Flood Risk Management (Scotland) Act 2009:

Local Flood Risk Management Plan

Tay Local Plan District

Cycle 2: 2022 - 2028

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PERTH & KINROSS COUNCIL

Angus Council

Stirling Council

Fife COUNCIL

SEPA
Scottish Environment Protection Agency
Buidheann Dìon Àrainneachd na h-Alba

Scottish Water
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LOCH LOMOND & THE TROSSACHS NATIONAL PARK

CAIRNGORMS NATIONAL PARK AUTHORITY
ÙGHDARRAS PÀIRC NÀISEANTA A' MHONAIDH 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 second 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 second planning cycle from 2022 to 2028.

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, Scottish Forestry, Forestry and Land Scotland, Loch Lomond & Trossachs National Park Authority and Cairngorms National Park Authority.

In summary, there are 14 areas that have been identified as being potentially vulnerable to flood risk across the Tay local plan district. It is estimated there are around 9,000 homes and businesses at risk from flooding, and this may increase to 13,000 homes and businesses by the 2080s due to climate change. The estimated annual average damage of these flood risks is £11.4 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 6 flood protection schemes or works; 9 flood studies and 5 surface water management plans. 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 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.

Contributors

Perth and Kinross Council
Angus Council
Fife Council
Stirling Council
SEPA
Scottish Water
Loch Lomond and the Trossachs National Park
Cairngorms National Park Authority
Scottish Forestry
Forestry and Land Scotland

Contents

List of Acronyms and Abbreviations

AOB	-	Area of Benefit
CNPA	-	Cairngorms National Park Authority
CoSLA	-	Convention of Scottish Local Authorities
FLS	-	Forestry and Land 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 and Land Scotland)
SEPA	-	Scottish Environment Protection Agency
SW	-	Scottish Water

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 Tay Flood Risk Management Plan 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 Plans 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 programmed over six-year planning cycles. The Flood Risk Management Plans 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. They are also important in our response to the climate emergency as flooding is increasing due to climate change.

The Local Flood Risk Management Plan takes the actions contained in the Flood Risk Management Plan 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 Local Plan covers the second six-year implementation cycle from 2022 to 2028.

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 act 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, Scottish Forestry, Forestry and Land 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 second flood risk management cycle from 2022 – 2028, 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 Plan for the Tay Local Plan District. The Flood Risk Management Plan has been developed by SEPA in parallel with this Plan and provides additional background information and national context. The Flood Risk Management Plans were approved by Scottish Ministers and published in December 2021. Both this Local Plan and the Flood Risk Management Plan will be updated every six years.

1.2 Progress in Cycle 1 (2016-2022)

The 2016 local flood risk management plan outlined the long-term objectives to tackle flooding in the areas at highest risk within the Tay Local Plan District.

The objectives for each area were agreed and actions were developed to meet those objectives. Actions to reduce flood risk included developing flood studies and flood protection schemes and providing public flood warnings and alerts. Actions to avoid flooding included maintenance of flood defences and storage areas and producing strong planning policies, which prevent development from taking place in flood risk areas.

In 2019, Perth and Kinross Council published the interim report for the Tay Local Plan District. This report gave the status of each action at that time and reported them as red, amber or green:

- Green – Action has been delivered and/or is on programme and within budget;
- Amber – Action is behind programme and/or over budget, but the key dates are still anticipated to be met;
- Red – Action is behind programme and/or over budget, with key dates unlikely to be met and/or outputs unlikely to achieve what was anticipated by the Local Flood Risk Management Plan.

Actions with a green or amber status can be expected to succeed in working towards their objectives. The final report was published December 2022. The interim and final reports can be viewed at www.pkc.gov.uk/frmplans.

1.3 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 Plan has been developed in partnership by:

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

1.4 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. There are steps you can take now to be flood prepared and reduce the damage and disruption flooding can have on your life.

- View SEPA's flood maps to check if your area is affected by flooding https://map.sepa.org.uk/floodmaps
- Sign up to Floodline to receive messages when flooding is forecast in your area https://www.floodlinescotland.org.uk/
- View up-to-date information on severe weather warnings https://www.metoffice.gov.uk/
- Make sure you have flood insurance in place https://www.floodre.co.uk/ https://www.biba.org.uk/current-issues/flood-insurance/
- Find out what to do if you are concerned that your property is at risk of flooding https://scottishfloodforum.org/ https://ready.scot/
- Know who to contact if flooding happens https://www.sepa.org.uk/media/28952/who_to_contact_2014.pdf

The Scottish Government oversees the implementation of the Flood Risk Management (Scotland) Act 2009, which requires the production of flood risk management plans and local flood risk management plans. Scottish Ministers are responsible for setting the policy framework for how organisations collectively manage flooding in Scotland.

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 Plans. 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.

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.

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.

Scottish Forestry and Forestry and Land Scotland took over the roles of Forestry Commission Scotland in 2018 when the Forestry and Land Management (Scotland) Act 2018 came into force. While these executive agencies of Scottish Government

are not formally designated as a responsible authority under the Flood Risk Management (Scotland) Act 2009, they support Scottish Government in delivering its flood risk related duties. This includes engaging in the development of the flood risk management plans through national and local advisory groups, Local Plan District partnerships, and collaborative projects. This reflects the widely held view that forestry can play a significant role in managing flooding.

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, combining SEPA's hydrological expertise with the Met Office's meteorological data to predict the likelihood and timing of river, coastal and surface water flooding.

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.

The Scottish Flood Forum aims to reduce the impacts of flooding by providing immediate support and by establishing a network of community resilience groups in flood risk areas, to equip communities to cope with flooding.

Further details on some of these key roles – including contact details - are outlined in Annex 1.

1.5 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 Plans and Local Flood Risk Management Plans. The first consultation, held in 2018 and led by SEPA, was on the general approach to flood risk management planning and the identification of priority areas. The second, held in 2021, was a joint SEPA and lead authority consultation on the draft Flood Risk Management Plans and implementation arrangements. 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. 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, Scottish Forestry, Forestry and Land 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.

1.6 Identification of Objectives, Appraisal and Prioritisation of Actions

The identification of objectives and selection of actions was led by SEPA as part of the Flood Risk Management Plan with 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 selected to ensure the right combinations are identified and prioritised. The actions considered in the development of the Flood Risk Management Plan 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.

Natural flood management can provide opportunities for using the land to slow down and store water. Natural flood management actions will be considered further as part of any individual flood studies.

The lists of actions to meet agreed goals and objectives in the second 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 out in the Flood Risk Management Plans in December 2021 and detailed in this Plan will be dependent on the availability of the necessary funding in each year of the six-year Plan.

The distribution of Scottish Government grant funding for actions in the plan for the period 2022 – 2028 is currently being considered by a flood risk management working group. This group will put forward options and recommendations to the Scottish Ministers and COSLA, through the Settlement and Distribution Group, for consideration. A decision will not be made in time for the publication of this Plan. However, just prior to publication, COSLA leaders confirmed that it is expected that the Local Government General Capital Grant will continue to include resources allocated for flooding projects, and decisions on quantum and distribution will be taken by Scottish Ministers and COSLA Leaders nearer the time.

As such it should be noted that it may not be possible for all actions identified in the Plan to be grant funded. At the time this Plan is published, capital funding remains in place for Cycle 1 flood schemes (in Comrie), although the proposed scheme on the Annaty Burn in Scone has been paused. While this scheme will still progress in the future, it is likely to take longer to implement due to the current funding limitations. No capital funding has been allocated to the new Cycle 2 flood schemes (proposed at Bridgend in Perth, Pitlochry, Aberfeldy and Kirriemuir). Inclusion of an action in this plan does not formally commit a Council to implement it, if reasons arise which make any actions undeliverable, including inability to secure adequate funding.

This Plan remains the best understanding of the objectives and actions required over the long term to manage flood risk in the identified high-risk areas within this LPD. The delivery of the Plan, particularly the ambitions on how quickly actions can be delivered, may have to be adapted to reflect wider developments in public funding, the ability of responsible authorities to access funding from other sources, pandemic recovery, and other national priorities.

1.7 Strategic Environmental Assessment and Habitats Regulations Appraisal

A Strategic Environmental Assessment (SEA) and Habitats Regulations appraisal have been undertaken for the Flood Risk Management Plan document that has informed this Plan. As this Local Flood Risk Management Plan is considered to be consistent with the Flood Risk Management Plan, no further SEA assessment has been undertaken. 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 he 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. NatureScot were consulted on the appraisal and their views have been taken into account. Mitigation has been applied where required to ensure that this Local Flood Risk Management Plan will not adversely affect the integrity of Special Areas of Conservation and Special Protection Areas.

Further details are available in Annex 4.

1.8 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 Plan 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 Plans 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 Plans, 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 regarding consultation and engagement but also in delivering environmental improvements, will be important for stakeholders many of whom have an interest in both sets of plans.

Land Use and Spatial Planning

Land use planning decisions are pivotal to achieving sustainable flood risk management. Flood risk management can have significant implications for the location of development and similarly the location of development can have an impact on flood risk. Actions that deliver national land use planning policies are summarised in Annex 3.

Perth and Kinross Council develops and adopts a new Local Development Plan every five years. It sets out the Council's strategy for delivering appropriate development in Perth and Kinross, considering a number of potential constraints, including flooding. The current plan (LDP2) was adopted in November 2019. Work has started on the review of LDP2 to produce LDP3. The initial work on the LDP3 review has been centred on data gathering and settlement audit work. Key milestones in the LDP3 review will be the policy and place discussions which will take place during 2023/24, culminating in the preparation of an Evidence Report in 2024, whilst preparation of the Proposed Plan is programmed for 2024/25.

Emergency Planning and Response

Emergency planning and response is undertaken by Category 1 and 2 responders including Police Scotland, the Scottish Fire and Rescue Service, the Scottish Ambulance Service, both local authorities, the NHS, the Met Office, Scottish Water and SEPA. Emergency plans are prepared under the Civil Contingencies Act 2004.

Perth and Kinross Council has produced its Flooding Emergency Response Plan, which is designed to ensure that contingency measures are in place for a coordinated and flexible response to flooding incidents to mitigate the effects of flooding emergencies on people, property and infrastructure. Other local authorities have similar arrangements in place.

Scottish Water Investment Plans

There is a close relationship between flood risk management plans and Scottish Water's 25-year strategic plan. Sewer flooding is not considered in detail in the flood risk management plans as it remains a high priority for Scottish Water and its customers. Scottish Water's close involvement in flood risk management planning aims to ensure that there is strong coordination between the management of sewer flooding and wider surface water flood risk, and the actions to be taken forward by local authorities and others.

Surface Water Management Plans

Surface water flooding occurs when rainwater does not drain away via normal drainage systems or soak into the ground but lies on of 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.

1.9 Next Steps and Monitoring Progress

This Plan runs from December 2022 until June 2028. Over this period the Tay LPD Partnership will continue to liaise periodically to monitor progress towards implementing the actions detailed in Chapter 3 of the Plan.

Between June 2024 and 2025, 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 publicly available.

Between June 2027 and 2028, 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 publicly available.

A third set of Flood Risk Management Plans and Local Flood Risk Management Plans will be published in December 2027 and June 2028 respectively.

1.10 Licensing Acknowledgements

Full licensing acknowledgements can be found in Annex 8 of this Plan.

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 14 Potentially Vulnerable Areas (PVAs) is also provided.

2.2 Background Summary of Flooding in the Tay Local Plan District

The Tay Local Plan District covers around 6,100km^2 and has a population of approximately 160,000. It spans from the southern part of the Cairngorms National Park all the way to the Firth of Tay. The Local Plan District includes a 74km stretch of the inner Firth of Tay coastline, where the River Tay and the River Earn meet. It includes the urban areas of Aberfeldy, Alyth, Blairgowrie, Comrie, Dunkeld, Forfar, Perth and Pitlochry.

There are urban and agricultural areas to the east and more rural, mountainous and forested areas to the west. There are many large lochs and reservoirs, including Loch Ericht, Loch Rannoch and Loch Tay. The main rivers are the Earn and Tay and the catchements are shown in Figure 1 below. The River Tay is Scotland's longest river at 190km, and its main tributaries include the River Garry, River Tummel, River Lyon, River Braan, River Isla and River Almond. 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.

There is a river, surface water and coastal flood risk. A number of large floods have affected this Local Plan District. Recently, intense rainfall in August 2020 and in September 2022 caused extensive surface water flooding in Perth and many other towns. Further extensive surface water floods were recorded in July 2015 following intense rainfall. Storms Desmond and Frank in December 2015 caused river flooding, affecting many areas within the Local Plan District. Extensive flooding in the early 1990s, notably in 1993, resulted in the construction of the Perth Flood Protection Scheme. Other formal flood protection schemes have been constructed

within the Local Plan District including in Almondbank, Bridge of Earn, Comrie, Kirriemuir, and Weem.

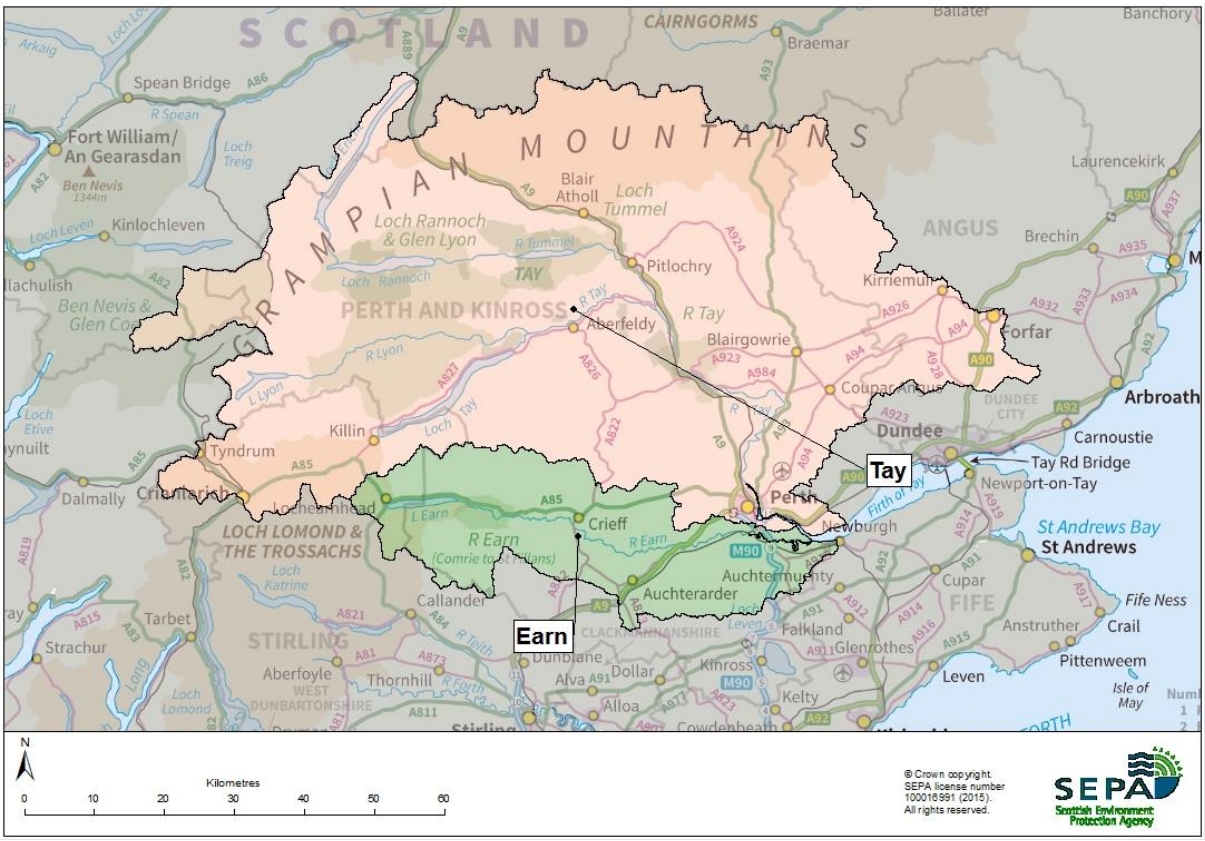


Figure 1: River catchments within the Tay LPD

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

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 above SEPA website.

Currently it is estimated that there are around 13,000 people and 9,000 homes and businesses at risk from flooding in the Tay Local Plan District. This may increase to 21,000 people and 13,000 homes and businesses by 2080s due to climate change. The expected annual cost of flooding over a long period of time is around £11.4 million.

SEPA lead development of the flood risk management plans for Scotland and delivery of flood warning services. Local flood risk management planning in the Tay Local Plan District is led by Perth and Kinross Council, as the lead local authority.

Other responsible authorities include three more local authorities, Scottish Water, Loch Lomond and the Trossachs National Park Authority and Cairngorm National Park Authority. They are supported by Scottish Government agencies including Forestry and Land Scotland, Scottish Forestry and Transport Scotland.

Within this Local Plan District, actions are regularly carried out by SEPA and responsible authorities to help prepare communities for potential flooding and reduce the impact of any flooding that does occur.

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

The identified objectives are the shared aims for managing flood risk and have been set out in the Tay flood risk management plan which can be viewed in the Tay Flood Risk Management Plan. 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 actions apply to all areas and locations (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.

The general actions that apply across the Tay Local Plan District are set out in the tables below. These actions are consistent with the Flood Risk Management Plan. The tables provide 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.

Action:	**AWARENESS RAISING**		
Delivery lead:	SEPA and responsible authorities		
Status:	Existing	**Planned Delivery Period:**	On-going
Description:	SEPA, the responsible authorities and other organisations such as the Scottish Flood Forum work together through national and local initiatives to help communities understand the risk of flooding and what actions individuals can take. Improved awareness of flood risk and actions that prepare individuals, homes and businesses for flooding can reduce the overall impact of flooding. Local authorities undertake additional awareness raising activities when developing any specific project proposals and will engage with community resilience groups and local communities. Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies. The Scottish Flood Forum supports flood risk communities by raising community awareness, promoting self-help, developing community groups and establish a recovery support programme after a flood.		
Coordination Arrangement:	Delivery of actions to raise awareness will be coordinated by SEPA and the responsible authorities through the Local Plan District Partnership. 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 other related actions.		
Funding Arrangement:	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement. Awareness raising activities will be funded from local authority revenue budgets. 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 support raising awareness of flood risk but do not receive any Scottish Government funding to support any flood specific activities.

Action (ID):	**DATA TO SUPPORT CLIMATE RESILIENCE**		
Delivery lead:	SEPA		
Status:	Existing	**Planned Delivery Period:**	2022-2028
Description:	As Scotland's hydrometric authority, SEPA operates a network of stations to measure river level, flow, rainfall, sea level, loch and groundwater level. The data goes into a long-term data archive and is critical to underpin all flood risk management activities including flood warning, flood mapping, design of flood protection and sustainable development as well as supporting a range of regulatory and recreational uses. SEPA will continue to maintain and develop its hydrometric network, contribute to UK and international data archives, and improve and update the datasets used for flood frequency analysis. SEPA will support research and development of data, methods and guidance to improve the evidence on which decisions can be made, and to enable the impact of climate change to be included in all flood risk management activities.		
Coordination Arrangement:	SEPA will coordinate with a range of other parties as required to deliver better and more accessible data, and ongoing improvements to the use of the data to underpin flood risk management activities and decisions.		
Funding Arrangement:	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		

Action (ID):	**EMERGENCY PLANS / RESPONSE**		
Delivery lead:	Category 1 and 2 Responders		
Status:	Existing	**Planned Delivery Period:**	On-going
Description:	Many organisations, including local authorities, the emergency services and SEPA provide an emergency response to flooding. Emergency plans are prepared and maintained under the Civil Contingencies Act 2004 by Category 1 and 2 Responders and are coordinated through regional and local resilience partnerships, often supported by voluntary organisations. They set out the steps to be taken to maximise safety and minimise impacts during flooding. 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.		
Coordination Arrangement:	Perth and Kinross Council has developed a Generic Emergency Plan and a Flooding Emergency Response Plan. These emergency plans are 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 local authorities can sometimes provide sandbags to properties. Unfortunately, Councils only have the resources to supply sandbags to residents where there is an imminent risk of flooding. Emergency plans/response activities will be coordinated with other related actions.
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. 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 role in this action is funded by Scottish Government through SEPA's grant in aid settlement.

Action (ID):	**FLOOD FORECASTING**		
Delivery lead:	SEPA		
Status:	Existing	**Planned Delivery Period:**	2022-2028
Description:	The Scottish Flood Forecasting Service is a partnership between SEPA and the Met Office. The service continues to produce a daily, national flood guidance statement, issued to emergency responders, local authorities, and other organisations with flood risk management duties. As the flood warning authority for Scotland SEPA continues to provide its flood warning service issuing flood alerts and warnings when required, giving people a better chance of reducing the impact of flooding on their home or business.		
Coordination Arrangement:	SEPA work in partnership with the Met Office and will work closely with all other authorities involved in emergency response to flooding.		
Funding Arrangement:	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		

Action (ID):	**FLOOD WARNING DEVELOPMENT FRAMEWORK**		
Delivery lead:	SEPA		
Status:	New	**Planned Delivery Period:**	On-going

Description:	SEPA published a new flood warning development framework in 2022, which details the ambition and strategic actions to maintain and improve our flood warning service across Scotland. This is available here: https://www.sepa.org.uk/media/594489/sepa-flood-warning-dev-framework-2022-28.pdf SEPA will further develop phase 1 of the Scottish Flood Forecast based on feedback gathered during public beta release before fully launching the service to the public formally in early 2023. Phase 1 is the national 3-day flood forecast and the starting point of our journey in providing the public with earlier and improved flood information. SEPA will continue to follow the service design approach for phase 2 of the Scottish Flood Forecast, which will provide the public with more localised flood forecast information. User research will determine what information will be displayed on the regional flood forecast webpages. It is anticipated that the final service will bring together all live information such as flood warnings, river levels and rainfall data into a central hub that is easily accessible for the public Working in close partnership with the Met Office through the Scottish Flood Forecasting Service, SEPA will develop its capability in surface water flooding forecasting, focusing initially on the transport sector to support climate-ready infrastructure. SEPA will also undertake a prioritised improvement programme of existing river and coastal flood warning schemes to provide more accurate forecast with improved lead time.
Coordination Arrangement:	SEPA work in partnership with the Met Office. Appropriate engagement with the other authorities involved in emergency response will happen as the flood warning developments are progressed.
Funding Arrangement:	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.

Action (ID):	**FUTURE FLOOD RISK MANAGEMENT PLANNING**		
Delivery lead:	SEPA		
Status:	Existing	**Planned Delivery Period:**	2022-2028; Flooding services strategy 2023; Next flood risk management plans 2027
Description:	The years covered by the lifetime of this plan are crucial. Radical progress is needed in how we reduce our impact on the climate and respond to the effects of climate change. How we plan to manage flooding to our communities is on the front line of the challenges of this decade. The 2027 flood risk management plans will be more ambitious than ever before. The plans will		

	look to develop long term plans for more flood resilient communities prepared for the impacts of climate change. The priority areas which will be the focus points of the next flood risk management plans will be identified in 2024 with the designation of PVAs. A 3-month public consultation will be held to inform the PVA designation. SEPA will plan for a better future by publishing our flooding services strategy in 2023 with a clear and measurable delivery plan. SEPA will put greener, fairer communities at the heart of our ambitions. SEPA has set its own target to be a regenerative organisation by 2030 and the next set of plans will further this ambition. During this plan cycle, SEPA will work to develop new partnerships with a wider range of stakeholders, including businesses and commercial sectors. SEPA will investigate alternative sources of finance to tackle flooding and drive forward practical options for adaptation.
Coordination Arrangement:	SEPA will lead the work, in partnership with the Scottish Government and other responsible authorities. A wider range of partners and stakeholders will be developed to support the action. SEPA will carry out a full consultation on the next draft flood risk management plans in 2026.
Funding Arrangement:	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.

Action (ID):	**GUIDANCE DEVELOPMENT**		
Delivery lead:	SEPA		
Status:	Existing	**Planned Delivery Period:**	Draft flood studies guidance (SEPA) 2023; Options appraisal & Adaptation guidance (Scottish Govt & SEPA) 2023; Other guidance & updates 2023-2028
Description:	The Scottish Government and SEPA will develop and update guidance to inform flood risk management projects. This guidance will be produced in 2022 and will look at how best to adapt to the long-term impacts of climate change and the most appropriate methods of assessing the benefits of flood risk management actions. Technical guidance to support flood risk management partners will be reviewed and updated by SEPA where required. Scottish Forestry, in collaboration with its UK counterparts, will promote new guidance on designing and managing forests to reduce flood risk. This is available here: https://www.forestresearch.gov.uk/publications/designing-and-managing-forests-and-woodlands-to-reduce-flood-risk/		

	Guidance will be developed to help local authorities understand the requirements for mapping relevant bodies of water and sustainable urban drainage systems in their areas.
Coordination Arrangement:	The Scottish Government, SEPA and Scottish Forestry all have lead roles in delivering the new or updated guidance outlined. A range of forums will be used to help coordinate and develop the guidance with the appropriate input from others, including SAIFF (The Scottish Advisory Implementation Forum for Flooding) and cross-party working groups.
Funding Arrangement:	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.

Action (ID):	**HAZARD MAPPING UPDATES**		
Delivery lead:	SEPA		
Status:	Existing	**Planned Delivery Period:**	2022-2028
Description:	An understanding of flooding is essential to develop a plan led risk-based approach to flood risk management. SEPA will continue to update their national hazard mapping, which shows the likelihood of flooding in Scotland from different flooding sources: https://www.sepa.org.uk/environment/water/flooding/flood-maps/. SEPA will continue to develop the hazard mapping viewer to make it easier for the public, partners and stakeholders to access data on the likelihood of flooding. SEPA will also review how modelling and mapping updates are undertaken to develop a more effective method of regional and national updates for the hazard maps.		
Coordination Arrangement:	SEPA will work with other relevant parties - including authorities who have ownership of data used in flood mapping - to develop the quality and accessibility of flood hazard mapping.		
Funding Arrangement:	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		

Action (ID):	**LAND USE PLANNING**		
Delivery lead:	Planning authority		
Status:	Existing	**Planned Delivery Period:**	On-going
Description:	Local authorities, SEPA and Scottish Water all have a responsibility under the Flood Risk Management (Scotland) Act 2009 to support sustainable flood risk management through the land use planning process. National planning policies set out the Scottish Ministers' priorities for the development and use of land. Under this approach, new development in areas with medium to high likelihood of flooding should generally be avoided. Current national planning policies aim to restrict development within the floodplain and limit exposure of new receptors to flood risk, promote flood reduction via natural and structural flood		

	management measures and restoration of natural features, and avoid increased surface water flooding through sustainable drainage and the minimisation of impermeable surfaces. Locally determined planning policies may place further requirements within their area of operation to restrict inappropriate development and prevent unacceptable risk.
Coordination Arrangement:	Planning authorities coordinate their work with the strategic development planning authority and the National Parks Authorities, who are also planning authorities. SEPA, Scottish Water and local authority flooding teams are consulted on planning applications and coordinate with the Planning authorities to ensure that flood risk is addressed. Local Development Plans provides the framework against which planning applications outside the National Parks are assessed and are consistent with the Strategic Development Plans. SEPA deliver statutory advice on flooding on both planning applications and Local Development Plans and will continue to work with the other responsible authorities to support the land use planning process. Perth and Kinross 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 (LDP2) 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 Measures. 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.
Funding Arrangement:	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement. Local authority planning activities are subject to funding from Council revenue budgets. 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.

Action (ID):	**MAINTENANCE**		
Delivery lead:	Local authority, Scottish Water, asset / land managers		
Status:	Existing	**Planned Delivery Period:**	On-going
Description:	Local authorities have a duty to assess bodies of water and to carry out clearance and repair works where such works would substantially reduce flood risk. Local authorities are also responsible for the drainage of roads. In addition, local authorities may also be responsible for maintenance of any existing flood protection schemes or works. Scottish Water will continue to 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.		
Coordination Arrangement:	Local authorities prepare maps of relevant bodies of water and sustainable urban drainage systems (SUDS) and carry out routine, scheduled inspections of bodies of water on their lists at a frequency which depends on flood risk. Local authorities assess flood risk on bodies of water from time to time and prepare a schedule of clearance and repair works where such works would substantially reduce flood risk. The schedule is available for public inspection and local authorities have a duty to carry out any clearance and repair works described therein. 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. 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. 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. Local authorities usually only carry out works where there has been a failure of the landowner to act, where landownership is not clear, or where urgent intervention is required. 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.		
Funding Arrangement:	Maintenance activities are subject to funding from the relevant local authority 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):	**NATURAL FLOOD MANAGEMENT MAPPING**		
Delivery lead:	SEPA		
Status:	Existing	**Planned Delivery Period:**	2025
Description:	SEPA will continue to support activities that improve our understanding of how to effectively target and deliver natural flood management. As part of this, SEPA will review and update the opportunities mapping for natural flood management. This will include linking blue-green infrastructure with the surrounding natural catchment and coastline. Natural flood management seeks to store or slow down flood waters through measures such as the planting of woodlands, wetland creation, river restoration, or the creation of intertidal habitats. In addition to flooding benefits, natural flood management measures can also provide many additional benefits to biodiversity, water quality, recreation, and carbon storage.		
Coordination Arrangement:	SEPA will work with key stakeholders to review and update the opportunities mapping.		
Funding Arrangement:	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		

Action (ID):	**NATIONAL FLOOD RISK ASSESSMENT**		
Delivery lead:	SEPA		
Status:	Existing	**Planned Delivery Period:**	December 2024
Description:	SEPA will use the most suitable data to review and update the national flood risk assessment (NFRA) undertaken in 2018. This update will be used to identify future potentially vulnerable areas and focus flood risk management planning.		
Coordination Arrangement:	SEPA will work with others as the NFRA is updated, including to keep other responsible authorities informed through the Local Plan District Partnerships.		
Funding Arrangement:	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		

Action (ID):	**NATIONAL SURFACE WATER MAPPING**		
Delivery lead:	SEPA		
Status:	Existing	**Planned Delivery Period:**	2024
Description:	The national flood risk assessment 2018 identified that surface water flooding has the potential to impact more properties in Scotland than any other source of flooding. Over the next 6-year cycle SEPA will look to vastly improve its national understanding of surface flood risk by undertaking a wholescale update of the		

	national surface water maps to reflect developments in data and understanding, including the impact of climate change.
Coordination Arrangement:	SEPA is currently working with a contractor to develop the modelling needed to deliver the flood maps. As the mapping is developed, local authorities and Scottish Water will continue to be engaged in opportunities to verify, shape and understand the new mapping products.
Funding Arrangement:	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.

Action (ID):	**RESERVOIRS**		
Delivery lead:	SEPA		
Status:	Existing	**Planned Delivery Period:**	2022-2028; (Flood warning developments 2022-2024)
Description:	SEPA will continue to develop its assessment of flood risk from dam failure and use these assessments to direct a proportionate regulatory approach to ensure reservoir safety. Over the next management cycle, we will implement further developments of our flood warning capabilities in the unlikely event of reservoir failure.		
Coordination Arrangement:	SEPA will work with others as required, to fulfil their regulatory duties and to develop flood warning capabilities. Others will include reservoir managers and operators, and Civil Contingencies Act responders who share duties for emergency response.		
Funding Arrangement:	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		

Action (ID):	**SCOTTISH FLOOD DEFENCE ASSET DATABASE**		
Delivery lead:	SEPA		
Status:	Existing	**Planned Delivery Period:**	2022-2028
Description:	The Scottish Flood Defence Asset Database provides information on existing flood protection schemes. National data on flood protection infrastructure is needed to understand flood risk and to develop adaptation planning for Scotland. SEPA will continue to host SFDAD and look for opportunities to support the development of our understanding of how and when Scotland's flood defence assets should be adapted to continue to maintain protection from flooding in the future.		
Coordination Arrangement:	SEPA will work with the local authorities to ensure accurate data on existing and new schemes is made available for the Scottish Flood Defence Asset Database.		
Funding Arrangement:	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		

Action (ID):	**SELF HELP** (80410011)		
Delivery lead:	-		
Status:	Existing	**Planned Delivery Period:**	On-going
Description:	Everyone is responsible for protecting themselves and their property from flooding. People can take 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 flood resilience measures, signing up to Floodline, engaging with their local flood group, and ensuring that properties and businesses are insured against flood damage. The following places offer help with taking steps to protect yourself: https://floodlinescotland.org.uk/ https://www.floodre.co.uk/ https://www.biba.org.uk/current-issues/flood-insurance/ https://scottishfloodforum.org/ https://ready.scot/ Responsible authorities and SEPA will continue to develop the understanding of flood risk to communities and promote measures to help individuals and businesses to reduce their risk.		
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 continue to actively promote Floodline; provide communities with advice to help them prepare for flooding and to install property flood products; and will support community resilience groups to developing their emergency plans. Work by SEPA and the responsible authorities to develop understanding and help communities reduce their risk will be coordinated through the Local Plan District Partnership.		
Funding Arrangement:	Individuals have prime responsibility for protecting themselves and their property from flooding and are therefore expected to meet the costs of protecting themselves.		

2.4 Potentially Vulnerable Areas (PVAs)

Potentially Vulnerable Areas (PVAs) were designated in 2018 based on the potential current or future risk from all sources of flooding. This designation was informed by the second national flood risk assessment, which can be viewed at: https://www.sepa.org.uk/data-visualisation/nfra2018/)

As part of continued analysis of flood risk, the national flood risk assessment and Potentially Vulnerable Areas (PVAs) will be reviewed every 6 years to take on board any new information. Following the second 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.

There are now 14 Potentially Vulnerable Areas (PVAs) in this Local Plan District, as shown in Figure 2 below.

The main focus of this Local Flood Risk Management Plan is to manage flood risk in these Potentially Vulnerable Areas where specific objectives and actions apply, in addition to the general actions listed in 2.3 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 during the second flood risk management planning cycle (2022-2028). Further detail on the specific objectives and actions relating to each individual Potentially Vulnerable Area can be found in Chapter 3 of this Plan.

This local flood risk management plan also introduces new Objective Target Areas (OTAs), which are located within potentially vulnerable areas and should benefit from objectives and actions to manage flood risk. These objectives and actions to manage flooding have been set for each OTA in the flood risk management plans. The OTAs are based on communities at risk of flooding.

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.

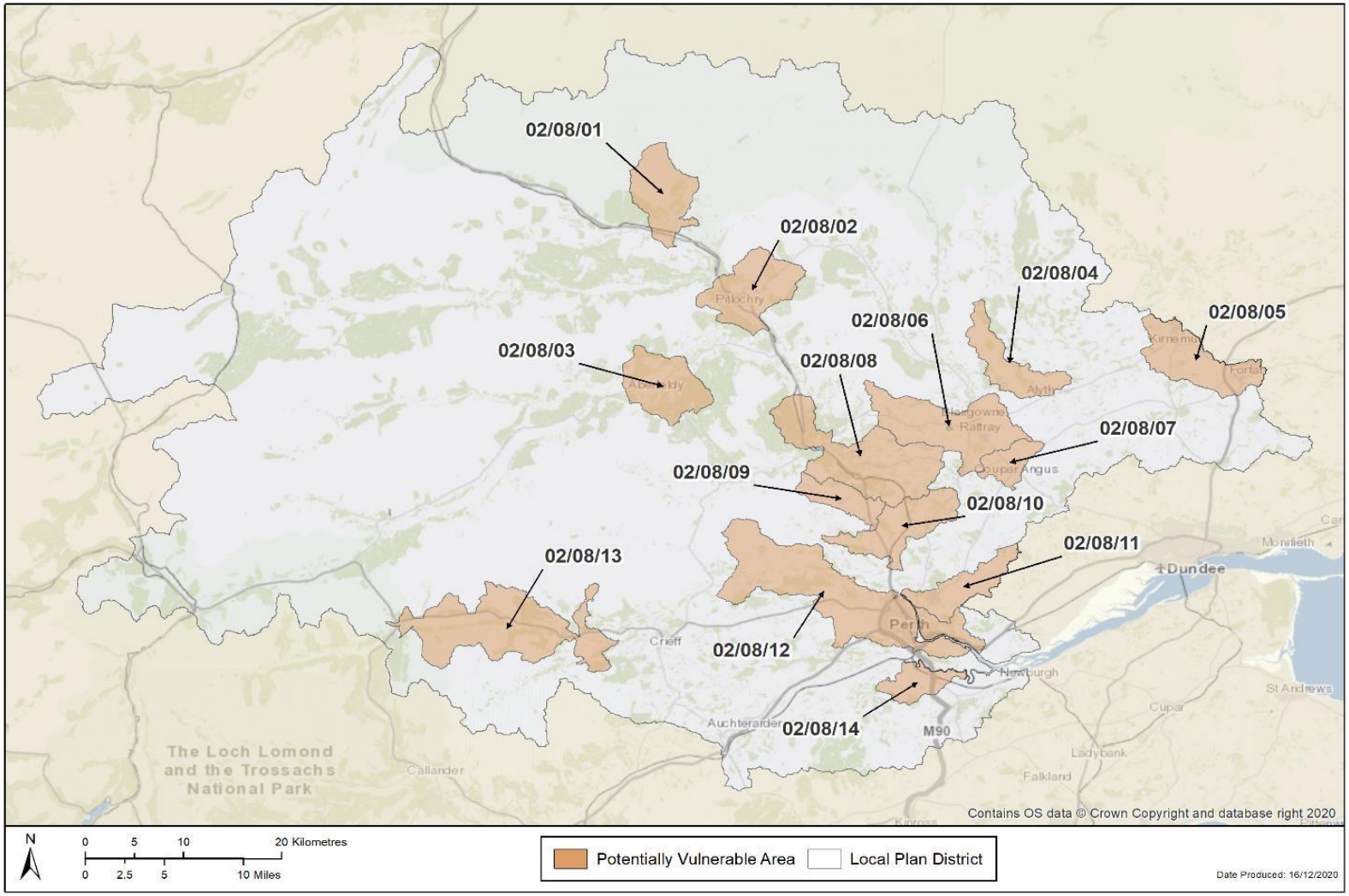


Figure 2 - Potentially Vulnerable Areas in the Tay Local Plan District

(Reproduced from the Tay Flood Risk Management Plan, SEPA, December 2021)

Return to Contents Page

Table 3: Summary of Actions to Manage Flood Risk Within PVAs During 2022-2028

				General Actions															Specific Actions								
Local Plan District	PVA	OTA	Location	Awareness Raising	Data to Support Climate Resilience	Emergency Plans	Flood Forecasting	Flood Warning Development Framework	Future Flood Risk Management Planning	Guidance Development	Hazard Mapping Updates	Land Use Planning	Maintenance	Natural Flood Management Mapping	National Flood Risk Assessment	National Surface Water Mapping	Reservoirs	Scottish Flood Defence Asset Database	Self Help	Adaptation Planning	Community Engagement	Community Resilience Group	Flood Protection Scheme or Works	Flood Study	Flood Warning Maintenance	Maintenance of Existing Flood Scheme	Sewer Flood Risk Assessment	Surface Water Management Plan
Tay Estuary	07/09	235	Invergowrie	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓			✓			✓	
Tay	08/01	172	Blair Atholl	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓				
	08/02	254	Pitlochry	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓			
	08/03	182	Weem	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓						✓	✓		
		183	Aberfeldy	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓			✓
	08/04	189	Alyth	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓				
	08/05	230	Forfar	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓				
		241	Kirriemuir	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓			✓		
	08/06	199	Blairgowrie & Rattray	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓			✓			✓

Return to Contents Page

	08/07	214	Coupar Angus	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓			✓			
	08/08	179	Spittalfield	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓			✓			
		225	Dunkeld & Birnam	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓			
		273	Dalguise	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓						✓			
	08/09	194	Bankfoot	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓						
	08/10	247	Luncarty	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓			✓			✓	
	08/11	255	Scone	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓		✓		✓
	08/12	187	Almondbank	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓						✓	✓		
		249	Methven	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓			✓				
		253	Perth	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
	08/13	213	Comrie	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	08/14	205	Bridge of Earn	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓			✓	✓	✓	✓	
Forth	09/03	198	Blackford	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓					
Forth Estuary	10/03	239	Kinross	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓			✓	✓	✓
		303	Milnathort	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓			✓	✓	✓

Return to Contents Page

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. There are 14 PVAs within this Local Plan District as shown in Figure 2.

The main focus of this Local Flood Risk Management Plan is to manage flood risk in these PVAs where specific actions apply in addition to the general actions (listed in Section 2.3). The following chapter therefore details the objectives and planned actions that have been prioritised for delivery between 2022 and 2028 in each of the 14 Potentially Vulnerable Areas (PVAs) within the Tay Local Plan District.

The information presented is based on Section 2.3 of the Tay Flood Risk Management Plan and includes the background to the area, the current understanding of flood risk and the objectives for flood risk management. A number of tables have also been provided which set out the actions to manage flooding in the PVAs 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.

It should be noted that the general actions to manage flooding across the Local Plan District (as set out in Section 2.3) apply to each PVA as well as the identified specific actions set out in the following sections.

List of Potentially Vulnerable Areas (PVAs)

The following table provides links to further information on these areas.

PVA Ref	PVA Name	Local Authority Area	Page number
02/08/01	Blair Atholl	Perth & Kinross	38
02/08/02	Pitlochry	Perth & Kinross	42
02/08/03	Aberfeldy and Weem	Perth & Kinross	47
02/08/04	Alyth	Perth & Kinross	54
02/08/05	Kirriemuir and Forfar	Angus	58
02/08/06	Blairgowrie and Rattray	Perth & Kinross	66
02/08/07	Coupar Angus	Perth & Kinross	70
02/08/08	Dunkeld and Birnam	Perth & Kinross	74
02/08/09	Bankfoot	Perth & Kinross	83
02/08/10	Luncarty	Perth & Kinross	86
02/08/11	Scone	Perth & Kinross	90
02/08/12	Perth and Almondbank	Perth & Kinross	95
02/08/13	Comrie	Perth & Kinross / Stirling	107
02/08/14	Bridge of Earn	Perth & Kinross	113

3.1 Blair Atholl - PVA 02/08/01

Local Plan District	Local Authority	Main Catchment
Tay	Perth and Kinross Council	River Garry (River Tay)

Background

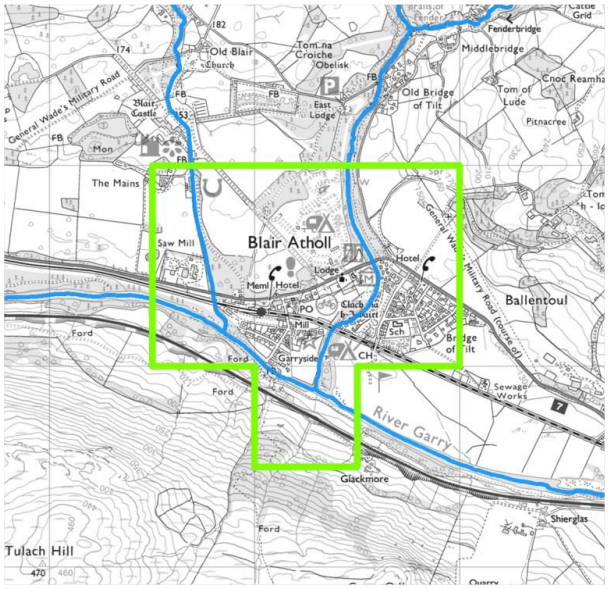
This area is designated as a potentially vulnerable area due to the flood risk to Blair Atholl. The main source of flooding is the River Garry and small watercourses. There is a history of flooding in the area, with recent floods occurring as a result of river flooding from the River Garry.

List of Objective Target Areas

There is one objective target area in this potentially vulnerable area, which has been the focus of further assessment. This is identified below. Further information on the objectives and actions to manage flood risk within this area is provided below.

Blair Atholl Objective Target Area 172

Blair Atholl (Objective Target Area 172)

Summary	Location Map
Blair Atholl is a village in Perthshire located on the banks of the River Garry and River Tilt. The main source of flooding in Blair Atholl is river flooding. There are approximately 50 people and 70 homes and businesses currently at risk from flooding. This is likely to increase to 80 people and 100 homes and businesses by the 2080s due to climate change. There are roads and railways at risk of flooding, which may cause travel disruption.	 (© Crown copyright and database rights 2022 OS 100016971)

Current Understanding of Flood Risk

This section provides a summary of information, which has helped to develop an understanding of flood risk in the area. Since 2011 SEPA has developed and updated national level assessments of flooding from rivers, surface water and coastal sources. The national assessment of river flooding has been improved by a SEPA led modelling project that improved the existing flood maps.

There is a history of flooding in this area. Most recently in December 2015, Storm Desmond caused the River Garry to flood, inundating 17 homes and businesses, Further flooding occurred in January 2016.

Objectives and Actions in the Blair Atholl Objective Target Area

The objectives and actions for this objective target area are set out in the tables below.

SEPA and responsible authorities also carry out actions in all areas to manage current and future flood risk. A description of these actions is included in Section 2.3.

Action (ID):	**FLOOD STUDY (Ref: 17201)**		
Objective (ID):	Reduce the risk of river flooding in Blair Atholl (Ref: 1723)		
Delivery Lead:	Perth and Kinross Council		
Status:	Not started	Planned Delivery Period:	2025-2027

Return to Contents Page

Description:	A flood study has been recommended for Blair Atholl. The study will build on previous work carried out in the area and consider both current and long-term flood risk and how the area will adapt to changes in flood risk through adaptive planning.
Coordination Arrangement:	The study is programmed to commence in the 2025/26 financial year. Perth and Kinross Council will engage a consulting engineer to investigate the fluvial flood risk and identify potential options for managing that risk. The study will be coordinated through the Tay Local Plan District Partnership and with other related actions.
Funding Arrangement:	The flood study will be subject to funding from Perth and Kinross Council's revenue budget.

Action (ID):	**COMMUNITY ENGAGEMENT (Ref: 17202)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Blair Atholl (Ref: 1722)		
Delivery Lead:	Responsible Authorities		
Status:	Existing	Planned Delivery Period:	On-going
Description:	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk. Community engagement activity will continue in connection with any on-going projects and activities. Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.		
Coordination Arrangement:	Community engagement will take place around any projects and activities will be coordinated through the Tay Local Plan District Partnership. Information will be disseminated through website, social media and other community engagement activity.		
Funding Arrangement:	Community engagement 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):	**COMMUNITY RESILIENCE GROUP (Ref: 17203)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Blair Atholl (1722)		
Delivery Lead:	Community		
Status:	Existing	Planned Delivery Period:	On-going
Description:	The group of community volunteers work to prepare and put in practice their Community Resilience Plan and be supported by the local authority.		

	The Blair Atholl and Struan Community Resilience Group forms part of the A9 Resilience Plan. Perth and Kinross Council will continue to communicate and support the group on flood risk matters. The resilience plan should be reviewed and updated regularly by the group, and this will be supported by the Council.
Coordination Arrangement:	Perth & Kinross Council will continue to coordinate with the Blair Atholl and Struan Community Resilience Group to manage flood risk, improve preparedness and increase resilience against flooding. The Council will continue to co-ordinate with the group on a priority needs basis where resources allow.
Funding Arrangement:	Funding for Community flood action groups will be provided by private individuals, businesses, organisations or communities at risk of flooding.

3.2 Pitlochry - PVA 02/08/02

Local Plan District	Local Authority	Main Catchment
Tay	Perth and Kinross Council	River Tay

Background

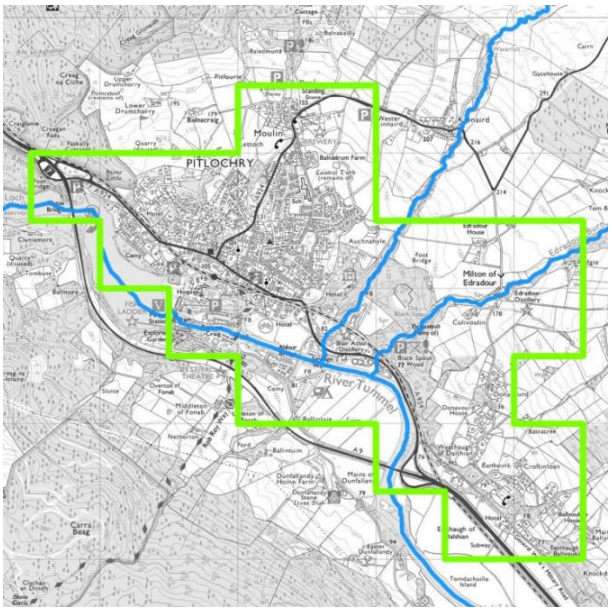
This area is designated as a potentially vulnerable area due to the flood risk to Pitlochry. The main source of flooding is the River Tummel and small watercourses. There is a long history of flooding in this area including recent flooding in August 2020.

List of Objective Target Areas

There is one objective target area in this potentially vulnerable area, which has been the focus of further assessment, this is identified below. Further information on the objectives and actions to manage flood risk within this area is provided below.

Pitlochry Objective Target Area 254

Pitlochry (Objective Target Area 254)

Summary	Location Map
Pitlochry is located on the banks of the River Tummel within the Perth and Kinross. The main source of flooding is river flooding from the River Tummel and small watercourses. Perth and Kinross Council has carried out a flood study in this area which estimated that there are approximately 155 homes and 75 businesses currently at risk of flooding.	 (© Crown copyright and database rights 2022 OS 100016971)

Current Understanding of Flood Risk

This section provides a summary of information, which has helped to develop an understanding of flood risk in the area. Since 2011 SEPA has developed and updated national assessments of flooding from rivers, surface water and coastal sources. The national assessment for river flooding was improved by the completion of the Pitlochry Flood Study in 2018. The national understanding of surface water flooding was improved by a sewer flood risk assessment.

There is a long history of flooding in the Pitlochry area. In January 1993, widespread flooding across the Tay catchment resulted in over £20 million of damage; the flood affected Pitlochry. In July 2002 torrential rain caused river flooding to several homes and the local distillery. A subsequent landslide caused further damage to roads and homes. The area was exposed to significant weather events including Storms Desmond and Frank in December 2015 and January 2016, which resulted in flooding in the Tay and Tummel catchments. In July 2016, the Moulin Burn flooded affecting shops, houses and roads. Most recently flooding in August 2020 affected a number of properties on Atholl Road.

Objectives and Actions in the Pitlochry Objective Target Area

The objectives and actions for this objective target area are set out in the tables below.

SEPA and responsible authorities also carry out actions in all areas to manage current and future flood risk. A description of these actions is included in Section 2.3.

Action (ID):	**FLOOD PROTECTION SCHEME (Ref: 25401)**		
Objective (ID):	Reduce the risk of river flooding from the small watercourses in Pitlochry (Ref: 2543)		
Delivery Lead:	Perth and Kinross Council		
Status:	Not Started	Planned Delivery Period:	To be confirmed
Description:	A flood protection scheme has been proposed for Pitlochry. A number of potential measures were identified for different locations, including flood defences, flood storage, managed diversions and natural flood management. The majority of these measures would provide a 1 in 200-year standard of protection (including a further allowance for climate change). However, one flood storage measure would adopt a lower 1 in 100-year standard of protection. These measures would also mitigate flood risk to other properties in the area but not to the same design standard. The study recommends that Perth and Kinross Council should select a preferred scheme and develop the proposals further. This work will also include ongoing community engagement as the project progresses. The scheme will then progress to the statutory process set out under the Flood Risk Management (Scotland) Act 2009. The detailed design will be completed thereafter. Current and long-term flood risk have been considered, including how the flood protection scheme and this area will adapt to changes in flood risk through development of an adaptation plan. Following completion of the detailed design, the proposed scheme should be procured and will progress to construction. As built drawings should be made available to SEPA, for inclusion in the Scottish Flood Defence Asset Database, flood map updates and flood warning scheme updates. Routine inspections and maintenance of the Pitlochry Flood Protection Scheme should commence when the scheme is complete in accordance with the inspection and maintenance regime. In accordance with the flood risk management plan, as part of the scheme or works, the responsible authority should aim to ensure the action will not have an adverse effect on the integrity of the River Tay Special Area of Conservation.		
Coordination Arrangement:	The Pitlochry Flood Protection Scheme will be coordinated through the Tay Local Plan District Partnership. SEPA will work with the local authority on the potential to coordinate this action with an update to SFDAD and flood warning actions.		

Funding Arrangement:	The delivery of the Pitlochry Flood Protection Scheme is subject to capital funding being made available (up to 80% capital grant funding from the Scottish Government with the remaining funding being provided from Perth & Kinross Council's capital programme).

Action (ID):	**FLOOD PROTECTION WORKS (Ref: 25402)**		
Objective (ID):	Reduce the risk of flooding from the culverts on the A9 in the vicinity of Dalshian area in Pitlochry (Ref: 2544)		
Delivery Lead:	Transport Scotland		
Status:	TBC	Planned Delivery Period:	TBC
Description:	Transport Scotland will continue to carry out civil engineering works in connection with the A9 dualling project which will reduce the risk of flooding on identified sections of the trunk road.		
Coordination Arrangement:	To be determined once the actions have been finalised.		
Funding Arrangement:	Transport Scotland to confirm		

Action (ID):	**COMMUNITY ENGAGEMENT (Ref: 25403)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Pitlochry (Ref: 2542)		
Delivery Lead:	Responsible authorities		
Status:	Existing	Planned Delivery Period:	On-going
Description:	Community engagement will continue to be carried out in the area by the responsible authorities to raise awareness of flood risk. Community engagement activity will continue in connection with any on-going projects and activities. Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.		
Coordination Arrangement:	Community engagement will take place around any projects and activities and will be coordinated through the Tay Local Plan District Partnership. Information will be disseminated through website, social media and other community engagement activity. Perth and Kinross Council will continue to coordinate with the Pitlochry and Moulin Community Resilience Group on a priority needs basis where resources allow.		
Funding Arrangement:	Community engagement activities will be subject to funding 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):	**COMMUNITY RESILIENCE GROUP (Ref: 25404)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Pitlochry (Ref: 2542)		
Delivery Lead:	Community		
Status:	Existing	Planned Delivery Period:	On-going
Description:	The group of community volunteers work to prepare and put in practice their Community Resilience Plan and be supported by the local authority. The Pitlochry and Moulin Community Resilience group operates in this area. Perth and Kinross Council will continue to communicate and support the group on flood risk matters. The resilience plan should be reviewed and updated regularly by the group, and this will be supported by the Council.		
Coordination Arrangement:	Perth & Kinross Council will continue to coordinate with the Pitlochry and Moulin Community Resilience Group to manage flood risk, improve preparedness and increase resilience against flooding. The Council will continue to co-ordinate with the group on a priority needs basis where resources allow.		
Funding Arrangement:	Funding for Community flood action groups will be provided by private individuals, businesses, organisations or communities at risk of flooding.		

Action (ID):	**FLOOD WARNING MAINTENANCE (Ref: 25405)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Pitlochry (Ref: 2542)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	On-going
Description:	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required. SEPA will maintain the River Tay flood warning scheme.		
Coordination Arrangement:	SEPA will continue to raise awareness of flood warning and engage with communities about the service when required.		
Funding Arrangement:	SEPA's role in this action is funded by the Scottish Government through SEPA's grant in aid settlement.		

3.3 Aberfeldy and Weem - PVA 02/08/03

Local Plan District	Local Authority	Main Catchment
Tay	Perth and Kinross Council	River Tay

Background

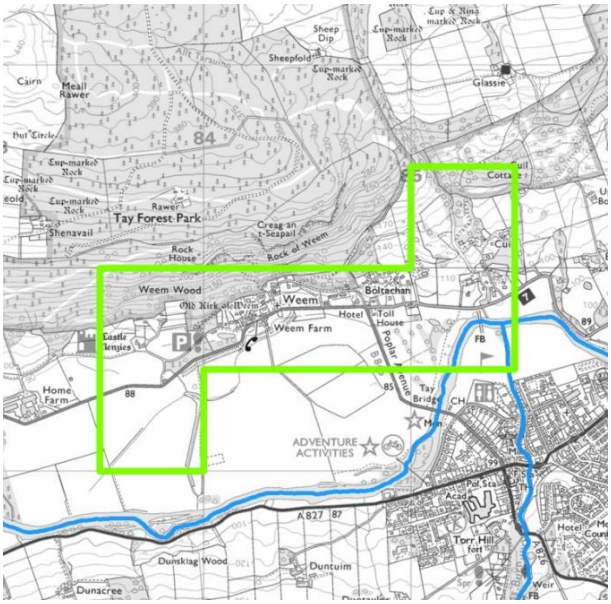
This area is designated as a potentially vulnerable area due to flood risk to Aberfeldy and Weem. The main sources of flooding are the River Tay and the Moness Burn, and there is also risk from surface water. There is a history of flooding in this area, with recent floods being caused by surface water.

List of Objective Target Areas

There are two objective target areas in this potentially vulnerable area, which have been the focus of further assessment. These are listed below. Further information on the objectives and actions to manage flood risk within this area is provided below.

Weem Objective Target Area 182
Aberfeldy Objective Target Area 183

Weem (Objective Target Area 182)

Summary	Location Map
The village of Weem is located near the town of Aberfeldy within Perth and Kinross. The main source of flooding in Weem is river flooding with a small proportion of risk coming from surface water. A flood protection scheme is in place that offers protection to the community. There are approximately 40 people and 30 homes and businesses at risk from flooding. This is estimated to increase to 50 people and 40 homes and businesses by the 2080s due to climate change.	 (© Crown copyright and database rights 2022 OS 100016971)

Current Understanding of Flood Risk

This section provides a summary of information, which has helped to develop an understanding of flood risk in the area. Since 2011, SEPA has developed and updated national assessments of flooding from rivers, surface water and coastal sources. The national assessment for river flooding was improved by the Aberfeldy Flood Study which was completed in 2019. The study also assessed flooding in Weem and reviewed the standard of protection offered by the existing flood scheme.

There is a long record of flooding in this area. Recent significant floods have occurred in January 1993, January 2005, December 2006 and in December 2015. The most recent flood was recorded in January 2020 when the Aberfeldy to Weem road was closed due to flooding caused by Storm Dennis.

Objectives and Actions in the Weem Objective Target Area

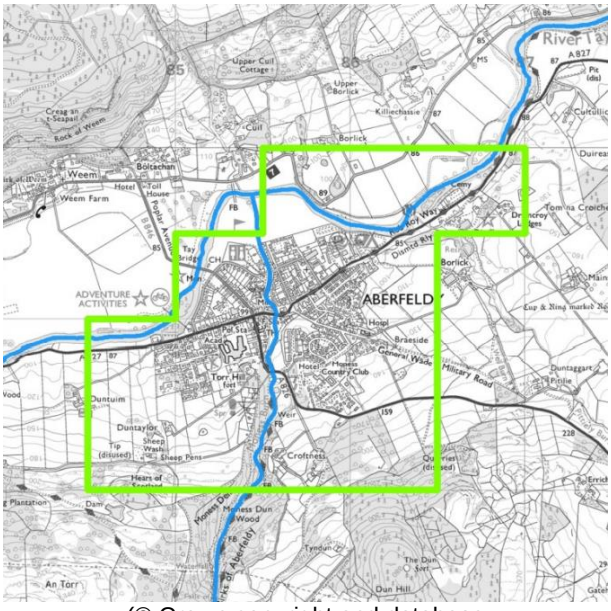
The objectives and actions for this objective target area are set out in the tables below.

SEPA and responsible authorities also carry out actions in all areas to manage current and future flood risk. A description of these actions is included in Section 2.3.

Action (ID):	**MAINTAIN FLOOD PROTECTION SCHEME (Ref: 18201)**		
Objective (ID):	Avoid an increase in flood risk by the appropriate management and maintenance of Weem Flood Protection Scheme (Ref:1822)		
Delivery Lead:	Perth and Kinross Council		
Status:	Existing	Planned Delivery Period:	On-going
Description:	Maintenance of the existing Weem Flood Protection Scheme will continue in accordance with the existing inspection and maintenance regime. Further maintenance work will also be carried out as identified by the recent review undertaken as part of the Aberfeldy flood study.		
Coordination Arrangement:	Perth & Kinross Council's Roads Maintenance Partnership maintain existing flood protection schemes 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, NatureScot, landowners and other stakeholders as required.		
Funding Arrangement:	The maintenance of flood protection schemes will be subject to funding from Perth and Kinross Council's revenue budget.		

Action (ID):	**FLOOD WARNING MAINTENANCE (Ref: 18202)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Weem (Ref: 1823)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	On-going
Description:	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.		
Coordination Arrangement:	SEPA will maintain the River Tay flood warning scheme. SEPA will continue to raise awareness of flood warning and engage with communities about the service when required.		
Funding Arrangement:	SEPA's role in this action is funded by the Scottish Government through SEPA's grant in aid settlement.		

Aberfeldy (Objective Target Area 183)

Summary	Location Map
Aberfeldy is located on the River Tay within the Perth and Kinross. The main source of flooding in Aberfeldy is river flooding, however there is also a risk from surface water flooding. Perth and Kinross Council carried out a flood study in this area which estimated that there are approximately 128 homes and 40 businesses are at risk of flooding.	 (© Crown copyright and database rights 2022 OS 100016971)

Current Understanding of Flood Risk

This section provides a summary of information, which has helped to develop an understanding of flood risk in the area. Since 2011 SEPA has developed and updated national assessments of flooding from rivers, surface water and coastal sources. The national assessment for river flooding was improved by the Aberfeldy Flood Study, which was completed in 2019. The national understanding of surface water flooding is improved by a sewer flood risk assessment undertaken by Scottish Water.

There is a long record of flooding in this area. Significant floods have occurred in January 1993, January 2005, December 2006 and in December 2015. The most recent flooding was recorded in February 2020 during Storm Dennis when surface water runoff from fields caused flooding to 2 properties as well as flooding to roads. Further surface water flooding occurred in February 2021, however there is no record of properties being affected internally.

Objectives and Actions in the Aberfeldy Objective Target Area

The objectives and actions for this objective target area are set out in the tables below.

SEPA and responsible authorities also carry out actions in all areas to manage current and future flood risk. A description of these actions is included in Section 2.3.

Action (ID):	**FLOOD PROTECTION SCHEME (Ref: 18301)**		
Objective (ID):	Reduce the risk of surface water and river flooding from the River Tay and Moness Burn in Aberfeldy (Ref: 1833)		
Delivery Lead:	Perth and Kinross Council		
Status:	Not Started	Planned Delivery Period:	To be confirmed
Description:	A flood protection scheme has been proposed in this area. The proposed scheme would consist of flood walls and embankments on the River Tay and the Moness Burn, along with culvert improvements on the Tomchulan Burn. The proposed scheme would provide a 1 in 200-year standard of protection. Current and long-term flood risk will be further considered at the design stage including the impacts of climate change and scheme adaptability. The outline design for the Aberfeldy Flood Protection Scheme will be progressed, in line with the recommendations of the Aberfeldy flood study. The flood study also recommended further consideration of natural flood management as part of the preferred option. This work is to also include ongoing community engagement as the project progresses. Once the flood protection scheme has been confirmed and the detailed design completed, the next stages are procurement then construction. As built drawings will be made available to SEPA, for inclusion in the Scottish Flood Defence Asset Database, flood map updates and flood warning scheme updates. Routine inspections and maintenance of the Aberfeldy Flood Protection Scheme would commence when the scheme is complete in accordance with the inspection and maintenance regime. In accordance with the flood risk management plan, as part of the scheme or works, Perth and Kinross Council will aim to ensure the action will not have an adverse effect on the integrity of the River Tay Special Area of Conservation.		
Coordination Arrangement:	The Aberfeldy Flood Protection Scheme will be coordinated through the Tay Local Plan District Partnership. SEPA will work with the local authority on the potential to coordinate this action with an update to SFDAD and flood warning actions.		
Funding Arrangement:	The delivery of the Aberfeldy Flood Protection Scheme is subject to capital funding being made available (up to 80% capital grant funding from the Scottish Government with the remaining funding being provided from Perth & Kinross Council's capital programme).		

Action (ID):	**SURFACE WATER MANAGEMENT PLAN (Ref: 18302)**		
Objective (ID):	Reduce the risk of surface water and river flooding from the River Tay and Moness Burn in Aberfeldy (Ref: 1833)		
Delivery Lead:	Perth and Kinross Council		
Status:	Not started	Planned Delivery Period:	2025 - 2027

Return to Contents Page

Description:	Perth & Kinross Council will engage consulting engineers to develop a surface water management plan for Aberfeldy. This will investigate the surface water flood risk and identify potential options for managing that risk. The results of the sewer flood risk assessment will be considered. Current and long-term flood risk will be assessed and if climate change impacts are found to be significant, surface water management should include adaptive planning.
Coordination Arrangement:	The surface water management plan is programmed to commence in the 2026/26 financial year and will be coordinated through the Tay Local Plan District Partnership. Scottish Water will support surface water management planning through ensuring that best available knowledge and data is used to input into the surface water management plan.
Funding Arrangement:	The surface water management plan will be subject to funding from Perth and Kinross Council's revenue budget.

Action (ID):	**COMMUNITY ENGAGEMENT (Ref: 18303)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Aberfeldy (Ref: 1832)		
Delivery Lead:	Responsible Authorities		
Status:	Existing	Planned Delivery Period:	On-going
Description:	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk. Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk. Community engagement activity will continue in connection with any on-going projects and activities. Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.		
Coordination Arrangement:	Community engagement will take place around any projects and activities will be coordinated through the Tay Local Plan District Partnership. Information will be disseminated through website, social media and other community engagement activity. Perth and Kinross Council will continue to coordinate with the Aberfeldy Resilience Group and the Tayside Waders Group on a priority needs basis where resources allow.		
Funding Arrangement:	Community engagement activities will be subject to funding from Perth and 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.		

Action (ID):	**COMMUNITY RESILIENCE GROUPS (Ref: 18304)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Aberfeldy (Ref: 1832)		
Delivery Lead:	Community		
Status:	Existing	Planned Delivery Period:	On-going
Description:	The group of community volunteers work to prepare and put in practice their Community Resilience Plan and be supported by the local authority. Perth and Kinross Council will continue to liaise with the Aberfeldy Resilience Group and the Tayside Waders Group on flood risk matters. Their resilience plans should be reviewed and updated regularly, and this will be supported by the Council.		
Coordination Arrangement:	Perth & Kinross Council will continue to coordinate with the Aberfeldy Resilience Group and the Tayside Waders to manage flood risk, improve preparedness and increase resilience against flooding. The Council will continue to co-ordinate with the group on a priority needs basis where resources allow		
Funding Arrangement:	Funding for Community resilience groups will be provided by private individuals, businesses, organisations or communities at risk of flooding.		

Action (ID):	**FLOOD WARNING MAINTENANCE (Ref: 18305)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Aberfeldy (Ref: 1832)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	On-going
Description:	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.		
Coordination Arrangement:	SEPA will maintain the River Tay flood warning scheme. SEPA will continue to raise awareness of flood warning and engage with communities about the service when required.		
Funding Arrangement:	SEPA's role in this action is funded by the Scottish Government through SEPA's grant in aid settlement.		

3.4 Alyth - PVA 02/08/04

Local Plan District	Local Authority	Main Catchment
Tay	Perth and Kinross Council	Alyth Burn (River Tay)

Background

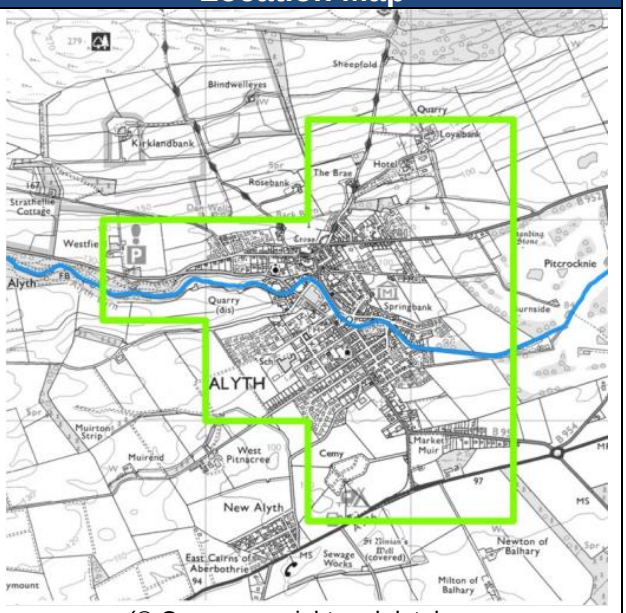
This area is designated as a potentially vulnerable area due to the flood risk at Alyth. The main source of flooding is the Alyth Burn. There is a history of flooding in this area, with recent flooding recorded in August 2020.

List of Objective Target Areas

There is one objective target area in this potentially vulnerable area, which has been the focus of further assessment. This is identified below. Further information on the objectives and actions to manage flood risk within this area is provided below.

Alyth Objective Target Area 189

Alyth (Objective Target Area 189)

Summary	Location Map
The town of Alyth is located 6km northeast of Blairgowrie within Perth and Kinross. The main source of flooding is river flooding from the Alyth Burn. There are approximately 180 people and 120 homes and businesses currently at risk of flooding. This is likely to increase to 240 people and 150 homes and businesses by the 2080s due to climate change.	 (© Crown copyright and database rights 2022 OS 100016971)

Current Understanding of Flood Risk

This section provides a summary of information, which has helped to develop an understanding of flood risk in the area. Since 2011 SEPA has developed and updated national assessments of flooding from rivers, surface water and coastal sources. Pervious work has underpinned the understanding of river flooding and the Joint Agency Report on the Flooding in Alyth of 17 July 2015 further improved the understanding of flooding mechanisms in this area.

There are records of frequent flooding in this area. A significant flood was recorded in July 2015 when the Alyth Burn burst its banks, affecting many homes and businesses. A notable flood occurred in August 2020, when the Alyth Burn and other small watercourses overtopped resulting in flooding of properties. Further flooding occurred in October 2020 and October 2021 but no properties in the area were flooded.

Objectives and Actions in the Alyth Objective Target Area

The objectives and actions for this objective target area are set out in the tables below.

SEPA and responsible authorities also carry out actions in all areas to manage current and future flood risk. A description of these actions is included in Section 2.3.

Action (ID):	**FLOOD STUDY (Ref: 18901)**		
Objective (ID):	Reduce the risk of river flooding from the Alyth Burn in Alyth (Ref: 1893).		
Delivery Lead:	Perth and Kinross Council		
Status:	On-going	Planned Delivery Period:	2022-2023
Description:	A natural flood management study is underway for Alyth as identified in the published Cycle 1 Tay Flood Risk Management Strategy and Local Flood Risk Management Plan. The study is considering both current and long-term flood risk and how the area will adapt to changes in flood risk due to climate change.		
Coordination Arrangement:	The study commenced in January 2022. Perth and Kinross Council has engaged consulting engineers, AECOM, to investigate the fluvial flood risk and identify potential options for managing that risk. The study is being coordinated through the Tay Local Plan District Partnership.		
Funding Arrangement:	The study is being funded from Perth and Kinross Council's revenue budget.		

Action (ID):	**COMMUNITY ENGAGEMENT (Ref: 18902)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Alyth (Ref: 1892).		
Delivery Lead:	Responsible Authorities		
Status:	Existing	Planned Delivery Period:	On-going
Description:	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk. Community engagement activity will continue in connection with any on-going projects and activities. Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.		
Coordination Arrangement:	Community engagement will take place around any projects and activities and will be coordinated through the Tay Local Plan District Partnership. Information will be disseminated through website, social media and other community engagement activity. This will include continuing to support the Alyth Community Support Group and updating the community on the outcomes of the natural flood management study.		
Funding Arrangement:	Community engagement activities will be subject to funding 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):	**COMMUNITY RESILIENCE GROUP (Ref: 18903)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Alyth (Ref: 1892).		
Delivery Lead:	Community		
Status:	Existing	Planned Delivery Period:	On-going
Description:	The group of community volunteers work to prepare and put in practice their Community Resilience Plan and be supported by the local authority. The Alyth Community Support Group has been set up and has developed a community resilience plan, alongside other resilience work. The resilience plan should be reviewed and updated regularly by the group, and this will be supported by the Council.		
Coordination Arrangement:	Perth and Kinross Council will continue to coordinate with the Alyth Community Support Group to manage flood risk, improve preparedness and increase resilience against flooding. The Council will continue to co-ordinate with the group on a priority needs basis where resources allow.		
Funding Arrangement:	Funding for Community flood action groups will be provided by private individuals, businesses, organisations or communities at risk of flooding		

3.5 Kirriemuir & Forfar - PVA 02/08/05

Local Plan District	Local Authority	Main Catchment
Tay	Angus Council	River Isla (River Tay)

Background

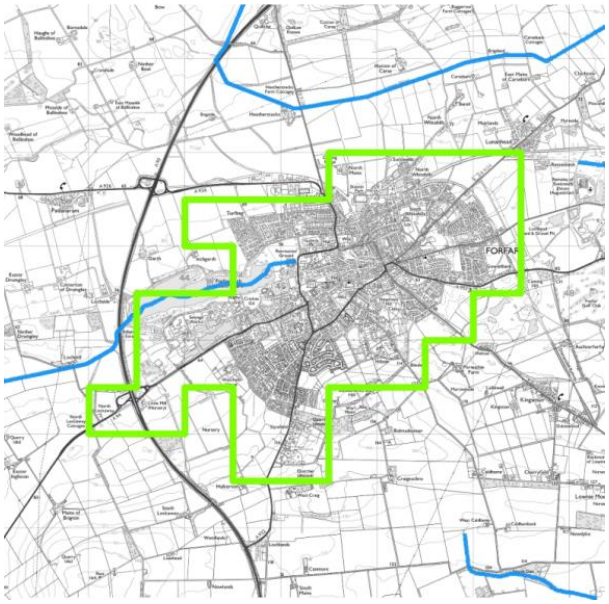
This area is designated as a potentially vulnerable area due to flood risk to Kirriemuir and Forfar. The main source of flooding is surface water. There is also risk of river flooding to Forfar from the Dean Water and to Kirriemuir from the Gairie Burn. There is a history of flooding in this area, with recent floods being caused by surface water.

List of Objective Target Areas

There are two objective target areas in this potentially vulnerable area, which has been the focus of further assessment. These are identified below. Further information on the objectives and actions to manage flood risk within this area is provided below.

Forfar Objective Target Area 230
Kirriemuir Objective Target Area 241

Forfar (Objective Target Area 230)

Summary	Location Map
Forfar is a town located north of Dundee and within the Angus Council Area. The main source of flooding in Forfar is surface water flooding, however there is a risk of river flooding. There are approximately 870 people and 590 homes and businesses currently at risk from flooding. This is likely to increase to 1,100 people and 700 homes and businesses by the 2080s due to climate change.	 (© Crown copyright and database rights 2022 OS 100016971)

Current Understanding of Flood Risk

This section provides a summary of information, which has helped to develop an understanding of flood risk in the area. Since 2011 SEPA has developed and updated national level assessments of flooding from rivers, surface water and coastal sources. The national assessment has been improved by flood studies undertaken by Angus Council and Scottish Water. There is a history of localised flooding in this area.

Objectives and Actions in the Forfar Objective Target Area

The objectives and actions for this objective target area are set out in the tables below.

SEPA and responsible authorities also carry out actions in all areas to manage current and future flood risk. A description of these actions is included in Section 2.3.

Action (ID):	**FLOOD STUDY (OPTIONS APPRAISAL) (Ref: 23001)**		
Objective (ID):	Reduce the risk of river and surface water flooding in Forfar (Ref: 2303)		
Delivery Lead:	Angus Council		
Status:	Not started	Planned Delivery Period:	2022 - 2028

Return to Contents Page

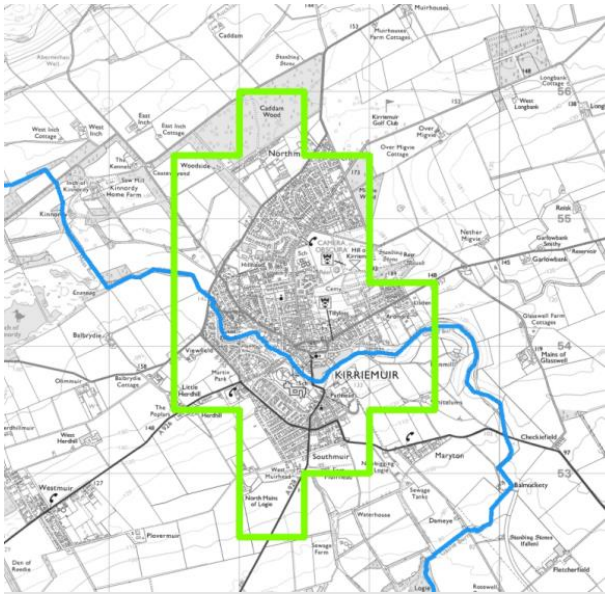
Description:	Angus Council will review the 2019 flood study outcomes and consider whether an additional detailed study of Forfar Loch and Dean Water interaction will provide further opportunities for actions to reduce flood risk in the Forfar area. The additional detailed study will focus on the interaction of surface water flooding locations which discharge to Forfar Loch and the Forfar Loch to Dean Water interaction.
Coordination Arrangement:	The study is programmed to commence within cycle 2. Angus Council will engage a consulting engineer to investigate the fluvial and pluvial flood risk and identify potential options for managing that risk. The study will be coordinated through the Tay Local Plan District Partnership.
Funding Arrangement:	The flood study will be subject to funding from Angus Council's revenue budget.

Action (ID):	**ADAPTION PLAN (23002)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Forfar (Ref: 2302)		
Delivery Lead:	Angus Council		
Status:	Not started	Planned Delivery Period:	2022 - 2028
Description:	An adaptation master plan will be developed to cover the Angus Council area. As part of this, Angus Council will use best available knowledge on climate change predictions to assess the effect on flood risk infrastructure. From this a long-term flood risk management approach will be developed. Any existing strategic initiatives will provide opportunities for adaptive actions to be implemented.		
Coordination Arrangement:	The adaptation plan is programmed to commence in cycle 2. Angus Council will engage a consulting engineer to develop the adaptation plan. The adaptation plan will be coordinated through the Tay Local Plan District Partnership.		
Funding Arrangement:	The adaptation plan will be subject to funding from Angus Council's revenue budget.		

Action (ID):	**COMMUNITY ENGAGMENT (Ref: 23003)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Forfar (Ref: 2302)		
Delivery Lead:	Responsible Authorities		
Status:	Existing	Planned Delivery Period:	On-going
Description:	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk. Community engagement activity will continue in connection with any on-going projects and activities. Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by		

	producing and supplying targeted information to the public on large capital projects and detailed local studies.
Coordination Arrangement:	The community will have opportunities to get involved with the development of the adaptation plan and any flood related projects and initiatives being developed for Forfar. This will include the flood study and the adaptation plan
Funding Arrangement:	Community engagement 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.

Kirriemuir (Objective Target Area 241)

Summary	Location Map
The town of Kirriemuir is located northwest of Forfar within the Angus area. The main sources of flooding in Kirriemuir are surface water and river flooding. There are approximately 140 people and 80 homes and businesses currently at risk from flooding. This is likely to increase to 180 people and 110 homes and businesses by the 2080s due to climate change	 (© Crown copyright and database rights 2022 OS 100016971)

Current Understanding of Flood Risk

This section provides a summary of information, which has helped to develop an understanding of flood risk in the area. Since 2011 SEPA has developed and updated national level assessments of flooding from rivers, surface water and coastal sources. The national assessment has been improved by flood studies undertaken by Angus Council and Scottish Water. There is a history of localised flooding in this area.

Objectives and Actions in the Kirriemuir Objective Target Area

The objectives and actions for this objective target area are set out in the tables below.

SEPA and responsible authorities also carry out actions in all areas to manage current and future flood risk. A description of these actions is included in Section 2.3.

Action (ID):	**FLOOD SCHEME OR WORKS IMPLEMENTATION (Ref: 24101)**		
Objective (ID):	Reduce the risk of river flooding from the Gairie Burn in Kirriemuir (Ref: 2415)		
Delivery Lead:	Angus Council		
Status:	Not started	Planned Delivery Period:	2022 - 2028
Description:	A flood study carried out for this location recommended a short-term option to manage flood risk. The preferred option consists of property flood resilience and localised kerb raising. It will be used		

	in conjunction with the installation of a river gauge on the Gairie Burn to improve understanding of flood risk and support future work. In accordance with the flood risk management plan, as part of the scheme or works, the responsible authority should aim to ensure that the action will not have an adverse effect on the integrity of the Loch of Kinnordy Special Protection Area.
Coordination Arrangement:	The works will be coordinated through the Tay Local Plan District Partnership.
Funding Arrangement:	The flood scheme will be subject to funding from Angus Council's revenue budget.

Action (ID):	**DATA COLLECTION (Ref: 24102)**		
Objective (ID):	Improve data and understanding of river flooding from the Gairie Burn in Kirriemuir (Ref: 2413)		
Delivery Lead:	Angus Council		
Status:	Not started	Planned Delivery Period:	2022 - 2028
Description:	Angus Council will review the Kirriemuir flood study of 2019 and prepare a contract for installation of flow monitoring on the Gairie Burn to reduce the uncertainty around flow estimation identified in the 2019 study. This will improve confidence levels in the flood study findings and allow the impact of climate change to be assessed for Kirriemuir.		
Coordination Arrangement:	The work will be coordinated through the Tay Local Plan District Partnership.		
Funding Arrangement:	This work will be subject to funding from Angus Council's revenue budget.		

Action (ID):	**ADAPTION PLAN (Ref: 24103)**		
Objective (ID):	Improve data and understanding of river flooding from the Gairie Burn in Kirriemuir (Ref: 2413)		
Delivery Lead:	Angus Council		
Status:	Not started	Planned Delivery Period:	2022 - 2028
Description:	Information on climate change is to be used to develop an adaptation plan to allow for the impacts of climate change to be monitored, understood and managed. An adaptation master plan will be developed to cover the Angus Council area. As part of this, Angus Council will use best available knowledge on climate change predictions to assess the effect on flood risk infrastructure. From this a long-term flood risk management approach will be developed. Any existing strategic initiatives will provide opportunities for adaptive actions to be implemented.		
Coordination Arrangement:	The adaptation plan is programmed to commence in cycle 2. Angus Council will engage a consulting engineer to develop the adaptation plan.		

	The adaptation plan will be coordinated through the Tay Local Plan District Partnership.
Funding Arrangement:	The adaptation plan will be subject to funding from Angus Council's revenue budget.

Action (ID):	**COMMUNITY ENGAGEMENT (Ref: 24104)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Kirriemuir (Ref: 2414)		
Delivery Lead:	Responsible Authorities		
Status:	Existing	Planned Delivery Period:	On-going
Description:	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk. Community engagement activity will continue in connection with any on-going projects and activities. Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.		
Coordination Arrangement:	The community will have opportunities to get involved with the development of the adaptation plan and any flood related projects and initiatives being developed for Kirriemuir. Angus Council will consider whether there is potential for provision of a community flood warning system (such as River Track) as part of a wider flood resilience approach for Kirriemuir and will discuss this with partners.		
Funding Arrangement:	Community engagement 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):	**FLOOD DEFENCE MAINTENANCE (Ref: 24105)**		
Objective (ID):	Avoid an increase in flood risk by the appropriate management and maintenance of Kirriemuir Flood Protection Scheme (Ref: 2412)		
Delivery Lead:	Angus Council		
Status:	Existing	Planned Delivery Period:	On-going
Description:	Angus Council will continue to maintain the flood defences on the Gairie Burn and seek opportunities to work with partners to reduce flood risk to existing commercial property impacted by the burn.		
Coordination Arrangement:	Angus Council maintain existing flood protection schemes 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, NatureScot, landowners and other stakeholders as required.		

Funding Arrangement:	The maintenance of flood protection schemes will be subject to funding from Angus Council's revenue budget.

Return to Contents Page

3.6 Blairgowrie & Rattray - PVA 02/08/06

Local Plan District	Local Authority	Main Catchment
Tay	Perth and Kinross Council	River Ericht (River Tay)

Background

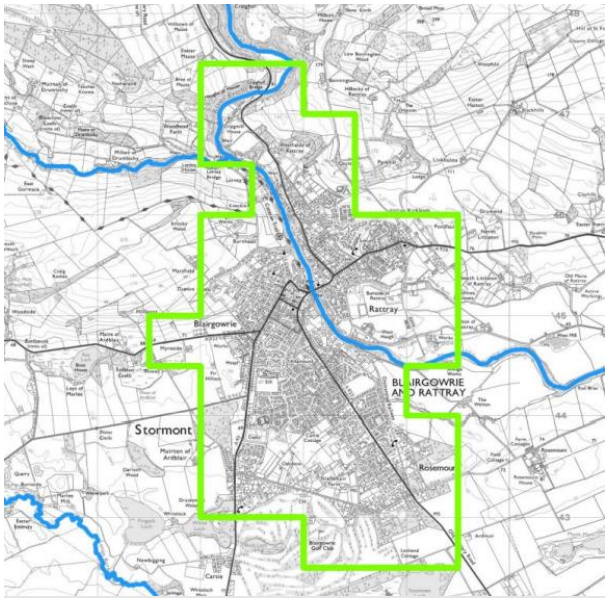
This area is designated as a potentially vulnerable area due to flood risk to Blairgowrie and Rattray. The main source of flooding in Blairgowrie is surface water. There is a history of flooding in this area with recent flooding recorded in August 2020, October 2021 and November 2022.

List of Objective Target Areas

There is one objective target area in this potentially vulnerable area, which has been the focus of further assessment. This is identified below. Further information on the objectives and actions to manage flood risk within this area is provided below.

Blairgowrie and Rattray Objective Target Area 199

Blairgowrie and Rattray (Objective Target Area 199)

Summary	Location Map
This community includes the towns of Blairgowrie and Rattray. The main source of flooding is surface water. There are approximately 750 people and 440 homes and businesses currently at risk from flooding. This is likely to increase to 1,100 people and 630 homes and businesses by the 2080s due to climate change.	 (© Crown copyright and database rights 2022 OS 100016971)

Current Understanding of Flood Risk

This section provides a summary of information, which has helped to develop an understanding of flood risk in the area. Since 2011 SEPA has developed and updated national assessments of flooding from rivers, surface water and coastal sources. Scottish Water has delivered an assessment of flood risk within the Blairgowrie sewer catchment.

There is a long record of flooding in this objective target area. In July 2004 a road and 2 properties were affected by surface water flooding. In July, October and December 2015 heavy rainfall led to flooding of a number of properties as well as road flooding. Flooding was recorded on 12 August 2020 when local roads and 5 properties flooded as a result of heavy rainfall in the area. In October 2021 flooding on the Rattray Burn affected 1 property in Rattray. Further flooding occurred on the Rattray Burn in November 2022.

Objectives and Actions in the Blairgowrie and Rattray Objective Target Area

The objectives and actions for this objective target area are set out in the tables below.

SEPA and responsible authorities also carry out actions in all areas to manage current and future flood risk. A description of these actions is included in Section 2.3.

Action (ID):	**SURFACE WATER MANAGEMENT PLAN (Ref: 19901)**		
Objective (ID):	Reduce the risk of surface water flooding in Blairgowrie and Rattray (Ref: 1993)		
Delivery Lead:	Perth and Kinross Council		
Status:	Started	Planned Delivery Period:	2022 - 2024
Description:	Perth and Kinross Council has engaged consulting engineers to develop a surface water management plan for Blairgowrie and Rattray. This will investigate the surface water flood risk and identify potential options for managing that risk. The results of the sewer flood risk assessment will be considered. Current and long-term flood risk will be assessed and if climate change impacts are found to be significant, surface water management should include adaptive planning.		
Coordination Arrangement:	The surface water management plan is programmed to be concluded in the 2023/24 financial year and is being coordinated through the Tay Local Plan District Partnership. Scottish Water will support surface water management planning through ensuring that best available knowledge and data is used to input into the surface water management plan.		
Funding Arrangement:	The surface water management plan will be subject to funding from Perth and Kinross Council's revenue budget.		

Action (ID):	**COMMUNITY ENGAGEMENT (Ref: 19902)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Blairgowrie and Rattray (Ref: 1992)		
Delivery Lead:	Responsible Authorities		
Status:	Existing	Planned Delivery Period:	On-going
Description:	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk. Community engagement activity will continue in connection with any on-going projects and activities. Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.		
Coordination Arrangement:	Community engagement will take place around any projects and activities will be coordinated through the Local Plan District Partnership. Information will be disseminated through website, social media and other community engagement activity.		
Funding Arrangement:	Community engagement activities will be subject to funding from Perth and 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.		

Action (ID):	**COMMUNITY RESILIENCE GROUP (Ref: 19903)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Blairgowrie and Rattray (Ref: 1992)		
Delivery Lead:	Community		
Status:	Existing	Planned Delivery Period:	On-going
Description:	The group of community volunteers work to prepare and put in practice their Community Resilience Plan and be supported by the local authority. Blairgowrie Community Resilience Group is active in this area. The resilience group should continue to implement the community emergency plan.		
Coordination Arrangement:	Perth & Kinross Council will continue to coordinate with the Blairgowrie Community Resilience Group to manage flood risk, improve preparedness and increase resilience against flooding. The Council will continue to co-ordinate with the group on a priority needs basis where resources allow.		
Funding Arrangement:	Funding for Community flood action groups will be provided by private individuals, businesses, organisations or communities at risk of flooding.		

Action (ID):	**FLOOD WARNING MAINTENANCE (Ref: 19904)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Blairgowrie and Rattray (Ref: 1992)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	On-going
Description:	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.		
Coordination Arrangement:	SEPA will maintain the Ericht flood warning scheme. SEPA will continue to raise awareness of flood warning and engage with communities about the service when required.		
Funding Arrangement:	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		

3.7 Coupar Angus - PVA 02/08/07

Local Plan District	Local Authority	Main Catchment
Tay	Perth and Kinross Council	Coupar Burn (River Tay)

Background

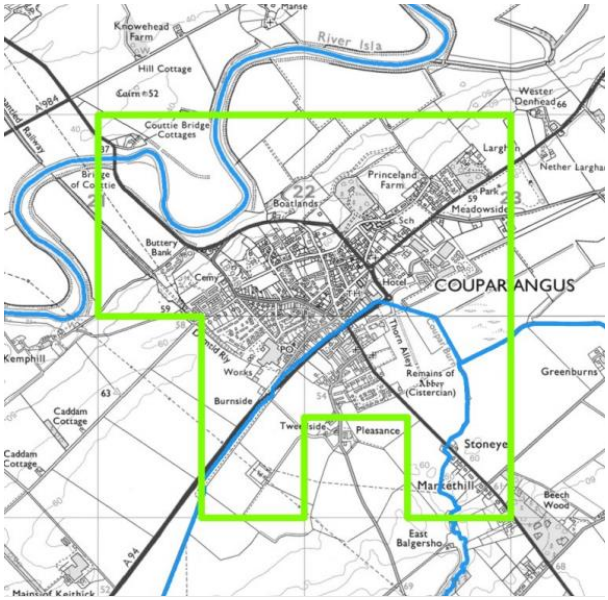
This area is designated as a potentially vulnerable area due to flood risk to Coupar Angus. The main source of flooding is the Coupar Burn. There is history of flooding in this area with recent floods caused by river flooding.

List of Objective Target Areas

There is one objective target area in this potentially vulnerable area, which has been the focus of further assessment. This is identified below. Further information on the objectives and actions to manage flood risk within this area is provided below.

Coupar Angus Objective Target Area 214

Coupar Angus (Objective Target Area 214)

Summary	Location Map
Coupar Angus is located to the northeast of Perth on the banks of the River Isla within Perth and Kinross. The main source of flooding in Coupar Angus is river flooding from the Coupar Burn and small tributaries. A local detailed flood study undertaken by Perth and Kinross Council indicates that there are approximately 30 homes and businesses currently at risk of flooding, and that this may increase to 62 homes and businesses in the future due to climate change.	 (© Crown copyright and database rights 2022 OS 100016971)

Current Understanding of Flood Risk

This section provides a summary of information, which has helped to develop an understanding of flood risk in the area. Since 2011 SEPA has developed and updated national assessments of flooding from rivers, surface water and coastal sources. The national assessment for river flooding is improved by the Coupar Burn Flood Study completed in 2016 and the SEPA modelling study to improve flood maps in the area. The study concluded that structural actions such as a flood protection scheme were not viable.

There is a long history of flooding in this area from the Coupar Burn including flooding in August 2004 and December 2012, when several homes and businesses flooded from Coupar Burn. In December 2015, Storm Frank caused prolonged rainfall across Perth & Kinross. Several roads were affected in the Coupar Angus area. Flooding on the Coupar Burn occurred in February 2021 and November 2022 but there is no record of properties being affected.

Objectives and Actions in the Coupar Angus Objective Target Area

The objectives and actions for this objective target area are set out in the tables below.

SEPA and responsible authorities also carry out actions in all areas to manage current and future flood risk. A description of these actions is included in Section 2.3.

Action (ID):	**FLOOD WARNING MAINTENANCE (Ref: 21401)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Coupar Angus (Ref: 2143)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	On-going
Description:	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.		
Coordination Arrangement:	SEPA will maintain the Isla flood warning scheme. SEPA will continue to raise awareness of flood warning and engage with communities about the service when required.		
Funding Arrangement:	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		

Action (ID):	**COMMUNITY RESILIENCE GROUP (Ref: 21402)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Coupar Angus (Ref: 2143)		
Delivery Lead:	Community		
Status:	Existing	Planned Delivery Period:	On-going
Description:	The group of community volunteers work to prepare and put in practice their Community Resilience Plan and be supported by the local authority. The Coupar Angus Community Resilience Group operates in this area. Perth and Kinross Council will continue to communicate and support the group on flood risk matters. The resilience plan should be reviewed and updated regularly by the group, and this will be supported by the Council.		
Coordination Arrangement:	Perth & Kinross Council will continue to coordinate with the Coupar Angus Community Resilience Group to manage flood risk, improve preparedness and increase resilience against flooding. The Council will continue to co-ordinate with the group on a priority needs basis where resources allow.		
Funding Arrangement:	Funding for Community flood action groups will be provided by private individuals, businesses, organisations or communities at risk of flooding.		

Action (ID):	**LAND USE PLANNING (Ref: 21403)**		
Objective (ID):	Avoid development that increases flood risk in Coupar Angus (Ref: 2141)		
Delivery Lead:	Perth & Kinross Council		
Status:	Existing	Planned Delivery Period:	On-going
Description:	As planning authority, Perth and Kinross Council will ensure that their development plan and planning decision-making supports the delivery of sustainable flood management. Perth and Kinross		

	Council will introduce protection for the Kettins Burn natural flood storage area through the local development planning process.
Coordination Arrangement:	Existing controls are already in place as set out under the Land Use Planning action. Perth and Kinross Council will further align the flood risk management and land use planning systems in this location. The Council will coordinate land use planning with other related actions.
Funding Arrangement:	Planning activities are subject to funding from Perth and Kinross Council's revenue budget.

3.8 Dunkeld & Birnam - PVA 02/08/08

Local Plan District	Local Authority	Main Catchment
Tay	Perth and Kinross Council	River Tay

Background

This area is designated as a potentially vulnerable area due to flood risk to Dunkeld & Birnam, Dalguise and Spittalfield. The main source of flood risk is the River Tay, the River Braan and small watercourses in Dunkeld and Birnam. The main source of flood risk in Dalguise and Spittalfield is the River Tay. There is history of flooding in the area.

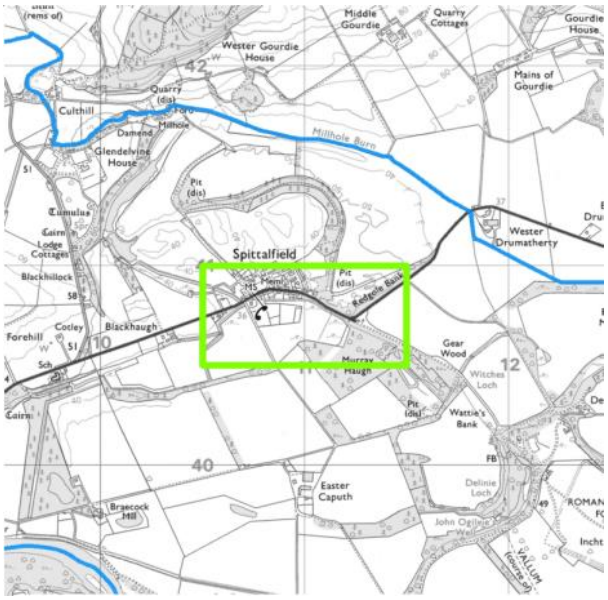
List of Objective Target Areas

There are three objective target areas in this potentially vulnerable area, which have been the focus of further assessment. These are listed below. Further information on the objectives and actions to manage flood risk within this area is provided below.

Spittalfield Objective Target Area 179
Dunkeld & Birnam Objective Target Area 225
Dalguise Objective Target Area 273

Spittalfield (Objective Target Area 179)

The small settlement of Spittalfield is located near the River Tay in Perth and Kinross.
The main concern is flooding from the River Tay to homes and the A984, and how this risk may change in future because of climate change. SEPA's flood maps indicate that currently there are approximately 6 homes and businesses at risk from flooding. This is estimated to increase to 40 homes and businesses by the 2080s due to climate change. However, Perth and Kinross Council has carried out a flood study in this area which predicts that this number is higher with an estimated 18 homes and businesses currently at risk, which is likely to increase to 50 due to climate change.



Current Understanding of Flood Risk

This section provides a summary of information, which has helped to develop an understanding of flood risk in the area. Since 2011 SEPA has developed and updated national assessments of flooding from rivers, surface water and coastal sources. The national assessment for river flooding was improved by a recent flood study.

There is a record of periodic flooding in this area. The first flood recorded in the area occurred in January 1993 when heavy rain and snow melt inundated roads around the Green. Further flooding occurred in 2006 with property flooding and the A894 being affected. The most recent flood was recorded in December 2015 due to Storm Desmond when roads and properties were affected. In January 2018 surface water flooding was reported in Spittalfield however there is no record of properties being affected by flooding.

Objectives and Actions in the Spittalfield Objective Target Area

The objectives and actions for this objective target area are set out in the tables below.

SEPA and responsible authorities also carry out actions in all areas to manage current and future flood risk. A description of these actions is included in Section 2.3.

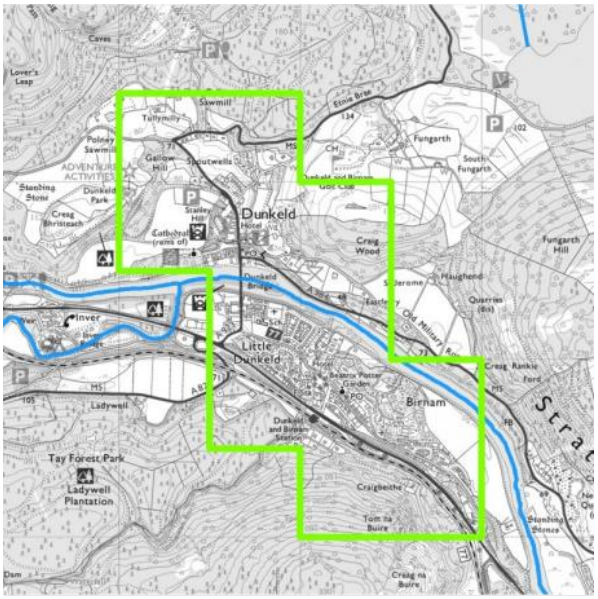
Action (ID):	**COMMUNITY RESILIENCE GROUP (Ref: 17901)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Spittalfield (Ref: 1792)		
Delivery Lead:	Community		
Status:	Existing	Planned Delivery Period:	On-going
Description:	The group of community volunteers work to prepare and put in practice their Community Resilience Plan and be supported by the local authority. The Spittalfield and Caputh Community Resilience Group operates in this area. Perth and Kinross Council will continue to communicate and support the group on flood risk matters. The resilience plan should be reviewed and updated regularly by the group, and this will be supported by the Council.		
Coordination Arrangement:	Perth & Kinross Council will continue to coordinate with the Spittalfield and Caputh Community Resilience Group to manage flood risk, improve preparedness and increase resilience against flooding. The Council will continue to co-ordinate with the group on a priority needs basis where resources allow.		
Funding Arrangement:	Funding for Community flood action groups will be provided by private individuals, businesses, organisations or communities at risk of flooding.		

Action (ID):	**EMERGENCY PLAN (Ref: 17902)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Spittalfield (Ref: 1792)		
Delivery Lead:	Perth and Kinross Council		
Status:	Not started	Planned Delivery Period:	2022 - 2028
Description:	The plan to coordinate responses to emergency incidents between organisations, including local authorities, the emergency services and SEPA, is to be maintained and executed as required. Perth and Kinross Council will include specific emergency planning arrangements for Spittalfield within its current Generic Emergency Plan and Flooding Emergency Response Plan.		
Coordination Arrangement:	Perth & Kinross Council has developed a Generic Emergency Plan and a Flooding Emergency Response Plan, 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. An emergency response will follow any reports of flooding, will be coordinated with regional and local resilience partnerships, and 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 local authorities 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.
Funding Arrangement:	Emergency response activities are subject to funding from Perth and Kinross Council's revenue budget.

Action (ID):	**FLOOD WARNING MAINTENANCE (Ref: 17903)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Spittalfield (Ref: 1792)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	2022-2028
Description:	SEPA will maintain the River Tay flood warning scheme. The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required		
Coordination Arrangement:	SEPA will maintain the River Tay flood warning scheme. SEPA will continue to raise awareness of flood warning and engage with communities about the service when required.		
Funding Arrangement:	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		

Dunkeld & Birnam (Objective Target Area 225)

Summary	Location Map
The villages of Dunkeld, Little Dunkeld and Birnam are located on the River Tay and within Perth and Kinross. The main source of flooding in Dunkeld and Birnam is river flooding from the River Tay, the River Braan and other small watercourses. A recent flood study undertaken by Perth and Kinross Council indicates that there are approximately 104 homes and businesses currently at risk of flooding. This is likely to increase to 149 homes and businesses by the 2080s due to climate change.	 (© Crown copyright and database rights 2022 OS 100016971)

Current Understanding of Flood Risk

This section provides a summary of information, which has helped to develop an understanding of flood risk in the area. Since 2011 SEPA has developed and updated national assessments of flooding from rivers, surface water and coastal sources. The national assessment for river flooding is being improved by a current flood study in the area.

There is a long record of flooding in this area, including notable flooding in February 1990 and January 1993. Further localised flooding occurred on the Spoutwells Burn, at Burnmouth Road and at Inver in August 2004. In December 2015 and January 2016, Storms Desmond and Frank caused prolonged rainfall throughout Perth and Kinross and properties and roads were affected in the Dunkeld area. The most recent flooding occurred in February 2020, with properties on Atholl Gardens being threatened by flooding from the Sawmill Burn

Objectives and Actions in the Dunkeld & Birnam Objective Target Area

The objectives and actions for this objective target area are set out in the tables below.

SEPA and responsible authorities also carry out actions in all areas to manage current and future flood risk. A description of these actions is included in Section 2.3.

Action (ID):	**FLOOD STUDY (Ref: 22501)**		
Objective (ID):	Reduce the risk of river flooding from the River Tay, River Braan and small watercourses in Dunkeld (Ref: 2255)		
Delivery Lead:	Perth & Kinross Council		
Status:	Existing	Planned Delivery Period:	2020 - 2023
Description:	A flood protection study for Dunkeld was included in the Cycle 1 Tay Local Flood Risk Management Plan. The study is underway and is being carried out as planned. The study is considering current and future flood risk and the potential impacts of climate change.		
Coordination Arrangement:	The study commenced in January 2020. Perth and Kinross Council engaged consulting engineers, AECOM, to investigate the fluvial flood risk and identify potential options for managing that risk. The study has involved the completion of existing investigations by previous consulting engineers, Mouchel, into the flooding on Atholl Gardens and Atholl Street, Dunkeld from the Spoutwells Burn and another small watercourses. The study also took a staged approach to allow coordination with SEPA on the Strategic Mapping and Modelling Action for the River Tay (Cycle 1 Action ID 80410016). The study has been coordinated through the Tay Local Plan District Partnership.		
Funding Arrangement:	The flood study has been funded from Perth and Kinross Council's revenue budget.		

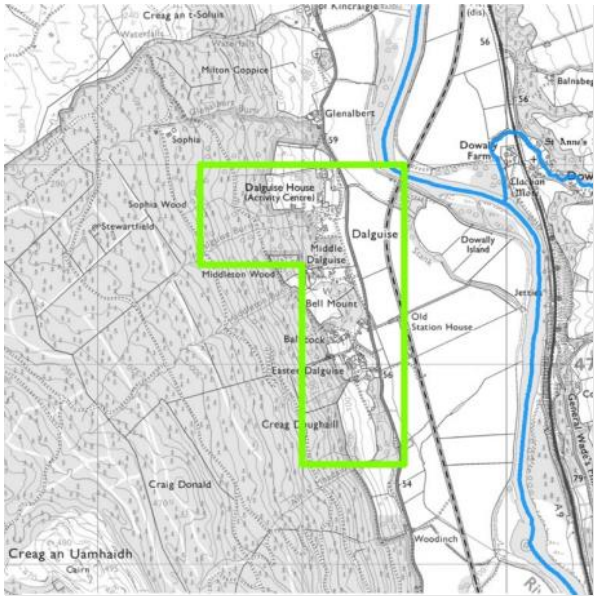
Action (ID):	**COMMUNITY ENGAGEMENT (Ref: 22502)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Dunkeld and Birnam (Ref: 2252)		
Delivery Lead:	Responsible Authorities		
Status:	Existing	Planned Delivery Period:	On-going
Description:	Community engagement will continue to be carried out in area by the responsible authorities to raise awareness of flood risk. Community engagement activity will continue in connection with any on-going projects and activities. Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.		
Coordination Arrangement:	Perth and Kinross will continue to coordinate with the Dunkeld Community Resilience Group on a priority needs basis where resources allow. Awareness raising and community engagement will take place around any projects and will be coordinated through the Local Plan District Partnership. Information will be disseminated through website, social media and other community engagement activity.		

Funding Arrangement:	Community engagement activities will be subject to funding from Perth and 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.

Action (ID):	**COMMUNITY RESILIENCE GROUP (Ref: 22503)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Dunkeld and Birnam (Ref: 2252)		
Delivery Lead:	Community		
Status:	Existing	Planned Delivery Period:	On-going
Description:	The group of community volunteers work to prepare and put in practice their Community Resilience Plan and be supported by the local authority. The Dunkeld Community Resilience Group operates in this area. Perth and Kinross Council will continue to communicate and support the group on flood risk matters. The resilience plan should be reviewed and updated regularly by the group, and this will be supported by the Council.		
Coordination Arrangement:	Perth & Kinross Council will continue to coordinate with the Dunkeld Community Resilience Group to manage flood risk, improve preparedness and increase resilience against flooding. The Council will continue to co-ordinate with the group on a priority needs basis where resources allow.		
Funding Arrangement:	Funding for Community flood action groups will be provided by private individuals, businesses, organisations or communities at risk of flooding.		

Action (ID):	**FLOOD WARNING MAINTENANCE (Ref: 22504)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Dunkeld and Birnam (Ref: 2252)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	2022-2028
Description:	SEPA should maintain the River Tay flood warning scheme. The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.		
Coordination Arrangement:	SEPA will maintain the River Tay flood warning scheme. SEPA will continue to raise awareness of flood warning and engage with communities about the service when required.		
Funding Arrangement:	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		

Dalguise (Objectve Target Area 273)

Summary	Location Map
The small settlement of Dalguise is located on the western side of the River Tay and within Perth and Kinross. The main source of flooding in Dalguise is river flooding. There are approximately 20 people at risk from flooding and approximately 20 homes and businesses. There is also risk to an activity centre, railway line and local roads that become inundated resulting in the community being cut off.	 (© Crown copyright and database rights 2022 OS 100016971)

Current Understanding of Flood Risk

This section provides a summary of information, which has helped to develop an understanding of flood risk in the area. Since 2011 SEPA has developed and updated national level assessments of flooding from rivers, surface water and coastal sources. The national understanding of flooding in this area was also improved by a previous flood study. This study did not identify a viable structural flood management solution.

There is a long record of flooding in this area. In January 1993, a significant weather event flooded 6 properties and caused extensive damage to the Perth to Inverness railway line. In December 2006, 4 properties were flooded and again the railway line was closed. The most recent flood was recorded in December 2018 when the Dalguise Burn and River Tay inundated local roads.

Objectives and Actions in the Dalguise Objective Target Area

The objectives and actions for this objective target area are set out in the tables below.

SEPA and responsible authorities also carry out actions in all areas to manage current and future flood risk. A description of these actions is included in Section 2.3.

Action (ID):	**EMERGENCY PLAN (Ref: 27301)**
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Dalguise (Ref: 2732)

Delivery Lead:	Perth and Kinross Council		
Status:	Not started	Planned Delivery Period:	2023
Description:	Perth and Kinross Council will include specific emergency planning arrangements for Dalguise within its current Generic Emergency Plan and Flooding Emergency Response Plan.		
Coordination Arrangement:	Perth & Kinross Council has developed emergency response plans, 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. An emergency response will follow any reports of flooding, will be coordinated with regional and local resilience partnerships, and 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 local authorities can sometimes provide sandbags to properties. Unfortunately, Councils only have the resources to supply sandbags to residents where there is an imminent risk of flooding. SEPA will work with Perth and Kinross Council on the potential to coordinate this action with flood warning actions.		
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 subject to funding from Perth and Kinross Council's revenue budget. SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		

Action (ID):	**FLOOD WARNING MAINTENANCE (Ref: 27302)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Dalguise (Ref: 2732)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	On-going
Description:	SEPA will maintain the River Tay flood warning scheme. The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.		
Coordination Arrangement:	SEPA will continue to raise awareness of flood warning and engage with communities about the service when required.		
Funding Arrangement:	SEPA's role in this action is funded by the Scottish Government through SEPA's grant in aid settlement.		

3.9 Bankfoot - PVA 02/08/09

Local Plan District	Local Authority	Main Catchment
Tay	Perth and Kinross Council	Garry Burn (River Tay)

Background

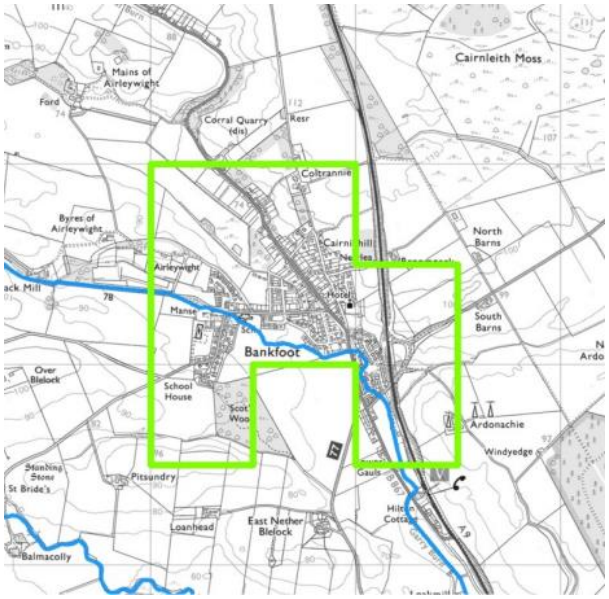
This area is designated as a potentially vulnerable area due to flood risk to Bankfoot. The main source of flooding is the Garry Burn and Glenhauch Burn. There is a history of flooding in this area, with recent floods being caused by river flooding.

List of Objective Target Areas

There is one objective target area in this potentially vulnerable area, which has been the focus of further assessment. This is identified below. Further information on the objectives and actions to manage flood risk within this area is provided below.

Bankfoot Objective Target Area 194

Bankfoot (Objective Target Area 194)

Summary	Location Map
The village of Bankfoot lies approximately 13km north of Perth, within the Perth and Kinross. The main source of flooding in Bankfoot is river flooding. The local authority has carried out a flood study in this area which estimated that there are approximately 154 homes and businesses at risk of flooding.	 (© Crown copyright and database rights 2022 OS 100016971)

Current Understanding of Flood Risk

This section provides a summary of information, which has helped to develop an understanding of flood risk in the area. Since 2011 SEPA has developed and updated national assessments of flooding from rivers, surface water and coastal sources. The national assessment for river flooding was improved by a flood study completed for Bankfoot in 2015. The study concluded that a flood scheme was not viable. The study described how on-going flood risk would be managed by other actions.

There is a long history of flooding in this area, including notable flooding in January 1993, August 2004, July 2015 and February and October 2020. In February 2020 during Storm Dennis, the Garry Burn burst its banks, inundating a number of roads. Some surface water flooding occurred in October 2020. Further minor flooding occurred on the Garry Burn in February 2021. The most recent flooding occurred in June 2022, when surface water runoff from fields affected the B867 and the gardens of adjacent properties.

Objectives and Actions in the Bankfoot Objective Target Area

The objectives and actions for this objective target area are set out in the tables below.

SEPA and responsible authorities also carry out actions in all areas to manage current and future flood risk. A description of these actions is included in Section 2.3.

Action (ID):	**COMMUNITY RESILIENCE GROUP (Ref: 19401)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Bankfoot (Ref: 1942)		
Delivery Lead:	Community		
Status:	Existing	Planned Delivery Period:	On-going
Description:	The group of community volunteers work to prepare and put in practice their Community Resilience Plan and be supported by the local authority. Perth and Kinross Council will continue to communicate with and support the Auchtergaven Community Council and Bankfoot Resilience Group on flood risk matters. The resilience plans should be updated regularly by these groups, and this will be supported by the council.		
Coordination Arrangement:	Perth & Kinross Council will continue to coordinate with the Bankfoot Resilience Group to manage flood risk, improve preparedness and increase resilience against flooding. The Council will continue to co-ordinate with the group on a priority needs basis where resources allow.		
Funding Arrangement:	Funding for Community flood action groups will be provided by private individuals, businesses, organisations or communities at risk of flooding.		

3.10 Luncarty - PVA 02/08/010

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

Background

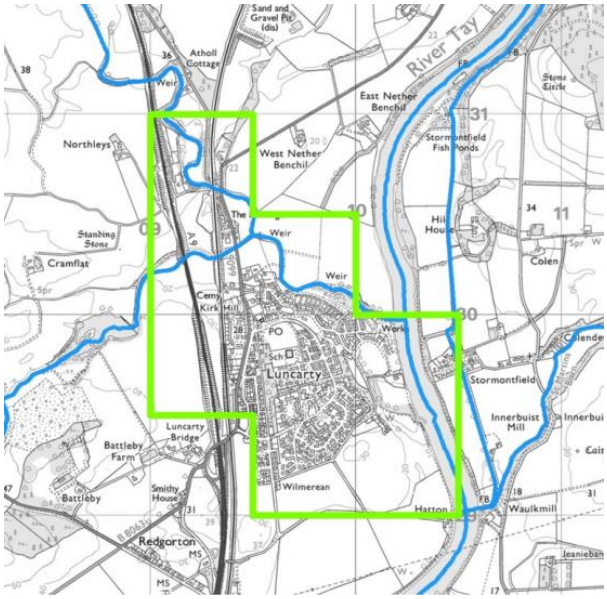
This area is designated as a potentially vulnerable area due to flood risk to Luncarty. The main sources of flooding are surface water and the River Tay and its tributaries. River flood risk is likely to increase significantly because of climate change. A number of floods have been recorded in this area.

List of Objective Target Areas

There is one objective target area in this potentially vulnerable area, which has been the focus of further assessment. This is identified below. Further information on the objectives and actions to manage flood risk within this area is provided below.

Luncarty Objective Target Area 247

Luncarty (Objective Target Area 247)

Summary	Location Map
Luncarty lies 6km north of Perth, near the River Tay and within Perth and Kinross. The main sources of flooding in Luncarty are river flooding and surface water flooding. There are approximately 160 people and 90 homes and businesses currently at risk of flooding. This is likely to increase to 250 people and 130 homes and businesses by the 2080s due to climate change. River flood risk is likely to increase significantly because of climate change.	 (© Crown copyright and database rights 2022 OS 100016971)

Current Understanding of Flood Risk

This section provides a summary of information, which has helped to develop an understanding of flood risk in the area. Since 2011 SEPA has developed and updated national assessments of flooding from rivers, surface water and coastal sources, and this information has highlighted the risk of flooding in this area.

There are limited records of flooding in this area. Flooding occurred in January 1993 and further minor floods have been noted in February 2002, January 2005, July and November 2009 and in July 2015 in the Westfield area when surface water flooding affected roads. The most recent flood was recorded on 5 December 2015 from Storm Desmond which caused some flooding of gardens in the area.

Objectives and Actions in the Luncarty Objective Target Area

The objectives and actions for this objective target area are set out in the tables below.

SEPA and responsible authorities also carry out actions in all areas to manage current and future flood risk. A description of these actions is included in Section 2.3.

Action (ID):	**FLOOD STUDY (Ref: 24701)**
Objective (ID):	Reduce the risk of river flooding in Luncarty (Ref: 2473)

Delivery Lead:	Perth & Kinross Council		
Status:	Not started	Planned Delivery Period:	2024-2026
Description:	Perth and Kinross Council will progress a flood study to look at river flood risk in Luncarty. The flood risk from the River Tay, the Shochie Burn and the Ordie Burn will be assessed. The impacts of climate change on flood risk will be evaluated. The study will include flood modelling, and if flood risk is confirmed, an appraisal of potential future actions to manage flood risk and scoping of future work will be carried out.		
Coordination Arrangement:	The study is programmed to commence in the 2024/25 financial year. Perth and Kinross Council will engage a consulting engineer to investigate the fluvial flood risk and identify potential options for managing that risk. The study will be coordinated through the Local Plan District Partnership and with other related actions.		
Funding Arrangement:	The flood study will be subject to funding from Perth and Kinross Council's revenue budget.		

Action (ID):	**COMMUNITY ENGAGEMENT (Ref: 24702)**		
Objective (ID):	Prepare for future flooding as a result of climate change in Luncarty (Ref: 2472)		
Delivery Lead:	Responsible Authorities		
Status:	Existing	Planned Delivery Period:	On-going
Description:	Community engagement will continue to be carried out in this area by the responsible authorities to raise awareness of flood risk. Community engagement activity will continue in connection with ongoing projects and activities. This will include engaging with the community on the development of the flood study. Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.		
Coordination Arrangement:	Community engagement will take place around any projects and activities and will be coordinated through the Local Plan District Partnership. Information will be disseminated through website, social media and other community engagement activity.		
Funding Arrangement:	Community engagement activities will be subject to funding from Perth and 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.		

Action (ID):	**SEWER FLOOD RISK ASSESSMENT (Ref: 24703)**
Objective (ID):	Prepare for future flooding as a result of climate change in Luncarty (Ref: 2472)

Delivery Lead:	Scottish Water		
Status:	Planned	Planned Delivery Period:	2025-2027
Description:	Scottish Water will undertake a modelling assessment in the Perth City 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 coordinate this action with Perth and Kinross Council and SEPA. Outputs of this modelling assessment will be shared with Perth and Kinross Council and SEPA		
Funding Arrangement:	Funding for this action is secured within Scottish Water's business plan.		

3.11 Scone - PVA 02/08/11

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

Background

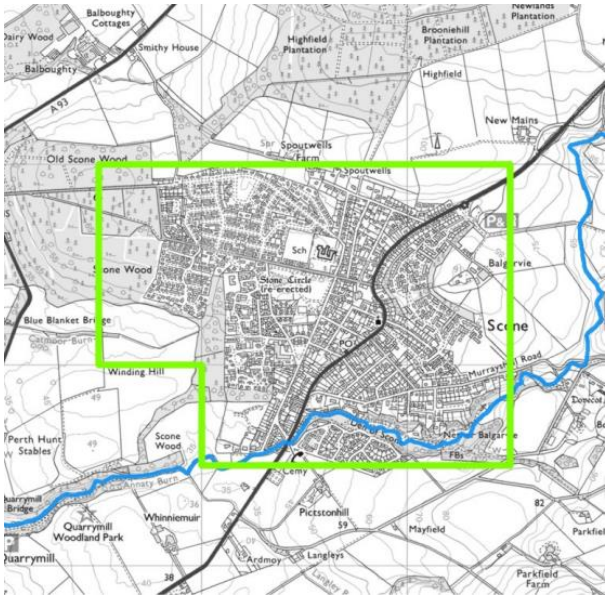
This area is designated as a potentially vulnerable area due to flood risk to Scone. The main source of flooding is the Annaty Burn and surface water. There is a history of flooding in this area, with recent floods caused by both river and surface water flooding.

List of Objective Target Areas

There is one objective target area in this potentially vulnerable area, which has been the focus of further assessment. This is identified below. Further information on the objectives and actions to manage flood risk within this area is provided below.

Scone Objective Target Area 255

Scone (Objective Target Area 255)

Summary	Location Map
Scone is a town northeast of Perth located within Perth and Kinross. The main source of flooding is surface water and river flooding from the Annaty Burn. There are approximately 330 people and 180 homes and businesses currently at risk from flooding. This is likely to increase to 400 people and 220 homes and businesses by the 2080s due to climate change.	 (© Crown copyright and database rights 2022 OS 100016971)

Current Understanding of Flood Risk

This section provides a summary of information, which has helped to develop an understanding of flood risk in the area. Since 2011 SEPA has developed and updated national assessments of flooding from rivers, surface water and coastal sources. The national assessment for river flooding was improved by a previous flood study for the Annaty Burn, while the national understanding of surface water flooding was improved by Scottish Water's sewer flood risk assessment.

There has been a history of flooding in this area. In August 2004 high intensity rainfall resulted in flooding to a number of properties and the Annaty Burn overtopped. A series of small-scale localised floods in Scone were recorded in 2010, 2013 and 2014. In May 2017, heavy rainfall led to several roads in the area being flooded. Heavy rain on 11 and 12 August 2020 led to surface water flood water outside some properties to rise to the level of airbricks. The most recent flood was recorded February 2021 when multiple areas across Perth and Kinross were affected, including Scone.

Objectives and Actions in the Scone Objective Target Area

The objectives and actions for this objective target area are set out in the tables below.

SEPA and responsible authorities also carry out actions in all areas to manage current and future flood risk. A description of these actions is included in Section 2.3.

Action (ID):	**FLOOD PROTECTION SCHEME (Ref: 25501)**		
Objective (ID):	Reduce the risk of surface water and river flooding from the Annaty Burn in Scone (Ref: 2554)		
Delivery Lead:	Perth & Kinross Council		
Status:	Not started	Planned Delivery Period:	To be confirmed
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 flood protection. The commencement of the work to develop the scheme has been delayed. The development of the proposals will be informed by community engagement. The scheme will then progress to the statutory process set out under the Flood Risk Management (Scotland) Act 2009. The detailed design will be completed thereafter. Following completion of the detailed design, the proposed scheme will be procured and will progress to construction. As built drawings will be made available to SEPA, for inclusion in the Scottish Flood Defence Asset Database, flood map updates and flood warning scheme updates.		
Coordination Arrangement:	The Scone (Annaty Burn) Flood Protection Scheme will be coordinated through the Tay Local Plan District Partnership. The flood protection scheme will be coordinated with other related actions.		
Funding Arrangement:	The delivery of the Annaty Burn Flood Protection Scheme is subject to capital funding being made available (up to 80% capital grant funding from the Scottish Government with the remaining funding being provided from Perth & Kinross Council's capital programme).		

Action (ID):	**MAINTAIN FLOOD PROTECTION SCHEME (Ref: 25502)**		
Objective (ID):	Avoid an increase in flood risk by the appropriate management and maintenance of Scone (Annaty Burn) Flood Protection Scheme (Ref: 2552)		
Delivery Lead:	Perth and Kinross Council		
Status:	Existing	Planned Delivery Period:	To be confirmed
Description:	Once built, Perth and Kinross Council will implement an inspection and maintenance regime for the Scone (Annaty Burn) Flood Protection Scheme.		
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, NatureScot, landowners and other stakeholders as required. The maintenance of the flood scheme will also be coordinated with related actions.
Funding Arrangement:	The maintenance of flood protection schemes will be subject to funding from Perth and Kinross Council revenue budget.

Action (ID):	**FLOOD STUDY (Ref: 25503)**		
Objective (ID):	Reduce the risk of surface water and river flooding from the Annaty Burn in Scone (Ref: 2554)		
Delivery Lead:	Perth and Kinross Council		
Status:	Not Started	Planned Delivery Period:	2023 - 2024
Description:	A flood protection study was carried out by Perth and Kinross Council for the Annaty Burn, Scone in 2007. The study identified a viable flood protection scheme as a priority in the first flood risk management cycle. Further study was recommended to supplement the previous investigations, looking at natural flood management and surface water flooding. Natural flood management options that should be considered include river/ floodplain restoration and sediment management. The study will also investigate the viability of property level protection. The study will take a catchment approach and consider the potential benefits and disbenefits and interaction between actions upstream and downstream. Perth and Kinross Council 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 a small number of drain failures and this will be carried out in conjunction with the study identified above		
Coordination Arrangement:	The study is scheduled to commence in the 2022/23 financial year. Perth and Kinross Council will engage a consulting engineer to investigate the flood risk and identify potential options for managing that risk. This action will be undertaken in conjunction with the Scone surface water management plan (Action Ref 25504). The study will be coordinated through the Tay Local Plan District Partnership.		
Funding Arrangement:	The flood study will be subject to funding from Perth and Kinross Council's revenue budget.		

Action (ID):	**SURFACE WATER MANAGEMENT PLAN (Ref: 25504)**
Objective(ID):	Reduce the risk of surface water and river flooding from the Annaty Burn in Scone (Ref: 2554).
Delivery Lead:	Perth and Kinross Council

Status:	Not started	Planned Delivery Period:	2023 - 2024
Description:	Perth & Kinross Council will engage consulting engineers to develop a surface water management plan for Scone. This will investigate the surface water flood risk and identify potential options for managing that risk. The surface water management plan will be delivered as part of the Scone Flood Study (Action Ref 25503). 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 is scheduled to commence in the 2022/23 financial year and will be coordinated through the Tay Local Plan District Partnership. Scottish Water will support surface water management planning through ensuring that best available knowledge and data is used to input into the surface water management plan.		
Funding Arrangement:	The surface water management plan will be subject to funding from Perth and Kinross Council's revenue budget.		

Action (ID):	**COMMUNITY ENGAGEMENT (Ref: 25505)**		
Objective (ID):	Prepare for current flood risk and future flooding in Scone as a result of climate change (Ref: 2553)		
Delivery Lead:	Responsible Authorities		
Status:	Existing	Planned Delivery Period:	On-going
Description:	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk. Community engagement activity will continue in connection with on-going projects and activities. Perth and Kinross Council will continue to coordinate with Scone Community Council and local landowners on a priority needs basis where resources allow. Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.		
Coordination Arrangement:	Community engagement will take place around any projects and activities and will be coordinated through the Tay Local Plan District Partnership. Information will be disseminated through website, social media and other community engagement activity.		
Funding Arrangement:	Community engagement activities will be subject to funding from Perth and 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.		

3.12 Perth & Almondbank - PVA 02/08/12

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

Background

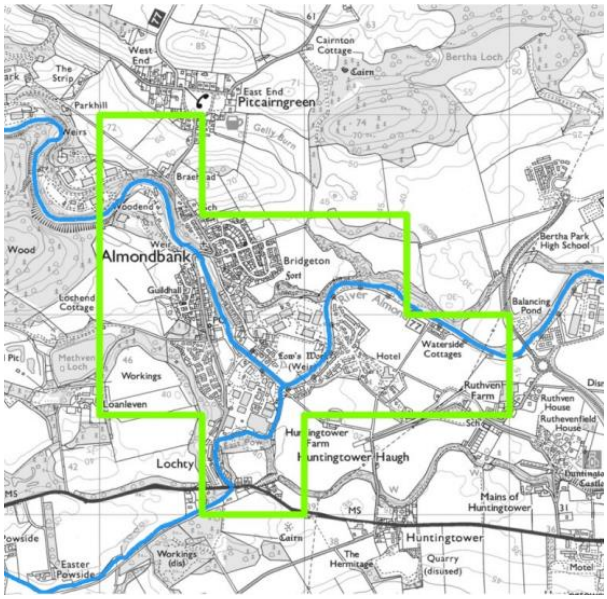
This area is designated as a potentially vulnerable area due to flood risk to Almondbank, Methven and Perth. The main source of flooding in Almondbank and Methven is river flooding. The main sources of flooding in Perth are small watercourses and surface water. Perth and Almondbank benefit from flood protection schemes. There is a long history of flooding in these areas, with recent flooding from surface water and small watercourses recorded in August 2020.

List of Objective Target Areas

There are three objective target areas in this potentially vulnerable area, which have been the focus of further assessment, these are listed below. Further information on the objectives and actions to manage flood risk within this area is provided below.

Almondbank	Objective Target Area 187
Methven	Objective Target Area 249
Perth	Objective Target Area 253

Almondbank (Objective Target Area 187)

Summary	Location Map
Almondbank is located approximately 5km northwest of Perth on the banks of the River Almond within Perth and Kinross. The main source of flooding in Almondbank is river flooding. The recent Almondbank Flood Protection Scheme protects approximately 31 homes and 48 businesses on the River Almond and the East Pow Burn up to the 1 in 200-year flood.	 (© Crown copyright and database rights 2022 OS 100016971)

Current Understanding of Flood Risk

This section provides a summary of information, which has helped to develop an understanding of flood risk in the area. Since 2011 SEPA has developed and updated national assessments of flooding from rivers, surface water and coastal sources. The national assessment for river flooding is improved by previous flood study work for the Almondbank Flood Protection Scheme.

There is a long record of flooding in this area. Previous significant flooding occurred in January 1993, September and December 1999 and January 2011. The most recent flood was recorded in December 2015 due to Storm Desmond when the River Almond overflowed causing erosion to the riverbank. The Almondbank Flood Protection Scheme was substantially completed in 2018 and protects homes and businesses from flooding in the area. In August 2020, some minor surface water flooding was recorded at the Lochty Industrial Estate. In September 2022, heavy rainfall resulted in the River Almond flooding onto the adjacent football pitch, affecting the road access to the bowling club. No properties were affected.

Objectives and Actions in the Almondbank Objective Target Area

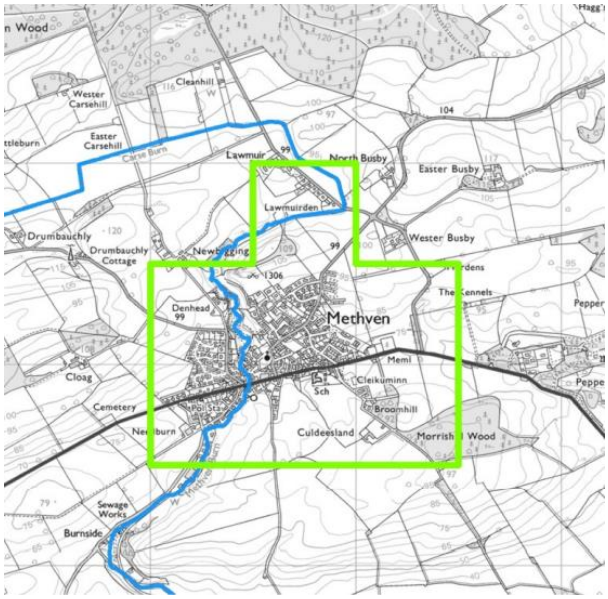
The objectives and actions for this objective target area are set out in the tables below.

SEPA and responsible authorities also carry out actions in all areas to manage current and future flood risk. A description of these actions is included in Section 2.3.

Action (ID):	**MAINTAIN FLOOD PROTECTION SCHEME (Ref: 18701)**		
Objective (ID):	Avoid an increase in flood risk by the appropriate management and maintenance of Almondbank and Perth flood protection schemes (Ref: 1872)		
Delivery Lead:	Perth and Kinross Council		
Status:	Existing	Planned Delivery Period:	On-going
Description:	Maintenance of the Almondbank Flood Protection Scheme on the River Almond and East Pow Burn will continue in accordance with the existing inspection and maintenance regime		
Coordination Arrangement:	Perth & Kinross Council's Roads Maintenance Partnership maintain existing flood protection schemes 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, NatureScot, landowners and other stakeholders as required.		
Funding Arrangement:	The maintenance of flood protection schemes will be subject to funding from Perth & Kinross Council's Revenue Budget.		

Action (ID):	**FLOOD WARNING MAINTENANCE (Ref: 18702)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Almondbank (Ref: 1873)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	On-going
Description:	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required. SEPA will maintain the Almond flood warning scheme.		
Coordination Arrangement:	SEPA will maintain the Almond flood warning service. SEPA will continue to raise awareness of flood warning and engage with communities about the service when required.		
Funding Arrangement:	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		

Methven (Objective Target Area 249)

Summary	Location Map
Methven is a village which lies due west of Perth within Perth and Kinross. The main source of flooding in Methven is river flooding, with some risk from surface water flooding. There are approximately 50 homes and businesses currently at risk of flooding. This is likely to increase to 60 homes and businesses by 2080 due to climate change.	 (© Crown copyright and database rights 2022 OS 100016971)

Current Understanding of Flood Risk

This section provides a summary of information, which has helped to develop an understanding of flood risk in the area. Since 2011 SEPA has developed and updated national assessments of flooding from rivers, surface water and coastal sources, and this information has highlighted the risk of flooding in this area.

There are records of flooding in this area. Flooding occurred in January and July 2002, July 2005, July 2010 and November 2012. In August 2020 when heavy rain led to flooding of approximately 4 properties and roads. The most recent flooding occurred in September 2022 when two properties are understood to have flooded.

Objectives and Actions in the Methven Objective Target Area

The objectives and actions for this objective target area are set out in the tables below.

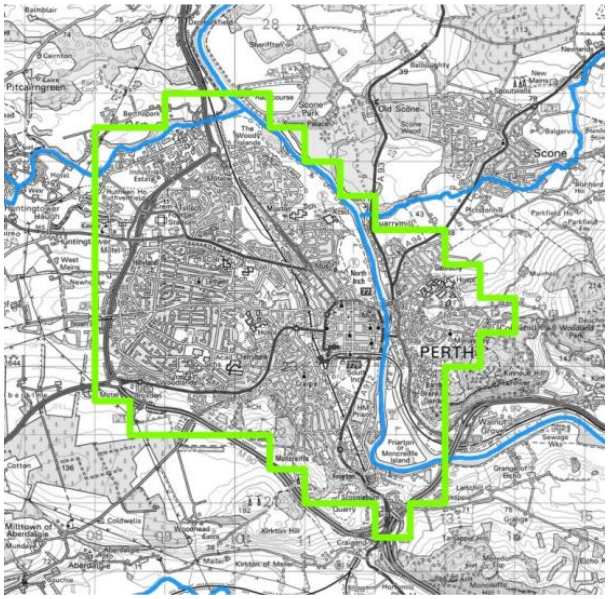
SEPA and responsible authorities also carry out actions in all areas to manage current and future flood risk. A description of these actions is included in Section 2.3.

Action (ID):	**FLOOD STUDY (Ref: 24901)**
Objective (ID):	Reduce the risk of river flooding from the Methven Burn in Methven (Ref: 2493).
Delivery Lead:	Perth & Kinross Council

Status:	Not started	Planned Delivery Period:	2026-2028
Description:	A flood study is required to improve understanding of river flood risk. The study will include flood modelling. If flood risk is confirmed, potential options to manage flood risk should be investigated. Current and long-term flood risk will be considered and include the assessment of the potential impacts of climate change.		
Coordination Arrangement:	The study is programmed to commence in the 2026/27 financial year. Perth and Kinross Council will engage a consulting engineer to investigate the fluvial flood risk and identify potential options for managing that risk. The study will be coordinated through the Tay Local Plan District Partnership and with other related actions.		
Funding Arrangement:	The flood study will be subject to funding from Perth and Kinross Council's revenue budget.		

Action (ID):	**COMMUNITY ENGAGEMENT (Ref: 24902)**		
Objective (ID):	Prepare for current flood risk and/or future flooding as a result of climate change in Methven (Ref: 2492)		
Delivery Lead:	Responsible Authorities		
Status:	Existing	Planned Delivery Period:	On-going
Description:	Community engagement is to continue to be carried out in the area the responsible authorities to raise awareness of flood risk. Community engagement activity will continue in connection with on-going projects and activities. This will include engaging with the community on the development of the flood study. Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.		
Coordination Arrangement:	Community engagement will take place around any projects and activities and will be coordinated through the Tay Local Plan District Partnership. Information will be disseminated through website, social media and other community engagement activity.		
Funding Arrangement:	Community engagement activities will be subject to funding from Perth and 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.		

Perth (Objective Target Area 253)

Summary	Location Map
The city of Perth is located on the River Tay within Perth and Kinross. The main source of flooding in Perth is river flooding, however there is also a risk from surface water. It should be noted that Perth Flood Protection Scheme reduces the risk of river and coastal flooding in Perth. There are approximately 4,000 people and 2,600 homes and businesses currently at risk of flooding. This is likely to increase to 9,300 people and 5,500 homes and businesses by the 2080s due to climate change.	 (© Crown copyright and database rights 2022 OS 100016971)

Current Understanding of Flood Risk

This section provides a summary of information, which has helped to develop an understanding of flood risk in the area. Since 2011 SEPA has developed and updated national assessments of flooding from rivers, surface water and coastal sources. The national assessment for river flooding is improved by previous flood studies carried out by the local authority for the Perth Flood Protection Scheme and the on-going Craigie Burn flood study and Perth surface water management plan. Understanding of sewer, river and surface water flooding was also improved as a result of the Perth integrated catchment study which assessed the interactions between the different flood sources.

There is a long record of flooding in this area, and most recently from surface water. Significant damage occurred in 1993 when 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. Numerous surface water floods were recorded in the area too, including on 21 July 2010 when extensive surface water flooding around Perth affected properties and roads and 16 July 2011 when heavy rain caused surface water flooding in Perth. Homes and businesses were affected. In June 2017 drains overflowed as a result of heavy rainfall, flooding properties and several gardens and roads. Recently, on 11 and 12 August 2020 heavy rainfall caused widespread flooding in Perth flooding approximately 155 homes and businesses across the city. In September 2022

flooding occurred throughout Perth and Kinross, with approximately 40 properties were flooded in Perth.

Objectives and Actions in the Perth Objective Target Area

The objectives and actions for this objective target area are set out in the tables below.

SEPA and responsible authorities also carry out actions in all areas to manage current and future flood risk. A description of these actions is included in Section 2.3.

Action (ID):	**FLOOD PROTECTION WORKS (Ref: 25301)**		
Objective (ID):	Reduce the risk of surface water flooding in Perth (Ref: 2535)		
Delivery Lead:	Perth and Kinross Council		
Status:	Existing	Planned Delivery Period:	To be confirmed
Description:	The design of the proposed Bridgend surface water flood protection works has commenced. The proposed works include a high-capacity drainage channel and outfall to the River Tay. Following completion of the design, the Bridgend surface water flood protection works will be procured and constructed. As built drawings will be made available to SEPA, for inclusion in the Scottish Flood Defence Asset Database, flood map updates and flood warning scheme updates. In accordance with the Tay flood risk management plan, as part of the scheme or works, Perth and Kinross Council will aim to ensure the action will not have an adverse effect on the integrity of the River Tay Special Area of Conservation.		
Coordination Arrangement:	The Bridgend surface water flood protection works will be coordinated through the Tay Local Plan District Partnership, taking cognisance of the on-going Perth surface water management plan.		
Funding Arrangement:	The delivery of the Bridged Flood Protection Works is subject to capital funding being made available (up to 80% capital grant funding from the Scottish Government with the remaining funding being provided from Perth & Kinross Council's capital programme).		

Action (ID):	**FLOOD STUDY (Ref: 25302)**		
Objective (ID):	Reduce the risk of river flooding from the Craigie Burn in Perth (Ref: 2534)		
Delivery Lead:	Perth and Kinross Council		
Status:	Existing	Planned Delivery Period:	2021 - 2023
Description:	Perth and Kinross Council has engaged consulting engineers to complete the Craigie Burn Flood Protection Study as set out in the Cycle 1 Tay local flood risk management plan.		

Coordination Arrangement:	The flood study commenced in November 2021 and is on-going. The consulting engineers are investigating the fluvial flood risk and the potential actions required to manage and, where achievable, to reduce that risk. The study is being coordinated through the Tay Local Plan District Partnership and with the on-going Perth surface water management plan.
Funding Arrangement:	The flood study is being funded from Perth and Kinross Council's revenue budget.

Action (ID):	**SEWER FLOOD RISK ASSESSMENT (Ref: 25303)**		
Objective (ID):	Reduce the risk of surface water flooding in Perth. (Ref: 2535)		
Delivery Lead:	Scottish Water		
Status:	Not started	Planned Delivery Period:	2025 - 2027
Description:	Scottish Water will undertake a modelling assessment in the Perth City 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:	The outputs of the modelling assessment will be shared with Perth and Kinross Council and SEPA.		
Funding Arrangement:	Funding for this action is secured within Scottish Water's business plan.		

Action (ID):	**SURFACE WATER MANAGEMENT PLAN (Ref: 25304)**		
Objective (ID):	Reduce the risk of surface water flooding in Perth (Ref: 2535)		
Delivery Lead:	Perth and Kinross Council		
Status:	Existing	Planned Delivery Period:	2021 - 2023
Description:	Perth and Kinross Council has engaged consulting engineers to develop the Perth Surface Water Management Plan. They are further investigating the surface water flood risk across Perth to identify potential options for managing that risk. The results of Scottish Water's sewer flood risk assessment and the Perth Integrated Catchment Study are being considered. Current and long-term flood risk is being considered and if climate change impacts are found to be significant, then an adaptation plan will be included. Perth is a Scottish Water priority area and opportunities to work jointly will be explored.		
Coordination Arrangement:	Development of the surface water management plan commenced in December 2021 and is on-going and is being coordinated through the Tay Local Plan District Partnership. This is a priority area for Scottish Water, who are working with and supporting surface water management planning through ensuring that best available knowledge and data is used to input into the surface water management plan.		
Funding Arrangement:	The surface water management plan is being funded from Perth and Kinross Council's revenue budget.		

Action (ID):	**FLOOD STUDY (Ref: 25305)**		
Objective (ID):	Reduce the risk of surface water flooding in Perth (Ref: 2535)		
Delivery Lead:	Scottish Water in coordination with Perth and Kinross Council		
Status:	Existing	Planned Delivery Period:	2020 - 2023
Description:	The Perth Integrated Catchment Study identified a number of flooding hotspots in Perth. These areas include Feus Road, Cavendish Avenue, Marshall Place, South Street and Bells Sports Centre. Scottish Water and Perth and Kinross Council will continue to progress study work to identify options to manage flood risk in the future. The study will outline potential solutions and phasing of solutions to reduce flood risk from the sewer network and surface water in the Cavendish Avenue/Gray Street area of Perth. The remaining study outputs will be assessed by all parties to identify whether any works will be economically viable and affordable to be taken forwards. Due to the cost of the and scale of options, it is likely that any viable improvements would be delivered in a phased manner over a number of FRM cycles.		
Coordination Arrangement:	The study has commenced and is expected to be completed in 2023. The results from the Feus Road elements of the study were disseminated to the local community in November 2022. Other areas will follow. Scottish Water will continue to work with Perth and Kinross Council to investigate the sewer and pluvial flood risk in the noted high priority areas and identify potential options for managing that risk. The study is being coordinated through the Tay Local Plan District Partnership.		
Funding Arrangement:	The study is being funded from Perth and Kinross Council's revenue budget. Funding for this action is secured within Scottish Water's business plan. Funding for any potential future phases of work is not confirmed.		

Action (ID):	**FLOOD STUDY (Ref: 25306)**		
Objective (ID):	Reduce the risk of surface water flooding in Perth (Ref: 2535)		
Delivery Lead:	Perth and Kinross Council		
Status:	Not started	Planned Delivery Period:	2023 - 2024
Description:	The Perth Integrated Catchment Study identified a number of flooding hotspots in Perth. The highest priority areas are currently being studied under a joint project run by Scottish Water in partnership with Perth and Kinross Council (Action Ref: 25305). Scottish Water and Perth and Kinross Council should progress further study work for the remaining hotspots to identify options to manage flood risk in the future.		

Coordination Arrangement:	The study is programmed to commence in 2023. Perth and Kinross Council will engage a consulting engineer to investigate the surface water flood risk and identify potential options for managing that risk. The study will be coordinated with Scottish Water through the Tay Local Plan District Partnership and with the on-going Perth Surface Water Management Plan (Action Ref: 25304). This is a priority area for Scottish Water, who will work with and support the Council through ensuring that best available knowledge and data is used to input into the study.
Funding Arrangement:	The study will be subject to funding from Perth and Kinross Council's revenue budget.

Action (ID):	**COMMUNITY ENGAGEMENT (Ref: 25307)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Perth (Ref: 2533)		
Delivery Lead:	Responsible Authorities		
Status:	Existing	Planned Delivery Period:	On-going
Description:	Community engagement will continue to be carried out in the area by the responsible authorities to raise awareness of flood risk. Community engagement activity will continue in connection with on-going projects and activities. Perth and Kinross Council will continue to coordinate with the Local Resilience Partnership's Community and Business Resilience Group and other community resilience groups on a priority needs basis where resources allow.		
Coordination Arrangement:	Community engagement will take place around any projects and activities and will be coordinated through the Tay Local Plan District Partnership. Information will be disseminated through website, social media and other community engagement activity. Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.		
Funding Arrangement:	Community engagement activities will be subject to funding from Perth and 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.		

Action (ID):	**COMMUNITY RESILIENCE GROUPS (Ref: 25308)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Perth (Ref: 2533)		
Delivery Lead:	Community		
Status:	Existing	Planned Delivery Period:	On-going

Description:	The group of community volunteers work to prepare and put in practice their Community Resilience Plan and be supported by the local authority. The Perth Community and Business Resilience Group and the South Inch Flood Group are active in this area. Perth and Kinross Council will continue to communicate and support these groups on flood risk matters. Their resilience plans should be reviewed and updated regularly by the groups, and this will be supported by the Council.
Coordination Arrangement:	Perth and Kinross Council will continue to coordinate with the Perth Business Community Resilience Group and the South Inch Flood Group to manage flood risk, improve preparedness and increase resilience against flooding. The Council will continue to co-ordinate with these groups on a priority needs basis where resources allow.
Funding Arrangement:	Funding for Community flood action groups will be provided by private individuals, businesses, organisations or communities at risk of flooding.

Action (ID):	**MAINTAIN FLOOD PROTECTION SCHEME (Ref: 25309)**		
Objective(ID):	Avoid an increase in flood risk by the appropriate management and maintenance of the Perth Flood Protection Scheme (Ref: 2532)		
Delivery Lead:	Perth and Kinross Council		
Status:	Existing	Planned Delivery Period:	On-going
Description:	Maintenance of the Perth Flood Protection Scheme on the River Tay and the Craigie Burn should continue in accordance with the existing inspection and maintenance regime.		
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, NatureScot, landowners and other stakeholders as required.		
Funding Arrangement:	The maintenance of flood protection schemes will be subject to funding from Perth & Kinross Council's revenue budget.		

Action (ID):	**FLOOD WARNING MAINTENANCE (Ref: 25310)**		
Objective(ID):	Prepare for current flood risk and future flooding as a result of climate change in Perth (Ref: 2533)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	On-going
Description:	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required. SEPA should maintain the Almond flood warning scheme.		

Coordination Arrangement:	SEPA will maintain the River Almond flood warning scheme. SEPA will continue to raise awareness of flood warning and engage with communities about the service when required.
Funding Arrangement:	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.

Action (ID):	**FLOOD WARNING MAINTENANCE (Ref: 25311)**		
Objective(ID):	Prepare for current flood risk and future flooding as a result of climate change in Perth (Ref: 2533)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	On-going
Description:	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required. SEPA should maintain the River Tay flood warning scheme.		
Coordination Arrangement:	SEPA will maintain the River Tay flood warning scheme. SEPA will continue to raise awareness of flood warning and engage with communities about the service when required.		
Funding Arrangement:	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		

3.13 Comrie - PVA 02/08/13

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

Background

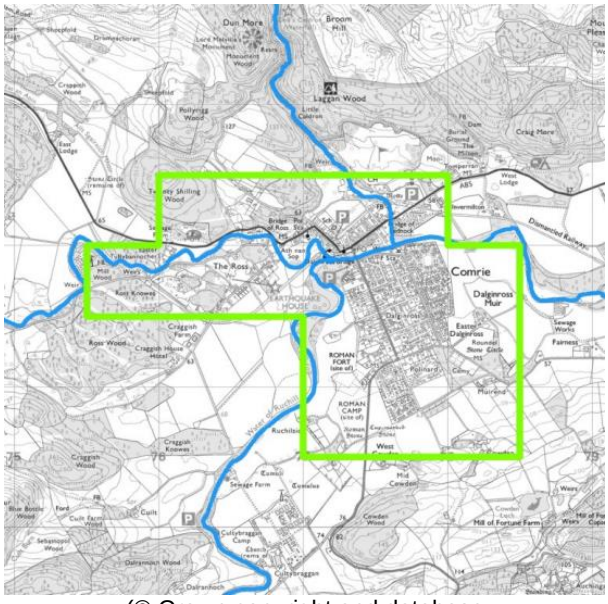
This area is designated as a potentially vulnerable area due to flood risk to Comrie. The main source of flooding is the River Earn, River Lednock and the Water of Ruchill. There is also risk of flooding from surface water. There is a history of flooding with significant floods recorded in 2015 and 2016 during Storm Frank.

List of Objective Target Areas

There is one objective target area in this potentially vulnerable area, which has been the focus of further assessment. This area is identified below. Further information on the objectives and actions to manage flood risk within this area is provided below.

Comrie Objective Target Area 213

Comrie (Objective Target Area 213)

Summary	Location Map
Comrie is located to the east of Loch Earn within Perth and Kinross. The main source of flooding in Comrie is river flooding from the Water of Ruchill, the River Earn and the River Lednock. There is also risk of surface water flooding. The local authority has carried out a flood study in this area which estimated that there are approximately 191 homes and 2 businesses currently at risk from flooding.	 (© Crown copyright and database rights 2022 OS 100016971)

Current Understanding of Flood Risk

This section provides a summary of information, which has helped to develop an understanding of flood risk in the area. Since 2011 SEPA has developed and updated national assessments of flooding from rivers, surface water and coastal sources. The national assessment for river flooding was improved by the studies supporting the on-going development of the proposed Comrie Flood Protection Scheme. The national understanding of surface water flooding was also improved by Scottish Water's sewer flood risk assessment.

There is a long record of flooding in this area. In August 2012, approximately 60 properties in Dalginross were flooded by the Water of Ruchill. In November 2012 the Water of Ruchill flooded again, inundating approximately 150 homes. In January 2016 the fire service was called to attend a localised flooding issue. The most recent flood occurred in February 2021 however no properties were affected.

Objectives and Actions in the Comrie Objective Target Area

The objectives and actions for this objective target area are set out in the tables below.

SEPA and responsible authorities also carry out actions in all areas to manage current and future flood risk. A description of these actions is included in Section 2.3.

Action (ID):	**FLOOD PROTECTION SCHEME (Ref: 21301)**		
Objective(ID):	Reduce the risk of river flooding from the River Earn, River Lednock and the Water of Ruchill in Comrie (Ref: 2134)		
Delivery Lead:	Perth and Kinross Council		
Status:	Existing	Planned Delivery Period:	2022 - 2024
Description:	The Comrie Flood Protection Scheme was confirmed under the Flood Risk Management (Scotland) Act on 18 August 2021. The detailed design of the flood scheme is on-going and once complete, the flood scheme is to be built. Advance works commenced in August 2022 and are on-going. The detailed design of the flood scheme is to be completed, followed by procurement and construction. The development of the proposals will continue to be informed by community engagement. Once complete, as built drawings will be made available to SEPA, for inclusion in the Scottish Flood Defence Asset Database, flood map updates and flood warning scheme updates.		
Coordination Arrangement:	The Comrie Flood Protection Scheme is being coordinated through the Tay Local Plan District Partnership. SEPA will work with Perth and Kinross Council on the potential to coordinate this action with an update to SFDAD and flood warning actions.		
Funding Arrangement:	The Comrie Flood Protection Scheme will be subject to on-going 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).		

Action (ID):	**SEWER FLOOD RISK ASSESSMENT (Ref: 21302)**		
Objective (ID):	Reduce the risk of surface water flooding in Comrie (Ref: 2133)		
Delivery Lead:	Scottish Water		
Status:	Not started	Planned Delivery Period:	2025 - 2027
Description:	Scottish Water will undertake a modelling assessment in the Comrie 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:	Outputs of this modelling assessment will be shared with local authorities and SEPA.		
Funding Arrangement:	Funding for this action is secured within Scottish Water's business plan.		

Action (ID):	**SURFACE WATER MANAGEMENT PLAN (Ref: 21303)**		
Objective (ID):	Reduce the risk of surface water flooding in Comrie (Ref: 2135)		
Delivery Lead:	Perth and Kinross Council		
Status:	Not started	Planned Delivery Period:	2023 - 2025

Description:	Perth & Kinross Council will engage consulting engineers to develop a surface water management plan for Comrie. This will investigate the surface water flood risk and identify potential options for managing that risk. The results of the sewer flood risk assessment will be considered. Current and long-term flood risk will be assessed and if climate change impacts are found to be significant, surface water management should include adaptive planning.
Coordination Arrangement:	The surface water management plan is programmed to commence in the 2023/24 financial year and will be coordinated through the Tay Local Plan District Partnership. Scottish Water support surface water management planning through ensuring that best available knowledge and data is used to input to the surface water management plan.
Funding Arrangement:	The surface water management plan will be subject to funding from Perth and Kinross Council's revenue budget.

Action (ID):	**COMMUNITY ENGAGEMENT (Ref: 21304)**		
Objective (ID):	Prepare for current flood risk and/or future flooding as a result of climate change in Comrie (Ref: 2133)		
Delivery Lead:	Responsible Authorities		
Status:	Existing	Planned Delivery Period:	On-going
Description:	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk. Community engagement activity will continue in connection with on-going projects and activities. Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.		
Coordination Arrangement:	Community engagement will take place around any projects and activities and will be coordinated through the Tay Local Plan District Partnership. Information will be disseminated through website, social media and other community engagement activity. Perth and Kinross Council will continue to coordinate with the Comrie Community Resilience Group on a priority needs basis where resources allow.		
Funding Arrangement:	Community engagement activities will be subject to funding from Perth and 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.		

Action (ID):	**COMMUNITY RESILIENCE GROUP (Ref: 21305)**
Objective (ID):	Prepare for current flood risk and/or future flooding as a result of climate change in Comrie (Ref: 2133)

Delivery Lead:	Community		
Status:	Existing	Planned Delivery Period:	On-going
Description:	The group of community volunteers work to prepare and put in practice their Community Resilience Plan and be supported by the local authority. The Comrie Community Resilience Group operates in this area. Perth and Kinross Council will continue to communicate and support the group on flood risk matters. The resilience plan should be reviewed and updated regularly by the group, and this will be supported by the Council.		
Coordination Arrangement:	Perth and Kinross Council will continue to coordinate with the Comrie Community Resilience Group to manage flood risk, improve preparedness and increase resilience against flooding. The Council will continue to co-ordinate with the group on a priority needs basis where resources allow.		
Funding Arrangement:	Funding for Community flood action groups will be provided by private individuals, businesses, organisations or communities at risk of flooding.		

Action (ID):	**MAINTAIN FLOOD PROTECTION SCHEME (Ref: 21306)**		
Objective (ID):	Avoid an increase in flood risk by the appropriate management and maintenance of the flood protection scheme in Comrie (Ref: 2132)		
Delivery Lead:	Perth and Kinross Council		
Status:	Existing	Planned Delivery Period:	On-going
Description:	Perth and Kinross Council will continue to maintain existing flood defences and flood protection works in Comrie in accordance with the existing inspection and maintenance regime. These include the Water of Ruchill Flood Protection Scheme constructed in the 1960s and flood protection works carried out in 2013. Once built, Perth and Kinross Council will implement an inspection and maintenance regime for the Comrie Flood Protection Scheme		
Coordination Arrangement:	Perth & Kinross Council's Roads Maintenance Partnership maintain 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, NatureScot, landowners and other stakeholders as required.		
Funding Arrangement:	The maintenance of flood protection schemes will be subject to funding from Perth & Kinross Council's revenue budget.		

Action (ID):	**FLOOD WARNING MAINTENANCE (Ref: 21307)**
Objective (ID):	Prepare for current flood risk and/or future flooding as a result of climate change in Comrie (Ref: 2133)
Delivery Lead:	SEPA

Status:	Existing	Planned Delivery Period:	On-going
Description:	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required. SEPA should maintain the Comrie flood warning scheme.		
Coordination Arrangement:	SEPA will work with Perth & Kinross Council on the potential to use information from the Comrie flood scheme to inform on-going flood warning. SEPA will continue to raise awareness of flood warning and engage with communities about the service when required.		
Funding Arrangement:	SEPA's role in this action is funded by the Scottish Government through SEPA's grant in aid settlement.		

3.14 Bridge of Earn - PVA 02/08/14

Local Plan District	Local Authority	Main Catchment
Tay	Perth and Kinross Council	River Earn

Background

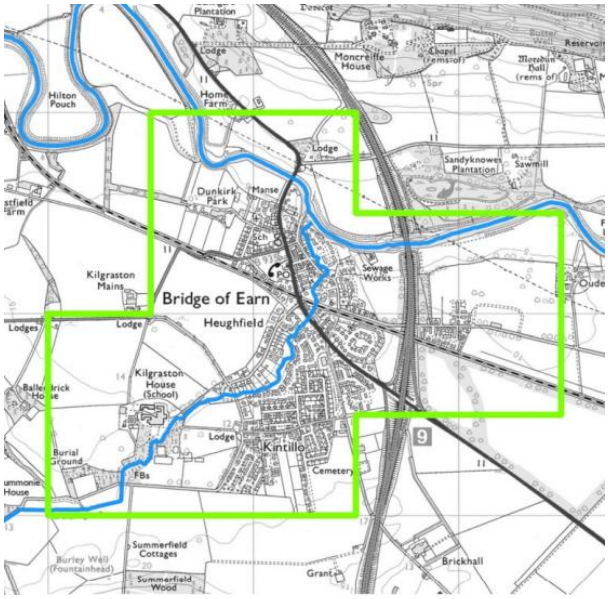
This area is designated as a potentially vulnerable area due to flood risk to Bridge of Earn. The main source of flooding is river flooding from the River Earn, Deich Burn and Yellow Burn. A flood protection scheme offers some protection against flooding in this area. There is also risk of surface water flooding. There is history of flooding in this area, with recent flooding recorded in 2015, 2016, and 2020.

List of Objective Target Areas

There is one objective target area in this potentially vulnerable area, which has been the focus of further assessment. This area is identified below. Further information on the objectives and actions to manage flood risk within this area is provided below.

Bridge of Earn Objective Target Area 205

Bridge of Earn (Objective Target Area 205)

Summary	Location Map
The town of Bridge of Earn is located on the River Earn within Perth and Kinross. The main source of flooding in Bridge of Earn is river flooding, however there is also a risk of surface water flooding. There are approximately 290 people and 150 homes and businesses at risk from flooding. This is likely to increase to 340 people and 180 homes and businesses by the 2080s due to climate change.	 (© Crown copyright and database rights 2022 OS 100016971)

Current Understanding of Flood Risk

This section provides a summary of information, which has helped to develop an understanding of flood risk in the area. Since 2011 SEPA has developed and updated national assessments of flooding from rivers, surface water and coastal sources. The national assessment for river and surface water flooding was improved by the Perth integrated catchment study which has assessed the interactions between sewer, river and surface water flooding.

There is a long record of flooding in this area. The town was affected by flooding in February 1990 and January 1993. In December 2015, Storm Desmond caused prolonged rainfall across Perth & Kinross, affecting several properties in Bridge of Earn. In June 2016 intense rainfall caused flooding to homes, roads and a local school. In August 2020, heavy rain flooded one property and some roads. The most recent flooding occurred in September 2022 when surface water flooding affected four properties.

Objectives and Actions in the Bridge of Earn Objective Target Area

The objectives and actions for this objective target area are set out in the tables below.

SEPA and responsible authorities also carry out actions in all areas to manage current and future flood risk. A description of these actions is included in Section 2.3.

Action (ID):	**FLOOD STUDY (Ref: 20501)**		
Objective (ID):	Reduce the risk of surface water flooding in Bridge of Earn (Ref: 2054)		
Delivery Lead:	Perth and Kinross Council		
Status:	Not started	Planned Delivery Period:	2023-2025
Description:	A flood study will be carried out to better understand the integrated flooding mechanisms in Bridge of Earn. The study will initially include a high-level assessment of actions and then consider the works required to reduce flood risk in the future. The results of the recent Perth Integrated Catchment Study will be incorporated. Current and long-term flood risk will be considered.		
Coordination Arrangement:	The study is programmed to commence in the 2023/24 financial year. Perth and Kinross Council will engage a consulting engineer to investigate the flood risk and identify potential options for managing that risk. The study will be coordinated through the Tay Local Plan District Partnership. 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 the Section 16 sewer assessment and/or Perth integrated catchment study.		
Funding Arrangement:	The flood study will be subject to funding from Perth and Kinross Council's revenue budget.		

Action (ID):	**COMMUNITY ENGAGEMENT (Ref: 20502)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Bridge of Earn (Ref: 2053)		
Delivery Lead:	Responsible Authorities		
Status:	Existing	Planned Delivery Period:	On-going
Description:	Community engagement will continue to be carried out in the area by the responsible authorities to raise awareness of flood risk. Community engagement will continue in connection with any on-going projects and activities. Perth and Kinross Council will continue to coordinate with Bridge of Earn Community Council and other groups on a priority needs basis where resources allow. Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.		
Coordination Arrangement:	Community engagement will take place around any projects and activities and will be coordinated through the Tay Local Plan District Partnership. Information will be disseminated through website, social media and other community engagement activity.		

Funding Arrangement:	Community engagement activities will be subject to funding 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):	**SEWER FLOOD RISK ASSESSMENT (Ref: 20503)**		
Objective (ID):	Reduce the risk of surface water flooding in Bridge of Earn (Ref: 2054)		
Delivery Lead:	Scottish Water		
Status:	Not started	Planned Delivery Period:	2025-2027
Description:	Scottish Water will undertake a modelling assessment in the Perth City 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:	Outputs of this modelling assessment will be shared with local authorities and SEPA.		
Funding Arrangement:	Funding for this action is secured within Scottish Water's business plan.		

Action (ID):	**MAINTAIN FLOOD PROTECTION SCHEME (Ref: 20504)**		
Objective (ID):	Avoid an increase in flood risk by the appropriate management and maintenance of the Bridge of Earn Flood Protection Scheme (Ref: 2052)		
Delivery Lead:	Perth and Kinross Council		
Status:	Existing	Planned Delivery Period:	On-going
Description:	Maintenance of the Bridge of Earn Flood Protection Scheme on the River Earn, the Deich Burn and the Yellow Burn will continue in accordance with the existing inspection and maintenance regime.		
Coordination Arrangement:	Perth & Kinross Council's Roads Maintenance Partnership maintain existing flood protection schemes 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, NatureScot, landowners and other stakeholders as required.		
Funding Arrangement:	The maintenance of flood protection schemes will be subject to funding from Perth & Kinross Council's Revenue Budget.		

Action (ID):	**FLOOD WARNING MAINTENANCE (Ref: 20505)**		
Objective (ID):	Prepare for current flood risk and future flooding as a result of climate change in Bridge of Earn (Ref: 2053)		
Delivery Lead:	SEPA		
Status:	Existing	Planned Delivery Period:	On-going

Description:	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required. SEPA will maintain the Earn flood warning scheme.
Coordination Arrangement:	SEPA will work with Perth and Kinross Council on the potential to use information from the flood study to inform ongoing flood warning. SEPA will continue to raise awareness of flood warning and engage with communities about the service when required.
Funding Arrangement:	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.

3.15 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 1.8 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.

3.16 Next Steps and Monitoring Progress

This Plan will run for six years from 2022. Over this period the Tay Local Plan District partnership will meet from time to time to monitor progress on implementing the actions detailed in Section 3 of the Plan.

Between years two and three of the cycle (i.e., before December 2025), Perth and Kinross Council, as lead local authority, will publish an interim report on the conclusions of a review of the Plan, including information on the progress that has been made towards delivering the actions identified in the Plan.

Between years five and six of the cycle (i.e., before June 2028), Perth and Kinross Council, as lead local authority. will publish a final report on the Plan containing an assessment of the progress made towards delivering the “current actions”, a summary of the actions not implemented, with reasons why, and a description of any other actions undertaken since the plan was finalised, which the lead local authority considers have contributed to the achievement of the objectives in the Plan.

Perth and Kinross Council will make these reports available for public inspection.

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 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. There are steps you can take now to be flood prepared and reduce the damage and disruption flooding can have on your life.

- View SEPA's flood maps to check if your area is affected by flooding https://map.sepa.org.uk/floodmaps
- Sign up to Floodline to receive messages when flooding is forecast in your area https://www.floodlinescotland.org.uk/
- View up-to-date information on severe weather warnings https://www.metoffice.gov.uk/
- Make sure you have flood insurance in place https://www.floodre.co.uk/ https://www.biba.org.uk/current-issues/flood-insurance/
- Find out what to do if you are concerned that your property is at risk of flooding
- https://scottishfloodforum.org/
- https://ready.scot/
- Know who to contact if flooding happens https://www.sepa.org.uk/media/28952/who_to_contact_2014.pdf

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: Angus Smith Building, 6 Parklands Avenue, Eurocentral, Holytown, North Lanarkshire ML1 4WQ

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	Flood@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

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.
- **Scottish Forestry and Forestry and Land Scotland** took over the roles of Forestry Commission Scotland in 2018 when the Forestry and Land Management (Scotland) Act 2018 came into force. While these executive agencies of Scottish Government are not formally designated as a responsible authority under the Flood Risk Management (Scotland) Act 2009, they support Scottish Government in delivering its flood risk related duties. This includes engaging in the development of the flood risk management plans through national and local advisory groups, Local Plan District partnerships, and collaborative projects. This reflects the widely held view that forestry can play a significant role in managing flooding. Contact details are as follows:

  Scottish Forestry
  Upper Battleby, Redgorton, Perth PH1 3EN
  Phone: 0300 067 6005

  Forestry and Land Scotland
  Inverpark, Dunkeld PH8 0JR
  Phone: 0300 067 6380

- 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 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: 0131 563 9392
  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 Plans 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 Plan and how they have taken them into account in preparing this Tay Local Flood Risk Management Plan.

The public consultation was delivered through a phased approach. Phase 1 (which included a series of characterisation reports) commenced on 21 December 2021. Phase 2 (which added initial objectives, a short list of measures and implementation arrangements) commenced on 30 July 2021. The consultation closed on 31 October 2021.

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. 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, NatureScot 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.

28 respondents made specific comments on the public consultation for the Tay Local Plan District as follows:

Respondent	No of Responses
Members of the public	22
Local businesses	1
Community bodies	1
Other organisations	2
Elected members	1
Local authorities	1
Total	28

Three consultation responses were received from the statutory consultees:

- Perth & Kinross Council
- Elected members
- NatureScot

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 made comment on the catchment characterisation, objectives and selected actions as follows:-

- Some concerns were raised about on-going flooding of increasing frequency in various areas – mainly in Perth – but these areas are within the designated PVAs and OTA's and objectives and actions have been set that will address them. Some respondents noted concern that their area was outside of a PVA, but this was due to lower flood risk and the general actions (as set out in Section 2.3 of this Plan) will apply. Overall, this suggests that the majority of significant flooding has been recorded in the characterisation reports.
- In general, there was agreement with the proposed objectives and actions although some responses sought clarification on the timelines or requested accelerated timelines. Where possible, the timescales will be provided in the final published Local Flood Risk Management Plan.
- Concerns were frequently raised around increased flood risk due to development, but the LPD-wide land use planning action has been set to address this. Annex 3 of this local flood risk management plan also includes land use planning objectives.

Any concerns raised are considered to have been addressed by the development of SEPA's Flood Risk Management Plan, the Council's actions (flood studies, flood schemes and on-going flood risk management responsibilities) or the final selected actions. Therefore, no changes were required to the draft Tay Local Flood Risk Management Plan.

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

No	Respondent	Brief Summary of Issues Raised	Lead Authority Comments
1	Member of the public	Noted flooding in some areas of Perth City and Bridge of Earn; that package of proposed objectives was too vague; wanted to hear more about maintenance, river dredging, use of	The Tay Local FRM Plan includes various actions for both Perth and Bridge of Earn, including flood studies and a surface water management plan. More detail on the objectives and actions –

		beavers, flooding of set aside agricultural land, etc; work should begin immediately.	including timescales - has been provided in the final published Plan. The Plan will also include maintenance actions.
2	Member of the public	A member of the public in Perth is concerned that their property has flooded multiple times because of heavy rain and blocked drains. They are concerned that this will happen again.	The Tay Local FRM Plan includes various actions to manage the risk of flooding including various flood studies, a surface water management plan and maintenance works. Perth & Kinross Council's Roads Maintenance Partnership carry out maintenance of road drainage systems. Road defects (including blocked gullies) can be reported to the Council via their website.
3	Member of the public	A resident of Wallace Crescent and Fairfield, Perth expressed concern that this area is not mentioned, despite previous repeated flooding of their property. They are looking for reassurance that this will be considered. They expressed concern about development in the area, the lack of upgrades or improvements to the existing drainage system and the time required for improvements.	This area is located within the Perth PVA (02/08/12) and OTA 253. The proposed Tay Local FRM Plan includes specific actions for the area that are intended to bring about a reduction in flood risk. These actions include the on-going Perth SWMP. Perth & Kinross Council also invested in road drainage improvements on Wallace Crescent in 2021 to reduce the risk of flooding.
4	Member of the public	A resident in Aberfeldy is concerned about the visual impact and access issues associated with the proposal to build a flood wall as part of the Aberfeldy Flood Scheme. The respondent noted involvement in the local community resilience plan and in reporting blocked street drains to the local authority.	The Tay Local FRM Plan includes an action for a new flood protection scheme in Aberfeldy. Any issues associated with visual impact and access will be addressed during the outline design of the flood scheme via further public consultation and the Environmental Impact Assessment. In the meantime, the Council welcomes local efforts to improve flood resilience in Aberfeldy.

5	Member of the public	A local resident who lives next to the Craigie Burn in Perth flooded last year and expressed concern that flooding has become more frequent. They requested quick action be taken by pumping water away, noting issues with surface water, sewer flooding, issues with flood gates, property insurance costs, SUDS and storage ponds. They have taken steps to protect their home and liaise with local councillors.	The Tay Local FRM Plan includes actions to manage flood risk in this area (the Perth PVA 02/08/12 and OTA 253), including the on-going maintenance of the existing Perth Flood Scheme, the on-going Craigie Burn Flood Study and the Perth SWMP. The Plan also includes self-help and awareness raising actions. It is individual property owners' responsibility to protect themselves and their assets from flooding.
6	Member of the public	A resident in Craigie, Perth noted concern that development has increased flood risk and that the objective should include infrastructure upgrades. They noted that some maintenance work has helped matters but more requires to be done. The resident noted that they have previously raised issues, but they have not been acted on, and suggested a community meeting. They also note that they monitor flooding in the Craigie area and have reported this to the Council.	The Tay Local FRM Plan includes actions to manage flood risk in this area (the Perth PVA 02/08/12 and OTA 253), including the on-going maintenance of the existing Perth Flood Scheme, the on-going Craigie Burn Flood Study, and the Perth SWMP. The Council has already undertaken public consultation in connection with these issues. The proposed Plan also includes other actions including: • Land Use Planning - all new development is required to comply with national and local planning policies, the Council's Supplementary Guidance and to include SUDS to manage surface water. • Maintenance - of watercourses, road drainage and existing flood defences. The Council welcomes local efforts to improve flood resilience in Perth.
7	Member of the public	A local resident in Blairgowrie & Rattray noted that localised flooding in	The Tay Local FRM Plan includes maintenance of watercourses. Perth & Kinross

		rural Perthshire could be mitigated in a cost-effective way by improved ditch and verge maintenance. The resident noted the proposed actions and timescales are 'non-committal' and won't be adhered to. They have carried out their own verge maintenance works.	Council's Flooding team inspect and assess bodies of water and carry out clearance and repair works, where this will substantially reduce flood risk. The primary responsibility for avoiding or managing flood risk remains with landowners. Actions and timescales will be set out in the published Plan and interim and final reports will also be published setting out the progress made. The Council welcomes local efforts to improve flood resilience in Blairgowrie & Rattray.
8	Member of the public	A local resident in Alyth noted two floods in 6 years and expressed concern about waiting until 2028 for a plan to be made. They noted the action taken by the local community to protect properties but noted that the Council should do more. They also noted the need for more radical action to prevent flooding by creating an artificial flood plain to the north of the town.	The Tay Local FRM Plan includes a number of on-going actions to manage flood risk in Alyth. In particular, Perth & Kinross Council are currently undertaking a Natural Flood Management (NFM) Study in Alyth. The study will explore the potential options for flood risk management measures in this area, including NFM and flood storage.
9	Member of the public	A local resident in Blairgowrie and Rattray noted that the timescales for actions are not quick enough.	The Tay Local FRM Plan will set out the current timescales for actions in Blairgowrie and Rattray. This area is currently the focus of an on-going surface water management plan which will consider the potential means of managing and, where achievable, reducing flood risk in this area.
10	Member of the public	A member of the public in Pitlochry agreed that the main communities and infrastructure had been identified and with the proposed objectives for this area.	No response required.

11	Member of the public	A member of the public noted that Dunning was not listed in the consultation.	Dunning was included within PVA 08/16 in the Cycle 1 FRM Plans, however, following the 2nd national flood risk assessment in 2018, this area has been re-assessed as having a lower level of flood risk. Dunning is therefore no longer designated as a PVA. However, the area is covered by the proposed LPD-wide actions set out in the Tay Local FRM Plan.
12	Member of the public	A member of the public in Coupar Angus noted that: • flood risk is preventing development and that development elsewhere has increased flood risk; • watercourses are flowing slower due to overgrown vegetation and silt. • the A93 road should be raised to prevent road closures and delayed emergency access due to flooding. • flood defences would prevent flooding in Coupar Angus but this would move the problem elsewhere.	The Tay Local FRM Plan includes actions to manage flood risk in this area, including the land use planning action. All new development is required to comply with national and local planning policies, the Council's Supplementary Guidance and to include SUDS to manage surface water. Perth & Kinross Council's Flooding team inspect and assess bodies of water and carry out clearance and repair works where this will substantially reduce flood risk. The primary responsibility for avoiding or managing flood risk remains with landowners. The Council's previous flood study considered the potential options for reducing flood risk in Coupar Angus but unfortunately did not identify an economically viable flood scheme. Flood risk will therefore continue to be managed as set out in the Tay Local FRM Plan.
13	Member of the public	A member of the public in Perth noted: • 8 flood events on the Craigie Burn since 1981; • concern about increased flood risk due to	The Tay Local FRM Plan includes actions to manage flood risk in this area (the Perth PVA 02/08/12 and OTA 253) and in particular the on-going maintenance of the existing Perth Flood Scheme, the on-

		development and global warming; • the lack of scope for improving existing flood defences, e.g., bottlenecks and culverts in the Craigie Burn, and the limited benefit of maintenance works; • that the pace of FRM is too slow to keep pace with the increased frequency of flooding; • that local residents need to be kept informed of any local works; • the on-going risk to property and people and the associated costs; and • it is the public authorities job to manage flood risk.	going Craigie Burn Flood Study and the Perth SWMP. The Council has already undertaken public consultation in connection with these issues and the associated timescales. The Plan also includes other actions including: • Land Use Planning - all new development is required to comply with national and local planning policies, the Council's Supplementary Guidance and to include SUDS to manage surface water. • Maintenance - of watercourses, road drainage and existing flood defences. While certain public authorities have a duty to manage and, where achievable, reduce flood risk overall, the primary responsibility for avoiding or managing flood risk remains with land and property owners.
14	Member of the public	A member of the public in Perth noted the increasing frequency of flooding; the increase in flood risk due to development; the need to improve drainage and not rely on existing drainage or watercourses such as the Craigie Burn; the need for improved communication on actions being taken; that the scale of the flooding over the last 20 years has been understated; that the timescales for action are too slow and that interim changes are also required.	The Tay Local FRM Plan includes actions to manage flood risk in this area (the Perth PVA 02/08/12 and OTA 253) and, in particular, the on-going maintenance of the existing Perth Flood Scheme, the on-going Craigie Burn Flood Study and the Perth SWMP. The Council has already undertaken public consultation in connection with these issues and the associated timescales. The Plan also includes other actions including: • Land Use Planning - all new development is required to comply with national and local planning policies, the Council's Supplementary Guidance and to include SUDS to manage surface water.

			• Maintenance - of watercourses, road drainage and existing flood defences.
15	Member of the public	A local resident in Perth noted: • that flooding wasn't happening 'once every 200 years' – there had been 8 flood events on the Craigie Burn since 1981; • concern about increased flood risk due to development; • concern about how SUDS operate and if they deal with older development; • concern about flooding on the Craigie Burn due to small culverts and blockages and the impact on flooding of adjacent properties; • concern that dredging of the Craigie Burn increases flood risk downstream; • disappointment that Perth & Kinross Council appear to be blaming householders for the flooding, while allowing development further upstream; • the damage done due to surface water flooding; and; • that action to manage flood risk is too slow – flooding is more frequent; and • that more communication is required from the Council.	The Tay Local FRM Plan includes actions to manage flood risk in this area (the Perth PVA 02/08/12 and OTA 253) and in particular the on-going maintenance of the existing Perth Flood Scheme, the on-going Craigie Burn Flood Study and the Perth SWMP. The Council has already undertaken public consultation in connection with these issues and the associated timescales. The Plan also includes other actions including: • Land Use Planning - all new development is required to comply with national and local planning policies, the Council's Supplementary Guidance and to include SUDS to manage surface water. • Maintenance - of watercourses, road drainage and existing flood defences. While certain public authorities have a duty to manage and, where achievable, reduce flood risk overall, the primary responsibility for avoiding or managing flood risk remains with land and property owners.
16	Member of the public	A local resident on the Cavendish Avenue area of Perth noted concern about	The Tay Local FRM Plan includes actions to manage flood risk in this area (the Perth

		increasing flooding and health impacts due to the limited capacity of the sewer system outside their property and development elsewhere in the catchment. This has been an issue for 15-16 years, and they feel that the sewer requires to be upgraded. The resident doesn't feel able to act as this may increase flood risk to adjacent properties.	PVA 02/08/12 and OTA 253). In particular, there is an on-going IFOS (Internal Flooding due to Overloaded Sewers) study being carried out jointly between Scottish Water and Perth and Kinross Council to consider the potential means of managing and, where achievable, reducing flood risk to properties in the vicinity of Cavendish Avenue. Community drop-in sessions will be held early in 2023 to disseminate the findings of this study.
17	Member of the public	A member of the public in the Tomcroy Terrace area of Pitlochry noted concern that the flood map omits to show the flood risk to their neighbour's property, which has been affected twice by an adjacent small burn and surface water runoff from fields. They noted they may be able to help the local community resilience group.	SEPA's indicative flood maps do not always show flooding on small watercourses (due to their limited catchment size). Tomcroy Terrace is affected by flooding from the Wester Kinnaird Burn which was fully considered by the more detailed modelling work carried out under the Pitlochry Flood Study. The study recommended a new watercourse diversion channel on the Wester Kinnaird Burn at Tomcroy Terrace, as part of the wider proposals for a flood scheme in this area. The proposed scheme is included as one of the actions for this area (the Pitlochry PVA 02/08/02 and OTA 254) in the Tay Local FRM Plan. The Council welcomes local efforts to improve flood resilience in Pitlochry.
18	Member of the public	A member of the public noted concern about an increase in flood risk due to development.	The Tay Local FRM Plan includes actions to manage flood risk, including the land use planning action. All new development is required to comply with national and local planning policies, the Council's Supplementary Guidance and

			to include SUDS to manage surface water.
19	Member of the public	A member of the public in Comrie agreed that the main communities and infrastructure had been identified and agreed with the proposed objectives for this area.	No response required.
20	Member of the public	A member of the public in Bridge of Earn is concerned that the Oudenarde and Brickhall industrial sites are not included within the objective target area. They noted concern about the proposed objectives don't include tributaries to the River Earn and need to address the flat topography which limits surface water drainage. They also noted concern that the timescales for actions were too long.	The Tay Local FRM Plan includes actions to manage flood risk in Bridge of Earn (PVA 02/08/14 and OTA 205). The development site at Oudenarde and the Brickhall Industrial site both fall out with OTA 205, although they are within PVA 02/08/14. The flood risk on these sites is being managed through the land use planning action which applies across the whole of the local plan district. The proposed objectives do not mention any watercourses but instead refer to the management of flood risk. Flood risk from any bodies of water and their tributaries will therefore be considered. The Deich and Yellow Burns have been noted against the 'Maintain flood protection scheme' action. The Plan also includes a Flood study to better understand the integrated flooding mechanisms in Bridge of Earn (including surface water) and the potential works required to reduce flood risk in the future. The timescales for all of these actions have been set out in the published Plan.
21	Member of the public	A member of the public noted that all vulnerable areas should be identified, and this should not be limited to affected houses, but should also include	The potentially vulnerable areas (PVA's) were set out in the second national flood risk assessment, published in December 2018. This assessment considered

		infrastructure. They note that Forgandenny isn't included, despite previous flooding, and that the flood risk maps do not show previous flooding. They noted that support is required from both Perth and Kinross Council and SEPA and noted concern that current legislation does not force rural landowners to cooperate on natural flood measures within their land.	homes, businesses and infrastructure. Forgandenny is not within one of the areas designated as a PVA in 2018. Even though there has been previous flooding, the level of flood risk is not significant enough for this area to be included within a PVA. SEPA's indicative flood maps do not always show flooding on small watercourses (due to their limited catchment size). Notwithstanding the above, actions have been set out in the Tay Local FRM Plan to manage flood risk across the local plan district and these apply to Forgandenny. While current legislation does not force rural landowners to undertake flood measures on their land, landowners remain responsible for managing or avoiding flood risk.
22	Member of the public	A member of the public in Coupar Angus agreed that the main communities and infrastructure had been identified and agreed with the proposed package of objectives.	No response required.
23	Local business	A local business owner in Aberfeldy noted that the underlying causes of flooding (the mismanagement of the moorlands in Highland Perthshire) have not been fully addressed. Work and legislation should be introduced immediately. They noted that banning grouse shooting, stopping muir burning and moorland ditchwork, and tree planting would help.	The Tay Local FRM Plan includes actions to manage flood risk in Aberfeldy (PVA 02/08/03 and OTA 183). This area was fully considered by the Aberfeldy Flood Study which was completed in 2019. The study considered a long list of options (including land management techniques) and recommended a flood scheme involving new flood defences in the town. The study findings were disseminated to the local community via drop-in sessions on 20 and 25 June 2019.

24	Community body	Earn Community Council agreed that the main communities and infrastructure had been identified and agreed with the proposed objectives, actions and timescales for the Bridge of Earn area. The community council noted that the local community can help to limit surface water runoff due to monoblocking/ surfacing of private land and by implementing natural flood management.	Perth and Kinross Council welcomes local efforts to improve flood resilience in Bridge of Earn.
25	Other organisation	A group of 72 healthcare professionals in Tayside and North Fife issued an open letter to Tayside and Fife Councillors, in support of climate mitigation for public health. The group are concerned that the worsening climate crisis is a public health emergency, due to several factors including worsening extreme weather, such as heavy rain and flooding. Creating green and blue spaces can provide health benefits; adaptation is required to cope with increased rainfall, and the risk of flooding as climate change worsens.	The publication of the second Tay Local FRM Plan is one of the key actions to help us adapt to climate change. As a society, we need to take action to manage the risk of flooding and its impacts on our lives, recognising that the risk can't ever be removed entirely. This plan takes our knowledge and understanding of flooding and the impacts of climate change and turns it into a set of actions that are planned, prioritised and co-ordinated to tackle flooding in the communities where it affects us the most. Flooding needs to be managed sustainably so that flood risk is reduced without moving the problem elsewhere. It must be done in a way that contributes to the health and wellbeing of communities, supports the protection and regeneration of the environment, improves resilience to climate change and enables a sustainable economy. Actions are needed on all sources of flooding – including from rivers, the sea, surface water and groundwater – to meet the needs of present and future generations while

			also protecting and enhancing the environment.
26	Other organisation	NatureScot noted that they had previously contributed to the 2018 NFRA consultation and were in general agreement with this consultation. They provided various detailed comments on the proposed actions in various OTA's and the need for an HRA to cover some of these, due to on-going and proposed actions within Special Areas of Conservation (SAC). NatureScot also reiterated that Natural Flood Management (NFM) should be used where possible to reduce flood risk.	NatureScot's comments will inform the various future actions to be taken on flood risk. The Council has undertaken a HRA as part of development of the Tay Local FRM Plan and has consulted with NatureScot on this. NFM is considered in the development of the Tay Local FRM Plan and in the long list of actions considered as part of any individual flood studies.
27	Elected members	Two of the Ward 10 elected members (Councillors Barrett & Wilson) in Perth & Kinross Council noted concern about various flooding issues in Perth including: • Surface water flooding from the M90 motorway and the Broxden Park & Ride facility; • Operation of the flood storage ponds at Broxden; • Maintenance of the Scouring and Craigie Burns; • Arrangements for developers completing works and handing them to the Council for adoption; • Flood gate closures on the Perth Flood Scheme; • River and surface water flooding at various locations.	The Tay Local FRM Plan on-going includes actions to manage flood risk in this area (the Perth PVA 02/08/12 and OTA 253); in particular, the maintenance of the existing Perth Flood Scheme, the Craigie Burn Flood Study, the Perth SWMP and the Perth IFOS Project. Perth & Kinross Council's Flooding team inspect and assess bodies of water and carry out clearance and repair works where this will substantially reduce flood risk. The Council also works with developers to ensure that any issues are fully addressed prior to adoption. The primary responsibility for avoiding or managing flood risk remains with landowners. A separate detailed response was sent to the elected members by e-mail on 25 January 2022.

28	Local Authorities	Perth & Kinross Council's flooding team made comments specific to various OTA's; provided updates for the prioritisation of proposed Cycle 2 flood schemes and flood protection works; noted concern over the lack of any Scottish Water actions; and suggested that Scottish Foresty/Forestry & Land Scotland should be including objectives and actions within the published FRM Plans. No comment was made by other services within the Council.	N/A

Perth and Kinross Council informed SEPA of any views expressed during the consultation that were considered to be relevant to SEPA's Flood Risk Management Plan. SEPA subsequently published their consultation digest in March 2022 (which can be viewed here) explaining how they took account of these views in preparing the Flood Risk Management Plans.

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 Climate Change and Sustainability Committee on 19 December 2022. The committee report can be viewed here:

https://perth-and-kinross.cmis.uk.com/perth-and-kinross/Meetings/tabid/70/ctl/ViewMeetingPublic/mid/397/Meeting/3505/Committee/136/Default.aspx

Angus Council

Angus Council presented the findings of the consultation in a report to their Communities Committee on 20 April 2021. The committee report can be viewed here:

https://www.angus.gov.uk/sites/default/files/2021-04/119.pdf

Stirling Council

In line with Stirling Council policies the consultation responses were reviewed by the relevant departments. Stirling Council reviews all FRM Plans by internal review processes up to senior management level and is not required to take to committee for approval.

Fife Council

Fife Council presented the findings of the consultation to the Environment and Protective Services Sub Committee on 21 January 2021.

As noted at the start of this Annex, the public consultation closed on 31 October 2021 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 (LDP2) 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 is 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 Plans 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 Plan 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;

https://www.strategicenvironmentalassessment.gov.scot/

Habitats Regulations Appraisal

The Tay 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 as 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 20 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.

NatureScot was consulted on this conclusion (on 29th July 2022) 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	https://www.pkc.gov.uk/media/45242/Adopted-Local-Development-Plan-2019/pdf/LDP_2_2019_Adopted_Interactive.pdf?m=637122639435770000
Perth & Kinross Council	Local Development Plan (website link)	http://www.pkc.gov.uk/developmentplan
Perth & Kinross Council	Supplementary Guidance - Developers Guidance Note on Flooding & Drainage	https://www.pkc.gov.uk/ldp2floodrisk
Angus Council	Local Development Plan	https://www.angus.gov.uk/sites/default/files/Angus%20local%20development%20plan%20adopted%20September%202016.pdf
Stirling Council	Local Development Plan	https://www.stirling.gov.uk/council-and-committees/managing-information/policy-register/policy-register-infrastructure/local-development-plan/
Fife Council	TAYPlan and SESPlan are the soon to be adopted Strategic Development Plans	https://www.fife.gov.uk/kb/docs/articles/planning-and-building2/planning/development-plan-and-planning-guidance/strategic-development-plans#:~:text=Strategic%20Development%20Plans%20set%20out,Dundee%2C%20Glasgow%20and%20Aberdeen)
Fife Council	Local Development Plan adopted in 2017	https://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.fife.gov.uk/__data/assets/pdf_file/0020/270461/Fife-SMP-2011-Summary2.pdf
Fife Council	Flooding Advice Page	https://www.fife.gov.uk/kb/docs/articles/readyfife/flooding-advice
Scottish Water	General Guidance on Flooding	https://www.scottishwater.co.uk/Your-Home/Your-Waste-Water/Sewer-flooding/Flood-Risk-Management
SEPA	Scotland Flood Risk Management Plans, 2021.	https://www2.sepa.org.uk/frmplans/index.html
SEPA	Scotland FRM Plans - Strategic Environmental Assessment	https://www2.sepa.org.uk/frmplans/strategic-environmental-assessment.html
SEPA	FRM Tay Local Plan District, December 2021 (Cycle 2)	https://www2.sepa.org.uk/frmplans/index.html Direct link to document here: https://www2.sepa.org.uk/frmplans/documents/lpd8-tay-frmp-2021.pdf
SEPA	FRM Tay Local Plan District, December 2015 (Cycle 1)	http://apps.sepa.org.uk/FRMStrategies/tay.html
SEPA	The river basin management plan for the Scotland river basin district: 2021 2027	http://www.sepa.org.uk/environment/water/river-basin-management-planning/ Direct link to Cycle 3 RBMP here: https://www.sepa.org.uk/media/594088/211222-final-rbmp3-scotland.pdf
SEPA	Land use planning guidance	http://www.sepa.org.uk/environment/land/planning/ Direct link to guidance for planning authorities and SEPA, December 2022: https://www.sepa.org.uk/media/594557/sepa-triage-framework-and-standing-advice.pdf
SEPA	Flood Maps	http://www.sepa.org.uk/environment/water/flooding/flood-maps/
Scottish Forestry	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 2022-2027	Cairngorms National Park Partnership Plan 2022-27 - Cairngorms National Park Authority
Cairngorms NPA	Local Development Plan 2021	Local Development Plan 2021 - Cairngorms National Park Authority

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: https://www.pkc.gov.uk/article/14718/Flooding-duties-and-responsibilities or via the direct link: https://www.pkc.gov.uk/media/22028/Schedule-of-watercourse-clearance-and-repair/pdf/2022_02_25_Schedule_of_Watercourse_Clearance_and_Repair_-_2021-22.pdf?m=637813829018370000
Angus Council	Currently only obtainable in hard copy from: County Buildings, Market Street, Forfar, Angus, DD8 3WE
Fife Council	Currently only available on request at: Fife Council, Roads & Transportation Services, Bankhead Central, Bankhead Park, Glenrothes, KY7 6GH
Stirling Council	Currently only available on request at; Endrick House, Kerse Road, Stirling FK7 7SZ

Surface Water Management Plans

As noted in Chapter 2 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

Scottish Water and Perth and Kinross Council completed the Perth Integrated Catchment Study in December 2019. Perth and Kinross Council worked in partnership with Scottish Water on this study. The Council is currently leading on the development

of the Perth Surface Water Management Plan in partnership with Scottish Water and SEPA. This is being 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.

The development of a surface water management plan for Blairgowrie and Rattray commenced in October 2022. This project will also consider the flood risk on the Rattray Burn.

Further surface water management plans are also proposed for Scone, Comrie and Aberfeldy and will commence later in the second 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. This will focus on the interaction of surface water flooding locations which discharge to Forfar Loch and the Forfar Loch to Dean Water interaction. The study will be coordinated through the Tay Local Plan District Partnership.

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 Plan.

Sources of Flooding Described in the Plan

The Tay Flood Risk Management Plan 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.

Groundwater is usually a contributing factor to flooding rather than the primary source. It is caused by water rising up from underlying rocks or flowing from springs. Actions to directly target groundwater are quite limited in the Plan. However, susceptibility to the contributing effects of groundwater on flooding was considered everywhere in the national flood risk assessment which underpins the Plan. Maps of areas where groundwater can contribute to flood risk are available to view on SEPA's website: https://map.sepa.org.uk/floodmap/map.htm

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

- **Reservoir breaches** have been assessed under separate legislation (Reservoirs (Scotland) Act 2011) and so flood risk from reservoir breach is not considered in this plan. There are fundamental differences in probability of flooding and associated management actions for reservoirs. Further information and maps can be found on SEPA's website at: www.sepa.org.uk/regulations/water/reservoirs/

- 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 Plans 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, SEPA have looked to see where the focus of coastal flood risk management studies coincides with areas at risk of coastal erosion as identified by the Dynamic Coast project. Subsequent detailed flood studies and scheme design will need to consider coastal erosion in these areas. This includes ensuring that actions to manage flood risk do not contribute to increased coastal

erosion and where appropriate, help to manage risks from coastal erosion now and in the future.

- **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.As a result, coastal flood risk may be underestimated in some areas and overestimated in others. Where more detailed local models were available from flood studies or from flood warning schemes, these have been incorporated into the development of the flood risk management plans, as have other sources of local information such as records of past flooding. SEPA is currently working on updates to the national coastal flood mapping to better represent the effects of waves. Actions in the plans reflect the best information currently available.

Commonly Used Terms

Below are explanatory notes for the commonly used terms in this local flood risk management plan. A glossary of terms is also available.

- **Reference to flood risk.** To develop this Plan, flood risk has been assessed over a range of likelihoods. For consistency in reporting information, unless otherwise stated, all references to properties or other receptors being 'at risk of flooding' refer to a medium likelihood flood (up to a 0.5% 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 10% chance/likelihood or 0.1% chance/likelihood of flooding in any given year respectively.

Chance / Likelihood of flooding		
Likelihood	**Return Period**	**Annual Chance**
High	10 year	10%
Medium	200 year	0.5%
Low	1000 year	0.1%

- An **Annual Cost of Flooding** is given as an assessment of the 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 many years. It does not mean that value of damage will occur every year: in many years there will be no damages and in some years the damages will be minor. In most places, there will be a very small number of years when much bigger floods occur, and that is when the highest damage costs will occur. To assess the annual cost, this is averaged over many years. In some areas, smaller floods which happen frequently contribute more to the annual cost than much larger events which are rarer. Within the plans, the annual cost of flooding

has been calculated based on the methods set out in the Flood Hazard Research Centre's Multi-Coloured Handbook (2016).

- **History of flooding.** The history of flooding sections of this document report floods that have occurred up to November 2022.

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 **second National Flood Risk Assessment**, which was published in 2018. 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 second 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, 235 Potentially Vulnerable Areas were identified. They are estimated to contain around 90% of the total number of properties at risk.

Improving the understanding of flooding

SEPA has developed **flood hazard and flood risk maps**. 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 SEPA's website at 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 selected to ensure the right combinations are identified. The actions considered in the development of this Plan 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 will be considered further in areas where flood studies are planned.

Annex 7: Glossary

TERMINOLOGY	DEFINITION
Accretion	Accumulation of sediment.
Actions	Activities undertaken to reduce the impact of flooding. Referred to as 'measures' within the FRM Act, Actions in the plans describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities and were subject to public consultation. Section 1.2.6 of the flood risk management plans describes how actions have been selected.
Adaptation Plan	An adaptation plan is intended to inform medium to long term management of an area. This plan should investigate multiple potential climate change scenarios and identify the best route to flood management under each scenario.
Annual Average Damages (AAD)	Depending on its size or severity each flood will cause a different amount of damage to a given area. Annual average damages (AADs) are the theoretical average economic damages caused by flooding when considered over a very long period of time. It does not mean that level of 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 AADs than rarer events. Within the flood risk management plans AADs 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 Manual (2016).
Annual cost of flooding	An annual cost of flooding is an assessment of the 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. See 'annual average damages'.
Appraisal	The process of defining objectives, examining flood management options and weighing up costs, benefits, risks and uncertainties before a decision is made. The appraisal method used in the flood risk management plans is designed to set objectives and identify the most sustainable combination of actions

	to tackle flooding from rivers, the sea and 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. Improved awareness of flood risk and actions that prepare individuals, homes and businesses for flooding can reduce the overall impact. SEPA and other responsible authorities have a duty to raise public awareness of flood risk. This is undertaken both individually and collaboratively by a range of organisations.
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.
Benefit cost ratio (BCR)	A benefit cost ratio summarises the overall value for money of an action or project. It is expressed as the ratio of benefits to costs (both expressed as present value monetary values). A ratio greater than 1:1 indicates that the economic benefits associated with an action are greater than the economic costs of implementation; therefore, this is taken as the threshold of economic viability. It should be recognised that it is not always possible to accurately estimate economic values for all elements of benefit, and benefit cost ratio is just one of a number of techniques used in appraisal.
Blue green infrastructure	Blue green infrastructure refers to use of green pathways to store or transfer excess water 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 all watercourses. See also green infrastructure.
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. • **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	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 activities to manage flood risk.
Coastal flooding	Coastal flooding is where the risk is from the sea. Flooding can result from high sea levels or a combination of high sea levels 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.
Combines sewer	Combined sewers transport sewage from homes and industry and also carry 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 (overflow) (CSO)	Combined sewer overflows are structures designed to ensure any excess water from sewerage systems is discharged in a controlled way and at a specific managed location.
Community facility	Within the plans the term 'community facilities' includes: • Emergency services (police, fire, ambulance, coastguard, and mountain rescue)

	• Educational buildings (crèche, nursery, primary, secondary, further, higher and special education premises) • Healthcare facilities: hospitals, health centres and residential care homes
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.
Cross Border Advisory Group (CBAG)	The Cross Border Advisory Group is a statutory group made up of representatives from the Environment Agency, SEPA, Scottish Water and the 4 local authorities located within the Solway-Tweed River Basin District. This group ensure coordination of plans across the border between England and Scotland.
Cultural heritage site	Historic Environment Scotland maintains lists of buildings of special architectural or historic interest. These buildings are referred to as 'listed buildings'. The highest level of designation is a World Heritage Site. Other designations included in this assessment are scheduled monuments, gardens and designed landscapes, and battlefields.
Culvert	A pipe, channel or tunnel used for the conveyance of a watercourse or surface drainage water under a road, railway, canal or other obstacle.
Damages	Flood damages are categorised as direct or indirect i.e. as a result of the flood water itself, or subsequent knock on effects. Damage to buildings and contents caused by flood water are an example of direct damages, whilst loss of industrial production, travel disruption or stress and anxiety are indirect. Some damages can be quantified in monetary terms, and others can only be described. The potential damages avoided by implementation of a flood risk management action are commonly referred to as the benefits of that action. When

	comparing the effectiveness of different actions, it is useful to consider estimated damages and damages avoided across the lifespan of the action. Within the plans, a 100-year appraisal period has been used as standard. This allows costs, damages and benefits across this time frame to be compared in present value terms. See also 'annual average damages'
Demountable defences	A temporary flood barrier is one that is only installed when the need arises, that is, when flooding is 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.
Deposition	A natural process leading to an accumulation of sediment on a riverbed, 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/or the actions taken to manage flooding.
Embankment	Flood embankments are engineered earth fill structures designed to contain high river levels or protect against coastal flooding. 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 as a result of an action or activity. Impacts can be positive or negative and may vary in significance, scale and duration.
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.	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, 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 earth's crust as a result of the displacement of one side with respect to the other. In Scotland the Great Glen Fault is a major geological fault line cutting diagonally across the Highlands from Fort William to Inverness.
Fetch	The distance travelled by wind or waves across open water.
Flash flood	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, leaving little time for issuing flood warnings or taking action to minimise the impact of flooding.
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 prone to flooding and leave a short time for warning or actions.
Flood	In the terms of the Flood Risk Management (Scotland) Act 2009, 'flood' means a temporary covering by water, from any source, of land not normally covered by water. This does not include a flood solely from a sewerage system, as a result of normal weather or infrastructure drainage. A flood can cause significant adverse impacts on people, property and the environment.
Flood bund	A constructed retaining wall, embankment or dyke designed to protect against flooding to a specified standard of protection.
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 for a particular likelihood of flooding.
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	The probability that a particular size/severity of flood will occur in a given year (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 gates can also be part of operational flood defences or protect individual buildings or sites.
Flood guard	Flood guards cover a variety of types of door and window barriers that can be fitted to individual properties and operated by the owners / occupiers prior to a flood event. They act as a physical barrier to water entering the property and can provide protection against frequent and relatively shallow flooding.
Flood hazard	In terms of the Flood Risk Management (Scotland) Act, hazard refers to the characteristics (extent, depth, velocity) of a flood.
Flood hazard map	Flood hazard maps are required by the Flood Risk Management (Scotland) Act 2009 to display information on the nature of a flood in terms of the source, extent, water level or depth and, where appropriate, velocity of water. Flood hazard and risk maps are referred to collectively as flood maps and are available on the SEPA website.
Floodplain	An area of land that borders a watercourse, an estuary or the sea, over which water flows in time of flood, or would 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 in order to reduce flooding elsewhere.
Flood Prevention (Scotland) Act 1961	The Flood Prevention (Scotland) Act 1961 gave local authorities discretionary powers to build flood prevention schemes. It was superseded by the Flood Risk Management (Scotland) Act 2009.
Flood Prevention Scheme / Flood Protection Scheme (FPS)	A flood protection scheme, as defined by the Flood Risk Management (Scotland) Act 2009, is a scheme developed by a local authority for the management of flood risk. This includes defence measures (flood prevention schemes) formerly promoted under the Flood Prevention (Scotland) Act 1961.
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 potential 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 process, protections and requirements that would come by

	delivering the works as a scheme. These are generally smaller flood defence measures.
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, may help to develop flood schemes and have 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 Flood Risk Management (Scotland) Act 2009, flood risk management planning is undertaken in 6-year cycles. The first planning cycle was 2015-2021. The delivery cycle was lagged by approximately 6 months and was from 2016-2022. The second planning cycle runs from 2021-2027 and the delivery cycle from 2022-2028.
Flood Risk Management Local Advisory Groups	Local Advisory Groups are stakeholder groups convened to advise SEPA and lead local authorities during the preparation of Flood Risk Management Plans. The groups include representatives from a range of sectors, including government agencies like Transport Scotland, National Park Authorities, local authorities, non-government organisations, utility companies and land and asset managers.
Flood Risk Management Plans (FRM Plans)	Flood risk management plans set out a long-term vision for the overall management of flood risk, helping to target investment and coordinate actions across public bodies. They set objectives for tackling flooding in high-risk areas and identify the actions needed to work towards those objectives. The plans are published by SEPA and are approved by the Scottish Ministers. They are prepared in collaboration with all 32 local authorities, national parks, Scottish Water and other organisations with a responsibility or interest in managing flooding. They are also shaped in consultation with the public.
Flood Risk Management Strategies (FRM Strategies)	The term used for the first set of flood risk management plans, which were published in December 2015. The strategies have since been replaced by the 2021 flood risk management plans. The term ‘flood risk management plan’ is consistent with the Flood Risk Management (Scotland) Act 2009 and other areas of the UK.

Flood risk map	The risk map complements the flood hazard maps, providing detail on the impacts of flooding on people, the economy and the environment. Flood hazard and risk maps are referred to collectively as flood maps and are available on the SEPA website.
Flood study	Flood studies aim to refine understanding of the hazard and risk associated with flooding in a particular area, catchment or coastline. They involve detailed assessment of flood hazard and/or risk and may develop potential options for managing flood risk.
Flood wall	A flood defence feature used to defend an area from flood water to a specified standard of protection.
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.
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.
Forestry and Land Scotland	On the 1st of April 2019, Forestry and Land Scotland was formed to take forward the work previously undertaken by Forestry Commission Scotland and Forest Enterprise Scotland.
Gabion	A metal cage filled with rocks 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 green infrastructure’.

Groundwater flooding	This type of flooding is caused by water rising up from underlying rocks or flowing from springs. In Scotland 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. 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 local authority	A local authority responsible for the production, consultation, publication and review of a local flood risk management plan. A flood risk management plan and local flood risk management plan is produced for each of the 14 Local Plan Districts in Scotland.
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 FRM Plan)	The local flood risk management plans, complement the flood risk management plans and are published by the lead local authority for each Local Plan District every 6 years. The local plans provide more detail on how the actions set out in the flood risk management plans will be delivered including information on the funding, timing and co-ordination of actions.
Local Nature Reserve	A local nature reserve is a protected area of land designated by a local authority because of its local special natural interest and / or educational value. 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 (LPDs) in Scotland.
Local Plan District Partnerships	Each Local Plan District has established a local partnership comprised of local authorities, SEPA and Scottish Water (and others as appropriate). These partnerships are distinct from the local advisory groups, and they retain clear responsibility for delivery of the flood risk management 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 treeline.
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 flood risk management plans and local flood risk management plans.
National Flood Risk Assessment (NFRA)	The national flood risk assessment provides a high-level overview of flood risk in Scotland. First published in December 2011, the NFRA provides the information needed to take a strategic approach to flood management. Information from the national

	flood risk assessment on the level of risk across the country is used to determine the potentially vulnerable areas (see 'potentially vulnerable areas'). The NFRA was reviewed and updated for the second flood risk management cycle in 2018 and is available to view on the SEPA website.
Natural flood management (NFM)	A set of techniques that aim to work with natural processes (or nature) to manage flood risk.
NatureScot	On the 1st of May 2020 Scotland's national nature agency, Scottish Natural Heritage changed its name to NatureScot.
Non-residential properties	Properties that are not used for people to live in, such as shops or other public, commercial or industrial buildings.
Objectives	The objectives in the plans provide a common goal and shared ambition for managing flooding. The objectives have been set by SEPA and agreed with flood risk management authorities and were identified by considering the causes and impacts of flooding in each target area.
Objective Target Area (OTA)	Objective target areas are based on communities at risk of flooding. These are situated within potentially vulnerable areas and should benefit from actions to reduce flood risk. Objectives and actions to manage flooding have been set for each objective target area in the flood risk management plans. To benefit the community, actions may be applied outside the objective target area. Note that this is referred to as a 'target area' in SEPA's flood risk management plans.
One in 200-year flood	See 'likelihood of flooding' and 'return period'.
Options appraisal study	An options appraisal study identifies and assesses a range of options that achieve flood risk management objectives whilst delivering other economic, social and environmental benefits. This helps to inform the decision-making process and identify how options work together to identify a preferred option for managing flooding within an area.
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)	Potentially vulnerable areas are catchments identified as having the greatest potential risk of flooding. These areas are the focus of further assessment and may require a multi-agency

	response to manage the flood risk. 233 PVAs were identified in the 2018 national flood risk assessment.
Preferred option	A preferred option identifies the collection of flood management options which when combined offer the most suitable way of managing flooding within an area, based on the economic, social and environmental benefits of the options.
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 flood resilience / 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 flood resilience scheme / 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 Scottish Water 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	Responsible authorities are designated under the Flood Risk Management (Scotland) Act 2009 and associated legislation. The current responsible authorities are local authorities, Scottish Water and the National Park Authorities. Responsible authorities, along with SEPA and Scottish Ministers, have specific duties in relation to their flood risk related functions.
Return period	A measure of the rarity of a flood event. It is the statistical average length of time separating flood events of a similar size. (See ‘likelihood’).
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 flood risk management 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.
Sewer flood risk assessment	Scottish Water carry out an assessment of sewer flood risk within priority sewer catchments to improve understanding of the performance of the urban drainage network.
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
Standard of protection (SoP)	All flood protection structures are designed to be effective up to a specified flood likelihood (standard of protection). For events beyond this standard, flooding will occur. The chosen standard of protection will determine the required defence height and / or capacity.
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. Flood risk management plan actions in this category include: surface water management plans, integrated catchment studies and assessment of flood risk from sewerage systems (Flood Risk Management (Scotland) Act Section 16) by Scottish Water.
Surface water runoff	The flow of water from rain, snow melt or other sources over land.
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.
Sustainable flood risk management	The sustainable flood risk management approach aims to meet human needs, whilst preserving the environment so that these needs can be met not only in the present, but also for future generations. The delivery of sustainable development is generally recognised to reconcile 3 pillars of sustainability – environmental, social and economic.

Target Area	See ‘objective target area’
Training wall	A wall, bank or jetty built to confine and direct the flow of water.
UK Climate Change Projections (UKCP18)	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. The high emissions scenario refers to the RCP8.5 emission scenario. See the UKCP18 climate change projections report for details.
Utility assets	Within the flood risk management plans, 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 occurs when water passes over a flood wall or other structure as a result of wave action. Wave overtopping may lead to flooding particularly in exposed coastal locations.

Annex 8: Licencing & Acknowledgements

The information described in this Annex relates to the Figures and Maps that have been generated by SEPA and have been reproduced in this Local Flood Risk Management Plan from the Tay Flood Risk Management Strategy. The Tay Local Plan District Partners gratefully acknowledge the cooperation and input that various parties have provided, including inter alia, the following organisations:

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