
*APPENDIX C – Comrie Flood Risk Management Strategy
and Comrie Local Flood Risk Management Plan*

1) Comrie Flood Risk Management Strategy

3.14 Comrie PVA 08/14

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

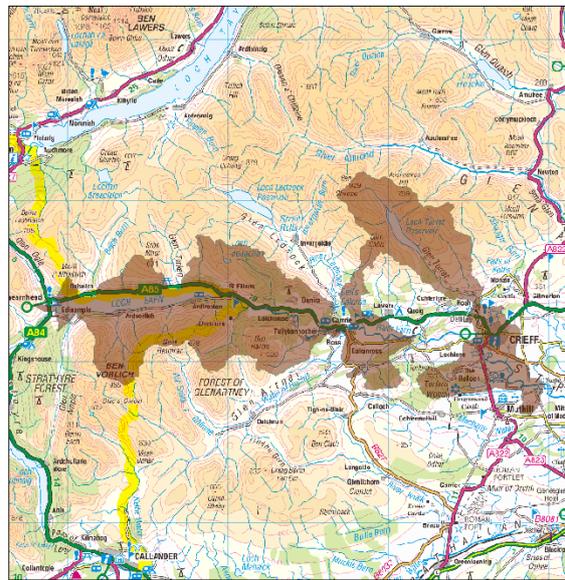
Background and summary of impacts

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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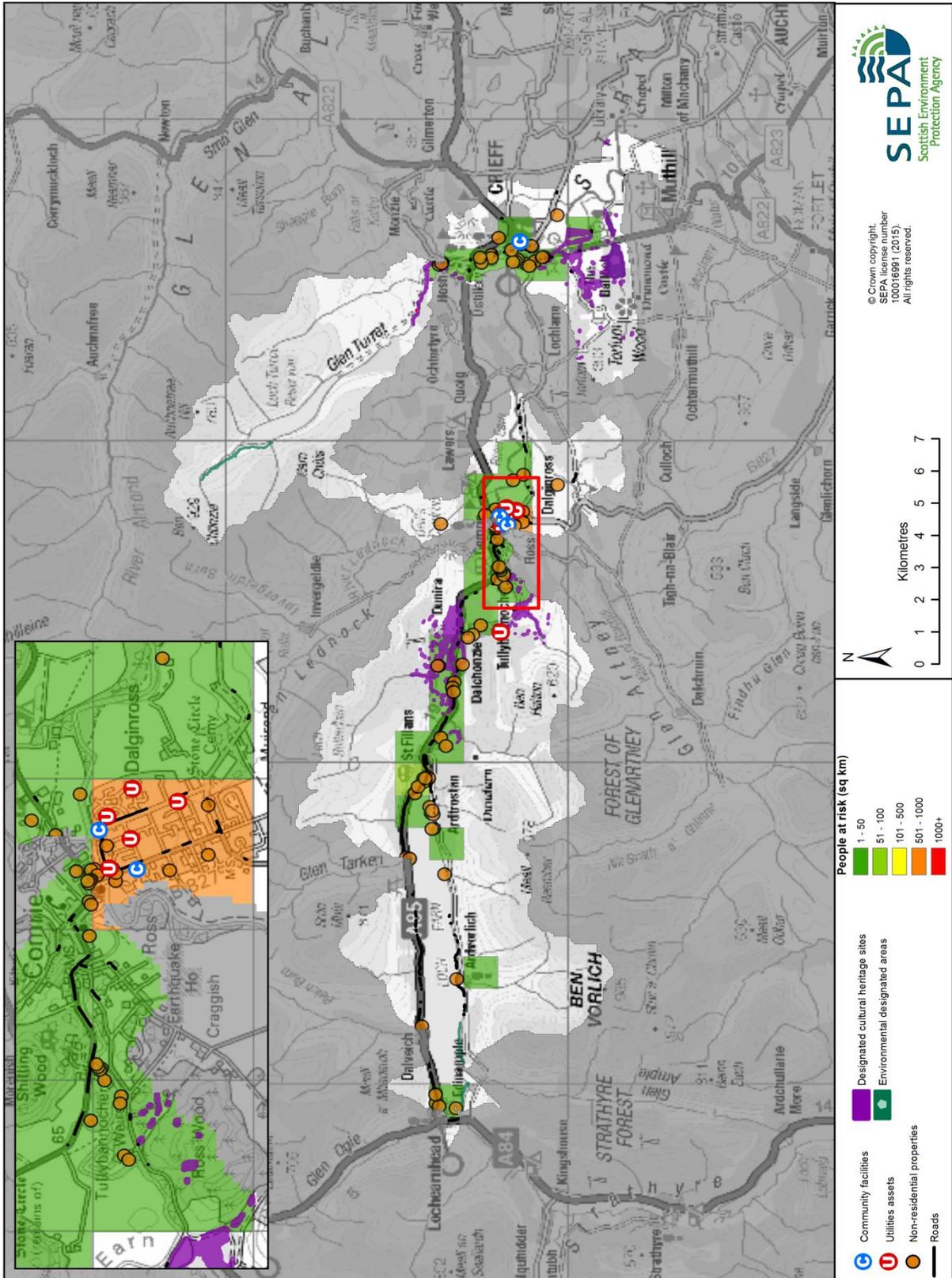


Figure 22: Impact of Flooding in PVA 08/14

(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 Monzievaird.
- 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 Innerpefferay 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 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 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. 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>

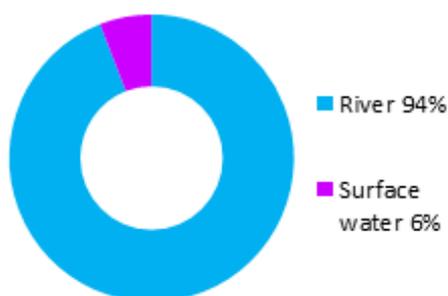
	<p>drainage impact assessment as applicable. They must also consider how a development site will be drained and how surface water runoff will be managed through the implementation of appropriate Sustainable Urban Drainage Measures. So as to align the flood risk management and land use planning systems, 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>

2) Comrie Local Flood Risk Management Plan

Comrie (Potentially Vulnerable Area 08/14)

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

Summary of flooding impacts



At risk of flooding

- 510 residential properties
- 100 non-residential properties
- £2.0 million Annual Average Damages

(damages by flood source shown left)

Summary of flooding impacts

Summary of objectives to manage flooding

Objectives have been set by SEPA and agreed with flood risk management authorities. These are the aims for managing local flood risk. The objectives have been grouped in three main ways: by reducing risk, avoiding increasing risk or accepting risk by maintaining current levels of management.

Many organisations, such as Scottish Water and energy companies, actively maintain and manage their own assets including their risk from flooding. Where known, these actions are described here. Scottish Natural Heritage and Historic Environment Scotland work with site owners to manage flooding where appropriate at designated environmental and/or cultural heritage sites. These actions are not detailed further in the Flood Risk Management Strategies.

Objectives

Summary of actions to manage flooding

The actions below have been selected to manage flood risk.

Flood protection scheme/works	<i>Natural flood management works</i>	<i>New flood warning</i>	Community flood action groups	<i>Property level protection scheme</i>	<i>Site protection plans</i>
<i>Flood protection study</i>	<i>Natural flood management study</i>	Maintain flood warning	Awareness raising	<i>Surface water plan/study</i>	Emergency plans/response
Maintain flood protection scheme	Strategic mapping and modelling	Flood forecasting	Self help	Maintenance	Planning policies

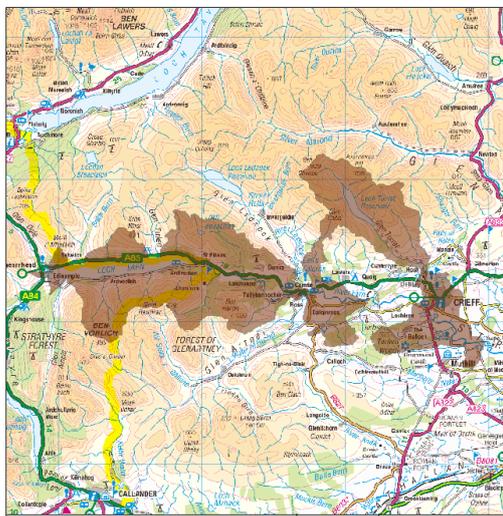
Actions

Comrie (Potentially Vulnerable Area 08/14)

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

Background

This Potentially Vulnerable Area is 168km² (shown below). 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.



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

The majority of flood damages are caused by river flooding.

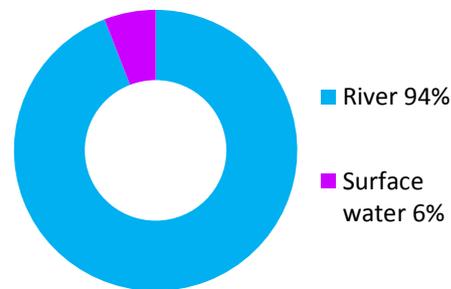


Figure 1: Annual Average Damages by flood source

Summary of flooding impacts

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

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

The damages associated with floods of different likelihood are shown in Figure 2. For this Potentially Vulnerable Area the highest damages are to residential properties followed by damages to non-residential properties. The A85 is also impacted at a number of locations. The location of the impacts of flooding is shown in Figure 3.

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

	1 in 10 High likelihood	1 in 200 Medium likelihood	1 in 1000 Low likelihood
Residential properties (total 4,800)	220	510	830
Non-residential properties (total 1,100)	50	100	120
People	490	1,100	1,800
Community facilities	<10 Emergency services	<10 Includes: emergency services and healthcare facilities	<10 Includes: emergency services and healthcare facilities
Utilities assets	<10	<10	10
Transport links (excluding minor roads)	3 A roads, 2 B roads at 86 locations	3 A roads, 2 B roads at 89 locations	3 A roads, 2 B roads at 109 locations
Environmental designated areas (km ²)	0.8	0.8	0.8
Designated cultural heritage sites	7	7	9
Agricultural land (km ²)	5.6	8.2	9.9

Table 1: Summary of flooding impacts

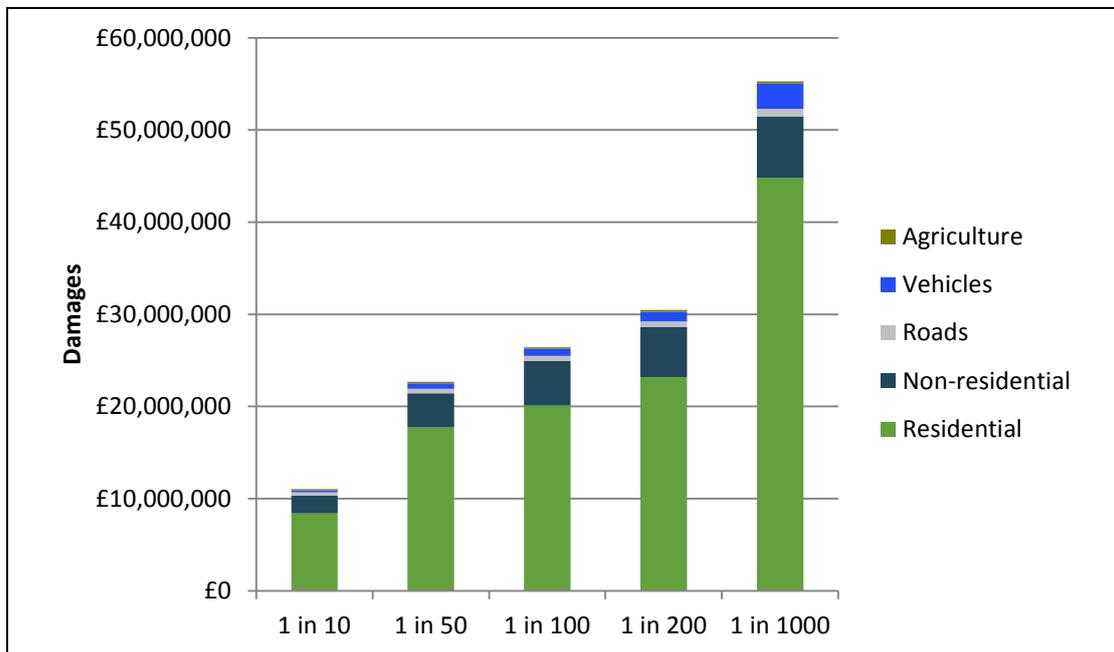


Figure 2: Damages by flood likelihood

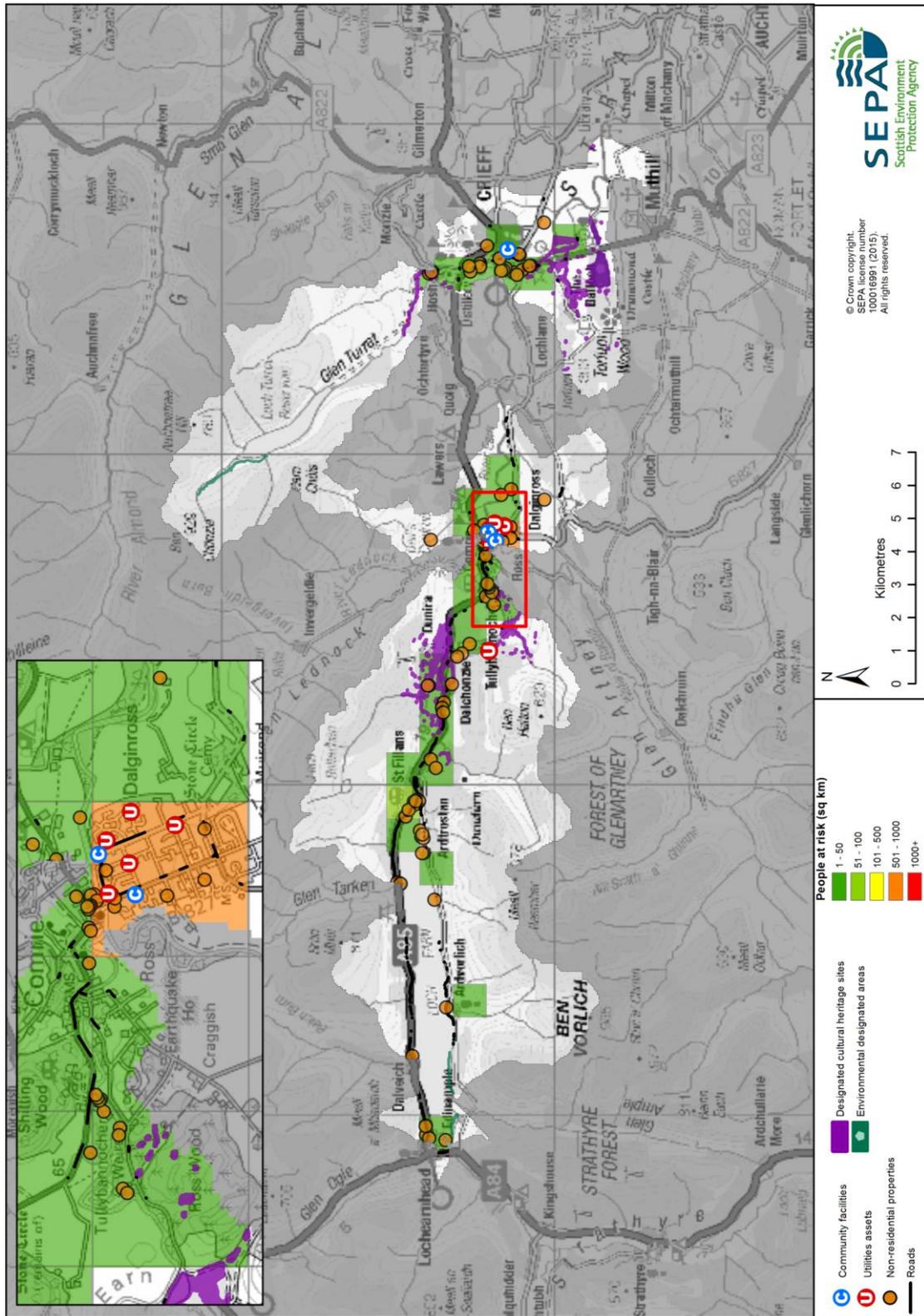


Figure 3: Impacts of flooding

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 Monzievaird.
- 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.

Objectives to manage flooding in Potentially Vulnerable Area 08/14

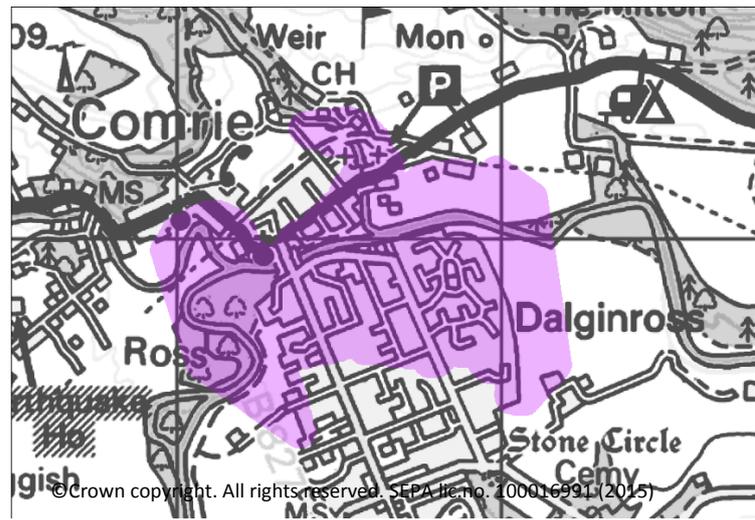
Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target areas have been set to focus actions; they do not necessarily correspond to areas at risk in SEPA's flood map. The objectives below have been set for Comrie Potentially Vulnerable Area.

Reduce economic damages to residential and non-residential properties in Comrie caused by flooding from the River Earn and River Lednock

Indicators:

- £1.3 million Annual Average Damages from residential properties
- £280,000 Annual Average Damages from non-residential properties

Target area:



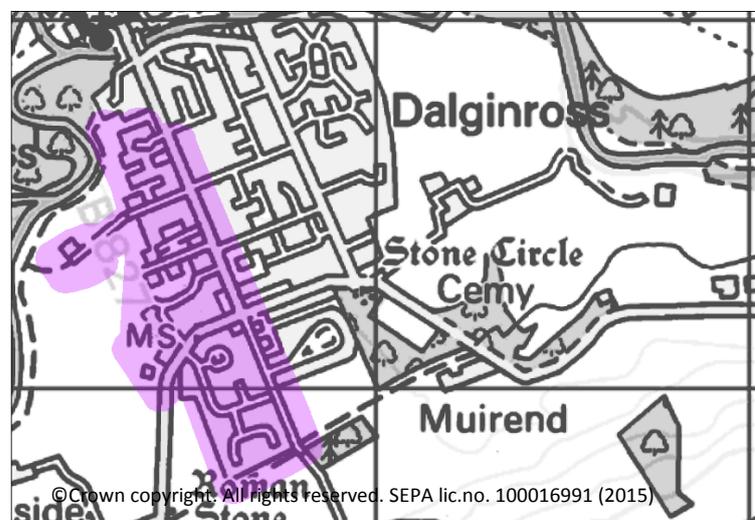
Objective ID: 8033

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.

Indicators:

- 90 residential properties and one non-residential properties protected (100 year event)

Target area:



Objective ID: 8035

Target area	Objective	ID	Indicators within PVA
Comrie	Reduce the physical or disruption risk related to the transport network for roads	8303	<ul style="list-style-type: none"> • 7.4km of road at 43 locations on the A85
Applies across Tay Local Plan District	Avoid an overall increase in flood risk	8001	<ul style="list-style-type: none"> • 510 residential properties • £2.0 million Annual Average Damages
Applies across Tay Local Plan District	Reduce overall flood risk	8041	<ul style="list-style-type: none"> • 510 residential properties • £2.0 million Annual Average Damages
Applies across Tay Local Plan District	Organisations such as Scottish Water, energy companies and Historic Environment Scotland actively maintain and manage their own assets, including the risk of flooding. These actions are not detailed further in the Flood Risk Management Strategies.		

Actions to manage flooding in Potentially Vulnerable Area 08/14

Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation. Selection of actions to deliver the agreed objectives was based on a detailed assessment and comparison of economic, social and environmental criteria. The actions shaded and then described below have been selected as the most appropriate for Comrie Potentially Vulnerable Area.

Selected actions					
Flood protection scheme/works	<i>Natural flood management works</i>	<i>New flood warning</i>	Community flood action groups	<i>Property level protection scheme</i>	<i>Site protection plans</i>
<i>Flood protection study</i>	<i>Natural flood management study</i>	Maintain flood warning	Awareness raising	<i>Surface water plan/study</i>	Emergency plans/response
Maintain flood protection scheme	Strategic mapping and modelling	Flood forecasting	Self help	Maintenance	Planning policies

Action (ID):	FLOOD PROTECTION SCHEME/WORKS (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:		Within local authority:		
	7 of 42		1 of 4		
Status:	Under development	Indicative delivery:	2016-2021		
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 scheme would consist of flood defences and flood storage areas. The scheme would provide a 1 in 100 year standard of protection.				
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				

Environmental:	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.
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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:	Under development	Indicative delivery:	2016-2021
Description:	Transport Scotland will carry out civil engineering work which will reduce the risk of flooding on identified sections of the trunk road.		

Action (ID):	STRATEGIC MAPPING AND MODELLING (80410016)		
Objective (ID):	Reduce overall flood risk (8041)		
Delivery lead:	SEPA		
Status:	Not started	Indicative delivery:	2016-2021
Description:	SEPA will seek to develop flood mapping in the Upper Earn area to improve understanding of flood risk. The extent and timing of improvements will depend on detailed scoping and data availability.		

Action (ID):	STRATEGIC MAPPING AND MODELLING (80410019)		
Objective (ID):	Reduce overall flood risk (8041)		
Delivery lead:	Scottish Water		
Status:	Not started	Indicative delivery:	2016-2021
Description:	Scottish Water will carry out an assessment of flood risk within the highest risk sewer catchments to improve knowledge and understanding of surface water flood risk.		

Action (ID):	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	Indicative delivery:	Ongoing
Description:	Continue to maintain existing flood defences and flood protection works in Comrie. These include the Ruchill Flood Protection Scheme constructed in the 1960s and flood protection works carried out in 2013.		

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	Indicative delivery:	Ongoing
Description:	Continue to maintain the Ruchill flood protection scheme constructed in 1960 that protects Dalginross from river flooding.		

Action (ID):	MAINTAIN FLOOD WARNING (80410030)		
Objective (ID):	Reduce overall flood risk (8041)		
Delivery lead:	SEPA		
Status:	Existing	Indicative delivery:	Ongoing
Description:	Continue to maintain the Carse of Lennoch to Lochlane and the Crieff to Innerpeffray flood warning areas which are part of the Earn river flood warning scheme. 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.		

Action (ID):	FLOOD FORECASTING (80410009)		
Objective (ID):	Reduce overall flood risk (8041)		
Delivery lead:	SEPA		
Status:	Existing	Indicative delivery:	Ongoing
Description:	The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information please visit SEPA's website.		

Action (ID):	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	Indicative delivery:	Ongoing
Description:	Comrie Resilience Group operates in this area. The membership includes Perth and Kinross Council, SEPA, Scottish Fire and 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.		

Action (ID):	SELF HELP (80410011)		
Objective (ID):	Reduce overall flood risk (8041)		
Delivery lead:	—		
Status:	Existing	Indicative delivery:	Ongoing
Description:	Everyone is responsible for protecting themselves and their property from flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline and Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage. Perth and Kinross Council is piloting a project for flood protection products for properties in flood risk areas.		

Action (ID):	AWARENESS RAISING (80410013)		
Objective (ID):	Reduce overall flood risk (8041)		
Delivery lead:	Responsible authorities		
Status:	Existing	Indicative delivery:	Ongoing
Description:	<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>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>Local authorities will be undertaking additional awareness raising activities. Further details will be set out in the Local FRM Plan.</p>		

Action (ID):	MAINTENANCE (80410007)		
Objective (ID):	Reduce overall flood risk (8041)		
Delivery lead:	Local authorities, asset / land managers		
Status:	Existing	Indicative delivery:	Ongoing
Description:	<p>Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. They produce schedules of clearance and repair works and make these available for public inspection. Scottish Water undertake inspection and repair on the public sewer network. Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk.</p>		

Action (ID):	EMERGENCY PLANS/RESPONSE (80410014)		
Objective (ID):	Reduce overall flood risk (8041)		
Delivery lead:	Category 1 and 2 Responders		
Status:	Existing	Indicative delivery:	Ongoing
Description:	<p>Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders. The emergency response by these organisations is co-ordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p>		

Action (ID):	PLANNING POLICIES (80010001)		
Objective (ID):	Avoid an overall increase in flood risk (8001) Reduce overall flood risk (8041)		
Delivery lead:	Planning authority		
Status:	Existing	Indicative delivery:	Ongoing
Description:	Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided. For further information on the application of national planning policies see Annex 2.		