

Flood Risk Management (Scotland) Act 2009:

Local Flood Risk Management Plan Tay Local Plan District



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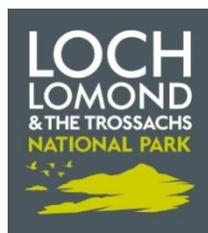
22 June 2016



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MHON AIDH RUAIDH

Delivering sustainable flood risk management is important for Scotland's continued economic success and well-being. It is essential that we avoid and reduce the risk of flooding, and prepare and protect ourselves and our communities.

This is first local flood risk management plan for the Tay Local Plan District, describing the actions which will make a real difference to managing the risk of flooding and recovering from any future flood events.

The task now for us – local authorities, Scottish Water, SEPA, the Scottish Government and all other responsible authorities and public bodies – is to turn our local flood risk management plan into action.

Foreword

The impacts of flooding experienced by individuals, communities and businesses can be devastating and long lasting. It is vital that we continue to reduce the risk of any such future events and improve Scotland's ability to manage and recover from any events which do occur.

The publication of this Plan is an important milestone in implementing the Flood Risk Management (Scotland) Act 2009 and improving how we cope with and manage floods in the Tay local plan district. The Plan translates this legislation into actions to reduce the damage and distress caused by flooding over the first planning cycle from 2016 to 2022.

The Tay local plan district is led by Perth & Kinross Council who have published this Plan on behalf of a partnership comprising Angus Council, Fife Council, Stirling Council, SEPA, Scottish Water, Loch Lomond & Trossachs National Park Authority, Cairngorms National Park Authority and Forestry Commission Scotland.

In summary, there are 17 areas that have been identified as being potentially vulnerable to flood risk across the Tay local plan district. These include 2,500 residential and 1,400 non-residential properties. The estimated annual average damage of these flood risks is £12.5 million.

This Plan presents actions to avoid and reduce the risk of flooding, and prepare and protect ourselves and our communities within these potentially vulnerable areas and across the local plan district. These actions include 4 flood protection schemes or works; 7 flood protection studies; as well as flood warning schemes, surface water management plans and natural flood management studies. The delivery of many of these actions may be dependent on the availability of funding; however, we can all play our part in managing flood risk as we are able.

Individuals are the first line of defence against flooding and have responsibilities to protect themselves from flooding. The publication of this Plan shows that the coordinated and collaborative efforts of public bodies can be brought together to deliver sustainable outcomes. However, the actions in this Plan can only be delivered with the support of all the public bodies, the Scottish Government and, most importantly, you and your communities.

This Plan therefore provides the blueprint upon which SEPA, local authorities and Scottish Water and any other responsible authorities will deliver their flood risk management responsibilities and, in particular, that all steps should be taken to manage flooding in a sustainable manner.

We would like to thank all those who contributed to the development of this Plan which will help shape the way in which floods and their impacts are managed across the Tay local plan district.

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List of Acronyms and Abbreviations

AOB	- Area of Benefit
CNPA	- Cairngorms National Park Authority
CoSLA	- Convention of Scottish Local Authorities
FSC	- Forestry Commission Scotland
ICS	- Integrated Catchment Study
LFRMP	- Local Flood Risk Management Plan
LLTNPA	- Loch Lomond and Trossachs National Park Authority
LPD	- Local Plan District
PVA	- Potentially Vulnerable Area
PVAc	- Candidate Potentially Vulnerable Area
Q&S	- Quality & Standards (Scottish Water)
RAs	- Responsible Authorities (Local Authorities, Scottish Water, National Park Authorities and Forestry Commission Scotland)
SEPA	- Scottish Environment Protection Agency
SNH	- Scottish Natural Heritage
SW	- Scottish Water

Chapter.1 What is a Local Flood Risk Management Plan?

This Local Flood Risk Management Plan (the 'Plan') has been developed to detail the actions adopted to reduce the devastating and costly impact of flooding in the Tay Local Plan District. The Plan supplements the [Flood Risk Management Strategy](#) for the Tay Local Plan District developed by SEPA in consultation with local authorities, Scottish Water, the National Park Authorities and transport and utility companies. The Flood Risk Management Strategies were developed to coordinate the efforts of all organisations that tackle flooding from all sources and in both urban and rural areas. They set the objectives to tackle flooding and identify actions to deliver these objectives. Objectives and actions have been set and agreed by all responsible authorities and prioritised over six-year planning cycles. The Flood Risk Management Strategies set out the short to long term ambition for flood risk management in Scotland, identifying where the risk of flooding and the benefits of investment are greatest.

The Local Flood Risk Management Plan takes the actions contained in the Flood Risk Management Strategy and adds details as to who will be responsible for implementing actions, a timetable of when actions will be delivered and a description of the coordination and funding arrangements (for detail [see Chapter 3](#)). The Plan covers the first six-year implementation cycle from 2016 to 2022.

By publishing the Local Flood Risk Management Plan, individuals and local communities are provided with information that allows them to better manage their own responsibilities. Everyone can take action with the confidence of what others are doing and with the clear knowledge of when they are undertaking these actions. It is through this risk-based and plan-led approach that flood management will improve for the individuals, communities and businesses at risk in the Tay Local Plan District.

The contents of the Local Flood Risk Management Plan have been agreed by the lead authority, all responsible authorities and SEPA.

The Plan is published by Perth & Kinross Council as the lead authority for the Tay Local Plan District. It has been prepared in collaboration with Stirling Council, Angus Council, Fife Council, SEPA, Scottish Water, Loch Lomond and the Trossachs National Park Authority, Cairngorms National Park Authority, Forestry Commission Scotland and other organisations with a responsibility or interest in managing flooding. The Plan is a statutory requirement of the Flood Risk Management (Scotland) Act 2009.

1.1 How to read this plan

This Local Flood Risk Management Plan has been developed in three sections:

- Chapter one explains what the flood risk management plan is, how it has been developed and the obligations different partners have to fulfil duties under the Flood Risk Management (Scotland) Act 2009;
- Chapter two provides a summary of flood risk in the Tay Local Plan District and an overview of the objectives and actions that have been selected to manage that risk across the district and within the Potentially Vulnerable Areas;
- Chapter three looks at the detail of the objectives and actions set within each Potentially Vulnerable Area for the first flood risk management cycle from 2016 – 2022, along with historical flooding information.

The annexes to this Plan provide supporting documents and references, and present more detailed information in various formats. A [glossary](#) of the terms used within this document is also available.

This Plan should be read alongside the Flood Risk Management Strategy for the Tay Local Plan District. The Flood Risk Management Strategy has been developed by SEPA in parallel with this Plan and provides additional background information and national context. The Flood Risk Management Strategies were approved by Scottish Ministers and published in December 2015. Both this Plan and the Flood Risk Management Strategy will be updated every six years.

1.2 How have we developed the Local Flood Risk Management Plan?

Many organisations and individuals have been involved in helping to improve flood risk management in Scotland and to provide a more holistic approach than was previously undertaken. It is recognised that a piecemeal or reactive approach to tackling flooding does not work. Working jointly to overcome administrative, institutional and geographical boundaries is essential to deliver effective flood risk management.

The Local Flood Risk Management Plan has been developed in close partnership between all responsible authorities, SEPA and Scottish Water. In local partnerships, here and throughout Scotland, SEPA has provided the technical analysis and the evidence to ensure that a nationally consistent approach is taken. Local authorities, Scottish Water and the National Park Authorities have made sure that local knowledge and expertise has informed the decision-making. The Tay Local Flood Risk Management Plan has been developed in partnership by:

- Perth & Kinross Council (lead authority);
- Angus Council, Fife Council and Stirling Council;
- SEPA;
- Scottish Water;
- Loch Lomond and the Trossachs National Park Authority;
- Cairngorms National Park Authority;
- Forestry Commission Scotland.

1.3 Roles and responsibilities for flood risk management planning

Individuals are the first line of defence against flooding and have responsibilities to protect themselves from flooding. Being prepared by knowing what to do and who to contact if flooding happens can help you reduce the damage and disruption flooding can have on your life.

SEPA is Scotland's national flood forecasting, flood warning and strategic flood risk management authority. SEPA has a statutory duty to produce Scotland's Flood Risk Management Strategies. SEPA works closely with other organisations responsible for managing flood risk through a network of partnerships and stakeholder groups to ensure that a nationally consistent approach to flood risk management is adopted. SEPA also has a responsibility to identify where in Scotland there is the potential for natural flood management techniques to be introduced.

In running Floodline, SEPA provides direct warnings, live flooding information and advice on how to prepare for or cope with the impacts of flooding 24 hours a day, seven days a week. To help forecast for flooding SEPA works in partnership with the [Met Office](#) through the Scottish Flood Forecasting Service. SEPA has piloted surface water flood forecasting to help urban areas improve their resilience to, and preparedness for, flooding. The development and wider roll-out of this service is being considered alongside the technical, resource and communication challenges associated with providing surface water flooding guidance.

To raise awareness of flooding at a national level SEPA runs education initiatives, community engagement programmes and an annual campaign to promote the useful advice and information available through Floodline. SEPA works in partnership with local authorities, Neighbourhood Watch Scotland, Ready Scotland and others to share our resources and help to promote preparedness and understanding of how flood risk is managed.

Local authorities work together for flood risk management planning purposes through a single lead authority which has the responsibility to produce a Local Flood Risk Management Plan. Local authorities have been working collaboratively to

develop these. It is the responsibility of your local authority to implement its flood protection actions agreed within the Plan whether that is new engineering projects, raising awareness of flooding or clearance and repair activities on the watercourses the Council manages. During severe flooding, local authorities will work with the emergency services and coordinate shelter for people evacuated from their homes.

Loch Lomond and the Trossachs National Park Authority (LLTNPA) is a responsible authority for flood risk management, is a land manager and is the planning authority for the area of the Tay catchment within the National Park boundary. Local Authorities and the LLTNPA will work closely to ensure any actions that may affect the park are approved and undertaken in such a way that is sensitive to the conservation areas and in keeping with the National Parks environmental policies.

Cairngorms National Park Authority (CNPA) is a responsible authority for flood risk management, is a land manager and is the planning authority for the area of the Tay catchment within the National Park boundary. Local Authorities and the CNPA will work closely to ensure any actions that may affect the park are approved and undertaken in such a way that is sensitive to the conservation areas and in keeping with the National Parks environmental policies.

Forestry Commission Scotland is a responsible authority for flood risk management and as a major landowner and land manager has potential to contribute to flood risk reduction.

Scottish Water is a responsible authority for flood risk management and is working closely with SEPA, local authorities and others to coordinate plans to manage flood risk. Scottish Water has the public drainage duty and is responsible for foul drainage and the drainage of rainwater run-off from roofs and any paved ground surface from the boundary of properties. Additionally, Scottish Water helps to protect homes from flooding caused by sewers either overflowing or becoming blocked. Scottish Water is not responsible for private pipework or guttering within the property boundary

Further details on some of these key roles are outlined in [Annex 1](#).

1.4 Consultation, engagement and advice

Local authorities and SEPA were keen to hear from the people and communities that live under the threat of flooding, to ensure that our technical analysis of the risks is accurate and that efforts to manage flooding are targeted to where most can be achieved. Two statutory public consultations were held during the development of the Flood Risk Management Strategies and Plans. The first consultation, held in 2011 and led by SEPA, was on the general approach to flood risk management planning and the identification of priority areas. The second, held in 2015, was a joint

SEPA and lead authority consultation on the draft Flood Risk Management Strategies and implementation plans. The views and representations of the respondents to this second consultation were taken into account in developing and finalising this Local Flood Risk Management Plan.

In addition to input from the public consultations, advice has been sought from relevant organisations at key stages. The Flood Risk Management Strategies and Local Flood Risk Management Plans have benefitted from input from the Tay Local Advisory Group throughout the process, providing important area-based knowledge. Advice was also taken from a National Flood Management Advisory Group consisting of over 50 member organisations, reflecting the national importance and impact of flooding on our communities, economy, environment and cultural heritage.

Some of the work carried out has been complex and technical in nature for which professional advice was sought. Working together, SEPA, the Scottish Government, local authorities, Scottish Water, Forestry Commission Scotland, the National Park Authorities and other key interested organisations have assisted each other and developed industry best practice guidance for flood risk management planning.

Further detail on consultation and engagement can be found within [Annex 2](#).

1.5 Identification of objectives, appraisal and prioritisation of actions

The identification of objectives and selection of actions was led by SEPA as part of Flood Risk Management Strategy with significant input from local authorities and Scottish Water.

Working collaboratively with local partnerships, SEPA has agreed the objectives for addressing the main flooding impacts. Actions that could deliver these agreed objectives have been appraised for their costs and benefits to ensure the right combinations are identified and prioritised. The actions considered in the development of the strategy include structural actions (such as building floodwalls, restoring flood plains, or clearance and repair works to rivers) and non-structural actions (such as flood warning, land use planning or improving our emergency response). Structural and non-structural actions are used together to manage flood risk effectively.

An assessment of the potential for natural flood management was used to help identify opportunities for using the land and coast to slow down and store water. Natural flood management actions have been recommended in areas where they could contribute to the management of flood risk. In such instances these actions are described as part of flood protection or natural flood management studies.

To prioritise actions across Scotland, SEPA made a technical, risk-based assessment of the costs and impacts of actions. This independent assessment was used alongside information from partner organisations to jointly agree priorities and identify indicative delivery dates for actions. A National Prioritisation Advisory Group was established to provide guidance to SEPA on the priority of flood risk management actions, having considered both the technical ranking prepared by SEPA and issues of local priority. This group was made up of representatives from SEPA, local authorities, CoSLA and Scottish Water.

The lists of prioritised actions to meet agreed goals and objectives in the first six-year cycle considered what would be achievable assuming a similar level of funding for flood risk management activities from the Scottish Government. However, given the timing of spending reviews and annualised financial settlements for local government, the actual ability to deliver all the actions set in the Strategies in December 2015 and detailed in this Plan will be dependent on the availability of the necessary funding in each year of the six year Plan.

1.6 Strategic Environmental Assessment and Habitats Regulations Appraisal

A Strategic Environmental Assessment (SEA) and Habitats Regulations appraisal have been undertaken for the Flood Risk Management Strategy document that has informed this Plan. As the Plan is considered to be consistent with the Flood Risk Management Strategy, no further SEA assessment has been undertaken. In order to confirm this was appropriate, Perth and Kinross Council submitted a SEA screening report to the SEA Gateway. The screening responses received via the SEA Gateway confirmed that the above approach was acceptable. Further impact assessments will be undertaken on any specific projects as required.

As the lead authority for the Tay District and a competent authority, Perth and Kinross Council also undertook a Habitats Regulations Appraisal to ensure that the Tay Local Flood Risk Management Plan will not adversely affect the integrity of Special Areas of Conservation and Special Protection Areas. Scottish Natural Heritage was consulted on the appraisal and their views have been taken into account. Mitigation has been applied where required to ensure that the Tay Local FRM Plan will not adversely affect the integrity of Special Areas of Conservation and Special Protection Areas.

Further details are available in [Annex 4](#).

1.7 Links with other plans, policies, strategies and legislative requirements

This Plan does not stand in isolation. As far as is practicable, an integrated approach to land and water management has been pursued. When developing the Flood Risk

Management Strategy and the Local Flood Risk Management Plan, early links were made with other relevant aspects of water and land management including local development plans, river basin management plans and emergency plans. In turn, the responsible authorities will work proactively to ensure the findings from these flood risk management plans and strategies will influence other planning initiatives in an interactive and iterative cycle. Making these links has helped identify opportunities to deliver multiple benefits from flood risk management goals, objectives and actions.

River basin management planning

Reducing flood risk in Scotland through the development of Flood Risk Management Strategies has provided an opportunity to connect with plans to improve the quality of Scotland's water environment. For example, coordination between river basin management and flood risk management can reduce flood risk, whilst improving water quality and biodiversity.

SEPA is coordinating the delivery of River Basin Management Plans and Flood Risk Management Strategies, and local authorities for Local Flood Risk Management Plans, and they have worked to ensure that there is integration and coordination between them. This coordination, particularly in regard to consultation and engagement but also in delivering environmental improvements, will be important for stakeholders many of whom have an interest in both the plans and strategies. Where relevant, the coordination requirements have been described as part of flood protection and natural flood management studies and schemes.

Scottish Water Business Plan 2015-2021

Scottish Water's investment programme is set out in their business plan 2015-2021, which can be found in their website;

<https://www.scottishwater.co.uk/about-us/publications/strategic-projections>

Scottish Water's customers have told them that reducing internal property flooding from sewers is a high priority and this is reflected in Scottish Waters Business Plan commitments for the period 2015-21. Addressing sewer flooding is of the highest importance to Scottish Water, as highlighted by our customers who have helped shape the investment plans for 2015-21.

In recognition of this high priority, within the period 2015-2021, Scottish Water will invest c. £115 m to improve the hydraulic capability of the sewer network so that they can remove all customers from the high risk internal sewer flooding register (greater than 10% chance per annum) as quickly as possible, typically within four years of their problem being confirmed. However Scottish Water has made a commitment to those customers on the register on 31 March 2015 that they will no longer be on the register by 31 March 2021.

Scottish Water Customers have also highlighted external flooding is an important issue. As a result, within the period 2015-2021, they are investing c. £40 m to develop and to begin to implement solutions to reduce the flood risk for 400 high priority external sewer flooding areas suffering from frequent repeat flooding events.

As a responsible authority under the Flood Risk Management (Scotland) Act 2009, Scottish Water is also working collaboratively with third parties such as SEPA and Local Authorities through the Flood Risk Management Planning process which will assess the risk of flooding into the future.

As part of that work, Scottish Water has allocated investment to undertake further modelling and assessment in sewer catchments within PVA's to improve knowledge and understanding of flood risk from the sewers in these areas, as required under Section 16 of the Flood Risk Management (Scotland) Act 2009. Scottish Water is also working in partnership with SEPA and Local Authorities, to lead on the production of Integrated Catchment Studies across key catchments. Work carried out under these Flood Risk Management (Scotland) Act 2009 duties will continue to inform future investment requirements for Scottish Water.

Integrated Catchment Studies and Surface Water Management Plans

Integrated Catchment Studies (ICS) are led by Scottish Water in partnership with local authorities and SEPA. These studies will improve knowledge and understanding of the interactions between the above ground and below ground drainage network, e.g. with the sewer network, watercourses and (where appropriate) the sea. This will improve the understanding of contributions these drainage networks play in local surface water flood risk.

Five ICS's were undertaken in Scotland during SR10 (2010-2015) to Modelling and Flood Risk assessment stage, which have provided a fuller understanding of the sources and mechanisms of flooding across these catchments. These studies are expected to undertake an Optioneering phase between 2015-2021. This will identify the actions to reduce flood risk across the catchments, with the outputs feeding into the local authority led surface water management planning process.

Fifteen ICS's will begin in Scotland during SR15 (2015-2021). These studies will go through the Scoping and Modelling phases, which culminate in defining the sources and mechanisms of flooding in the catchment, and an understanding of the impacts of that flooding. It is expected that the ICS partnerships will remain and it is anticipated that the Optioneering phase for these studies will be initiated directly after the preceding phases.

Within the Tay Local Plan District, an ICS is being carried out in Perth. A Catchment map for the [Perth ICS](#) work can be found in [Annex 5](#).

Surface water flooding occurs when rainwater does not drain away via normal drainage systems or soak into the ground, but lies on or flows over the ground instead. This form of flooding is experienced in areas of the Tay Local Plan District. This will be addressed by Surface Water Management Planning, which is a key component of the flood risk assessment that has led to the development of this Plan. Further details of this work can be found in [Annex 5](#).

1.8 Next Steps and monitoring progress

This Plan runs for six years from 22 June 2016. Over this period the Tay LPD Partnership will continue to meet periodically to monitor progress towards implementing the actions detailed in [Chapter 3](#) of the Plan.

Between June 2018 and 2019, Perth & Kinross Council, as lead authority will publish an interim report on the progress towards implementing the actions identified in the local flood risk management plan. This mid-term report will be made publically available.

Between June 2021 and 2022, Perth & Kinross Council, as lead authority will publish a final report on the progress towards implementing the actions contained in the local flood risk management plan. This final report will also be made publically available.

A second set of Flood Risk Management Strategies and Local Flood Risk Management Plans will be published in December 2021 and June 2022 respectively.

1.9 Licensing acknowledgements

Full licensing acknowledgements can be found in [Annex 8](#) of this Plan.

Chapter.2 Managing Flood Risk in the Tay Local Plan District

2.1 Understanding of flooding within the Tay Local Plan District

This chapter presents a background summary of flooding in the Tay Local Plan District. This summary includes the characteristics and impacts of flooding from river, coastal and surface water sources in the Tay Local Plan District. A summary of the objectives and planned actions to manage flooding from these mechanisms across the whole local plan district and within each of the 17 Potentially Vulnerable Areas (PVAs) is also provided.

2.2 Background Summary of Flooding in the Tay Local Plan District

The area of the Tay Local Plan District is 6,061km² with a population of approximately 160,000. The Local Plan District contains four local authorities and 17 Potentially Vulnerable Areas.

There are approximately 2,500 residential and 1,400 non-residential properties at risk of flooding within the Tay Local Plan District. This equates to approximately 4% of all properties at risk of flooding nationally. Within the Local Plan District, approximately 3.5% of all residential and 10% of all non-residential properties are at risk and it is estimated that 79% of these properties are located within the Potentially Vulnerable Areas. The Annual Average Damages ([see glossary](#)) from flooding are approximately £12 million.

River flooding is the main source of flood risk. The Annual Average Damages caused by river flooding are £10 million, those caused by surface water flooding are £2 million and damages caused by coastal flooding are £550,000 (see Figure 1).

The extent of the Tay Local Plan District is shown in Figures 2 and 3. The Tay Local Plan District contains the River Tay and River Earn catchments and includes the urban areas of Perth, Forfar, Blairgowrie, Crieff, Auchterarder, Aberfeldy and Pitlochry. The River Tay and River Earn river catchments are shown in Figure 2.

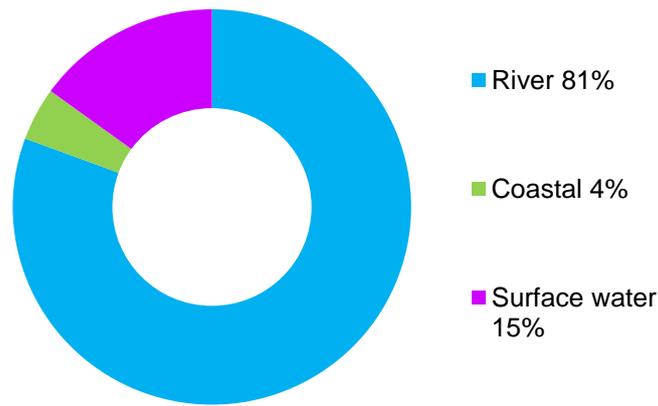


Figure 1: Annual Average Damages by Flood Source in the Tay Local Plan District
 (Reproduced from the Tay Flood Risk Management Strategy, SEPA, December 2015)

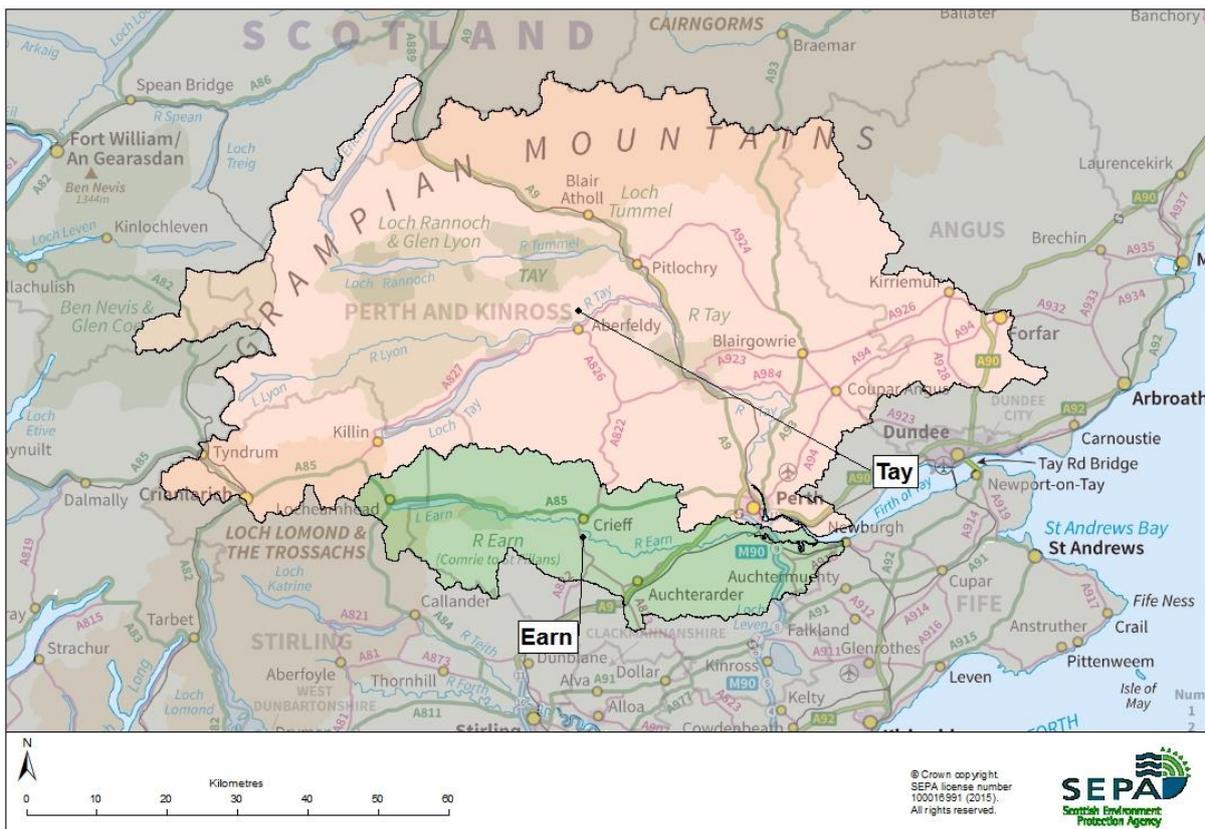


Figure 2: River catchments within the Tay LPD
 (Reproduced from the Tay Flood Risk Management Strategy, SEPA, December 2015)

The locations of the Potentially Vulnerable Areas are shown in Figure 3.

The River Tay is the longest river in Scotland (190km) and has the largest catchment covering an area of around 5,000km². More water flows through the River Tay than any other river in the UK. The main tributaries include the River Garry, River Tummel, River Lyon, River Braan, River Isla and River Almond. The largest lochs in the Tay catchment include Loch Ericht, Loch Rannoch and Loch Tay. Many of the lochs and rivers in the Tay catchment are managed to produce hydropower.

The Tay Local Plan District includes a 74km stretch of the inner Firth of Tay, where the River Tay and the River Earn meet the Firth of Tay.

Flood maps are required by the Flood Risk Management (Scotland) Act to show information that describes the nature of a flood in terms of the source, extent, water level or depth and, where appropriate, velocity of water. River, coastal and surface water flood maps were developed by SEPA using a consistent methodology to produce outputs for the whole of Scotland. This was supplemented with more detailed, local assessments where available and suitable for use.

In developing the flood maps SEPA have:

- Used the most up to date modelling techniques;
- Used industry endorsed methods;
- Been able to show more information than ever before on the sources and impacts of flooding;
- Developed the first national natural flood management maps showing the areas where natural techniques to help reduce flood risk could be most effective.

In developing the maps SEPA worked in partnership with local authorities. They also worked with the industry to define the overall approach to flood hazard mapping and undertook a series of internal checks and local authority reviews of outputs. Further information on Flood Hazard and Risk including mapping can be found at:

<http://www.sepa.org.uk/environment/water/flooding/flood-maps/>

Flood hazard and risk maps are referred to collectively as flood maps and are available on the SEPA website here:

<http://www.sepa.org.uk/environment/water/flooding/flood-maps/>

Further details of flood risk from distinct sources can be found in the river, coastal and surface water chapters in Section 3 of the [Tay Flood Risk Management Strategy](#).

2.3 Summary of Objectives and Actions in the Tay Local Plan District

The identified objectives are the shared aims for managing flood risk. The associated actions describe where and how that flood risk will be managed. The objectives and actions have been developed by SEPA in consultation with responsible authorities to manage flooding within the Tay Local Plan District.

Some flood risk management objectives and actions apply to all areas, whether designated as a Potentially Vulnerable Area or not. For example, flood risk can be managed through national planning policy or as part of ongoing statutory duties for local authorities. Table 1 describes the objectives that apply across the Tay Local Plan District. The associated general actions that apply across the Tay Local Plan District include flood forecasting, self-help, awareness raising, maintenance, emergency plans/response and planning policies. These general actions are summarised in Table 2 which also provides further information about who will be responsible for the delivery and implementation of the actions, a timetable of when the actions will be undertaken and the coordination and funding arrangements for those actions. Table 3 (page 23) provides a summary of the specific actions to manage flood risk within PVAs during the first flood risk management planning cycle (2016-2022).

Table 1: General Objectives That Apply Within the Tay Local Plan District

Target Area	Objective(s)	ID	Indicators
Applies across Tay Local Plan District	Avoid an overall increase in flood risk	8001	<ul style="list-style-type: none"> • 2,500 residential properties • 1,400 non-residential properties • 5,500 people
Applies across Tay Local Plan District	Reduce overall flood risk	8041	<ul style="list-style-type: none"> • 2,500 residential properties • 1,400 non-residential properties • 5,500 people

Table 2: General Actions to Manage Flood Risk that Apply Across the Tay Local Plan District

Action (ID):	FLOOD FORECASTING (80410009)		
Objective (ID):	Reduce overall flood risk (8041)		
Delivery lead:	SEPA		
Status:	Existing	Planned Delivery Period:	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 flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. 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.		
Coordination Arrangement:	This is a joint initiative between SEPA and the Met Office. Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.		
Funding Arrangement:	SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.		

Action (ID):	SELF HELP (80410011)		
Objective (ID):	Reduce overall flood risk (8041)		
Delivery lead:	-		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	Everyone is responsible for protecting themselves and their property from flooding. Self-help actions can be undertaken by any individuals, businesses, organisations or communities at risk of flooding. They are applicable to all sources, frequency and scales of flooding. They focus on awareness raising and understanding of flood risk. 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 the Resilient Communities Initiative, and ensuring that properties and businesses are insured against flood damage.		
Coordination Arrangement:	Responsible Authorities have a duty to raise public awareness of flood risk. Helping individuals understand the risks from which they are most vulnerable from is the first step in the process.		

	<p>Following the Resilient Communities Initiative, Perth and Kinross Council leads a multi-agency Local Resilience Partnership to support communities to develop community resilience groups and community emergency plans.</p> <p>Perth & Kinross Council can provide advice on flood protection products for properties in flood risk areas.</p> <p>Responsible Authorities will also actively promote Floodline.</p>
Funding Arrangement:	Individuals have prime responsibility to protect themselves and their property from flooding and are therefore are expected to meet the costs of protecting themselves.

Action (ID):	AWARENESS RAISING (80410013)		
Objective (ID):	Reduce overall flood risk (8041)		
Delivery lead:	Responsible authorities		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Public awareness, participation and community support are essential components of sustainable flood risk management. SEPA and the responsible authorities have a duty to raise public awareness of flood risk. This is undertaken both individually and collaboratively by a range of organisations. 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 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.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships.</p> <p>Local authorities will be undertaking additional awareness raising activities when developing any specific project proposals and will engage with community resilience groups and local communities. As a Responsible Authority, Scottish Water will support SEPA and RAs with awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies. More general information and flooding guidance will be available on the website at: https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information</p>		

Coordination Arrangement:	Awareness raising will be coordinated through the Local Plan District partnership between SEPA and the responsible authorities. SEPA and the responsible authorities will use any studies, projects and flood schemes to engage with communities and raise awareness of flood risk. Communications activity will be coordinated through existing arrangements within Local Plan District Partnerships. Information will be disseminated through website, social media and other community engagement activity. SEPA and responsible authorities will coordinate awareness raising activities with related actions.
Funding Arrangement:	SEPA's awareness raising activities are funded by Scottish Government through SEPA's grant in aid settlement. Awareness raising activities will be funded from the Council's revenue budget. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure. The National Park Authorities also have a duty to raise awareness of flood risk but do not receive any Scottish Government funding to support any flood specific activities.

Action (ID):	MAINTENANCE (80410007)		
Objective (ID):	Reduce overall flood risk (8041)		
Delivery lead:	Local authority, asset / land managers		
Status:	Existing	Planned Delivery Period:	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 will undertake risk based inspection, maintenance 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> <p>Sections 18 and 59 of the Flood Risk Management (Scotland) Act 2009 place duties of watercourse assessment, clearance and repair on local authorities. In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or defences.</p>		
Coordination Arrangement:	<p>Sections 17 and 18 of the Flood Risk Management (Scotland) Act 2009 require local authorities to prepare maps of relevant bodies of water and sustainable urban drainage systems (SUDS), assess flood risk on those bodies of water from time to time and to prepare a schedule of clearance and repair works where such works would substantially reduce flood risk. Under Section 59 of the same Act, Local authorities also have a duty to carry out clearance and repair works described on the schedule. The</p>		

	<p>Council's schedule of clearance and repair works is made available for public inspection on its website.</p> <p>The Council carries out routine, scheduled inspections of watercourses on its list at a frequency which depends on flood risk. Further reactive inspections are carried out when issues are highlighted or during times of flooding. Further bodies of water will be included where it has been identified that they may give rise to a risk of flooding.</p> <p>Any identified clearance and repair works from these inspections are logged in a database and are undertaken in order of priority, subject to available funding.</p> <p>Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk. In the first instance, clearance and repair works are therefore referred to the landowner, where they can be identified. The Council usually only carries out works where there has been a failure of the landowner to act, where landownership is not clear, or where urgent intervention is required.</p> <p>In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or works. Scottish Water undertakes risk based inspection, maintenance 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> <p>If any removal of trees is proposed, this may require permission from Forestry Commission Scotland. Removal without permission could be a breach of the Forestry Act and also Cross Compliance.</p> <p>Local Authorities will liaise with SEPA where controlled activities may be required and with private landowners where they may require to take access on private land or to notify landowners that they require to undertake maintenance.</p> <p>The Council will coordinate maintenance activities with related actions.</p>
Funding Arrangement:	<p>Maintenance activities are subject to funding from the relevant Perth and Kinross Council revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator. All business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure</p>

Action (ID):	EMERGENCY PLANS / RESPONSE (80410014)		
Objective (ID):	Reduce overall flood risk (8041)		
Delivery lead:	Category 1 and 2 Responders		
Status:	Existing	Planned Delivery Period:	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 coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. Emergency response plans are applicable for all types of flooding. They set out the steps to be taken during flooding in order to maximise safety and minimise impacts where possible. Under the Civil Contingencies Act, Category 1 Responders have a duty to maintain emergency plans. Emergency plans may also be prepared by individuals, businesses, organisations or communities.</p> <p>Scottish Water is a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required.</p>
Coordination Arrangement:	<p>Perth and Kinross Council has developed a Generic Emergency Plan and a Flooding Emergency Response Plan. The Plan is designed to ensure that contingency measures are in place for the coordinated and flexible response to flooding incidents to mitigate the effects of flooding emergencies.</p> <p>SEPA flood alerts and warnings will be monitored and resources made ready as required. A coordinated response will follow any reports of flooding.</p> <p>Emergency response is coordinated with regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. A debrief and plan review will be carried out following any flood events.</p> <p>Protecting property from flooding is the responsibility of the owner of the property, but Perth & Kinross Council can sometimes provide sandbags to properties. Unfortunately the Council only has the resources to supply sandbags to residents where there is an imminent risk of flooding.</p> <p>Emergency plans/response activities will be coordinated with related actions.</p>
Funding Arrangement:	<p>Funding is allocated to category 1 and 2 responders by the Scottish Government for dealing with emergency response and in extreme cases may reimburse responders after an extreme event. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</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	Planned Delivery Period:	Ongoing
Description:	<p>The Scottish Planning Policy (SPP) and accompanying Planning Advice Notes set out the 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 SPP 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 generally be avoided. For further information on the application of national planning policies see Annex 3.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the Flood Risk Management (Scotland) 2009. SEPA also has a duty to co-operate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engage in the planning system, including guidance on flood risk and planning is available on SEPA website http://www.sepa.org.uk/environment/land/planning/</p> <p>Current national planning policies, the Scottish Planning Policy and accompanying Planning Advice notes restrict development within the floodplain and limit exposure of new receptors to flood risk. Planning authorities are responsible for implementing this policy guidance when preparing Local Development Plans and when considering individual planning applications.</p> <p>In addition to national policies, local planning policies may place further requirements within their area of operation to restrict inappropriate development and prevent unacceptable risk. Scottish Water is a statutory consultee within the planning legislation. They provide advice to planning authorities during the preparation of Local Development Plans and are required to comment on all outline or full planning applications which are referred by a planning authority.</p>		
Coordination Arrangement:	<p>Perth and Kinross Council is a local planning authority and will coordinate its work with the strategic development planning authority and the National Parks Authorities, who are also planning authorities.</p> <p>The Council's Flooding Team are consulted on planning applications and work with the Planning and Development Service to ensure that flood risk is addressed. The Perth &</p>		

	<p>Kinross Local Development Plan provides the framework against which planning applications outside the National Parks are assessed and is consistent with the Strategic Development Plan (TAYplan).</p> <p>Supplementary Guidance on Flood Risk and Flood Risk Assessments is also available to support the content of the Perth & Kinross Local Development Plan. Planning applications within the National Parks are assessed against their respective Local Development Plans, which also contain policies in relation to flood risk. Planning applications are also reviewed against SEPA’s indicative flood maps, existing flood studies and records of flooding. Where flood risk is an issue, developers are required to prepare and submit a site-specific flood risk assessment and drainage impact assessment as applicable. They must also consider how a development site will be drained and how surface water runoff will be managed through the implementation of appropriate Sustainable Urban Drainage Measures. So as to align the flood risk management and land use planning systems, land use planning objectives and actions have been developed which can be viewed in Annex 3. The Council will coordinate land use planning policies with related actions.</p>
<p>Funding Arrangement:</p>	<p>SEPA’s land use planning activities will be funded by the Scottish Government through SEPA’s grant in aid settlement. Perth & Kinross Council’s planning activities will be funded from the Council’s revenue budget. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure. Planning activities are funded from the National Park’s revenue budget which is a combination of Scottish Government direct grant and planning fees.</p>

The main focus of this Local Flood Risk Management Plan is to manage flood risk in Potentially Vulnerable Areas where specific objectives and actions apply, in addition to the general actions listed in Table 2 above. These specific actions are required to manage a particular source of potential flooding. Table 3 therefore provides a summary of where specific actions will be undertaken. Further detail on the specific objectives and actions relating to each individual PVA can be found in [Chapter 3](#) of this Plan.

Following the National Flood Risk Assessment, a small number of Potentially Vulnerable Areas were identified as having a lower flood risk than first thought. In light of this new information, those PVAs only have general objectives and actions and no specific objectives or actions have been set. The PVAs are included in the flood risk management planning process and the National Flood Risk Assessment will be updated to inform each subsequent planning cycle.

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 Local Flood Risk Management Plans.

Table 3: Summary of Specific Actions to Manage Flood Risk Within PVAs During 2016-2022

PVA	Location	Flood protection scheme/ works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan/study	Strategic mapping and modelling	Maintain flood protection scheme*	Maintain flood warning*	Flood forecasting	Property level protection scheme	Community flood action groups	Self help	Awareness raising	Maintenance	Site protection plans	Emergency plans/ response	Planning policies
08/01	Blair Atholl							✓	N/A	N/A	✓		✓	✓	✓	✓		✓	✓
08/02	Kinloch Rannoch								N/A	N/A	✓			✓	✓	✓		✓	✓
08/03	Aberfeldy & Pitlochry				✓			✓	✓	✓	✓		✓	✓	✓	✓		✓	✓
08/04	Alyth					✓		✓	N/A	N/A	✓			✓	✓	✓		✓	✓
08/05	Kirriemuir & Forfar				✓		✓	✓	✓	N/A	✓			✓	✓	✓		✓	✓
08/06	Blairgowrie						✓	✓	N/A	✓	✓			✓	✓	✓		✓	✓
08/07	Coupar Angus							✓	N/A	N/A	✓			✓	✓	✓		✓	✓
08/08	Luncarty, Stanley, Bankfoot, Dunkeld & Birnam				✓			✓	N/A	✓	✓			✓	✓	✓		✓	✓
08/09	Tyndrum & Crianlarich							✓	N/A	N/A	✓			✓	✓	✓		✓	✓
08/10	Almondbank	✓						✓	✓	✓	✓			✓	✓	✓		✓	✓
08/11	Scone	✓			✓		✓	✓	N/A	N/A	✓			✓	✓	✓		✓	✓
08/12	Perth to Kinfauns (north of A90)	✓					✓	✓	✓	✓	✓			✓	✓	✓		✓	✓
08/13	Perth Centre				✓		✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓
08/14	Comrie	✓						✓	✓	✓	✓		✓	✓	✓	✓		✓	✓
08/15	Forteviot							✓	N/A	✓	✓			✓	✓	✓		✓	✓
08/16	Dunning							✓	N/A	✓	✓			✓	✓	✓		✓	✓
08/17	Bridge of Earn							✓	✓	✓	✓		✓	✓	✓	✓		✓	✓

* Note: N/A is used where there is no formal Flood Protection Scheme or flood warning scheme present.

Chapter.3 Potentially Vulnerable Areas (PVAs)

Potentially Vulnerable Areas (PVAs) are catchments identified as being at medium to high risk of flooding and where the impact of flooding is sufficient to justify further assessment and appraisal.

The main focus of this Plan is to manage flood risk in these PVAs where specific actions apply in addition to the generic actions (listed in Table 2). The following chapter therefore details the objectives and planned actions that have been prioritised for delivery between 2016 and 2022 in each of the 17 Potentially Vulnerable Areas (PVAs) within the Tay Local Plan District.

The information presented is based on Section 2 of the Tay Flood Risk Management Strategy and includes the background to the area, a summary of flooding impacts and the history of significant flooding. Each PVA has a summary table which shows at a glance all of the actions that will be actively undertaken in that Potentially Vulnerable Area over the 6 year cycle of the Local Flood Risk Management Plan. A number of tables have also been provided which set out the objectives to manage flooding in the PVA and identify who will be responsible for the delivery and implementation of the actions, along with a timetable of when the actions will be undertaken and the coordination and funding arrangements. The priority to be given to implementing any flood studies and flood protection schemes is also identified at a national, local authority and Local Plan District level is identified.

For completeness, each PVA includes details on the general objectives and actions to manage flooding across the Local Plan District as well as the specific actions to manage flooding within the PVA.

3.1 Blair Atholl PVA 08/01

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

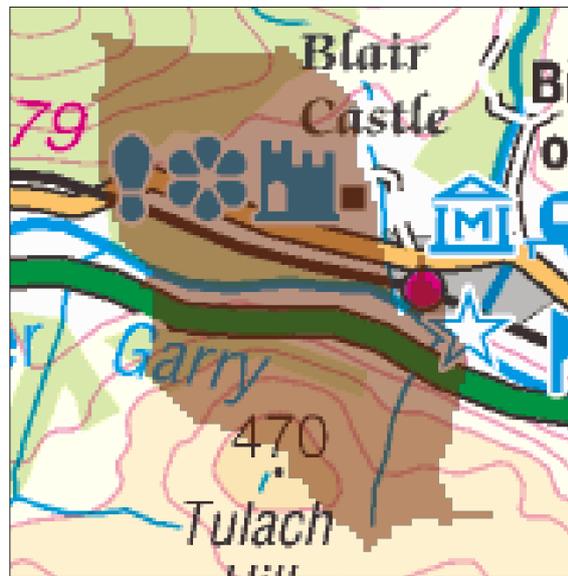
Background and summary of impacts

This Potentially Vulnerable Area is 6km² and is situated in the upper reaches of the River Tay catchment. It includes Blair Atholl and the main watercourse is the River Garry.

The majority of flood damages are caused by river flooding, followed by surface water flooding.

There are fewer than 10 residential and non-residential properties at risk of flooding. The Annual Average Damages from flooding are approximately £14,000.

For more detailed information please see the [Tay Flood Risk Management Strategy](#).



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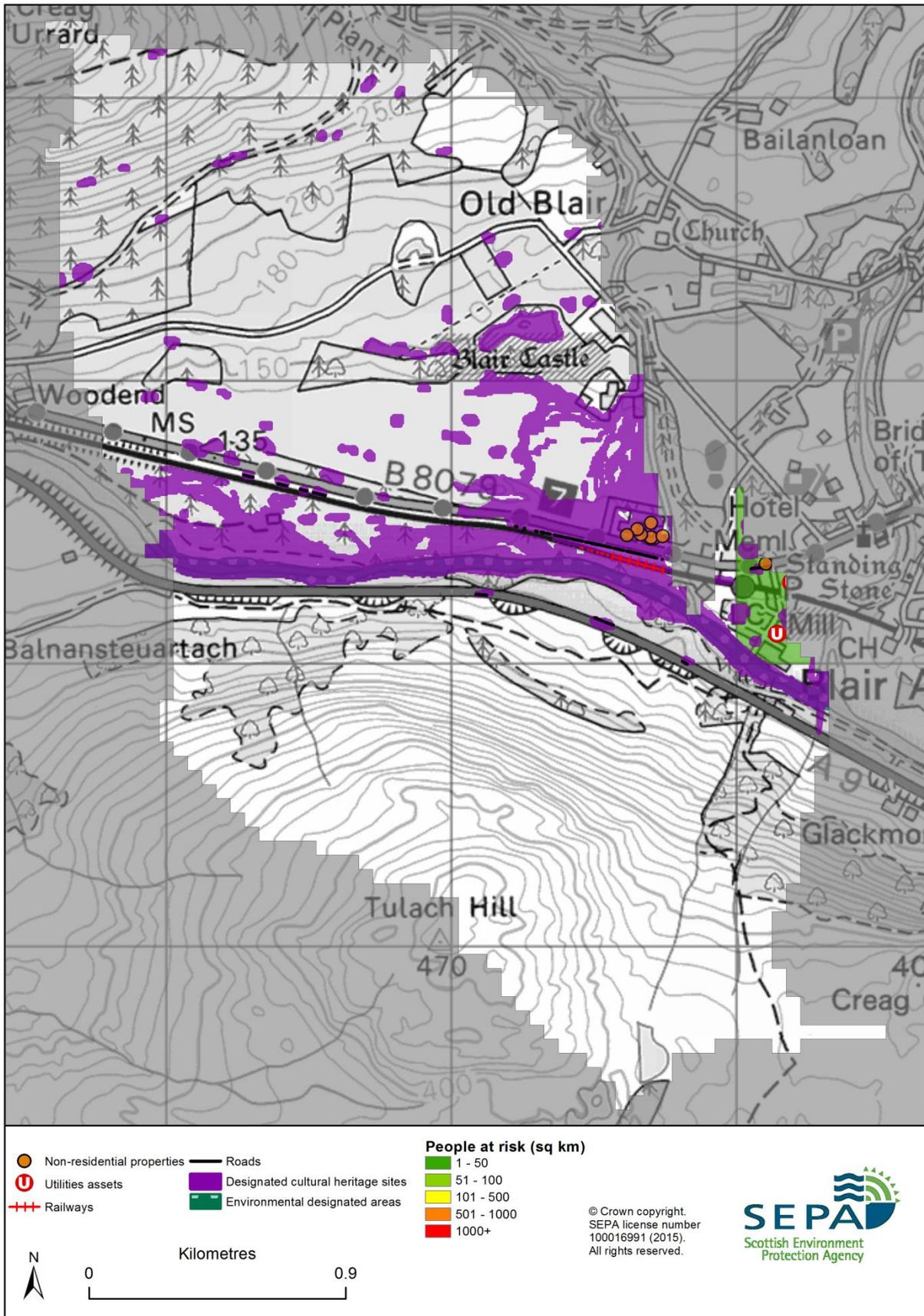


Figure 9: Impacts of Flooding in PVA 08/01

(Reproduced from the Tay Flood Risk Management Strategy, SEPA, December 2015)

History of flooding

A number of river floods have been recorded in this area. These include:

- December 2015: Storm Desmond caused prolonged rainfall across Perth & Kinross. Residents were evacuated from properties on Garryside due to flooding from the River Garry.
- 13 June 1931: Evacuation was required as River Garry flooded near Blair Atholl, the railway was also affected.
- July 1916: Evacuation was required as River Garry flooded near Blair Atholl, the railway was also flooded.

Selected Actions in the Blair Atholl PVA

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):	STRATEGIC MAPPING AND MODELLING (80410016)				
Objective(ID):	Reduce overall flood risk (8041)				
Delivery Lead:	SEPA				
Status:	Not started,	Planned Delivery Period:	Strategic mapping improvements in the River Garry area will be undertaken in 2016 to 2017. Given the size and complexity of the Tay catchment, combined with a number of third party studies and works in particular the A9 Dualling Scheme, there is currently considerable uncertainty over delivery timescales. SEPA will seek to better understand these issues during 2016 in order to further refine timescales.		
Description:	SEPA will seek to develop flood mapping in the River Garry area to improve understanding of flood risk. The extent and timing of improvements will depend on detailed scoping and data				

	availability.
Coordination Arrangement:	SEPA's strategic mapping activities will be coordinated with the activities of other responsible authorities as required.
Related Actions:	Planning Policies
Funding Arrangement:	SEPA's strategic mapping and modelling activities are funded by Scottish Government through SEPA's grant in aid settlement.

Action (ID):	FLOOD FORECASTING (80410009)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	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 flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. 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.		
Coordination Arrangement:	SEPA / Met Office joint initiative. Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.		
Related Actions:	Awareness Raising, Self Help, Emergency Plans/Response.		
Funding Arrangement:	SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.		

Action (ID):	COMMUNITY FLOOD ACTION GROUPS (80020012)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Community		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	Community flood action groups are community based resilience groups which, on behalf of local residents and business, help to prepare for and minimise the effects of flooding. They reflect the interests of their local communities and may differ in composition and remit. There are over 60 groups already established in Scotland. The Scottish Flood Forum provides support for both new and existing groups. Blair Atholl Community Council operates in this area. The		

	community council is currently in the process of developing a community resilience plan which includes plans to mitigate the impact of flooding.
Coordination Arrangement:	The Council will work with the Blair Atholl community council to reduce flood risk, improve preparedness and increase resilience against flooding. The Council will continue to co-ordinate with Blair Atholl community council throughout the next 6 years on a priority needs basis where resources allow. The Council will coordinate community flood action groups with related actions.
Related Actions:	Flood Forecasting, Awareness Raising, Self Help, Maintenance, Emergency Plans/Response.
Funding Arrangement:	Funding for Community flood action groups will be provided by private individuals, businesses, organisations or communities at risk of flooding.

Action (ID):	AWARENESS RAISING (80410013)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Responsible authorities		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Public awareness, participation and community support are essential components of sustainable flood risk management. SEPA and the responsible authorities have a duty to raise public awareness of flood risk. This is undertaken both individually and collaboratively by a range of organisations. Improved awareness of flood risk and actions that prepare individuals, homes and businesses for flooding can reduce the overall impact.</p> <p>The Scottish government is developing curriculum resources to be used in Schools to increase awareness. 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. Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships.</p> <p>Local authorities will be undertaking additional awareness raising activities when developing any specific project proposals and will engage with community resilience groups and local communities. Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies. More general information and flooding</p>		

	guidance will be available on the website at: https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information
Coordination Arrangement:	Awareness raising will be coordinated through the Local Plan District partnership between SEPA and the responsible authorities. SEPA and the responsible authorities will use any studies, projects and flood schemes to engage with communities and raise awareness of flood risk. Communications activity will be coordinated through existing arrangements within Local Plan District Partnerships. Information will be disseminated through website, social media and other community engagement activity. Scottish Water will keep responsible authorities informed of its awareness raising activities through the Local Plan District partnerships. SEPA and responsible authorities will coordinate awareness raising activities with related actions.
Related Actions:	Strategic mapping and modelling, Flood Forecasting, Community Flood Action groups, Self Help, Maintenance, Emergency Plans/Response
Funding Arrangement:	SEPA's awareness raising activities are funded by Scottish Government through SEPA's grant in aid settlement. Awareness raising activities will be funded from the Council's revenue budget. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure

Action (ID):	SELF-HELP (80410011)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	-		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	Everyone is responsible for protecting themselves and their property from flooding. Self help actions can be undertaken by any individuals, businesses, organisations or communities at risk of flooding. They are applicable to all sources, frequency and scales of flooding. They focus on awareness raising and understanding of flood risk. 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.		
Coordination Arrangement:	SEPA and Responsible Authorities have a duty to raise public awareness of flood risk. Helping individuals understand the risks		

	<p>from which they are most vulnerable from is the first step in the process.</p> <p>Following the Resilient Communities Initiative, Perth and Kinross Council leads a multi-agency Local Resilience Partnership to support communities to develop community resilience groups and community emergency plans.</p> <p>Perth & Kinross Council can provide advice on flood protection products for properties in flood risk areas.</p> <p>Responsible Authorities will also actively promote Floodline.</p> <p>SEPA and responsible authorities will coordinate self-help activities with related actions.</p>
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Maintenance, Emergency Plans/Response
Funding Arrangement:	Individuals have prime responsibility to protect themselves and their property from flooding and are therefore expected to meet the costs of protecting themselves.

Action (ID):	MAINTENANCE (80410007)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Perth and Kinross Council, asset / land managers		
Status:	Existing	Planned Delivery Period:	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 undertakes risk based inspection, maintenance 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> <p>Sections 18 and 59 of the Flood Risk Management (Scotland) Act 2009 place duties of watercourse assessment, clearance and repair on local authorities. In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or defences.</p>		
Coordination Arrangement:	<p>Sections 17 and 18 of the Flood Risk Management (Scotland) Act 2009 require local authorities to prepare maps of relevant bodies of water and sustainable urban drainage systems (SUDS), assess flood risk on those bodies of water from time to time and to prepare a schedule of clearance and repair works where such works would substantially reduce flood risk. Under Section 59 of the same Act, Local authorities also have a duty to carry out clearance and repair works described on the schedule. The Council's schedule of clearance and repair works is made available for public inspection on its website.</p> <p>The Council carries out routine, scheduled inspections of watercourses on its list at a frequency which depends on flood risk. Further reactive inspections are carried out when issues are</p>		

	<p>highlighted or during times of flooding. Further bodies of water will be included where it has been identified that they may give rise to a risk of flooding.</p> <p>Any identified clearance and repair works from these inspections are logged in a database and are undertaken in order of priority, subject to available funding.</p> <p>Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk. In the first instance, clearance and repair works are therefore referred to the landowner, where they can be identified. The Council usually only carries out works where there has been a failure of the landowner to act, where landownership is not clear, or where urgent intervention is required.</p> <p>Local Authorities will liaise with SEPA where controlled activities may be required and with private landowners where they may require to take access on private land or to notify landowners that they require to undertake maintenance.</p> <p>The Responsible Authorities will coordinate maintenance activities with related actions.</p>
Related Actions:	Community flood action groups, Awareness raising, Self help
Funding Arrangement:	<p>Maintenance activities are subject to funding from the relevant Perth and Kinross Council revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator. All business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</p>

Action (ID):	EMERGENCY PLANS/RESPONSE (80410014)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Category 1 and 2 Responders		
Status:	Existing	Planned Delivery Period:	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 coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p> <p>Emergency response plans are applicable for all types of flooding. They set out the steps to be taken during flooding in order to maximise safety and minimise impacts where possible. Under the Civil Contingencies Act, Category 1 Responders have a duty to maintain emergency plans. Emergency plans may also be prepared by individuals, businesses, organisations or communities.</p>		

	Scottish Water is a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required.
Coordination Arrangement:	<p>Perth and Kinross Council has developed a Generic Emergency Plan and a Flooding Emergency Response Plan. The Plan is designed to ensure that contingency measures are in place for the coordinated and flexible response to flooding incidents to mitigate the effects of flooding emergencies.</p> <p>SEPA flood alerts and warnings will be monitored and resources made ready as required. A coordinated response will follow any reports of flooding.</p> <p>Emergency response is coordinated with regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. A debrief and plan review will be carried out following any flood events.</p> <p>Protecting property from flooding is the responsibility of the owner of the property, but Perth & Kinross Council can sometimes provide sandbags to properties. Unfortunately the Council only has the resources to supply sandbags to residents where there is an imminent risk of flooding.</p> <p>Emergency plans/response activities will be coordinated with related actions.</p>
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Self Help
Funding Arrangement:	<p>Funding is allocated to category 1 and 2 responders by the Scottish Government for dealing with emergency response and in extreme cases may reimburse responders after an extreme event. Emergency response activities are funded from the Council's revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</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	Planned Delivery Period:	Ongoing
Description:	<p>The Scottish Planning Policy (SPP) and accompanying Planning Advice Notes set out the 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 SPP 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</p>		

	<p>likelihood of flooding should generally be avoided. For further information on the application of national planning policies see Annex 3.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the Flood Risk Management (Scotland) 2009. SEPA also has a duty to co-operate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engage in the planning system, including guidance on flood risk and planning is available on SEPA website http://www.sepa.org.uk/environment/land/planning/</p> <p>Current national planning policies, the Scottish Planning Policy and accompanying Planning Advice notes restrict development within the floodplain and limit exposure of new receptors to flood risk. In addition to national policies, local planning policies may place further requirements within their area of operation to restrict inappropriate development and prevent unacceptable risk.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the Flood Risk Management (Scotland) Act, 2009. SEPA also has a duty to co-operate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice.</p> <p>Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.</p>
Coordination Arrangement:	<p>Perth and Kinross Council is a local planning authority and will coordinate its work with the strategic development planning authority and the National Parks Authorities (who are also planning authorities).</p> <p>The Council's Flooding Team are consulted on planning applications and work with the Planning and Development Service to ensure that flood risk is addressed. The Perth and Kinross Local Development Plan provides the framework against which planning applications outside the National Parks are assessed and is consistent with the Strategic Development Plan (TAYplan). Supplementary Guidance on Flood Risk and Flood Risk Assessments is also available to support the content of the Perth and Kinross Local Development Plan. Planning applications within the National Parks are assessed against their respective Local Development Plans, which also contain policies in relation to flood</p>

	<p>risk. Planning applications are also reviewed against SEPA’s indicative flood maps, existing flood studies and records of flooding. Where flood risk is an issue, developers are required to prepare and submit a site-specific flood risk assessment and drainage impact assessment as applicable. They must also consider how a development site will be drained and how surface water runoff will be managed through the implementation of appropriate Sustainable Urban Drainage Measures. So as to align the flood risk management and land use planning systems, land use planning objectives and actions have been developed which can be viewed in Annex 3. The Council will coordinate land use planning policies with related actions.</p>
<p>Related Actions:</p>	<p>Strategic mapping and modelling, Awareness raising, Self help, Maintenance.</p>
<p>Funding Arrangement:</p>	<p>SEPA's land use planning activities are funded by the Scottish Government through SEPA’s grant in aid settlement. Perth & Kinross Council's planning activities are funded from its revenue budget. Scottish Water is funded by customer charges as set by their economic regulator. All business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</p>

3.2 Kinloch Rannoch PVA 08/02

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

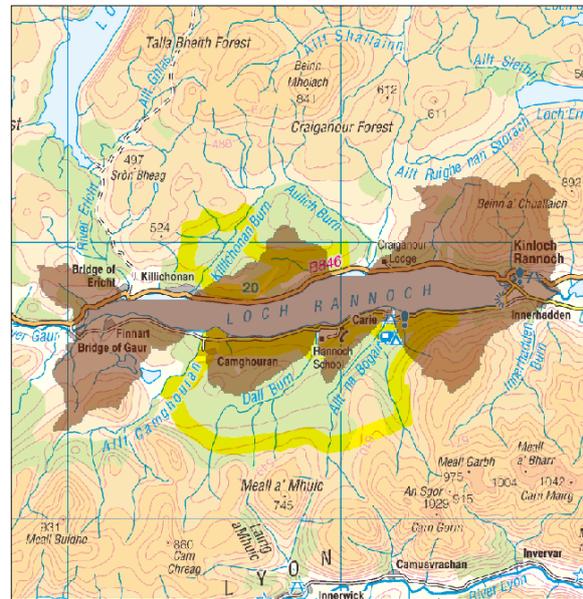
Background and summary of impacts

This Potentially Vulnerable Area is 77km². It is situated in the upper reaches of the River Tay catchment and includes Kinloch Rannoch. It includes Loch Rannoch and the many burns that drain into it. The main watercourse is the River Tummel.

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

There are approximately 30 residential properties and 20 non-residential properties at risk of flooding. The Annual Average Damages are approximately £94,000.

For more detailed information please see the [Tay Flood Risk Management Strategy](#).



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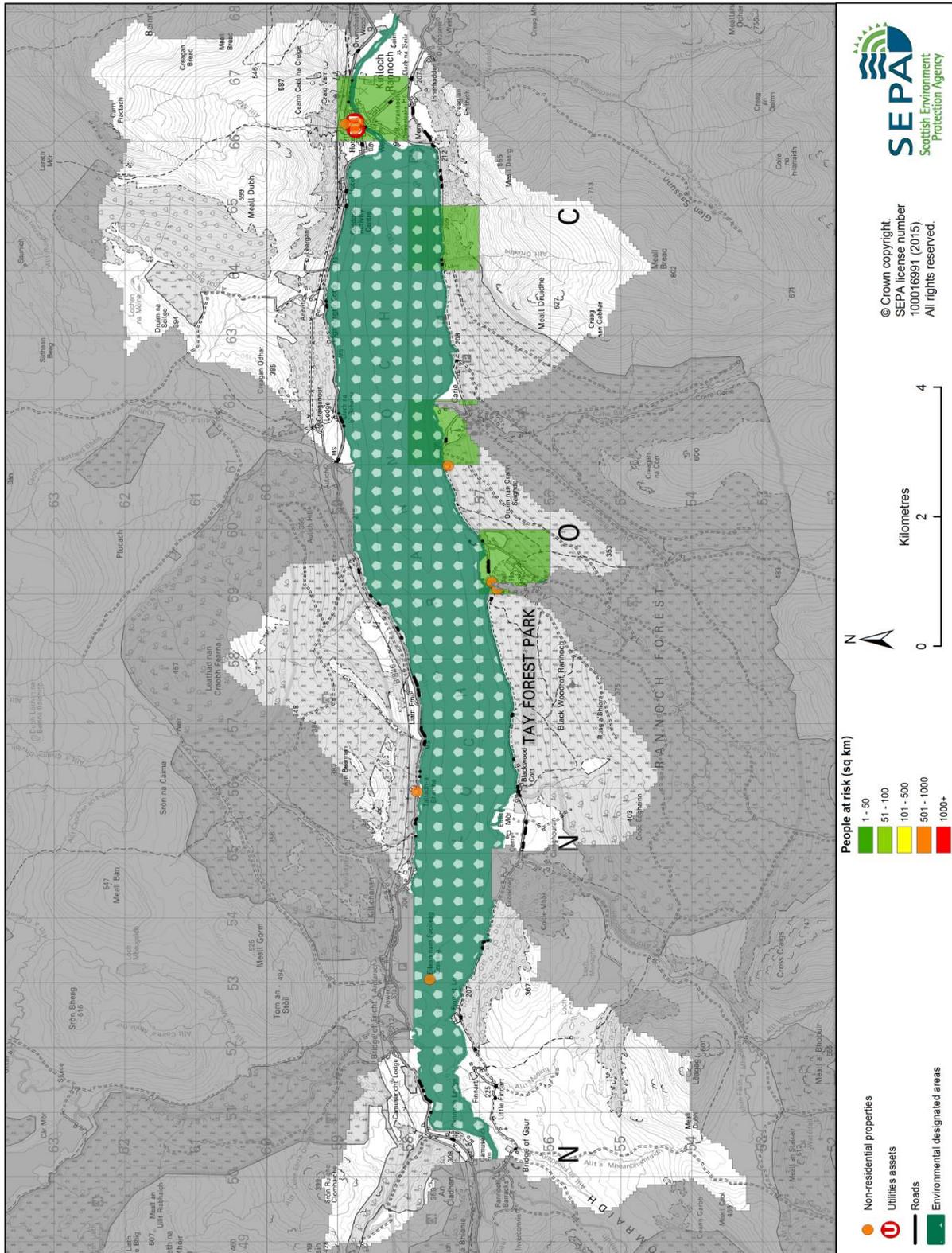


Figure 10: Impacts of flooding in PVA 08/02

(Reproduced from the Tay Flood Risk Management Strategy, SEPA, December 2015)

History of flooding

No significant floods have been recorded in this Potentially Vulnerable Area.

Selected Actions in the Kinloch Rannoch PVA

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):	FLOOD FORECASTING (80410009)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	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 flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. 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.		
Coordination Arrangement:	SEPA / Met Office joint initiative. Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.		
Related Actions:	Awareness Raising, Self Help, Emergency Plans/Response		
Funding Arrangement:	SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.		

Action (ID):	AWARENESS RAISING (80410013)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Responsible authorities		
Status:	Existing	Planned Delivery Period:	Ongoing

Description:	<p>Public awareness, participation and community support are essential components of sustainable flood risk management. SEPA and the responsible authorities have a duty to raise public awareness of flood risk. This is undertaken both individually and collaboratively by a range of organisations. Improved awareness of flood risk and actions that prepare individuals, homes and businesses for flooding can reduce the overall impact.</p> <p>The Scottish government is developing curriculum resources to be used in Schools to increase awareness. From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships.</p> <p>Local authorities will be undertaking additional awareness raising activities when developing any specific project proposals and will engage with community resilience groups and local communities. Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies. More general information and flooding guidance will be available on the website at: https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information</p>
Coordination Arrangement:	<p>Awareness raising will be coordinated through the Local Plan District partnership between SEPA and the responsible authorities.</p> <p>SEPA and the responsible authorities will use any studies, projects and flood schemes to engage with communities and raise awareness of flood risk.</p> <p>Communications activity will be coordinated through existing arrangements within Local Plan District Partnerships. Information will be disseminated through website, social media and other community engagement activity.</p> <p>SEPA and responsible authorities will coordinate awareness raising activities with related actions.</p>
Related Actions:	Flood forecasting, Self-help, Maintenance, Emergency Plans/Response.
Funding Arrangement:	<p>SEPA's awareness raising activities are funded by the Scottish Government through SEPA's grant in aid settlement.</p> <p>Awareness raising activities will be funded from Perth & Kinross Council's revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this</p>

	action by Scottish Water are accounted for in their capital or operational expenditure
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Action (ID):	SELF-HELP (80410011)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	-		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Everyone is responsible for protecting themselves and their property from flooding. Self-help actions can be undertaken by any individuals, businesses, organisations or communities at risk of flooding. They are applicable to all sources, frequency and scales of flooding. They focus on awareness raising and understanding of flood risk.</p> <p>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 the Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.</p>		
Coordination Arrangement:	<p>SEPA and Responsible Authorities have a duty to raise public awareness of flood risk. Helping individuals understand the risks from which they are most vulnerable from is the first step in the process.</p> <p>Perth & Kinross Council can provide advice on flood protection products for properties in flood risk areas.</p> <p>Responsible Authorities will also actively promote Floodline. SEPA and responsible authorities will coordinate self-help activities with related actions.</p>		
Related Actions:	Flood forecasting, Awareness Raising, Maintenance, Emergency Plans/Response		
Funding Arrangement:	Individuals have prime responsibility to protect themselves and their property from flooding and are therefore are expected to meet the costs of protecting themselves.		

Action (ID):	MAINTENANCE (80410007)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Perth and Kinross Council, asset / land managers		
Status:	Existing	Planned Delivery Period:	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 undertakes risk based inspection, maintenance and repair on the public sewer network. Asset owners and riparian landowners are responsible for the</p>		

	<p>maintenance and management of their own assets including those which help to reduce flood risk.</p> <p>Sections 18 and 59 of the Flood Risk Management (Scotland) Act 2009 place duties of watercourse assessment, clearance and repair on local authorities. In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or defences.</p>
<p>Coordination Arrangement:</p>	<p>Sections 17 and 18 of the Flood Risk Management (Scotland) Act 2009 require local authorities to prepare maps of relevant bodies of water and sustainable urban drainage systems (SUDS), assess flood risk on those bodies of water from time to time and to prepare a schedule of clearance and repair works where such works would substantially reduce flood risk. Under Section 59 of the same Act, Local Authorities also have a duty to carry out clearance and repair works described on the schedule. The Council's schedule of clearance and repair works is made available for public inspection on its website.</p> <p>The Council carries out routine, scheduled inspections of watercourses on its list at a frequency which depends on flood risk. Further reactive inspections are carried out when issues are highlighted or during times of flooding. Further bodies of water will be included where it has been identified that they may give rise to a risk of flooding.</p> <p>Any identified clearance and repair works from these inspections are logged in a database and are undertaken in order of priority, subject to available funding.</p> <p>Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk. In the first instance, clearance and repair works are therefore referred to the landowner, where they can be identified. The Council usually only carries out works where there has been a failure of the landowner to act, where landownership is not clear, or where urgent intervention is required.</p> <p>Local Authorities will liaise with SEPA where controlled activities may be required and with private landowners where they may require to take access on private land or to notify landowners that they require to undertake maintenance.</p> <p>The Responsible Authorities will coordinate maintenance activities with related actions.</p>
<p>Related Actions:</p>	<p>Awareness raising, Self Help.</p>
<p>Funding Arrangement:</p>	<p>Maintenance activities are subject to funding from the relevant Perth and Kinross Council Revenue Budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</p>

Action (ID):	EMERGENCY PLANS/RESPONSE (80410014)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Category 1 and 2 Responders		
Status:	Existing	Planned Delivery Period:	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 coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. Emergency response plans are applicable for all types of flooding. They set out the steps to be taken during flooding in order to maximise safety and minimise impacts where possible. Under the Civil Contingencies Act, Category 1 Responders have a duty to maintain emergency plans. Emergency plans may also be prepared by individuals, businesses, organisations or communities.</p> <p>Scottish Water is a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required.</p>		
Coordination Arrangement:	<p>Perth and Kinross Council has developed a Generic Emergency Plan and a Flooding Emergency Response Plan. The Plan is designed to ensure that contingency measures are in place for the coordinated and flexible response to flooding incidents to mitigate the effects of flooding emergencies.</p> <p>SEPA flood alerts and warnings will be monitored and resources made ready as required. A coordinated response will follow any reports of flooding.</p> <p>Emergency response is coordinated with regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. A debrief and plan review will be carried out following any flood events.</p> <p>Protecting property from flooding is the responsibility of the owner of the property, but Perth & Kinross Council can sometimes provide sandbags to properties. Unfortunately the Council only has the resources to supply sandbags to residents where there is an imminent risk of flooding.</p> <p>Emergency plans/response activities will be coordinated with related actions.</p>		
Related Actions:	Awareness Raising, Self Help		
Funding Arrangement:	Funding is allocated to category 1 and 2 responders by the Scottish Government for dealing with emergency response and in extreme cases may reimburse responders after an extreme event. Emergency response activities are funded from Perth & Kinross Council's revenue budget.		

	Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.
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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	Planned Delivery Period:	Ongoing
Description:	<p>The Scottish Planning Policy (SPP) and accompanying Planning Advice Notes set out the 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 SPP 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 generally be avoided. For further information on the application of national planning policies see Annex 3. SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the Flood Risk Management (Scotland) 2009. SEPA also has a duty to co-operate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engage in the planning system, including guidance on flood risk and planning is available on SEPA website http://www.sepa.org.uk/environment/land/planning/</p> <p>Current national planning policies, the Scottish Planning Policy and accompanying Planning Advice notes restrict development within the floodplain and limit exposure of new receptors to flood risk. In addition to national policies, local planning policies may place further requirements within their area of operation to restrict inappropriate development and prevent unacceptable risk. SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the Flood Risk Management (Scotland) 2009. SEPA also has a duty to co-operate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a</p>		

	<p>risk of flooding, SEPA will provide advice. Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.</p>
<p>Coordination Arrangement:</p>	<p>Perth and Kinross Council is a local planning authority and will coordinate its work with the strategic development planning authority and the National Parks Authorities. The Council's Flooding Team are consulted on planning applications and work with the Planning and Development Service to ensure that flood risk is addressed. The Local Development Plan provides the framework against which planning applications are assessed and is consistent with the Strategic Development Plan (TAYplan). Supplementary Guidance on Flood Risk and Flood Risk Assessments is also available to support the content of the Local Development Plan. Planning applications are also reviewed against SEPA's indicative flood maps, existing flood studies and records of flooding. Where flood risk is an issue, developers are required to prepare and submit a site-specific flood risk assessment and drainage impact assessment as applicable. They must also consider how a development site will be drained and how surface water runoff will be managed through the implementation of appropriate Sustainable Urban Drainage Measures.</p> <p>So as to align the flood risk management and land use planning systems, land use planning objectives and actions have been developed which can be viewed in Annex 3. The Council will coordinate land use planning policies with related actions.</p>
<p>Related Actions:</p>	<p>Awareness Raising, self Help, Maintenance.</p>
<p>Funding Arrangement:</p>	<p>SEPA's land use planning activities are funded by the Scottish Government through SEPA's grant in aid settlement. Perth & Kinross Council's planning activities are funded from its revenue budget. Scottish Water is funded by customer charges as set by their economic regulator. All business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</p>

3.3 Aberfeldy and Pitlochry PVA 08/03

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

Background and summary of impacts

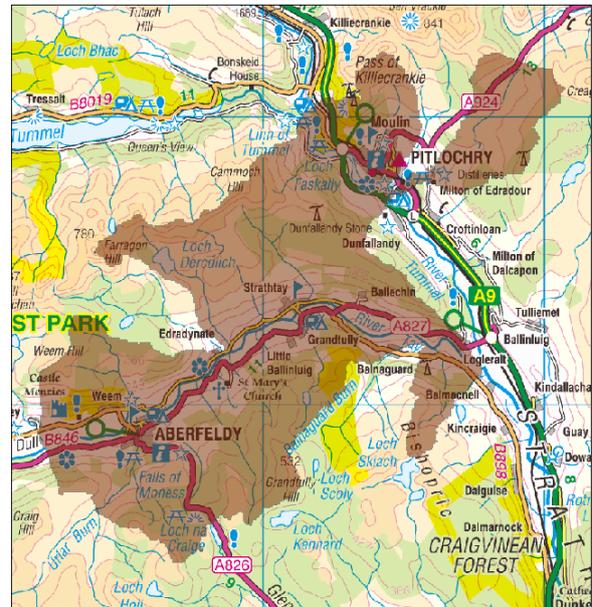
This Potentially Vulnerable Area is 140km². It is situated in the middle reaches of the River Tay catchment and includes Aberfeldy and Pitlochry. The main watercourses are the River Tay and the River Tummel.

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

The highest risk of flooding is in Pitlochry from the River Tummel and smaller watercourses, and in Aberfeldy from the River Tay and Moness Burn.

There are approximately 240 residential properties and 130 non-residential properties at risk of flooding. The Annual Average Damages are approximately £1.2 million.

For more detailed information please see the [Tay Flood Risk Management Strategy](#).



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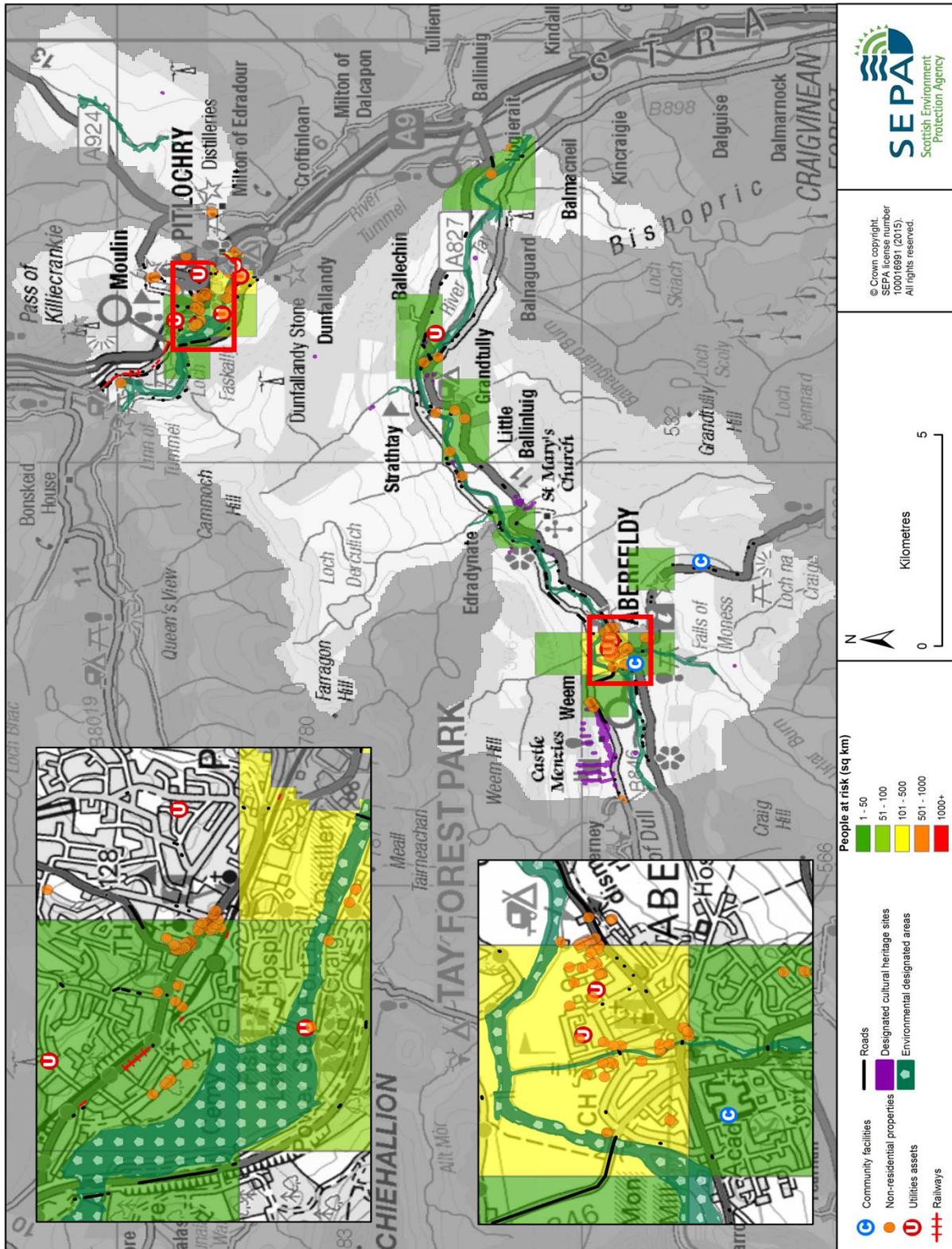


Figure 11: Impacts of flooding in PVA 08/03

(Reproduced from the Tay Flood Risk Management Strategy, SEPA, December 2015)

History of flooding

The River Tay has a long history of flooding. The following significant river floods have been recorded:

- December 2015: Storms Desmond and Frank caused prolonged rainfall across Perth & Kinross. Several areas affected including properties and roads in the Aberfeldy and Pitlochry areas.
- 13 December 2006: River Tay flooded, affecting numerous houses in Aberfeldy, Logierait and isolated rural properties.
- 16 January 1993: Widespread flooding across the Tay catchment resulted in over £20 million of damage. The flood event is known to have affected Aberfeldy, Logierait and Pitlochry.
- 7 February 1990: Communication networks were disrupted as a result of flooding in the Tay and Earn Valleys. Properties, roads and railways were also damaged.
- 17 February 1950: Communication networks were disrupted and properties and several roads were flooded within the upper Tay. The flood is known to have affected a large part of Perth and Kinross.
- 22 January 1928: At the time, this was the wettest January on record and resulted in flooding from the River Tay across Perth and Kinross including Aberfeldy, Pitlochry and Logierait. The River Tay reached 5.77m above normal levels at Smeaton's Bridge in Perth.

Selected Actions in the PVA

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):	FLOOD PROTECTION STUDY (80040005)		
Objective(ID):	Reduce economic damages to residential and non-residential properties in Pitlochry from the River Tummel and small watercourses (8004)		
Delivery Lead:	Perth and Kinross Council		
Priority:	National: 25 of 168	Local Authority: 1 of 6	Within LPD: 2 of 7
Status:	Not Started	Planned Delivery Period:	2016 - 2018
Description:	A flood protection study has been recommended for Pitlochry to assess whether flood storage, sediment management,		

	modification of conveyance and installation/ modification of fluvial control structures could reduce flood risk. The study should also consider property relocation. The study should build on the previous study carried out by Perth and Kinross Council in 2007 and consider flooding from small watercourses as well as the main river. The study should take a catchment approach and consider the potential benefits and dis-benefits and interaction between actions upstream and downstream.
Coordination Arrangement:	The study is programmed to commence in the 2016/17 financial year. Perth and Kinross Council will engage a consultant to investigate the fluvial flood risk and identify potential options for managing that risk. The study will be coordinated through the LPD Partnership and with other related actions.
Related Actions:	Awareness raising, self-help, maintenance, strategic mapping & modelling
Funding Arrangement:	The study will be subject to funding from Perth and Kinross Council's revenue budget.
Potential Impacts	
Economic:	The study could benefit 121 residential properties and 47 non-residential properties at risk of flooding in this location, with estimated damages avoided of £19 million.
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.
Environmental:	Flood protection studies should consider the positive and negative impacts of proposed actions on the ecological quality of the environment and designated sites. Where possible opportunities to enhance and restore the environment should be sought, for example through natural flood management. To be in accord with the Tay Local Flood Risk Management Plan, 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, Shingle Islands Special Area of Conservation and Black Wood of Rannoch Special Area of Conservation. Conservation areas, National Scenic Areas, scheduled monuments, listed buildings, Sites of Special Scientific Interest and ancient woodlands are also present in the study area and could be positively or negatively impacted.

Action (ID):	FLOOD PROTECTION STUDY (80050005)		
Objective(ID):	Reduce economic damages to residential and non-residential properties in Aberfeldy from the River Tay and Moness Burn (8005)		
Delivery Lead:	Perth and Kinross Council		
Priority:	National: 41 of 168	Local Authority: 2 of 6	Within LPD: 3 of 7
Status:	Not Started	Planned Delivery Period:	2017 - 2019

Description:	A flood protection study has been recommended for Aberfeldy to assess whether installation/ modification of fluvial control structures, direct flood defences and sediment management could reduce flood risk. The study should take a catchment approach and consider the potential benefits and dis-benefits and interaction between actions upstream and downstream.
Coordination Arrangement:	The study is programmed to commence in the 2017/18 financial year. Perth and Kinross Council will engage a consultant to investigate the fluvial flood risk and identify potential options for managing that risk. The study will be coordinated through the LPD Partnership and with other related actions.
Related Actions:	Awareness raising, self-help, maintenance, strategic mapping & modelling
Funding Arrangement:	The study will be subject to funding from Perth and Kinross Council's revenue budget.
Potential Impacts	
Economic:	The study could benefit 104 residential properties and 44 non-residential properties at risk of flooding in this location, with estimated damages avoided of £8.7 million.
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. In addition the study could benefit two utilities and one road located within the study area.
Environmental:	Flood protection studies should consider the positive and negative impacts of proposed actions on the ecological quality of the environment and designated sites. Where possible opportunities to enhance and restore the environment should be sought, for example through natural flood management. To be in accord with the Tay Local Flood Risk Management Plan, 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. Conservation areas and listed buildings are also present in the study area and could be positively or negatively impacted.

Action (ID):	MAINTAIN FLOOD PROTECTION SCHEME (80060017)		
Objective(ID):	Accept that significant flood risk in Weem is managed appropriately. Maintain existing actions that reduce flood risk in Weem caused by flooding from the River Tay and the surrounding minor watercourses. (8006)		
Delivery Lead:	Perth and Kinross Council		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	Continue to maintain the existing Weem Flood Protection Scheme. The scheme was completed in 2006 and includes a flood embankment and pumping station. The scheme has a design standard of protection of 1 in 100 years.		

Coordination Arrangement:	Perth & Kinross Council's Roads Maintenance Partnership will maintain any existing flood protection scheme through a programme of inspections carried out in accordance with the recommendations set out in the scheme maintenance manuals. Maintenance works will be coordinated with SEPA, SNH, landowners and other stakeholders as required. The maintenance of the flood scheme will also be coordinated with related actions.
Related Actions:	Flood protection study (Aberfeldy), Flood warning, Flood forecasting, Awareness raising, Maintenance, Emergency plans/response.
Funding Arrangement:	Maintenance activities are subject to funding from the relevant Perth and Kinross Council revenue budget.

Action (ID):	STRATEGIC MAPPING AND MODELLING (80410016)		
Objective(ID):	Reduce overall flood risk(8041)		
Delivery Lead:	SEPA		
Status:	Not started.	Planned Delivery Period:	SEPA led mapping improvements in the River Tummel and River Tay area will be undertaken in 2016 to 2017. Given the size and complexity of the Tay catchment, combined with a number of third party studies and works in particular the A9 Dualling Scheme, there is currently considerable uncertainty over delivery timescales. SEPA will seek to better understand these during 2016 in order to further refine timescales.
Description:	SEPA will seek to develop flood mapping in the River Tummel and River Tay areas to improve understanding of flood risk. The extent and timing of improvements will depend on detailed scoping and data availability. Where this work coincides with local authority studies, SEPA will work collaboratively to ensure consistent modelling approaches are applied.		
Coordination Arrangement:	Flood protection studies are proposed for Pitlochry and Aberfeldy. SEPA will work with the local authority to ensure that new information about flood risk resulting from the proposed flood protection studies is considered in SEPA's strategic mapping and modelling developments where appropriate and relevant.		
Related Actions:	Flood protection study, Strategic Mapping And Modelling (Scottish Water), Planning Policies		

Funding Arrangement:	SEPA's strategic mapping and modelling activities are funded by the Scottish Government through SEPA's grant in aid settlement.
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Action (ID):	STRATEGIC MAPPING AND MODELLING (80410019)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Scottish Water		
Status:	Not Started	Planned Delivery Period:	Aberfeldy 2016-2017 Pitlochry 2016-2019
Description:	Scottish Water will undertake further investigation and modelling in the Aberfeldy and Pitlochry sewer catchments to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.		
Coordination Arrangement:	Scottish Water will work with responsible authorities to incorporate relevant information into these studies and by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform surface water management plans and SEPA flood hazard and risk maps		
Related Actions:	Strategic Mapping And Modelling (SEPA)		
Funding Arrangement:	Scottish Water funding is committed in its capital programme through Q&S 4a (2015-2021) which is approved by its regulators and customers.		

Action (ID):	MAINTAIN FLOOD WARNING (80410030)		
Objective(ID):	Reduce overall flood risk(8041)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	Continue to maintain the Aberfeldy, Ballinluig to Logierait, Logierait to Victoria Bridge, Pitlochry to Ballinluig, River Tummel in Pitlochry and the Upper Tay (from Taymouth Castle to Logierait) flood warning areas which are part of the Tay river flood warning scheme. When flood events occur in an area with an existing flood warning service, SEPA will seek to verify the flood forecasts and warnings. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.		
Coordination Arrangement:	Flood protection studies are proposed for Pitlochry and Aberfeldy. SEPA will work with the local authority to ensure that any new information about flood risk resulting from the proposed flood protection studies is considered in the existing flood warning system.		

Related Actions:	Awareness Raising, Self Help, Emergency Plans/Response, Flood protection study, community flood action groups, flood forecasting
Funding Arrangement:	The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement.

Action (ID):	FLOOD FORECASTING (80410009)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	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 flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. 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.		
Coordination Arrangement:	SEPA / Met Office joint initiative. Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.		
Related Actions:	Awareness Raising, Self Help, Emergency Plans/Response, maintain flood warning		
Funding Arrangement:	SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.		

Action (ID):	COMMUNITY FLOOD ACTION GROUPS (80040012)		
Objective(ID):	Reduce economic damages to residential and non-residential properties in Pitlochry from the River Tummel and small watercourses (8004).		
Delivery Lead:	Community		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	Community flood action groups are community based resilience groups which, on behalf of local residents and business, help to prepare for and minimise the effects of flooding. They reflect the interests of their local communities and may differ in composition and remit. There are over 60 groups already established in Scotland. The Scottish Flood Forum provides support for both new and existing groups. Pitlochry Resilience Group operates in this area. The group is in the process of developing a community resilience plan which includes mitigating the impact of flooding.		

Coordination Arrangement:	The Council will work with Pitlochry Resilience Group to reduce flood risk, improve preparedness and increase resilience against flooding. The Council will continue to co-ordinate with the group throughout the next 6 years on a priority needs basis where resources allow. The Council will coordinate community flood action groups with related actions.
Related Actions:	Self Help, Awareness Raising, Maintenance, Flood Forecasting, Emergency Plans/Response.
Funding Arrangement:	Funding for Community flood action groups will be provided by private individuals, businesses, organisations or communities at risk of flooding.

Action (ID):	COMMUNITY FLOOD ACTION GROUPS (80050012)		
Objective(ID):	Reduce economic damages to residential and non-residential properties in Aberfeldy from the River Tay and Moness Burn (8005)		
Delivery Lead:	Community		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	Community flood action groups are community based resilience groups which, on behalf of local residents and business, help to prepare for and minimise the effects of flooding. They reflect the interests of their local communities and may differ in composition and remit. There are over 60 groups already established in Scotland. The Scottish Flood Forum provides support for both new and existing groups. Aberfeldy Resilience Group operates in this area. Membership of the group includes Perth and Kinross Council, SEPA, Tayside Fire and Rescue and the Scottish Flood Forum. The group aims to help reduce flooding to businesses and communities within the Aberfeldy area, improve joint working before, during and after flooding and increase community resilience.		
Coordination Arrangement:	The Council will work with the Aberfeldy Resilience Group to reduce flood risk, improve preparedness and increase resilience against flooding. The Council will continue to co-ordinate with the group throughout the next 6 years on a priority needs basis where resources allow. The Council will coordinate community flood action groups with related actions.		
Related Actions:	Self Help, Awareness Raising, Maintenance, Flood Forecasting, Emergency Plans/Response		
Funding Arrangement:	Funding for Community flood action groups will be provided by private individuals, businesses, organisations or communities at risk of flooding		

Action (ID):	AWARENESS RAISING (80410013)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Responsible authorities		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Public awareness, participation and community support are essential components of sustainable flood risk management. SEPA and the responsible authorities have a duty to raise public awareness of flood risk. This is undertaken both individually and collaboratively by a range of organisations. Improved awareness of flood risk and actions that prepare individuals, homes and businesses for flooding can reduce the overall impact.</p> <p>The Scottish government is developing curriculum resources to be used in Schools to increase awareness. From 2016 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.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships. Local authorities will be undertaking additional awareness raising activities when developing any specific project proposals and will engage with community resilience groups and local communities. Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies. More general information and flooding guidance will be available on the website at: https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information</p>		
Coordination Arrangement:	<p>Awareness raising will be coordinated through the Local Plan District partnership between SEPA and the responsible authorities. SEPA and the responsible authorities will use any studies, projects and flood schemes to engage with communities and raise awareness of flood risk.</p> <p>Communications activity will be coordinated through existing arrangements within Local Plan District Partnerships. Information will be disseminated through website, social media and other community engagement activity.</p> <p>SEPA and responsible authorities will coordinate awareness raising activities with related actions</p>		
Related Actions:	Community Flood Action groups, Maintain Flood Warning, Self Help, Emergency Plans/Response, Flood Forecasting		

Funding Arrangement:	Awareness raising activities will be funded from the Council's revenue budget. SEPA's awareness raising activities are funded by Scottish Government through SEPA's grant in aid settlement. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure
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Action (ID):	SELF-HELP (80410011)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	N/A		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Everyone is responsible for protecting themselves and their property from flooding. Self help actions can be undertaken by any individuals, businesses, organisations or communities at risk of flooding. They are applicable to all sources, frequency and scales of flooding. They focus on awareness raising and understanding of flood risk.</p> <p>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>		
Coordination Arrangement:	Responsible Authorities have a duty to raise public awareness of flood risk. Helping individuals understand the risks from which they are most vulnerable from is the first step in the process. Responsible Authorities will also actively promote Floodline.		
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Maintenance, Emergency Plans/Response		
Funding Arrangement:	Individuals have prime responsibility to protect themselves and their property from flooding and are therefore are expected to meet the costs of protecting themselves.		

Action (ID):	MAINTENANCE (80410007)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Perth and Kinross Council, asset / land managers		
Status:	Existing	Planned Delivery Period:	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</p>		

	<p>which help to reduce flood risk. Sections 18 and 59 of the Flood Risk Management (Scotland) Act 2009 place duties of watercourse assessment, clearance and repair on local authorities. In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or defences.</p>
<p>Coordination Arrangement:</p>	<p>Sections 17 and 18 of the Flood Risk Management (Scotland) Act 2009 require local authorities to prepare maps of relevant bodies of water and sustainable urban drainage systems (SUDS), assess flood risk on those bodies of water from time to time and to prepare a schedule of clearance and repair works where such works would substantially reduce flood risk. Under Section 59 of the same Act, Local authorities also have a duty to carry out clearance and repair works described on the schedule. The Council's schedule of clearance and repair works is made available for public inspection on its website. The Council carries out routine, scheduled inspections of watercourses on its list at a frequency which depends on flood risk. Further reactive inspections are carried out when issues are highlighted or during times of flooding. Further bodies of water will be included where it has been identified that they may give rise to a risk of flooding.</p> <p>Any identified clearance and repair works from these inspections are logged in a database and are undertaken in order of priority, subject to available funding.</p> <p>Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk. In the first instance, clearance and repair works are therefore referred to the landowner, where they can be identified. The Council usually only carries out works where there has been a failure of the landowner to act, where landownership is not clear, or where urgent intervention is required. In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or works.</p> <p>Scottish Water undertakes risk based inspection, maintenance 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. Local Authorities will liaise with SEPA where controlled activities may be required and with private landowners where they may require to take access on private land or to notify landowners that they require to undertake maintenance.</p> <p>The Council will coordinate maintenance activities with related actions.</p>
<p>Related Actions:</p>	<p>Raising Awareness, Self Help, Community Flood Action Groups</p>
<p>Funding Arrangement:</p>	<p>Maintenance activities are subject to funding from the relevant Perth and Kinross Council revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure</p>

Action (ID):	EMERGENCY PLANS/RESPONSE (80410014)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Category 1 and 2 Responders		
Status:	Existing	Planned Delivery Period:	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 coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p> <p>Emergency response plans are applicable for all types of flooding. They set out the steps to be taken during flooding in order to maximise safety and minimise impacts where possible. Under the Civil Contingencies Act, Category 1 Responders have a duty to maintain emergency plans. Emergency plans may also be prepared by individuals, businesses, organisations or communities. Scottish Water is a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required.</p>		
Coordination Arrangement:	<p>Perth and Kinross Council has developed a Generic Emergency Plan and a Flooding Emergency Response Plan. The Plan is designed to ensure that contingency measures are in place for the coordinated and flexible response to flooding incidents to mitigate the effects of flooding emergencies.</p> <p>SEPA flood alerts and warnings will be monitored and resources made ready as required. A coordinated response will follow any reports of flooding.</p> <p>Emergency response is coordinated with regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. A debrief and plan review will be carried out following any flood events.</p> <p>Protecting property from flooding is the responsibility of the owner of the property, but Perth & Kinross Council can sometimes provide sandbags to properties. Unfortunately the Council only has the resources to supply sandbags to residents where there is an imminent risk of flooding.</p> <p>Emergency plans/response activities will be coordinated with related actions.</p>		
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Self Help		
Funding Arrangement:	<p>Funding is allocated to category 1 and 2 responders by the Scottish Government for dealing with emergency response and in extreme cases may reimburse responders after an extreme event.</p> <p>Emergency response activities are funded from the Council's revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their</p>		

	economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure
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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	Planned Delivery Period:	Ongoing
Description:	<p>National planning policies 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 generally be avoided.</p> <p>For further information on the application of national planning policies see Annex 3.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the Flood Risk Management (Scotland) 2009. SEPA also has a duty to co-operate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engage in the planning system, including guidance on flood risk and planning is available on SEPA website http://www.sepa.org.uk/environment/land/planning/</p> <p>Current national planning policies, the Scottish Planning Policy and accompanying Planning Advice notes restrict development within the floodplain and limit exposure of new receptors to flood risk. In addition to national policies, local planning policies may place further requirements within their area of operation to restrict inappropriate development and prevent unacceptable risk. Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.</p>		
Coordination Arrangement:	Perth and Kinross Council is a local planning authority and will coordinate its work with the strategic development planning authority and the National Parks Authorities. The Council's Flooding Team are consulted on planning		

	<p>applications and work with the Planning and Development Service to ensure that flood risk is addressed. The Local Development Plan provides the framework against which planning applications are assessed and is consistent with the Strategic Development Plan (TAYplan). Supplementary Guidance on Flood Risk and Flood Risk Assessments is also available to support the content of the Local Development Plan. Planning applications are also reviewed against SEPA's indicative flood maps, existing flood studies and records of flooding. Where flood risk is an issue, developers are required to prepare and submit a site-specific flood risk assessment and drainage impact assessment as applicable. They must also consider how a development site will be drained and how surface water runoff will be managed through the implementation of appropriate Sustainable Urban Drainage Measures.</p> <p>So as to align the flood risk management and land use planning systems, land use planning objectives and actions have been developed which can be viewed in Annex 3. The Council will coordinate land use planning policies with related actions.</p>
<p>Related Actions:</p>	<p>Flood protection study, Awareness Raising, self Help, Maintenance, Strategic Mapping & Modelling</p>
<p>Funding Arrangement:</p>	<p>SEPA's land use planning activities are funded by Scottish Government through SEPA's grant in aid settlement. Perth & Kinross Council's planning activities are funded from the Council's revenue budget. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure</p>

3.4 Alyth PVA 08/04

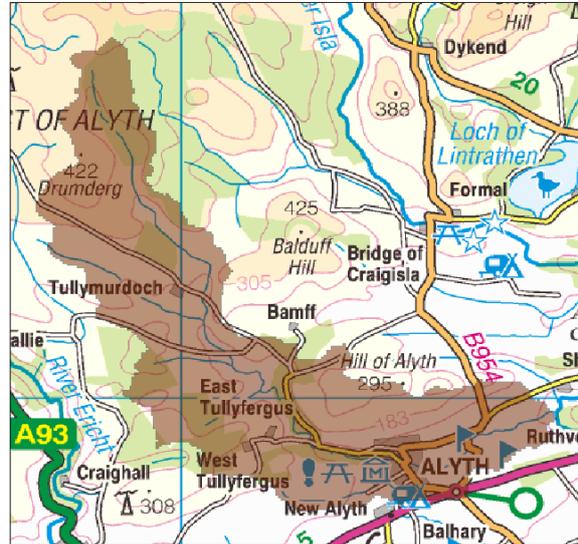
Background and summary of impacts

This Potentially Vulnerable Area is 36km². 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. The highest risk of flooding is in Alyth from the Alyth Burn.

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

For more detailed information please see the [Tay Flood Risk Management Strategy](#).



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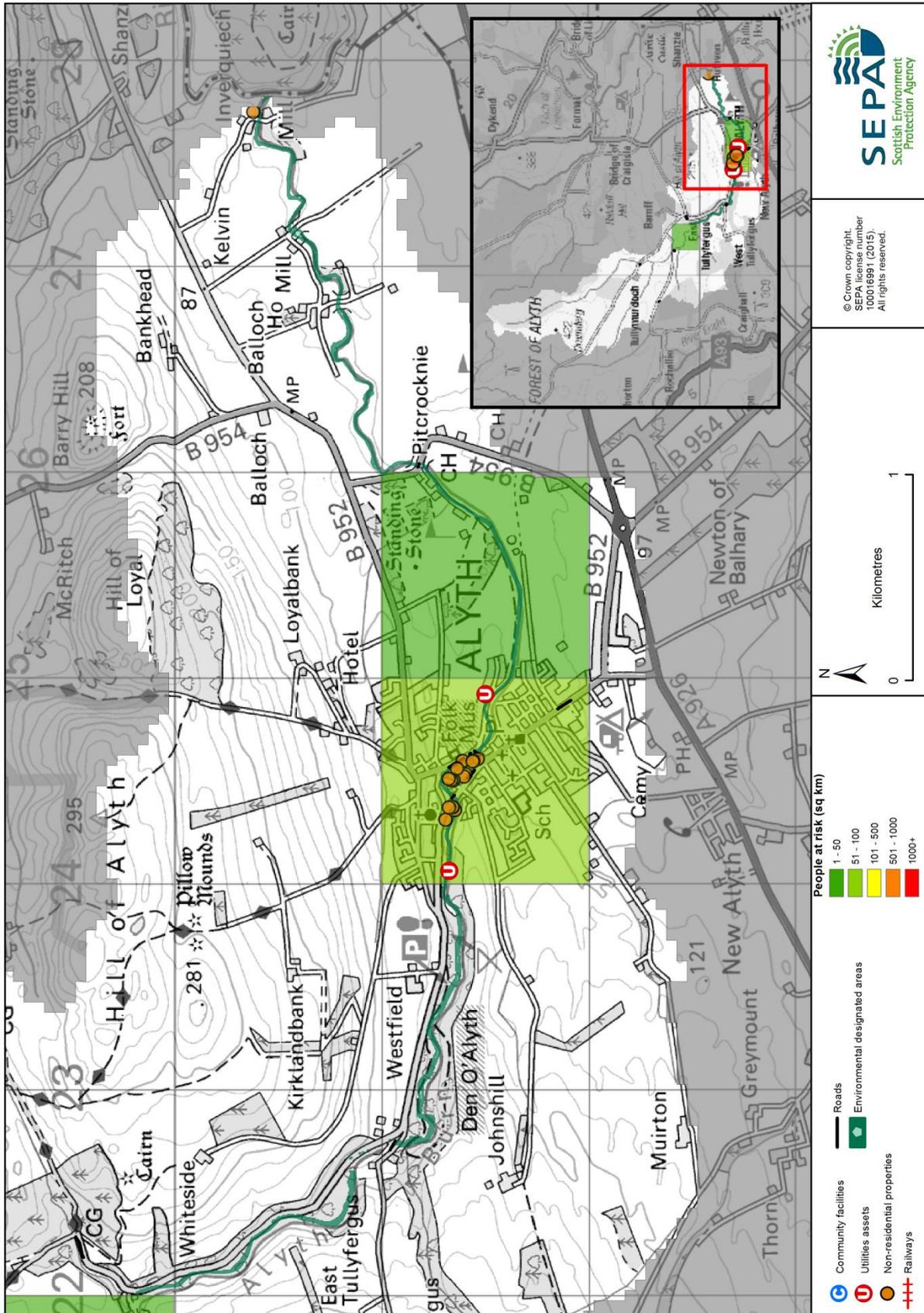


Figure 12: Impacts of flooding in PVA 08/04

(Reproduced from the Tay Flood Risk Management Strategy, SEPA, December 2015)

History of flooding

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

- 17 July 2015: Extreme rainfall resulted in the Alyth Burn overflowing and flooding approximately 59 mixed commercial and residential properties. Two electrical substations were affected, which resulted in around 700 properties being left without power. Flooding affected properties in Commercial Street, Pitnacree Street, Market Square, Springbank Road and other adjacent areas. In Alyth, four footbridges were washed away by the flood waters and a number of roads and bridges in the wider areas were also damaged. The Scottish Fire and Rescue Service were involved in multiple evacuations and a refuge centre was set up at Alyth Town 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.

Selected Actions in the Aberfeldy & Pitlochry PVA

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):	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	Planned Delivery Period:	2020-2021
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.
Coordination Arrangement:	The study is programmed to commence in the 2020/21 financial year. Perth and Kinross Council will engage a consultant to investigate the fluvial flood risk and identify potential options for managing that risk. The study will be coordinated through the LPD Partnership and with other related actions.
Related Actions:	Strategic mapping and modelling, Flood warning, Flood forecasting, Awareness raising, Self-help, Maintenance, Emergency plans/response.
Funding Arrangement:	The study will be subject to funding from Perth and Kinross Council's revenue budget.
Potential Impacts	
Economic:	The economic impact of natural flood management actions is difficult to define. However, these actions can reduce flood risk for high 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 Tay Local Flood Risk Management Plan, 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	Planned Delivery Period:	SEPA led surface water mapping improvements are expected to be undertaken in 2016 to 2017.
Description:	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.		
Related Actions:	Strategic Mapping And Modelling (Scottish Water), Planning Policies, natural flood management study		

Coordination Arrangement:	SEPA's strategic mapping activities will be coordinated with the activities of other responsible authorities as required.
Funding Arrangement:	SEPA's strategic mapping and modelling activities are funded by Scottish Government through SEPA's grant in aid settlement.

Action (ID):	STRATEGIC MAPPING AND MODELLING (80410019)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Scottish Water		
Status:	Not Started	Planned Delivery Period:	2016-2018
Description:	Scottish Water will undertake further investigation and modelling in the Alyth sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.		
Related Actions:	Strategic Mapping And Modelling (SEPA)		
Coordination Arrangement:	Scottish Water will work with responsible authorities to incorporate relevant information into these studies and by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform surface water management plans and SEPA flood hazard and risk maps		
Funding Arrangement:	Scottish Water funding is committed in its capital programme through Q&S 4a (2015-2021) which is approved by its regulators and customers.		

Action (ID):	FLOOD FORECASTING (80410009)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	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 flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. 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.		
Related Actions:	Awareness Raising, Self Help, Emergency Plans/Response		
Coordination Arrangement:	SEPA / Met Office joint initiative. Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood		

	and timing of river, coastal and surface water flooding.
Funding Arrangement:	SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.

Action (ID):	AWARENESS RAISING (80410013)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Responsible authorities		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Public awareness, participation and community support are essential components of sustainable flood risk management. 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>The Scottish government is developing curriculum resources to be used in Schools to increase awareness. 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.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships.</p> <p>Local authorities will be undertaking additional awareness raising activities when developing any specific project proposals and will engage with community resilience groups and local communities. Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies. More general information and flooding guidance will be available on the website at: https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information</p>		
Coordination Arrangement:	<p>Awareness raising will be coordinated through the Local Plan District partnership between SEPA and the responsible authorities.</p> <p>SEPA and the responsible authorities will use any studies, projects and flood schemes to engage with communities and raise awareness of flood risk.</p> <p>Communications activity will be coordinated through existing arrangements within Local Plan District Partnerships. Information</p>		

	will be disseminated through website, social media and other community engagement activity. SEPA and responsible authorities will coordinate awareness raising activities with related actions
Related Actions:	Self Help, Emergency Plans/Response, Flood Forecasting
Funding Arrangement:	Awareness raising activities will be funded from the Council's revenue budget. SEPA's awareness raising activities are funded by Scottish Government through SEPA's grant in aid settlement. Scottish Water funding is committed in its capital programme through Q&S 4a (2015-2021) which is approved by its regulators and customers.

Action (ID):	SELF-HELP (80410011)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	N/A		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Everyone is responsible for protecting themselves and their property from flooding. Self help actions can be undertaken by any individuals, businesses, organisations or communities at risk of flooding. They are applicable to all sources, frequency and scales of flooding. They focus on awareness raising and understanding of flood risk.</p> <p>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 the Resilient Communities Initiative, and ensuring that properties and businesses are insured against flood damage.</p>		
Coordination Arrangement:	Responsible Authorities have a duty to raise public awareness of flood risk. Helping individuals understand the risks from which they are most vulnerable from is the first step in the process. Responsible Authorities will also actively promote Floodline.		
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Maintenance, Emergency Plans/Response		
Funding Arrangement:	Individuals have prime responsibility to protect themselves and their property from flooding and are therefore are expected to meet the costs of protecting themselves.		

Action (ID):	MAINTENANCE (80410007)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Perth and Kinross Council, asset / land managers		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would		

	<p>substantially reduce flood risk. They produce schedules of clearance and repair works and make these available for public inspection. Scottish Water undertakes 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> <p>Sections 18 and 59 of the Flood Risk Management (Scotland) Act 2009 place duties of watercourse assessment, clearance and repair on local authorities. In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or defences.</p>
<p>Coordination Arrangement:</p>	<p>Sections 17 and 18 of the Flood Risk Management (Scotland) Act 2009 require local authorities to prepare maps of relevant bodies of water and sustainable urban drainage systems (SUDS), assess flood risk on those bodies of water from time to time and to prepare a schedule of clearance and repair works where such works would substantially reduce flood risk. Under Section 59 of the same Act, Local authorities also have a duty to carry out clearance and repair works described on the schedule. The Council's schedule of clearance and repair works is made available for public inspection on its website.</p> <p>The Council carries out routine, scheduled inspections of watercourses on its list at a frequency which depends on flood risk. Further reactive inspections are carried out when issues are highlighted or during times of flooding. Further bodies of water will be included where it has been identified that they may give rise to a risk of flooding.</p> <p>Any identified clearance and repair works from these inspections are logged in a database and are undertaken in order of priority, subject to available funding.</p> <p>Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk. In the first instance, clearance and repair works are therefore referred to the landowner, where they can be identified. The Council usually only carries out works where there has been a failure of the landowner to act, where landownership is not clear, or where urgent intervention is required.</p> <p>In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or works</p> <p>Scottish Water undertakes risk based inspection, maintenance 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. Local Authorities will liaise with SEPA where controlled activities may be required and with private landowners where they may require to take access on private land or to notify landowners that they require to undertake maintenance.</p> <p>The Council will coordinate maintenance activities with related actions.</p>

Related Actions:	Raising Awareness, Self Help, Community Flood Action Groups
Funding Arrangement:	Maintenance activities are subject to funding from the relevant Perth and Kinross Council revenue budget. Scottish Water is funded by customer charges as set by their economic regulator. All business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure

Action (ID):	EMERGENCY PLANS/RESPONSE (80410014)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Category 1 and 2 Responders		
Status:	Existing	Planned Delivery Period:	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 coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p> <p>Emergency response plans are applicable for all types of flooding. They set out the steps to be taken during flooding in order to maximise safety and minimise impacts where possible. Under the Civil Contingencies Act, Category 1 Responders have a duty to maintain emergency plans. Emergency plans may also be prepared by individuals, businesses, organisations or communities.</p> <p>Scottish Water is a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required.</p>		
Coordination Arrangement:	<p>Perth and Kinross Council has developed a Generic Emergency Plan and a Flooding Emergency Response Plan. The Plan is designed to ensure that contingency measures are in place for the coordinated and flexible response to flooding incidents to mitigate the effects of flooding emergencies.</p> <p>SEPA flood alerts and warnings will be monitored and resources made ready as required. A coordinated response will follow any reports of flooding.</p> <p>Emergency response is coordinated with regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. A debrief and plan review will be carried out following any flood events.</p> <p>Protecting property from flooding is the responsibility of the owner of the property, but Perth & Kinross Council can sometimes provide sandbags to properties. Unfortunately the Council only has the resources to supply sandbags to residents where there is an imminent risk of flooding.</p>		

	Emergency plans/response activities will be coordinated with related actions.
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Self Help
Funding Arrangement:	Funding is allocated to category 1 and 2 responders by the Scottish Government for dealing with emergency response and in extreme cases may reimburse responders after an extreme event. Emergency response activities are funded from the Council's revenue budget. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure

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	Planned Delivery Period:	Ongoing
Description:	<p>National planning policies 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 generally be avoided. For further information on the application of national planning policies see Annex 3.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the Flood Risk Management (Scotland) 2009. SEPA also has a duty to co-operate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engage in the planning system, including guidance on flood risk and planning is available on SEPA website http://www.sepa.org.uk/environment/land/planning/</p> <p>Current national planning policies, the Scottish Planning Policy and accompanying Planning Advice notes restrict development within the floodplain and limit exposure of new receptors to flood</p>		

	<p>risk. In addition to national policies, local planning policies may place further requirements within their area of operation to restrict inappropriate development and prevent unacceptable risk. Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.</p>
<p>Coordination Arrangement:</p>	<p>Perth and Kinross Council is a local planning authority and will coordinate its work with the strategic development planning authority and the National Parks Authorities.</p> <p>The Council's Flooding Team are consulted on planning applications and work with the Planning and Development Service to ensure that flood risk is addressed. The Local Development Plan provides the framework against which planning applications are assessed and is consistent with the Strategic Development Plan (TAYplan). Supplementary Guidance on Flood Risk and Flood Risk Assessments is also available to support the content of the Local Development Plan. Planning applications are also reviewed against SEPA's indicative flood maps, existing flood studies and records of flooding. Where flood risk is an issue, developers are required to prepare and submit a site-specific flood risk assessment and drainage impact assessment as applicable. They must also consider how a development site will be drained and how surface water runoff will be managed through the implementation of appropriate Sustainable Urban Drainage Measures.</p> <p>So as to align the flood risk management and land use planning systems, land use planning objectives and actions have been developed which can be viewed in Annex 3. The Council will coordinate land use planning policies with related actions.</p>
<p>Related Actions:</p>	<p>Awareness Raising, self Help, Maintenance, Strategic Mapping & Modelling, natural flood management study</p>
<p>Funding Arrangement:</p>	<p>SEPA's land use planning activities are funded by Scottish Government through SEPA's grant in aid settlement.</p> <p>Perth & Kinross Council's planning activities are funded from the Council's revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure</p>

3.5 Kirriemuir & Forfar PVA 08/05

Local Plan District	Local authority	Main catchment
Tay	Angus Council	River Tay

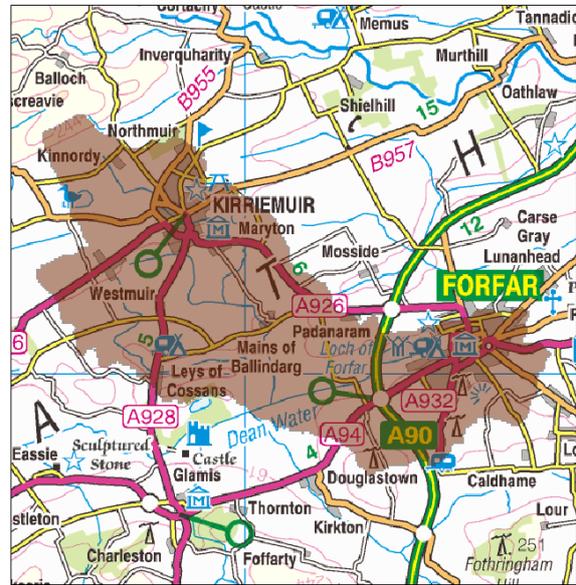
Background and summary of impacts

This Potentially Vulnerable Area is 53km². It is situated in the upper reaches of the River Tay catchment and includes Forfar and Kirriemuir. The main watercourses are Dean Water and its tributary the Ballindarg Burn (Gairie Burn).

The area has a risk of river and surface water flooding. The majority of flood damages are caused by river flooding. The highest risk of flooding is to Forfar from the Dean Water and from surface water. Kirriemuir has a risk of flooding from the Gairie Burn.

There are approximately 150 residential properties and 80 non-residential properties at risk of flooding. The Annual Average Damages are approximately £950,000.

For more detailed information please see the [Tay Flood Risk Management Strategy](#).



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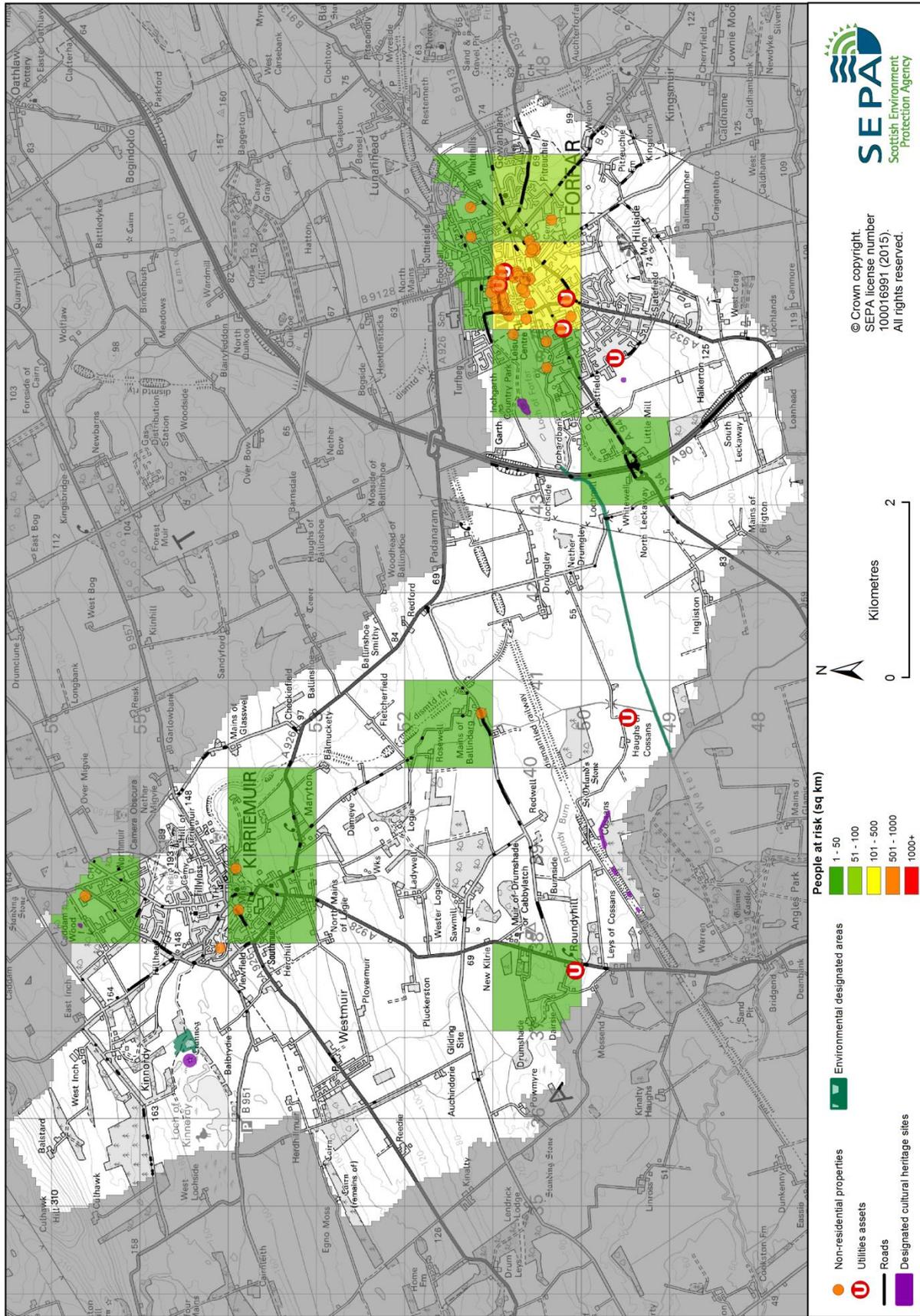


Figure 13: Impacts of flooding in PVA 08/05

(Reproduced from the Tay Flood Risk Management Strategy, SEPA, December 2015)

History of flooding

December 2015/January 2016: Water on road was unable to drain away due to high water levels in Forfar Loch (Fiskens). At South Park of Gardyne, Forfar, flood water flowed onto the road from agricultural land (between the Forfar – Friockheim Road and the back road B961 Dundee – Crombie). At Netheron, Old Quarry the Melgund burn burst its banks, causing damage to properties. At Lintrathen, Kirriemuir a backwater effect on the Melgam Water (caused by the Kinnaird Bridge) resulted in flood water flowing out of banks and onto adjacent farmland. At Well Green, Mid Road, Kirriemuir, blocked gullies resulted in 6 inches of standing water on the road.

In August 1887, it was recorded that properties were flooded in Forfar. Localised surface water flooding has since been recorded in summer 2007, September 2009, December 2012 and January 2013.

Selected Actions in the Kirriemuir & Forfar PVA

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):	FLOOD PROTECTION STUDY (80110005)		
Objective(ID):	Reduce risk to people in Forfar from river flooding (8011) Reduce economic damages and number of residential properties at risk of surface water flooding in Forfar where practical (8008)		
Delivery Lead:	Angus Council		
Priority:	National:	Local Authority:	Within LPD:
	21 of 168	1 of 6	1 of 7
Status:	Ongoing	Planned Delivery Period:	2016-2020
Description:	Angus Council will undertake a flood protection study for Forfar to be delivered by financial year 2019/20. This will assess whether flood storage, modification of conveyance, direct flood defences, sediment management and natural flood management could reduce flood risk. The study will also consider the viability of property level protection and will include surface water investigations in partnership with Scottish Water. The study will take a catchment approach considering the interactions between both upstream and downstream. Angus Council will coordinate the study with Scottish Water, SEPA and Landowners, etc.		

Coordination Arrangement:	Angus Council will coordinate the study through the Local Planning District (LPD) partnership and or separate agreements. Angus Council will coordinate the studies with related actions.
Related Actions:	Strategic mapping and modelling, awareness raising, self help, surface water plan/study, maintenance, emergency plans/response.
Funding Arrangement:	Funding for flood protection study will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022.
Potential Impacts	
Economic:	The study could benefit 45 residential properties and 28 non-residential properties at risk of flooding in this location, with potential damages avoided of up to £13 million.
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 and socially vulnerable people located within the flood protection study area. In addition the study could benefit two utilities and one railway line located within the study area. Natural flood management actions can restore and enhance natural environments and create opportunities for recreation and tourism.
Environmental:	The study will consider the positive and negative impacts of proposed actions on the ecological quality of the environment and designated sites. Opportunities to improve the condition of the Dean Water (water body ID 6556) which is located within the study area and the physical condition of this river is identified by SEPA to be at less than good status, will be considered by coordinating with river basin management planning. To be in accord with the Tay Local Flood Risk Management Plan, 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 SAC.

Action (ID):	FLOOD PROTECTION STUDY (80100005)		
Objective(ID):	Reduce economic damages to residential and non-residential properties in the Kirriemuir and Forfar Potentially Vulnerable Area caused by river flooding (8010)		
Delivery Lead:	Angus Council		
Priority:	National: 127 of 168	Local Authority: 6 of 6	Within LPD: 7 of 7
Status:	Not Started	Planned Delivery Period:	2016-2020
Description:	A flood protection study has been recommended for Kirriemuir to assess whether flood storage, sediment management, modification of conveyance, direct flood defences and natural flood management could reduce flood risk. Natural flood management options that should be considered include floodplain restoration and sediment management. The study should also consider the viability of property level protection and property relocation. The study will take a catchment approach considering		

	the interactions between both upstream and downstream. Angus Council will coordinate the study with Scottish Water, SEPA and Landowners, etc.
Coordination Arrangement:	Angus Council will coordinate the study through the Local Planning District (LPD) partnership and or separate agreements. Angus Council will coordinate the studies with related actions.
Related Actions:	Strategic mapping and modelling, awareness raising, self help, surface water plan/study, maintenance, emergency plans/response.
Funding Arrangement:	Funding for flood protection study will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022.
Potential Impacts	
Economic:	The study could benefit 15 residential properties at risk of flooding in this location, with estimated damages avoided of £1.2 million.
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 and socially vulnerable people. In addition the study could benefit two utilities and one railway line located within the study area. Natural flood management actions can restore and enhance natural environments and create opportunities for recreation and tourism.
Environmental:	The study will consider the positive and negative impacts of proposed actions on the ecological quality of the environment and designated sites. Opportunities to improve the condition of the Dean Water and Gairie Burn (water body IDs 6556 and 6563) which are located within the study area and the physical condition of these rivers is identified by SEPA to be at less than good status, will be considered by coordinating with river basin management planning. To be in accord with the Tay Local Flood Risk Management Plan, 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 SAC and Loch of Kinnordy SPA.

Action (ID):	MAINTAIN FLOOD PROTECTION SCHEME (80100017)		
Objective(ID):	Reduce economic damages to residential and non-residential properties in the Kirriemuir and Forfar Potentially Vulnerable Area caused by river flooding (8010)		
Delivery Lead:	Angus Council		
Status:	Existing	Planned Delivery Period:	2016-2022
Description:	The existing Kirriemuir Flood Prevention Scheme provides protection from the Gairie Burn. Angus Council will maintain the existing Flood Protection Scheme ensuring works are coordinated and infrastructure is fully assessed. This will be done by undertaking routine, reactive, programmed, regulatory and emergency response inspections. This work will be carried out by Angus Council engineers on a priority needs basis as resource		

	allows. The general maintenance standard target is to conduct watercourse inspections annually and structural inspections biennially.
Coordination Arrangement:	Where required Angus Council will co-ordinate required maintenance works with the Scottish Environment Protection Agency (SEPA); Scottish Natural Heritage (SNH), landowners etc. Angus Council will coordinate maintaining flood protection scheme with related actions.
Related Actions:	Awareness raising, surface water plan/study, maintenance, emergency plans/response
Funding Arrangement:	Angus Council funding for maintain flood protection schemes will be shared with others as appropriate and will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022.

Action (ID):	STRATEGIC MAPPING AND MODELLING (80410016)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Not started	Planned Delivery Period:	SEPA led mapping improvements in the Dean Water and Gairie Burn areas will be undertaken in 2017 to 2018.
Description:	SEPA will seek to develop flood mapping in the Dean Water and Gairie Burn areas to improve understanding of flood risk. The extent and timing of improvements will depend on detailed scoping and data availability. Where this work coincides with local authority studies, SEPA will work collaboratively to ensure consistent modelling approaches are applied.		
Coordination Arrangement:	Given the size and complexity of the Tay catchment, combined with a number of third party studies and works in particular the A9 Dualling Scheme, there is currently considerable uncertainty over delivery timescales. SEPA will seek to better understand these during 2016 in order to further refine timescales. Flood protection studies are proposed for Kirriemuir and Forfar. SEPA will work with Angus Council to ensure that new information about flood risk resulting from the proposed flood protection studies is considered in SEPA's strategic mapping and modelling developments where appropriate and relevant. SEPA will coordinate their strategic mapping and modelling activities with related actions through the Tay Local Plan District Partnership and or separate agreements.		
Related Actions:	Flood protection study, Strategic Mapping And Modelling (Scottish Water), Surface water plan/study, Planning policies.		

Funding Arrangement:	SEPA's strategic mapping and modelling activities are funded by Scottish Government through SEPA's grant in aid settlement.
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Action (ID):	STRATEGIC MAPPING AND MODELLING (80410019)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Scottish Water		
Status:	Not Started	Planned Delivery Period:	Forfar 2016-2019 Kirriemuir 2016-2019
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. Scottish Water will undertake further investigation and modelling in the Forfar sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.		
Coordination Arrangement:	Scottish Water will work with responsible authorities to incorporate relevant information into these studies and by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform surface water management plans and SEPA flood hazard and risk maps.		
Related Actions:	Strategic Mapping And Modelling (SEPA), Flood forecasting, Surface water plan/study, Maintenance, Emergency plans/response, Planning policies.		
Funding Arrangement:	Scottish Water funding is committed in its capital programme through Q&S 4a (2015-2021) which is approved by its regulators and customers.		

Action ID:	FLOOD FORECASTING (80410009)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	2016-2022
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 flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. 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.		
Coordination Arrangement:	SEPA / Met Office joint initiative. Hydrological information is provided by SEPA and meteorological information is provided by		

	the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding. SEPA will coordinate flood forecasting with related actions through the Tay Local Plan District partnership and or separate agreements.
Related Actions:	Awareness Raising, Self Help, Emergency Plans/Response.
Funding Arrangement:	SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.

Action (ID):	AWARENESS RAISING (80410013)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Responsible authorities		
Status:	Existing	Planned Delivery Period:	2016-2022
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.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships.</p> <p>Over the six-year planning cycle, Angus Council will seek opportunities to raise awareness of flood risk and actions that prepare individuals, homes and businesses to reduce the overall impact of flooding.</p> <p>Angus Council will work with local communities to raise awareness and assist SEPA in relation to the new flood warning system.</p> <p>Angus Council will also develop emergency plans/response and work with any community flood action groups. Angus Council will use the delivery of a flood protection study to address flood risk and undertake surface water management plan/study by 2019/20 as opportunities to raise awareness.</p> <p>Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities.</p> <p>Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies. More general information and flooding</p>		

	guidance will be available on the website at: https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information
Coordination Arrangement:	<p>Awareness raising will be coordinated through the Local Plan District partnership between SEPA and the responsible authorities.</p> <p>SEPA and the responsible authorities will use any studies, projects and flood schemes to engage with communities and raise awareness of flood risk.</p> <p>Communications activity will be coordinated through existing arrangements within Local Plan District Partnerships. Information will be disseminated through website, social media and other community engagement activity.</p> <p>Angus Council will also disseminate more general information to raise awareness via social media streams relating to flooding i.e. road closures, transport disruptions and weather forecasts.</p> <p>Scottish Water will keep responsible authorities informed of its awareness raising activities through the Local Plan District partnerships.</p> <p>SEPA and Angus Council will coordinate awareness raising with related actions.</p>
Related Actions:	Flood protection study, Maintain flood protection scheme, Self Help, Surface water plan/study, Maintenance, Emergency Plans/Response, Planning policies, Flood Forecasting
Funding Arrangement:	<p>SEPA's awareness raising activities are funded by Scottish Government through SEPA's grant in aid settlement.</p> <p>Angus Council's funding will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</p>

Action (ID):	SELF-HELP (80410011)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	-		
Status:	Existing	Planned Delivery Period:	2016-2022
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> <p>Angus Council will assist, support and educate, as appropriate, property and business owners to protect themselves and their property from flooding, which is their responsibility.</p>		

Coordination Arrangement:	SEPA and Responsible Authorities have a duty to raise public awareness of flood risk. Helping individuals understand the risks from which they are most vulnerable from is the first step in the process. SEPA and Responsible Authorities will also actively promote Floodline. Self help actions will be coordinated with SEPA and other responsible authorities and other actions and in particular with 'awareness raising' and 'emergency plans/response' actions. This is to be through the Tay Local Plan District Partnership.
Related Actions:	Awareness Raising, Surface water plan/study, Maintenance, Emergency Plans/Response
Funding Arrangement:	Individuals have prime responsibility to protect themselves and their property from flooding and are therefore are expected to meet the costs of protecting themselves.

Action (ID):	SURFACE WATER PLAN/STUDY (80080018)		
Objective(ID):	Reduce economic damages and number of residential properties at risk of surface water flooding in Forfar where practical (8008)		
Delivery Lead:	Angus Council		
Status:	Ongoing	Planned Delivery Period:	Forfar 2016-2020 Kirriemuir 2016-2020
Description:	Angus Council will prepare Surface Water Management Plans (SWMPs) to cover Forfar. This will identify the most sustainable measures to manage urban drainage and the risk of surface water flooding, as well as sources of flooding such as the sewer network, watercourses and sea. This will establish a long-term action plan for each area to manage surface water and influence future capital investment, drainage maintenance, land-use planning, emergency planning etc. Angus Council will co-ordinate this work with Scottish Water and SEPA through the local plan district (LPD) partnership with delivery of the SWMP by 2019/2020.		
Coordination Arrangement:	Scottish Water will provide local knowledge and understanding of the sewer network. This includes Scottish Water corporate data (as applicable) and, where available, outputs of Section 16 or integrated catchment studies, to assist with the surface water management planning process. Scottish Water will work with and support surface water management planning through ensuring that best available knowledge and data is used to input into the surface water management plans. Angus Council will coordinate the surface water plan/study through the Tay Local Plan District partnership and or separate agreements. Angus Council will coordinate the surface water plan/study with related actions.		
Related Actions:	Flood protection study, Maintain flood protection scheme, Strategic mapping and modelling, Flood forecasting, Awareness raising, Self-help, Maintenance, Emergency plans/response,		

	Planning policies.
Funding Arrangement:	Angus Council funding for surface water management will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022.

Action (ID):	MAINTENANCE (80410007)
Objective(ID):	Reduce overall flood risk (8041)
Delivery Lead:	Angus Council, asset / land managers
Status:	Existing Planned Delivery Period: 2016-2022
Description:	<p>Angus Council has a duty to assess bodies of water and conduct clearance and repair works which would substantially reduce flood risk. Angus Council will coordinate with landowners and other responsible authorities where a risk has been identified and carry out works necessary. Angus Council will prepare a schedule of clearance and repair as required by the Flood Risk Management (Scotland) Act 2009 and make this available for public inspection. Each schedule will include the name of water body, location, description of works, justification for works, target for completion and the date of the next assessment. In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or defences.</p> <p>Scottish Water will undertake inspection and repair on the public sewer network.</p> <p>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>
Coordination Arrangement:	<p>Watercourse inspections are carried out by the Flooding Teams in Local Authorities and clearance and repair items from these inspections are logged through databases and prioritised for further works. These works are contracted to the roads departments or external contractors when specialist equipment is required.</p> <p>Local Authorities will liaise with SEPA where controlled activities may be required and with private landowners where they may require to take access on private land or to notify landowners that they require to undertake maintenance.</p> <p>Angus Council and Scottish Water will coordinate maintenance with related actions.</p>
Related Actions:	Maintain flood protection scheme, Awareness raising, Self-help, Surface water plan/study, Emergency plans/response, Planning policies.
Funding Arrangement:	<p>Angus Council funding for maintenance will be shared with others as appropriate and will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or</p>

	operational expenditure.		
Action (ID):	EMERGENCY PLANS/RESPONSE (80410014)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Category 1 and 2 Responders		
Status:	Existing	Planned Delivery Period:	2016-2022
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. Angus Council has developed and operate an emergency flood plan for Kirriemuir and Forfar, which is coordinated through the responders identified under the Civil Contingencies Act 2004. The aim of the plan is to set out arrangements to deal effectively with flood risk in Brechin. At predetermined trigger levels for the River South Esk flood alerts and warnings will be issued through Floodline and Angus Council will conduct assessments at known hotspots and prepare resources as required. Angus Council will also co-ordinate measures in conjunction with partner agencies (emergency services, SEPA, Scottish Water etc). Scottish Water is a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required.</p>		
Coordination Arrangement:	<p>The emergency response process is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. Angus Council Resilience Team review and update the Emergency Plan biennially and can be found via the Angus Council website, search “emergency plan”. Angus Council will coordinate emergency plans/response with related actions.</p>		
Related Actions:	<p>Flood protection study, Maintain flood protection scheme, Flood forecasting, Awareness raising, Self help, Surface water plan/study, Maintenance, Planning policies.</p>		
Funding Arrangement:	<p>Angus Council funding for emergency plans/response will be shared with other organisations, emergency services and responders, as appropriate and will be subject to Scottish Government’s block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022. SEPA's emergency plans/response are funded by Scottish Government through SEPA’s grant in aid settlement. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</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	Planned Delivery Period:	2016-2022
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 generally be avoided. For further information on the application of national planning policies see Annex 3.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the Flood Risk Management (Scotland) 2009. SEPA also has a duty to co-operate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engage in the planning system, including guidance on flood risk and planning is available on SEPA website http://www.sepa.org.uk/environment/land/planning/</p> <p>Angus Council is a local planning authority and will work with regional planning authorities to incorporate national policy on flood risk management i.e. TayPlan Strategic Development Planning Authority (SDPA). Furthermore, Angus Council will work directly with their planners to ensure that appropriate policies and measures are put in place to reduce flood risk i.e. Local Development Plans.</p> <p>Angus Council adopts proactive strategies to mitigate and adapt to climate change, taking full account of flood risk. Angus Council will develop appropriate planning policies and measures to reduce flood risk through the Local Development Plan, masterplans, site planning briefs and other appropriate measures as required.</p> <p>Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.</p>		

Coordination Arrangement:	SEPA and Angus Council will coordinate land use planning policies with related actions.
Related Actions:	Flood Protection study, awareness raising, strategic mapping and modelling, surface water plan/study, Emergency plans/response.
Funding Arrangement:	SEPA's land use planning policy activities are funded by Scottish Government through SEPA's grant in aid settlement. Angus Council and other local authority funding for planning policies will be shared as appropriate and will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure

3.6 Blairgowrie PVA 08/06

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

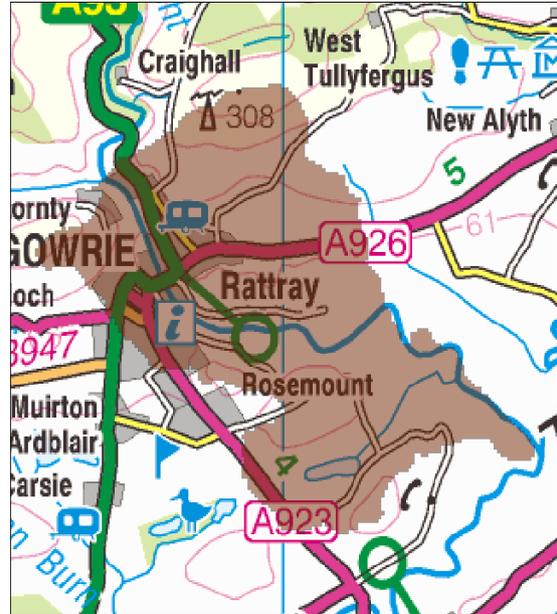
Background and summary of impacts

This Potentially Vulnerable Area is 20km². It is situated in the upper reaches of the River Tay catchment and includes Blairgowrie. The main watercourse is the River Ericht.

The area has a risk of surface water and river flooding. The majority of damages are caused by surface water flooding. The greatest risk of flooding in this area is to Rattray (Blairgowrie) from surface water.

There are approximately 30 residential properties and 60 non-residential properties at risk of flooding. The Annual Average Damages are approximately £120,000.

For more detailed information please see the [Tay Flood Risk Management Strategy](#)



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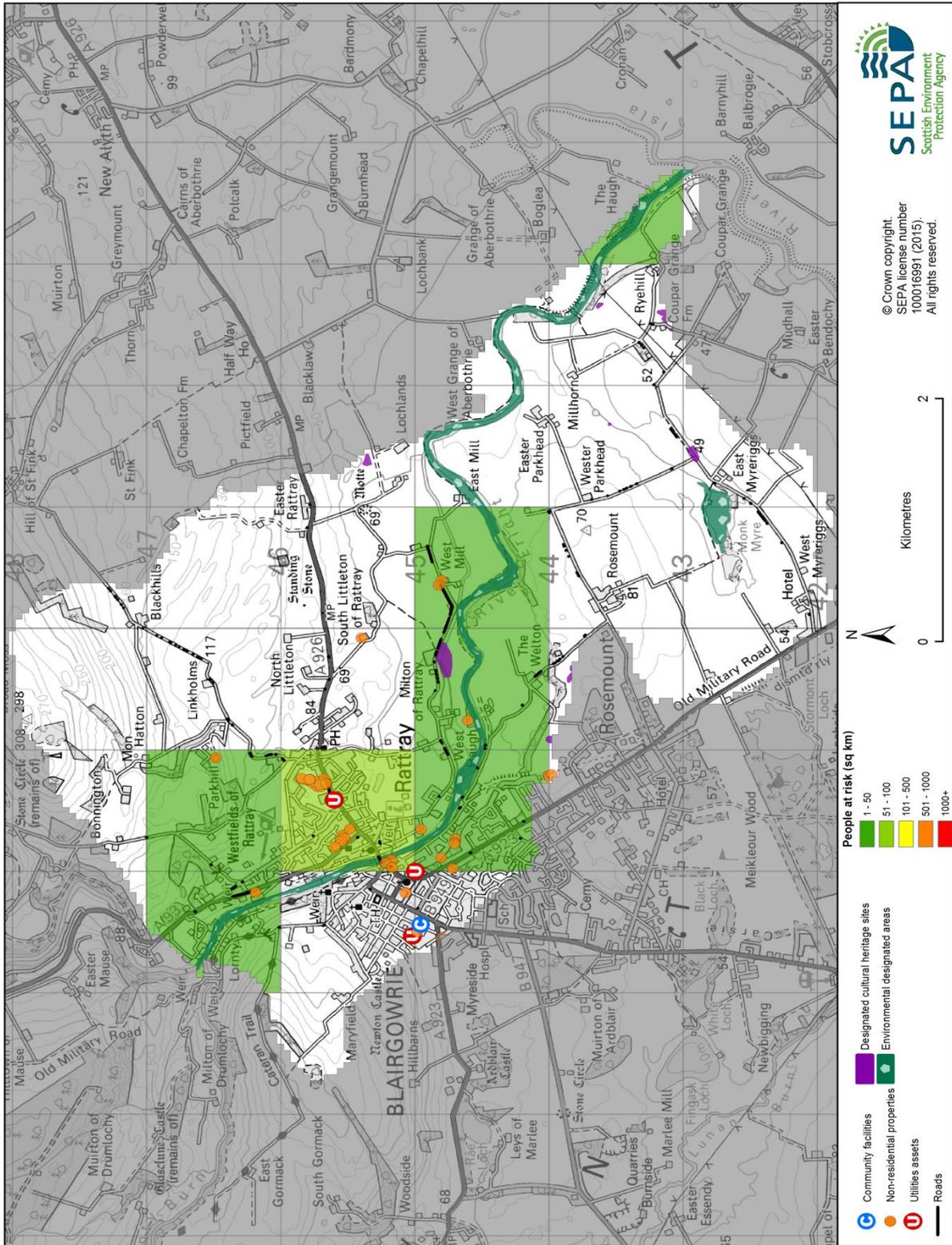


Figure 14: Impact of Flooding in PVA 08/06

(Reproduced from the Tay Flood Risk Management Strategy, SEPA, December 2015)

History of flooding

- December 2015: Storm Frank caused prolonged rainfall across Perth & Kinross. Several roads affected in the Blairgowrie area.
- On 22 January 1928 there was extensive flooding from the River Tay across Perth and Kinross including Blairgowrie. The River Tay reached 5.77m above normal levels at Smeaton's Bridge in Perth.

Selected Actions in the Blairgowrie PVA

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):	STRATEGIC MAPPING AND MODELLING (80410019)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Scottish Water		
Status:	Not Started	Planned Delivery Period:	2016-2018
Description:	Scottish Water will undertake further investigation and modelling in the Blairgowrie sewer catchments to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009		
Coordination Arrangement:	Scottish Water will work with responsible authorities to incorporate relevant information into these studies and by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform surface water management plans and SEPA flood hazard and risk maps.		
Related Actions:	Strategic Mapping And Modelling (SEPA)		
Funding Arrangement:	Scottish Water funding is committed in its capital programme through Q&S 4a (2015-2021) which is approved by its regulators and customers		

Action (ID):	MAINTAIN FLOOD WARNING (80410030)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Continue to maintain the Blairgowrie to the River Isla flood warning area which is part of the Ericht river flood warning scheme.</p> <p>When flood events occur in an area with an existing flood warning service, SEPA will seek to verify the flood forecasts and warnings. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.</p>		
Coordination Arrangement:	SEPA will work with the local authority to ensure that any new information about flood risk is considered in the existing flood warning system		
Related Actions:	Flood forecasting, awareness raising, emergency response, self help		
Funding Arrangement:	The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement.		

Action (ID):	FLOOD FORECASTING (80410009)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	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 flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. 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>		
Coordination Arrangement:	SEPA / Met Office joint initiative. Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.		
Related Actions:	Awareness Raising, Self Help, Emergency Plans/Response, maintain flood warning		
Funding Arrangement:	SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.		

Action (ID):	AWARENESS RAISING (80410013)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Responsible authorities		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Public awareness, participation and community support are essential components of sustainable flood risk management. 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>The Scottish government is developing curriculum resources to be used in Schools to increase awareness. 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. Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships..</p> <p>Local authorities will be undertaking additional awareness raising activities when developing any specific project proposals and will engage with community resilience groups and local communities. Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies. More general information and flooding guidance will be available on the website at: https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information</p>		
Coordination Arrangement:	<p>Awareness raising will be coordinated through the Local Plan District partnership between SEPA and the responsible authorities.</p> <p>SEPA and the responsible authorities will use any studies, projects and flood schemes to engage with communities and raise awareness of flood risk.</p> <p>Communications activity will be coordinated through existing arrangements within Local Plan District Partnerships. Information will be disseminated through website, social media and other community engagement activity.</p> <p>SEPA and responsible authorities will coordinate awareness raising activities with related actions</p>		

Related Actions:	Community Flood Action groups, Flood Warning, Self Help, Emergency Plans/Response, Flood Forecasting
Funding Arrangement:	Awareness raising activities will be funded from the Council's revenue budget. SEPA's awareness raising activities are funded by Scottish Government through SEPA's grant in aid settlement. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.

Action (ID):	SELF-HELP (80410011)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	N/A		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Everyone is responsible for protecting themselves and their property from flooding. Self help actions can be undertaken by any individuals, businesses, organisations or communities at risk of flooding. They are applicable to all sources, frequency and scales of flooding. They focus on awareness raising and understanding of flood risk.</p> <p>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>		
Coordination Arrangement:	Responsible Authorities have a duty to raise public awareness of flood risk. Helping individuals understand the risks from which they are most vulnerable from is the first step in the process. Responsible Authorities will also actively promote Floodline.		
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Maintenance, Emergency Plans/Response		
Funding Arrangement:	Individuals have prime responsibility to protect themselves and their property from flooding and are therefore are expected to meet the costs of protecting themselves.		

Action (ID):	SURFACE WATER PLAN/STUDY (80120018)		
Objective(ID):	Reduce economic damages and number of residential properties at risk of surface water flooding in Blairgowrie and Rattray where practical (8012)		
Delivery Lead:	Perth and Kinross Council		
Status:	Not started	Planned Delivery Period:	2020-2022
Description:	The area must be covered by a surface water management plan or plans that set objectives for the management of surface water flood risk and identify the most sustainable actions to achieve the objectives.		

	Scottish Water will provide local knowledge and understanding of the sewer network. This includes Scottish Water corporate data (as applicable) and, where available, outputs of Section 16 or integrated catchment studies, to assist with the surface water management planning process
Coordination Arrangement:	The surface water management plan/study is programmed to commence in the 2020/21 financial year. Perth and Kinross Council will engage a consultant to investigate the surface water flood risk and identify potential options for managing that risk. The plan/study will be coordinated through the Tay Local Plan District Partnership and with other related actions. Scottish Water will work with and support surface water management planning through ensuring that best available knowledge and data is used to input into the surface water management plans.
Related Actions:	Strategic mapping and modelling, Flood warning, Flood forecasting, Awareness raising, Self-help, Maintenance, Emergency plans/response.
Funding Arrangement:	The surface water plan/study will be subject to funding from Perth and Kinross Council revenue budget.

Action (ID):	MAINTENANCE (80410007)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Perth and Kinross Council, asset / land managers		
Status:	Existing	Planned Delivery Period:	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 undertakes risk based inspection, maintenance 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. Sections 18 and 59 of the Flood Risk Management (Scotland) Act 2009 place duties of watercourse assessment, clearance and repair on local authorities. In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or defences.		
Related Actions:	Raising Awareness, Self Help, Community Flood Action Groups		
Coordination Arrangement:	Sections 17 and 18 of the Flood Risk Management (Scotland) Act 2009 require local authorities to prepare maps of relevant bodies of water and sustainable urban drainage systems (SUDS), assess flood risk on those bodies of water from time to time and to prepare a schedule of clearance and repair works where such works would substantially reduce flood risk. Under Section 59 of		

	<p>the same Act, Local authorities also have a duty to carry out clearance and repair works described on the schedule. The Council's schedule of clearance and repair works is made available for public inspection on its website.</p> <p>The Council carries out routine, scheduled inspections of watercourses on its list at a frequency which depends on flood risk. Further reactive inspections are carried out when issues are highlighted or during times of flooding. Further bodies of water will be included where it has been identified that they may give rise to a risk of flooding.</p> <p>Any identified clearance and repair works from these inspections are logged in a database and are undertaken in order of priority, subject to available funding.</p> <p>Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk. In the first instance, clearance and repair works are therefore referred to the landowner, where they can be identified. The Council usually only carries out works where there has been a failure of the landowner to act, where landownership is not clear, or where urgent intervention is required.</p> <p>In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or works. Scottish Water undertakes risk based inspection, maintenance 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. Local Authorities will liaise with SEPA where controlled activities may be required and with private landowners where they may require to take access on private land or to notify landowners that they require to undertake maintenance.</p> <p>The Council will coordinate maintenance activities with related actions.</p>
Funding Arrangement:	<p>Maintenance activities are subject to funding from the relevant Perth and Kinross Council revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</p>

Action (ID):	EMERGENCY PLANS/RESPONSE (80410014)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Category 1 and 2 Responders		
Status:	Existing	Planned Delivery Period:	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		

	<p>Civil Contingencies Act 2004 by Category 1 and 2 Responders. The emergency response by these organisations is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. Emergency response plans are applicable for all types of flooding. They set out the steps to be taken during flooding in order to maximise safety and minimise impacts where possible. Under the Civil Contingencies Act, Category 1 Responders have a duty to maintain emergency plans. Emergency plans may also be prepared by individuals, businesses, organisations or communities.</p> <p>Scottish Water is a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required.</p>
Coordination Arrangement:	<p>Perth and Kinross Council has developed a Generic Emergency Plan and a Flooding Emergency Response Plan. The Plan is designed to ensure that contingency measures are in place for the coordinated and flexible response to flooding incidents to mitigate the effects of flooding emergencies.</p> <p>SEPA flood alerts and warnings will be monitored and resources made ready as required. A coordinated response will follow any reports of flooding.</p> <p>Emergency response is coordinated with regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. A debrief and plan review will be carried out following any flood events.</p> <p>Protecting property from flooding is the responsibility of the owner of the property, but Perth & Kinross Council can sometimes provide sandbags to properties. Unfortunately the Council only has the resources to supply sandbags to residents where there is an imminent risk of flooding.</p> <p>Emergency plans/response activities will be coordinated with related actions</p>
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Self Help
Funding Arrangement:	<p>Funding is allocated to category 1 and 2 responders by the Scottish Government for dealing with emergency response and in extreme cases may reimburse responders after an extreme event. Emergency response activities are funded from the Council's revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</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	Planned Delivery Period:	Ongoing
Description:	<p>National planning policies 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 generally be avoided. For further information on the application of national planning policies see Annex 3.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the Flood Risk Management (Scotland) 2009. SEPA also has a duty to co-operate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engage in the planning system, including guidance on flood risk and planning is available on SEPA website http://www.sepa.org.uk/environment/land/planning/</p> <p>Current national planning policies, the Scottish Planning Policy and accompanying Planning Advice notes restrict development within the floodplain and limit exposure of new receptors to flood risk. In addition to national policies, local planning policies may place further requirements within their area of operation to restrict inappropriate development and prevent unacceptable risk. Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.</p>		
Coordination Arrangement:	<p>Perth and Kinross Council is a local planning authority and will coordinate its work with the strategic development planning authority and the National Parks Authorities.</p> <p>The Council's Flooding Team are consulted on planning applications and work with the Planning and Development Service to ensure that flood risk is addressed. The Local Development Plan provides the framework against which planning applications are assessed and is consistent with the Strategic Development Plan (TAYplan). Supplementary Guidance on Flood Risk and Flood Risk Assessments is also available to support the content of the Local Development Plan. Planning applications are also reviewed against SEPA's indicative flood maps, existing flood studies and records of flooding. Where flood risk is an issue,</p>		

	<p>developers are required to prepare and submit a site-specific flood risk assessment and drainage impact assessment as applicable. They must also consider how a development site will be drained and how surface water runoff will be managed through the implementation of appropriate Sustainable Urban Drainage Measures.</p> <p>So as to align the flood risk management and land use planning systems, land use planning objectives and actions have been developed which can be viewed in Annex 3. The Council will coordinate land use planning policies with related actions.</p>
<p>Related Actions:</p>	<p>Awareness Raising, self Help, Maintenance, Strategic Mapping & Modelling, surface water plan/study</p>
<p>Funding Arrangement:</p>	<p>SEPA's land use planning activities are funded by Scottish Government through SEPA's grant in aid settlement. Perth & Kinross Council's planning activities are funded from the Council's revenue budget. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</p>

3.7 Coupar Angus PVA 08/07

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

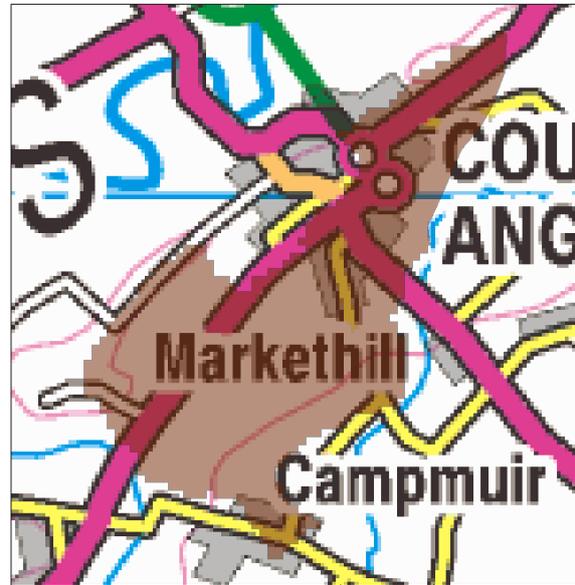
Background and summary of impacts

This Potentially Vulnerable Area is 4km². It is situated in the lower reaches of the River Tay catchment and includes Coupar Angus. The main watercourse is the Coupar Burn that flows into the River Isla.

The area has a risk of surface water and river flooding. The majority of flood damages are caused by river flooding. The highest risk of flooding is in Coupar Angus from the Coupar Burn.

The area has a risk of surface water and river flooding. The majority of flood damages are caused by river flooding. There are approximately 10 residential properties and fewer than 10 non-residential properties at risk of flooding. The Annual Average Damages are approximately £26,000.

For more detailed information please see the [Tay Flood Risk Management Strategy](#).



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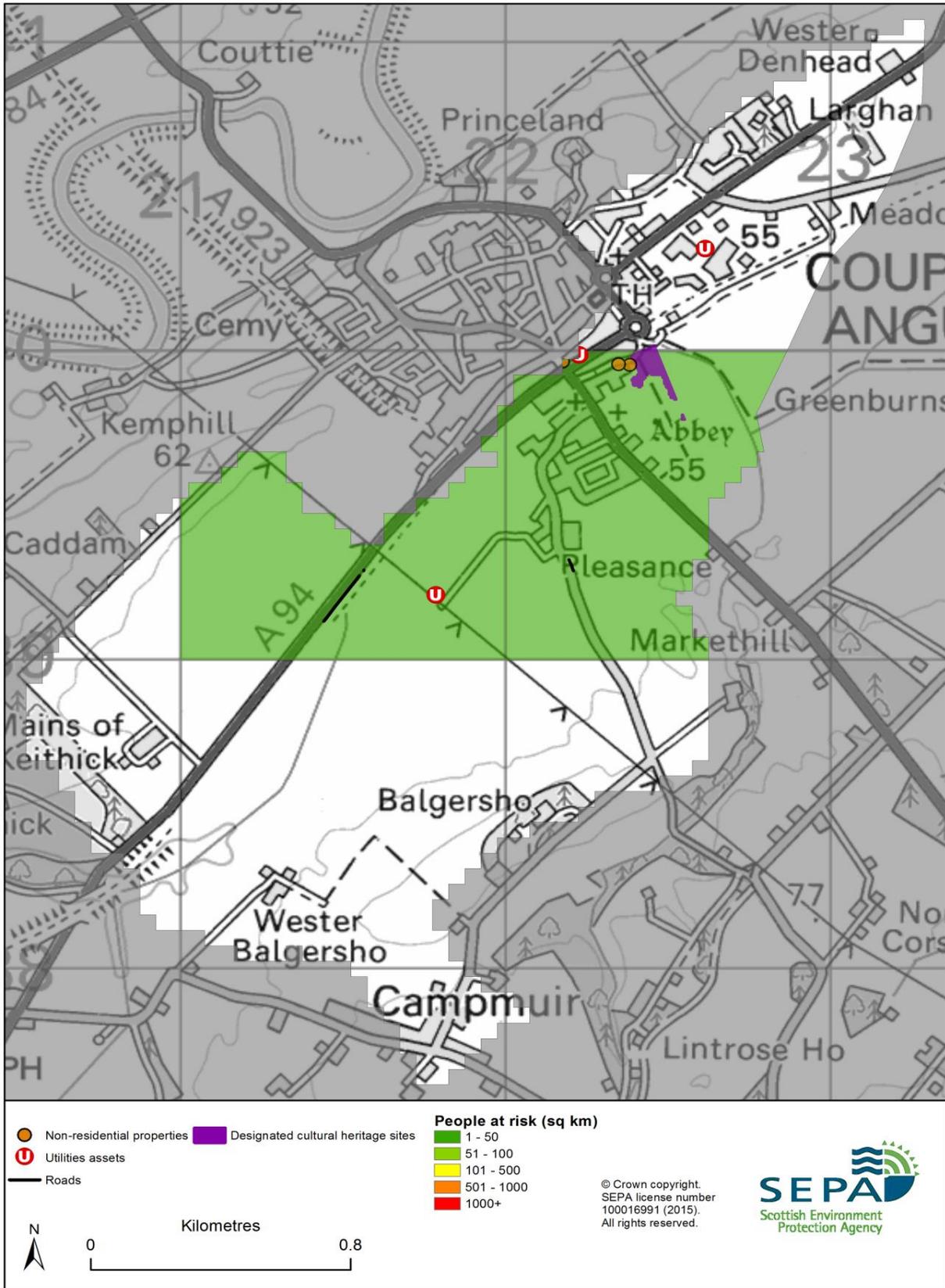


Figure 15: Impacts of flooding in PVA 08/07

(Reproduced from the Tay Flood Risk Management Strategy, SEPA, December 2015)

History of flooding

The following significant river floods have been recorded:

- December 2015: Storm Frank caused prolonged rainfall across Perth & Kinross. Several roads affected in the Coupar Angus area.
- December 2012: Flooding from the Coupar Burn affected properties in George Street in Coupar Angus.
- August 2004: Flooding from the Coupar Burn affected properties in George Street in Coupar Angus. At least six houses were directly affected, including two requiring evacuation.

Selected Actions in the Coupar Angus PVA

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):	STRATEGIC MAPPING AND MODELLING (80410016)				
Objective(ID):	Reduce overall flood risk (8041)				
Delivery Lead:	SEPA				
Status:	Not started	Planned Delivery Period:			SEPA led mapping improvements in the Burrelton area will be undertaken in 2016
Description:	SEPA will seek to develop flood mapping in the Coupar Burn area to improve understanding of flood risk. The extent and timing of improvements will depend on detailed scoping and data availability.				
Coordination Arrangement:	SEPA's strategic mapping activities will be coordinated with the activities of other responsible authorities as required.				
Related Actions:	Strategic Mapping And Modelling (Scottish Water), Planning Policies				
Funding Arrangement:	SEPA's strategic mapping and modelling activities are funded by Scottish Government through SEPA's grant in aid settlement.				

Action (ID):	STRATEGIC MAPPING AND MODELLING (80410019)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Scottish Water		
Status:	Not Started	Planned Delivery Period:	2016-2022
Description:	Scottish Water will undertake further investigation and modelling in the Coupar Angus sewer catchments to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009		
Coordination Arrangement:	Scottish Water will work with responsible authorities to incorporate relevant information into these studies and by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform surface water management plans and SEPA flood hazard and risk maps.		
Related Actions:	Strategic Mapping And Modelling (SEPA)		
Funding Arrangement:	Scottish Water funding is committed in its capital programme through Q&S 4a (2015-2021) which is approved by its regulators and customers.		

Action (ID):	FLOOD FORECASTING (80410009)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	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 flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. 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.		
Coordination Arrangement:	SEPA / Met Office joint initiative. Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.		
Related Actions:	Awareness Raising, Self Help, Emergency Plans/Response		
Funding Arrangement:	SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.		

Action (ID):	AWARENESS RAISING (80410013)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Responsible authorities		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Public awareness, participation and community support are essential components of sustainable flood risk management. 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>The Scottish government is developing curriculum resources to be used in Schools to increase awareness. 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. Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships.</p> <p>Local authorities will be undertaking additional awareness raising activities when developing any specific project proposals and will engage with community resilience groups and local communities. Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.</p> <p>More general information and flooding guidance will be available on the website at: https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information</p>		
Coordination Arrangement:	<p>Awareness raising will be coordinated through the Local Plan District partnership between SEPA and the responsible authorities.</p> <p>SEPA and the responsible authorities will use any studies, projects and flood schemes to engage with communities and raise awareness of flood risk.</p> <p>Communications activity will be coordinated through existing arrangements within Local Plan District Partnerships. Information will be disseminated through website, social media and other community engagement activity.</p> <p>SEPA and responsible authorities will coordinate awareness raising activities with related actions</p>		

Related Actions:	Self Help, Emergency Plans/Response, Flood Forecasting
Funding Arrangement:	Awareness raising activities will be funded from the Council's revenue budget. SEPA's awareness raising activities are funded by Scottish Government through SEPA's grant in aid settlement. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.

Action (ID):	SELF-HELP (80410011)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	N/A		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Everyone is responsible for protecting themselves and their property from flooding. Self-help actions can be undertaken by any individuals, businesses, organisations or communities at risk of flooding. They are applicable to all sources, frequency and scales of flooding. They focus on awareness raising and understanding of flood risk.</p> <p>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>		
Coordination Arrangement:	Responsible Authorities have a duty to raise public awareness of flood risk. Helping individuals understand the risks from which they are most vulnerable from is the first step in the process. Responsible Authorities will also actively promote Floodline.		
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Maintenance, Emergency Plans/Response		
Funding Arrangement:	Individuals have prime responsibility to protect themselves and their property from flooding and are therefore are expected to meet the costs of protecting themselves.		

Action (ID):	MAINTENANCE (80410007)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Perth and Kinross Council, asset / land managers		
Status:	Existing	Planned Delivery Period:	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 undertakes risk based inspection,		

	<p>maintenance 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> <p>Sections 18 and 59 of the Flood Risk Management (Scotland) Act 2009 place duties of watercourse assessment, clearance and repair on local authorities. In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or defences.</p>
<p>Coordination Arrangement:</p>	<p>Sections 17 and 18 of the Flood Risk Management (Scotland) Act 2009 require local authorities to prepare maps of relevant bodies of water and sustainable urban drainage systems (SUDS), assess flood risk on those bodies of water from time to time and to prepare a schedule of clearance and repair works where such works would substantially reduce flood risk. Under Section 59 of the same Act, Local authorities also have a duty to carry out clearance and repair works described on the schedule. The Council's schedule of clearance and repair works is made available for public inspection on its website.</p> <p>The Council carries out routine, scheduled inspections of watercourses on its list at a frequency which depends on flood risk. Further reactive inspections are carried out when issues are highlighted or during times of flooding. Further bodies of water will be included where it has been identified that they may give rise to a risk of flooding.</p> <p>Any identified clearance and repair works from these inspections are logged in a database and are undertaken in order of priority, subject to available funding.</p> <p>Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk. In the first instance, clearance and repair works are therefore referred to the landowner, where they can be identified. The Council usually only carries out works where there has been a failure of the landowner to act, where landownership is not clear, or where urgent intervention is required.</p> <p>In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or works.</p> <p>Scottish Water undertakes risk based inspection, maintenance 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. Local Authorities will liaise with SEPA where controlled activities may be required and with private landowners where they may require to take access on private land or to notify landowners that they require to undertake maintenance.</p> <p>The Council will coordinate maintenance activities with related actions.</p>
<p>Related Actions:</p>	<p>Raising Awareness, Self Help, Community Flood Action Groups</p>

Funding Arrangement:	Maintenance activities are subject to funding from the relevant Perth and Kinross Council revenue budget. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.
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Action (ID):	EMERGENCY PLANS/RESPONSE (80410014)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Category 1 and 2 Responders		
Status:	Existing	Planned Delivery Period:	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 coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. Emergency response plans are applicable for all types of flooding. They set out the steps to be taken during flooding in order to maximise safety and minimise impacts where possible. Under the Civil Contingencies Act, Category 1 Responders have a duty to maintain emergency plans. Emergency plans may also be prepared by individuals, businesses, organisations or communities.</p> <p>Scottish Water is a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required.</p>		
Coordination Arrangement:	<p>Perth and Kinross Council has developed a Generic Emergency Plan and a Flooding Emergency Response Plan. The Plan is designed to ensure that contingency measures are in place for the coordinated and flexible response to flooding incidents to mitigate the effects of flooding emergencies.</p> <p>SEPA flood alerts and warnings will be monitored and resources made ready as required. A coordinated response will follow any reports of flooding.</p> <p>Emergency response is coordinated with regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. A debrief and plan review will be carried out following any flood events.</p> <p>Protecting property from flooding is the responsibility of the owner of the property, but Perth & Kinross Council can sometimes provide sandbags to properties. Unfortunately the Council only has the resources to supply sandbags to residents where there is an imminent risk of flooding.</p> <p>Emergency plans/response activities will be coordinated with related actions.</p>		

Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Self Help
Funding Arrangement:	Funding is allocated to category 1 and 2 responders by the Scottish Government for dealing with emergency response and in extreme cases may reimburse responders after an extreme event. Emergency response activities are funded from the Council's revenue budget. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.

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	Planned Delivery Period:	Ongoing
Description:	<p>The Scottish Planning Policy (SPP) and accompanying Planning Advice Notes set out the 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 SPP 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 generally be avoided. For further information on the application of national planning policies see Annex 3.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the Flood Risk Management (Scotland) 2009. SEPA also has a duty to co-operate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engage in the planning system, including guidance on flood risk and planning is available on SEPA website http://www.sepa.org.uk/environment/land/planning/</p> <p>Current national planning policies, the Scottish Planning Policy and accompanying Planning Advice notes restrict development within the floodplain and limit exposure of new receptors to flood risk. In addition to national policies, local planning policies may place further requirements within their area of operation to restrict</p>		

	<p>inappropriate development and prevent unacceptable risk. Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.</p>
<p>Coordination Arrangement:</p>	<p>Perth and Kinross Council is a local planning authority and will coordinate its work with the strategic development planning authority and the National Parks Authorities.</p> <p>The Council's Flooding Team are consulted on planning applications and work with the Planning and Development Service to ensure that flood risk is addressed. The Local Development Plan provides the framework against which planning applications are assessed and is consistent with the Strategic Development Plan (TAYplan). Supplementary Guidance on Flood Risk and Flood Risk Assessments is also available to support the content of the Local Development Plan. Planning applications are also reviewed against SEPA's indicative flood maps, existing flood studies and records of flooding. Where flood risk is an issue, developers are required to prepare and submit a site-specific flood risk assessment and drainage impact assessment as applicable. They must also consider how a development site will be drained and how surface water runoff will be managed through the implementation of appropriate Sustainable Urban Drainage Measures.</p> <p>So as to align the flood risk management and land use planning systems, land use planning objectives and actions have been developed which can be viewed in Annex 3. The Council will coordinate land use planning policies with related actions.</p>
<p>Related Actions:</p>	<p>Awareness Raising, self Help, Maintenance, Strategic Mapping & Modelling</p>
<p>Funding Arrangement:</p>	<p>SEPA's land use planning activities are funded by Scottish Government through SEPA's grant in aid settlement. Perth & Kinross Council's planning activities are funded from the Council's revenue budget. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</p>

3.8 Luncarty, Stanley, Bankfoot, Dunkeld & Birnam PVA 08/08

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

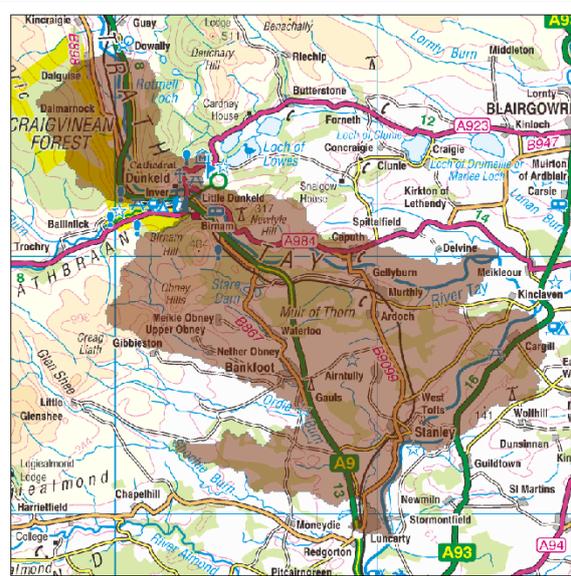
Background and summary of impacts

This Potentially Vulnerable Area is 141km². It is situated in the lower reaches of the River Tay catchment and includes Dunkeld, Birnam, Bankfoot, Stanley and Luncarty. The main watercourse is the River Tay.

The area has a risk of surface water and river flooding. The majority of flood damages are caused by river flooding. The highest risk of flooding is in Dunkeld from the River Tay and River Braan, and in Bankfoot from the Garry Burn and Glenshauch Burn.

There are approximately 360 residential properties and 130 non-residential properties at risk of flooding. The Annual Average Damages from flooding are approximately £740,000.

For more detailed information please see the Tay LPD [Tay Flood Risk Management Strategy](#)



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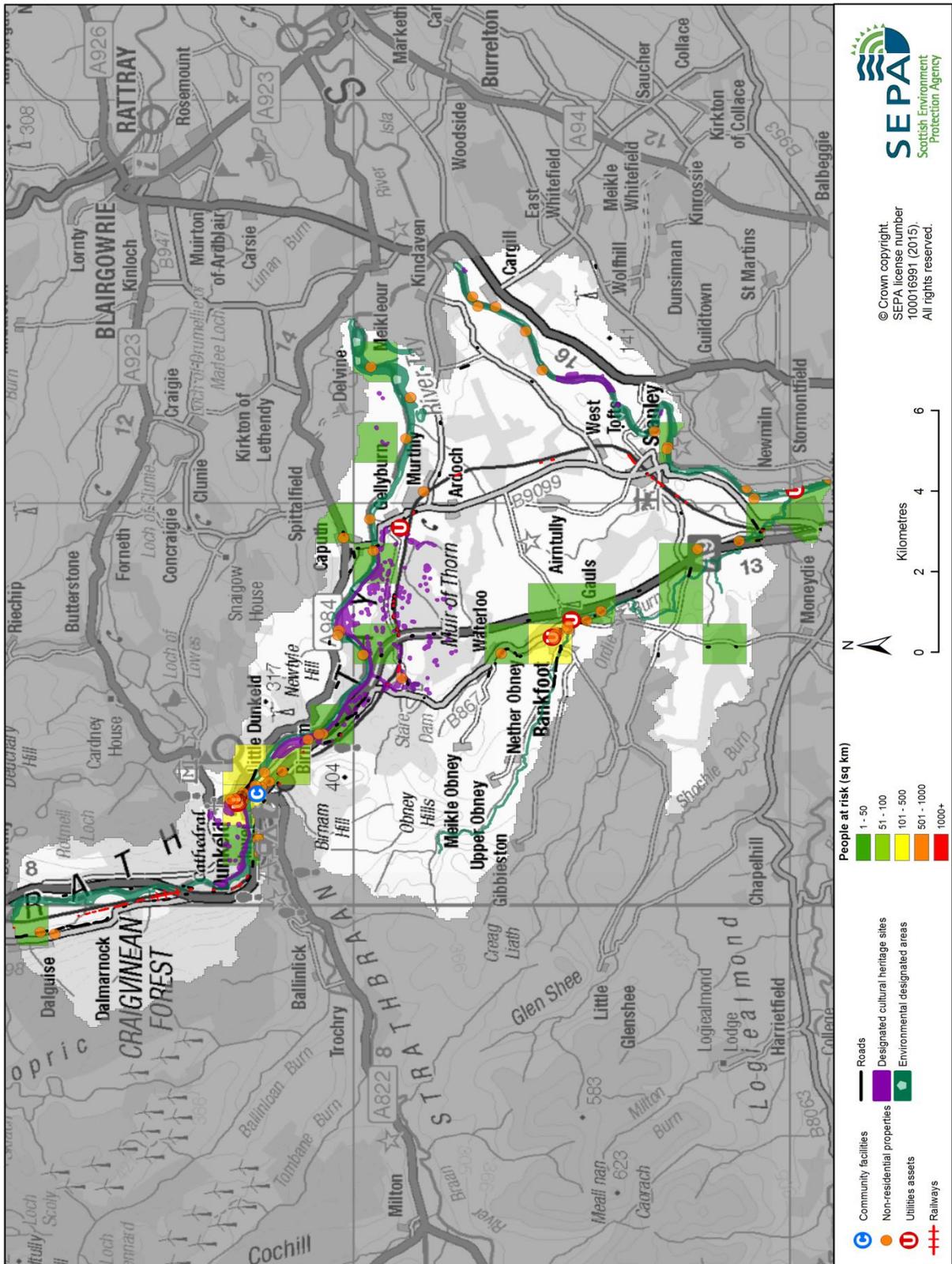


Figure 16: Impacts of flooding in PVA 08/08

(Reproduced from the Tay Flood Risk Management Strategy, SEPA, December 2015)

History of flooding

This area has a long history of flooding from the River Tay and its tributaries. The following floods have been recorded:

- December 2015: Storms Desmond and Frank caused prolonged rainfall across Perth & Kinross. Properties and roads affected in the Bankfoot and Dunkeld areas.
- 17 July 2015: Heavy rain caused serious flooding in parts of Scotland, including Bankfoot. It has been reported that 21 properties were affected by flooding from the Garry Burn, with 7 of those being flooded internally.
- 11 August 2004: 50 people evacuated in Bankfoot due to flooding from the Garry Burn. Properties were flooded on Prieston Road and the boundary wall at Church Hall on Church Lane was destroyed. In Dunkeld, flooding from the Spoutwell Burn and an associated tributary caused flooding to approximately 8-10 properties in the town centre.
- December 1996: Four properties affected in Dalguise due to flooding from the River Tay and extensive damage was caused to the Perth to Inverness railway line.
- 16 January 1993: Widespread flooding across the Tay catchment resulted in over £20 million of damage. The flood is known to have affected Bankfoot and Dalguise. Peak flow at Ballathie Gauging Station was recorded at 2269 m³/s during this flood event.
- 7 February 1990: Communication networks were disrupted as a result of flooding in the Tay and Earn valleys. Properties, roads and railways were also damaged.
- 24 May 1984: Localised flooding in Bankfoot caused by very heavy hail and rapid thaw. Approximately 5-10 properties flooded on Main Street and Tulliebelton Place.
- 27 January 1961: Heavy overnight rain and quick thaw of lying snow caused flooding along the Garry Burn in Bankfoot. The local primary school and some local farm cottages were affected.
- 17 February 1950: Communication networks were disrupted and properties and several roads were flooded within the Upper Tay. The flood affected a large part of Perth and Kinross.

Selected Actions in the Luncarty, Stanley, Bankfoot, Dunkeld & Birnam PVA

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):	FLOOD PROTECTION STUDY (80170005)		
Objective (ID):	Reduce economic damages to residential and non-residential properties in Dunkeld from River Tay and River Braan (8017)		
Delivery Lead:	Perth & Kinross Council		
Priority:	National: 67 of 168	Local Authority: 4 of 6	Within LPD: 4 of 7
Status:	Not Started	Planned Delivery Period:	2019 - 2021
Description:	A flood protection study has been recommended for Dunkeld to assess whether modification of conveyance, direct flood defences and sediment management could reduce flood risk. The study will build on previous studies and take a staged approach to allow collaboration with SEPA on strategic mapping and modelling for the River Tay. The study will take a catchment approach and consider the potential benefits and dis-benefits and interaction between actions upstream and downstream.		
Coordination Arrangement:	The study is programmed to commence in the 2019/20 financial year. Perth and Kinross Council will engage a consultant to investigate the fluvial flood risk and identify potential options for managing that risk. The study will involve the completion of existing investigations by consultants, Mouchel, into the flooding on Atholl Gardens and Atholl Street, Dunkeld from the Spoutwells Burn and another small watercourse. The study will also take a staged approach to allow coordination with SEPA on the Strategic Mapping and Modelling Action for the River Tay (Action ID 80410016). The study will be coordinated through the Tay LPD Partnership and with other related actions.		
Related Actions:	Strategic mapping and modelling, Flood warning, Flood forecasting, Awareness raising, Self-help, Maintenance, Emergency plans/response.		
Funding Arrangement:	The study will be subject to funding from Perth and Kinross Council's revenue budget.		
Potential Impacts			
Economic:	The study could benefit 179 residential properties and 74 non-residential properties at risk of flooding in this location, with estimated damages avoided of £5.8 million.		
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. In addition there is one educational building located within the study area.		
Environmental:	Flood protection studies should consider the positive and negative impacts of proposed actions on the ecological quality of the environment and designated sites. Where possible opportunities to enhance and restore the environment should be sought, for example through natural flood management. To be in accord with the Tay Local Flood Risk Management Plan, 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. Conservation areas, National Scenic Areas, scheduled monuments, Gardens and designed landscapes, listed buildings and ancient woodlands are also present in the study area and could be positively or negatively impacted.
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Action (ID):	STRATEGIC MAPPING AND MODELLING (80410016)		
Objective (ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Not started	Planned Delivery Period:	Mapping improvements in this area are dependent on the local authority study (Dunkeld). Given the size and complexity of the Tay catchment, combined with a number of third party studies and works in particular the A9 Dualling Scheme, there is currently considerable uncertainty over delivery timescales. SEPA will seek to better understand these during 2016 in order to further refine timescales
Description:	SEPA will seek to develop flood mapping in the River Tay area to improve understanding of flood risk. The extent and timing of improvements will depend on detailed scoping and data availability. Where this work coincides with local authority studies, SEPA will work collaboratively to ensure consistent modelling approaches are applied.		
Coordination Arrangement:	A flood protection study is proposed for Dunkeld (Action ID 80170005). SEPA will work with Perth and Kinross Council to ensure that new information about flood risk resulting from the proposed flood protection study is considered in SEPA's strategic mapping and modelling developments where appropriate and relevant.		
Related Actions:	Flood protection study, Strategic Mapping And Modelling (Scottish Water), Planning Policies		
Funding Arrangement:	SEPA's strategic mapping and modelling activities are funded by Scottish Government through SEPA's grant in aid settlement.		

Action (ID):	STRATEGIC MAPPING AND MODELLING (80410019)		
Objective (ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Scottish Water		

Status:	Not Started	Planned Delivery Period:	Bankfoot 2016-2018 Dunkeld 2016-2017
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. Scottish Water will undertake further investigation and modelling in the Bankfoot and Dunkeld sewer catchments to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.		
Coordination Arrangement:	Scottish Water will work with responsible authorities to incorporate relevant information into these studies and by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform surface water management plans and SEPA flood hazard and risk maps.		
Related Actions:	Strategic Mapping And Modelling (SEPA)		
Funding Arrangement:	Scottish Water funding is committed in its capital programme through Q&S 4a (2015-2021) which is approved by its regulators and customers.		

Action (ID):	MAINTAIN FLOOD WARNING (80410030)		
Objective (ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	Continue to maintain the Boat of Murthly, Caputh to Kinclaven, Dalguise, Dunkeld and Burnmouth Road, Logierait to Victoria Bridge and the Stanley Mills flood warning areas which are part of the Tay river flood warning scheme. When flood events occur in an area with an existing flood warning service, SEPA will seek to verify the flood forecasts and warnings. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.		
Coordination Arrangement:	A flood protection study is proposed for Dunkeld. SEPA will work with the local authority to ensure that any new information about flood risk resulting from the proposed flood protection study is considered in the existing flood warning system.		
Related Actions:	flood protection study, flood forecasting, awareness raising, emergency response, self help		
Funding Arrangement:	The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement.		

Action (ID):	FLOOD FORECASTING (80410009)		
Objective (ID):	Reduce overall flood risk (8041)		

Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	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 flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. 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>		
Coordination Arrangement:	SEPA / Met Office joint initiative. Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.		
Related Actions:	Awareness Raising, Self Help, Emergency Plans/Response, Maintain flood warning		
Funding Arrangement:	SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.		

Action (ID):	AWARENESS RAISING (80410013)		
Objective (ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Responsible Authorities		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Public awareness, participation and community support are essential components of sustainable flood risk management. 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>The Scottish government is developing curriculum resources to be used in Schools to increase awareness. 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. Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships.</p> <p>Local authorities will be undertaking additional awareness raising activities when developing any specific project proposals and will</p>		

	<p>engage with community resilience groups and local communities. Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.</p> <p>More general information and flooding guidance will be available on the website at: https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information</p>
Coordination Arrangement:	<p>Awareness raising will be coordinated through the Local Plan District partnership between SEPA and the responsible authorities.</p> <p>SEPA and the responsible authorities will use any studies, projects and flood schemes to engage with communities and raise awareness of flood risk.</p> <p>Communications activity will be coordinated through existing arrangements within Local Plan District Partnerships. Information will be disseminated through website, social media and other community engagement activity.</p> <p>SEPA and responsible authorities will coordinate awareness raising activities with related actions.</p>
Related Actions:	Strategic mapping and modelling, Flood warning, Flood forecasting, Community flood action groups, Self help, Maintenance, Emergency Plans/Response
Funding Arrangement:	<p>Awareness raising activities will be funded from the Council's revenue budget.</p> <p>SEPA's awareness raising activities are funded by Scottish Government through SEPA's grant in aid settlement. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</p>

Action (ID):	SELF-HELP (80410011)		
Objective (ID):	Reduce Overall flood risk (8041)		
Delivery Lead:	-		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Everyone is responsible for protecting themselves and their property from flooding. Self help actions can be undertaken by any individuals, businesses, organisations or communities at risk of flooding. They are applicable to all sources, frequency and scales of flooding. They focus on awareness raising and understanding of flood risk.</p> <p>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</p>		

	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.
Coordination Arrangement:	Responsible Authorities have a duty to raise public awareness of flood risk. Helping individuals understand the risks from which they are most vulnerable from is the first step in the process. Responsible Authorities will also actively promote Floodline.
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Maintenance, Emergency Plans/Response.
Funding Arrangement:	Individuals have prime responsibility to protect themselves and their property from flooding and are therefore are expected to meet the costs of protecting themselves.

Action (ID):	MAINTENANCE (80410007)		
Objective (ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Perth and Kinross Council, asset / land managers		
Status:	Existing	Planned Delivery Period:	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 undertakes risk based inspection, maintenance 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> <p>Sections 18 and 59 of the Flood Risk Management (Scotland) Act 2009 place duties of watercourse assessment, clearance and repair on local authorities. In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or defences.</p>		
Coordination Arrangement:	<p>Sections 17 and 18 of the Flood Risk Management (Scotland) Act 2009 require local authorities to prepare maps of relevant bodies of water and sustainable urban drainage systems (SUDS), assess flood risk on those bodies of water from time to time and to prepare a schedule of clearance and repair works where such works would substantially reduce flood risk. Under Section 59 of the same Act, Local authorities also have a duty to carry out clearance and repair works described on the schedule. The Council's schedule of clearance and repair works is made available for public inspection on its website.</p> <p>The Council carries out routine, scheduled inspections of watercourses on its list at a frequency which depends on flood risk. Further reactive inspections are carried out when issues are highlighted or during times of flooding. Further bodies of water will be included where it has been identified that they may give rise to a risk of flooding.</p>		

	<p>Any identified clearance and repair works from these inspections are logged in a database and are undertaken in order of priority, subject to available funding.</p> <p>Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk. In the first instance, clearance and repair works are therefore referred to the landowner, where they can be identified. The Council usually only carries out works where there has been a failure of the landowner to act, where landownership is not clear, or where urgent intervention is required.</p> <p>In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or works. Scottish Water undertakes risk based inspection, maintenance 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. Local Authorities will liaise with SEPA where controlled activities may be required and with private landowners where they may require to take access on private land or to notify landowners that they require to undertake maintenance.</p> <p>The Council will coordinate maintenance activities with related actions.</p>
Related Actions:	Raising Awareness, Self Help, Community Flood Action Groups
Funding Arrangement:	<p>Maintenance activities are subject to funding from the relevant Perth and Kinross Council revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</p>

Action (ID):	EMERGENCY PLANS/RESPONSE (80410014)		
Objective (ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Category 1 and 2 Responders		
Status:	Existing	Planned Delivery Period:	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 coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p> <p>Emergency response plans are applicable for all types of flooding. They set out the steps to be taken during flooding in order to maximise safety and minimise impacts where possible. Under the Civil Contingencies Act, Category 1 Responders have a duty to</p>		

	<p>maintain emergency plans. Emergency plans may also be prepared by individuals, businesses, organisations or communities.</p> <p>Scottish Water is a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required.</p>
Coordination Arrangement:	<p>Perth and Kinross Council has developed a Generic Emergency Plan and a Flooding Emergency Response Plan. The Plan is designed to ensure that contingency measures are in place for the coordinated and flexible response to flooding incidents to mitigate the effects of flooding emergencies.</p> <p>SEPA flood alerts and warnings will be monitored and resources made ready as required. A coordinated response will follow any reports of flooding.</p> <p>Emergency response is coordinated with regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. A debrief and plan review will be carried out following any flood events.</p> <p>Protecting property from flooding is the responsibility of the owner of the property, but Perth & Kinross Council can sometimes provide sandbags to properties. Unfortunately the Council only has the resources to supply sandbags to residents where there is an imminent risk of flooding.</p> <p>Emergency plans/response activities will be coordinated with related actions.</p>
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Self Help
Funding Arrangement:	<p>Funding is allocated to category 1 and 2 responders by the Scottish Government for dealing with emergency response and in extreme cases may reimburse responders after an extreme event. Emergency response activities are funded from the Council's revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</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	Planned Delivery Period:	Ongoing
Description:	<p>The Scottish Planning Policy (SPP) and accompanying Planning Advice Notes set out the 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 SPP 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</p>		

	<p>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 generally be avoided. For further information on the application of national planning policies see Annex 3.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the Flood Risk Management (Scotland) 2009. SEPA also has a duty to co-operate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engage in the planning system, including guidance on flood risk and planning is available on SEPA website http://www.sepa.org.uk/environment/land/planning/</p> <p>Current national planning policies, the Scottish Planning Policy and accompanying Planning Advice notes restrict development within the floodplain and limit exposure of new receptors to flood risk. In addition to national policies, local planning policies may place further requirements within their area of operation to restrict inappropriate development and prevent unacceptable risk. Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.</p>
Coordination Arrangement:	<p>Perth and Kinross Council is a local planning authority and will coordinate its work with the strategic development planning authority and the National Parks Authorities.</p> <p>The Council's Flooding Team are consulted on planning applications and work with the Planning and Development Service to ensure that flood risk is addressed. The Local Development Plan provides the framework against which planning applications are assessed and is consistent with the Strategic Development Plan (TAYplan). Supplementary Guidance on Flood Risk and Flood Risk Assessments is also available to support the content of the Local Development Plan. Planning applications are also reviewed against SEPA's indicative flood maps, existing flood studies and records of flooding. Where flood risk is an issue, developers are required to prepare and submit a site-specific flood risk assessment and drainage impact assessment as applicable. They must also consider how a development site will be drained and how surface water runoff will be managed through the implementation of appropriate Sustainable Urban Drainage Measures.</p> <p>So as to align the flood risk management and land use planning systems, land use planning objectives and actions have been</p>

	developed which can be viewed in Annex 3 . The Council will coordinate land use planning policies with related actions.
Related Actions:	Flood protection study, awareness raising, self Help, Maintenance, Strategic Mapping & Modelling
Funding Arrangement:	SEPA's land use planning activities are funded by Scottish Government through SEPA's grant in aid settlement. Perth & Kinross Council's planning activities are funded from the Council's revenue budget. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.

3.9 Tyndrum & Crianlarich PVA 08/09

Local Plan District	Local authority	Main catchment
Tay	Stirling Council	River Tay

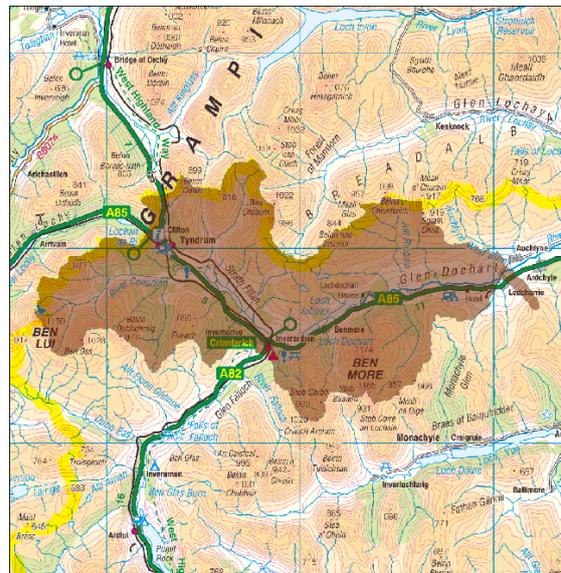
Background and summary of impacts

This Potentially Vulnerable Area is 166km². It is situated in the upper reaches of the River Tay catchment and includes Tyndrum and Crianlarich. The main watercourses are the River Fillan and River Dochart, and it also includes Loch Dochart and Loch Lubhair.

The majority of flood risk in this area is dispersed between Crianlarich, from the River Fillan, and Tyndrum, from small watercourses.

There are approximately 20 residential properties and 10 non-residential properties at risk of flooding. The Annual Average Damages are approximately £160,000.

For more detailed information please see the [Tay Flood Risk Management Strategy](#)



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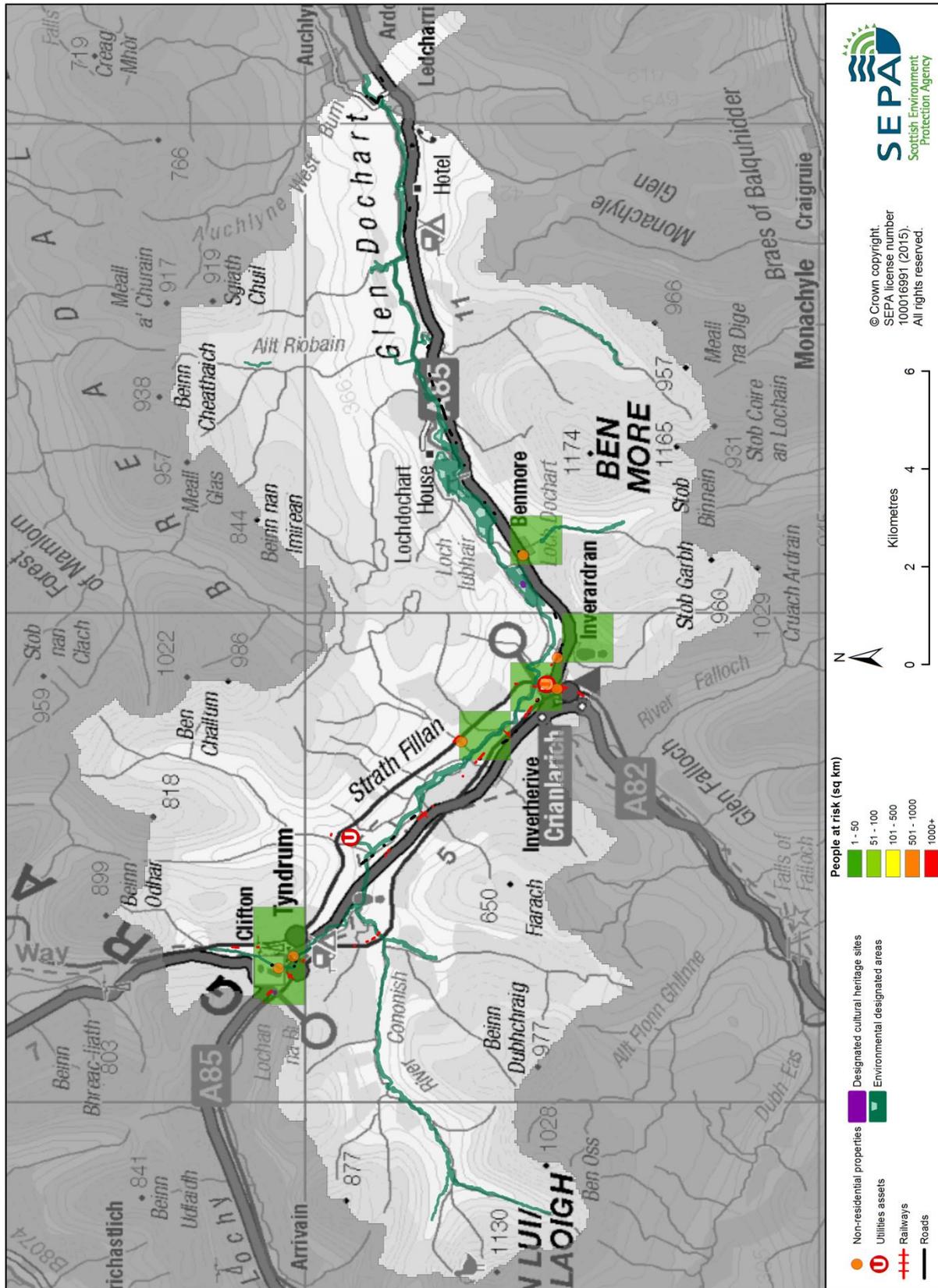


Figure 17: Impacts of flooding in PVA 08/09

(Reproduced from the Tay Flood Risk Management Strategy, SEPA, December 2015)

History of flooding

No significant floods have been recorded in this Potentially Vulnerable Area.

Selected Actions in the Tyndrum & Crianlarich PVA

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):	STRATEGIC MAPPING AND MODELLING (80410016)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Not started	Planned Delivery Period:	SEPA led mapping improvements will be undertaken in 2018 to 2019. Given the size and complexity of the Tay catchment, combined with a number of third party studies and works in particular the A9 Dualling Scheme, there is currently considerable uncertainty over delivery timescales. SEPA will seek to better understand these during 2016 in order to further refine timescales.
Description:	SEPA will seek to develop flood mapping in the River Fillin area to improve understanding of flood risk. The extent and timing of improvements will depend on detailed scoping and data availability.		
Coordination Arrangement:	SEPA's strategic mapping activities will be coordinated with the activities of other responsible authorities as required.		
Related Actions:	Strategic Mapping And Modelling (Scottish Water), Planning Policies		

Funding Arrangement:	SEPA's strategic mapping and modelling activities are funded by Scottish Government through SEPA's grant in aid settlement.
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Action (ID):	FLOOD FORECASTING (80410009)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	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 flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. 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.		
Coordination Arrangement:	SEPA / Met Office joint initiative. Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.		
Related Actions:	Awareness Raising, Self Help, Emergency Plans/Response		
Funding Arrangement:	SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.		

Action (ID):	AWARENESS RAISING (80410013)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Responsible authorities		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	Public awareness, participation and community support are essential components of sustainable flood risk management. 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. The Scottish government is developing curriculum resources to be used in Schools to increase awareness. 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. Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and		

	<p>marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships.</p> <p>Local authorities will be undertaking additional awareness raising activities when developing any specific project proposals and will engage with community resilience groups and local communities. Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.</p> <p>More general information and flooding guidance will be available on the website at: https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information</p>
Coordination Arrangement:	<p>Awareness raising will be coordinated through the Local Plan District partnership between SEPA and the responsible authorities.</p> <p>SEPA and the responsible authorities will use any studies, projects and flood schemes to engage with communities and raise awareness of flood risk.</p> <p>Communications activity will be coordinated through existing arrangements within Local Plan District Partnerships. Information will be disseminated through website, social media and other community engagement activity.</p> <p>SEPA and responsible authorities will coordinate awareness raising activities with related actions</p>
Related Actions:	Flood Warning, Self Help, Emergency Plans/Response, Flood Forecasting
Funding Arrangement:	<p>SEPA's awareness raising activities are funded by Scottish Government through SEPA's grant in aid settlement. Awareness raising activities will be funded from the Council's revenue budget. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</p>

Action (ID):	SELF-HELP (80410011)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	N/A		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Everyone is responsible for protecting themselves and their property from flooding. Self help actions can be undertaken by any individuals, businesses, organisations or communities at risk of flooding. They are applicable to all sources, frequency and scales of flooding. They focus on awareness raising and understanding of flood risk.</p>		

	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 the Resilient Communities Initiative, and ensuring that properties and businesses are insured against flood damage
Coordination Arrangement:	Responsible Authorities have a duty to raise public awareness of flood risk. Helping individuals understand the risks from which they are most vulnerable from is the first step in the process. Responsible Authorities will also actively promote Floodline.
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Maintenance, Emergency Plans/Response
Funding Arrangement:	Individuals have prime responsibility to protect themselves and their property from flooding and are therefore are expected to meet the costs of protecting themselves.

Action (ID):	MAINTENANCE (80410007)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Perth and Kinross Council, asset / land managers		
Status:	Existing	Planned Delivery Period:	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 will undertake risk based inspection, maintenance 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> <p>Sections 18 and 59 of the Flood Risk Management (Scotland) Act 2009 place duties of watercourse assessment, clearance and repair on local authorities. In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or defences.</p>		
Coordination Arrangement:	<p>Sections 17 and 18 of the Flood Risk Management (Scotland) Act 2009 require local authorities to prepare maps of relevant bodies of water and sustainable urban drainage systems (SUDS), assess flood risk on those bodies of water from time to time and to prepare a schedule of clearance and repair works where such works would substantially reduce flood risk. Under Section 59 of the same Act, Local authorities also have a duty to carry out clearance and repair works described on the schedule. The Council's schedule of clearance and repair works is made available for public inspection on its website.</p> <p>The Council carries out routine, scheduled inspections of watercourses on its list at a frequency which depends on flood risk. Further reactive inspections are carried out when issues are highlighted or during times of flooding. Further bodies of water will</p>		

	<p>be included where it has been identified that they may give rise to a risk of flooding.</p> <p>Any identified clearance and repair works from these inspections are logged in a database and are undertaken in order of priority, subject to available funding.</p> <p>Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk. In the first instance, clearance and repair works are therefore referred to the landowner, where they can be identified. The Council usually only carries out works where there has been a failure of the landowner to act, where landownership is not clear, or where urgent intervention is required.</p> <p>In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or works. Scottish Water undertakes risk based inspection, maintenance 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. Local Authorities will liaise with SEPA where controlled activities may be required and with private landowners where they may require to take access on private land or to notify landowners that they require to undertake maintenance. The Council will coordinate maintenance activities with related actions.</p>
Related Actions:	Raising Awareness, Self Help, Community Flood Action Groups
Funding Arrangement:	<p>Maintenance activities are subject to funding from the relevant Perth and Kinross Council revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator. All business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure</p>

Action (ID):	EMERGENCY PLANS/RESPONSE (80410014)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Category 1 and 2 Responders		
Status:	Existing	Planned Delivery Period:	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 coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. Emergency response plans are applicable for all types of flooding. They set out the steps to be taken during flooding in order to maximise safety and minimise impacts where possible. Under the</p>		

	<p>Civil Contingencies Act, Category 1 Responders have a duty to maintain emergency plans. Emergency plans may also be prepared by individuals, businesses, organisations or communities.</p> <p>Scottish Water is a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required.</p>
Coordination Arrangement:	<p>Perth and Kinross Council has developed a Generic Emergency Plan and a Flooding Emergency Response Plan. The Plan is designed to ensure that contingency measures are in place for the coordinated and flexible response to flooding incidents to mitigate the effects of flooding emergencies.</p> <p>SEPA flood alerts and warnings will be monitored and resources made ready as required. A coordinated response will follow any reports of flooding.</p> <p>Emergency response is coordinated with regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. A debrief and plan review will be carried out following any flood events.</p> <p>Protecting property from flooding is the responsibility of the owner of the property, but Perth & Kinross Council can sometimes provide sandbags to properties. Unfortunately the Council only has the resources to supply sandbags to residents where there is an imminent risk of flooding.</p> <p>Emergency plans/response activities will be coordinated with related actions.</p>
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Self Help
Funding Arrangement:	<p>Funding is allocated to category 1 and 2 responders by the Scottish Government for dealing with emergency response and in extreme cases may reimburse responders after an extreme event. Emergency response activities are funded from the Council's revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure</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	Planned Delivery Period:	Ongoing
Description:	National planning policies 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		

	<p>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 generally be avoided. For further information on the application of national planning policies see Annex 3.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the Flood Risk Management (Scotland) 2009. SEPA also has a duty to co-operate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engage in the planning system, including guidance on flood risk and planning is available on SEPA website http://www.sepa.org.uk/environment/land/planning/</p> <p>Current national planning policies, the Scottish Planning Policy and accompanying Planning Advice notes restrict development within the floodplain and limit exposure of new receptors to flood risk. In addition to national policies, local planning policies may place further requirements within their area of operation to restrict inappropriate development and prevent unacceptable risk. Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.</p>
<p>Coordination Arrangement:</p>	<p>Perth and Kinross Council is a local planning authority and will coordinate its work with the strategic development planning authority and the National Parks Authorities, who are also planning authorities.</p> <p>The Council's Flooding Team are consulted on planning applications and work with the Planning and Development Service to ensure that flood risk is addressed. The Perth & Kinross Local Development Plan provides the framework against which planning applications outside the National Parks are assessed and is consistent with the Strategic Development Plan (TAYplan). Supplementary Guidance on Flood Risk and Flood Risk Assessments is also available to support the content of the Perth & Kinross Local Development Plan. Planning applications within the National Parks are assessed against their respective Local Development Plans, which also contain policies in relation to flood risk. Planning applications are also reviewed against SEPA's indicative flood maps, existing flood studies and records of flooding. Where flood risk is an issue, developers are required to prepare and submit a site-specific flood risk assessment and drainage impact assessment as applicable. They must also consider how a development site will be drained and how surface</p>

	<p>water runoff will be managed through the implementation of appropriate Sustainable Urban Drainage Measures. So as to align the flood risk management and land use planning systems, land use planning objectives and actions have been developed which can be viewed in Annex 3. The Council will coordinate land use planning policies with related actions.</p>
<p>Related Actions:</p>	<p>Awareness Raising, self Help, Maintenance, Strategic Mapping & Modelling</p>
<p>Funding Arrangement:</p>	<p>SEPA's land use planning activities are funded by Scottish Government through SEPA's grant in aid settlement. Perth & Kinross Council's planning activities are funded from the Council's revenue budget. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure. Planning activities are funded from the National Park's revenue budget which is a combination of Scottish Government direct grant and planning fees.</p>

3.10 Almondbank PVA 08/10

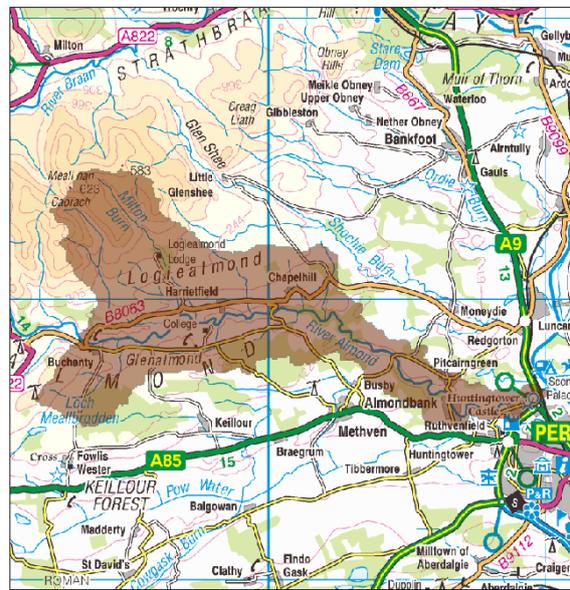
Local Plan District	Local authority	Main catchment
Tay	Perth and Kinross Council	River Almond (River Tay)

Background and summary of impacts

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.

The area has a risk of surface water and river flooding. The majority of damages are caused by river flooding. The highest risk of river flooding is from the River Almond and the East Pow Burn to Almondbank.

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. For more detailed information please see the [Tay Flood Risk Management Strategy](#)



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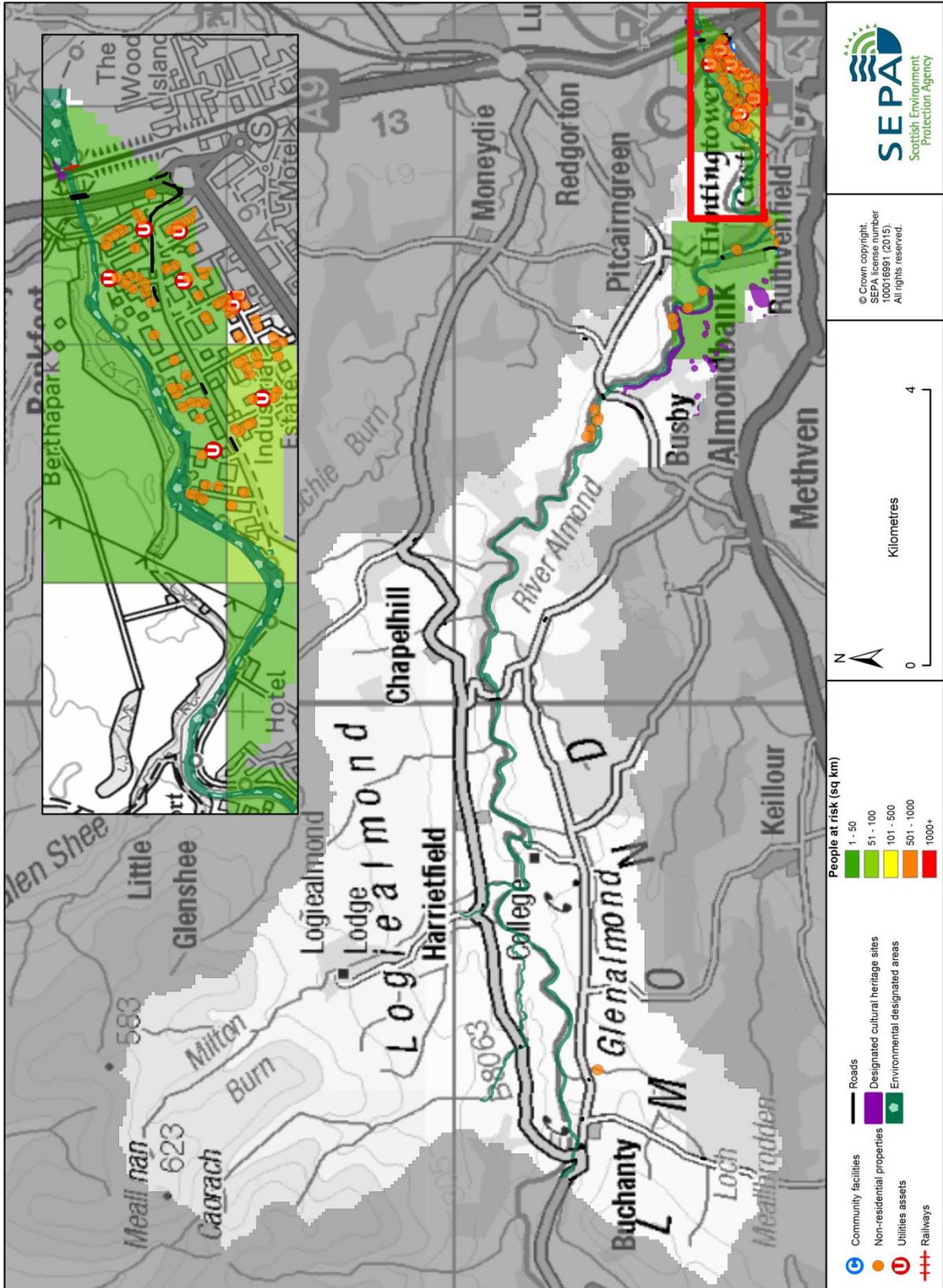


Figure 18: Impacts of flooding in PVA 08/10

(Reproduced from the Tay Flood Risk Management Strategy, SEPA, December 2015)

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.

Selected Actions in the Almondbank PVA

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):	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		
Status:	Ongoing	Planned Delivery Period:	2016-2017
Description:	The Almondbank Flood Protection Scheme is currently under construction and is scheduled to be completed by summer 2017. The scheme will reduce the risk of flooding to Almondbank 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.
Coordination Arrangement:	The Almondbank Flood Protection Scheme is being coordinated through the Tay Local Plan District Partnership. The Council will coordinate the flood protection scheme with related actions.
Related Actions:	Strategic mapping and modelling, Maintain flood protection scheme, Flood warning, Flood forecasting, Awareness raising, Self-help, Maintenance, Emergency plans/response, Planning Policies.
Funding Arrangement:	The Almondbank Flood Protection Scheme has capital funding in place (80% capital grant funding from the Scottish Government with the remaining funding being provided from Perth & Kinross Council's capital programme).
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 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.

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	Planned Delivery Period:	2016-2022
Description:	Continue to maintain the existing flood protection schemes that protect 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.		
Coordination Arrangement:	Perth & Kinross Council's Roads Maintenance Partnership will maintain any existing flood protection scheme through a programme of inspections carried out in accordance with the recommendations set out in the scheme maintenance manuals. Maintenance works will be coordinated with SEPA, SNH,		

	landowners and other stakeholders as required. The maintenance of the flood scheme will also be coordinated with related actions.
Related Actions:	Flood warning, Flood forecasting, Self-help, Awareness raising, Maintenance Emergency plans/response.
Funding Arrangement:	The maintenance of flood protection schemes will be subject to funding from Perth & Kinross Council's Revenue Budget.

Action (ID):	STRATEGIC MAPPING AND MODELLING (80410016)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Not started	Planned Delivery Period:	SEPA led mapping improvements in the River Almond area will be undertaken in 2017. Given the size and complexity of the Tay catchment, combined with a number of third party studies and works in particular the A9 Dualling Scheme, there is currently considerable uncertainty over delivery timescales. SEPA will seek to better understand these during 2016 in order to further refine timescales. Surface water mapping improvements are expected to be undertaken in 2016 to 2017.
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.		
Coordination Arrangement:	The Almondbank Flood Protection Scheme is currently under construction. SEPA will work with the local authority to ensure that strategic mapping and modelling developments reflect the changes in flood risk resulting from the new flood protection scheme where appropriate and relevant.		
Related Actions:	Flood protection scheme, strategic mapping and modelling (Scottish Water), Planning Policies.		

Funding Arrangement:	SEPA's strategic mapping and modelling activities are funded by Scottish Government through SEPA's grant in aid settlement.
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Action (ID):	STRATEGIC MAPPING AND MODELLING (80410019)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Scottish Water		
Status:	Not Started	Planned Delivery Period:	Almondbank 2016-2018 Perth City 2016-2018
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. Scottish Water will undertake further investigation and modelling in the Almondbank and Perth City sewer catchments to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.		
Coordination Arrangement:	Scottish Water will work with responsible authorities to incorporate relevant information into these studies and by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform surface water management plans and SEPA flood hazard and risk maps.		
Related Actions:	Strategic Mapping And Modelling (SEPA)		
Funding Arrangement:	Scottish Water funding is committed in its capital programme through Q&S 4a (2015-2021) which is approved by its regulators and customers.		

Action (ID):	MAINTAIN FLOOD WARNING (80410030)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	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. When flood events occur in an area with an existing flood warning service, SEPA will seek to verify the flood forecasts and warnings. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.		
Coordination Arrangement:	A flood protection scheme is currently under construction for Almondbank. SEPA will work with the local authority to ensure that changes to hydrology and flood risk as a result of the flood protection scheme are fully considered in the existing flood warning system.		

Related Actions:	Flood protection scheme, flood forecasting, awareness raising, emergency response, self help.
Funding Arrangement:	The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement.

Action (ID):	FLOOD FORECASTING (80410009)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	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 flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. 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>		
Coordination Arrangement:	SEPA / Met Office joint initiative. Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.		
Related Actions:	Awareness Raising, Self Help, Emergency Plans/Response, maintain flood warning.		
Funding Arrangement:	SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.		

Action (ID):	AWARENESS RAISING (80410013)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Responsible Authorities		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Public awareness, participation and community support are essential components of sustainable flood risk management. 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.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These</p>		

	<p>resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships.</p> <p>For the new flood protection scheme, SEPA will support the local authority's communications and engagement activities with media activity, local public awareness events and education engagement with schools. SEPA will also deliver joint communications with local authorities for Floodline customers in any newly protected flood warning area.</p> <p>Local authorities will be undertaking additional awareness raising activities when developing any specific project proposals and will engage with community resilience groups and local communities. Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.</p> <p>More general information and flooding guidance will be available on the website at: https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information</p>
<p>Coordination Arrangement:</p>	<p>Awareness raising will be coordinated through the Local Plan District partnership between SEPA and the responsible authorities.</p> <p>SEPA and the responsible authorities will use any studies, projects and flood schemes to engage with communities and raise awareness of flood risk.</p> <p>Communications activity will be coordinated through existing arrangements within Local Plan District Partnerships. Information will be disseminated through website, social media and other community engagement activity.</p> <p>SEPA and responsible authorities will coordinate awareness raising activities with related actions.</p>
<p>Related Actions:</p>	<p>Flood protection scheme, Community Flood Action groups, Flood Warning, Self Help, Emergency Plans/Response, Flood Forecasting</p>
<p>Funding Arrangement:</p>	<p>Awareness raising activities will be funded from the Council's revenue budget.</p> <p>SEPA's awareness raising activities are funded by Scottish Government through SEPA's grant in aid settlement. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</p>

Action (ID):	SELF-HELP (80410011)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	-		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Everyone is responsible for protecting themselves and their property from flooding. Self help actions can be undertaken by any individuals, businesses, organisations or communities at risk of flooding. They are applicable to all sources, frequency and scales of flooding. They focus on awareness raising and understanding of flood risk.</p> <p>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>		
Coordination Arrangement:	<p>Responsible Authorities have a duty to raise public awareness of flood risk. Helping individuals understand the risks from which they are most vulnerable from is the first step in the process. Responsible Authorities will also actively promote Floodline.</p>		
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Maintenance, Emergency Plans/Response		
Funding Arrangement:	Individuals have prime responsibility to protect themselves and their property from flooding and are therefore are expected to meet the costs of protecting themselves.		

Action (ID):	MAINTENANCE (80410007)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Perth and Kinross Council, asset / land managers		
Status:	Existing	Planned Delivery Period:	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 undertakes risk based inspection, maintenance 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> <p>Sections 18 and 59 of the Flood Risk Management (Scotland) Act 2009 place duties of watercourse assessment, clearance and repair on local authorities. In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or defences.</p>		
Coordination Arrangement:	Sections 17 and 18 of the Flood Risk Management (Scotland) Act 2009 require local authorities to prepare maps of relevant bodies		

	<p>of water and sustainable urban drainage systems (SUDS), assess flood risk on those bodies of water from time to time and to prepare a schedule of clearance and repair works where such works would substantially reduce flood risk. Under Section 59 of the same Act, Local authorities also have a duty to carry out clearance and repair works described on the schedule. The Council's schedule of clearance and repair works is made available for public inspection on its website.</p> <p>The Council carries out routine, scheduled inspections of watercourses on its list at a frequency which depends on flood risk. Further reactive inspections are carried out when issues are highlighted or during times of flooding. Further bodies of water will be included where it has been identified that they may give rise to a risk of flooding.</p> <p>Any identified clearance and repair works from these inspections are logged in a database and are undertaken in order of priority, subject to available funding.</p> <p>Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk. In the first instance, clearance and repair works are therefore referred to the landowner, where they can be identified. The Council usually only carries out works where there has been a failure of the landowner to act, where landownership is not clear, or where urgent intervention is required.</p> <p>In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or works. Scottish Water undertakes risk based inspection, maintenance 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. Local Authorities will liaise with SEPA where controlled activities may be required and with private landowners where they may require to take access on private land or to notify landowners that they require to undertake maintenance.</p> <p>The Council will coordinate maintenance activities with related actions.</p>
Related Actions:	Raising Awareness, Self Help, Community Flood Action Groups.
Funding Arrangement:	<p>Maintenance activities are subject to funding from the relevant Perth and Kinross Council revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator. All business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure</p>

Action (ID):	EMERGENCY PLANS/RESPONSE (80410014)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Category 1 and 2 Responders		
Status:	Existing	Planned Delivery Period:	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 coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. Emergency response plans are applicable for all types of flooding. They set out the steps to be taken during flooding in order to maximise safety and minimise impacts where possible. Under the Civil Contingencies Act, Category 1 Responders have a duty to maintain emergency plans. Emergency plans may also be prepared by individuals, businesses, organisations or communities.</p> <p>Scottish Water is a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required.</p>		
Coordination Arrangement:	<p>Perth and Kinross Council has developed a Generic Emergency Plan and a Flooding Emergency Response Plan. The Plan is designed to ensure that contingency measures are in place for the coordinated and flexible response to flooding incidents to mitigate the effects of flooding emergencies.</p> <p>SEPA flood alerts and warnings will be monitored and resources made ready as required. A coordinated response will follow any reports of flooding.</p> <p>Emergency response is coordinated with regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. A debrief and plan review will be carried out following any flood events.</p> <p>Protecting property from flooding is the responsibility of the owner of the property, but Perth & Kinross Council can sometimes provide sandbags to properties. Unfortunately the Council only has the resources to supply sandbags to residents where there is an imminent risk of flooding. Emergency plans/response activities will be coordinated with related actions.</p>		
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Self Help		
Funding Arrangement:	<p>Funding is allocated to category 1 and 2 responders by the Scottish Government for dealing with emergency response and in extreme cases may reimburse responders after an extreme event. Emergency response activities are funded from the Council's revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their</p>		

	economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.		
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	Planned Delivery Period:	Ongoing
Description:	<p>The Scottish Planning Policy (SPP) and accompanying Planning Advice Notes set out the 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 SPP 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 generally be avoided. For further information on the application of national planning policies see Annex 3.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the Flood Risk Management (Scotland) 2009. SEPA also has a duty to co-operate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engage in the planning system, including guidance on flood risk and planning is available on SEPA website http://www.sepa.org.uk/environment/land/planning/</p> <p>Current national planning policies, the Scottish Planning Policy and accompanying Planning Advice notes restrict development within the floodplain and limit exposure of new receptors to flood risk. In addition to national policies, local planning policies may place further requirements within their area of operation to restrict inappropriate development and prevent unacceptable risk. Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.</p>		
Coordination Arrangement:	Perth and Kinross Council is a local planning authority and will coordinate its work with the strategic development planning authority and the National Parks Authorities. The Council's Flooding Team are consulted on planning		

	<p>applications and work with the Planning and Development Service to ensure that flood risk is addressed. The Local Development Plan provides the framework against which planning applications are assessed and is consistent with the Strategic Development Plan (TAYplan). Supplementary Guidance on Flood Risk and Flood Risk Assessments is also available to support the content of the Local Development Plan. Planning applications are also reviewed against SEPA’s indicative flood maps, existing flood studies and records of flooding. Where flood risk is an issue, developers are required to prepare and submit a site-specific flood risk assessment and drainage impact assessment as applicable. They must also consider how a development site will be drained and how surface water runoff will be managed through the implementation of appropriate Sustainable Urban Drainage Measures.</p> <p>So as to align the flood risk management and land use planning systems, land use planning objectives and actions have been developed which can be viewed in Annex 3. The Council will coordinate land use planning policies with related actions.</p>
<p>Related Actions:</p>	<p>Flood protection scheme, awareness Raising, self Help, Maintenance, Strategic Mapping & Modelling</p>
<p>Funding Arrangement:</p>	<p>SEPA's land use planning activities are funded by Scottish Government through SEPA’s grant in aid settlement. Perth & Kinross Council's planning activities are funded from the Council's revenue budget. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</p>

3.11 Scone PVA 08/11

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

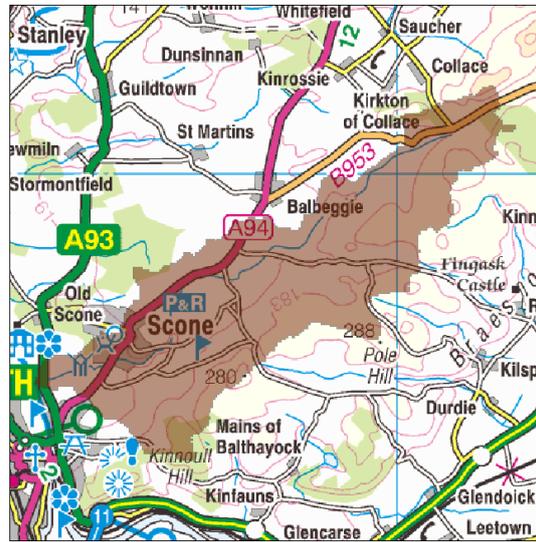
Background and summary of impacts

This Potentially Vulnerable Area is 30km² and situated in the lower reaches of the River Tay catchment. It includes Scone and the main watercourse is the Annaty Burn.

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

There are approximately 40 residential properties and 50 non-residential properties at risk of flooding. The Annual Average Damages are approximately £320,000.

For more detailed information please see the [Tay Flood Risk Management Strategy](#)



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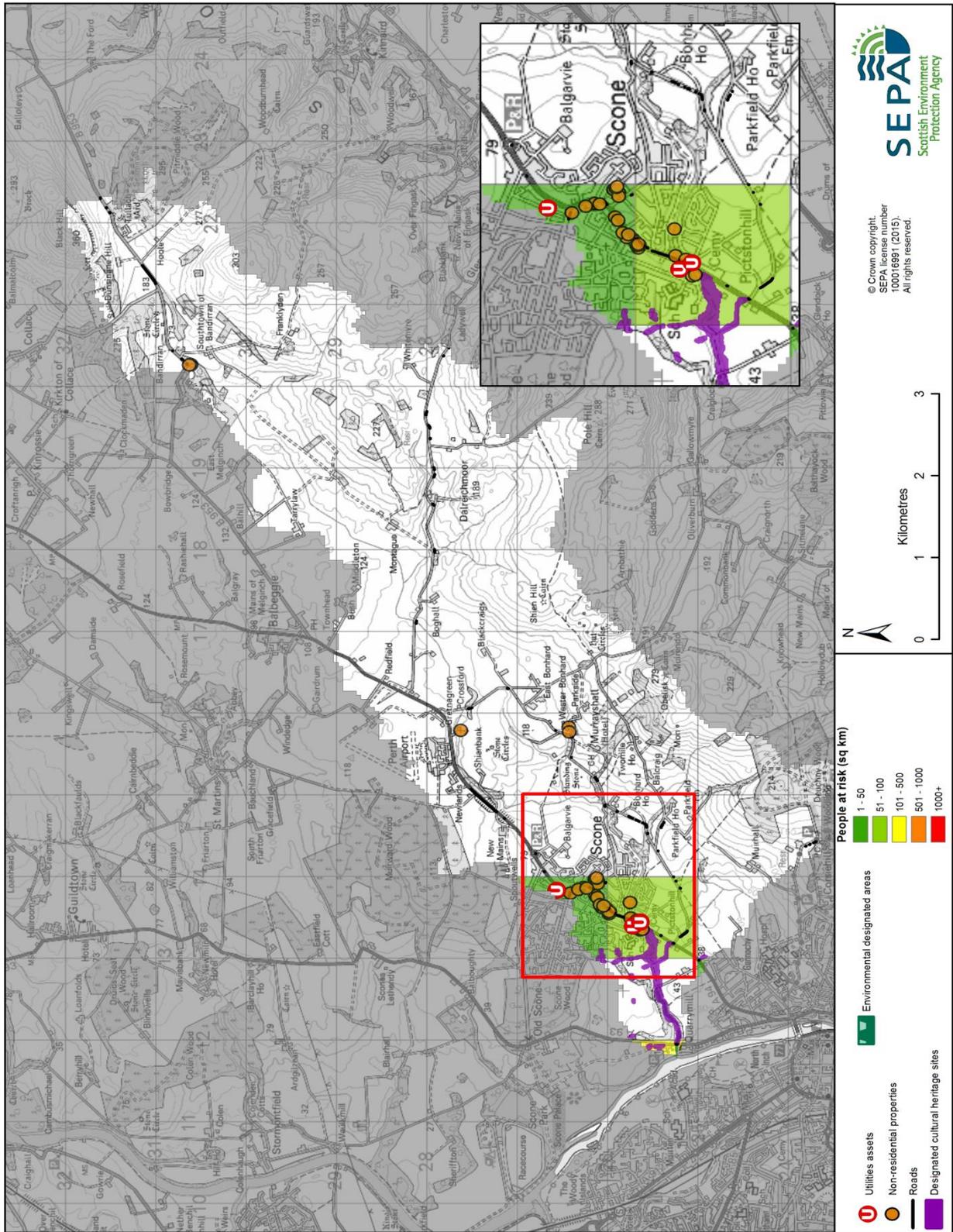


Figure 19: Impact of flooding in PVA 08/11

(Reproduced from the Tay Flood Risk Management Strategy, SEPA, December 2015)

History of flooding

The following significant flood events have been recorded:

- A series of small scale localised floods in Scone caused by a collapse of an old barrel drain in poor condition and associated drainage were recorded in 2010, 2013 and 2014.
- August 2004: Scone experienced a period of high intensity rainfall, resulting in flooding to a number of properties. Surface water flooding occurred to properties and gardens on Highfield Road, Murray Road and Angus Road. The Annaty Burn also caused flooding to a number of properties on Den Road, Perth Road and Burnside.

Selected Actions in the Scone PVA

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):	FLOOD PROTECTION SCHEME/WORKS (80230006)		
Objective(ID):	Reduce economic damages to residential and non-residential properties in the Scone Potentially Vulnerable Area caused by river flooding (8023)		
Delivery Lead:	Perth & Kinross Council		
Priority:	National: 34 of 42	Local Authority: 4 of 4	Within LPD: 2 of 2
Status:	Not started.	Planned Delivery Period:	2018-2021
Description:	A flood protection scheme has been proposed to address the risk of river flooding to the Goshenbank Park and Burnside area in Scone from the Annaty Burn. The preferred option consists of raising existing footbridges and constructing riverside defences. The scheme would provide a 1 in 200 year standard of protection. Outline design development of the scheme is expected to commence in the 2018/19 financial year.		
Coordination Arrangement:	The scheme will be coordinated through the Tay Local Plan District Partnership. The flood protection scheme will be coordinated with related actions.		

Related Actions:	Flood protection study, surface water plan/study, Strategic mapping and modelling, Flood forecasting, Awareness raising, Self-help, Maintenance, Emergency plans/response, Planning policies.
Funding Arrangement:	The Annaty Burn Flood Protection Scheme will be subject to available capital funding (up to 80% capital grant funding from the Scottish Government with the remaining funding being provided from Perth & Kinross Council's capital programme).
Potential Impacts	
Economic:	The proposed scheme may benefit 35 residential properties and nine non-residential properties at risk of flooding in this location, with estimated damages avoided of £880,000. The economic assessment for the scheme will be reviewed and updated during development of the outline design.
Social:	A reduction in flood risk would have a positive benefit to the health and wellbeing of the community. There may be negative impacts through disturbance to the local community during the construction phase.
Environmental:	Flood protection schemes can have both positive and negative impacts on the ecological quality of the environment depending on how they are designed. The proposed flood protection works are located on the Annaty Burn (water body ID 6413). The physical condition of this river has been identified by SEPA to be at less than good status. Opportunities to improve the condition of the river should be considered by coordinating with river basin management planning. To be in accord with the Tay Local Flood Risk Management Plan, the responsible authority (and where applicable, the licensing authority) should seek to ensure that the works will not have an adverse effect on the integrity of the River Tay Special Area of Conservation. In addition, a number of nationally and locally designated sites are also present in the study area and could be positively or negatively impacted. These include gardens and designed landscapes.

Action (ID):	FLOOD PROTECTION STUDY (80230005)		
Objective(ID):	Reduce economic damages to residential and non-residential properties in the Scone Potentially Vulnerable Area caused by river flooding (8023) Reduce economic damages and number of residential properties at risk of surface water flooding in Scone where practical (8021)		
Delivery Lead:	Perth and Kinross Council		
Priority:	National: 72 of 168	Local Authority: 5 of 6	Within LPD: 5 of 7
Status:	Not Started	Planned Delivery Period:	2020-2022
Description:	A flood protection has been carried out by Perth and Kinross Council for the Annaty Burn, Scone in 2007. The study identified a viable flood protection scheme that is currently being progressed as a priority in the first flood risk management cycle. Further study		

	<p>has been recommended to supplement the previous investigations, looking at natural flood management and surface water flooding (see also Action ID 80210018). Natural flood management options that should be considered include river/floodplain restoration and sediment management. The study should also investigate the viability of property level protection. The study should take a catchment approach and consider the potential benefits and disbenefits and interaction between actions upstream and downstream.</p> <p>Perth and Kinross Council has also carried out a flood protection study for the Barrel drain in Scone in 2007 which did not identify a viable flood protection scheme. However the Perth and Kinross Council intends to re-examine this previous study following recent drain failures and this will be carried out in conjunction with the studies identified above.</p>
Coordination Arrangement:	The study is programmed to commence in the 2020/21 financial year. Perth & Kinross Council will engage a consultant to investigate the fluvial and surface water flood risk and identify potential options for managing that risk. The study will be coordinated through the LPD Partnership and with other related actions.
Related Actions:	Strategic mapping and modelling, Surface water plan/study, Flood forecasting, Awareness raising, Self-help, Maintenance, Emergency plans/response.
Funding Arrangement:	The study will be subject to funding from Perth and Kinross Council's revenue budget.
Potential Impacts	
Economic:	The study could benefit 56 residential properties and 58 non-residential properties at risk of flooding in this location, with potential damages avoided of up to £4.8 million.
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:	Flood protection studies should consider the positive and negative impacts of proposed actions on the ecological quality of the environment and designated sites. Where possible opportunities to enhance and restore the environment should be sought, for example through natural flood management. Annaty Burn (water body ID 6413) is located within the study area and the physical condition of this river is identified by SEPA to be at less than good status. Opportunities to improve the condition of the river should be considered by coordinating with river basin management planning. To be in accord with the Tay Local Flood Risk Management Plan, 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. Gardens and designed landscapes are also present in the study area and could be positively or negatively impacted.
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Action (ID):	STRATEGIC MAPPING AND MODELLING (80410019)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Scottish Water		
Status:	Not Started	Planned Delivery Period:	Perth City 2016-2018 Scone 2016-2019
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. Scottish Water will undertake further investigation and modelling in the Perth City and Scone sewer catchments to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.		
Coordination Arrangement:	Scottish Water will work with responsible authorities to incorporate relevant information into these studies and by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform surface water management plans and SEPA flood hazard and risk maps.		
Related Actions:	Flood protection study, Strategic mapping & Modelling (SEPA), flood forecasting, surface water plan/study		
Funding Arrangement:	Scottish Water funding is committed in its capital programme through Q&S 4a (2015-2021) which is approved by its regulators and customers.		

Action (ID):	FLOOD FORECASTING (80410009)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	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 flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. 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.		
Coordination Arrangement:	SEPA / Met Office joint initiative. Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.		

Related Actions:	Awareness Raising, Self Help, Emergency Plans/Response
Funding Arrangement:	SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.

Action (ID):	AWARENESS RAISING (80410013)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Responsible Authorities		
Status:	The Scottish government is developing curriculum resources to be used in Schools to increase awareness. LPD awareness raising will be coordinated by the LLA and developed through the LPD group.	Planned Delivery Period:	Ongoing
Description:	<p>Public awareness, participation and community support are essential components of sustainable flood risk management. 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.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships.</p> <p>For the new flood protection scheme, SEPA will support the local authority's communications and engagement activities with media activity, local public awareness events and education engagement with schools. SEPA will also deliver joint communications with local authorities for Floodline customers in any newly protected flood warning area.</p> <p>Local authorities will be undertaking additional awareness raising</p>		

	<p>activities when developing any specific project proposals and will engage with community resilience groups and local communities. Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies. More general information and flooding guidance will be available on the website at: https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information</p>
Coordination Arrangement:	<p>Awareness raising will be coordinated through the Local Plan District partnership between SEPA and the responsible authorities. SEPA and the responsible authorities will use any studies, projects and flood schemes to engage with communities and raise awareness of flood risk. Communications activity will be coordinated through existing arrangements within Local Plan District Partnerships. Information will be disseminated through website, social media and other community engagement activity. SEPA and responsible authorities will coordinate awareness raising activities with related actions</p>
Related Actions:	Flood protection scheme, Self Help, Emergency Plans/Response, Flood Forecasting
Funding Arrangement:	<p>SEPA's awareness raising activities are funded by Scottish Government through SEPA's grant in aid settlement. Awareness raising activities will be funded from the Council's revenue budget. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</p>

Action (ID):	SELF-HELP (80410011)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	-		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Everyone is responsible for protecting themselves and their property from flooding. Self help actions can be undertaken by any individuals, businesses, organisations or communities at risk of flooding. They are applicable to all sources, frequency and scales of flooding. They focus on awareness raising and understanding of flood risk. 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</p>		

	Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.
Coordination Arrangement:	Responsible Authorities have a duty to raise public awareness of flood risk. Helping individuals understand the risks from which they are most vulnerable from is the first step in the process. Responsible Authorities will also actively promote Floodline.
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Maintenance, Emergency Plans/Response
Funding Arrangement:	Individuals have prime responsibility to protect themselves and their property from flooding and are therefore are expected to meet the costs of protecting themselves.

Action (ID):	SURFACE WATER PLAN/STUDY (80210018)		
Objective(ID):	Reduce economic damages and number of residential properties at risk of surface water flooding in Scone where practical (8021)		
Delivery Lead:	Perth and Kinross Council		
Status:	Ongoing	Planned Delivery Period:	2020-2022
Description:	<p>The area must be covered by a surface water management plan or plans that set objectives for the management of surface water flood risk and identify the most sustainable actions to achieve the objectives.</p> <p>This surface water management plan will be delivered by Perth & Kinross Council as part of the flood protection study (Action ID 80230005).</p> <p>Scottish Water will provide local knowledge and understanding of the sewer network. This includes Scottish Water corporate data (as applicable) and, where available, outputs of Section 16 or integrated catchment studies, to assist with the surface water management planning process.</p>		
Coordination Arrangement:	<p>The flood protection study and surface water management plan are programmed to commence in the 2020/21 financial year. Perth and Kinross Council will engage a consultant to investigate the surface water flood risk and identify potential options for managing that risk. The plan/study will be coordinated through the Tay Local Plan District Partnership and with other related actions.</p> <p>Scottish Water will work with and support surface water management planning through ensuring that best available knowledge and data is used to input into the surface water management plans.</p>		
Related Actions:	Flood protection study, Strategic mapping and modelling, Flood forecasting, Awareness raising, Self-help, Maintenance, Emergency plans/response.		
Funding Arrangement:	The surface water plan/study will be subject to funding from Perth and Kinross Council's revenue budget.		

Action (ID):	MAINTENANCE (80410007)
Objective(ID):	Reduce overall flood risk (8041)

Delivery Lead:	Perth and Kinross Council, asset / land managers		
Status:	Existing	Planned Delivery Period:	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 undertakes risk based inspection, maintenance 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> <p>Sections 18 and 59 of the Flood Risk Management (Scotland) Act 2009 place duties of watercourse assessment, clearance and repair on local authorities. In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or defences.</p>		
Coordination Arrangement:	<p>Sections 17 and 18 of the Flood Risk Management (Scotland) Act 2009 require local authorities to prepare maps of relevant bodies of water and sustainable urban drainage systems (SUDS), assess flood risk on those bodies of water from time to time and to prepare a schedule of clearance and repair works where such works would substantially reduce flood risk. Under Section 59 of the same Act, Local authorities also have a duty to carry out clearance and repair works described on the schedule. The Council's schedule of clearance and repair works is made available for public inspection on its website.</p> <p>The Council carries out routine, scheduled inspections of watercourses on its list at a frequency which depends on flood risk. Further reactive inspections are carried out when issues are highlighted or during times of flooding. Further bodies of water will be included where it has been identified that they may give rise to a risk of flooding.</p> <p>Any identified clearance and repair works from these inspections are logged in a database and are undertaken in order of priority, subject to available funding.</p> <p>Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk. In the first instance, clearance and repair works are therefore referred to the landowner, where they can be identified. The Council usually only carries out works where there has been a failure of the landowner to act, where landownership is not clear, or where urgent intervention is required.</p> <p>In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or works. Scottish Water undertakes risk based inspection, maintenance 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>		

	Local Authorities will liaise with SEPA where controlled activities may be required and with private landowners where they may require to take access on private land or to notify landowners that they require to undertake maintenance. The Council will coordinate maintenance activities with related actions.
Related Actions:	Raising Awareness, Self Help, Community Flood Action Groups
Funding Arrangement:	Maintenance activities are subject to funding from the relevant Perth and Kinross Council revenue budget. Scottish Water is funded by customer charges as set by their economic regulator. All business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.

Action (ID):	EMERGENCY PLANS/RESPONSE (80410014)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Category 1 and 2 Responders		
Status:	Existing	Planned Delivery Period:	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 coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. Emergency response plans are applicable for all types of flooding. They set out the steps to be taken during flooding in order to maximise safety and minimise impacts where possible. Under the Civil Contingencies Act, Category 1 Responders have a duty to maintain emergency plans. Emergency plans may also be prepared by individuals, businesses, organisations or communities.</p> <p>Scottish Water is a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required.</p>		
Coordination Arrangement:	<p>Perth and Kinross Council has developed a Generic Emergency Plan and a Flooding Emergency Response Plan. The Plan is designed to ensure that contingency measures are in place for the coordinated and flexible response to flooding incidents to mitigate the effects of flooding emergencies.</p> <p>SEPA flood alerts and warnings will be monitored and resources made ready as required. A coordinated response will follow any reports of flooding.</p> <p>Emergency response is coordinated with regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. A debrief and plan review will be</p>		

	<p>carried out following any flood events.</p> <p>Protecting property from flooding is the responsibility of the owner of the property, but Perth & Kinross Council can sometimes provide sandbags to properties. Unfortunately the Council only has the resources to supply sandbags to residents where there is an imminent risk of flooding.</p> <p>Emergency plans/response activities will be coordinated with related actions.</p>
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Self Help
Funding Arrangement:	<p>Funding is allocated to category 1 and 2 responders by the Scottish Government for dealing with emergency response and in extreme cases may reimburse responders after an extreme event. Emergency response activities are funded from the Council's revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</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	Planned Delivery Period:	Ongoing
Description:	<p>The Scottish Planning Policy (SPP) and accompanying Planning Advice Notes set out the 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 SPP 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.</p> <p>Under this approach, new development in areas with medium to high likelihood of flooding should generally be avoided.</p> <p>For further information on the application of national planning policies see Annex 3.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the Flood Risk Management (Scotland) 2009. SEPA also has a duty to co-operate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engage</p>		

	<p>in the planning system, including guidance on flood risk and planning is available on SEPA website http://www.sepa.org.uk/environment/land/planning/</p> <p>Current national planning policies, the Scottish Planning Policy and accompanying Planning Advice notes restrict development within the floodplain and limit exposure of new receptors to flood risk. In addition to national policies, local planning policies may place further requirements within their area of operation to restrict inappropriate development and prevent unacceptable risk. Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.</p>
<p>Coordination Arrangement:</p>	<p>Perth and Kinross Council is a local planning authority and will coordinate its work with the strategic development planning authority and the National Parks Authorities.</p> <p>The Council's Flooding Team are consulted on planning applications and work with the Planning and Development Service to ensure that flood risk is addressed. The Local Development Plan provides the framework against which planning applications are assessed and is consistent with the Strategic Development Plan (TAYplan). Supplementary Guidance on Flood Risk and Flood Risk Assessments is also available to support the content of the Local Development Plan. Planning applications are also reviewed against SEPA's indicative flood maps, existing flood studies and records of flooding. Where flood risk is an issue, developers are required to prepare and submit a site-specific flood risk assessment and drainage impact assessment as applicable. They must also consider how a development site will be drained and how surface water runoff will be managed through the implementation of appropriate Sustainable Urban Drainage Measures.</p> <p>So as to align the flood risk management and land use planning systems, land use planning objectives and actions have been developed which can be viewed in Annex 3. The Council will coordinate land use planning policies with related actions.</p>
<p>Related Actions:</p>	<p>Flood protection scheme, flood protection study, surface water plan/study, Awareness Raising, self Help, Maintenance, Strategic Mapping & Modelling</p>
<p>Funding Arrangement:</p>	<p>SEPA's land use planning activities are funded by Scottish Government through SEPA's grant in aid settlement. Perth & Kinross Council's planning activities are funded from the Council's revenue budget. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</p>

3.12 Perth to Kinfauns (north of A90) PVA 08/12

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

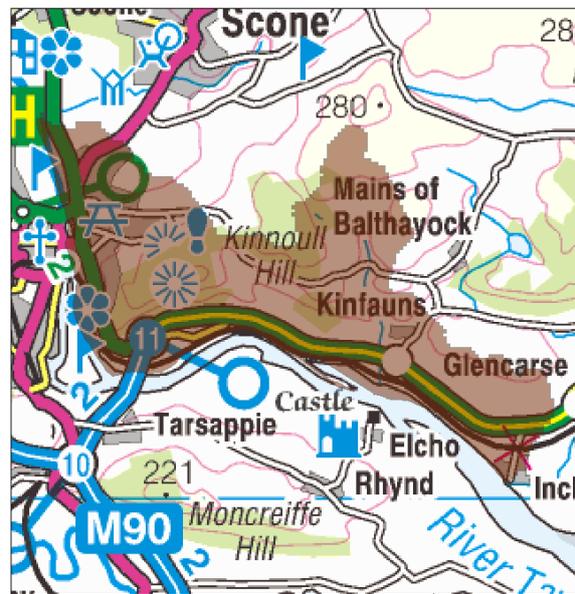
Background and summary of impacts

This Potentially Vulnerable Area is 14km² and part of the River Tay catchment. It is situated on the eastern bank at the mouth of the River Tay where it flows into the Firth of Tay and includes the eastern side of Perth, Kinfauns and Inchyra. The interaction between river and coastal flooding where the River Tay meets the Firth of Tay influences flooding in Perth.

The area has a risk of river, coastal and surface water flooding. The majority of damages occur as a result of river flooding. It should be noted that Perth Flood Protection Scheme reduces the risk of river and coastal flooding in Perth.

There are approximately 80 residential properties and 20 non-residential properties at risk of flooding. The Annual Average Damages are approximately £180,000.

For more detailed information please see the [Tay Flood Risk Management Strategy](#)



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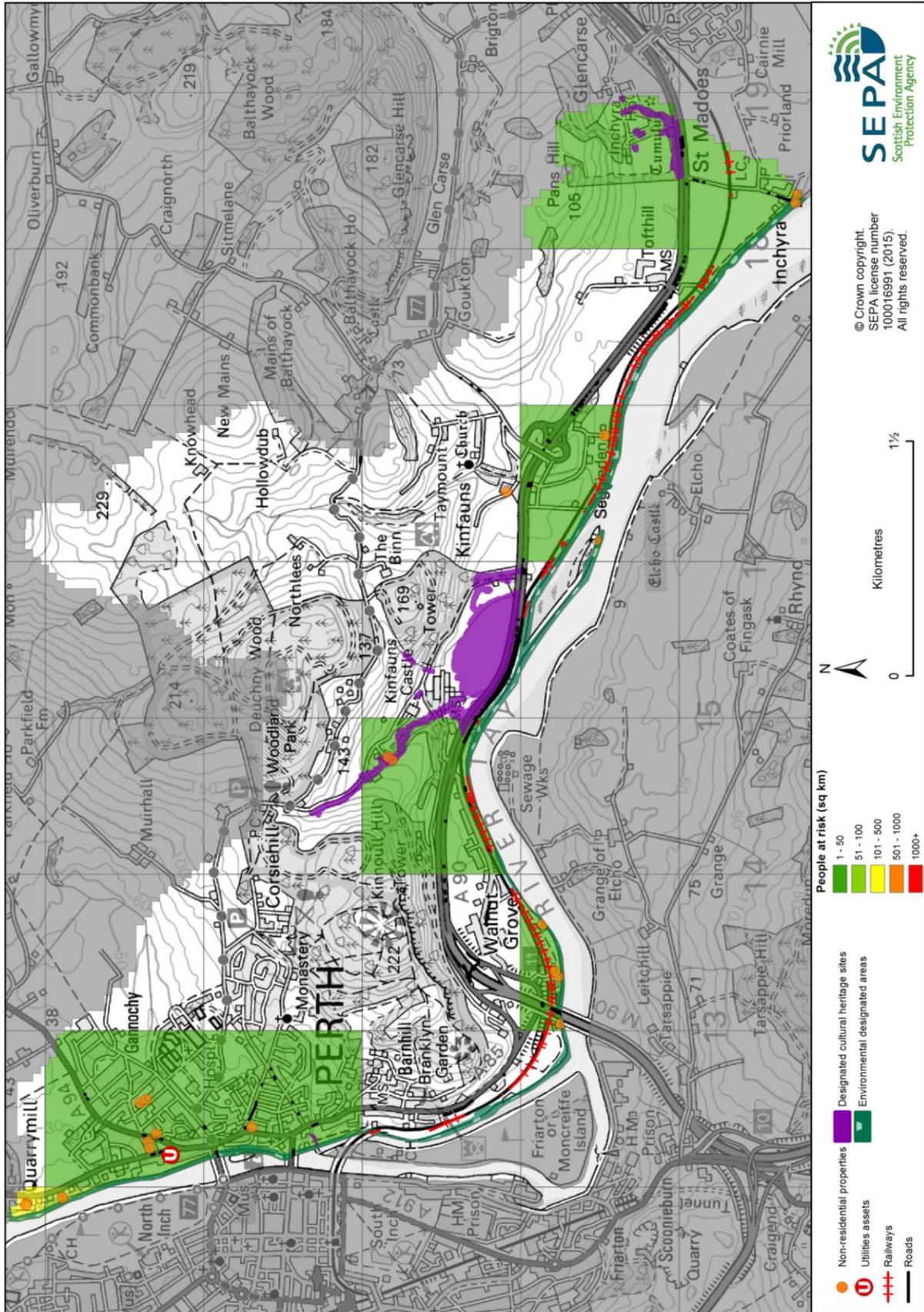


Figure 20: Impacts of flooding in PVA 08/12

(Reproduced from the Tay Flood Risk Management Strategy, SEPA, December 2015)

History of flooding

Perth has a long history of flooding from the River Tay and surface water. A number of river floods may have had tidal influences. The following floods have been recorded in this area:

- December 2015: Storms Desmond and Frank caused prolonged rainfall across Perth & Kinross. Several properties and roads affected.
- July 2012: The Langley Burn flooded at Kinfauns.
- 16 July 2011: Heavy rain caused surface water flooding in Perth. Homes and businesses were affected.
- 21 July 2010: Extensive surface water flooding around Perth affecting properties and roads.
- December 2006: Surface water flooding around Bridgend Court from heavy rain and overwhelmed drains.
- 16 January 1993: Widespread flooding resulted in damage to communication networks, hundreds of properties and farmland in and around Perth, causing an estimated £20 million of damage. Residents were evacuated in the North Muirton housing estate after flood defences were breached.
- 7 February 1990: Following a period of heavy rain and snowfall, widespread flooding affected the whole of the Tay catchment. Properties, roads and railways were damaged. The water level at Smeaton's Bridge in Perth was recorded as 5.85m above ordinary levels.
- 17 February 1950: Flooding within Perth on several roads including Tay Street, North and South Inches, the junction of Scott Street and Marshall Street, Moncrieffe Island, Commercial Street (Bridgend) and James Street. Telephone cables damaged outside Perth and properties flooded.
- February 1928: Residents of several farms in Muirton had to be rescued as roads became impassable.
- 31 January 1903: Nearly all cellars in Perth flooded after heavy rains and strong gales, including North and South Inches, Rose Terrace, North Port, Lower Commercial Street, Princes Street, Nelson Street, Scott Street, James Street, King Street, Edinburgh Road and Marshall Place. Many roads impassable.
- 2 October 1847: Flooding from the River Tay affected Perth, Dunkeld, Dalguise and Dalmarnock. Many residents were evacuated and there were reports of cattle being swept away in flood waters. The water level at Perth Bridge was estimated to be 6.11m above ordinary levels.
- 12 February 1814: Blocks of ice on the River Tay caused bridges to become blocked resulting in widespread flooding to the Perth region. North and South Inch were submerged for two days. An estimated flood height of 7.0m above ordinary levels was recorded on the River Tay.
- 14 February 1774: Snow and ice melt caused widespread flooding from the River Almond and River Tay to Perth and the surrounding area.
- 12-14 October 1621: Constant heavy rain over a two day period caused flooding from the River Tay. Residents were evacuated from numerous properties and severe damage was caused to Milne's Bridge. Perth was surrounded by water for 5-6 days after the event.

Selected Actions in the Perth to Kinfauns (north of A90) PVA

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):	FLOOD PROTECTION SCHEME/WORKS (80240006)		
Objective(ID):	Reduce economic damages and number of residential properties at risk of surface water flooding in Perth where practical (8024)		
Delivery Lead:	Perth and Kinross Council		
Status:	Under Development	Planned Delivery Period:	2019 - 2021
Description:	Flood protection works have been proposed at Bridgend in Perth to reduce the risk of surface water flooding. The proposed works include a high capacity drainage channel and outfall to the River Tay. Outline design of the works will commence in 2019/20.		
Coordination Arrangement:	An integrated catchment study covering the Perth City catchment (Action ID 80240019) will be carried out to support the surface water management planning process (Action ID 80240018) in the Perth surface water management priority area. This will improve the understanding of local surface water flood risk. The flood protection works will be coordinated through the Tay Local Plan District Partnership, taking cognisance of the integrated catchment study and surface water management plan. The flood protection works will be coordinated with related actions.		
Related Actions:	Strategic mapping and modelling, Surface water plan/study, Flood warning, Flood forecasting, Awareness raising, Self-help, Maintenance, Emergency plans/response.		
Funding Arrangement:	The flood protection works will be subject to available funding from Perth & Kinross Council's capital programme.		
Potential Impacts			
Economic:	This action has not been included on the national priority list as the economic impacts have not been defined at this stage. An economic appraisal will be developed during the outline design.		
Social:	A reduction in flood risk would have a positive benefit to the health and wellbeing of the community. There may be negative impacts through disturbance to the local community during the construction phase.		
Environmental:	Flood protection schemes can have both positive and negative impacts on the ecological quality of the environment depending on how they are designed.		

Action (ID):	MAINTAIN FLOOD PROTECTION SCHEME (80260017)		
Objective(ID):	Accept that significant flood risk in Perth is managed appropriately. Maintain existing actions that reduce flood risk in Perth caused by flooding from the River Tay and coastal flooding. (8026)		
Delivery Lead:	Perth and Kinross Council		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	Continue to maintain the existing Perth Flood Protection Scheme along the east bank of the River Tay. The scheme was completed in 2002 and includes major flood defence works such as embankments, walls, sluice gates, ponds and pumping stations.		
Coordination Arrangement:	Perth & Kinross Council's Roads Maintenance Partnership will maintain any existing flood protection scheme through a programme of inspections carried out in accordance with the recommendations set out in the scheme maintenance manuals. Maintenance works will be coordinated with SEPA, SNH, landowners and other stakeholders as required. The maintenance of the flood scheme will also be coordinated with related actions.		
Related Actions:	Flood warning, Flood forecasting, Self-help, Surface water plan/study, Awareness raising, Maintenance Emergency plans/response.		
Funding Arrangement:	The maintenance of flood protection schemes will be subject to funding from Perth & Kinross Council's Revenue Budget.		

Action (ID):	STRATEGIC MAPPING AND MODELLING (80410019)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Scottish Water		
Status:	Not Started	Planned Delivery Period:	Perth City 2016-2018 Scone 2016-2019
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. Scottish Water will undertake further investigation and modelling in the Perth City and Scone sewer catchments to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.		
Coordination Arrangement:	Scottish Water will work with responsible authorities to incorporate relevant information into these studies and by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform surface water management plans and SEPA flood hazard and risk maps.		
Related Actions:	Strategic Mapping And Modelling (SEPA)		

Funding Arrangement:	Scottish Water funding is committed in its capital programme through Q&S 4a (2015-2021) which is approved by its regulators and customers.
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Action (ID):	MAINTAIN FLOOD WARNING (80410030)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Continue to maintain the Basement Properties from North Inch to Friarton Bridge flood warning area which is part of the Tay river flood warning scheme.</p> <p>When flood events occur in an area with an existing flood warning service, SEPA will seek to verify the flood forecasts and warnings. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.</p>		
Coordination Arrangement:	SEPA will work with the local authority to ensure that any new information about flood risk is considered in the existing flood warning system.		
Related Actions:	flood protection scheme, flood forecasting, awareness raising, emergency plans/response, self help.		
Funding Arrangement:	The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement.		

Action (ID):	FLOOD FORECASTING (80410009)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	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 flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. 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>		
Coordination Arrangement:	SEPA / Met Office joint initiative. Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.		
Related Actions:	Awareness Raising, Self Help, Emergency Plans/Response, maintain flood warning.		
Funding Arrangement:	SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives		

	funding from the UK Government.		
Action (ID):	AWARENESS RAISING (80410013)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Responsible authorities		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Public awareness, participation and community support are essential components of sustainable flood risk management. 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>The Scottish government is developing curriculum resources to be used in Schools to increase awareness. 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. Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships.</p> <p>For the new flood protection scheme, SEPA will support the local authority's communications and engagement activities with media activity, local public awareness events and education engagement with schools. SEPA will also deliver joint communications with local authorities for Floodline customers in any newly protected flood warning area.</p> <p>Local authorities will be undertaking additional awareness raising activities.</p> <p>Local authorities will be undertaking additional awareness raising activities when developing any specific project proposals and will engage with community resilience groups and local communities. Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies. More general information and flooding guidance will be available on the website at: https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information</p>		

Coordination Arrangement:	<p>Awareness raising will be coordinated through the Local Plan District partnership between SEPA and the responsible authorities.</p> <p>SEPA and the responsible authorities will use any studies, projects and flood schemes to engage with communities and raise awareness of flood risk.</p> <p>Communications activity will be coordinated through existing arrangements within Local Plan District Partnerships. Information will be disseminated through website, social media and other community engagement activity. SEPA and responsible authorities will coordinate awareness raising activities with related actions.</p>
Related Actions:	Flood protection scheme, Flood Warning, Self Help, Emergency Plans/Response, Flood Forecasting
Funding Arrangement:	<p>Awareness raising activities will be funded from the Council's revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure. SEPA's awareness raising activities are funded by Scottish Government through SEPA's grant in aid settlement.</p>

Action (ID):	SELF-HELP (80410011)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	N/A		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Everyone is responsible for protecting themselves and their property from flooding. Self-help actions can be undertaken by any individuals, businesses, organisations or communities at risk of flooding. They are applicable to all sources, frequency and scales of flooding. They focus on awareness raising and understanding of flood risk.</p> <p>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>		
Coordination Arrangement:	<p>Responsible Authorities have a duty to raise public awareness of flood risk. Helping individuals understand the risks from which they are most vulnerable from is the first step in the process.</p> <p>Responsible Authorities will also actively promote Floodline.</p>		
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Maintenance, Emergency Plans/Response		
Funding Arrangement:	Individuals have prime responsibility to protect themselves and their property from flooding and are therefore are expected to meet the costs of protecting themselves.		

Action (ID):	SURFACE WATER PLAN/STUDY (80240018)		
Objective(ID):	Reduce economic damages and number of residential properties at risk of surface water flooding in Perth where practical (8024)		
Delivery Lead:	Perth & Kinross Council		
Status:	Not started	Planned Delivery Period:	2018-2020
Description:	<p>The area must be covered by a surface water management plan (SWMP) or plans that set objectives for the management of surface water flood risk and identify the most sustainable actions to achieve the objectives.</p> <p>Scottish Water will provide local knowledge and understanding of the sewer network. This includes Scottish Water corporate data (as applicable) and, where available, outputs of Section 16 or integrated catchment studies, to assist with the surface water management planning process.</p>		
Coordination Arrangement:	<p>The surface water management plan/study is programmed to commence in the 2018/19 financial year. This allows for coordination with the Perth City integrated catchment study so that any relevant outputs can inform the SWMP. Perth and Kinross Council will engage a consultant to investigate the surface water flood risk and identify potential options for managing that risk. The plan/study will be coordinated through the Tay Local Plan District Partnership and with other related actions.</p> <p>Scottish Water will work with and support surface water management planning through ensuring that best available knowledge and data is used to input into the surface water management plans.</p>		
Related Actions:	Surface water plan/study (Action ID 80240019), Strategic mapping and modelling, Flood warning, Flood forecasting, Awareness raising, Self-help, Maintenance, Emergency plans/response.		
Funding Arrangement:	The surface water plan/study will be subject to funding from Perth and Kinross Council's revenue budget.		

Action (ID):	SURFACE WATER PLAN/STUDY (80240019)		
Objective(ID):	Reduce economic damages and number of residential properties at risk of surface water flooding in Perth where practical (8024)		
Delivery Lead:	Scottish Water in partnership with Perth & Kinross Council.		
Status:	Ongoing	Planned Delivery Period:	Perth City 2016-2019
Description:	<p>An integrated catchment study covering the Perth City catchment will be carried out to support the surface water management planning process in the Perth surface water management priority area. The study will improve knowledge and understanding of the interactions between the above ground and below ground drainage network e.g. with the sewer network, watercourses and (where applicable) the sea.</p> <p>This will improve the understanding of local surface water flood risk. The stated timescales and funding arrangements between Scottish Water and Perth & Kinross Council will take the studies</p>		

	though the Scoping and Modelling phases to define the significant flooding issues in the catchment. After this has been completed, it is expected that the integrated catchment study partnerships will remain in place and will progress with the Optioneering phase to establish the preferred solution(s) to the significant flooding issues.
Coordination Arrangement:	Scottish Water will work collaboratively with project partners throughout the study. Scottish Water will provide project partners with the outputs of the integrated catchment study which, where relevant, may be used to inform surface water management plans. The plan/study will be coordinated through the Tay Local Plan District Partnership and with other related actions.
Related Actions:	Surface water plan/study (Action ID 80240018), Strategic mapping and modelling, Flood warning, Flood forecasting, Awareness raising, Self-help, Maintenance, Emergency plans/response, Planning policies.
Funding Arrangement:	This project is being funded by Scottish Water in partnership with Perth & Kinross Council. Scottish Water funding is committed in its capital programme through Q&S 4a (2015-2021) which is approved by its regulators and customers. The project is also being partly funded from Perth and Kinross Council's revenue budget.

Action (ID):	MAINTENANCE (80410007)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Perth and Kinross Council, asset / land managers		
Status:	Existing	Planned Delivery Period:	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 undertakes 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. Sections 18 and 59 of the Flood Risk Management (Scotland) Act 2009 place duties of watercourse assessment, clearance and repair on local authorities. In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or defences.		
Coordination Arrangement:	Sections 17 and 18 of the Flood Risk Management (Scotland) Act 2009 require local authorities to prepare maps of relevant bodies of water and sustainable urban drainage systems (SUDS), assess flood risk on those bodies of water from time to time and to prepare a schedule of clearance and repair works where such works would substantially reduce flood risk. Under Section 59 of the same Act, Local authorities also have a duty to carry out clearance and repair works described on the schedule. The Council's schedule of clearance and repair works is made		

	<p>available for public inspection on its website.</p> <p>The Council carries out routine, scheduled inspections of watercourses on its list at a frequency which depends on flood risk. Further reactive inspections are carried out when issues are highlighted or during times of flooding. Further bodies of water will be included where it has been identified that they may give rise to a risk of flooding.</p> <p>Any identified clearance and repair works from these inspections are logged in a database and are undertaken in order of priority, subject to available funding.</p> <p>Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk. In the first instance, clearance and repair works are therefore referred to the landowner, where they can be identified. The Council usually only carries out works where there has been a failure of the landowner to act, where landownership is not clear, or where urgent intervention is required.</p> <p>In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or works. Scottish Water undertakes risk based inspection, maintenance 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. Local Authorities will liaise with SEPA where controlled activities may be required and with private landowners where they may require to take access on private land or to notify landowners that they require to undertake maintenance.</p> <p>The Council will coordinate maintenance activities with related actions.</p>
Related Actions:	Raising Awareness, Self Help, Community Flood Action Groups
Funding Arrangement:	<p>Maintenance activities are subject to funding from the relevant Perth and Kinross Council revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator. All business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</p>

Action (ID):	EMERGENCY PLANS/RESPONSE (80410014)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Category 1 and 2 Responders		
Status:	Existing	Planned Delivery Period:	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.</p>		

	<p>The emergency response by these organisations is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. Emergency response plans are applicable for all types of flooding. They set out the steps to be taken during flooding in order to maximise safety and minimise impacts where possible. Under the Civil Contingencies Act, Category 1 Responders have a duty to maintain emergency plans. Emergency plans may also be prepared by individuals, businesses, organisations or communities.</p> <p>Scottish Water is a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required.</p>
Coordination Arrangement:	<p>Perth and Kinross Council has developed a Generic Emergency Plan and a Flooding Emergency Response Plan. The Plan is designed to ensure that contingency measures are in place for the coordinated and flexible response to flooding incidents to mitigate the effects of flooding emergencies.</p> <p>SEPA flood alerts and warnings will be monitored and resources made ready as required. A coordinated response will follow any reports of flooding.</p> <p>Emergency response is coordinated with regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. A debrief and plan review will be carried out following any flood events.</p> <p>Protecting property from flooding is the responsibility of the owner of the property, but Perth & Kinross Council can sometimes provide sandbags to properties. Unfortunately the Council only has the resources to supply sandbags to residents where there is an imminent risk of flooding.</p> <p>Emergency plans/response activities will be coordinated with related actions.</p>
Related Actions:	Flood warning, Flood forecasting, Community flood action groups, Awareness raising, Self help
Funding Arrangement:	<p>Funding is allocated to category 1 and 2 responders by the Scottish Government for dealing with emergency response and in extreme cases may reimburse responders after an extreme event. Emergency response activities are funded from the Council's revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure</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	Planned Delivery Period:	Ongoing
Description:	<p>The Scottish Planning Policy (SPP) and accompanying Planning Advice Notes set out the 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 SPP 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 generally be avoided. For further information on the application of national planning policies see Annex 3.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the Flood Risk Management (Scotland) 2009. SEPA also has a duty to co-operate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engage in the planning system, including guidance on flood risk and planning is available on SEPA website http://www.sepa.org.uk/environment/land/planning/</p> <p>Current national planning policies, the Scottish Planning Policy and accompanying Planning Advice notes restrict development within the floodplain and limit exposure of new receptors to flood risk. In addition to national policies, local planning policies may place further requirements within their area of operation to restrict inappropriate development and prevent unacceptable risk. Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.</p>		
Coordination Arrangement:	<p>Perth and Kinross Council is a local planning authority and will coordinate its work with the strategic development planning authority and the National Parks Authorities.</p> <p>The Council's Flooding Team are consulted on planning applications and work with the Planning and Development Service to ensure that flood risk is addressed. The Local Development Plan provides the framework against which planning applications are assessed and is consistent with the Strategic Development Plan (TAYplan). Supplementary Guidance on Flood Risk and Flood Risk Assessments is also available to support the content of the Local Development Plan. Planning applications are also reviewed against SEPA's indicative flood maps, existing flood</p>		

	<p>studies and records of flooding. Where flood risk is an issue, developers are required to prepare and submit a site-specific flood risk assessment and drainage impact assessment as applicable. They must also consider how a development site will be drained and how surface water runoff will be managed through the implementation of appropriate Sustainable Urban Drainage Measures.</p> <p>Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority. So as to align the flood risk management and land use planning systems, land use planning objectives and actions have been developed which can be viewed in Annex 3. The Council will coordinate land use planning policies with related actions.</p>
<p>Related Actions:</p>	<p>Flood protection scheme, surface water plan/study, awareness raising, self Help, Maintenance, Strategic Mapping & Modelling</p>
<p>Funding Arrangement:</p>	<p>SEPA's land use planning activities will be funded by the Scottish Government through SEPA's grant in aid settlement. Perth & Kinross Council's planning activities will be funded from the Council's revenue budget. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</p>

3.13 Perth Centre PVA 08/13

Local Plan District	Local authority	Main catchment
Tay	Perth and Kinross Council	Perth coastal

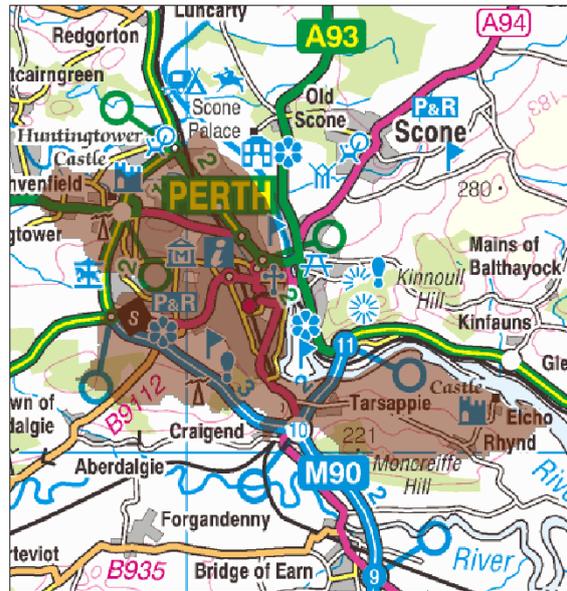
Background and summary of impacts

This Potentially Vulnerable Area is 28km² and part of the River Tay catchment. It covers the west bank of the lower River Tay where it meets the Firth of Tay and includes the city of Perth. The main watercourse is River Tay. Other watercourses include the Town's Lade that carries water from the River Almond to the River Tay and the Craigie Burn.

The area has a risk of surface water, coastal and river flooding. The majority of flood damages are caused by river flooding. It should be noted that Perth Flood Protection Scheme reduces the risk of river and coastal flooding in Perth.

There are approximately 320 residential properties and 260 non-residential properties at risk of flooding. The Annual Average Damages are approximately £1.8 million.

For more detailed information please see the [Tay Flood Risk Management Strategy](#)



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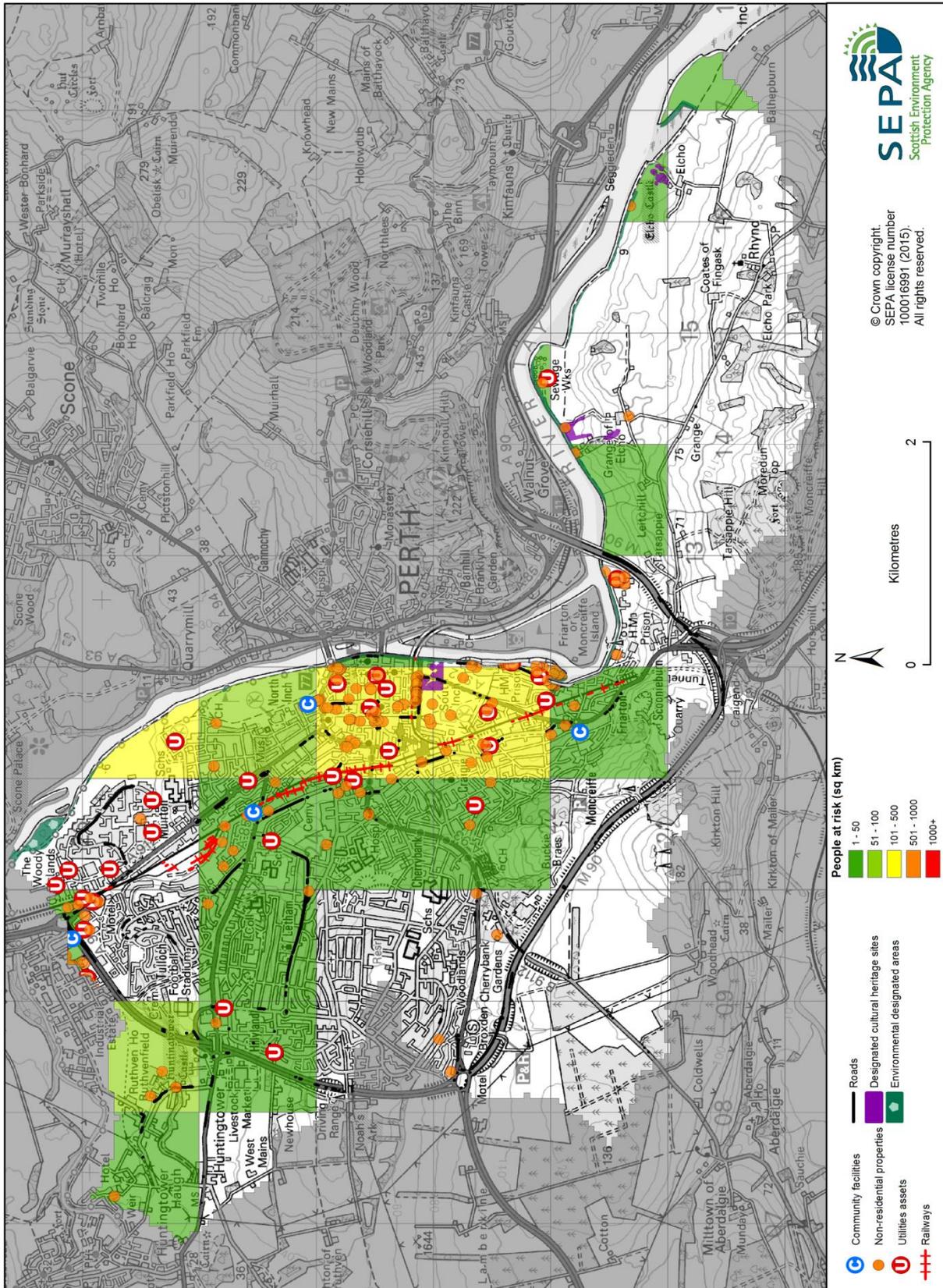


Figure 21: Impact of flooding in PVA 08/13
 (Reproduced from the Tay Flood Risk Management Strategy, SEPA, December 2015)

History of flooding

Perth has a long history of flooding. The following significant floods have been recorded in this area:

- December 2015: Storms Desmond and Frank caused prolonged rainfall across Perth & Kinross. Several properties and roads affected in the Perth area.
- 20-21 December 2012: Heavy rain and snow melt affected a number of locations in Perth including Marshall Place from James Street to Princes Street, Moncrieffe Island, Edinburgh Road, North Port and Tay Street. Flood levels reached 5.68m above normal levels at Smeaton's Bridge.
- 16 July 2011: Heavy rain caused surface water flooding in Perth. Homes and businesses were affected.
- 21 July 2010: Extensive surface water flooding around Perth affecting properties and roads.
- 6 August 2002: There was flash flooding on the Craigie Burn in Perth when approximately 30mm of rain fell in 60 minutes.
- 16 January 1993: Widespread flooding resulted in damage to communication networks, hundreds of properties and farmland in and around Perth, causing an estimated £20 million of damage. Residents were evacuated in the North Muirton housing estate after flood defences were breached.
- 17 February 1950: Flooding within Perth on several roads including Tay Street, North and South Inches, the junction of Scott Street and Marshall Street, Moncrieffe Island, Commercial Street (Bridgend) and James Street. Telephone cables damaged outside of Perth and properties flooded.
- 22 January 1928: Wettest January on record caused flooding across Perth and Kinross including Perth and Muirton. Residents of several farms in Muirton had to be rescued as roads became impassable. The River Tay reached 5.77m above normal levels at Smeaton's Bridge in Perth.
- 31 January 1903: Nearly all cellars in Perth flooded after heavy rains and strong gales resulted in flooding on the River Tay, including North and South Inches, Rose Terrace, North Port, Lower Commercial Street, Princes Street, Nelson Street, Scott Street, James Street, King Street, Edinburgh Road, Marshall Place, Moncrieffe Island. Many roads impassable.
- 7 October 1847: Flooding from the River Tay affected Perth, Dunkeld, Dalguise and Dalmarnock. Many residents were evacuated and there were reports of cattle being swept away in flood waters. The water level at Smeaton's Bridge in Perth was estimated to be 6.11m above ordinary levels.
- 12 February 1814: Blocks of ice on the River Tay caused bridges to become blocked resulting in widespread flooding to the Perth region. North and South Inch were submerged for two days. An estimated flood height of 7.0m above ordinary levels was recorded on the River Tay which is the highest known flood level.
- 12-14 October 1621: Constant heavy rain over a two day period caused flooding from the River Tay. Residents were evacuated from numerous properties and severe damage was caused to Milne's Bridge. Perth was surrounded by water for 5-6 days after the event.

Selected Actions in the Perth Centre PVA

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):	FLOOD PROTECTION STUDY (80290005)		
Objective(ID):	Reduce economic damages to residential and non-residential properties and risk to people in Perth caused by flooding from the Perth Town Lade and the Craigie Burn (8029, 8031)		
Delivery Lead:	Perth and Kinross Council		
Priority:	National Rank:	Lead Authority:	LPD Rank:
	116 of 168	6 of 6	6 of 7
Status:	Not Started	Planned Delivery Period:	2016 - 2018
Description:	A flood protection study has been recommended for Perth and will consider flood risk from the Craigie Burn. The study will assess direct flood defences and sediment management. The study should take a catchment approach and consider the potential benefits and disbenefits and interaction between actions upstream and downstream. The study area (primarily Queens Avenue, Queen Street and Windsor Terrace) falls within the area of the Perth City integrated catchment study and surface water management plan (Action ID's 80240018 and 80240019). The study will therefore be integrated with the Perth integrated catchment study.		
Coordination Arrangement:	The study is programmed to commence in the 2016/17 financial year. Scottish Water has engaged a consultant to carry out the Perth City integrated catchment study. Perth and Kinross Council will arrange for the consultant to investigate the fluvial flood risk. Any potential options for managing that risk will be identified as part of the surface water management plan. The study will be coordinated through the Tay LPD Partnership and with other related actions.		
Related Actions:	Strategic mapping and modelling, Surface water plan/study, Flood warning, Flood forecasting, Community Flood Action Groups, Awareness raising, Self-help, Maintenance, Emergency plans/response.		
Funding Arrangement:	The study will be subject to funding from Perth and Kinross Council's revenue budget.		

Potential Impacts	
Economic:	The study could benefit 58 residential properties and four non-residential properties at risk of flooding in this location, with estimated damages avoided of £2.8 million.
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 and socially vulnerable people located within the study area.
Environmental:	Flood protection studies should consider the positive and negative impacts of proposed actions on the ecological quality of the environment land designated sites. Where possible opportunities to enhance and restore the environment should be sought, for example through natural flood management. To be in accord with the Tay Local Flood Risk Management Plan, 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.

Action (ID):	MAINTAIN FLOOD PROTECTION SCHEME (80290017)		
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) Reduce economic damages to residential and non-residential properties and risk to people in Perth caused by flooding from the Perth Town Lade and the Craigie Burn (8029, 8031)		
Delivery Lead:	Perth and Kinross Council		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	Continue to maintain the flood protection schemes that protect Perth against flooding. The schemes include the Perth Flood Protection Scheme that was completed 2002, including flood defences on the Perth Town Lade and Craigie Burn, and the Almondbank Flood Protection Scheme which is currently under construction and due to be completed in 2016.		
Coordination Arrangement:	Perth & Kinross Council's Roads Maintenance Partnership will maintain any existing flood protection scheme through a programme of inspections carried out in accordance with the recommendations set out in the scheme maintenance manuals. Maintenance works will be coordinated with SEPA, SNH, landowners and other stakeholders as required. The maintenance of the flood scheme will also be coordinated with related actions.		
Related Actions:	Flood warning, Flood forecasting, Self-help, Surface water plan/study, Awareness raising, Maintenance Emergency plans/response		
Funding Arrangement:	The maintenance of flood protection schemes will be subject to funding from Perth & Kinross Council's Revenue Budget.		

Action (ID):	MAINTAIN FLOOD PROTECTION SCHEME (80300017)		
Objective(ID):	Accept that risk in Perth from flooding on the River Tay, Craigie Burn, Scouring Burn and coastal flooding is being managed appropriately and maintain existing actions that reduce flood risk (8030)		
Delivery Lead:	Perth and Kinross Council		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	Continue to maintain the Perth Flood Protection Scheme. The scheme was completed in 2002 and includes major flood defence works such as embankments, walls, sluice gates, ponds and pumping stations.		
Coordination Arrangement:	Perth & Kinross Council's Roads Maintenance Partnership will maintain any existing flood protection scheme through a programme of inspections carried out in accordance with the recommendations set out in the scheme maintenance manuals. Maintenance works will be coordinated with SEPA, SNH, landowners and other stakeholders as required. The maintenance of the flood scheme will also be coordinated with related actions.		
Related Actions:	Flood warning, Flood forecasting, Self-help, Surface water plan/study, Awareness raising, Maintenance Emergency plans/response		
Funding Arrangement:	The maintenance of flood protection schemes will be subject to funding from Perth & Kinross Council's Revenue Budget.		

Action (ID):	STRATEGIC MAPPING AND MODELLING (80410016)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Not started	Planned Delivery Period:	SEPA led mapping improvements in the River Almond area will be undertaken in 2017.
Description:	SEPA will seek to develop flood mapping in the River Almond area to improve understanding of flood risk. The extent and timing of improvements will depend on detailed scoping and data availability. Where this work coincides with local authority studies, SEPA will work collaboratively to ensure consistent modelling approaches are applied.		
Coordination Arrangement:	SEPA's strategic mapping activities will be coordinated with the activities of other responsible authorities as required.		
Related Actions:	Flood protection study, surface water plan/study, strategic Mapping And Modelling (Scottish Water), Planning Policies		
Funding Arrangement:	SEPA's strategic mapping and modelling activities are funded by Scottish Government through SEPA's grant in aid settlement.		

Action (ID):	STRATEGIC MAPPING AND MODELLING (80410019)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Scottish Water		
Status:	Not Started	Planned Delivery Period:	Perth city 2016-2018 Almondbank 2016-2018
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. Scottish Water will undertake further investigation and modelling in the Almondbank and Perth City sewer catchments to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.		
Coordination Arrangement:	Scottish Water will work with responsible authorities to incorporate relevant information into these studies and by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform surface water management plans and SEPA flood hazard and risk maps		
Related Actions:	Strategic Mapping And Modelling (SEPA)		
Funding Arrangement:	Scottish Water funding is committed in its capital programme through Q&S 4a (2015-2021) which is approved by its regulators and customers.		

Action (ID):	MAINTAIN FLOOD WARNING (80410030)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	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. Continue to maintain the North Muirton Industrial Estate and the Basement Properties from North Inch to Friarton Bridge flood warning areas which are part of the Tay river flood warning scheme. When flood events occur in an area with an existing flood warning service, SEPA will seek to verify the flood forecasts and warnings. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.		
Coordination Arrangement:	SEPA will work with the local authority to ensure that any new information about flood risk is considered in the existing flood warning system		
Related Actions:	Flood protection study, community flood action group, flood forecasting, awareness raising, emergency response, self help		

Funding Arrangement:	The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement.
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Action (ID):	FLOOD FORECASTING (80410009)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	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 flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. 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.		
Coordination Arrangement:	SEPA / Met Office joint initiative. Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.		
Related Actions:	Maintain flood warning, Awareness Raising, Self Help, Emergency Plans/Response.		
Funding Arrangement:	SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.		

Action (ID):	COMMUNITY FLOOD ACTION GROUPS (80290012)		
Objective(ID):	Reduce economic damages to residential and non-residential properties and risk to people in Perth caused by flooding from the Perth Town Lade and the Craigie Burn (8029, 8031)		
Delivery Lead:	Community		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	Community flood action groups are community based resilience groups which, on behalf of local residents and business, help to prepare for and minimise the effects of flooding. They reflect the interests of their local communities and may differ in composition and remit. There are over 60 groups already established in Scotland. The Scottish Flood Forum provides support for both new and existing groups. Perth Business Community Resilience Group operates in this area. Membership of the group includes Perth and Kinross Council, SEPA, Tayside Fire and Rescue and the Scottish Flood Forum. The group aims to reduce flooding to businesses and communities within Perth city centre, improve joint working before, during and after flooding and develop ways of increasing		

	community resilience against flooding.
Coordination Arrangement:	The Council will work with the Perth Business Community Resilience Group to reduce flood risk, improve preparedness and increase resilience against flooding. The Council will continue to co-ordinate with Perth Business Community Resilience Group throughout the next 6 years on a priority needs basis where resources allow. The Council will coordinate community flood action groups with related actions.
Related Actions:	Self Help, Awareness Raising, Maintenance, Flood Forecasting, Emergency Plans/Response
Funding Arrangement:	Funding for Community flood action groups will be provided by private individuals, businesses, organisations or communities at risk of flooding

Action (ID):	AWARENESS RAISING (80410013)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Responsible authorities		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Public awareness, participation and community support are essential components of sustainable flood risk management. 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>The Scottish government is developing curriculum resources to be used in Schools to increase awareness. From 2016 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.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships.</p> <p>Local authorities will be undertaking additional awareness raising activities when developing any specific project proposals and will engage with community resilience groups and local communities. Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies. More general information and flooding guidance will be available on the website at:</p>		

	https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information
Coordination Arrangement:	<p>Awareness raising will be coordinated through the Local Plan District partnership between SEPA and the responsible authorities.</p> <p>SEPA and the responsible authorities will use any studies, projects and flood schemes to engage with communities and raise awareness of flood risk.</p> <p>Communications activity will be coordinated through existing arrangements within Local Plan District Partnerships. Information will be disseminated through website, social media and other community engagement activity.</p> <p>SEPA and responsible authorities will coordinate awareness raising activities with related actions.</p>
Related Actions:	Community Flood Action groups, Flood Warning, Self Help, Emergency Plans/Response, Flood Forecasting
Funding Arrangement:	<p>Awareness raising activities will be funded from the Council's revenue budget.</p> <p>SEPA's awareness raising activities are funded by Scottish Government through SEPA's grant in aid settlement.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</p>

Action (ID):	SELF-HELP (80410011)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	N/A		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Everyone is responsible for protecting themselves and their property from flooding. Self help actions can be undertaken by any individuals, businesses, organisations or communities at risk of flooding. They are applicable to all sources, frequency and scales of flooding. They focus on awareness raising and understanding of flood risk.</p> <p>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.</p>		
Coordination Arrangement:	<p>Responsible Authorities have a duty to raise public awareness of flood risk. Helping individuals understand the risks from which they are most vulnerable from is the first step in the process.</p> <p>Responsible Authorities will also actively promote Floodline.</p>		

Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Maintenance, Emergency Plans/Response.
Funding Arrangement:	Individuals have prime responsibility to protect themselves and their property from flooding and are therefore are expected to meet the costs of protecting themselves.

Action (ID):	SURFACE WATER PLAN/STUDY (80240018)		
Objective(ID):	Reduce economic damages and number of residential properties at risk of surface water flooding in Perth where practical (8024)		
Delivery Lead:	Perth and Kinross Council		
Status:	Not started	Planned Delivery Period:	2018-2020
Description:	<p>The area must be covered by a surface water management plan (SWMP) or plans that set objectives for the management of surface water flood risk and identify the most sustainable actions to achieve the objectives.</p> <p>Scottish Water will provide local knowledge and understanding of the sewer network. This includes Scottish Water corporate data (as applicable) and, where available, outputs of Section 16 or integrated catchment studies, to assist with the surface water management planning process</p>		
Coordination Arrangement:	<p>The surface water management plan/study is programmed to commence in the 2018/19 financial year. This allows for coordination with the Perth City integrated catchment study so that any relevant outputs can inform the SWMP. Perth & Kinross Council will engage a consultant to investigate the surface water flood risk and identify potential options for managing that risk. The plan/study will be coordinated through the Tay Local Plan District Partnership and with other related actions.</p> <p>Scottish Water will work with and support surface water management planning through ensuring that best available knowledge and data is used to input into the surface water management plans.</p>		
Related Actions:	Flood protection study, Surface water plan/study (Action ID 80240019), Strategic mapping and modelling, Flood warning, Flood forecasting, Awareness raising, Self-help, Maintenance, Emergency plans/response.		
Funding Arrangement:	The surface water plan/study will be subject to funding from Perth and Kinross Council's revenue budget.		

Action (ID):	SURFACE WATER PLAN/STUDY (80240019)		
Objective(ID):	Reduce economic damages and number of residential properties at risk of surface water flooding in Perth where practical (8024)		
Delivery Lead:	Scottish Water in partnership with Perth & Kinross Council		
Status:	Ongoing	Planned Delivery Period:	Perth city 2016-2019
Description:	An integrated catchment study covering the Perth City catchment will be carried out to support the surface water management planning process in the Perth surface water management priority		

	<p>area. The study will improve knowledge and understanding of the interactions between the above ground and below ground drainage network e.g. with the sewer network, watercourses and (where applicable) the sea. This will improve the understanding of local surface water flood risk.</p> <p>The stated timescales and funding arrangements between Scottish Water and Perth & Kinross Council will take the studies through the Scoping and Modelling phases to define the significant flooding issues in the catchment. After this has been completed, it is expected that the integrated catchment study partnerships will remain in place and will progress with the Optioneering phase to establish the preferred solution(s) to the significant flooding issues.</p>
Coordination Arrangement:	<p>Scottish Water will work collaboratively with project partners throughout the study. Scottish Water will provide project partners with the outputs of the integrated catchment study which, where relevant, may be used to inform surface water management plans. The plan/study will be coordinated through the Tay Local Plan District Partnership and with other related actions.</p>
Related Actions:	<p>Flood protection study, Surface water plan/study (Action ID 80240018), Strategic mapping and modelling, Flood warning, Flood forecasting, Awareness raising, Self-help, Maintenance, Emergency plans/response, Planning policies.</p>
Funding Arrangement:	<p>This project is being funded by Scottish Water in partnership with Perth & Kinross Council. Scottish Water funding is committed in its capital programme through Q&S 4a (2015-2021) which is approved by its regulators and customers.</p> <p>The project is also being partly funded from Perth and Kinross Council's revenue budget.</p>

Action (ID):	MAINTENANCE (80410007)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Perth and Kinross Council, asset / land managers		
Status:	Existing	Planned Delivery Period:	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 undertakes 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. Sections 18 and 59 of the Flood Risk Management (Scotland) Act 2009 place duties of watercourse assessment, clearance and repair on local authorities. In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or defences.</p>		

<p>Coordination Arrangement:</p>	<p>Sections 17 and 18 of the Flood Risk Management (Scotland) Act 2009 require local authorities to prepare maps of relevant bodies of water and sustainable urban drainage systems (SUDS), assess flood risk on those bodies of water from time to time and to prepare a schedule of clearance and repair works where such works would substantially reduce flood risk. Under Section 59 of the same Act, Local authorities also have a duty to carry out clearance and repair works described on the schedule. The Council's schedule of clearance and repair works is made available for public inspection on its website.</p> <p>The Council carries out routine, scheduled inspections of watercourses on its list at a frequency which depends on flood risk. Further reactive inspections are carried out when issues are highlighted or during times of flooding. Further bodies of water will be included where it has been identified that they may give rise to a risk of flooding.</p> <p>Any identified clearance and repair works from these inspections are logged in a database and are undertaken in order of priority, subject to available funding.</p> <p>Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk. In the first instance, clearance and repair works are therefore referred to the landowner, where they can be identified. The Council usually only carries out works where there has been a failure of the landowner to act, where landownership is not clear, or where urgent intervention is required.</p> <p>In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or works. Scottish Water undertakes risk based inspection, maintenance 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. Local Authorities will liaise with SEPA where controlled activities may be required and with private landowners where they may require to take access on private land or to notify landowners that they require to undertake maintenance.</p> <p>The Council will coordinate maintenance activities with related actions.</p>
<p>Related Actions:</p>	<p>Raising Awareness, Self Help, Community Flood Action Groups</p>
<p>Funding Arrangement:</p>	<p>Maintenance activities are subject to funding from the relevant Perth and Kinross Council revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator. All business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure</p>

Action (ID):	EMERGENCY PLANS/RESPONSE (80410014)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Category 1 and 2 Responders		
Status:	Existing	Planned Delivery Period:	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 coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. Emergency response plans are applicable for all types of flooding. They set out the steps to be taken during flooding in order to maximise safety and minimise impacts where possible. Under the Civil Contingencies Act, Category 1 Responders have a duty to maintain emergency plans. Emergency plans may also be prepared by individuals, businesses, organisations or communities. Scottish Water is a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required.</p>		
Coordination Arrangement:	<p>Perth and Kinross Council has developed a Generic Emergency Plan and a Flooding Emergency Response Plan. The Plan is designed to ensure that contingency measures are in place for the coordinated and flexible response to flooding incidents to mitigate the effects of flooding emergencies. SEPA flood alerts and warnings will be monitored and resources made ready as required. A coordinated response will follow any reports of flooding. Emergency response is coordinated with regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. A debrief and plan review will be carried out following any flood events. Protecting property from flooding is the responsibility of the owner of the property, but Perth & Kinross Council can sometimes provide sandbags to properties. Unfortunately the Council only has the resources to supply sandbags to residents where there is an imminent risk of flooding. Emergency plans/response activities will be coordinated with related actions.</p>		
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Self Help		
Funding Arrangement:	Funding is allocated to category 1 and 2 responders by the Scottish Government for dealing with emergency response and in extreme cases may reimburse responders after an extreme event. Emergency response activities are funded from the Council's revenue budget.		

	Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.
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on (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	Planned Delivery Period:	Ongoing
Description:	<p>The Scottish Planning Policy (SPP) and accompanying Planning Advice Notes set out the 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 SPP 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 generally be avoided. For further information on the application of national planning policies see Annex 3.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the Flood Risk Management (Scotland) 2009. SEPA also has a duty to co-operate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engage in the planning system, including guidance on flood risk and planning is available on SEPA website http://www.sepa.org.uk/environment/land/planning/</p> <p>Current national planning policies, the Scottish Planning Policy and accompanying Planning Advice notes restrict development within the floodplain and limit exposure of new receptors to flood risk. In addition to national policies, local planning policies may place further requirements within their area of operation to restrict inappropriate development and prevent unacceptable risk. Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.</p>		
Coordination Arrangement:	Perth and Kinross Council is a local planning authority and will coordinate its work with the strategic development planning authority and the National Parks Authorities.		

	<p>The Council's Flooding Team are consulted on planning applications and work with the Planning and Development Service to ensure that flood risk is addressed. The Local Development Plan provides the framework against which planning applications are assessed and is consistent with the Strategic Development Plan (TAYplan). Supplementary Guidance on Flood Risk and Flood Risk Assessments is also available to support the content of the Local Development Plan. Planning applications are also reviewed against SEPA's indicative flood maps, existing flood studies and records of flooding. Where flood risk is an issue, developers are required to prepare and submit a site-specific flood risk assessment and drainage impact assessment as applicable. They must also consider how a development site will be drained and how surface water runoff will be managed through the implementation of appropriate Sustainable Urban Drainage Measures.</p> <p>So as to align the flood risk management and land use planning systems, land use planning objectives and actions have been developed which can be viewed in Annex 3. The Council will coordinate land use planning policies with related actions.</p>
Related Actions:	Flood protection study, surface water plan/study, awareness Raising, self Help, Maintenance, Strategic Mapping & Modelling.
Funding Arrangement:	SEPA's land use planning activities will be funded by the Scottish Government through SEPA's grant in aid settlement. Perth & Kinross Council's planning activities will be funded from the Council's revenue budget. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.

3.14 Comrie PVA 08/14

Local Plan District	Local authority	Main catchment
Tay	Perth and Kinross Council, Stirling Council	River Earn

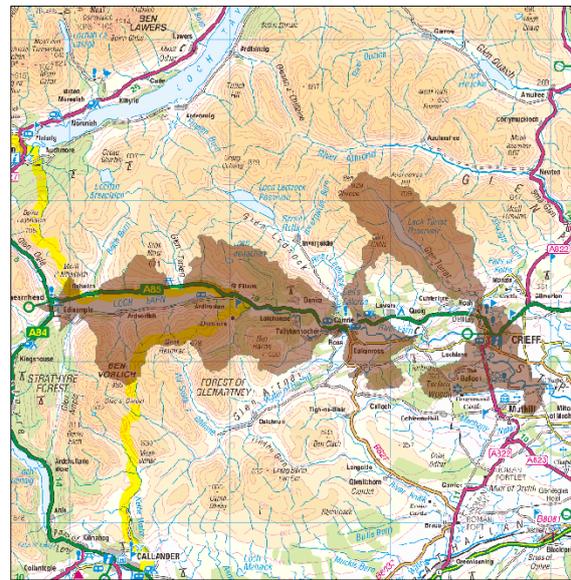
Background and summary of impacts

This Potentially Vulnerable Area is 168km². It is situated in the upper reaches of the River Earn catchment and includes Comrie and Crieff. The main watercourses are the River Earn, River Lednock and the Turret Burn. It also includes Loch Earn and the Turret Reservoir.

The highest risk of flooding is in Comrie from the River Earn and River Lednock and in Crieff from the Turret Burn.

There are approximately 510 residential properties and 100 non-residential properties at risk of flooding. The Annual Average Damages are approximately £2.0 million.

For more detailed information please see the [Tay Flood Risk Management Strategy](#)



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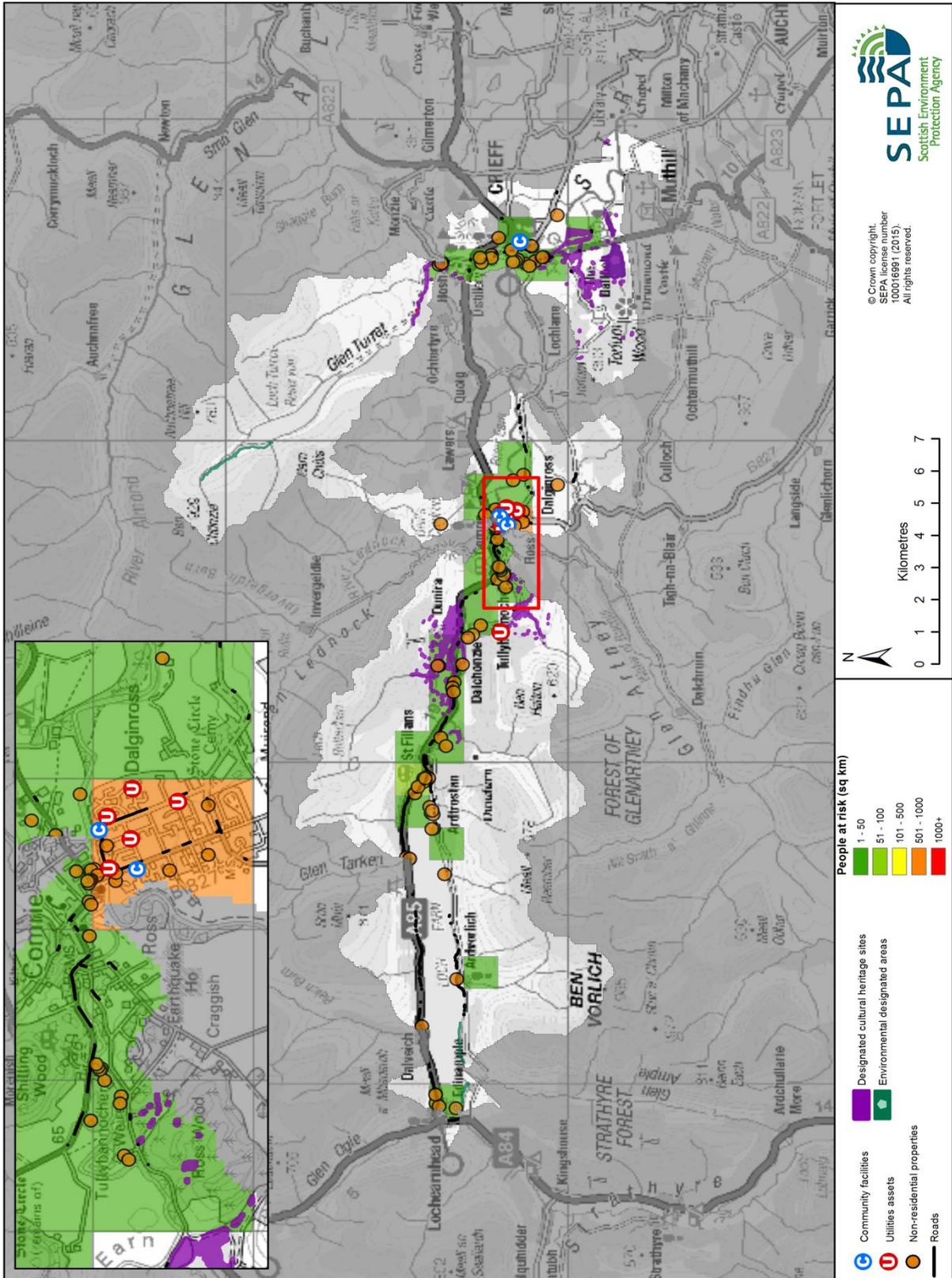


Figure 22: Impact of Flooding in PVA 08/14

(Reproduced from the Tay Flood Risk Management Strategy, SEPA, December 2015)

History of flooding

The area has a long history of flooding. The following notable floods have been recorded in this area:

- 19 November 2012: Approximately 150 properties were flooded in Dalginross from the Water of Ruchill.
- 27 August 2012: Approximately 60 properties were flooded in Dalginross from the Water of Ruchill.
- 19 February 1997: A number of streets and houses in Dalginross were flooded, as well as farm land and farm buildings.
- 16 January 1993: Widespread flooding across the Tay Catchment resulted in over £20 million of damage. The flooding is known to have affected Comrie.
- 2 February 1948: Telephone lines and power was disrupted within the Strathearn district when power lines were damaged. Two hundred acres of land were flooded.
- 22 January 1928: Wettest January on record at the time caused flooding across Perth and Kinross including Comrie and Crieff. The River Tay reached 5.77m above normal levels at Smeaton's Bridge in Perth
- 8 November 1926: Flooding throughout the area due to the River Earn and tributaries rising up to a depth of 3.5m in some places. Gas works flooded in Comrie. Residential properties, shops and commercial properties also affected.
- January 1909: The road between Comrie and St Fillans at East Tullybannocher was reported to have five to seven feet of water over it due to snow melt. Farmlands at Carse of Trowan and Carse of Lennoch were under water. A lake reportedly formed between Comrie and Monzievauid.
- 17 March 1903: Railway infrastructure seriously affected causing major disruption to traffic after large stretch of embankment was washed away by flooding at New Comrie.

Selected Actions in the Comrie PVA

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):	FLOOD PROTECTION SCHEME/WORKS (80330006)		
Objective(ID):	Reduce economic damages to residential and non-residential properties in Comrie caused by flooding from the River Earn and River Lednock (8033)		
Delivery Lead:	Perth and Kinross Council		
Priority:	National:	Local Authority:	Within LPD:
	7 of 42	1 of 4	1 of 2
Status:	Under Development	Planned Delivery Period:	2016-2020
Description:	A flood protection scheme has been proposed for Comrie to reduce the combined flood risk from the Water of Ruchill, River Earn and River Lednock. The proposed scheme consists of flood walls and embankments. The scheme would provide a 1 in 100 year standard of protection, although recent work indicates that this may increase to 1 in 200.		
Coordination Arrangement:	The Comrie Flood Protection Scheme will be coordinated through the Tay Local Plan District Partnership. The flood protection scheme will be coordinated with related actions.		
Related Actions:	Awareness raising, Flood protection study, Emergency plans/response, Flood forecasting, Maintain flood protection scheme (Kinross), Maintenance, New flood warning, Self help, Strategic mapping and modelling, Planning Policy.		
Funding Arrangement:	The Comrie Flood Protection Scheme will be subject to available capital funding (up to 80% capital grant funding from the Scottish Government with the remaining funding being provided from Perth & Kinross Council's capital programme).		
Potential Impacts			
Economic:	The proposed scheme may benefit 382 residential properties and 15 non-residential properties at risk of flooding in this location, with estimated damages avoided of £89 million. The flood protection scheme has an estimated benefit cost ratio of 6.7.		
Social:	A reduction in flood risk would have a positive benefit to the health and wellbeing of the community. In addition there are one emergency service and one healthcare facility which have been identified as potentially benefitting from this action. There may be negative impacts through disturbance to the local community during the construction phase.		
Environmental:	Flood protection schemes can have both positive and negative impacts on the ecological quality of the environment depending on how they are designed. A number of nationally and locally designated sites are present in the study area and could be positively or negatively impacted. These include conservation areas, National Scenic Areas, scheduled monuments, gardens and designed landscapes, listed buildings, national parks, Sites of Special Scientific Interest and ancient woodlands.		

Action (ID):	FLOOD PROTECTION SCHEME WORKS (8303021)		
Objective(ID):	Reduce the physical or disruption risk related to the transport network for roads (8303)		
Delivery Lead:	Transport Scotland		
Status:	On-going	Planned Delivery Period:	On-going
Description:	<p>Transport Scotland will carry out civil engineering work which will reduce the risk of flooding on identified sections of the trunk road. Transport Scotland will manage the reduction through the operation of the trunk road via the routine and cyclic maintenance programme. Transport Scotland maintains an on-going review of areas of known historic flood locations, and should areas such as Comrie be identified as such an area, Transport Scotland will seek funding in due course based on a prioritised criteria to support the routine and cyclic maintenance programme at these locations.</p>		
Coordination Arrangement:	<p>The management of repairs and improvements to existing trunk road structure assets that will reduce the physical risk, or disruption risk, related to areas at risk of flooding on the trunk road is led by Transport Scotland's Network Maintenance team (with support from the regular maintenance and inspection regimes undertaken by Transport Scotland's Operating Companies). For new major road scheme construction, the lead will fall with Transport Scotland's Major Transport Infrastructure Projects Directorate. The development and delivery of the flood protection schemes and works on new or existing assets will be co-ordinated, with all appropriate stakeholders to ensure an integrated and collaborative approach is demonstrated. The Scottish Climate Change Adaptation Programme Transport Steering Group will have oversight of flooding mitigation undertaken on existing major roads, with contributions from both Transport Scotland and SCOTS; feedback from this Group into the SCOTS Flooding Group is envisaged in order to keep authorities informed of the related action activities for the PVA. Periodic discussion and advice from SEPA will also be sought. The management of unplanned disruptions from flooding is being coordinated in Transport Scotland via an Unplanned Disruption Working Group, which comprises various teams across the Trunk Road and Bus Operations (TRBO) Directorate.</p>		
Related Actions:	<p>Delivery of Flood Risk Management Strategy actions will be prioritised in accordance with allocated funding. For locations where Transport Scotland will accept the physical or disruption risk from flooding, the next steps would encompass a mix of awareness raising, emergency response plans, clearance and repair of flooding incidents and engagement with SEPA around utilising (and perhaps supplementing a surface water additional element of) the flood forecasting warning service.</p>		
Funding Arrangement:	<p>The Scottish Government has a duty to consider the requirements of the Flood Risk Management (Scotland) Act in future funding allocations. Delivery of civil engineering works by Transport Scotland to either accept (but to monitor and take appropriate</p>		

	action) or to reduce the physical risk, or disruption risk, at this location will be determined by Ministerial funding decisions, as outlined in forthcoming Spending Reviews. Local authority partners will contribute funding towards studies where applicable.
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Action (ID):	MAINTAIN FLOOD PROTECTION SCHEME (80330017)		
Objective(ID):	Reduce economic damages to residential and non-residential properties in Comrie caused by flooding from the River Earn and River Lednock (8033)		
Delivery Lead:	Perth and Kinross Council		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	Continue to maintain existing flood defences and flood protection works in Comrie. These include the Water of Ruchill Flood Protection Scheme (constructed in the 1960's) and the flood protection works carried out in 2013.		
Coordination Arrangement:	Perth & Kinross Council's Roads Maintenance Partnership will maintain any existing flood protection schemes and works through a programme of inspections carried out in accordance with the recommendations set out in the scheme maintenance manuals. Maintenance works will be coordinated with SEPA, SNH, landowners and other stakeholders as required. The maintenance of the flood scheme/works will also be coordinated with related actions.		
Related Actions:	Flood warning, Flood forecasting, Self-help, Surface water plan/study, Awareness raising, Maintenance, Emergency plans/response.		
Funding Arrangement:	The maintenance of flood protection schemes will be subject to funding from Perth & Kinross Council's Revenue Budget.		

Action (ID):	MAINTAIN FLOOD PROTECTION SCHEME (80350017)		
Objective(ID):	Accept that significant flood risk in Dalginross is being managed appropriately. Maintain existing actions that reduce flood risk in Dalginross caused by flooding from the Water of Ruchill (8035)		
Delivery Lead:	Perth and Kinross Council		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	Continue to maintain the Water of Ruchill Flood Protection Scheme (constructed in the 1960's) and the flood protection works carried out in 2013 that reduce the risk of river flooding to Dalginross.		
Coordination Arrangement:	Perth & Kinross Council's Roads Maintenance Partnership will maintain any existing flood protection schemes and works through a programme of inspections carried out in accordance with the recommendations set out in the scheme maintenance manuals. Maintenance works will be coordinated with SEPA, SNH, landowners and other stakeholders as required. The maintenance of the flood scheme/works will also be coordinated with related actions.		

Related Actions:	Flood warning, Flood forecasting, Self-help, Surface water plan/study, Awareness raising, Maintenance Emergency plans/response.
Funding Arrangement:	The maintenance of flood protection schemes will be subject to funding from Perth & Kinross Council's Revenue Budget.

Action (ID):	STRATEGIC MAPPING AND MODELLING (80410016)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Not started	Planned Delivery Period:	SEPA led mapping improvements in the Upper Earn area will be undertaken in 2016 to 2017, and revisit following completion of the proposed flood protection scheme.
Description:	SEPA will seek to develop flood mapping in the Upper Earn area to improve understanding of flood risk. The extent and timing of improvements will depend on detailed scoping and data availability.		
Coordination Arrangement:	A flood protection scheme is proposed for Comrie. SEPA will work with the local authority to ensure that strategic mapping and modelling developments reflect the changes in flood risk resulting from the new flood protection scheme where appropriate and relevant.		
Related Actions:	Flood protection scheme, strategic Mapping And Modelling (Scottish Water), Planning Policies.		
Funding Arrangement:	SEPA's strategic mapping and modelling activities are funded by Scottish Government through SEPA's grant in aid settlement.		

Action (ID):	STRATEGIC MAPPING AND MODELLING (80410019)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Scottish Water		
Status:	Not Started	Planned Delivery Period:	Comrie 2016-2018 Crieff 2016-2017
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. Scottish Water will undertake further investigation and modelling in the Comrie and Crieff sewer catchments to improve knowledge and understanding		

	of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.
Coordination Arrangement:	Scottish Water will work with responsible authorities to incorporate relevant information into these studies and by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform surface water management plans and SEPA flood hazard and risk maps.
Related Actions:	Strategic Mapping And Modelling (SEPA)
Funding Arrangement:	Scottish Water funding is committed in its capital programme through Q&S 4a (2015-2021) which is approved by its regulators and customers.

Action (ID):	MAINTAIN FLOOD WARNING (80410030)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Continue to maintain the Carse of Lennoch to Lochlane and the Crieff to Innerpeffray flood warning areas which are part of the Earn river flood warning scheme.</p> <p>Continue to maintain the Comrie flood warning area which covers properties at risk of flooding from the Water of Ruchill and/or the River Earn as part of the Ruchill river flood warning scheme.</p> <p>When flood events occur in an area with an existing flood warning service, SEPA will seek to verify the flood forecasts and warnings. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.</p>		
Coordination Arrangement:	A flood protection scheme is proposed for Comrie. SEPA will work with the local authority to ensure that changes to hydrology and flood risk as a result of the proposed flood protection scheme are fully considered in the existing flood warning system.		
Related Actions:	Flood protection scheme, community flood action group, flood forecasting, awareness raising, emergency response, self help.		
Funding Arrangement:	The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement.		

Action (ID):	FLOOD FORECASTING (80410009)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	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 flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. 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.
Coordination Arrangement:	SEPA / Met Office joint initiative. Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.
Related Actions:	Maintain flood warning, awareness Raising, Self Help, Emergency Plans/Response.
Funding Arrangement:	SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.

Action (ID):	COMMUNITY FLOOD ACTION GROUPS (80330012)		
Objective(ID):	Reduce economic damages to residential and non-residential properties in Comrie caused by flooding from the River Earn and River Lednock (8033)		
Delivery Lead:	Community		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Community flood action groups are community based resilience groups which, on behalf of local residents and business, help to prepare for and minimise the effects of flooding. They reflect the interests of their local communities and may differ in composition and remit. There are over 60 groups already established in Scotland. The Scottish Flood Forum provides support for both new and existing groups.</p> <p>Comrie Resilience Group operates in this area. The membership includes Perth and Kinross Council, SEPA, Scottish Fire & Rescue and the Scottish Flood Forum. The group aims to reduce flooding of businesses and communities in Comrie. The resilience group was formed as a response to severe flooding in Comrie in August and November 2012.</p>		
Coordination Arrangement:	<p>The Council will work with Comrie Resilience Group to reduce flood risk, improve preparedness and increase resilience against flooding. The Council will continue to co-ordinate with the Comrie Resilience Group throughout the next 6 years on a priority needs basis where resources allow.</p> <p>The Council will coordinate community flood action groups with related actions.</p>		
Related Actions:	Self Help, Awareness Raising, Maintenance, Flood Forecasting, Emergency Plans/Response.		
Funding Arrangement:	Funding for Community flood action groups will be provided by private individuals, businesses, organisations or communities at risk of flooding.		

Action (ID):	AWARENESS RAISING (80410013)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Responsible authorities		
Status:	The Scottish government is developing curriculum resources to be used in Schools to increase awareness. LPD awareness raising will be coordinated by the LLA and developed through the LPD group.	Planned Delivery Period:	Ongoing
Description:	<p>Public awareness, participation and community support are essential components of sustainable flood risk management. 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>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.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships.</p> <p>For the new flood protection scheme, SEPA will support the local authority's communications and engagement activities with media activity, local public awareness events and education engagement with schools. SEPA will also deliver joint communications with local authorities for Floodline customers in any newly protected flood warning area.</p> <p>As part of SEPA's education programme and to contribute to community resilience SEPA is sponsoring a play by Rightlines Productions called 'Rapid Departure'. This interactive play about flooding will tour locations in Scotland throughout 2016, including this Potentially Vulnerable Area. The performances aim to lead people to consider how flooding could impact their community and how they can take steps to prepare for it.</p> <p>Local authorities will be undertaking additional awareness raising</p>		

	<p>activities when developing any specific project proposals and will engage with community resilience groups and local communities. As a responsible Authority Scottish Water will support SEPA and the other RAs with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.</p> <p>More general information and flooding guidance will be available on the website at: https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information</p>
Coordination Arrangement:	<p>Awareness raising will be coordinated through the Local Plan District partnership between SEPA and the responsible authorities.</p> <p>SEPA and the responsible authorities will use any studies, projects and flood schemes to engage with communities and raise awareness of flood risk.</p> <p>Communications activity will be coordinated through existing arrangements within Local Plan District Partnerships. Information will be disseminated through website, social media and other community engagement activity.</p> <p>SEPA and responsible authorities will coordinate awareness raising activities with related actions.</p>
Related Actions:	Flood protections scheme, Community Flood Action groups, Flood Warning, Self Help, Emergency Plans/Response, Flood Forecasting.
Funding Arrangement:	<p>Awareness raising activities will be funded from the Council's revenue budget.</p> <p>SEPA's awareness raising activities are funded by Scottish Government through SEPA's grant in aid settlement.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure. The National Park Authorities also have a duty to raise awareness of flood risk but do not receive any Scottish Government funding to support any flood specific activities.</p>

Action (ID):	SELF-HELP (80410011)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	-		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Everyone is responsible for protecting themselves and their property from flooding. Self help actions can be undertaken by any individuals, businesses, organisations or communities at risk of flooding. They are applicable to all sources, frequency and scales of flooding. They focus on awareness raising and understanding of flood risk.</p>		

	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.
Coordination Arrangement:	Responsible Authorities have a duty to raise public awareness of flood risk. Helping individuals understand the risks from which they are most vulnerable from is the first step in the process. Responsible Authorities will also actively promote Floodline.
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Maintenance, Emergency Plans/Response.
Funding Arrangement:	Individuals have prime responsibility to protect themselves and their property from flooding and are therefore expected to meet the costs of protecting themselves.

Action (ID):	MAINTENANCE (80410007)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Perth and Kinross and Stirling Council, asset / land managers		
Status:	Existing	Planned Delivery Period:	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 undertakes risk based inspection, maintenance 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. Sections 18 and 59 of the Flood Risk Management (Scotland) Act 2009 place duties of watercourse assessment, clearance and repair on local authorities. In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or defences.		
Coordination Arrangement:	Sections 17 and 18 of the Flood Risk Management (Scotland) Act 2009 require local authorities to prepare maps of relevant bodies of water and SuDS, assess flood risk on those bodies of water from time to time and to prepare a schedule of clearance and repair works where such works would substantially reduce flood risk. Under Section 59 of the same Act, Local authorities also have a duty to carry out clearance and repair works described on the schedule. The Council's schedule of clearance and repair works is made available for public inspection on its website. The Council carries out routine, scheduled inspections of watercourses on its list at a frequency which depends on flood risk. Further reactive inspections are carried out when issues are highlighted or during times of flooding. Further bodies of water will		

	<p>be included where it has been identified that they may give rise to a risk of flooding.</p> <p>Any identified clearance and repair works from these inspections are logged in a database and are undertaken in order of priority, subject to available funding.</p> <p>Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk. In the first instance, clearance and repair works are therefore referred to the landowner, where they can be identified. The Council usually only carries out works where there has been a failure of the landowner to act, where landownership is not clear, or where urgent intervention is required.</p> <p>In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or works.</p> <p>Scottish Water undertakes risk based inspection, maintenance 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. Local Authorities will liaise with SEPA where controlled activities may be required and with private landowners where they may require to take access on private land or to notify landowners that they require to undertake maintenance.</p> <p>The Council will coordinate maintenance activities with related actions.</p>
Related Actions:	Raising Awareness, Self Help, Community Flood Action Groups
Funding Arrangement:	<p>Maintenance activities are subject to funding from the relevant Perth and Kinross Council revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator. All business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</p>

Action (ID):	EMERGENCY PLANS/RESPONSE (80410014)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Category 1 and 2 Responders		
Status:	Existing	Planned Delivery Period:	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 coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p> <p>Emergency response plans are applicable for all types of flooding. They set out the steps to be taken during flooding in order to</p>		

	<p>maximise safety and minimise impacts where possible. Under the Civil Contingencies Act, Category 1 Responders have a duty to maintain emergency plans. Emergency plans may also be prepared by individuals, businesses, organisations or communities.</p> <p>Scottish Water is a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required.</p>
Coordination Arrangement:	<p>Perth and Kinross Council has developed a Generic Emergency Plan and a Flooding Emergency Response Plan. The Plan is designed to ensure that contingency measures are in place for the coordinated and flexible response to flooding incidents to mitigate the effects of flooding emergencies.</p> <p>SEPA flood alerts and warnings will be monitored and resources made ready as required. A coordinated response will follow any reports of flooding.</p> <p>Emergency response is coordinated with regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. A debrief and plan review will be carried out following any flood events.</p> <p>Protecting property from flooding is the responsibility of the owner of the property, but Perth & Kinross Council can sometimes provide sandbags to properties. Unfortunately the Council only has the resources to supply sandbags to residents where there is an imminent risk of flooding.</p> <p>Emergency plans/response activities will be coordinated with related actions.</p>
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Self Help.
Funding Arrangement:	<p>Funding is allocated to category 1 and 2 responders by the Scottish Government for dealing with emergency response and in extreme cases may reimburse responders after an extreme event. Emergency response activities are funded from the Council's revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</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	Planned Delivery Period:	Ongoing
Description:	The Scottish Planning Policy (SPP) and accompanying Planning Advice Notes set out the 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 SPP supports a catchment scale approach to sustainable flood risk management		

	<p>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 generally be avoided. For further information on the application of national planning policies see Annex 3.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the Flood Risk Management (Scotland) 2009. SEPA also has a duty to co-operate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engage in the planning system, including guidance on flood risk and planning is available on SEPA website http://www.sepa.org.uk/environment/land/planning/</p> <p>Current national planning policies, the Scottish Planning Policy and accompanying Planning Advice notes restrict development within the floodplain and limit exposure of new receptors to flood risk. In addition to national policies, local planning policies may place further requirements within their area of operation to restrict inappropriate development and prevent unacceptable risk. Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.</p>
Coordination Arrangement:	<p>Perth and Kinross Council is a local planning authority and will coordinate its work with the strategic development planning authority and the National Parks Authorities, who are also planning authorities.</p> <p>The Council's Flooding Team are consulted on planning applications and work with the Planning and Development Service to ensure that flood risk is addressed. The Perth & Kinross Local Development Plan provides the framework against which planning applications outside the National Parks are assessed and is consistent with the Strategic Development Plan (TAYplan). Supplementary Guidance on Flood Risk and Flood Risk Assessments is also available to support the content of the Perth & Kinross Local Development Plan. Planning applications within the National Parks are assessed against their respective Local Development Plans, which also contain policies in relation to flood risk. Planning applications are also reviewed against SEPA's indicative flood maps, existing flood studies and records of flooding. Where flood risk is an issue, developers are required to prepare and submit a site-specific flood risk assessment and</p>

	<p>drainage impact assessment as applicable. They must also consider how a development site will be drained and how surface water runoff will be managed through the implementation of appropriate Sustainable Urban Drainage Measures. So as to align the flood risk management and land use planning systems, land use planning objectives and actions have been developed which can be viewed in Annex 3. The Council will coordinate land use planning policies with related actions.</p>
<p>Related Actions:</p>	<p>Flood protection scheme, awareness Raising, self Help, Maintenance, Strategic Mapping & Modelling.</p>
<p>Funding Arrangement:</p>	<p>Perth & Kinross Council's planning activities are funded from the Council's revenue budget SEPA's land use planning activities are funded by Scottish Government through SEPA's grant in aid settlement. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure. Planning activities are funded from the National Park's revenue budget which is a combination of Scottish Government direct grant and planning fees.</p>

3.15 Forteviot PVA 08/15

Local Plan District	Local authority	Main catchment
Tay	Perth and Kinross Council	River Earn

Background and summary of impacts

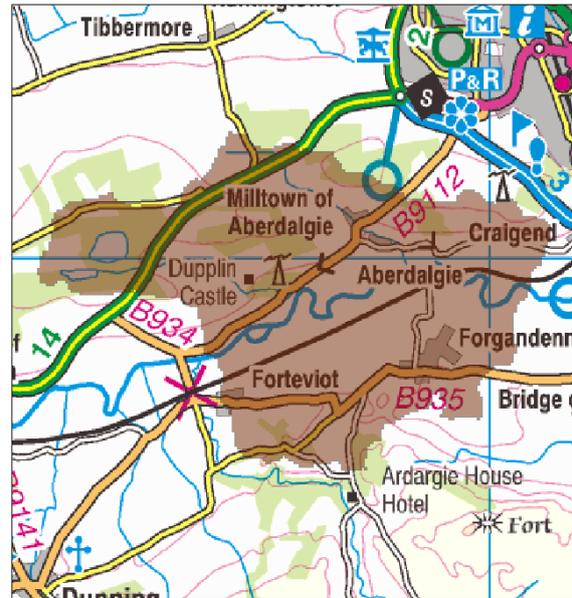
This Potentially Vulnerable Area is 29km². It is situated in the lower reaches of the River Earn catchment and includes Forteviot and Forgandenny.

The majority of flood damages are caused by river flooding.

There are fewer than 10 residential and non-residential properties at risk of flooding. The Annual Average Damages are approximately £15,000.

Work carried out since the National Flood Risk Assessment in 2011 has concluded that the risk of flooding in this Potentially Vulnerable Area is now relatively low. The designation of this Potentially Vulnerable Area will be reviewed in the next flood risk management planning cycle.

For more detailed information please see the [Tay Flood Risk Management Strategy](#)



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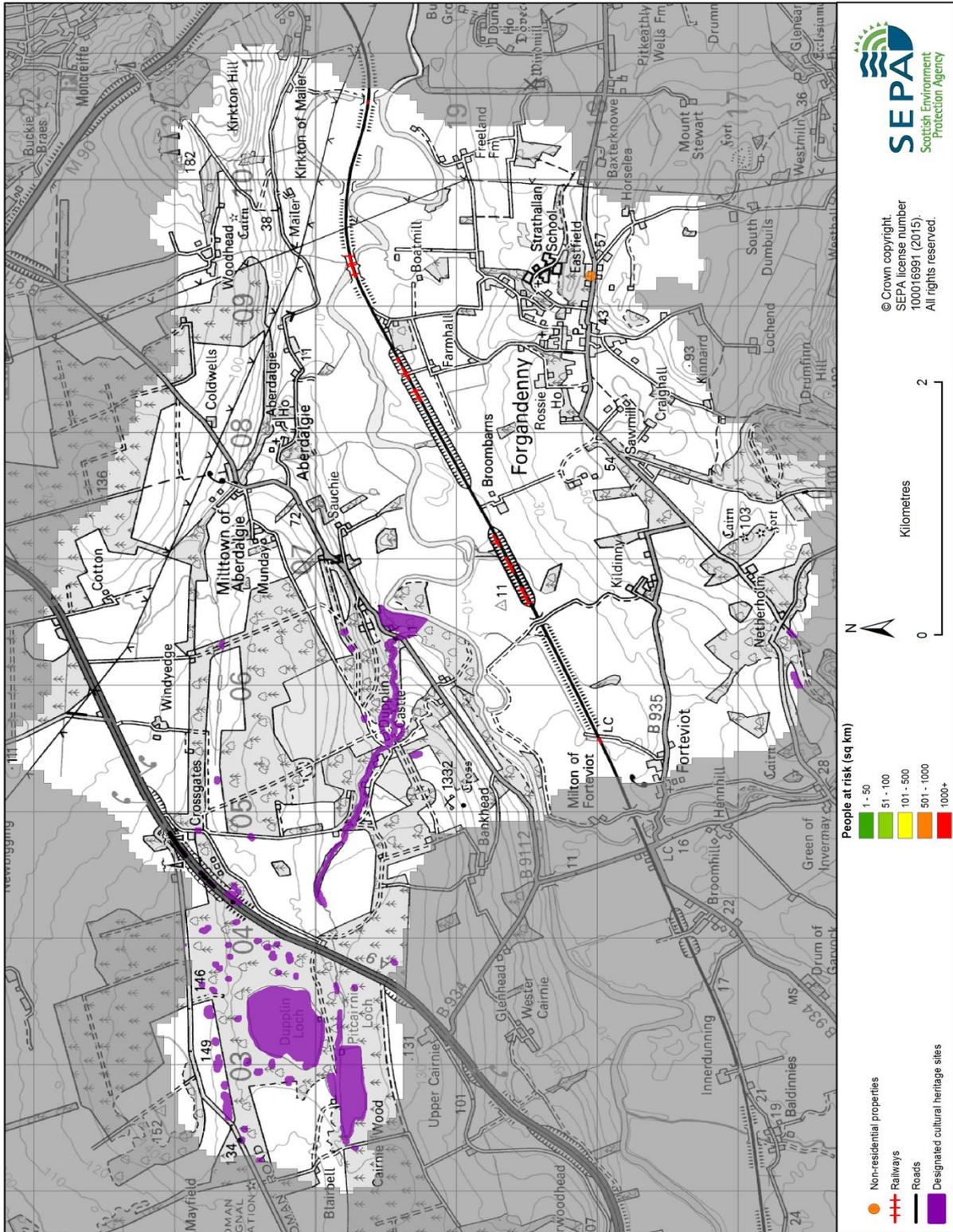


Figure 23: Impact of flooding in PVA 08/15

(Reproduced from the Tay Flood Risk Management Strategy, SEPA, December 2015)

History of flooding

- In January 1993 hundreds of properties flooded in Perth and Kinross and surrounding areas from the River Earn with over £20 million of damage.

Selected Actions in the Forteviot PVA

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):	STRATEGIC MAPPING AND MODELLING (80410016)				
Objective(ID):	Reduce overall flood risk (8041)				
Delivery Lead:	SEPA				
Status:	Not started	Planned Delivery Period:			SEPA led mapping improvements in the Lower Earn area will be undertaken in 2016 to 2018. Surface water mapping improvements are expected to be undertaken in 2016 to 2017.
Description:	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. SEPA will seek to develop flood mapping in the Lower Earn area (from Forteviot Bridge 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.				
Coordination Arrangement:	SEPA's strategic mapping activities will be coordinated with the activities of other responsible authorities as required.				

Related Actions:	Strategic Mapping And Modelling (Scottish Water), Planning Policies
Funding Arrangement:	SEPA's strategic mapping and modelling activities are funded by Scottish Government through SEPA's grant in aid settlement.

Action (ID):	MAINTAIN FLOOD WARNING (80410030)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	Continue to maintain the Innerpefferay to Bridge of Earn flood warning area which is part of the Earn river flood warning scheme. When flood events occur in an area with an existing flood warning service, SEPA will seek to verify the flood forecasts and warnings. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.		
Coordination Arrangement:	SEPA will work with the local authority to ensure that any new information about flood risk is considered in the existing flood warning system.		
Related Actions:	Flood forecasting, awareness raising, emergency response, self help.		
Funding Arrangement:	The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement.		

Action (ID):	FLOOD FORECASTING (80410009)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	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 flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. 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.		
Coordination Arrangement:	SEPA / Met Office joint initiative. Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.		
Related Actions:	Maintain flood warning, awareness Raising, Self Help, Emergency Plans/Response.		

Funding Arrangement:	SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.		
Action (ID):	AWARENESS RAISING (80410013)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Responsible authorities		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Public awareness, participation and community support are essential components of sustainable flood risk management. 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.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships.</p> <p>Local authorities will be undertaking additional awareness raising activities when developing any specific project proposals and will engage with community resilience groups and local communities. Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies. More general information and flooding guidance will be available on the website at: https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information</p>		
Coordination Arrangement:	<p>Awareness raising will be coordinated through the Local Plan District partnership between SEPA and the responsible authorities.</p> <p>SEPA and the responsible authorities will use any studies, projects and flood schemes to engage with communities and raise awareness of flood risk.</p> <p>Communications activity will be coordinated through existing arrangements within Local Plan District Partnerships. Information will be disseminated through website, social media and other community engagement activity.</p>		

	SEPA and responsible authorities will coordinate awareness raising activities with related actions.
Related Actions:	Flood Warning, Self Help, Emergency Plans/Response, Flood Forecasting
Funding Arrangement:	Awareness raising activities will be funded from the Council's revenue budget. SEPA's awareness raising activities are funded by Scottish Government through SEPA's grant in aid settlement. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.

Action (ID):	SELF-HELP (80410011)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	N/A		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Everyone is responsible for protecting themselves and their property from flooding. Self help actions can be undertaken by any individuals, businesses, organisations or communities at risk of flooding. They are applicable to all sources, frequency and scales of flooding. They focus on awareness raising and understanding of flood risk.</p> <p>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.</p>		
Coordination Arrangement:	Responsible Authorities have a duty to raise public awareness of flood risk. Helping individuals understand the risks from which they are most vulnerable from is the first step in the process. Responsible Authorities will also actively promote Floodline.		
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Maintenance, Emergency Plans/Response.		
Funding Arrangement:	Individuals have prime responsibility to protect themselves and their property from flooding and are therefore are expected to meet the costs of protecting themselves.		

Action (ID):	MAINTENANCE (80410007)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Perth and Kinross Council, asset / land managers		
Status:	Existing	Planned Delivery Period:	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 undertakes 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. Sections 18 and 59 of the Flood Risk Management (Scotland) Act 2009 place duties of watercourse assessment, clearance and repair on local authorities. In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or defences.</p>
Coordination Arrangement:	<p>Sections 17 and 18 of the Flood Risk Management (Scotland) Act 2009 require local authorities to prepare maps of relevant bodies of water and sustainable urban drainage systems (SUDS), assess flood risk on those bodies of water from time to time and to prepare a schedule of clearance and repair works where such works would substantially reduce flood risk. Under Section 59 of the same Act, Local authorities also have a duty to carry out clearance and repair works described on the schedule. The Council's schedule of clearance and repair works is made available for public inspection on its website.</p> <p>The Council carries out routine, scheduled inspections of watercourses on its list at a frequency which depends on flood risk. Further reactive inspections are carried out when issues are highlighted or during times of flooding. Further bodies of water will be included where it has been identified that they may give rise to a risk of flooding.</p> <p>Any identified clearance and repair works from these inspections are logged in a database and are undertaken in order of priority, subject to available funding.</p> <p>Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk. In the first instance, clearance and repair works are therefore referred to the landowner, where they can be identified. The Council usually only carries out works where there has been a failure of the landowner to act, where landownership is not clear, or where urgent intervention is required.</p> <p>In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or works. Scottish Water undertakes risk based inspection, maintenance 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. Local Authorities will liaise with SEPA where controlled activities may be required and with private landowners where they may require to take access on private land or to notify landowners that they require to undertake maintenance.</p>

	The Council will coordinate maintenance activities with related actions.
Related Actions:	Raising Awareness, Self Help, Community Flood Action Groups
Funding Arrangement:	Maintenance activities are subject to funding from the relevant Perth and Kinross Council revenue budget. Scottish Water is funded by customer charges as set by their economic regulator. All business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.

Action (ID):	EMERGENCY PLANS/RESPONSE (80410014)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Category 1 and 2 Responders		
Status:	Existing	Planned Delivery Period:	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 coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. Emergency response plans are applicable for all types of flooding. They set out the steps to be taken during flooding in order to maximise safety and minimise impacts where possible. Under the Civil Contingencies Act, Category 1 Responders have a duty to maintain emergency plans. Emergency plans may also be prepared by individuals, businesses, organisations or communities.</p> <p>Scottish Water is a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required.</p>		
Coordination Arrangement:	<p>Perth and Kinross Council has developed a Generic Emergency Plan and a Flooding Emergency Response Plan. The Plan is designed to ensure that contingency measures are in place for the coordinated and flexible response to flooding incidents to mitigate the effects of flooding emergencies.</p> <p>SEPA flood alerts and warnings will be monitored and resources made ready as required. A coordinated response will follow any reports of flooding.</p> <p>Emergency response is coordinated with regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. A debrief and plan review will be carried out following any flood events.</p> <p>Protecting property from flooding is the responsibility of the owner of the property, but Perth & Kinross Council can sometimes provide sandbags to properties. Unfortunately the Council only</p>		

	has the resources to supply sandbags to residents where there is an imminent risk of flooding. Emergency plans/response activities will be coordinated with related actions.
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Self Help.
Funding Arrangement:	Funding is allocated to category 1 and 2 responders by the Scottish Government for dealing with emergency response and in extreme cases may reimburse responders after an extreme event. Emergency response activities are funded from the Council's revenue budget. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.

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	Planned Delivery Period:	Ongoing
Description:	<p>The Scottish Planning Policy (SPP) and accompanying Planning Advice Notes set out the 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 SPP 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 generally be avoided. For further information on the application of national planning policies see Annex 3.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the Flood Risk Management (Scotland) 2009. SEPA also has a duty to co-operate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engage in the planning system, including guidance on flood risk and planning is available on SEPA website http://www.sepa.org.uk/environment/land/planning/</p> <p>Current national planning policies, the Scottish Planning Policy</p>		

	<p>and accompanying Planning Advice notes restrict development within the floodplain and limit exposure of new receptors to flood risk. In addition to national policies, local planning policies may place further requirements within their area of operation to restrict inappropriate development and prevent unacceptable risk. Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.</p>
<p>Coordination Arrangement:</p>	<p>Perth and Kinross Council is a local planning authority and will coordinate its work with the strategic development planning authority and the National Parks Authorities.</p> <p>The Council's Flooding Team are consulted on planning applications and work with the Planning and Development Service to ensure that flood risk is addressed. The Local Development Plan provides the framework against which planning applications are assessed and is consistent with the Strategic Development Plan (TAYplan). Supplementary Guidance on Flood Risk and Flood Risk Assessments is also available to support the content of the Local Development Plan. Planning applications are also reviewed against SEPA's indicative flood maps, existing flood studies and records of flooding. Where flood risk is an issue, developers are required to prepare and submit a site-specific flood risk assessment and drainage impact assessment as applicable. They must also consider how a development site will be drained and how surface water runoff will be managed through the implementation of appropriate Sustainable Urban Drainage Measures.</p> <p>So as to align the flood risk management and land use planning systems, land use planning objectives and actions have been developed which can be viewed in Annex 3. The Council will coordinate land use planning policies with related actions.</p>
<p>Related Actions:</p>	<p>Awareness Raising, self Help, Maintenance, Strategic Mapping & Modelling.</p>
<p>Funding Arrangement:</p>	<p>Perth & Kinross Council's planning activities will be funded from the Council's revenue budget. SEPA's land use planning activities will be funded by the Scottish Government through SEPA's grant in aid settlement. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</p>

3.16 Dunning PVA 08/16

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

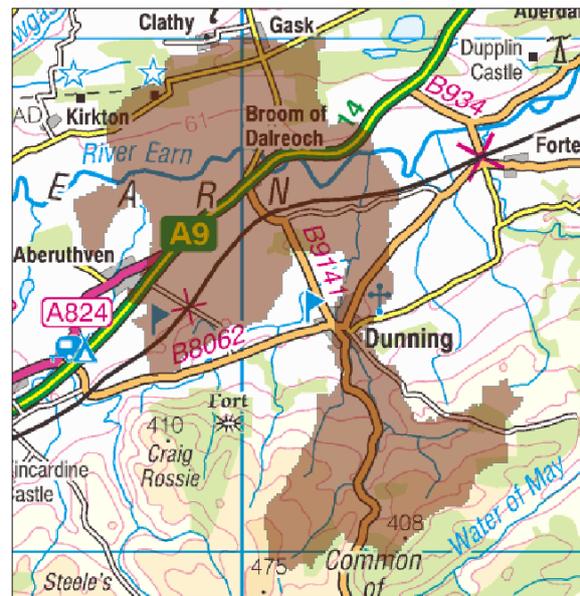
Background and summary of impacts

This Potentially Vulnerable Area is 37km². It is situated in the lower reaches of the River Earn catchment and includes the town of Dunning. The main watercourses are the River Earn and its tributary the Dunning Burn.

The majority of flood damages are caused by river flooding. The highest risk of flooding is in Dunning from the Dunning Burn.

There are approximately 40 residential properties at risk of flooding. The Annual Average Damages are approximately £120,000.

For more detailed information please see the [Tay Flood Risk Management Strategy](#)



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Figure 24: Impact of flooding in PVA 08/16

(Reproduced from the Tay Flood Risk Management Strategy, SEPA, December 2015)

History of flooding

The following significant floods have been recorded:

- 2 February 1948: Telephone lines and power disrupted within Strathearn district when poles carrying high tension wires were toppled. Two hundred acres of land were flooded.
- 18 September 1930: A dam, four bridges, a dyke and a garage washed away in Dunning. Residential and non-residential properties in the vicinity were also flooded. Evacuation of some properties was required.
- 8 November 1926: Flooding throughout the area due to the River Earn and tributaries flooding up to 3.5m in some places.

Selected Actions in the Dunning PVA

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):	STRATEGIC MAPPING AND MODELLING (80410016)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Not started	Planned Delivery Period:	SEPA led mapping improvements in the Middle Earn area will be undertaken in 2016 to 2017.
Description:	SEPA will seek to develop flood mapping in the Middle Earn area to improve understanding of flood risk. The extent and timing of improvements will depend on detailed scoping and data availability.		
Coordination Arrangement:	SEPA's strategic mapping activities will be coordinated with the activities of other responsible authorities as required.		
Related Actions:	Strategic Mapping And Modelling (Scottish Water), Planning Policies		
Funding Arrangement:	SEPA's strategic mapping and modelling activities are funded by Scottish Government through SEPA's grant in aid settlement.		

Action (ID):	STRATEGIC MAPPING AND MODELLING (80410019)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Scottish Water		
Status:	Not Started	Planned Delivery Period:	2016 - 2018
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. Scottish Water will undertake further investigation and modelling in the Auchterarder sewer catchments to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.		
Coordination Arrangement:	Scottish Water will work with responsible authorities to incorporate relevant information into these studies and by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform surface water management plans and SEPA flood hazard and risk maps.		
Related Actions:	Strategic Mapping And Modelling (SEPA)		
Funding Arrangement:	Scottish Water funding is committed in its capital programme through Q&S 4a (2015-2021) which is approved by its regulators and customers.		

Action (ID):	MAINTAIN FLOOD WARNING (80410030)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	Continue to maintain the Innerpeffray to Bridge of Earn flood warning area which is part of the Earn river flood warning scheme. When flood events occur in an area with an existing flood warning service, SEPA will seek to verify the flood forecasts and warnings. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.		
Coordination Arrangement:	SEPA will work with the local authority to ensure that any new information about flood risk is considered in the existing flood warning system.		
Related Actions:	Flood forecasting, awareness raising, emergency response, self help.		
Funding Arrangement:	The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement.		

Action (ID):	FLOOD FORECASTING (80410009)		
Objective(ID):	Reduce overall flood risk (8041)		

Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	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 flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. 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>		
Coordination Arrangement:	<p>SEPA / Met Office joint initiative. Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.</p>		
Related Actions:	<p>Maintain flood warning, awareness Raising, Self Help, Emergency Plans/Response.</p>		
Funding Arrangement:	<p>SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.</p>		

Action (ID):	AWARENESS RAISING (80410013)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Responsible authorities		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Public awareness, participation and community support are essential components of sustainable flood risk management. 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>The Scottish government is developing curriculum resources to be used in Schools to increase awareness. From 2016 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.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships.</p> <p>Local authorities will be undertaking additional awareness raising</p>		

	<p>activities when developing any specific project proposals and will engage with community resilience groups and local communities. Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies. More general information and flooding guidance will be available on the website at: https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information</p>
Coordination Arrangement:	<p>Awareness raising will be coordinated through the Local Plan District partnership between SEPA and the responsible authorities.</p> <p>SEPA and the responsible authorities will use any studies, projects and flood schemes to engage with communities and raise awareness of flood risk.</p> <p>Communications activity will be coordinated through existing arrangements within Local Plan District Partnerships. Information will be disseminated through website, social media and other community engagement activity.</p> <p>SEPA and responsible authorities will coordinate awareness raising activities with related actions.</p>
Related Actions:	Flood Warning, Self Help, Emergency Plans/Response, Flood Forecasting.
Funding Arrangement:	<p>Awareness raising activities will be funded from the Council's revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</p>

Action (ID):	SELF-HELP (80410011)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	N/A		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Everyone is responsible for protecting themselves and their property from flooding. Self help actions can be undertaken by any individuals, businesses, organisations or communities at risk of flooding. They are applicable to all sources, frequency and scales of flooding. They focus on awareness raising and understanding of flood risk.</p> <p>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</p>		

	Council is piloting a project for flood protection products for properties in flood risk areas.
Coordination Arrangement:	Responsible Authorities have a duty to raise public awareness of flood risk. Helping individuals understand the risks from which they are most vulnerable from is the first step in the process. Responsible Authorities will also actively promote Floodline.
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Maintenance, Emergency Plans/Response.
Funding Arrangement:	Individuals have prime responsibility to protect themselves and their property from flooding and are therefore are expected to meet the costs of protecting themselves.

Action (ID):	MAINTENANCE (80410007)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Perth and Kinross Council, asset / land managers		
Status:	Existing	Planned Delivery Period:	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 undertakes 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> <p>Sections 18 and 59 of the Flood Risk Management (Scotland) Act 2009 place duties of watercourse assessment, clearance and repair on local authorities. In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or defences.</p>		
Coordination Arrangement:	<p>Sections 17 and 18 of the Flood Risk Management (Scotland) Act 2009 require local authorities to prepare maps of relevant bodies of water and sustainable urban drainage systems (SUDS), assess flood risk on those bodies of water from time to time and to prepare a schedule of clearance and repair works where such works would substantially reduce flood risk. Under Section 59 of the same Act, Local authorities also have a duty to carry out clearance and repair works described on the schedule. The Council's schedule of clearance and repair works is made available for public inspection on its website.</p> <p>The Council carries out routine, scheduled inspections of watercourses on its list at a frequency which depends on flood risk. Further reactive inspections are carried out when issues are highlighted or during times of flooding. Further bodies of water will be included where it has been identified that they may give rise to a risk of flooding.</p> <p>Any identified clearance and repair works from these inspections are logged in a database and are undertaken in order of priority, subject to available funding.</p>		

	<p>Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk. In the first instance, clearance and repair works are therefore referred to the landowner, where they can be identified. The Council usually only carries out works where there has been a failure of the landowner to act, where landownership is not clear, or where urgent intervention is required.</p> <p>In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or works. Scottish Water undertakes risk based inspection, maintenance 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. Local Authorities will liaise with SEPA where controlled activities may be required and with private landowners where they may require to take access on private land or to notify landowners that they require to undertake maintenance.</p> <p>The Council will coordinate maintenance activities with related actions.</p>
Related Actions:	Raising Awareness, Self Help, Community Flood Action Groups
Funding Arrangement:	<p>Maintenance activities are subject to funding from the relevant Perth and Kinross Council revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator. All business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</p>

Action (ID):	EMERGENCY PLANS/RESPONSE (80410014)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Category 1 and 2 Responders		
Status:	Existing	Planned Delivery Period:	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 coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p> <p>Emergency response plans are applicable for all types of flooding. They set out the steps to be taken during flooding in order to maximise safety and minimise impacts where possible. Under the Civil Contingencies Act, Category 1 Responders have a duty to maintain emergency plans. Emergency plans may also be prepared by individuals, businesses, organisations or communities.</p>		

	Scottish Water is a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required.
Coordination Arrangement:	<p>Perth and Kinross Council has developed a Generic Emergency Plan and a Flooding Emergency Response Plan. The Plan is designed to ensure that contingency measures are in place for the coordinated and flexible response to flooding incidents to mitigate the effects of flooding emergencies.</p> <p>SEPA flood alerts and warnings will be monitored and resources made ready as required. A coordinated response will follow any reports of flooding.</p> <p>Emergency response is coordinated with regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. A debrief and plan review will be carried out following any flood events.</p> <p>Protecting property from flooding is the responsibility of the owner of the property, but Perth & Kinross Council can sometimes provide sandbags to properties. Unfortunately the Council only has the resources to supply sandbags to residents where there is an imminent risk of flooding.</p> <p>Emergency plans/response activities will be coordinated with related actions.</p>
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Self Help.
Funding Arrangement:	<p>Funding is allocated to category 1 and 2 responders by the Scottish Government for dealing with emergency response and in extreme cases may reimburse responders after an extreme event. Emergency response activities are funded from the Council's revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</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	Planned Delivery Period:	Ongoing
Description:	<p>The Scottish Planning Policy (SPP) and accompanying Planning Advice Notes set out the 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 SPP 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.</p> <p>Under this approach, new development in areas with medium to high likelihood of flooding should generally be avoided.</p>		

	<p>For further information on the application of national planning policies see Annex 3.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the Flood Risk Management (Scotland) 2009. SEPA also has a duty to co-operate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engage in the planning system, including guidance on flood risk and planning is available on SEPA website http://www.sepa.org.uk/environment/land/planning/</p> <p>Current national planning policies, the Scottish Planning Policy and accompanying Planning Advice notes restrict development within the floodplain and limit exposure of new receptors to flood risk. In addition to national policies, local planning policies may place further requirements within their area of operation to restrict inappropriate development and prevent unacceptable risk. Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.</p>
Coordination Arrangement:	<p>Perth and Kinross Council is a local planning authority and will coordinate its work with the strategic development planning authority and the National Parks Authorities.</p> <p>The Council's Flooding Team are consulted on planning applications and work with the Planning and Development Service to ensure that flood risk is addressed. The Local Development Plan provides the framework against which planning applications are assessed and is consistent with the Strategic Development Plan (TAYplan). Supplementary Guidance on Flood Risk and Flood Risk Assessments is also available to support the content of the Local Development Plan. Planning applications are also reviewed against SEPA's indicative flood maps, existing flood studies and records of flooding. Where flood risk is an issue, developers are required to prepare and submit a site-specific flood risk assessment and drainage impact assessment as applicable. They must also consider how a development site will be drained and how surface water runoff will be managed through the implementation of appropriate Sustainable Urban Drainage Measures.</p> <p>So as to align the flood risk management and land use planning systems, land use planning objectives and actions have been developed which can be viewed in Annex 3. The Council will coordinate land use planning policies with related actions.</p>

Related Actions:	Awareness Raising, self Help, Maintenance, Strategic Mapping & Modelling.
Funding Arrangement:	SEPA's land use planning activities will be funded by the Scottish Government through SEPA's grant in aid settlement. Perth & Kinross Council's planning activities will be funded from the Council's revenue budget. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.

3.17 Bridge of Earn PVA 08/17

Local Plan District	Local authority	Main catchment
Tay	Fife Council, Perth and Kinross Council	River Earn

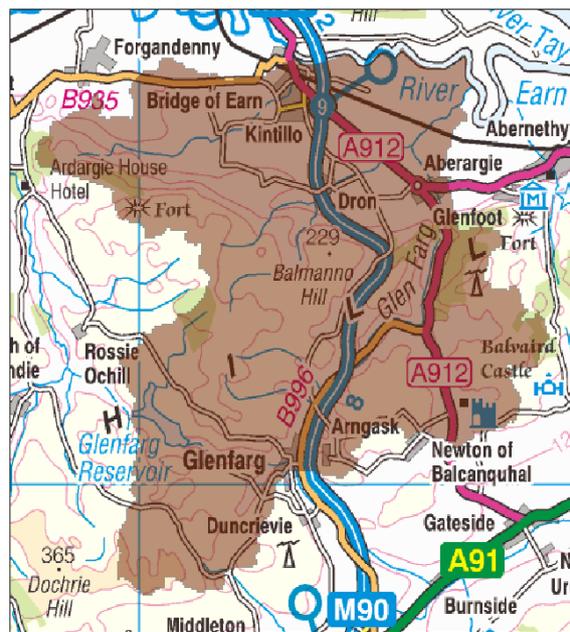
Background and summary of impacts

This Potentially Vulnerable Area is 66km² and part of the River Earn catchment. It is situated on the south bank at the mouth of the River Earn where it flows into the Firth of Tay. It includes Bridge of Earn and Glenfarg and the main watercourses are the River Earn and River Farg.

The majority of flood damages are caused by river flooding, however, the interaction between river and coastal flooding where the River Earn meets the Firth of Tay influences flooding in Bridge of Earn. The majority of flood damages are caused by river flooding, however, the interaction between river and coastal flooding where the River Earn meets the Firth of Tay influences flooding in Bridge of Earn.

There are approximately 50 residential properties and 20 non-residential properties at risk of flooding. The Annual Average Damages are approximately £410,000.

For more detailed information please see the [Tay Flood Risk Management Strategy](#)



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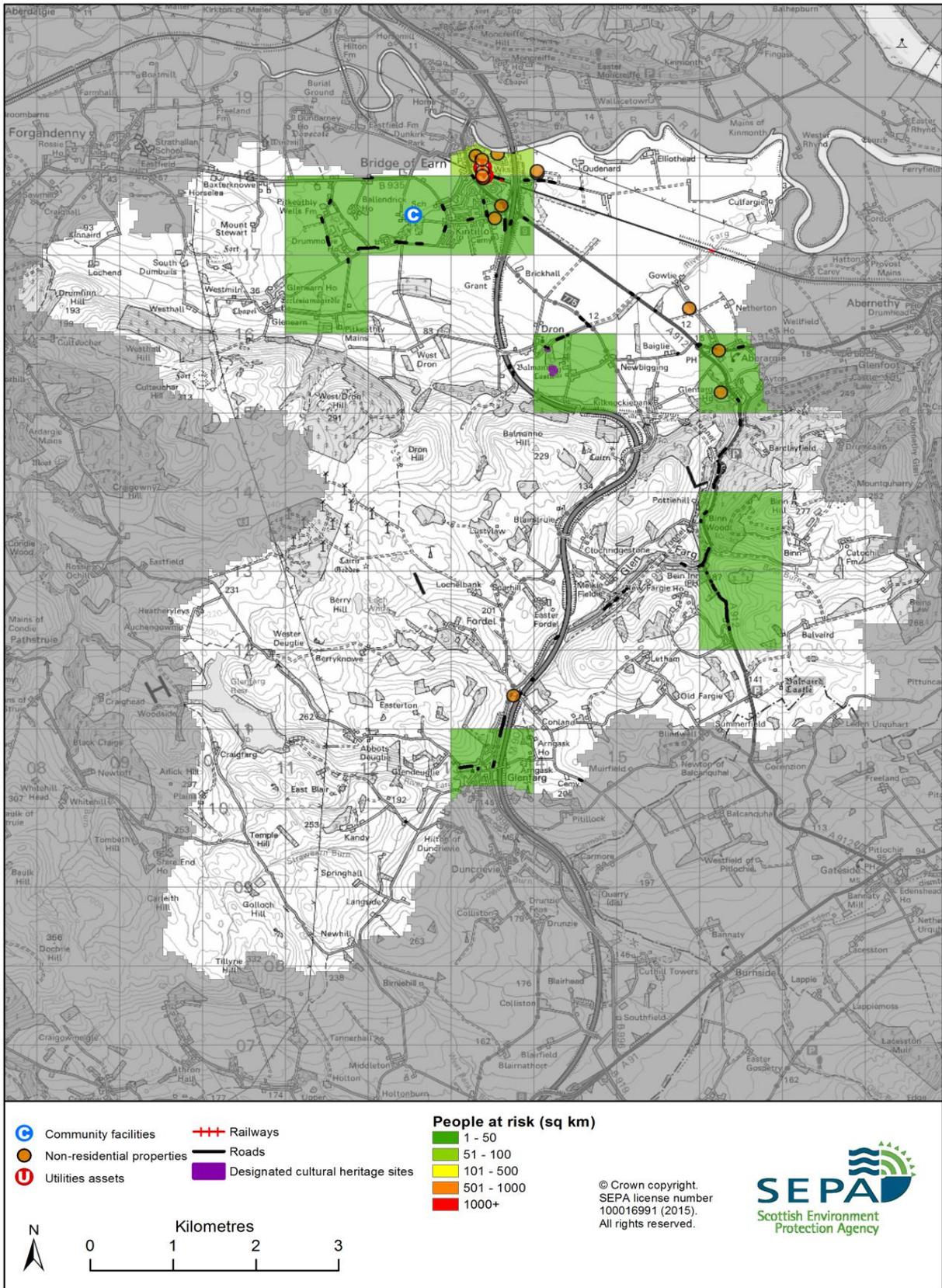


Figure 25: Impact of flooding in PVA 08/17

(Reproduced from the Tay Flood Risk Management Strategy, SEPA, December 2015)

History of flooding

- December 2015: Storm Desmond caused prolonged rainfall across Perth & Kinross. Several properties and roads affected in the Bridge of Earn and Glenfarg areas.
- One flood has been recorded as significant in this area, which occurred in January 1993. Widespread flooding across the Tay catchment resulted in over £20 million of damage. The flooding is known to have affected Bridge of Earn.

Selected Actions in the Bridge of Earn PVA

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):	MAINTAIN FLOOD PROTECTION SCHEME (80400017)		
Objective(ID):	Accept that significant flood risk in Bridge of Earn is being managed appropriately. Maintain existing actions that reduce risk of flooding on the River Earn, Deich Burn and Yellow Burn. (8040)		
Delivery Lead:	Perth and Kinross Council		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	Continue to maintain the existing Bridge of Earn Flood Protection Scheme on the River Earn, the Deich Burn and the Yellow Burn. The scheme was completed in 2006 and includes flood walls and embankments.		
Coordination Arrangement:	Perth & Kinross Council's Roads Maintenance Partnership will maintain any existing flood protection scheme through a programme of inspections carried out in accordance with the recommendations set out in the scheme maintenance manuals. Maintenance works will be coordinated with SEPA, SNH, landowners and other stakeholders as required. The maintenance of the flood scheme will also be coordinated with related actions.		
Related Actions:	Flood warning, Flood forecasting, Awareness raising, Maintenance Emergency plans/response		
Funding Arrangement:	The maintenance of flood protection schemes will be subject to funding from Perth & Kinross Council's Revenue Budget.		

Action (ID):	STRATEGIC MAPPING AND MODELLING (80410016)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Not started	Planned Delivery Period:	SEPA led mapping improvements in the Lower Earn area will be undertaken in 2016 to 2018. Surface water mapping improvements are expected to be undertaken in 2016 to 2017.
Description:	<p>SEPA will seek to incorporate additional surface water data into the flood maps to improve understanding of flood risk, to be completed early in the first flood risk management cycle. Approximately 900km² of improved surface water data is currently available within this Local Plan District.</p> <p>SEPA will seek to develop flood mapping in the Lower Earn area to improve understanding of flood risk. The extent and timing of improvements will depend on detailed scoping and data availability.</p>		
Coordination Arrangement:	SEPA's strategic mapping activities will be coordinated with the activities of other responsible authorities as required.		
Related Actions:	Strategic Mapping And Modelling (Scottish Water), Planning Policies.		
Funding Arrangement:	SEPA's strategic mapping and modelling activities are funded by Scottish Government through SEPA's grant in aid settlement.		

Action (ID):	STRATEGIC MAPPING AND MODELLING (80410019)		
Objective(ID):	Reduce overall Flood Risk (8041)		
Delivery Lead:	Scottish Water		
Status:	Not Started	Planned Delivery Period:	2016 - 2018
Description:	<p>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. Scottish Water will undertake further investigation and modelling in the Perth City sewer catchments to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.</p>		
Coordination Arrangement:	Scottish Water will work with responsible authorities to incorporate relevant information into these studies and by regularly keeping the responsible authorities informed of their progress. Scottish		

	Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform surface water management plans and SEPA flood hazard and risk maps.
Related Actions:	Strategic Mapping And Modelling (SEPA)
Funding Arrangement:	Scottish Water funding is committed in its capital programme through Q&S 4a (2015-2021) which is approved by its regulators and customers.

Action (ID):	MAINTAIN FLOOD WARNING (80410030)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	Continue to maintain the Bridge of Earn and the Bridge of Earn to the River Tay flood warning areas which are part of the Earn river flood warning scheme. When flood events occur in an area with an existing flood warning service, SEPA will seek to verify the flood forecasts and warnings. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.		
Coordination Arrangement:	SEPA will work with the local authority to ensure that any new information about flood risk is considered in the existing flood warning system		
Related Actions:	community flood action group, flood forecasting, awareness raising, emergency response, self help		
Funding Arrangement:	The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement.		

Action (ID):	FLOOD FORECASTING (80410009)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	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 flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. 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.		
Related Actions:	Maintain flood warning, awareness Raising, Self Help, Emergency Plans/Response.		

Coordination Arrangement:	SEPA / Met Office joint initiative. Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.
Funding Arrangement:	SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.

Action (ID):	COMMUNITY FLOOD ACTION GROUPS (80400012)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Community		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Community flood action groups are community based resilience groups which, on behalf of local residents and business, help to prepare for and minimise the effects of flooding. They reflect the interests of their local communities and may differ in composition and remit. There are over 60 groups already established in Scotland. The Scottish Flood Forum provides support for both new and existing groups.</p> <p>Glenfarg Community Council operates in this area. The community council have prepared a community resilience plan to help prepare for and respond to emergencies.</p>		
Coordination Arrangement:	<p>The Council will work with Glenfarg Community Council to reduce flood risk, improve preparedness and increase resilience against flooding. The Council will continue to co-ordinate with Glenfarg Community Council throughout the next 6 years on a priority needs basis where resources allow.</p> <p>The Council will coordinate community flood action groups with related actions.</p>		
Related Actions:	Self Help, Awareness Raising, Maintenance, Flood Forecasting, Emergency Plans/Response.		
Funding Arrangement:	Funding for Community flood action groups will be provided by private individuals, businesses, organisations or communities at risk of flooding.		

Action (ID):	AWARENESS RAISING (80410013)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Responsible authorities		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Public awareness, participation and community support are essential components of sustainable flood risk management. 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>The Scottish government is developing curriculum resources to be</p>		

	<p>used in Schools to increase awareness. 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. Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships.</p> <p>Local authorities will be undertaking additional awareness raising activities when developing any specific project proposals and will engage with community resilience groups and local communities. Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies. More general information and flooding guidance will be available on the website at: https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information</p>
<p>Coordination Arrangement:</p>	<p>Awareness raising will be coordinated through the Local Plan District partnership between SEPA and the responsible authorities.</p> <p>SEPA and the responsible authorities will use any studies, projects and flood schemes to engage with communities and raise awareness of flood risk.</p> <p>Communications activity will be coordinated through existing arrangements within Local Plan District Partnerships. Information will be disseminated through website, social media and other community engagement activity.</p> <p>SEPA and responsible authorities will coordinate awareness raising activities with related actions.</p>
<p>Related Actions:</p>	<p>Community Flood Action groups, Flood Warning, Self Help, Emergency Plans/Response, Flood Forecasting.</p>
<p>Funding Arrangement:</p>	<p>SEPA's awareness raising activities are funded by Scottish Government through SEPA's grant in aid settlement.</p> <p>Awareness raising activities will be funded from the Council's revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</p>
<p>Action (ID):</p>	<p>SELF-HELP (80410011)</p>
<p>Objective(ID):</p>	<p>Reduce overall flood risk (8041)</p>

Delivery Lead:	N/A		
Status:	Existing	Planned Delivery Period:	Ongoing
Description:	<p>Everyone is responsible for protecting themselves and their property from flooding. Self help actions can be undertaken by any individuals, businesses, organisations or communities at risk of flooding. They are applicable to all sources, frequency and scales of flooding. They focus on awareness raising and understanding of flood risk.</p> <p>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.</p>		
Coordination Arrangement:	<p>Responsible Authorities have a duty to raise public awareness of flood risk. Helping individuals understand the risks from which they are most vulnerable from is the first step in the process. Responsible Authorities will also actively promote Floodline.</p>		
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Maintenance, Emergency Plans/Response		
Funding Arrangement:	Individuals have prime responsibility to protect themselves and their property from flooding and are therefore are expected to meet the costs of protecting themselves.		

Action (ID):	MAINTENANCE (80410007)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Perth and Kinross Council, asset / land managers		
Status:	Existing	Planned Delivery Period:	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 undertakes 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> <p>Sections 18 and 59 of the Flood Risk Management (Scotland) Act 2009 place duties of watercourse assessment, clearance and repair on local authorities. In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or defences.</p>		
Coordination Arrangement:	Sections 17 and 18 of the Flood Risk Management (Scotland) Act 2009 require local authorities to prepare maps of relevant bodies of water and sustainable urban drainage systems (SUDS), assess flood risk on those bodies of water from time to time and to		

	<p>prepare a schedule of clearance and repair works where such works would substantially reduce flood risk. Under Section 59 of the same Act, Local authorities also have a duty to carry out clearance and repair works described on the schedule. The Council's schedule of clearance and repair works is made available for public inspection on its website.</p> <p>The Council carries out routine, scheduled inspections of watercourses on its list at a frequency which depends on flood risk. Further reactive inspections are carried out when issues are highlighted or during times of flooding. Further bodies of water will be included where it has been identified that they may give rise to a risk of flooding.</p> <p>Any identified clearance and repair works from these inspections are logged in a database and are undertaken in order of priority, subject to available funding.</p> <p>Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk. In the first instance, clearance and repair works are therefore referred to the landowner, where they can be identified. The Council usually only carries out works where there has been a failure of the landowner to act, where landownership is not clear, or where urgent intervention is required.</p> <p>In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or works. Scottish Water undertakes risk based inspection, maintenance 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. Local Authorities will liaise with SEPA where controlled activities may be required and with private landowners where they may require to take access on private land or to notify landowners that they require to undertake maintenance.</p> <p>The Council will coordinate maintenance activities with related actions.</p>
Related Actions:	Raising Awareness, Self Help, Community Flood Action Groups
Funding Arrangement:	<p>Maintenance activities are subject to funding from the relevant Perth and Kinross Council revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator. All business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</p>

Action (ID):	EMERGENCY PLANS/RESPONSE (80410014)		
Objective(ID):	Reduce overall flood risk (8041)		
Delivery Lead:	Category 1 and 2 Responders		
Status:	Existing	Planned Delivery Period:	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 coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. Emergency response plans are applicable for all types of flooding. They set out the steps to be taken during flooding in order to maximise safety and minimise impacts where possible. Under the Civil Contingencies Act, Category 1 Responders have a duty to maintain emergency plans. Emergency plans may also be prepared by individuals, businesses, organisations or communities.</p> <p>Scottish Water is a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required.</p>
Coordination Arrangement:	<p>Perth and Kinross Council has developed a Generic Emergency Plan and a Flooding Emergency Response Plan. The Plan is designed to ensure that contingency measures are in place for the coordinated and flexible response to flooding incidents to mitigate the effects of flooding emergencies.</p> <p>SEPA flood alerts and warnings will be monitored and resources made ready as required. A coordinated response will follow any reports of flooding.</p> <p>Emergency response is coordinated with regional and local resilience partnerships. This response may be supported by the work of voluntary organisations. A debrief and plan review will be carried out following any flood events.</p> <p>Protecting property from flooding is the responsibility of the owner of the property, but Perth & Kinross Council can sometimes provide sandbags to properties. Unfortunately the Council only has the resources to supply sandbags to residents where there is an imminent risk of flooding.</p> <p>Emergency plans/response activities will be coordinated with related actions.</p>
Related Actions:	Community Flood Action groups, Flood Warning, Awareness Raising, Self Help
Funding Arrangement:	<p>Funding is allocated to category 1 and 2 responders by the Scottish Government for dealing with emergency response and in extreme cases may reimburse responders after an extreme event. Emergency response activities are funded from the Council's revenue budget.</p> <p>Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</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	Planned Delivery Period:	Ongoing
Description:	<p>The Scottish Planning Policy (SPP) and accompanying Planning Advice Notes set out the 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 SPP 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 generally be avoided. For further information on the application of national planning policies see Annex 3.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the Flood Risk Management (Scotland) 2009. SEPA also has a duty to co-operate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engage in the planning system, including guidance on flood risk and planning is available on SEPA website http://www.sepa.org.uk/environment/land/planning/</p> <p>Current national planning policies, the Scottish Planning Policy and accompanying Planning Advice notes restrict development within the floodplain and limit exposure of new receptors to flood risk. In addition to national policies, local planning policies may place further requirements within their area of operation to restrict inappropriate development and prevent unacceptable risk. Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.</p>		
Coordination Arrangement:	<p>Perth and Kinross Council is a local planning authority and will coordinate its work with the strategic development planning authority and the National Parks Authorities.</p> <p>The Council's Flooding Team are consulted on planning applications and work with the Planning and Development Service to ensure that flood risk is addressed. The Local Development Plan provides the framework against which planning applications are assessed and is consistent with the Strategic Development</p>		

	<p>Plan (TAYplan). Supplementary Guidance on Flood Risk and Flood Risk Assessments is also available to support the content of the Local Development Plan. Planning applications are also reviewed against SEPA's indicative flood maps, existing flood studies and records of flooding. Where flood risk is an issue, developers are required to prepare and submit a site-specific flood risk assessment and drainage impact assessment as applicable. They must also consider how a development site will be drained and how surface water runoff will be managed through the implementation of appropriate Sustainable Urban Drainage Measures.</p> <p>So as to align the flood risk management and land use planning systems, land use planning objectives and actions have been developed which can be viewed in Annex 3. The Council will coordinate land use planning policies with related actions.</p>
<p>Related Actions:</p>	<p>Awareness Raising, self Help, Maintenance, Strategic Mapping & Modelling.</p>
<p>Funding Arrangement:</p>	<p>SEPA's land use planning activities will be funded by the Scottish Government through SEPA's grant in aid settlement. Perth & Kinross Council's planning activities will be funded from the Council's revenue budget. Scottish Water is funded by customer charges as set by their economic regulator, all business activities required under this action by Scottish Water are accounted for in their capital or operational expenditure.</p>

3.18 Other Flood Risk Activities by Local Authorities in the Tay Local Plan District

This Local Flood Risk Management Plan presents the actions to manage flood risk in the Tay Local Plan District. These actions are at a LPD-wide scale or are targeted at specific Potentially Vulnerable Areas. In addition to the actions in this Plan, responsible authorities are undertaking other activities to manage flood risk as included in the Flood Risk Management (Scotland) Act 2009. The main activities that have a significant effect and should be considered in conjunction with the Plan are summarised as follows:

Surface Water Management Planning

As described in paragraph 1.7 of this Plan, surface water flooding occurs in areas of the Tay Local Plan District. This will be addressed by Surface Water Management Planning. Details of the Surface Water Management Planning for each local authority in the Local Plan District are included in [Annex 5](#) of this Plan.

Section 18 & 59: Works of Clearance and Repair

Based on an assessment of the condition of a body of water, local authorities must prepare a schedule of clearance and repair works that would substantially reduce the risk of flooding of land. This is commonly referred to as a Schedule 18, which is made available by each local authority within the Local Plan District for public inspection. Under Section 59 of the Flood Risk Management (Scotland) Act, a local authority must carry out the works in the Schedule 18 if it considers that this will contribute to (or will not affect) the implementation of actions in this Plan. Details of how to access Schedule 18's for each local authority in the Local Plan District are included in [Annex 5](#) of this Plan.

Section 56: General Power to manage flood risk

Without affecting the implementation of actions in this Plan, a local authority may do anything which it considers will contribute to the implementation of actions in this Plan or is necessary to reduce the risk of a flood which is likely to occur imminently and have serious adverse consequences for human health, the environment, cultural heritage or economic activity in its area.

This may include carrying out flood protection works, which may not be identified as actions in this Plan. Where a local authority has a commitment to carry out such flood protection works or any other activities within the period of the current FRM cycle not included as actions in this Plan, then these works are identified in [Annex 5](#) of this Plan.

Annex 1: Tay LPD Roles, Responsibilities & Contact Details

Roles and responsibilities for Flood Risk Management Planning

Individuals are the first line of defence against flooding. However, public bodies have responsibilities too and are working together to reduce the impacts of flooding in Scotland. Responsibility for flood risk management planning falls in the main to SEPA, local authorities and Scottish Water. However, individuals have a personal responsibility to protect themselves and their property.

Some of the key roles are outlined below and more information is available from the SEPA website.

Your Responsibilities

Organisations and individuals have responsibilities to protect themselves from flooding. Being prepared by knowing what to do and who to contact if flooding happens can help you reduce the damage and disruption flooding can have on your life.

The first step to being prepared is [signing up to Floodline](#) so you can receive messages to let you know where and when flooding is likely to happen. Other useful tools and advice on how to be prepared are available on the [Floodline](#) website including a quick guide to who to contact in the event of a flood. You can also check how your area could be affected by flooding by looking at SEPA's [flood maps](#).

SEPA

SEPA is Scotland's national flood forecasting, flood warning and strategic flood risk management authority. We have a statutory duty to produce Scotland's Flood Risk Management Strategies. As described above, we work closely with other organisations responsible for managing flood risk through a network of partnerships and stakeholder groups to ensure that a nationally consistent approach to flood risk management is adopted.

SEPA also has a responsibility to identify where in Scotland there is the potential for natural flood management techniques to be introduced. Natural flood management is the use of the natural features of the land to store and slow down the flow of water. In running Floodline, we provide live flooding information and advice on how to prepare for or cope with the impacts of flooding 24 hours a day, seven days a week. To help us forecast for flooding we work closely with the [Met Office](#).

To raise awareness of flooding at a national level SEPA runs education initiatives, community engagement programmes and an annual campaign to promote the useful advice and information available through Floodline. We work in partnership with local authorities, Neighbourhood Watch Scotland, Ready Scotland and others to share our

resources and help to promote preparedness and understanding of how flood risk is managed.

SEPA can be contacted as follows:

Telephone: 03000 99 66 99

E-mail: frmplanning@sepa.org

Address: Strathallan House Castle Business Park Stirling, FK9 4TZ

Local Authorities

Local authorities work together for flood risk management planning purposes through a single lead authority which has the responsibility for producing the Local Flood Risk Management Plan. Local authorities have been working collaboratively in the manner described above to develop these.

It is the responsibility of your local authority to implement its flood protection actions agreed within the Flood Risk Management Strategy, including new schemes or works and the requirement to carry out clearance and repair works on bodies of water. You can help your local authority to manage flooding by letting them know if debris is blocking watercourses or if flood defences are tampered with.

During severe flooding, local authorities will work with the emergency services and coordinate shelter for people evacuated from their homes.

The lead authority for the Tay Local Plan District is Perth & Kinross Council. Other local authorities who are responsible authorities for the Tay Local Plan District are:

- Angus Council;
- Fife Council;
- Stirling Council.

Contact details are provided below.

Local Authority	Telephone	E-mail	Address
Perth & Kinross Council	01738 475000	enquiries@pkc.gov.uk	Pullar House 35 Kinnoull Street Perth PH1 5GD
Angus Council	03452 777 778	Accesline@angus.gov.uk	Orchardbank Business Park, Orchardbank, Forfar, Angus DD8 1AX
Fife Council	03451 550000	fife.council@fife.gov.uk	Fife Council Fife House, North Street, Glenrothes KY7 5LT

Stirling Council	01786 404040	http://my.stirling.gov.uk/contact (online form)	Flooding Team, Stirling Council, Endrick House, Kerse Road, Stirling FK7 7SZ
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Scottish Water

Scottish Water is a responsible authority for flood risk management and is working closely with SEPA, local authorities and others to coordinate plans to manage flood risk. Scottish Water has the public drainage duty and is responsible for foul drainage and the drainage of rainwater run-off from roofs and any paved ground surface from the boundary of properties. Additionally, Scottish Water helps to protect homes from flooding caused by sewers either overflowing or becoming blocked. Scottish Water is not responsible for private pipework or guttering within the property boundary.

Scottish Water can be contacted on 0800 0778 778.

National Parks

The two National Park Authorities, Loch Lomond and Trossachs National Park and Cairngorms National Park, are the Planning Authorities for their respective areas and were designated as responsible authorities for flood risk management purposes in 2012. Both have worked with SEPA, local authorities and Scottish Water to help develop Flood Risk Management Strategies and Local Flood Risk Management Plans. As planning authorities they fulfil an important role in land use planning, carrying out or granting permission for activities that can play a key role in managing and reducing flood risk. The Loch Lomond and Trossachs National Park and the Cairngorms National Park are responsible authorities with the Tay Local Plan District.

Contact details are provided below.

National Park Authority	Telephone	E-mail	Address
Loch Lomond & Trossachs	01389 722 600	info@lochlomond-trossachs.org	Carrochan, Carrochan Road, Balloch, G83 8EG
Cairngorms	01479 873 535	planning@cairngorms.co.uk	14 The Square, Grantown-on-Spey PH26 3HG

Other organisations

- The **Scottish Government** oversees the implementation of the Flood Risk Management (Scotland) Act 2009 which requires the production of Flood Risk Management Strategies and Local Flood Risk Management Plans. Scottish

Ministers are responsible for setting the policy framework for how organisations collectively manage flooding in Scotland. The Scottish Government has also approved the Tay Flood Risk Management Strategy.

- **Scottish Natural Heritage** has provided general and local advice in the development of the Flood Risk Management Strategies. Flooding is seen as a natural process that can maintain the features of interest at many designated sites, so Scottish Natural Heritage helps to ensure that any changes to patterns of flooding do not adversely affect the environment. Scottish Natural Heritage also provides advice on the impact of Flood Protection Schemes and other land use development on designated sites and species.
- **Forestry Commission Scotland** was designated in 2012 as a responsible authority for flood risk management planning purposes and has engaged in the development of the Flood Risk Management Strategies through national and local advisory groups. This reflects the widely held view that forestry can play a significant role in managing flooding. Forestry Commission Scotland can be contacted as follows:
Tel: 03000 676 005
Address: Upper Battleby, Redgorton, Perth, PH1 3EN
- During the preparation of the first flood risk management plans, **Network Rail** and **Transport Scotland** have undertaken works to address flooding at a number of frequently flooded sites. Further engagement is planned with SEPA and local authorities to identify areas of future work. There is the opportunity for further works to be undertaken during the first flood risk management planning cycle although locations for these works are yet to be confirmed.
- **Utility companies** have undertaken site specific flood risk studies for their primary assets and have management plans in place to mitigate the effects of flooding to their assets and also minimise the impacts on customers.
- The **Met Office** provides a wide range of forecasts and weather warnings. SEPA and the Met Office work together through the [Scottish Flood Forecasting Service](#).
- The **emergency services** provide emergency relief when flooding occurs and can coordinate evacuations. You should call the emergency services on 999 if you are concerned about your safety or the safety of others and act immediately on any advice provided.
- **Historic Environment Scotland** considers flooding as part of their regular site assessments. As such, flooding is considered as one of the many factors which inform the development and delivery of its management and maintenance programmes.
- **The Scottish Flood Forum** is a Scottish charitable organisation that provides support for those who are affected by, or are at risk of, flooding. It provides flood

advice, information, awareness, education and training to individuals and communities to help reduce the risk of flooding; in partnership with the local authority, provides support during the recovery process following a flood incident and aims to support the development of resilient communities. The Scottish Flood Forum can be contacted as follows:

Tel: 01698 839 021

Web: www.scottishfloodforum.org

Address: Caledonian Exchange, 19A Canning Street, Edinburgh, EH3 8HE

Annex 2: Consultation and Engagement

It is essential that any action taken on flooding is informed by the best available data. The 2009 Act therefore required that the draft Flood Risk Management Strategies and corresponding supplementary parts of Local Flood Risk Management Plans be put to public consultation. SEPA and the lead local authorities were required to coordinate their consultation arrangements during the preparation of these documents.

The purpose of the consultation was to seek views from everyone including individuals, businesses and interested community groups at risk of flooding as well as organisations with an interest in how flood risk is managed and delivered. This Annex contains a summary of the responses made in the Tay Local Plan District and explains how SEPA took these into account in preparing the Tay Flood Risk Management Strategy and also how we have taken them into account in preparing the Tay Local Flood Risk Management Plan.

The public consultation was delivered through a phased approach which was approved by the Scottish Ministers. The first phase commenced on 22 December 2014 and the second on 2 March 2015. The consultation closed on 2 June 2015.

The consultation was a web based exercise carried out jointly with SEPA and the other responsible authorities. The Citizen Space web-based platform was used to host the consultation. Hard copies of the consultation documents were also placed in the Council's Perth and Area offices. Consultation questions were developed to stimulate a response and respondents were also given the opportunity to make comment.

In order to encourage appropriate participation in the public consultation, Perth & Kinross Council placed public notices in newspapers circulating in the Tay District and the Council wrote to the other Responsible Authorities, Category 1 Responders, SEPA, SNH and the national park authorities. The Council also wrote to community councils and advertised the consultation online and through social media. The other responsible authorities in the Tay District also followed similar arrangements.

5 respondents made specific comments on the public consultation for the Tay Local Plan District. A summary of the specific responses received along with a summary of the changes made to this Plan is provided below in Table A2.1.

In general the respondents either made no comment or were broadly in agreement with the information provided. Some information was noted regarding localised flooding incidents but, without further information, these are not likely to be significant. This suggests that the majority of significant flooding had been recorded in the consultation documents. In general there was no disagreement with the proposed objectives and actions and only the respondents from Scone and Coupar Angus noted concern over some local issues. However the concerns raised are

considered to be addressed by the published Flood Risk Management Strategy, the Council's flood studies or the final objectives and selected actions in this Plan.

Table A2.1: Summary of Specific Issues Raised During Public Consultation

Brief Summary of Issues Raised	Changes Made to the Plan
<p>One business raised general concern over potential use of prime agricultural land as flood plain storage.</p>	<p>Land use planning actions, flood warning schemes and many natural flood management actions have been subsequently selected for inclusion in the Flood Risk Management Strategy and this Plan. Local authorities will be able to draw upon the consultation responses provided to help implement actions.</p> <p>We note the potential constraints of some of the actions – these concerns will be examined in subsequent detailed studies. These studies will take into account the specific local conditions and concerns to ensure that the solutions developed are effective, balanced and appropriate.</p> <p>In a small number of cases, actions have been removed from the Flood Risk Management Strategies, simultaneously removing concerns raised by respondents.</p>
<p>A community group raised concern over characterisation of flood risk within LPD8 (Scone in particular) and PVA 08/11 (Scone); the land use planning objectives; surface water management objectives and actions; potential actions and draft delivery plan. The response raised various local issues regarding the Annaty Burn and the barrel drain in Scone.</p>	<p>SEPA have checked the descriptions provided for flood events and updated the Flood Risk Management Strategy where appropriate. Some of the information was too detailed to publish in the Flood Risk Management Strategy or this Plan but will be used to inform further studies. A number of the floods described by respondents were not considered to be nationally significant for inclusion in the Flood Risk Management Strategy. The information provided by respondents will be added to the national flood event database and can be used to help inform future flood hazard modelling and flood risk assessments, and may be used to inform local studies.</p> <p>Actions have been included in the Flood Risk Management Strategy and this Plan that will address many of the requests received in the consultation. In the majority of cases, these actions are included in flood protection and natural flood management studies that will examine a wide range of solutions in more detail.</p> <p>Perth & Kinross Council have already carried out flood studies into the Annaty Burn (a flood scheme is proposed and is included on the prioritised list of schemes) and the barrel drain (the study did not identify an economically viable scheme, although this will be re-visited following some recent structural collapses of the drain). A further flood protection study will be carried out for Scone to supplement the previous investigations, looking at natural flood management (including sediment management) and surface water flooding.</p>

	<p>Surface water flooding is to be addressed within a future surface water management plan (SWMP) which will look at surface water flooding and interactions with drainage systems. The Council and the community council have improved their knowledge of the existing drainage systems in Scone and this will be further investigated as part of the proposed SWMP for the area. This will also inform future land use planning actions.</p> <p>SEPA and the responsible authorities will engage with the community in the development of the study, the SWMP and the flood scheme.</p> <p>In the meantime the Council continues to inspect and clear the Annaty Burn and barrel drain as necessary and actions to maintain watercourses are included in the Flood Risk Management Strategy and this Plan.</p>
<p>A business raised concern over characterisation of flood risk in PVA 08/07 (Coupar Angus) and elsewhere in Meigle. The response noted a preference for sediment management and modification of conveyance which should be carried out by the Council and landowners.</p>	<p>SEPA have checked the descriptions provided for flood events and updated the Flood Risk Management Strategy where appropriate. Some of the information was too detailed to publish in the Flood Risk Management Strategy or this Plan but has been used to inform recent study work. A number of the floods described by respondents were not considered to be nationally significant for inclusion in the Flood Risk Management Strategy. The information provided by respondents will be added to the national flood event database and can be used to help inform future flood hazard mapping and modelling work and flood risk assessments.</p> <p>The boundaries of Potentially Vulnerable Areas were designated in 2011 following a public consultation and will not be altered for the publication of the first Flood Risk Management Strategies or Local Flood Risk Management Plans. Boundaries will be reviewed as part of the second National Flood Risk Assessment (due in 2018).</p> <p>The Meigle area was not found to be at significant flood risk in the 2011 Assessment and is therefore located outside of the boundary of PVA 08/07.</p> <p>Perth & Kinross Council has just completed a flood study for the Coupar Burn in Coupar Angus and this fully considered the properties at George Street and the wider area. Sediment management and modification of conveyance were fully considered in the study, which was used to inform the development of the Flood Risk Management Strategy and this Plan.</p> <p>The Council continues to inspect and clear bodies of water as necessary and actions to maintain watercourses are included in the Flood Risk Management Strategy and this Plan. Recent work by a local burns group has also resulted in sediment being removed from sections of the Coupar Burn.</p>

<p>A community group raised concern over the characterisation of flood risk on the River Garry in PVA 08/01 (Blair Atholl).</p>	<p>SEPA have checked the descriptions provided and updated the Flood Risk Management Strategy where appropriate. Some of the information was too detailed to publish in the Flood Risk Management Strategy or this Plan. A number of the floods described by respondents were not considered to be nationally significant for inclusion in the Flood Risk Management Strategies. However SEPA will add the information provided to the national flood event database and it will be used to inform the further strategic mapping and modelling work identified for this PVA.</p>
<p>Scottish Natural Heritage noted their main interest is ensuring that designated sites are not adversely affected and made comments on environmental considerations for local authorities to consider as part of more detailed studies.</p>	<p>SEPA and the Responsible authorities will continue to engage with Scottish Natural Heritage in future to help implement the selected actions.</p> <p>SEPA and Perth & Kinross Council have had further consultation with SNH in the development of the strategic environmental assessment and habitats regulation appraisal. Further detail on the selected actions has now been included in the Flood Risk Management Strategy and this Plan. SNH will be consulted further in the future on any maintenance work or project specific environmental assessments.</p> <p>Where appropriate, natural flood management actions have been selected for inclusion in the Flood Risk Management Strategy and this Plan. In some instances the delivery of flood protection and natural flood management actions have been grouped together to emphasise the importance of considering upstream and downstream effects. In the majority of cases, these actions are included in flood protection and natural flood management studies that will examine a wide range of potential solutions in more detail. Local authorities will be able to draw upon the consultation responses provided to help implement these actions.</p> <p>At the time of the consultation, a shortlist of feasible actions was provided that were being considered to meet the objectives. SEPA have subsequently carried out an appraisal of the costs and benefits of the actions to help inform selection and prioritisation. In doing so, SEPA have looked at the effects on flood risk reduction and wider social, environmental and economic impacts. Links with river basin management planning have been included in the assessment of multiple benefits.</p> <p>The appraisal uses the best available data and takes account of existing detailed studies and appraisal in support of proposed schemes. The selection of actions has been reviewed by local authorities and revised to incorporate additional supporting data.</p>

A number of respondents also made national responses to the consultation on a more general basis. A summary of the general responses received and the changes made to this Plan is also provided below in Table A2.2.

Table A2.2: Summary of Specific Issues Raised During Public Consultation

Brief Summary of Issues Raised	Changes Made to the Plan
<p>The Scottish Flood Forum recommended mechanisms to make implementation of actions (such as property level protection) more effective.</p>	<p>SEPA have set objectives to avoid an increase in flood risk, which apply across all Local Plan Districts. Actions such as flood warning, flood alerts, property level protection, self-help and awareness raising will help to meet these objectives. Land use planning actions, property level protection and flood warning schemes have been subsequently selected for inclusion in the Flood Risk Management Strategy and this Plan.</p> <p>There are a number of public bodies involved in the approval, adoption and maintenance of sustainable drainage systems. A working group has been set up with SEPA, Scottish Government, Scottish Water and local authorities to address the issues raised by the responses that relate to implementation of sustainable drainage systems.</p> <p>We will continue to encourage the uptake of property level protection and strengthen the links with community resilience groups in this regard.</p> <p>Actions to protect privately owned property, including commercial property, remain the responsibility of the property owner. The Flood Risk Management Strategy and this Plan recommend actions such as self-help, property level protection and flood warning services that will assist owners in taking steps to protect their own property.</p>
<p>Scottish Power Identified potential constraints for specific actions in four other Local Plan Districts.</p>	<p>Responsible authorities will continue to engage with Scottish Power in future to help implement the selected actions.</p>
<p>Local authorities were asked to note that Scottish Water:</p> <ul style="list-style-type: none"> - Will help to inform understanding of sources, pathways and receptors at risk of flooding for SWMPs; - Recommend a review of the development of 	<p>SEPA and the Responsible Authorities will continue to engage with Scottish Water in future to help implement the selected actions and in the review of the Flood Risk Management Strategy and this Plan. The Flood Risk Management Strategy and this Plan now include further detail on actions for integrated catchment studies and surface water management plans which better reflect the significant investment to reduce the risk of sewer flooding in the Tay District.</p>

<p>FRMS and LFRMPs once complete; Scottish Water also request that the FRMS and LFRMPs better reflect significant investment to reduce the risk of sewer flooding in Scotland.</p>	
<p>Forestry Commission Scotland recommended forestry-related aspects that should be checked as part of the development of Local FRM Plans and further studies.</p>	<p>Where appropriate, natural flood management actions have been selected for inclusion in the Flood Risk Management Strategy and this Plan. In some instances the delivery of flood protection and natural flood management actions have been grouped together to emphasise the importance of considering upstream and downstream effects. In the majority of cases, these actions are included in flood protection and natural flood management studies that will examine a wide range of potential solutions in more detail. Local authorities will be able to draw upon the consultation responses provided to help implement these actions.</p>
<p>Historic Scotland recommended early consultations with Historic Scotland as part of the development of Local FRM Plans and further studies.</p>	<p>Impacts on cultural heritage sites have been agreed between SEPA and Historic Scotland and a have been considered further as part of the strategic environment assessment undertaken by SEPA. Early consultation with Historic Scotland will be undertaken as part of any further study work.</p>
<p>RSPB Scotland recommended active promotion of NFM in Local FRM Plans and further studies.</p>	<p>Where appropriate, natural flood management actions have been selected for inclusion in the Flood Risk Management Strategy and this Plan. In some instances the delivery of flood protection and natural flood management actions have been grouped together to emphasise the importance of considering upstream and downstream effects. In the majority of cases, these actions are included in flood protection and natural flood management studies that will examine a wide range of potential solutions in more detail. Local authorities will be able to draw upon the consultation responses provided to help implement these actions.</p>

The Council subsequently informed SEPA of any views expressed during the consultation that were considered to be relevant to SEPA's Flood Risk Management Strategy. SEPA subsequently published their consultation digest in December 2015 (http://www.sepa.org.uk/media/163414/consultation_digest.pdf), explaining how they took account of these views in preparing the Flood Risk Management Strategies.

The views and representations of the respondents were also taken into account in developing and finalising this Local Flood Risk Management Plan.

The local authorities in the Tay District presented the findings from the public consultation to their elected members as follows:

Perth & Kinross Council

Perth and Kinross Council presented the findings of the consultation in a report to their Environment Committee on 9 September 2015. The committee report can be viewed here:

<http://www.pkc.gov.uk/article/12123/Environment-Committee-9-September-2015>

Angus Council

Angus Council presented the findings of the consultation in a report to their Environment Committee on 18 August 2015. The committee report can be viewed here:

https://www.angus.gov.uk/media/agenda_item_12_report_no_29715_flood_risk_management_scotland_act_2009_arbroath_flood

(Agenda Item 12, Point 4.1 and Appendix A)

Stirling Council

Stirling Council presented the outcome of the consultation initially through an information bulletin and a paper to their Environment & Housing Committee on 4 June 2015. The minutes of the committee meeting can be viewed here:

<http://minutes.stirling.gov.uk/pdfs/environment%20%26%20housing/minutes/eh20150604.pdf>

Fife Council

Fife Council presented the findings of the consultation to their elected members on 23 June 2015 as detailed here:

<http://www.fifedirect.org.uk/publications/index.cfm?fuseaction=publication.pop&pubid=00D35649-0D6A-6C03-88A22B9F288F29A8> (under item No. 17).

As noted at the start of this Annex, the public consultation closed on 2 June 2015 and there has not been any further formal communications or engagement in relation to this Plan.

Annex 3: Land Use Planning

Approach to Land Use Planning in the Tay Local Plan District

Perth and Kinross Council is a local planning authority and will coordinate its work with the strategic development planning authority and the National Parks Authorities, who are also planning authorities.

The Council's Flooding Team are consulted on planning applications and work with the Planning and Development Service to provide advice and ensure that flood risk is addressed. The Perth & Kinross Local Development Plan provides the framework against which planning applications outside the National Parks are assessed and is consistent with the Strategic Development Plan (TAYplan).

Supplementary Guidance on Flood Risk and Flood Risk Assessments is also available to support the content of the Perth & Kinross Local Development Plan. Planning applications within the National Parks are assessed against their respective Local Development Plans, which also contain policies in relation to flood risk. Planning applications are also reviewed against SEPA's indicative flood maps, existing flood studies and records of flooding. Where flood risk is an issue, developers are required to prepare and submit a site-specific flood risk assessment and drainage impact assessment as applicable. They must also consider how a development site will be drained and how surface water runoff will be managed through the implementation of appropriate Sustainable Urban Drainage Systems (SuDS).

The above referenced documents can be viewed at the links provided in [Annex 5](#).

The Scottish Planning Policy sets out a flood risk framework to guide development. Areas of medium to high risk – where the annual probability of coastal or watercourse flooding is greater than 0.5% (1:200 years) – may be suitable for development provided flood protection measures to the appropriate standard (1:200 years) already exist and are maintained, are under construction, or are a planned measure in a current flood risk management plan. This is a matter for careful consideration through review of the Development Plan and its Strategic Environmental Assessment. However if the site is an important component of the settlement strategy and no other equally suitable site is available then development (apart from civic infrastructure and the most vulnerable uses) may be suitable. Any development in such areas would also be subject to appropriate mitigation measures: including water resistance, and water resilience measures and evacuation procedures.

So as to align the flood risk management and land use planning systems, land use planning objectives and actions have been developed as shown below.

Flood Risk Management Actions From National Planning Policies

The following objectives and actions reflect national Land Use Planning policies and Guidance:-

AVOID DEVELOPMENT IN MEDIUM TO HIGH RISK AREAS

- a) **Planning authorities** work in partnership undertaking catchment-wide Strategic Flood Risk Assessments to inform their development plan allocations in line with SEPA's guidance and Land Use Vulnerability.
- b) **Planning authorities and SEPA** require the submission of flood risk assessments that accord with SEPA's *Technical Flood Risk Guidance for Stakeholders*, to support planning applications where there is a potential flood risk. The flood risk assessment should be used to demonstrate as far as possible that the development will be safe for its lifetime, without increasing flood risk elsewhere and, where possible, takes opportunities to reduce flood risk overall.
- c) **SEPA** ensures that its flood risk advice to planning authorities is clear and appropriate. SEPA, in consultation with planning authorities, undertakes an annual assessment of planning advice and its contribution to flood risk.
- d) **SEPA and planning authorities** engage at an early stage of the development plan process to agree appropriate forms of development to help inform the preparation and implementation of Strategic Flood Risk Assessments.

REDUCE IMPACTS TO EXISTING BUILDINGS

- a) **SEPA, planning authorities and local communities** are required to engage at an early stage of the development plan process to agree the best long term land uses for areas where relocation, abandonment and/or change of use have been identified to deliver sustainable flood risk management. Where possible, new land uses should aim to achieve multiple benefits for local communities such as the creation of blue / green infrastructure and increased resilience to climate change.

PROTECT AND ENHANCE NATURAL FEATURES THAT HAVE A POSITIVE IMPACT ON REDUCING OVERALL FLOOD RISK

- a) **SEPA and planning authorities** are required to engage early in the development plan process to identify opportunities for the restoration and protection of natural features which help manage flood risk. Opportunities should be maximised to achieve multiple benefits such as the development of green / blue infrastructure and improved place making. Areas of land that may contribute to flood management should be identified and protected.

NEW DEVELOPMENTS ARE DESIGNED TO ENSURE THAT SURFACE WATER DRAINAGE DOES NOT INCREASE FLOOD RISK ON OR OFF SITE

- a) **SEPA** prepares guidance for planning authorities and developers on the use of surface water hazard maps for land use planning purposes.
- b) **Planning authorities** support the implementation of Surface Water Management Plans, developed by the local authorities, through development plan allocations and policies. Surface Water Management Plans should take account of development opportunities that could contribute to the reduction of surface water flood risk.
- c) **SEPA** engages at an early stage of the development plan process to progress exemplar projects that demonstrate the potential for land use planning to mitigate surface water flooding and contribute to wider environmental benefits.

NEW DEVELOPMENT IS RESILIENT TO PREDICTED FUTURE CHANGES IN CLIMATE

- a) **Planning authorities** ensure that climate change is considered in Strategic Flood Risk Assessments and Flood Risk Assessments, based upon the best scientific evidence and the information requirements of planners to make informed decisions.

Annex 4: Strategic Environmental Assessment & Habitats Regulations Appraisal

Strategic Environmental Assessment

The Environmental Assessment (Scotland) Act 2005 places a duty on Perth & Kinross Council to identify and assess the environmental consequences of its proposals.

There are likely to be significant environmental effects associated with the Tay Local Flood Risk Management Plan. As a consequence an environmental assessment is necessary. SEPA have completed an environmental assessment for their Flood Risk Management Strategies and their environmental report has been published.

Following a review of this assessment, it has been confirmed that this will cover the Tay Local Flood Risk Management Plan and that no further assessment is required. A screening report was submitted to the SEA Gateway to confirm this. The screening responses received via the SEA Gateway confirmed that this Plan is consistent with the Tay Flood Risk Management Strategy and therefore no further assessment is required at this time.

Further impact assessments will be undertaken on any specific projects as required.

The screening report can be viewed via the SEA Gateway by searching for Perth & Kinross Council at the following link;

<http://www.gov.scot/Topics/Environment/environmental-assessment/sea/SEAG>

Habitats Regulations Appraisal

The Tay Local Plan District Local Flood Risk Management Plan was considered in light of the assessment requirements of regulation 48(1) of the Conservation (Natural Habitats, &c) Regulations 1994 (as amended) by Perth and Kinross Council which is the competent authority responsible for adopting the Plan and any assessment of it required by the Regulations.

Following screening out of sites where there were no credible impact pathways from the proposals within the Local Flood Risk Management Plan, a list of European sites potentially affected by the Plan is given below:

- River Tay SAC
- Shingle Islands SAC
- Black Wood of Rannoch SAC
- Glenartney Juniper Wood SAC
- Upper Strathearn Oakwoods SAC
- Loch of Kinnordy SPA

Having carried out a 'screening' assessment of the Plan, the competent authority has concluded that 11 actions in the Plan have been assessed as having a likely significant effect on a European site. The following generic mitigation statement has been applied: 'Therefore, to be in accord with the Tay Local Flood Risk Management Plan, the responsible authority should seek to ensure that the action will not have an adverse effect on the integrity of any Natura site (SPA or SAC) before any consents or permissions are granted'. This statement ensures that a more detailed assessment of each action is carried out as more detail becomes available (i.e. at the project level). This may require the inclusion of suitable mitigation during the development of these actions in the first planning cycle.

Scottish Natural Heritage (SNH) was consulted on this conclusion (02/05/16) and has agreed with it (following the adoption of any recommended changes).

Annex 5: Links to other plans, policies, strategies and legislative requirements

Other Plans, Policies, Strategies and Legislative Requirements

The following plans, policies strategies and legislative requirements are relevant to this Plan:

Council/ Responsible Authority	Details of Plan	Hyperlink or web address
Perth & Kinross Council	Strategic Development Plan	https://www.tayplan-sdpa.gov.uk/publications
Perth & Kinross Council	Strategic Development Plan (TAYPlan Website)	http://www.tayplan-sdpa.gov.uk/strategic_development_plan
Perth & Kinross Council	Local Development Plan	http://www.pkc.gov.uk/media/23633/Local-Development-Plan/pdf/Adopted_LDP_Web_Version.pdf?m=636099646768900000
Perth & Kinross Council	Local Development Plan	http://www.pkc.gov.uk/developmentplan
Perth & Kinross Council	Developers Guidance Note on Flooding & Drainage	http://www.pkc.gov.uk/media/24772/Flood-Risk-and-FRA/pdf/Flood_Risk_and_FRA_-_June_2014.pdf?m=635379146904000000
Angus Council	Local Development Plan	https://archive.angus.gov.uk/localdevelopmentplan/AngusDevelopmentPlanScheme2014.pdf
Stirling Council	Local Development Plan	https://my.stirling.gov.uk/services/planning-and-the-environment/planning-and-building-standards/local-and-statutory-development-plans/local-development-plan
Fife Council	TAYPlan and SESPlan are the soon to be adopted Strategic Development Plans	https://www.fifedirect.org.uk/topics/index.cfm?fuseaction=service.display&p2sid=B A85256B-C559-16FB-C2D8A09D3FEB7E83&themeid=2B482E89-1CC4-E06A-52FBA69F838F4D24
Fife Council	Local Development Plan due to be adopted in 2016	https://www.fifedirect.org.uk/topics/index.cfm?fuseaction=page.display&p2sid=D61 AC1F5-DD4B-CE6A-51E3BDDDED79D5ABC&themeid=2B482E89-1CC4-E06A-52FBA69F838F4D24
Fife Council	Adopted St Andrews & East Fife Local Plan	http://fife-consult.objective.co.uk/portal/fife_ldp/fifeplan_adopted_plan_13/adopted_fifeplan

Fife Council	Adopted Mid Fife Local Plan	http://fife-consult.objective.co.uk/portal/fife_ldp/fifeplan - adopted plan 13/adopted fifeplan
Fife Council	Adopted Dunfermline & West Fife Local Plan	http://fife-consult.objective.co.uk/portal/fife_ldp/fifeplan - adopted plan 13/adopted fifeplan
Fife Council	South East Scotland and Tay Strategic Transport Plans	http://sestran.gov.uk/ https://tactran.gov.uk/
Fife Council	Shoreline Management Plan	https://www.fifedirect.org.uk/minisites/index.cfm?fuseaction=page.display&pageid=B3679654-A6D1-5C31-F426BD276B04EF36&siteID=B35A78B8-9AF8-3BC3-A4DA217231595BC2
Scottish Water	General Guidance on Flooding	http://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information
SEPA	The river basin management plan for the Scotland river basin district: 2015–2027	http://www.sepa.org.uk/environment/water/river-basin-management-planning/
SEPA	FRM Strategy Tay Local Plan District, December 2015	http://apps.sepa.org.uk/FRMStrategies/tay.html
SEPA	FRM Strategies for Scotland Environmental Report, December 2015	http://www.sepa.org.uk/environment/water/flooding/FRM-strategies/frminfo/
SEPA	Land use planning guidance	http://www.sepa.org.uk/environment/land/planning/
SEPA	Flood Maps	http://www.sepa.org.uk/environment/water/flooding/flood-maps/
Forestry Commission Scotland	Control of Woodland	https://scotland.forestry.gov.uk/supporting/strategy-policy-guidance/woodland-expansion/control-of-woodland-removal
Loch Lomond & Trossachs NPA	Local Development Plan (Adopted)	http://www.lochlomond-trossachs.org/planning/planning-guidance/local-development-plan/
Cairngorms NPA	National Park Partnership Plan 2012-2017	http://cairngorms.co.uk/authority/publication/299/
Cairngorms NPA	Local Development Plan 2015	http://cairngorms.co.uk/park-authority/planning/local-dev-plan/

Section 18 Schedule of Clearance and Repair Works

The following links provide access to the schedules of clearance and repair produced by the local authorities in the Tay Local Plan District. The schedules are a requirement of Section 18 of the Flood Risk Management (Scotland) Act 2009.

Local Authority	Method of Public Access to the Schedule of Clearance and Repair Works
Perth & Kinross Council	Perth & Kinross Council's Schedule of Clearance & Repair Works is available at the following web address: http://www.pkc.gov.uk/media/22028/Schedule-of-watercourse-clearance-and-repair/pdf/Schedule_of_Watercourse_Clearance_and_Repair_-Sep2018.pdf?m=636719070210570000
Angus Council	Currently only obtainable in hard copy from: County Buildings, Market Street, Forfar, Angus, DD8 3WE
Fife Council	Fife Council's Schedule of Clearance & Repair is available at the following web address: http://www.fifedirect.org.uk/topics/index.cfm?fuseaction=page.display&p2sid=618DD563-ABBC-ECA5-1675450324EED528&themeid=81E299FB-1BCF-4994-8C8A-233463B738F6
Stirling Council	Currently only available on request at; Endrick House, Kerse Road, Stirling FK7 7SZ

Integrated Catchment Studies

As noted in Chapter 1 of this Plan, Scottish Water are currently working in partnership with local authorities to develop Integrated Catchment Studies.

One of the studies has commenced within the Tay Local Plan District in Perth. Scottish Water is leading on an integrated catchment study for the Perth city area (located within PVA's 08/12 and 08/13). Perth & Kinross Council is working with Scottish Water on this project which is currently at the initial scoping phase. The proposed study areas are shown in Figure A5.1. The study will consider the flooding issues at locations such as Feus Road, Bridgend Cross and other areas which have been affected by flooding in recent years. The outputs from the study will inform the Surface Water Management Plan for Perth.

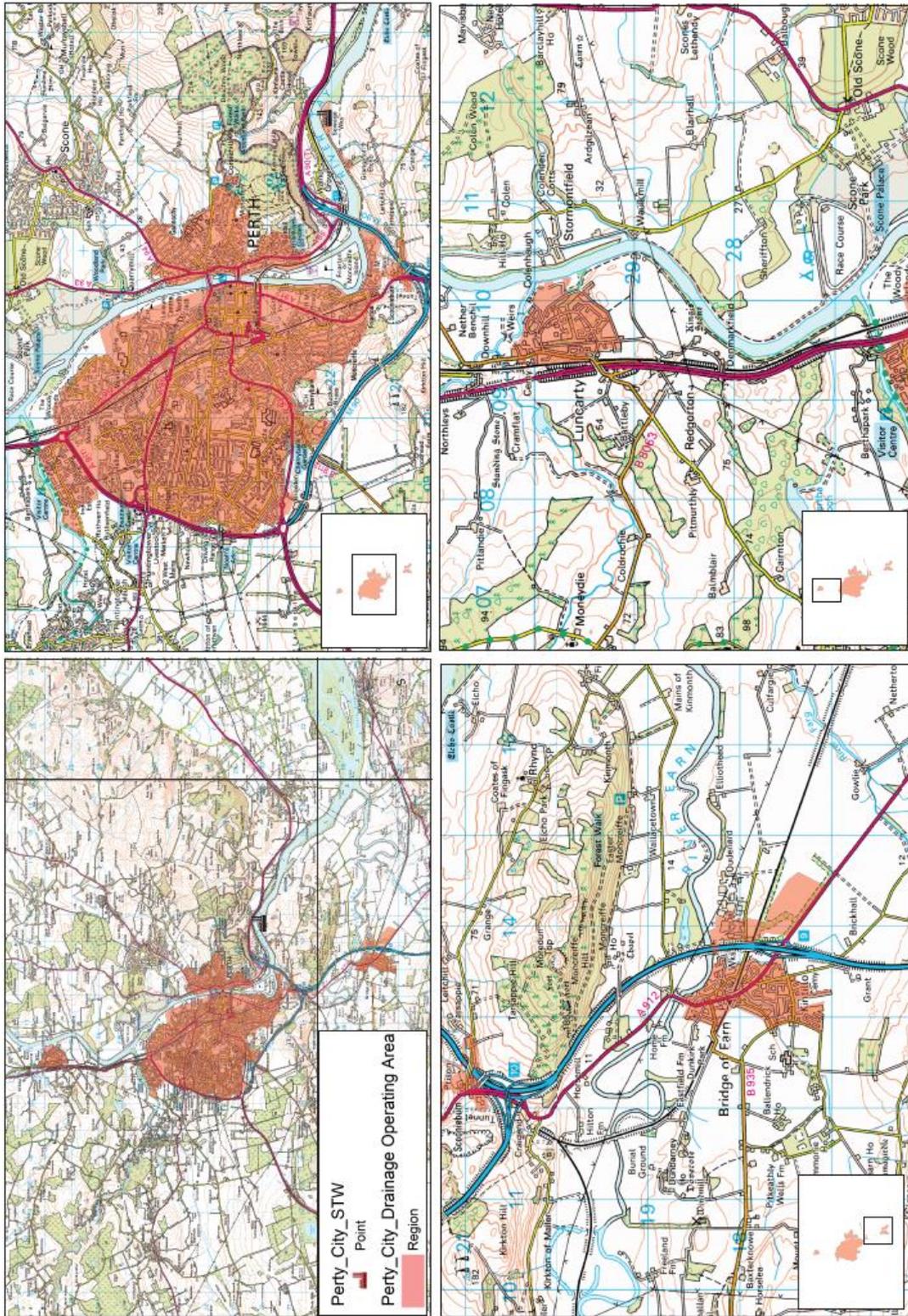


Figure A5.1 - Perth City ICS – Proposed Study Areas

Surface Water Management Plans

As noted in Chapter 1 of this Plan, surface water flooding is experienced in areas of the Tay Local Plan District. This will be addressed by Surface Water Management Planning. A brief description of the work that is currently being carried, out or is planned, within the Tay Local Plan District is provided below.

Perth and Kinross Council

As noted above, Scottish Water is leading on the Perth Integrated Catchment Study. Perth and Kinross Council is working in partnership with Scottish Water on this study. Once complete, the Council will lead on the development of the Perth Surface Water Management Plan in partnership with Scottish Water and SEPA. This will be informed by the work of the integrated catchment study and will identify and implement the most sustainable actions to manage surface water flooding in the area.

Further surface water management plans are also proposed for Scone and Blairgowrie and will commence later in the first flood risk management planning cycle.

Angus Council

Angus Council will lead on the development of a Surface Water Management Plan for Forfar. This work will be carried out in partnership with Scottish Water and SEPA and will identify the most sustainable measures to manage surface water flooding in the area.

Fife Council

Fife Council has no surface water management planning actions to deliver within the Tay Local Plan District.

Stirling Council

Stirling Council has no surface water management planning actions to deliver within the Tay Local Plan District.

Annex 6: Supporting information

The following information has been extracted from the Tay Flood Risk Management Strategy¹.

Sources of flooding described in the strategy

The Flood Risk Management Strategy addresses the risk of flooding from rivers, the coast and surface water. The risk of flooding from rivers is usually due to rainfall causing a river to rise above bank level spreading out and inundating adjacent areas. Coastal flooding is where the risk is from the sea. Sea levels can change in response to tidal cycles or atmospheric conditions. Over the longer term, sea levels and coastal flood risk may change due to climate change. Surface water flooding happens when rainwater does not drain away through the normal drainage systems or soak into the ground, but lies on or flows over the ground instead. There can be interactions between these sources of flooding, but for the purposes of the Strategy they are dealt with independently.

The following aspects of flooding have not been incorporated into the Strategy:

- **Groundwater** is generally a contributing factor to flooding rather than the primary source. It is caused by water rising up from underlying rocks or flowing from springs.
- **Reservoir breaches** have been assessed under separate legislation (Reservoirs (Scotland) Act 2011). Further information and maps can be found on SEPA's website.
- The Flood Risk Management (Scotland) Act 2009 does not require SEPA or responsible authorities to assess or manage **coastal erosion**. However, SEPA has included consideration of erosion in the Flood Risk Management Strategies by identifying areas that are likely to be susceptible to erosion and where erosion can exacerbate flood risk. As part of considering where actions might deliver multiple benefits, we have looked to see where the focus of coastal flood risk management studies coincides with areas of high susceptibility to coastal erosion. Subsequent detailed studies and scheme design will need to consider coastal erosion in these areas.
- **Coastal flood modelling.** The information on coastal flooding used to set objectives and identify actions is based on SEPA modelling using simplified coastal processes and flooding mechanisms at work during a storm. Wave overtopping cannot be accurately modelled at a national scale due to the importance of local factors such as prevailing wind conditions, the depth and profile of the near-shore sea bed or the influence of any existing defences or management structures. As a result, coastal flood risk may be underestimated in

¹ 6 Tay Flood Risk Management Strategy, SEPA (December 2015). Found at (<http://apps.sepa.org.uk/FRMStrategies/tay.html>)

some areas. Conversely, in locations with wide and flat floodplains, the modelling may overestimate flood risk. To address this, in a number of locations where more detailed local models were available they have been incorporated into the development of the Flood Risk Management Strategies. Where wave overtopping has been specifically identified as a concern – but where no further detailed modelling is available – particular compensation has been made in the selecting actions to address coastal flood risk.

Commonly used terms

Below are explanatory notes for the approach taken in this strategy and commonly used terms in flood risk management. A glossary of terms is also available.

- **Reference to flood risk.** During the development of the Strategy, flood risk has been assessed over a range of likelihoods. For consistency in reporting information within the Strategies, unless otherwise stated, all references to properties or other receptors being ‘at risk of flooding’ refer to a medium likelihood flood (up to a 1 in 200 chance of flooding in any given year). By exception, references will be made to high or low risk flooding, which should be taken to mean a 1 in 10 chance/likelihood or 1 in 1000 chance/likelihood of flooding in any given year respectively.

Chance / Likelihood of flooding	
High	10 year
Medium	200 year
Low	1000 year

- **Annual Average Damages** have been used to assess the potential economic impact of flooding within an area. Depending on its size or severity each flood will cause a different amount of damage to a given area. Annual Average Damages are the theoretical average economic damages caused by flooding when considered over a very long period of time. It does not mean that damage will occur every year: in many years there will be no damages, in some years minor damages and in a few years major damages may occur. High likelihood events, which occur more regularly, contribute proportionally more to Annual Average Damages than rarer events. Within the Flood Risk Management Strategies, Annual Average Damages incorporate economic damages to the following receptors: residential properties, non-residential properties, vehicles, emergency services, agriculture and roads. They have been calculated based on the principles set out in the Flood Hazard Research Centre Multi-Coloured Handbook (2010).
- **History of flooding.** The history of flooding sections of this document report floods that have occurred up to July 2015.

Flood risk management planning process

Flood risk management in Scotland aims to manage flooding in a sustainable way. Sustainable flood risk management considers where floods are likely to occur in the future and takes action to reduce their impact without moving the problem elsewhere. It considers all sources of flooding, whether from rivers, the sea or from surface water. It delivers actions that will meet the needs of present and future generations whilst also protecting and enhancing the environment.

The sustainable approach to managing flood risk works on a six year planning cycle, progressing through the key stages outlined below.

Identifying priority areas at significant flood risk

The first step to delivering a risk-based, sustainable and plan-led approach to flood risk management was SEPA's **National Flood Risk Assessment**, which was published in 2011. The assessment considered the likelihood of flooding from rivers, groundwater and the sea, as well as flooding caused when heavy rainfall is unable to enter drainage systems or the river network. The likelihood of flooding was examined alongside the estimated impact on people, the economy, cultural heritage and the environment. It significantly improved our understanding of the causes and consequences of flooding, and identified areas most vulnerable to floods.

Based on the National Flood Risk Assessment, SEPA identified areas where flooding was considered to be nationally significant. These areas are based on catchment units as it is within the context of the wider catchment that flooding can be best understood and managed. These nationally significant catchments are referred to as **Potentially Vulnerable Areas**. In Scotland, 243 Potentially Vulnerable Areas were identified. They are estimated to contain 92% of the total number of properties at risk.

A small number of Candidate Potentially Vulnerable Areas were identified after the National Flood Risk Assessment in light of new information that warranted further assessment and appraisal. They are included in the flood risk management planning process. The National Flood Risk Assessment will be updated to inform each subsequent planning cycle.

Improving the understanding of flooding

SEPA developed **flood hazard and flood risk maps** between 2012 and 2014. These maps improved our understanding of flooding and helped inform the subsequent selection of actions to manage flood risk in Potentially Vulnerable Areas. The flood hazard maps show information such as the extent of flooding, water level, as well as depth and velocity where appropriate. The flood risk maps provide detail on the impacts on people, the economy, cultural heritage and the environment.

In 2012 SEPA also developed an **assessment of the potential for natural flood management**. The assessment produced the first national source of information on where natural flood management actions would be most effective within Scotland. Flood hazard and flood risk maps and the assessment of the potential for natural flood management can be viewed on the SEPA website www.sepa.org.uk.

Identifying objectives and selecting actions

The objectives and actions to manage flooding will provide the long-term vision and practical steps for delivering flood risk management in Scotland.

Working collaboratively with local partnerships, SEPA has agreed the objectives for addressing the main flooding impacts. Actions that could deliver these agreed objectives have been appraised for their costs and benefits to ensure the right combinations are identified and prioritised. The actions considered in the development of this strategy include structural actions (such as building floodwalls, restoring flood plains, or clearance and repair works to rivers) and non-structural actions (such as flood warning, land use planning or improving our emergency response). Structural and non-structural actions should be used together to manage flood risk effectively.

An assessment of the potential for natural flood management was used to help identify opportunities for using the land and coast to slow down and store water. Natural flood management actions were recommended in areas where they could contribute to the management of flood risk. In such instances these actions were put forward as part of flood protection or natural flood management studies.

Annex 7: Glossary

TERMINOLOGY	DEFINITION
Accretion	Accumulation of sediment.
Actions	Referred to as 'measures' within the FRM Act, 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 has been based on a detailed assessment and comparison of economic, social and environmental criteria.
Annual Average Damages (AAD)	Depending on its size or severity, each flood will cause a different amount of damage to a flood prone area and we can calculate the cost of this damage. Annual Average Damages for an area are the average costs per year that would occur from flooding over a very long period of time. Scottish figures have been calculated based on the method set out in the Flood Hazard Research Centre's Multi-Coloured Handbook (2010).
Appraisal	A method designed to set objectives and identify the most sustainable combination of actions to tackle flooding from rivers, the coast and urban surface water.
Appraisal baseline	Defines the existing level of flood risk under the current flood risk management regime.
Area of benefit (AOB)	An area which has benefited from a flood defence or flood protection scheme and is now at a reduced risk of flooding relative to the scheme's standard of protection.
Assets	Flood risk assets are structures and features which are likely to have a significant effect on flood risk. These can include pumping stations, culverts, walls and river banks.
Awareness Raising	Public awareness, participation and community support are essential components of sustainable flood risk management. SEPA and the responsible authorities have a duty to raise public awareness of flood risk. This is undertaken both individually and collaboratively by a range of organisations. Improved awareness of flood risk and actions that prepare individuals, homes and businesses for flooding can reduce the overall impact.
Bathing waters	Bathing waters are classed as protected areas under Annex IV of the Water Framework Directive (WFD). There are 84 designated bathing waters in

	Scotland ¹
Benefit cost ratio (BCR)	Benefit cost ratio is a way of expressing benefits from a project as a ratio of project costs. If the ratio is greater than 1:1 then the project is deemed to represent value for money and should be taken forward.
Blue infrastructure	Blue infrastructure is often complementary to 'green infrastructure' and includes sustainable drainage systems, swales (shallow, broad and vegetated channels designed to store and/or convey runoff and remove pollutants), wetlands, rivers, canals (and their banks) and other watercourses.
Bund	See flood bund
Candidate Potentially Vulnerable Area (PVAc)	Candidate PVAs are those areas identified after the National Flood Risk Assessment (2011) as a result of new information where the impact of flooding is potentially sufficient to justify further assessment and appraisal. They will be considered for inclusion as new PVAs in the next flood risk management planning cycle.
Catchment	All the land drained by a river and its tributaries.
Category 1 and 2 Responders (Cat 1 / 2)	Category 1 and 2 responders are defined as part of the Civil Contingencies Act 2004 which seeks to minimise disruption in the event of an emergency. Category 1 responders are 'core' responders: local authorities, police, fire and rescue services, ambulance service, NHS health boards, SEPA and the Maritime and Coastguard Agency. iv Category 2 responders are key co-operating responders in support of Category 1 responders. These include gas and electricity companies, rail and air transport operators, harbour authorities, telecommunications providers, Scottish Water, the Health and Safety Executive and NHS National Services Scotland.
Channel (capacity) improvement	Where work has been carried out on a river channel allowing an increase in the volume of water it can carry.
Characterisation	Provides a description of the natural characteristics of catchment, coastlines and urban areas in terms of hydrology, geomorphology, topography and land use. It also includes the characterisation of existing levels of flood risk and existing flood risk management activity.
Coastal flooding	Flooding that results from sea level rise or a combination of high tides and stormy conditions. The term coastal flooding is used under the Flood Risk Management (Scotland) Act 2009, but in some areas it is also referred to as tidal flooding and covers areas such as estuaries and river channels

	that are influenced by tidal flows.
Combined sewer (overflow) (CSO)	Combined sewers transport sewage from homes and industry as well as carrying surface water runoff from gutters, drains and some highways. Heavy or prolonged rainfall can rapidly increase the flow in a combined sewer until the amount of water exceeds sewer capacity. Combined sewer overflows are purposely-designed structures to ensure any excess water from sewerage systems is discharged in a controlled way and at a specific managed location.
Community facility	Within the FRM Strategies this term includes care homes, nursing homes, schools, nurseries, universities, police stations, health centres, hospitals, fire stations, GPs and dental surgeries.
Competent Authority	SEPA's designation
Community flood action groups	Community flood action groups are community based resilience groups which, on behalf of local residents and business, help to prepare for and minimise the effects of flooding. They reflect the interests of their local communities and may differ in composition and remit. There are over 60 groups already established in Scotland. The Scottish Flood Forum provides support for both new and existing groups.
Confluence	Where two or more rivers meet.
Conveyance	Conveyance is a measure of the carrying capacity of a watercourse. Increasing conveyance enables flow to pass more rapidly and reducing conveyance slows flow down. Both actions can be effective in managing flood risk depending on local conditions.
Cultural heritage site	Sites of particular cultural significance may be designated. The highest level of designation is a World Heritage Site. Historic Scotland maintains lists of buildings of special architectural or historic interest; these buildings are referred to as 'listed buildings'.
Culvert	A conduit used for the conveyance of a watercourse or surface drainage water under a roadway, railroad, canal or other impediment.
Damages	See 'Annual Average Damages', 'direct damages', 'indirect damages'.
Demountable defences	A temporary flood barrier is one that is only installed when the need arises, that is, when high flood levels are forecast. A demountable flood defence is a particular form of temporary defence that requires built-in parts and therefore can only be deployed in one specific location. ^v
Deposition	A natural process leading to an accumulation of

	sediment on a river bed, floodplain or coastline.
Direct damages	Defined in the appraisal process as immediate damages to the receptor as a result of flooding (e.g. damages to the fabric or content of buildings, clean-up costs).
Economic impact	An assessment of the economic value of the positive and negative effects of flooding and the actions taken to manage floods.
Embankment	Flood embankments are earthfill structures designed to contain high river levels. They are commonly grass-covered, but may need additional protection against erosion by swiftly flowing water, waves or overtopping.
Emergency plans / response	Emergency response plans are applicable for all types of flooding. They set out the steps to be taken during flooding in order to maximise safety and minimise impacts where possible. Under the Civil Contingencies Act, Category 1 Responders have a duty to maintain emergency plans. Emergency plans may also be prepared by individuals, businesses, organisations or communities.
Environmental impact	A change in the environment that could have a negative or positive effect on the ecosystem.
Environmental Impact Assessment (EIA)	Environmental Impact Assessment (EIA) is a process which identifies the potential environmental effects, both negative and positive, of a proposal.
Environmental sites / environmental designated areas/ environmentally designated sites	Areas formally designated for environmental importance, such as Sites of Special Scientific Interest (SSSI), Special Protection Area (SPA) or Special Areas of Conservation (SAC).
Episodic erosion	Erosion induced by a single event such as a storm.
Erosion	A natural process leading to the removal of sediment from a river bed, bank or floodplain or coastline.
Estuarine surge attenuation	How an estuary influences the dissipation of coastal surges caused by tides or weather.
Estuary	A coastal body of water usually found where a river meets the sea; the part of the river that is affected by tides.
Fault (fault line)	A break or fracture in the ground that occurs when the Earth's tectonic plates move. In Scotland the Highland Boundary Fault is the major geological fault line cutting diagonally across the Highlands from Fort William to Inverness. It is also known as the Great Glen.
Fetch	The distance travelled by wind or waves across open water.
Flash flood	A flash flood is a flood that occurs in a short period

	of time after high intensity rainfall or a sudden snow melt. A sudden increase in the level and velocity of the water body is often characteristic of these events. Rising water levels in the river network can reach a peak within minutes to a few hours of the onset of the flood event, leaving a short time for warning or actions.
Flashy watercourse	A 'flashy' river or watercourse has a short lag time (the delay between peak rainfall intensity and peak river discharge), high peak discharge, and quickly returns to average flow. Rivers with these characteristics can be more likely to flood and leave a short time for warning or actions.
Flood	A flood can be defined as the period of time flooding is expected, occurs and drains away. It causes significant adverse impacts on people, property, environment or infrastructure and is not a result of regular weather or infrastructure drainage.
Flood bund	A constructed retaining wall, embankment or dyke designed to prevent flooding.
Flood defence	Infrastructure, such as flood walls and embankments, intended to protect an area against flooding to a specified standard of protection.
Flood extent	The area that has been affected by flooding, or is at risk of flooding from one or more sources.
Flood forecasting	SEPA operates a network of over 250 rainfall, river and coastal monitoring stations throughout Scotland that generate data 24 hours a day. This hydrological information is combined with meteorological information from the Met Office. A team of experts then predict the likelihood and timing of river, coastal and surface water flooding. This joint initiative between SEPA and the Met Office forms the Scottish Flood Forecasting Service.
Flood frequency	How often we expect a flood to happen (see likelihood).
Flood gate	An adjustable, sometimes temporary, barrier used as a flood defence to control the flow of water within a water system or during a flood.
Flood hazard	In terms of the FRM Act, hazard refers to the characteristics (extent, depth, velocity) of a flood.
Flood hazard map	Required by the FRM Act to show information that describes the nature of a flood in terms of the source, extent, water level or depth and velocity of water, where appropriate.
Flood Prevention Scheme / Flood Protection Scheme (FPS)	Flood defence measures (flood prevention schemes) formerly promoted under the Flood Prevention (Scotland) Act 1961 can now be taken forward under the FRM Act by a local authority to reduce flood risk. A flood protection scheme, as

	defined by the FRM Act, is a scheme by a local authority for the management of flood risk within the authority's area.
Flood protection study	A detailed assessment of an area for flood risk. The study may assess what is at risk of flooding with more accuracy and provide options for dealing with the risk of flooding.
Flood protection works	Flood protection works can include the same flood defence measures that would make up a flood protection scheme but without the legal requirements, process and protections that would come by designating the works as a scheme.
Flood risk	A measure of the combination of the likelihood of flooding occurring and the associated impacts on people, the economy and the environment.
Flood Risk Assessment (FRA)	Flood Risk Assessments are detailed studies of an area where flood risk may be present. These are often used to inform planning decisions, develop flood schemes and they also contributed to the National Flood Risk Assessment.
Flood Risk Management (Scotland) Act 2009 (FRM Act)	The flood risk management legislation for Scotland. It transposes the EC Floods Directive into Scots Law and aims to reduce the adverse consequences of flooding on communities, the environment, cultural heritage and economic activity.
Flood risk management cycle	Under the FRM Act flood risk management planning is to occur in six year cycles. The first cycle is 2015 – 2021.
Flood Prevention (Scotland) Act 1961	The Flood Prevention (Scotland) Act 1961 gave local authorities discretionary powers to make and build flood prevention schemes. It was superseded by the Flood Risk Management (Scotland) Act 2009.
Flood Risk Management Local Advisory Groups	FRM Local Advisory Groups are stakeholder groups convened to advise SEPA and lead local authorities in the preparation of Flood Risk Management Plans. SEPA and lead local authorities must have regard to the advice they provide.
Flood Risk Management Plans (FRM Plans)	A term used in the FRM Act. FRM Plans set out the actions that will be taken to reduce flood risk in a Local Plan District. They comprise Flood Risk Management Strategies, developed by SEPA, and Local Flood Risk Management Plans produced by lead local authorities.
Flood Risk Management Strategy (FRM Flood Risk Management Strategy)	Sets out a long-term vision for the overall reduction of flood risk. They contain a summary of flood risk in each Local Plan District, together with information on catchment characteristics and a summary of objectives and actions for Potentially Vulnerable Areas.
Flood risk map	Builds on flood hazard maps providing detail on the

	impacts of flooding on people, the economy and the environment.
Flood wall	A flood defence feature used to defend an area from flood water.
Flood Warning area (FWA)	A Flood Warning area is where SEPA operates a formal Flood Monitoring Scheme to issue targeted Flood Warning messages for properties located in the area.
Flood warning scheme	A flood warning scheme is the network of monitoring on a coastal stretch or river, which provides SEPA with the ability to issue Flood Warnings.
Floodplain	Area of land that borders a watercourse, an estuary or the sea, over which water flows in time of flood, or would naturally flow but for the presence of flood defences and other structures where they exist.
Floodplain storage	Floodplains naturally store water during high flows. Storage can be increased through natural or man-made features to increase flood depth or slow flows to reduce flooding elsewhere.
Floods Directive	European Directive 2007/60/EC on the Assessment and Management of Flood Risks builds on and is closely related to the Water Framework Directive (see river basin management planning). It was transposed into Scots Law by the Flood Risk Management (Scotland) Act 2009. The Directive requires Member States to assess if all watercourses and coastlines are at risk from flooding, to map the flood extent, assets and humans at risk in these areas and to take adequate and coordinated measures to reduce this flood risk.
Fluvial flooding	Flooding from a river or other watercourse.
Gabion	A metal cage filled with rocks to walls often used in river bank protection.
Green infrastructure	The European Commission defines green infrastructure as “the use of ecosystems, green spaces and water in strategic land use planning to deliver environmental and quality of life benefits. It includes parks, open spaces, playing fields, woodlands, wetlands, road verges, allotments and private gardens. Green infrastructure can contribute to climate change mitigation and adaptation, natural disaster risk mitigation, protection against flooding and erosion as well as biodiversity conservation.” See also ‘blue infrastructure’.
Groundwater flooding	This type of flooding is caused by water rising up from underlying rocks or flowing from springs. Groundwater is generally a contributing factor to flooding rather than the primary source.
Hydrometric areas	These are either whole river catchments having one

	or more outlets to the sea or tidal estuary, or they may include several connected river catchments having similar surface features but with separate tidal outlets.xi There are 107 hydrometric areas in the UK, 45 of which are in Scotland.
Indirect damages	Defined in the appraisal process as damages incurred due to the knock on effects of flooding such as disruption, evacuation, costs to emergency services, loss of income or earnings/industrial production. (See also 'direct damages').
Integrated catchment study (ICS)	In urban areas, the causes of flooding are complex because of the interactions between rivers, surface water drainage and combined sewer systems and tidal waters. Scottish Water works with SEPA and local authorities to assess these interactions through detailed studies.
Land use planning (LUP)	The process undertaken by public authorities to identify, evaluate and decide on different options for the use of land, including consideration of long term economic, social and environmental objectives and the implications for different communities and interest groups.
Lead authority	A local authority responsible for the production, consultation, publication and review of a Local Flood Risk Management Plan.
Likelihood of flooding	The chance of flooding occurring. High likelihood: A flood is likely to occur in the defined area on average once in every ten years (1:10). Or a 10% chance of happening in any one year. Medium likelihood: A flood is likely to occur in the defined area on average once in every two hundred years (1:200). Or a 0.5% chance of happening in any one year. Low likelihood: A flood is likely to occur in the defined area on average once in every thousand years (1:1000). Or a 0.1% chance of happening in any one year.
Local Development Plans	Each planning authority area in Scotland is covered by a Local Development Plan, which sets out where most new developments are proposed and the policies that will guide decision-making on planning applications. The four main city regions in Scotland (Aberdeen, Dundee, Edinburgh and Glasgow) are also covered by a Strategic Development Plan which sets out the long-term development of the city region and deals with region-wide issues such as housing and transport.
Local Flood Risk Management Plans	Local Flood Risk Management Plans, produced by lead local authorities, will take forward the objectives

(Local FRM Plan)	and actions set out in Flood Risk Management Strategies. They will provide detail on the funding, timeline of delivery, arrangements and coordination of actions at the local level during each six year FRM planning cycle.
Local Nature Reserve	Local nature reserves are areas of at least locally important natural heritage, designated and managed by local authorities to give people better opportunities to learn about and enjoy nature close to where they live. Local authorities select and designate local nature reserves using their powers under the National Parks and Access to the Countryside Act 1949
Local Plan District (LPD)	Geographical areas for the purposes of flood risk management planning. There are 14 Local Plan Districts in Scotland.
Local Plan District Partnerships	Each LPD has established a local partnership comprised of local authorities, SEPA, Scottish Water and others as appropriate. These partnerships are distinct from the FRM Local Advisory Groups and they retain clear responsibility for delivery of the FRM actions set out in the Local Flood Risk Management Plans. It is the local partnership that makes decisions and supports the delivery of these plans.
Maintenance	Sections 18 and 59 of the Flood Risk Management (Scotland) Act 2009 put duties of watercourse inspection, clearance and repair on local authorities. In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or defences.
Montane habitat	This habitat encompasses a range of natural or near-natural vegetation occurring in the montane zone, lying above or beyond the natural tree-line.
National Flood Management Advisory Group (NFMAG)	The National Flood Management Advisory Group provides advice and support to SEPA and, where required, Scottish Water, local authorities and other responsible authorities on the production of FRM Strategies and Local FRM Plans.
National Flood Risk Assessment (NFRA)	A national analysis of flood risk from all sources of flooding which also considers climate change impacts. Completed in December 2011 this provides the information required to undertake a strategic approach to flood management that identifies areas at flood risk that require further appraisal. The NFRA will be reviewed and updated for the second cycle of FRM Planning by December 2018.
Natural flood management (NFM)	A set of flood management techniques that aim to work with natural processes (or nature) to manage flood risk.

Non-residential properties	Properties that are not used for people to live in, such as shops or other commercial or industrial type buildings.
Objectives	Measurable goals relating to managing flood risk. The Flood Risk Management Strategies for each of the 14 Local Plan Districts in Scotland will set out objectives to reduce flood risk and actions to achieve those objectives.
One in 200 year flood	See 'likelihood of flooding' and 'return period'.
Planning policies	Current national planning policies, Scottish Planning Policy and accompanying Planning Advice notes restrict development within the floodplain and limit exposure of new receptors to flood risk. In addition to national policies, local planning policies may place further requirements within their area of operation to restrict inappropriate development and prevent unacceptable risk.
Potentially Vulnerable Areas (PVA)	Catchments identified as being at risk of flooding and where the impact of flooding is sufficient to justify further assessment and appraisal. There were 243 PVAs identified by SEPA in the National Flood Risk Assessment and these will be the focus of the first FRM planning cycle.
Probability	The chance of a flood occurring within a given time. This is also expressed as likelihood of flooding as in the SEPA flood maps.
Property level protection	Property level protection includes flood gates, sandbags and other temporary barriers that can be used to prevent water from entering individual properties during a flood.
Property level protection scheme	Some responsible authorities may have a formal scheme to provide, install and maintain property level protection for properties.
Q&S	Quality and Standards (Q&S) is the process, governing costs and outputs, through which the planning and delivery of improvements to the public drinking water and sewerage services in Scotland is carried out
Ramsar sites	Ramsar sites are wetlands of international importance designated under the Ramsar Convention.
Receptor	Refers to the entity that may be impacted by flooding (a person, property, infrastructure or habitat). The vulnerability of a receptor can be modified by increasing its resilience to flooding.
Residual risk	The risk that remains after risk management and mitigation. This may include risk due to very severe (above design standard) storms or risks from unforeseen hazards.
Resilience	The ability of an individual, community or system to

	recover from flooding.
Responsible authority	Designated under the FRM (Scotland) Act 2009 and associated legislation as local authorities, Scottish Water and, from 21 December 2013, the National Park Authorities and Forestry Commission Scotland. Responsible authorities, along with SEPA and Scottish Ministers, have specific duties in relation to their flood risk related functions.
Return period	The average period of time between occurrences of a flood event. The longer the return period, the rarer the event. (See also 'likelihood of flooding'.)
Revetment	Sloping structures placed on banks or at the foot of cliffs in such a way as to deflect the energy of incoming water.
Riparian	The riparian area is the interface between land and a river or stream. For the purposes of FRM this commonly refers to the riparian owner, which denotes ownership of the land area beside a river or stream.
River basin district	Geographic areas over which River Basin Management and Flood Risk Management Plans are prepared. In Scotland there are two River Basin Districts identified under the Water Environment and Water Services (Scotland) Act 2003 (WEWS Act) - one for the Solway/Tweed area and one covering the rest of Scotland.
River basin management planning (RBMP)	The Water Environment and Water Services (Scotland) Act 2003 transposed the European Water Framework Directive into Scots law. The Act created the River Basin Management Planning process to achieve environmental improvements to protect and improve our water environment. It also provided for regulations to control the negative impacts of all activities likely to have an impact on the water environment.
Runoff reduction	Actions within a catchment or sub-catchment to reduce the amount of runoff during rainfall events. This can include intercepting rainfall, storing water, diverting flows or encouraging infiltration.
Scottish Advisory and Implementation Forum for Flooding (SAIFF)	The stakeholder forum on flooding set up by the Scottish Government to ensure legislative and policy aims are met and to provide a platform for sharing expertise and developing common aspirations and approaches to reducing the impact of flooding on Scotland's communities, environment, cultural heritage and economy.
Scottish Government's Rural Payments and Inspections Directorate	Part of the Scottish Government which has the most direct dealings with Scotland's land managers, including processing grant applications and payments, carrying out inspections, plant health

	visits and estate management.
Sediment balance	Within a river where erosion and deposition processes are equal over the medium to long-term resulting in channel dimensions (width, depth, slope) that are relatively stable.
Self help	Self help actions can be undertaken by any individuals, businesses, organisations or communities at risk of flooding. They are applicable to all sources, frequency and scales of flooding. They focus on awareness raising and understanding of flood risk.
Sewer flooding (and other artificial drainage system flooding)	Flooding as a result of the sewer or other artificial drainage system (e.g. road drainage) capacity being exceeded by rainfall runoff or when the drainage system cannot discharge water at the outfall due to high water levels (river and sea levels) in receiving waters.
Shoreline Management Plan (SMP)	A Shoreline Management Plan is a large scale assessment of the coastal flood and erosion risks to people and the developed, historic and natural environment. It sets out a long-term framework for the management of these risks in a sustainable manner.
Site of Special Scientific Interest (SSSI)	Sites of Special Scientific Interest are protected by law under the Nature Conservation (Scotland) Act 2004 to conserve their plants, animals and habitats, rocks and landforms.
Site protection plans	Site protection plans are developed to identify whether normal operation of a facility can be maintained during a flood. This may be due to existing protection or resilience of the facility or the network.
Source of flooding	The type of flooding. This can be coastal, river, surface water or groundwater.
Special Area of Conservation (SAC)	Special Areas of Conservation are strictly protected sites designated under the European Habitats Directive. The Directive requires the establishment of a European network of protected areas which are internationally important for threatened habitats and species.
Special Protection Areas (SPA)	Special Protection Areas are strictly protected sites classified in accordance with the European Birds Directive. They are classified for rare and vulnerable birds (as listed in the Directive), and for regularly occurring migratory species
SR10 / SR15	SR10 and SR15 are Scottish Water's investment programmes. SR10 covered the period 2010 -2015 and SR15 covers 2015-2021. For more information on their investment programme please see https://www.scottishwater.co.uk/about-

	us/publications/strategic-projections
Standard of protection (SoP)	The flood event return period above which significant damage and possible failure of the flood defences could occur.
Storage area	A feature that can be used to store floodwater, this can be natural in the form of low lying land or manmade such as a large reservoir or modified landform.
Strategic Environmental Assessment (SEA)	A process for the early identification and assessment of the likely significant environmental effects, positive and negative, of activities. Often considered before actions are approved or adopted.
Strategic Flood Risk Assessment (SFRA)	A Strategic Flood Risk Assessment is designed for the purposes of specifically informing the Development Plan Process. A SFRA involves the collection, analysis and presentation of all existing and readily available flood risk information (from any source) for the area of interest. It constitutes a strategic overview of flood risk.
Strategic mapping and modelling	Strategic mapping and modelling actions have been identified in locations where SEPA is planning to undertake additional modelling or analysis of catchments and coastlines, working collaboratively with local authorities where appropriate, to improve the national understanding of flood risk.
Surcharge	Watercourses and culverts can carry a limited amount of water. When they can no longer cope, they overflow, or 'surcharge'.
Surface water flooding	Flooding that occurs when rainwater does not drain away through the normal drainage systems or soak into the ground, but lies on or flows over the ground instead
Surface water management plan (SWMP)	A plan that takes an integrated approach to drainage accounting for all aspects of urban drainage systems and produces long term and sustainable actions. The aim is to ensure that during a flood the flows created can be managed in a way that will cause minimum harm to people, buildings, the environment and business.
Surface water plan/study	The management of flooding from surface water sewers, drains, small watercourses and ditches that occurs, primarily in urban areas, during heavy rainfall. FRM Strategy actions in this category include: Surface Water Management Plans, Integrated Catchment Studies and assessment of flood risk from sewerage systems (FRM Act Section 16) by Scottish Water. These have been selected as appropriate for each Potentially Vulnerable Area.
Surface water runoff	The flow of water from rain, snow melt or other sources over land.

Sustainable flood risk management	An approach which involves taking actions now to manage the risk of flooding that are robust enough to stand the test of time. There are three pillars of sustainability that must be considered - environmental, social and economic.
Sustainable drainage systems (SuDS)	A set of techniques designed to slow the flow of water. They can contribute to reducing flood risk by absorbing some of the initial rainfall and then releasing it gradually, thereby reducing the flood peak and helping to mitigate downstream problems. SuDS encourage us to take account of quality, quantity and amenity / biodiversity.
Training wall	A wall, bank or jetty built to confine and direct the flow of water.
UK Climate Change Projections (UKCP09)	The leading source of climate change information for the UK. It can help users to assess their climate risks and plan how to adapt to a changing climate.
Utility assets	Within the FRM Strategies this refers to electricity sub stations, mineral and fuel extraction sites, telephone assets, television and radio assets.
Vulnerability	A measure of how likely someone or something is to suffer long-term damage as a result of flooding. It is a combination of the likelihood of suffering harm or damage during a flood (susceptibility) and the ability to recover following a flood (resilience).
Wave energy dissipation	Process by which a wave loses its mechanical energy.
Wave overtopping	Wave overtopping takes place when waves meet a submerged or emerged reef or structure and pass over it.

Annex 8: Licencing & Acknowledgements

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