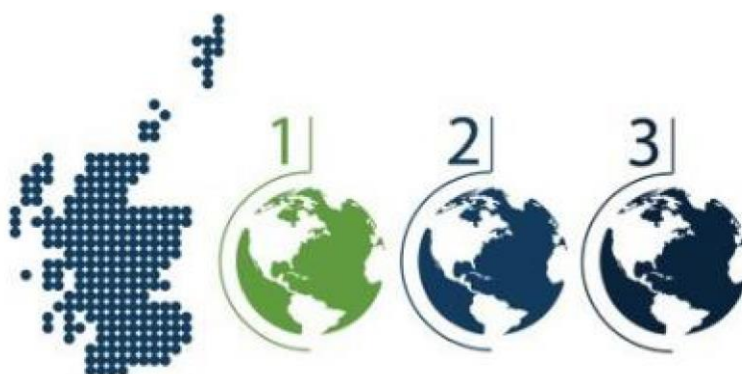


Tay Local Plan District (LPD 8)

Draft flood risk management plans 2022-2028

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07747 627671

If you wish to post your comments, please mark them for the attention of FRM consultation and send them to:

Scottish Environment Protection Agency
Angus Smith Building
6 Parklands Avenue
Eurocentral
Holytown
North Lanarkshire
ML1 4WQ

This document has been produced in collaboration with:



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ÙGH DARRAS PÀIRC NÀISEANTA A'
MHONAIDH RUAIDH

Tay Local Plan District (LPD 8)

Draft flood risk management plans 2022-2028

The Tay Local Plan District covers around 6,100km² and has a population of approximately 160,000 people. 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. 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.

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 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. Currently it is estimated that there are around 13,000 people and 9,000 homes and businesses at risk from flooding. 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.

Actions across the Local Plan District

SEPA and responsible authorities carry out actions in all areas of the Local Plan District which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. The following actions are due to take place over the next six years, and most of these are carried out on an ongoing basis.

	Awareness raising
Action	<p>SEPA the responsible authorities and other organisations such as the Scottish Flood Forum work together to help communities understand the risk of flooding and what actions individuals can take through national and local initiatives. Improved awareness of flood risk and actions that prepare individuals, homes and businesses for flooding can reduce the overall impact of flooding.</p> <p>Local authorities undertake additional awareness raising activities when developing any specific project proposals and will engage with community resilience groups and local communities.</p> <p>Scottish Flood Forum support flood risk communities by raising community awareness, promoting self-help, developing community groups and establish a recovery support programme after a flood.</p>

Emergency response and plans	
Action	<p>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.</p>

Flood forecasting	
Action	<p>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.</p>

Flood Warning Development Framework	
Action	<p>SEPA will publish a new Flood Warning Development Framework by March 2022, which will detail its ambitions and strategic actions to maintain and improve our flood warning service across Scotland.</p> <p>SEPA will continue to develop the Scottish Flood Forecast, a 3 day forecast of flood risk across Scotland and bring together all live information such as flood warnings, river levels and rainfall data into a central hub easily accessible for the public.</p> <p>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.</p>

	Guidance development
Action	<p>The Scottish Government and SEPA will develop and update guidance to inform flood risk management projects. This guidance will be produced by June 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.</p> <p>Technical guidance to support flood risk management partners will also be reviewed and updated by SEPA where required.</p>

	Hazard mapping updates
Action	<p>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. (Flood Maps link) 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.</p>

	Land use planning
Action	<p>National planning policies set out the Scottish Ministers' priorities for the operation of the planning system and 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, the Scottish Planning Policy and accompanying Planning Advice notes restrict development within the floodplain and limit exposure of new receptors to flood risk. Local planning policies may place further requirements within their area of operation to restrict inappropriate development and prevent unacceptable risk.</p> <p>Local authorities, SEPA and Scottish Water all have a role to support sustainable development.</p>

	Maintenance
Action	<p>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.</p> <p>Scottish Water will continue to undertake risk-based inspection, maintenance and repair on the public sewer network.</p> <p>Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk.</p>

	Natural flood management mapping
Action	SEPA will review and update the opportunities mapping for natural flood management. This work will focus on the suburban environment and look at linking blue-green infrastructure with the surrounding natural catchment. 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 and recreation.

	National flood risk assessment
Action	Understanding the future impacts of climate change remains a central theme of SEPA's flood risk management activity. SEPA will use the latest UK information on climate change to support an improved understanding of the changes in flood risk across the 21 st century. SEPA will use the most suitable data to develop the National Flood Risk Assessment 2024. This assessment will be used to identify future Potentially Vulnerable Areas.

	National surface water mapping
Action	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 six-year cycle SEPA will look to vastly improve its national understanding of surface flood risk by undertaking a wholesale update of the national surface water maps to reflect developments in data and understanding, including the impact of climate change.

	Reservoirs
Action	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.

	Scottish Flood Defence Asset Database
Action	We are in a global climate emergency. The evidence is clear. In Scotland one of the main impacts of climate change will be increased flooding. SEPA will push forward the development of adaptation planning within Scotland. This work will start by reviewing and developing our understand of how and when Scotland's flood defence assets can be adapted to continue to provide vital protection from flooding in the future.

	Self help
Action	<p>Everyone is responsible for protecting themselves and their property from flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property flood resilience measures, signing up to Floodline, engaging with their local flood group, and ensuring that properties and businesses are insured against flood damage.</p> <p>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.</p>

Potentially Vulnerable Areas

Potentially Vulnerable Areas (PVA) were designation in 2018 based on the potential current or future risk from all sources of flooding. This designation was informed by the National Flood Risk Assessment ([link](#)). As part of continued analysis of flood risk, the National Flood Risk Assessment and Potentially Vulnerable Areas (PVA) will be reviewed every six years to take on board any new information. There are 14 Potentially Vulnerable Areas (PVA) within this Local Plan District. Following sections provide more information on these areas.

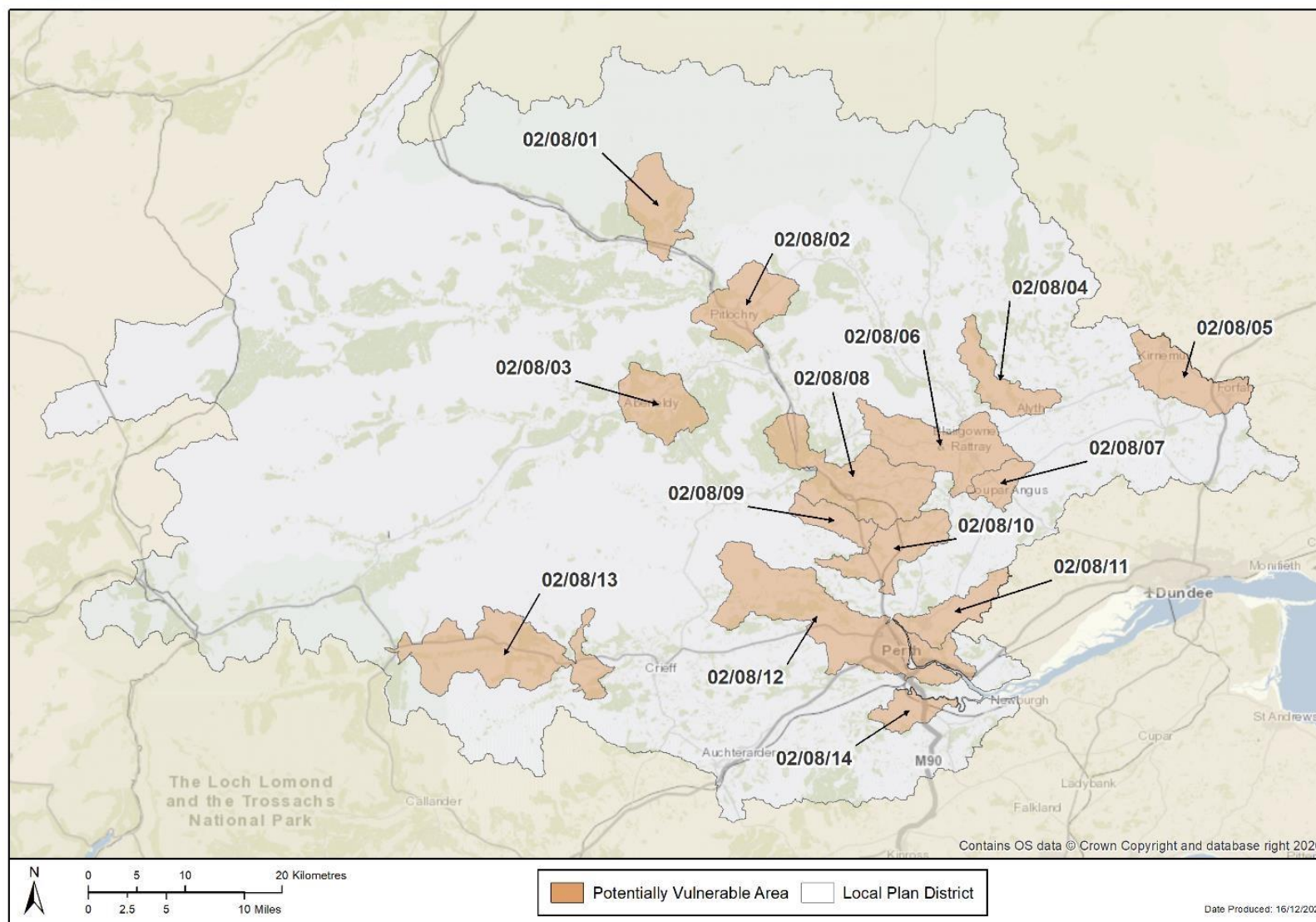


Figure 1. Potentially Vulnerable Areas in Tay Local Plan District

LPD 8 Tay - table of contents

Click the [blue text](#) to select your area of interest

PVA Ref	PVA NAME	Local authority
02/08/01	Blair Atholl	Perth & Kinross
02/08/02	Pitlochry	Perth & Kinross
02/08/03	Aberfeldy and Weem	Perth & Kinross
02/08/04	Alyth	Perth & Kinross
02/08/05	Kirriemuir and Forfar	Angus
02/08/06	Blairgowrie and Rattray	Perth & Kinross
02/08/07	Coupar Angus	Perth & Kinross
02/08/08	Dunkeld and Birnam	Perth & Kinross
02/08/09	Bankfoot	Perth & Kinross
02/08/10	Luncarty	Perth & Kinross
02/08/11	Scone	Perth & Kinross
02/08/12	Perth and Almondbank	Perth & Kinross
02/08/13	Comrie	Perth & Kinross
02/08/14	Bridge of Earn	Perth & Kinross

02/08/01 (Blair Atholl)

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

There is 1 area in this Potentially Vulnerable Area, which has been the focus of further assessment, this is identified below. Further information on the proposed objectives and actions to manage flood risk within this area is provided below.

List of target areas

Blair Atholl (target area 172)

[Summary](#)
[Location map](#)

Location map

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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 is improved for river flooding by a SEPA led modelling project that improved the existing flood maps.

There is a record 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.

In each target area, SEPA and the responsible authorities have set objectives for the management of flood risk. In some locations, the objectives provide a short-term direction that will be reviewed and updated when more information is available. In others they provide a long-term direction for the management of flooding within a community. The objectives along with the current understanding of flood risk help to identify the actions that are required in the short and long term. It may take several years or multiple 6 year cycles to achieve the identified objectives, but they set a common goal for multiple agencies. The following package of objectives have been established for this area. The objectives must be considered alongside national principles to manage flood risk. These include:

- Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.
- Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.
- Consider whole catchments and coastlines and work with natural processes and the environment to deliver multiple outcomes.

Objective ref	Objective type	Objective description
1721	Avoid flood risk	Avoid development that increases flood risk in Blair Atholl
1722	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Blair Atholl
1723	Reduce flood risk	Reduce the risk of river flooding in Blair Atholl

What actions are proposed for this area?

This section provides information on the draft proposed actions for this target area. The proposed actions take account of the understanding of flood risk and the package of objectives set for the area. Actions will be coordinated to achieve maximum benefit; this will be determined once the actions have been finalised. The proposed actions are draft for consultation and are provided for comment. Your comments will help shape future flood risk management. The delivery of the proposed actions is subject to available funding and resources.

Actions proposed to start before June 2028

Community engagement (Ref: 17201)	
Action	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk.
Action detail	Community engagement will continue in connection with ongoing projects and activities. Ongoing Covid-19 restrictions may impact the format of this awareness raising.
Coordination	The action delivery lead is Perth and Kinross Council. Awareness raising and community engagement will take place around any projects and will be coordinated through the Local Plan District Partnership.

Community resilience group (Ref: 17202)	
Action	The group of community volunteers work to prepare and put in practice their Community Resilience Plan and be supported by the local authority.
Action detail	The Blair Atholl and Struan Community Resilience Group forms part of the A9 Resilience Plan. Perth and Kinross Council will continue to communicate with 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	The action delivery lead is the community. Perth and Kinross Council will continue to coordinate with the Blair Atholl and Struan Community Resilience Group on a priority needs basis where resources allow.

Flood study (Ref: 17203)	
Action	An understanding of flood risk and associated issues in the area is to be developed, which may include surveys and modelling and should consider the impacts of climate change on flood risk.
Action detail	A flood study has been recommended for Blair Atholl. Perth and Kinross Council will engage a consulting engineer to investigate the fluvial flood risk and identify potential options for managing flood risk. 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	The action delivery lead is Perth and Kinross Council. The study will be coordinated through the Local Plan District Partnership and with other related actions.

SEPA and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

Working in partnership is at the heart of flood risk management, responsible authorities and SEPA regularly work together in all areas to improve the coordination of flood management. Working across organisations and groups contributes to sustainable ways of managing current and future flood risk in a community. The potential for joint working will be further explored following the consultation feedback.

02/08/02 (Pitlochry)

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

There is 1 area in this Potentially Vulnerable Area, which has been the focus of further assessment, this is identified below. Further information on the proposed objectives and actions to manage flood risk within this area is provided below.

List of target areas

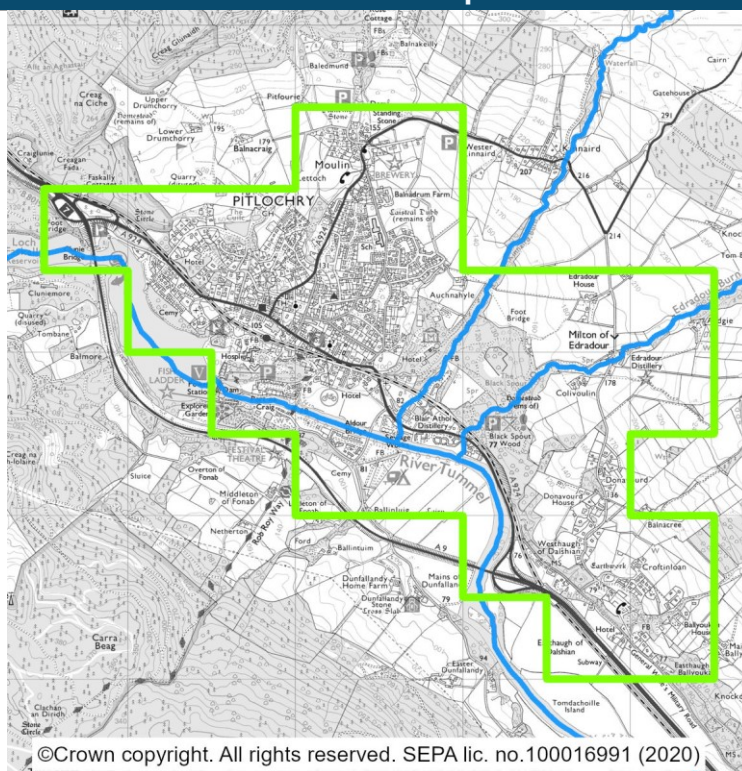
Pitlochry (target area 254)

Pitlochry (target area 254)

Summary

The town of Pitlochry is located on the banks of the River Tummel within the Perth and Kinross Council area. The main source of flooding is river flooding from the River Tummel and small watercourses. The local authority 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.

Location map



What is the 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 completion of the Pitlochry Flood Study in 2018. The national understanding of surface water flooding is improved by the 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.

What are the objectives for the area?

In each target area, SEPA and the responsible authorities have set objectives for the management of flood risk. In some locations, the objectives provide a short-term direction that will be reviewed and updated when more information is available. In others they provide a long-term direction for the management of flooding within a community. The objectives along with the current understanding of flood risk help to identify the actions that are required in the short and long term. It may take several years or multiple 6 year cycles to achieve the identified objectives, but they set a common goal for multiple agencies. The following package of objectives have been established for this area. The objectives must be considered alongside national principles to manage flood risk. These include:

- Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.
- Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.
- Consider whole catchments and coastlines and work with natural processes and the environment to deliver multiple outcomes.

Objective ref	Objective type	Objective description
2541	Avoid flood risk	Avoid development that increases flood risk in Pitlochry
2542	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Pitlochry
2543	Reduce flood risk	Reduce the risk of river flooding from the small watercourses in Pitlochry
2544	Reduce flood risk	Reduce the risk of flooding from the culverts on the A9 in the vicinity of Dalshian area in Pitlochry

What actions are proposed for this area?

This section provides information on the draft proposed actions for this target area. The proposed actions take account of the understanding of flood risk and the package of objectives set for the area. Actions will be coordinated to achieve maximum benefit; this will be determined once the actions have been finalised. The proposed actions are draft for consultation and are provided for comment. Your comments will help shape future flood risk management. The delivery of the proposed actions is subject to available funding and resources.

Actions proposed to start before June 2028

Flood protection scheme (Ref: 25401)	
Action	The selected preferred approach for managing flood risk is to be designed, including consideration of the long-term impacts of climate change. The flood scheme is to be built once statutory approval has been secured.
Action detail	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. The responsible authority proposes this action as the best option for managing flood risk in this community. The delivery of this action is subject to funding being made available. 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.
Coordination	The action delivery lead is Perth and Kinross Council. The Pitlochry Flood Protection Scheme will be coordinated through the Tay Local Plan District Partnership. The flood protection scheme will be coordinated with other related actions.

Community engagement (Ref: 25402)	
Action	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk.
Action detail	Community engagement will continue in connection with ongoing projects and activities. Perth and Kinross Council will continue to coordinate with the Pitlochry and Moulin Community Resilience Group on a priority needs basis where resources allow.
Coordination	Action delivery lead is Perth and Kinross Council. Awareness raising and community engagement will take place around any projects and will be coordinated through the Tay Local Plan District Partnership.

Community resilience group (Ref: 25403)

Action	The group of community volunteers work to prepare and put in practice their Community Resilience Plan and be supported by the local authority.
Action detail	Perth and Kinross Council will continue to liaise with the Pitlochry and Moulin Community Resilience Group.
Coordination	Action delivery lead is the community. Perth and Kinross Council will continue to coordinate with the Pitlochry and Moulin Community Resilience group on a priority needs basis where resources allow.

Flood protection works (Ref: 25404)

Action	The flood scheme/works is to be built following agreement of the design, costs and timescales.
Action detail	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	Action delivery lead is Transport Scotland and coordination will be determined once the actions have been finalised

Flood warning maintenance (Ref: 25405)

Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the River Tay flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

Actions proposed after June 2028

The following actions are proposed to take place after June 2028. These will be reviewed in 2026, considering added information at that time, to ensure they are still the most appropriate actions for the community.

Flood warning maintenance (Ref: 25406)

Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should investigate improvements to the River Tay flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

SEPA and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

Working in partnership is at the heart of flood risk management, responsible authorities and SEPA regularly work together in all areas to improve the coordination of flood management. Working across organisations and groups contributes to sustainable ways of managing current and future flood risk in a community. The potential for joint working will be further explored following the consultation feedback.

02/08/03 (Aberfeldy and Weem)

This area is designated as a Potentially Vulnerable Area due to flood risk to Aberfeldy and Weem. The main source of flooding is the River Tay and 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.

There are 2 areas in this Potentially Vulnerable Area, which have been the focus of further assessment, these are listed below. Further information on the proposed objectives and actions to manage flood risk within this area is provided below.

List of target areas

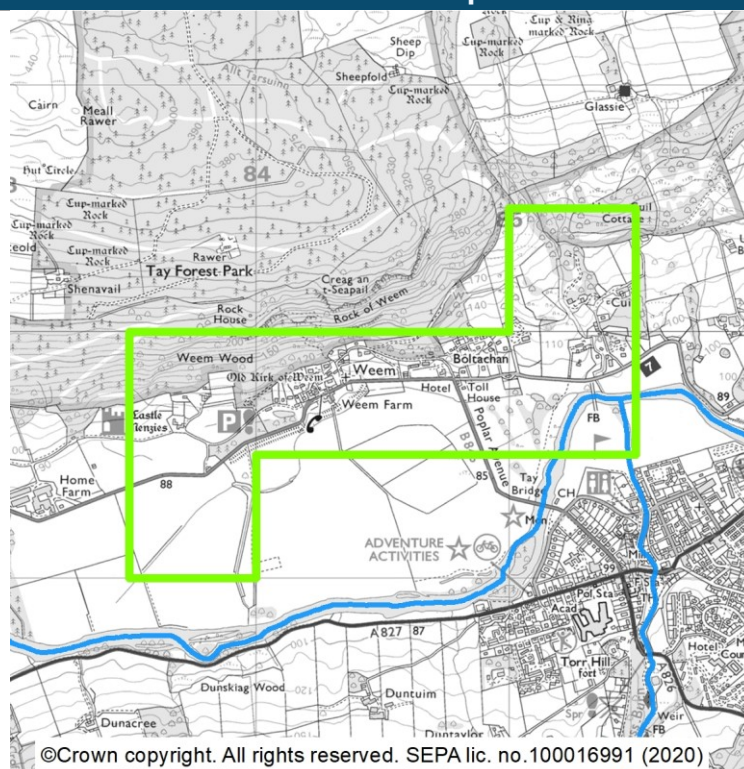
Weem	(target area 182)
Aberfeldy	(target area 183)

Weem (target area 182)

Summary

The village of Weem is located near the town of Aberfeldy within the Perth and Kinross Council area. 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.

Location map



What is the 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 Aberfeldy Flood Study completed in 2019 which 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.

What are the objectives for the area?

In each target area, SEPA and the responsible authorities have set objectives for the management of flood risk. In some locations, the objectives provide a short-term direction that will be reviewed and updated when more information is available. In others they provide a long-term direction for the management of flooding within a community. The objectives along with the current understanding of flood risk help to identify the actions that are required in the short and long term. It may take several years or multiple 6 year cycles to achieve the identified objectives, but they set a common goal for multiple agencies. The following package of objectives have been established for this area. The objectives must be considered alongside national principles to manage flood risk. These include:

- Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.
- Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.
- Consider whole catchments and coastlines and work with natural processes and the environment to deliver multiple outcomes.

Objective ref	Objective type	Objective description
1821	Avoid flood risk	Avoid development that increases flood risk in Weem
1822	Avoid flood risk	Avoid an increase in flood risk by the appropriate management and maintenance of Weem Flood Protection Scheme
1823	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Weem

What actions are proposed for this area?

This section provides information on the draft proposed actions for this target area. The proposed actions take account of the understanding of flood risk and the package of objectives set for the area. Actions will be coordinated to achieve maximum benefit; this will be determined once the actions have been finalised. The proposed actions are draft for consultation and are provided for comment. Your comments will help shape future flood risk management. The delivery of the proposed actions is subject to available funding and resources.

Actions proposed to start before June 2028

Maintain flood protection scheme (Ref: 18201)	
Action	The existing flood defences are to be maintained by the asset owner to ensure they are in good condition.
Action detail	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	The action delivery lead is Perth and Kinross Council. Perth and 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, SNH, landowners and other stakeholders as required. The maintenance of the flood scheme will also be coordinated with related actions.

Flood warning maintenance (Ref: 18202)	
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the River Tay flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

Actions proposed after June 2028

The following actions are proposed to take place after June 2028. These will be reviewed in 2026, considering added information at that time, to ensure they are still the most appropriate actions for the community.

Flood warning maintenance (Ref: 18203)	
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should investigate improvements to the River Tay flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

Adaptation plan (Ref: 18204)	
Action	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.
Action detail	An adaptation plan will be developed to cover existing flood protection schemes in the Perth and Kinross Council area. The plan will aim to monitor the impacts of climate change on flood risk, including the impact on existing flood schemes, and to develop a long-term flood risk management approach.
Coordination	The action delivery lead is Perth and Kinross Council. The adaptation plan will be coordinated through the Local Plan District Partnership and with other related actions.

SEPA and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

Working in partnership is at the heart of flood risk management, responsible authorities and SEPA regularly work together in all areas to improve the coordination of flood management. Working across organisations and groups contributes to sustainable ways of managing current and future flood risk in a community. The potential for joint working will be further explored following the consultation feedback.

Summary

Aberfeldy is located on the River Tay within the Perth and Kinross Council area. The main source of flooding in Aberfeldy is river flooding, however there is also a risk from surface water flooding. The local authority has carried out a flood study in this area which estimated that there are approximately 128 homes and 40 businesses are at risk of flooding.

Location map

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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 Aberfeldy flood study completed in 2019. The national understanding of surface water flooding is improved by a sewer flood risk assessment.

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 flood 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.

In each target area, SEPA and the responsible authorities have set objectives for the management of flood risk. In some locations, the objectives provide a short-term direction that will be reviewed and updated when more information is available. In others they provide a long-term direction for the management of flooding within a community. The objectives along with the current understanding of flood risk help to identify the actions that are required in the short and long term. It may take several years or multiple 6 year cycles to achieve the identified objectives, but they set a common goal for multiple agencies. The following package of objectives have been established for this area. The objectives must be considered alongside national principles to manage flood risk. These include:

- page 24 of 89

Objective ref	Objective type	Objective description
1831	Avoid flood risk	Avoid- development that increases flood risk in Aberfeldy
1832	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Aberfeldy
1833	Reduce flood risk	Reduce the risk of surface water and river flooding from the River Tay and Moness Burn in Aberfeldy

What actions are proposed for this area?

This section provides information on the draft proposed actions for this target area. The proposed actions take account of the understanding of flood risk and the package of objectives set for the area. Actions will be coordinated to achieve maximum benefit; this will be determined once the actions have been finalised. The proposed actions are draft for consultation and are provided for comment. Your comments will help shape future flood risk management. The delivery of the proposed actions is subject to available funding and resources.

Actions proposed to start before June 2028

Flood protection scheme (Ref: 18301)	
Action	The selected preferred approach for managing flood risk is to be designed, including consideration of the long-term impacts of climate change. The flood scheme is to be built once statutory approval has been secured.
Action detail	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 should 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 is to be progressed, in line with the recommendations of the Aberfeldy flood study. The flood study recommendations also included an investigation of how natural flood management can assist in managing flood risk in this area. This work is to also include ongoing community engagement as the project progresses. The responsible authority proposes this action as the best viable option for managing flood risk in this community. The delivery of this action is subject to funding being made available. Once the flood protection scheme has been confirmed and the detailed design completed, the next stages are procurement then 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 Aberfeldy Flood Protection Scheme would commence when the scheme is complete in accordance with the inspection and maintenance regime.
Coordination	The action delivery lead is Perth and Kinross Council. The Aberfeldy Flood Protection Scheme will be coordinated through the Tay Local Plan District Partnership and with other related actions.

Surface water management plan (Ref: 18302)

Action	Areas at risk of heavy or prolonged rainfall causing flooding due to water ponding on man-made surfaces or overwhelming the drainage system are to be identified. These priority areas will provide a baseline for the identification of next steps in managing water ponding or over-whelmed drainage systems. This should guide adaptive planning to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	Perth and 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	The action delivery lead is Perth and Kinross Council. The plan will be coordinated through the Tay Local Plan District Partnership and with other related actions. 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 plans.

Flood warning maintenance (Ref: 18303)

Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the River Tay flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

Community resilience group (Ref: 18304)

Action	The group of community volunteers work to prepare and put in practice their Community Resilience Plan and be supported by the local authority.
Action detail	Perth and Kinross Council will continue to liaise with the Aberfeldy Resilience Group and the Tayside Waders Group.
Coordination	The action delivery lead is the community. Perth and Kinross Council will continue to coordinate with the Aberfeldy Resilience Group and the Tayside Waders on a priority needs basis where resources allow.

Community engagement (Ref: 18305)

Action	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk.
Action detail	Awareness raising and community engagement will continue in connection with ongoing projects and activities. 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.
Coordination	The action delivery lead is Perth and Kinross Council. Awareness raising and community engagement will be coordinated through the Local Plan District Partnership.

Actions proposed after June 2028

The following actions are proposed to take place after June 2028. These will be reviewed in 2026, considering added information at that time, to ensure they are still the most appropriate actions for the community.

Flood warning maintenance (Ref: 18306)	
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should investigate improvements to the River Tay flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

SEPA and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

Working in partnership is at the heart of flood risk management, responsible authorities and SEPA regularly work together in all areas to improve the coordination of flood management. Working across organisations and groups contributes to sustainable ways of managing current and future flood risk in a community. The potential for joint working will be further explored following the consultation feedback.

02/08/04 (Alyth)

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.

There is 1 area in this Potentially Vulnerable Area, which has been the focus of further assessment, this is identified below. Further information on the proposed objectives and actions to manage flood risk within this area is provided below.

List of target areas

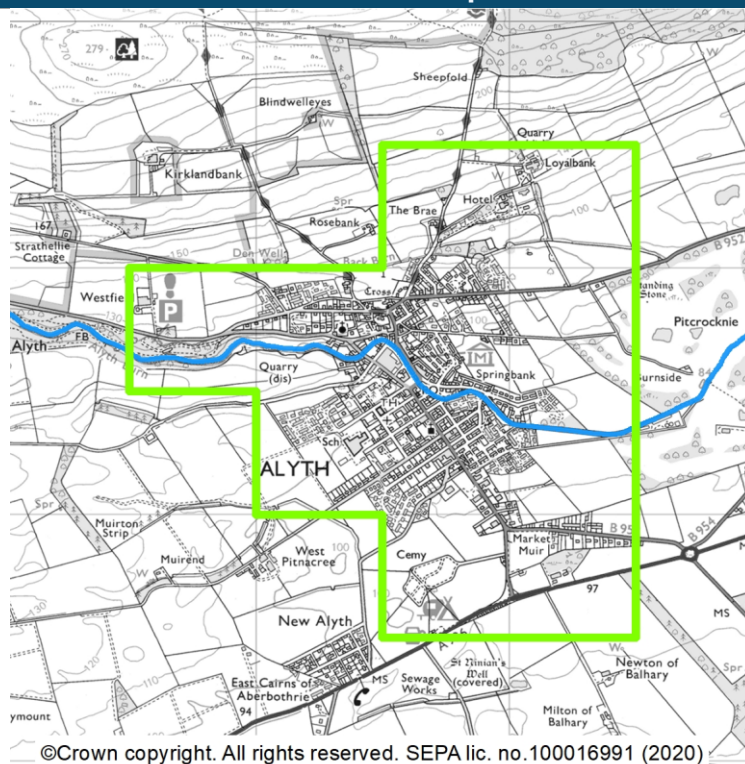
Alyth (target area 189)

Alyth (target area 189)

Summary

The town of Alyth is located 6km north east of Blairgowrie within the Perth and Kinross Council area. 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.

Location map



What is the 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. A previous flood study 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 further notable flood occurred in August 2020, when the Alyth Burn and other small watercourses overtopped resulting in flooding of properties.

What are the objectives for the area?

In each target area, SEPA and the responsible authorities have set objectives for the management of flood risk. In some locations, the objectives provide a short-term direction that will be reviewed and updated when more information is available. In others they provide a long-term direction for the management of flooding within a community. The objectives along with the current understanding of flood risk help to identify the actions that are required in the short and long term. It may take several years or multiple 6 year cycles to achieve the identified objectives, but they set a common goal for multiple agencies. The following package of objectives have been established for this area. The objectives must be considered alongside national principles to manage flood risk. These include:

- Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.
- Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.
- Consider whole catchments and coastlines and work with natural processes and the environment to deliver multiple outcomes.

Objective ref	Objective type	Objective description
1891	Avoid flood risk	Avoid development that increases flood risk in Alyth
1892	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Alyth
1893	Reduce flood risk	Reduce the risk of river flooding from the Alyth Burn in Alyth.

What actions are proposed for this area?

This section provides information on the draft proposed actions for this target area. The proposed actions take account of the understanding of flood risk and the package of objectives set for the area. Actions will be coordinated to achieve maximum benefit; this will be determined once the actions have been finalised. The proposed actions are draft for consultation and are provided for comment. Your comments will help shape future flood risk management. The delivery of the proposed actions is subject to available funding and resources.

Actions proposed to start before June 2028

Community engagement (Ref: 18901)	
Action	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk.
Action detail	Community engagement will continue in connection with ongoing projects and activities. This will include continuing to support the Alyth Community Support Group and updating the community on the outcomes of the natural flood management study. Ongoing Covid-19 restrictions may impact the format of this awareness raising activity.
Coordination	The action delivery lead is Perth and Kinross Council. Awareness raising and community engagement will take place around any projects and will be coordinated through the Local Plan District Partnership.

Community resilience group (Ref: 18902)	
Action	The group of community volunteers work to prepare and put in practice their Community Resilience Plan and be supported by the local authority.
Action detail	The Alyth Community Support Group has been set up and has developed a community resilience plan, alongside other resilience work. The plan should be reviewed and updated regularly.
Coordination	The action delivery lead is the community. Perth and Kinross Council will continue to coordinate with the Alyth Community Support Group on a priority needs basis where resources allow.

Flood study (Ref: 18903)	
Action	An understanding of flood risk and associated issues in the area is to be developed, which may include surveys and modelling and should consider the impacts of climate change on flood risk.
Action detail	It is recommended that a natural flood management study is carried out for Alyth as identified in the published cycle 1 Tay Flood Risk Management Strategy and Local Flood Risk Management Plan. The study should consider both current and long term flood risk and how the area will adapt to changes in flood risk due to climate change.
Coordination	The action delivery lead is Perth and Kinross Council. The flood study will be coordinated through the Local Plan District Partnership and with other related actions.

SEPA and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

Working in partnership is at the heart of flood risk management, responsible authorities and SEPA regularly work together in all areas to improve the coordination of flood management. Working across organisations and groups contributes to sustainable ways of managing current and future flood risk in a community. The potential for joint working will be further explored following the consultation feedback.

02/08/05 (Kirriemuir and Forfar)

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

There are 2 areas in this Potentially Vulnerable Area, which have been the focus of further assessment, these are listed below. Further information on the proposed objectives and actions to manage flood risk within this area is provided below.

List of target areas

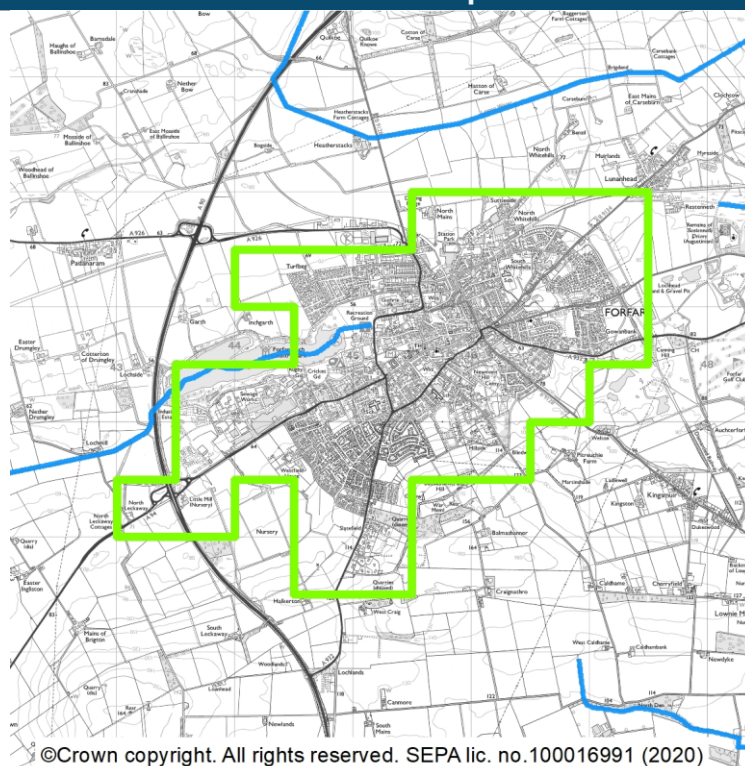
Forfar	(target area 230)
Kirriemuir	(target area 241)

Forfar (target area 230)

Summary

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.

Location map



What is the 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.

What are the objectives for the area?

In each target area, SEPA and the responsible authorities have set objectives for the management of flood risk. In some locations, the objectives provide a short-term direction that will be reviewed and updated when more information is available. In others they provide a long-term direction for the management of flooding within a community. The objectives along with the current understanding of flood risk help to identify the actions that are required in the short and long term. It may take several years or multiple 6 year cycles to achieve the identified objectives, but they set a common goal for multiple agencies. The following package of objectives have been established for this area. The objectives must be considered alongside national principles to manage flood risk. These include:

- Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.
- Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.
- Consider whole catchments and coastlines and work with natural processes and the environment to deliver multiple outcomes.

Objective ref	Objective type	Objective description
2301	Avoid flood risk	Avoid inappropriate development that increases flood risk in Forfar
2302	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Forfar
2303	Reduce flood risk	Reduce the risk of river and surface water flooding in Forfar

What actions are proposed for this area?

This section provides information on the draft proposed actions for this target area. The proposed actions take account of the understanding of flood risk and the package of objectives set for the area. Actions will be coordinated to achieve maximum benefit; this will be determined once the actions have been finalised. The proposed actions are draft for consultation and are provided for comment. Your comments will help shape future flood risk management. The delivery of the proposed actions is subject to available funding and resources.

Actions proposed to start before June 2028

Flood study (options appraisal) (Ref: 23001)	
Action	In areas where flood risk is confirmed, a range of possible options to manage flood risk are to be identified, including natural flood management actions where suitable, and a preferred approach is to be chosen. This should include adaptive planning to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	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	Action delivery lead is Angus Council in coordination with Scottish Water and other actions in the area.

Adaptation plan (Ref: 23002)	
Action	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.
Action detail	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	Action delivery lead is Angus Council and coordinated with the surface water management plan and community engagement.

Community engagement (Ref: 23003)	
Action	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk.
Action detail	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.
Coordination	Action delivery lead is Angus Council and coordinated with the surface water management plan and community engagement.

SEPA and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

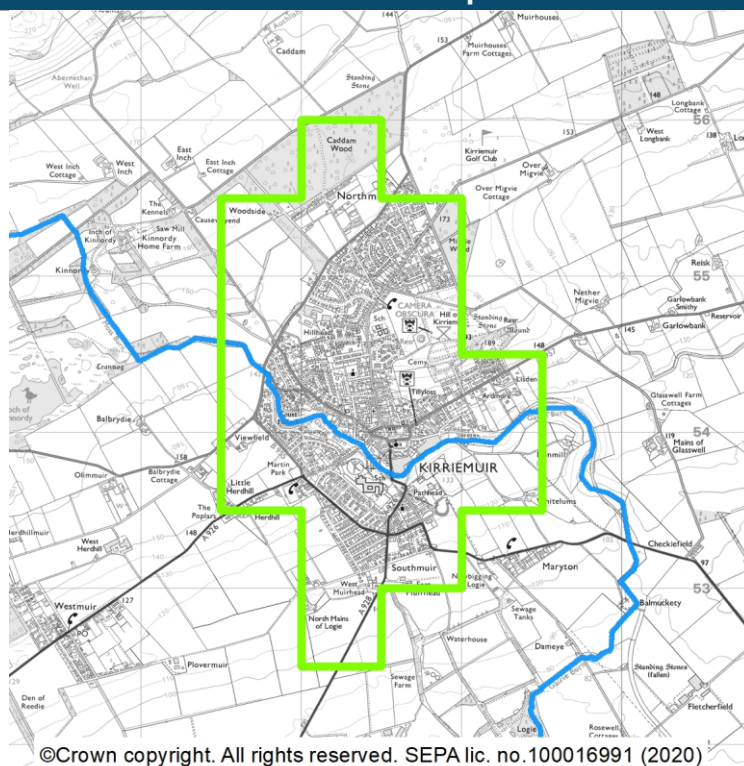
Working in partnership is at the heart of flood risk management, responsible authorities and SEPA regularly work together in all areas to improve the coordination of flood management. Working across organisations and groups contributes to sustainable ways of managing current and future flood risk in a community. The potential for joint working will be further explored following the consultation feedback.

Kirriemuir (target area 241)

Summary

The town of Kirriemuir is located north west of Forfar within the Angus Council 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.

Location map



What is the 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.

What are the objectives for the area?

In each target area, SEPA and the responsible authorities have set objectives for the management of flood risk. In some locations, the objectives provide a short-term direction that will be reviewed and updated when more information is available. In others they provide a long-term direction for the management of flooding within a community. The objectives along with the current understanding of flood risk help to identify the actions that are required in the short and long term. It may take several years or multiple 6 year cycles to achieve the identified objectives, but they set a common goal for multiple agencies. The following package of objectives have been established for this area. The objectives must be considered alongside national principles to manage flood risk. These include:

- Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.
- Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.
- Consider whole catchments and coastlines and work with natural processes and the environment to deliver multiple outcomes.

Objective ref	Objective type	Objective description
2411	Avoid flood risk	Avoid inappropriate development that increases flood risk in Kirriemuir
2412	Avoid flood risk	Avoid an increase in flood risk by the appropriate management and maintenance of Kirriemuir Flood Protection Scheme
2413	Improve data and understanding	Improve data and understanding of river flooding from the Gairie Burn in Kirriemuir
2414	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Kirriemuir
2415	Reduce flood risk	Reduce the risk of river flooding from the Gairie Burn in Kirriemuir

What actions are proposed for this area?

This section provides information on the draft proposed actions for this target area. The proposed actions take account of the understanding of flood risk and the package of objectives set for the area. Actions will be coordinated to achieve maximum benefit; this will be determined once the actions have been finalised. The proposed actions are draft for consultation and are provided for comment. Your comments will help shape future flood risk management. The delivery of the proposed actions is subject to available funding and resources.

Actions proposed to start before June 2028

Flood scheme or works implementation (Ref: 24101)	
Action	The flood scheme/works is to be built following agreement of the design, costs and timescales.
Action detail	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 Gairie Burn to improve understanding of flood risk and support future work.
Coordination	Action delivery lead is Angus Council and coordination will be determined once the actions have been finalised.

Adaptation plan (Ref: 24102)	
Action	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.
Action detail	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	Action delivery lead is Angus Council and coordinated with the surface water management plan and community engagement.

Community engagement (Ref: 24103)	
Action	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk.
Action detail	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.
Coordination	Action delivery lead is Angus Council and coordinated with the adaptation plan.

Data collection (Ref: 24104)	
Action	Equipment that measures rainfall, river levels, erosion, ground levels or wave height may be installed and maintained to improve our understanding of flood risk. This can be done over short term or to measure longer term impacts.
Action detail	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	Action delivery lead is Angus Council and coordination will be determined once the actions have been finalised.

Flood defence maintenance (Ref: 24105)	
Action	The existing flood defences are to be maintained by the asset owner to ensure they are in good condition.
Action detail	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	Action delivery lead is Angus Council and coordination will be determined once the actions have been finalised.

SEPA and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

Working in partnership is at the heart of flood risk management, responsible authorities and SEPA regularly work together in all areas to improve the coordination of flood management. Working across organisations and groups contributes to sustainable ways of managing current and future flood risk in a community. The potential for joint working will be further explored following the consultation feedback.

There is potential to work with SEPA's River Basin Management team to improve the physical condition of the water environment.

02/08/06 (Blairgowrie and Rattray)

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.

There is 1 area in this Potentially Vulnerable Area, which has been the focus of further assessment, this is identified below. Further information on the proposed objectives and actions to manage flood risk within this area is provided below.

List of target areas

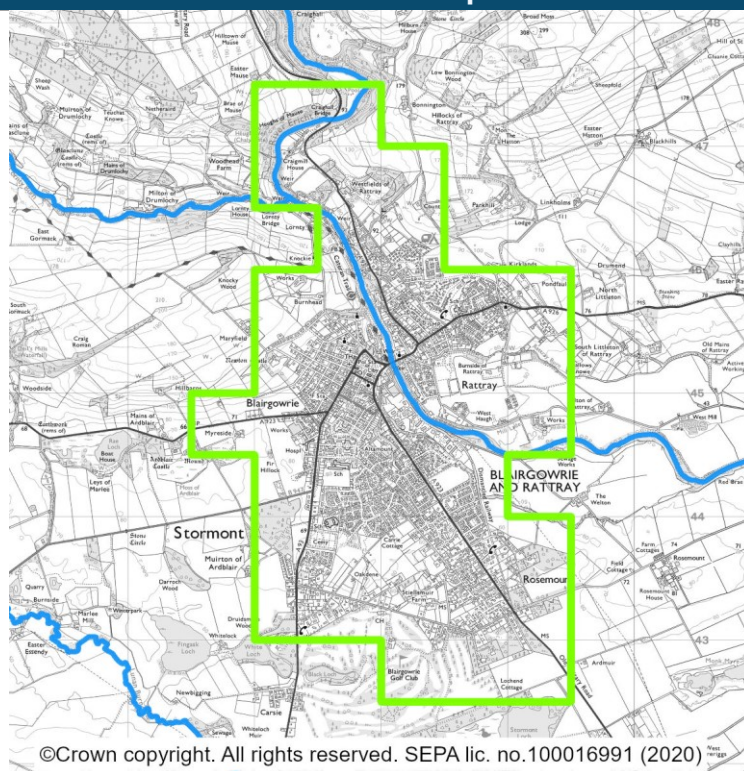
Blairgowrie and Rattray (target area 199)

Blairgowrie and Rattray (target area 199)

Summary

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.

Location map



What is the 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 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. The most recent flooding was recorded on 12 August 2020 when roads and properties flooded as a result of heavy rainfall in the area.

What are the objectives for the area?

In each target area, SEPA and the responsible authorities have set objectives for the management of flood risk. In some locations, the objectives provide a short-term direction that will be reviewed and updated when more information is available. In others they provide a long-term direction for the management of flooding within a community. The objectives along with the current understanding of flood risk help to identify the actions that are required in the short and long term. It may take several years or multiple 6 year cycles to achieve the identified objectives, but they set a common goal for multiple agencies. The following package of objectives have been established for this area. The objectives must be considered alongside national principles to manage flood risk. These include:

- Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.
- Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.
- Consider whole catchments and coastlines and work with natural processes and the environment to deliver multiple outcomes.

Objective ref	Objective type	Objective description
1991	Avoid flood risk	Avoid development that increases flood risk in Blairgowrie and Rattray
1992	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Blairgowrie and Rattray
1993	Reduce flood risk	Reduce the risk of surface water flooding in Blairgowrie and Rattray

What actions are proposed for this area?

This section provides information on the draft proposed actions for this target area. The proposed actions take account of the understanding of flood risk and the package of objectives set for the area. Actions will be coordinated to achieve maximum benefit; this will be determined once the actions have been finalised. The proposed actions are draft for consultation and are provided for comment. Your comments will help shape future flood risk management. The delivery of the proposed actions is subject to available funding and resources.

Actions proposed to start before June 2028

Flood warning maintenance (Ref: 19901)	
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the Ericht flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

Community engagement (Ref: 19902)	
Action	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk.
Action detail	Community engagement will continue in connection with ongoing projects and activities, in particular the findings of the surface water management plan.
Coordination	The action delivery lead is Perth and Kinross Council. Awareness raising and community engagement will take place around any projects and will be coordinated through the Local Plan District Partnership.

Community resilience group (Ref: 19903)	
Action	The group of community volunteers work to prepare and put in practice their Community Resilience Plan and be supported by the local authority.
Action detail	Blairgowrie Community Resilience Group is active in this area. The resilience group should continue to implement the community emergency plan.
Coordination	The action delivery lead is the community. Perth and Kinross Council will continue to coordinate with the Blairgowrie resilience Group on a priority needs basis where resources allow.

Surface water management plan (Ref: 19904)	
Action	Areas at risk of heavy or prolonged rainfall causing flooding due to water ponding on man-made surfaces or overwhelming the drainage system are to be identified. These priority areas will provide a baseline for the identification of next steps in managing water ponding or over-whelmed drainage systems. This should guide adaptive planning to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	Perth and Kinross Council will be working with Scottish Water to develop a surface water management plan for this area. A consulting engineer is to be appointed to develop this plan which will examine and identify potential options for reducing the risk of surface water flooding across Blairgowrie.
Coordination	The action delivery lead is Perth and Kinross Council. Perth and Kinross Council will engage consulting engineers to investigate the surface water flood risk and identify potential options for managing that risk. The plan will be coordinated through the Tay Local Plan District Partnership and with other related actions. Scottish Water will work with and support surface water management planning through ensuring that best available knowledge and data is used to input into the surface water management plans.

SEPA and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

Working in partnership is at the heart of flood risk management, responsible authorities and SEPA regularly work together in all areas to improve the coordination of flood management. Working across organisations and groups contributes to sustainable ways of managing current and future flood risk in a community. The potential for joint working will be further explored following the consultation feedback.

02/08/07 (Coupar Angus)

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 and surface water. There is history of flooding in this area with recent floods caused by river flooding.

There is 1 area in this Potentially Vulnerable Area, which has been the focus of further assessment, this is identified below. Further information on the proposed objectives and actions to manage flood risk within this area is provided below.

List of target areas

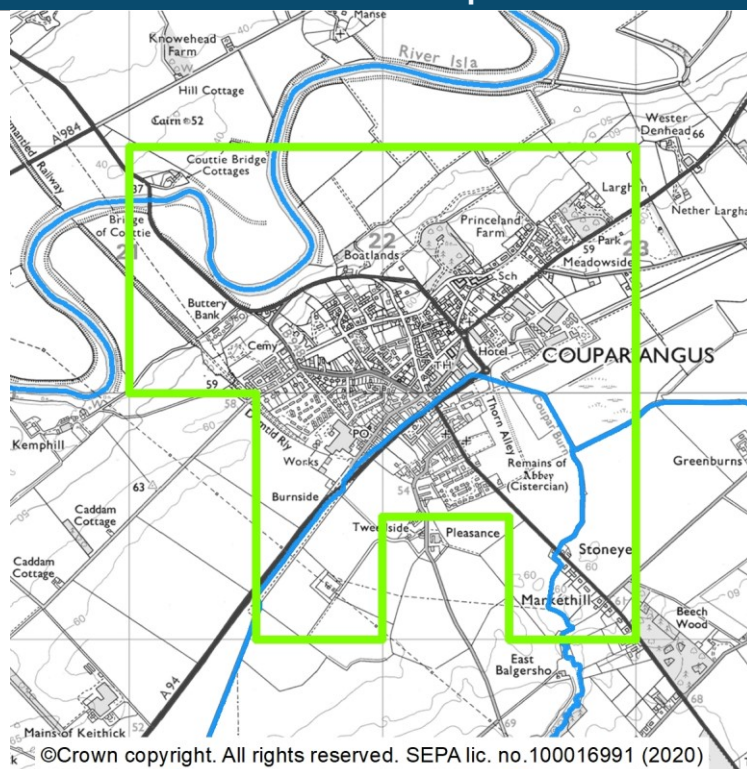
Coupar Angus (target area 214)

Coupar Angus (target area 214)

Summary

Coupar Angus is located to the north east of Perth on the banks of the River Isla and within the Perth and Kinross Council area. 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.

Location map



What is the 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.

What are the objectives for the area?

In each target area, SEPA and the responsible authorities have set objectives for the management of flood risk. In some locations, the objectives provide a short-term direction that will be reviewed and updated when more information is available. In others they provide a long-term direction for the management of flooding within a community. The objectives along with the current understanding of flood risk help to identify the actions that are required in the short and long term. It may take several years or multiple 6 year cycles to achieve the identified objectives, but they set a common goal for multiple agencies. The following package of objectives have been established for this area. The objectives must be considered alongside national principles to manage flood risk. These include:

- Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.
- Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.
- Consider whole catchments and coastlines and work with natural processes and the environment to deliver multiple outcomes.

Objective ref	Objective type	Objective description
2141	Avoid flood risk	Avoid development that increases flood risk in Coupar Angus
2142	Avoid flood risk	Avoid an increase in flood risk in Coupar Angus by the appropriate protection of the Kettins Burn natural flood storage area
2143	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Coupar Angus

What actions are proposed for this area?

This section provides information on the draft proposed actions for this target area. The proposed actions take account of the understanding of flood risk and the package of objectives set for the area. Actions will be coordinated to achieve maximum benefit; this will be determined once the actions have been finalised. The proposed actions are draft for consultation and are provided for comment. Your comments will help shape future flood risk management. The delivery of the proposed actions is subject to available funding and resources.

Actions proposed to start before June 2028

Flood warning maintenance (Ref: 21401)	
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the Isla flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

Land Use Planning (Ref: 21402)	
Action	Planning authority should ensure that their development plan and planning decision-making supports delivery of sustainable flood management.
Action detail	Perth and Kinross Council should introduce protection for the Kettins Burn natural flood storage area through the local development planning process.
Coordination	The action delivery lead is Perth and Kinross Council. Existing controls are already in place as set out under the land use planning action as described in Annex 1. 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.

Community resilience group (Ref: 21403)	
Action	The group of community volunteers work to prepare and put in practice their Community Resilience Plan and be supported by the local authority.
Action detail	Perth and Kinross Council will continue to liaise with the Coupar Angus Community Resilience Group.
Coordination	The action delivery lead is the community. Perth and Kinross Council will continue to coordinate with the Coupar Angus Community Resilience Group on a priority needs basis where resources allow.

SEPA and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

Working in partnership is at the heart of flood risk management, responsible authorities and SEPA regularly work together in all areas to improve the coordination of flood management. Working across organisations and groups contributes to sustainable ways of managing current and future flood risk in a community. The potential for joint working will be further explored following the consultation feedback.

02/08/08 (Dunkeld and Birnam)

This area is designated as a Potentially Vulnerable Area due to flood risk to Dunkeld and 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.

There are 3 areas in this Potentially Vulnerable Area, which have been the focus of further assessment, these are listed below. Further information on the proposed objectives and actions to manage flood risk within this area is provided below.

List of target areas

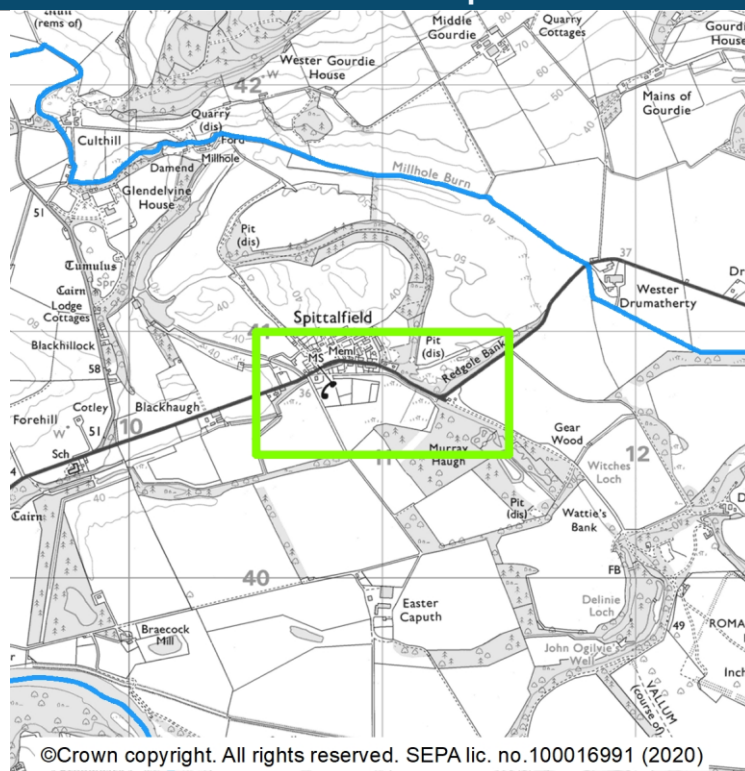
Spittalfield	(target area 179)
Dunkeld and Birnam	(target area 225)
Dalguise	(target area 273)

Spittalfield (target area 179)

Summary

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, the local authority 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.

Location map



What is the 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 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 inundated.

What are the objectives for the area?

In each target area, SEPA and the responsible authorities have set objectives for the management of flood risk. In some locations, the objectives provide a short-term direction that will be reviewed and updated when more information is available. In others they provide a long-term direction for the management of flooding within a community. The objectives along with the current understanding of flood risk help to identify the actions that are required in the short and long term. It may take several years or multiple 6 year cycles to achieve the identified objectives, but they set a common goal for multiple agencies. The following package of objectives have been established for this area. The objectives must be considered alongside national principles to manage flood risk. These include:

- Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.
- Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.
- Consider whole catchments and coastlines and work with natural processes and the environment to deliver multiple outcomes.

Objective ref	Objective type	Objective description
1791	Avoid flood risk	Avoid development that increases flood risk in Spittalfield
1792	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Spittalfield

What actions are proposed for this area?

This section provides information on the draft proposed actions for this target area. The proposed actions take account of the understanding of flood risk and the package of objectives set for the area. Actions will be coordinated to achieve maximum benefit; this will be determined once the actions have been finalised. The proposed actions are draft for consultation and are provided for comment. Your comments will help shape future flood risk management. The delivery of the proposed actions is subject to available funding and resources.

Actions proposed to start before June 2028

Community resilience group (Ref: 17901)	
Action	The group of community volunteers work to prepare and put in practice their Community Resilience Plan and be supported by the local authority.
Action detail	Perth and Kinross Council will continue to liaise with the Spittalfield and Caputh Community Resilience Group.
Coordination	The action delivery lead is the community. Perth and Kinross Council will continue to coordinate with the Spittalfield and Caputh Community Resilience Group on a priority needs basis where resources allow.

Emergency plan (Ref: 17902)	
Action	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.
Action detail	Perth and Kinross Council should include specific emergency planning arrangements for Spittalfield within its current Generic Emergency Plan and Flooding Emergency Response Plan.
Coordination	The action delivery lead is Perth and Kinross Council. Perth and 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.

Flood warning maintenance (Ref: 17904)	
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the River Tay flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

Actions proposed after June 2028

The following actions are proposed to take place after June 2028. These will be reviewed in 2026, considering added information at that time, to ensure they are still the most appropriate actions for the community.

Adaptation plan (Ref: 17903)	
Action	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.
Action detail	An adaptation plan will be developed to cover the Spittalfield area. The plan will aim to monitor the impacts of climate change on flood risk, and to develop a long-term flood risk management approach.
Coordination	The action delivery lead is Perth and Kinross Council. The adaptation plan will be coordinated through the Local Plan District Partnership and with other related actions.

Flood warning maintenance (Ref: 17905)	
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should investigate improvements to the River Tay flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

SEPA and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

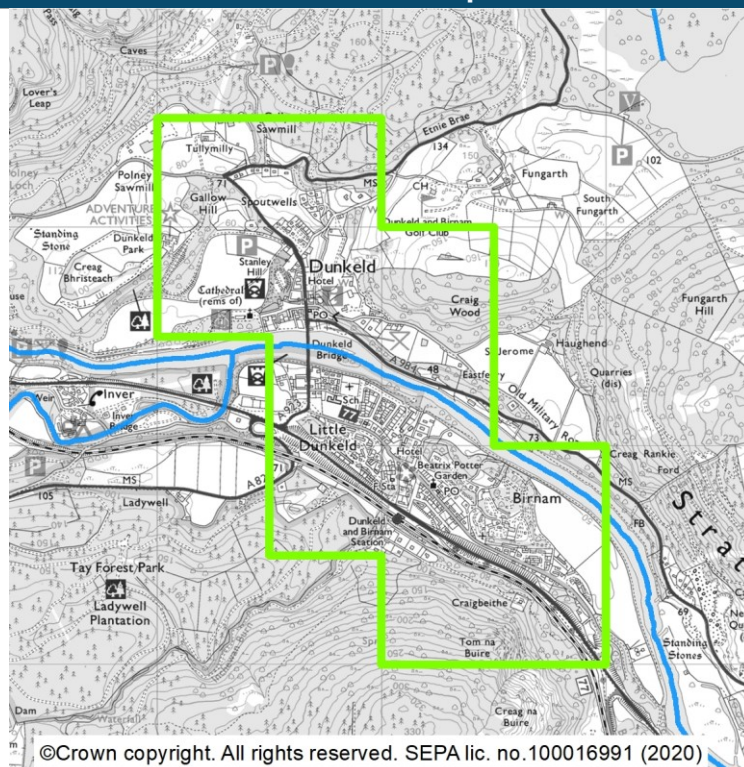
Working in partnership is at the heart of flood risk management, responsible authorities and SEPA regularly work together in all areas to improve the coordination of flood management. Working across organisations and groups contributes to sustainable ways of managing current and future flood risk in a community. The potential for joint working will be further explored following the consultation feedback.

Dunkeld and Birnam (target area 225)

Summary

The villages of Dunkeld, Little Dunkeld and Birnam are located on the River Tay and within the Perth and Kinross Council area. The main source of flooding in Dunkeld and Birnam is river flooding from the River Tay, the River Braan and other small watercourses. The on-going flood study undertaken by the local authority 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.

Location map



What is the 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.

What are the objectives for the area?

In each target area, SEPA and the responsible authorities have set objectives for the management of flood risk. In some locations, the objectives provide a short-term direction that will be reviewed and updated when more information is available. In others they provide a long-term direction for the management of flooding within a community. The objectives along with the current understanding of flood risk help to identify the actions that are required in the short and long term. It may take several years or multiple 6 year cycles to achieve the identified objectives, but they set a common goal for multiple agencies. The following package of objectives have been established for this area. The objectives must be considered alongside national principles to manage flood risk. These include:

- Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.
- Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.
- Consider whole catchments and coastlines and work with natural processes and the environment to deliver multiple outcomes.

Objective ref	Objective type	Objective description
2251	Avoid flood risk	Avoid development that increases flood risk in Dunkeld and Birnam
2252	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Dunkeld and Birnam
2253	Reduce flood risk	Reduce the risk of river flooding from the River Tay, River Braan and small watercourses in Dunkeld

What actions are proposed for this area?

This section provides information on the draft proposed actions for this target area. The proposed actions take account of the understanding of flood risk and the package of objectives set for the area. Actions will be coordinated to achieve maximum benefit; this will be determined once the actions have been finalised. The proposed actions are draft for consultation and are provided for comment. Your comments will help shape future flood risk management. The delivery of the proposed actions is subject to available funding and resources.

Actions proposed to start before June 2028

Flood study (Ref: 22501)	
Action	An understanding of flood risk and associated issues in the area is to be developed, which may include surveys and modelling and should consider the impacts of climate change on flood risk.
Action detail	A flood protection study for Dunkeld was included in the current 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	The action delivery lead is Perth and Kinross Council. The study is investigating the river flood risk and will identify potential options for managing that risk. The study will involve the completion of existing investigations by consultants, Mouchel, into the flooding on Atholl Gardens and Atholl Street, Dunkeld from the Spoutwells Burn and another small watercourse. The study is also taking a staged approach to allow coordination with SEPA on the Strategic Mapping and Modelling Action for the River Tay. The study is being coordinated through the Tay LPD Partnership, with Transport Scotland and with other related actions.

Community engagement (Ref: 22502)	
Action	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk.
Action detail	Community engagement will continue in connection with ongoing projects and activities. Perth and Kinross will continue to coordinate with the Dunkeld Community Resilience Group on a priority needs basis where resources allow.
Coordination	The action delivery lead is Perth and Kinross Council. Awareness raising and community engagement will take place around any projects and will be coordinated through the Local Plan District Partnership.

Community resilience group (Ref: 22503)	
Action	The group of community volunteers work to prepare and put in practice their Community Resilience Plan and be supported by the local authority.
Action detail	Perth and Kinross Council will continue to liaise with the Dunkeld Community Resilience Group.
Coordination	The action delivery lead is the community. Perth and Kinross Council will continue to coordinate with the Dunkeld Community Resilience Group on a priority needs basis where resources allow.

Flood warning maintenance (Ref: 22504)

Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the River Tay flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

Actions proposed after June 2028

The following actions are proposed to take place after June 2028. These will be reviewed in 2026, considering added information at that time, to ensure they are still the most appropriate actions for the community.

Flood scheme or works implementation (Ref: 22505)

Action	The flood scheme/works is to be built following agreement of the design, costs and timescales.
Action detail	Transport Scotland will continue to carry out civil engineering works which will reduce the risk of flooding on identified sections of the trunk road.
Coordination	Action delivery lead is Transport Scotland and coordination will be determined once the actions have been finalised

Flood warning maintenance (Ref: 22506)

Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should investigate improvements to the River Tay flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

SEPA and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

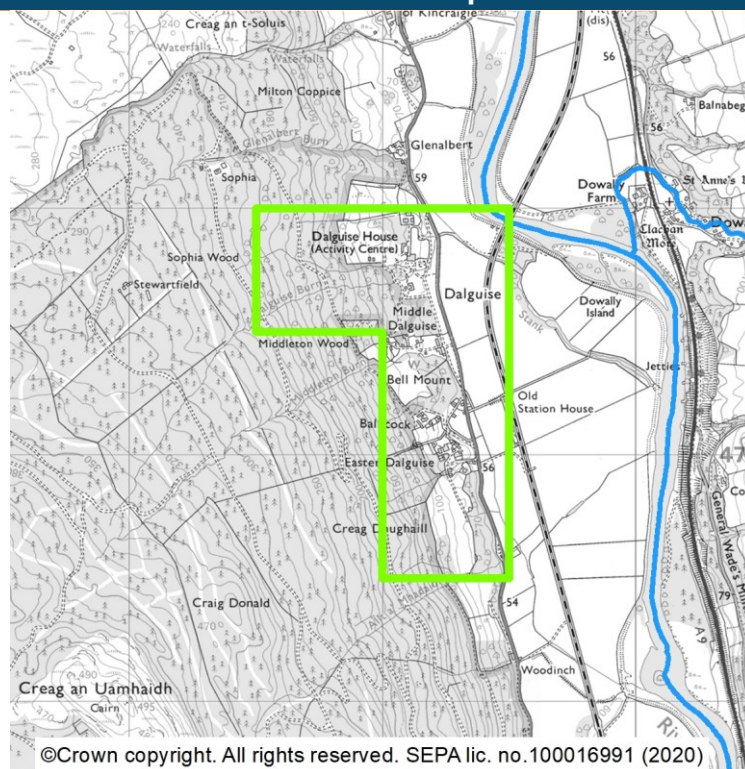
Working in partnership is at the heart of flood risk management, responsible authorities and SEPA regularly work together in all areas to improve the coordination of flood management. Working across organisations and groups contributes to sustainable ways of managing current and future flood risk in a community. The potential for joint working will be further explored following the consultation feedback.

Dalguise (target area 273)

Summary

The small settlement of Dalguise is located on the western side of the River Tay and within the Perth and Kinross Council area. 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.

Location map



What is the 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 is 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.

What are the objectives for the area?

In each target area, SEPA and the responsible authorities have set objectives for the management of flood risk. In some locations, the objectives provide a short-term direction that will be reviewed and updated when more information is available. In others they provide a long-term direction for the management of flooding within a community. The objectives along with the current understanding of flood risk help to identify the actions that are required in the short and long term. It may take several years or multiple 6 year cycles to achieve the identified objectives, but they set a common goal for multiple agencies. The following package of objectives have been established for this area. The objectives must be considered alongside national principles to manage flood risk. These include:

- Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.
- Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.
- Consider whole catchments and coastlines and work with natural processes and the environment to deliver multiple outcomes.

Objective ref	Objective type	Objective description
2731	Avoid flood risk	Avoid development that increases flood risk in Dalguise
2732	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Dalguise

What actions are proposed for this area?

This section provides information on the draft proposed actions for this target area. The proposed actions take account of the understanding of flood risk and the package of objectives set for the area. Actions will be coordinated to achieve maximum benefit; this will be determined once the actions have been finalised. The proposed actions are draft for consultation and are provided for comment. Your comments will help shape future flood risk management. The delivery of the proposed actions is subject to available funding and resources.

Actions proposed to start before June 2028

Emergency plan (Ref: 27301)	
Action	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.
Action detail	Perth and Kinross Council should include specific emergency planning arrangements for Dalguise within its current Generic Emergency Plan and Flooding Emergency Response Plan.
Coordination	The action delivery lead is Perth and Kinross Council. Perth and 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.

Flood warning maintenance (Ref: 27302)	
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the River Tay flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

Actions proposed after June 2028

The following actions are proposed to take place after June 2028. These will be reviewed in 2026, considering added information at that time, to ensure they are still the most appropriate actions for the community.

Flood warning maintenance (Ref: 27303)	
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should investigate improvements to the River Tay flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

SEPA and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

Working in partnership is at the heart of flood risk management, responsible authorities and SEPA regularly work together in all areas to improve the coordination of flood management. Working across organisations and groups contributes to sustainable ways of managing current and future flood risk in a community. The potential for joint working will be further explored following the consultation feedback.

02/08/09 (Bankfoot)

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 and surface water.

There is 1 area in this Potentially Vulnerable Area, which has been the focus of further assessment, this is identified below. Further information on the proposed objectives and actions to manage flood risk within this area is provided below.

List of target areas

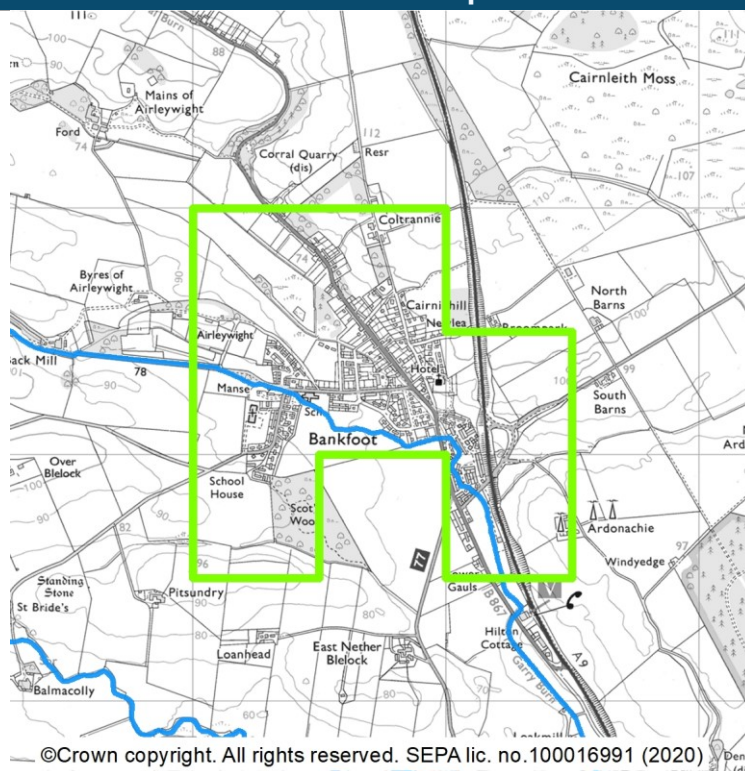
Bankfoot (target area 194)

Bankfoot (target area 194)

Summary

The village of Bankfoot lies approximately 13km north of Perth, within the Perth and Kinross Council area. 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.

Location map



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What is the 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 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 and July 2015. The most recent flooding was in February 2020 during Storm Dennis when the Garry Burn burst its banks, inundating a number of roads. Further minor flooding occurred on the Garry Burn in February 2021.

What are the objectives for the area?

In each target area, SEPA and the responsible authorities have set objectives for the management of flood risk. In some locations, the objectives provide a short-term direction that will be reviewed and updated when more information is available. In others they provide a long-term direction for the management of flooding within a community. The objectives along with the current understanding of flood risk help to identify the actions that are required in the short and long term. It may take several years or multiple 6 year cycles to achieve the identified objectives, but they set a common goal for multiple agencies. The following package of objectives have been established for this area. The objectives must be considered alongside national principles to manage flood risk. These include:

- Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.
- Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.
- Consider whole catchments and coastlines and work with natural processes and the environment to deliver multiple outcomes.

Objective ref	Objective type	Objective description
1941	Avoid flood risk	Avoid development that increases flood risk in Bankfoot
1942	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Bankfoot

What actions are proposed for this area?

This section provides information on the draft proposed actions for this target area. The proposed actions take account of the understanding of flood risk and the package of objectives set for the area. Actions will be coordinated to achieve maximum benefit; this will be determined once the actions have been finalised. The proposed actions are draft for consultation and are provided for comment. Your comments will help shape future flood risk management. The delivery of the proposed actions is subject to available funding and resources.

Actions proposed to start before June 2028

Community resilience group (Ref: 19401)	
Action	The group of community volunteers work to prepare and put in practice their Community Resilience Plan and be supported by the local authority.
Action detail	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	The action delivery lead is the community. Perth and Kinross Council will continue to coordinate with Auchtergaven Community Council and the Bankfoot Resilience Group on a priority needs basis where resources allow.

SEPA and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

Working in partnership is at the heart of flood risk management, responsible authorities and SEPA regularly work together in all areas to improve the coordination of flood management. Working across organisations and groups contributes to sustainable ways of managing current and future flood risk in a community. The potential for joint working will be further explored following the consultation feedback.

02/08/10 (Luncarty)

This area is designated as a Potentially Vulnerable Area due to flood risk to Luncarty. The main source of flooding is 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.

There is 1 area in this Potentially Vulnerable Area, which has been the focus of further assessment, this is identified below. Further information on the proposed objectives and actions to manage flood risk within this area is provided below.

List of target areas

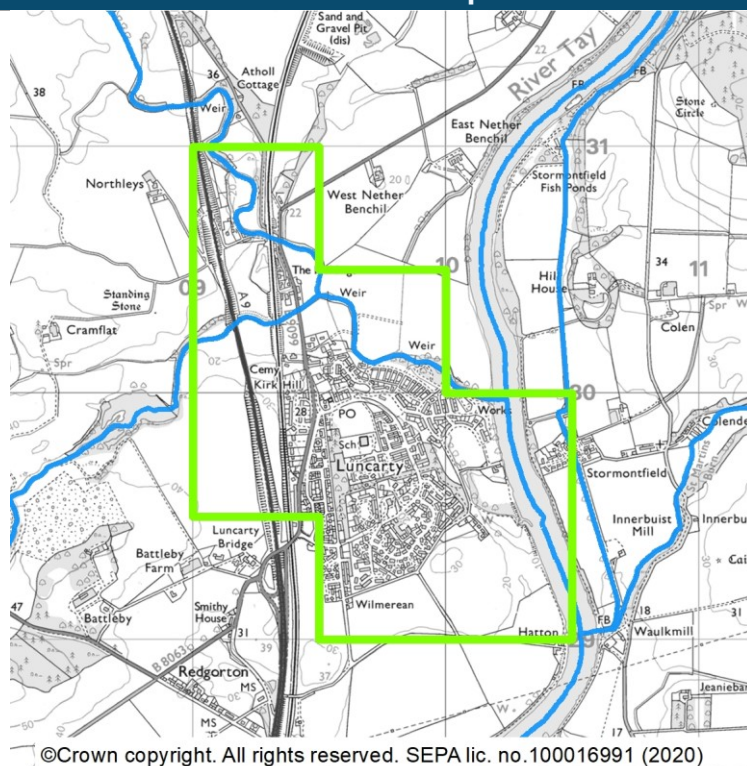
Luncarty (target area 247)

Luncarty (target area 247)

Summary

Luncarty lies 6km north of Perth, near the River Tay. It is within the Perth and Kinross Council area. 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.

Location map



What is the 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.

What are the objectives for the area?

In each target area, SEPA and the responsible authorities have set objectives for the management of flood risk. In some locations, the objectives provide a short-term direction that will be reviewed and updated when more information is available. In others they provide a long-term direction for the management of flooding within a community. The objectives along with the current understanding of flood risk help to identify the actions that are required in the short and long term. It may take several years or multiple 6 year cycles to achieve the identified objectives, but they set a common goal for multiple agencies. The following package of objectives have been established for this area. The objectives must be considered alongside national principles to manage flood risk. These include:

- Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.
- Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.
- Consider whole catchments and coastlines and work with natural processes and the environment to deliver multiple outcomes.

Objective ref	Objective type	Objective description
2471	Avoid flood risk	Avoid development that increases flood risk in Luncarty
2472	Prepare for flooding	Prepare for future flooding as a result of climate change in Luncarty
2473	Reduce flood risk	Reduce the risk of river flooding in Luncarty

What actions are proposed for this area?

This section provides information on the draft proposed actions for this target area. The proposed actions take account of the understanding of flood risk and the package of objectives set for the area. Actions will be coordinated to achieve maximum benefit; this will be determined once the actions have been finalised. The proposed actions are draft for consultation and are provided for comment. Your comments will help shape future flood risk management. The delivery of the proposed actions is subject to available funding and resources.

Actions proposed to start before June 2028

Flood study (Ref: 24701)	
Action	An understanding of flood risk and associated issues in the area is to be developed, which may include surveys and modelling and should consider the impacts of climate change on flood risk.
Action detail	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	The action delivery lead is Perth and Kinross Council. Perth and Kinross Council will engage a consulting engineer to investigate the river 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.

Sewer flood risk assessment (Ref: 24702)	
Action	The volume of water that would overwhelm the sewer system and cause flooding from man-holes or inside our homes is to be assessed, to support understanding of the performance of the urban drainage network
Action detail	Scottish Water will carry out an assessment of sewer flood risk within the highest priority sewer catchments, which includes Perth City sewer catchment in this target area. This will help to improve knowledge and understanding of potential surface water flood risk. Funding for this action is secured through Scottish Water's strategic planning commitments.
Coordination	Action delivery lead is Scottish Water in coordination with the local authority and SEPA.

Community engagement (Ref: 24703)	
Action	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk.
Action detail	Community engagement will continue in connection with ongoing projects and activities. This will include engaging with the community on the development of the flood study.
Coordination	The action delivery lead is Perth and Kinross Council. Awareness raising and community engagement will take place around any projects and will be coordinated through the Local Plan District Partnership.

SEPA and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

Working in partnership is at the heart of flood risk management, responsible authorities and SEPA regularly work together in all areas to improve the coordination of flood management. Working across organisations and groups contributes to sustainable ways of managing current and future flood risk in a community. The potential for joint working will be further explored following the consultation feedback.

There is potential to work with SEPA's River Basin Management team to improve the physical condition of the water environment.

02/08/11 (Scone)

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.

There is 1 area in this Potentially Vulnerable Area, which has been the focus of further assessment, this is identified below. Further information on the proposed objectives and actions to manage flood risk within this area is provided below.

List of target areas

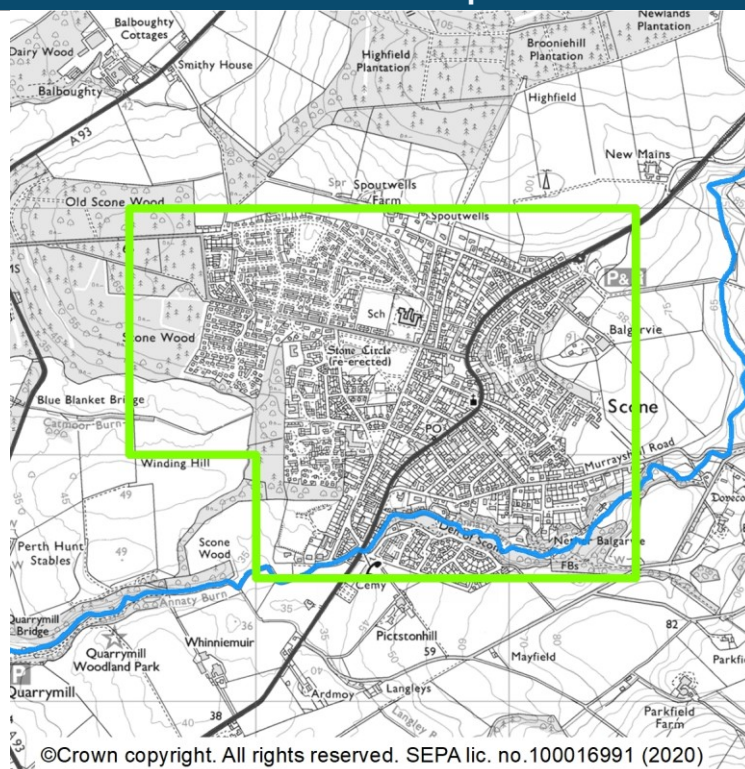
Scone (target area 255)

Scone (target area 255)

Summary

Scone is a town northeast of Perth located within the Perth and Kinross Council area. 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.

Location map



What is the 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 a previous flood study for the Annaty Burn. The national understanding of surface water is improved by the 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. The most recent flood was recorded in May 2017 when 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 up to the level of airbricks.

What are the objectives for the area?

In each target area, SEPA and the responsible authorities have set objectives for the management of flood risk. In some locations, the objectives provide a short-term direction that will be reviewed and updated when more information is available. In others they provide a long-term direction for the management of flooding within a community. The objectives along with the current understanding of flood risk help to identify the actions that are required in the short and long term. It may take several years or multiple 6 year cycles to achieve the identified objectives, but they set a common goal for multiple agencies. The following package of objectives have been established for this area. The objectives must be considered alongside national principles to manage flood risk. These include:

- Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.
- Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.
- Consider whole catchments and coastlines and work with natural processes and the environment to deliver multiple outcomes.

Objective ref	Objective type	Objective description
2551	Avoid flood risk	Avoid development that increases flood risk in Scone
2552	Avoid flood risk	Avoid an increase in flood risk by the appropriate management and maintenance of Scone (Annaty Burn) flood protection scheme
2553	Prepare for flooding	Prepare for current flood risk and future flooding in Scone as a result of climate change
2554	Reduce flood risk	Reduce the risk of surface water and river flooding from the Annaty Burn in Scone.

What actions are proposed for this area?

This section provides information on the draft proposed actions for this target area. The proposed actions take account of the understanding of flood risk and the package of objectives set for the area. Actions will be coordinated to achieve maximum benefit; this will be determined once the actions have been finalised. The proposed actions are draft for consultation and are provided for comment. Your comments will help shape future flood risk management. The delivery of the proposed actions is subject to available funding and resources.

Actions proposed to start before June 2028

	Flood protection scheme (Ref: 25501)
Action	The selected preferred approach for managing flood risk is to be designed, including consideration of the long-term impacts of climate change. The flood scheme is to be built once statutory approval has been secured.
Action detail	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	The action delivery lead is Perth and Kinross Council. 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.

	Maintain flood protection scheme (Ref: 25502)
Action	The existing flood defences are to be maintained by the asset owner to ensure they are in good condition.
Action detail	Once built, Perth and Kinross Council will implement an inspection and maintenance regime for the Scone (Annaty Burn) Flood Protection Scheme.
Coordination	The action delivery lead is Perth and Kinross Council. Perth and Kinross Council's Roads Maintenance Partnership will maintain any existing flood protection scheme through a programme of inspections carried out in accordance with the recommendations set out in the scheme maintenance manuals. Maintenance works will be coordinated with SEPA, SNH, landowners and other stakeholders as required. The maintenance of the flood scheme will also be coordinated with related actions.

Flood study (options appraisal) (Ref: 25503)

Action	In areas where flood risk is confirmed, a range of possible options to manage flood risk are to be identified, including natural flood management actions where suitable, and a preferred approach is to be chosen. This should include adaptive planning to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	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. The study is scheduled to commence in 2021. 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	The action delivery lead is Perth and Kinross Council. 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.

Surface water management plan (Ref: 25504)

Action	Areas at risk of heavy or prolonged rainfall causing flooding due to water ponding on man-made surfaces or overwhelming the drainage system are to be identified. These priority areas will provide a baseline for the identification of next steps in managing water ponding or over-whelmed drainage systems. This should guide adaptive planning to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	The area must be covered by a surface water management plan or plans that set objectives for the management of surface water flood risk and identify the most sustainable actions to achieve the objectives. This surface water management plan will be delivered by Perth & Kinross Council as part of the Scone flood protection study. 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	The action delivery lead is Perth and Kinross Council. Perth and Kinross Council will engage consulting engineers to investigate the surface water flood risk and identify potential options for managing that risk. The plan will be coordinated through the Tay Local Plan District Partnership and with other related actions. Scottish Water will work with and support surface water management planning through ensuring that best available knowledge and data is used to input into the surface water management plans.

Community engagement (Ref: 25505)

Action	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk.
Action detail	Community engagement will continue in connection with ongoing 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.
Coordination	Action delivery lead is Perth and Kinross Council. Awareness raising and community engagement will take place around any projects and will be coordinated through the Local Plan District Partnership.

SEPA and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

Working in partnership is at the heart of flood risk management, responsible authorities and SEPA regularly work together in all areas to improve the coordination of flood management. Working across organisations and groups contributes to sustainable ways of managing current and future flood risk in a community. The potential for joint working will be further explored following the consultation feedback.

02/08/12 (Perth and Almondbank)

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.

There are 3 areas in this Potentially Vulnerable Area, which have been the focus of further assessment, these are listed below. Further information on the proposed objectives and actions to manage flood risk within this area is provided below.

List of target areas

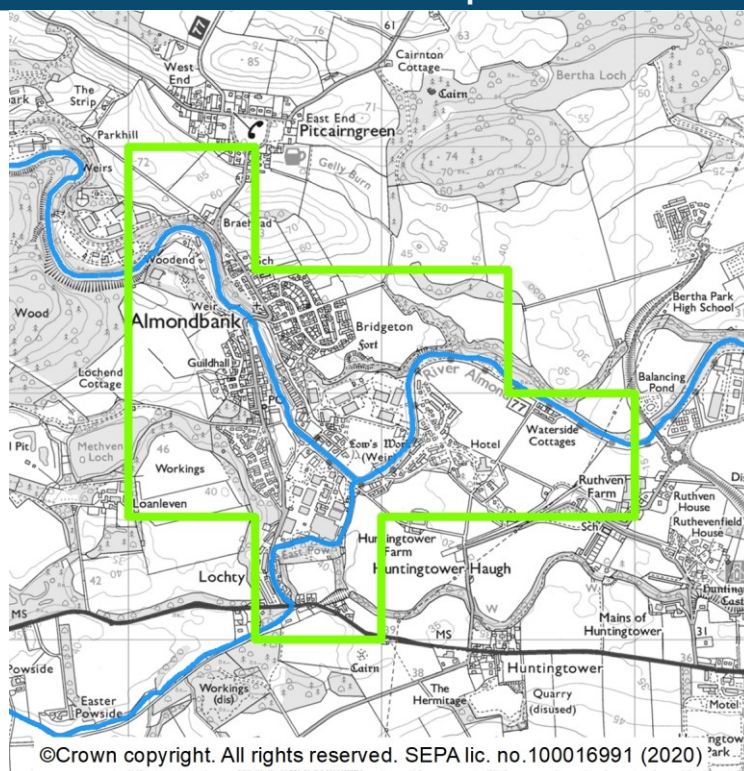
Almondbank	(target area 187)
Methven	(target area 249)
Perth	(target area 253)

Almondbank (target area 187)

Summary

Almondbank is located approximately 5km north west of Perth on the banks of the River Almond. It is within the Perth and Kinross Council area. 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.

Location map



What is the 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.

What are the objectives for the area?

In each target area, SEPA and the responsible authorities have set objectives for the management of flood risk. In some locations, the objectives provide a short-term direction that will be reviewed and updated when more information is available. In others they provide a long-term direction for the management of flooding within a community. The objectives along with the current understanding of flood risk help to identify the actions that are required in the short and long term. It may take several years or multiple 6 year cycles to achieve the identified objectives, but they set a common goal for multiple agencies. The following package of objectives have been established for this area. The objectives must be considered alongside national principles to manage flood risk. These include:

- Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.
- Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.
- Consider whole catchments and coastlines and work with natural processes and the environment to deliver multiple outcomes.

Objective ref	Objective type	Objective description
1871	Avoid flood risk	Avoid development that increases flood risk in Almondbank
1872	Avoid flood risk	Avoid an increase in flood risk by the appropriate management and maintenance of Almondbank and Perth flood protection schemes
1873	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Almondbank

What actions are proposed for this area?

This section provides information on the draft proposed actions for this target area. The proposed actions take account of the understanding of flood risk and the package of objectives set for the area. Actions will be coordinated to achieve maximum benefit; this will be determined once the actions have been finalised. The proposed actions are draft for consultation and are provided for comment. Your comments will help shape future flood risk management. The delivery of the proposed actions is subject to available funding and resources.

Actions proposed to start before June 2028

Maintain flood protection scheme (Ref: 18701)	
Action	The existing flood defences are to be maintained by the asset owner to ensure they are in good condition.
Action detail	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	The action delivery lead is Perth and Kinross Council. Perth and Kinross Council's Roads Maintenance Partnership will maintain any existing flood protection scheme through a programme of inspections carried out in accordance with the recommendations set out in the scheme maintenance manuals. Maintenance works will be coordinated with SEPA, SNH, landowners and other stakeholders as required. The maintenance of the flood scheme will also be coordinated with related actions.

Flood warning maintenance (Ref: 18702)	
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the Almond flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

Actions proposed after June 2028

The following actions are proposed to take place after June 2028. These will be reviewed in 2026, considering added information at that time, to ensure they are still the most appropriate actions for the community.

Adaptation plan (Ref: 18703)	
Action	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.
Action detail	An adaptation plan will be developed to cover existing flood protection schemes in the Perth and Kinross Council area. The plan will aim to monitor the impacts of climate change on flood risk, including the impact on existing flood schemes, and to develop a long-term flood risk management approach.
Coordination	The action delivery lead is Perth and Kinross Council. The adaptation plan will be coordinated through the Local Plan District Partnership and with other related actions.

SEPA and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

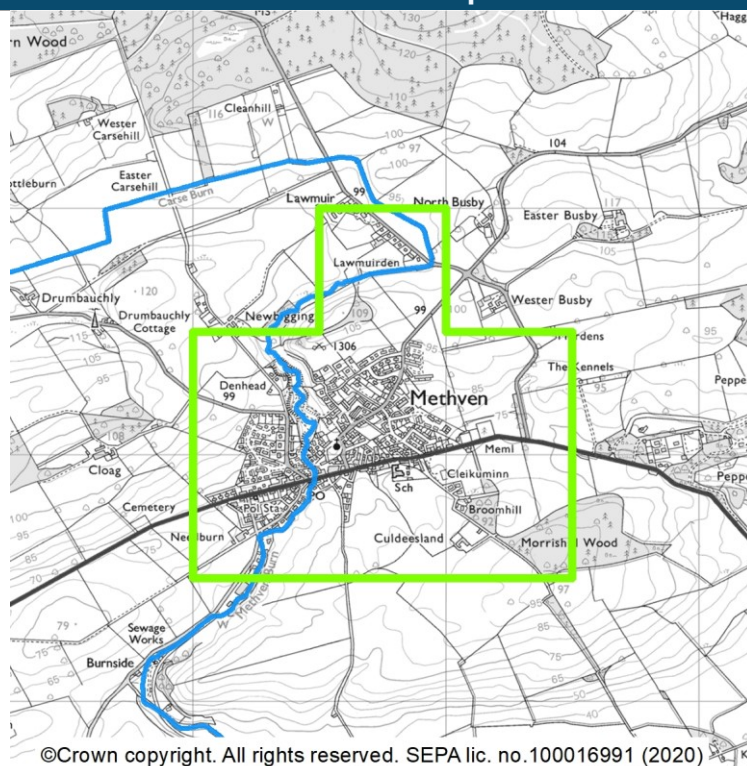
Working in partnership is at the heart of flood risk management, responsible authorities and SEPA regularly work together in all areas to improve the coordination of flood management. Working across organisations and groups contributes to sustainable ways of managing current and future flood risk in a community. The potential for joint working will be further explored following the consultation feedback.

Methven (target area 249)

Summary

Methven is a village which lies due west of Perth within the Perth and Kinross Council area. 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.

Location map



What is the 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. The most recent flooding occurred in August 2020 when heavy rain led to flooding of properties and roads.

What are the objectives for the area?

In each target area, SEPA and the responsible authorities have set objectives for the management of flood risk. In some locations, the objectives provide a short-term direction that will be reviewed and updated when more information is available. In others they provide a long-term direction for the management of flooding within a community. The objectives along with the current understanding of flood risk help to identify the actions that are required in the short and long term. It may take several years or multiple 6 year cycles to achieve the identified objectives, but they set a common goal for multiple agencies. The following package of objectives have been established for this area. The objectives must be considered alongside national principles to manage flood risk. These include:

- Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.
- Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.
- Consider whole catchments and coastlines and work with natural processes and the environment to deliver multiple outcomes.

Objective ref	Objective type	Objective description
2491	Avoid flood risk	Avoid development that increases flood risk in Methven
2492	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Methven
2493	Reduce flood risk	Reduce the risk of river flooding from the Methven Burn in Methven

What actions are proposed for this area?

This section provides information on the draft proposed actions for this target area. The proposed actions take account of the understanding of flood risk and the package of objectives set for the area. Actions will be coordinated to achieve maximum benefit; this will be determined once the actions have been finalised. The proposed actions are draft for consultation and are provided for comment. Your comments will help shape future flood risk management. The delivery of the proposed actions is subject to available funding and resources.

Actions proposed to start before June 2028

Community engagement (Ref: 24901)	
Action	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk.
Action detail	Community engagement will continue in connection with ongoing projects and activities. This will include engaging with the community on the development of the flood study.
Coordination	The action delivery lead is Perth and Kinross Council. Awareness raising and community engagement will take place around any projects and will be coordinated through the Local Plan District Partnership.

Flood study (Ref: 24902)	
Action	An understanding of flood risk and associated issues in the area is to be developed, which may include surveys and modelling and should consider the impacts of climate change on flood risk.
Action detail	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 should be considered and include the assessment of the potential impacts of climate change.
Coordination	The action delivery lead is Perth and Kinross Council. Perth and Kinross Council will engage a consulting engineer to investigate the river 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.

SEPA and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

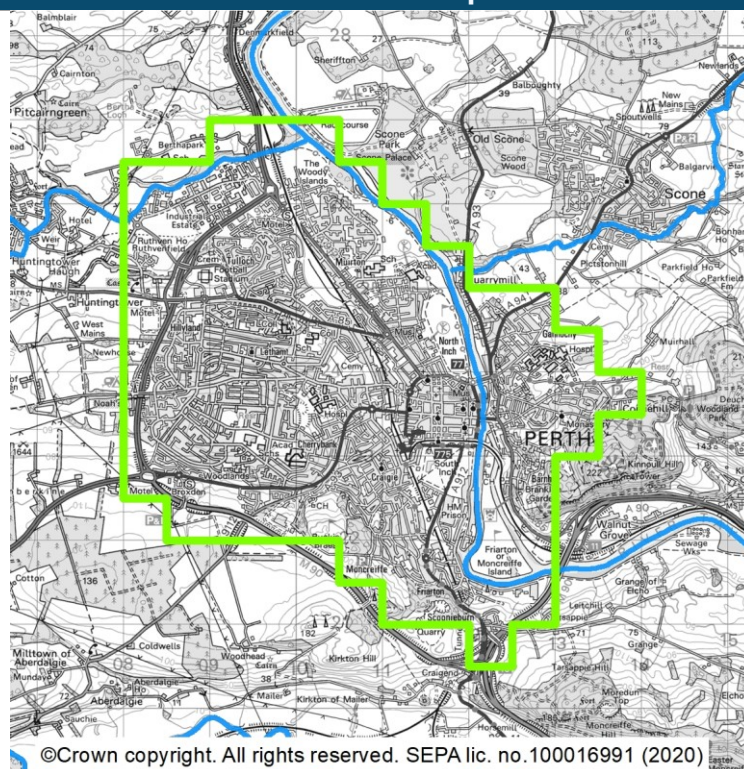
Working in partnership is at the heart of flood risk management, responsible authorities and SEPA regularly work together in all areas to improve the coordination of flood management. Working across organisations and groups contributes to sustainable ways of managing current and future flood risk in a community. The potential for joint working will be further explored following the consultation feedback.

Perth (target area 253)

Summary

The city of Perth is located on the River Tay within the Perth and Kinross Council area. 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.

Location map



What is the 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. Understanding of sewer, river and surface water flooding is 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.

What are the objectives for the area?

In each target area, SEPA and the responsible authorities have set objectives for the management of flood risk. In some locations, the objectives provide a short-term direction that will be reviewed and updated when more information is available. In others they provide a long-term direction for the management of flooding within a community. The objectives along with the current understanding of flood risk help to identify the actions that are required in the short and long term. It may take several years or multiple 6 year cycles to achieve the identified objectives, but they set a common goal for multiple agencies. The following package of objectives have been established for this area. The objectives must be considered alongside national principles to manage flood risk. These include:

- Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.
- Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

- Consider whole catchments and coastlines and work with natural processes and the environment to deliver multiple outcomes.

Objective ref	Objective type	Objective description
2531	Avoid flood risk	Avoid development that increases flood risk in Perth
2532	Avoid flood risk	Avoid an increase in flood risk by the appropriate management and maintenance of the Perth Flood Protection Scheme
2533	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Perth
2534	Reduce flood risk	Reduce the risk of river flooding from the Craigie Burn in Perth.
2535	Reduce flood risk	Reduce the risk of surface water flooding in Perth.

What actions are proposed for this area?

This section provides information on the draft proposed actions for this target area. The proposed actions take account of the understanding of flood risk and the package of objectives set for the area. Actions will be coordinated to achieve maximum benefit; this will be determined once the actions have been finalised. The proposed actions are draft for consultation and are provided for comment. Your comments will help shape future flood risk management. The delivery of the proposed actions is subject to available funding and resources.

Actions proposed to start before June 2028

Flood protection works (Ref: 25301)	
Action	The selected preferred approach for managing flood risk is to be designed, including consideration of the long-term impacts of climate change. The flood scheme is to be built once statutory approval has been secured.
Action detail	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. The responsible authority proposes this action as the best option for managing flood risk in this community. The delivery of this action is subject to funding being made available. 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.
Coordination	The action delivery lead is Perth and Kinross Council. The Bridgend surface water flood protection works will be coordinated through the Tay Local Plan District Partnership. The flood protection works will be coordinated with other related actions.

Flood study (options appraisal) (Ref: 25302)	
Action	In areas where flood risk is confirmed, a range of possible options to manage flood risk are to be identified, including natural flood management actions where suitable, and a preferred approach is to be chosen. This should include adaptive planning to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	Perth and Kinross Council will engage consulting engineers to complete the Craigie Burn Flood Protection Study as set out in the current Tay local flood risk management plan. This next phased of work will commence in the 2021/22 financial year.
Coordination	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.

Sewer flood risk assessment (Ref: 25303)

Action	The volume of water that would overwhelm the sewer system and cause flooding from man-holes or inside our homes is to be assessed, to support understanding of the performance of the urban drainage network
Action detail	Scottish Water will carry out an assessment of sewer flood risk within the highest priority sewer catchments, which includes Perth City sewer catchment in this target area. This will help to improve knowledge and understanding of potential surface water flood risk. Funding for this action is secured through Scottish Water's strategic planning commitments.
Coordination	Action delivery lead is Scottish Water in coordination with the local authority and SEPA.

Surface water management plan (Ref: 25304)

Action	Areas at risk of heavy or prolonged rainfall causing flooding due to water ponding on man-made surfaces or overwhelming the drainage system are to be identified. These priority areas will provide a baseline for the identification of next steps in managing water ponding or over-whelmed drainage systems. This should guide adaptive planning to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	Perth and Kinross Council is currently developing contract documents to engage a consulting engineer to develop the Perth Surface Water Management Plan. The results of the sewer flood risk assessment and the Perth Integrated Catchment Study will be considered. Current and long term flood risk will be 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 should be explored.
Coordination	The action delivery lead is Perth and Kinross Council. Perth and Kinross Council will engage consulting engineers to investigate the surface water flood risk and identify potential options for managing that risk. The plan will be coordinated through the Tay Local Plan District Partnership and with other related actions. This is a priority area for Scottish Water, who will work with and support surface water management planning through ensuring that best available knowledge and data is used to input into the surface water management plan.

Flood study (options appraisal) (Ref: 25305)

Action	In areas where flood risk is confirmed, a range of possible options to manage flood risk are to be identified, including natural flood management actions where suitable, and a preferred approach is to be chosen. This should include adaptive planning to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	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.
Coordination	Perth and Kinross Council will engage consulting engineers to further investigate the surface water 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, including the Perth Surface Water Management Plan. Scottish Water will support the council through ensuring that best available knowledge and data is used to input into the study.

Flood study (options appraisal) (Ref: 25306)

Action	In areas where flood risk is confirmed, a range of possible options to manage flood risk are to be identified, including natural flood management actions where suitable, and a preferred approach is to be chosen. This should include adaptive planning to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	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. 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	Action delivery leads are Scottish Water and Perth and Kinross Council and coordination will be determined once the actions have been finalised.

Community engagement (Ref: 25307)

Action	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk.
Action detail	Community engagement will continue in connection with ongoing projects and activities. Perth and Kinross will continue to coordinate with the Local Resilience Partnerships Community and Business Resilience Group and other community resilience groups on a priority needs basis where resources allow.
Coordination	The action delivery lead is Perth and Kinross Council. Awareness raising and community engagement will take place around any projects and will be coordinated through the Local Plan District Partnership.

Community resilience group (Ref: 25308)

Action	The group of community volunteers work to prepare and put in practice their Community Resilience Plan and be supported by the local authority.
Action detail	Perth and Kinross Council will continue to liaise with the Local Resilience Partnerships Community and Business Resilience Group and the South Inch Flood Group.
Coordination	The action delivery lead is the community. Perth and Kinross Council will continue to coordinate with the Local Resilience Partnerships Community and Business Resilience Group and the South Inch Flood Group on a priority needs basis where resources allow.

Maintain flood protection scheme (Ref: 25309)

Action	The existing flood defences are to be maintained by the asset owner to ensure they are in good condition.
Action detail	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	The action delivery lead is Perth and Kinross Council. Perth and Kinross Council's Roads Maintenance Partnership will maintain any existing flood protection scheme through a programme of inspections carried out in accordance with the recommendations set out in the scheme maintenance manuals. Maintenance works will be coordinated with SEPA, SNH, landowners and other stakeholders as required. The maintenance of the flood scheme will also be coordinated with related actions.

Flood warning maintenance (Ref: 25310)

Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the Almond flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

Flood warning maintenance (Ref: 25311)

Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the River Tay flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

Actions proposed after June 2028

The following actions are proposed to take place after June 2028. These will be reviewed in 2026, considering added information at that time, to ensure they are still the most appropriate actions for the community.

Adaptation plan (Ref: 25312)

Action	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.
Action detail	An adaptation plan will be developed to cover existing flood protection schemes in the Perth and Kinross Council area. The plan will aim to monitor the impacts of climate change on flood risk, including the impact on existing flood schemes, and to develop a long-term flood risk management approach.
Coordination	The action delivery lead is Perth and Kinross Council. The adaptation plan will be coordinated through the Local Plan District Partnership and with other related actions.

Flood warning maintenance (Ref: 25313)

Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should investigate improvements to the River Tay flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

SEPA and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

Working in partnership is at the heart of flood risk management, responsible authorities and SEPA regularly work together in all areas to improve the coordination of flood management. Working across organisations and groups contributes to sustainable ways of managing current and future flood risk in a community. The potential for joint working will be further explored following the consultation feedback.

The current study work (for Feus Road, Cavendish Avenue, Marshall Place, South Street and Bells Sports Centre) is being delivered jointly by Scottish Water and Perth and Kinross Council.

There is potential to work with SEPA's River Basin Management team to improve the physical condition of the water environment.

Scottish Water will explore the potential for developing a strategic drainage partnership with local authorities, SEPA and other relevant authorities to support long term sustainable drainage planning.

02/08/13 (Comrie)

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.

There is 1 area in this Potentially Vulnerable Area, which has been the focus of further assessment, this is identified below. Further information on the proposed objectives and actions to manage flood risk within this area is provided below.

List of target areas

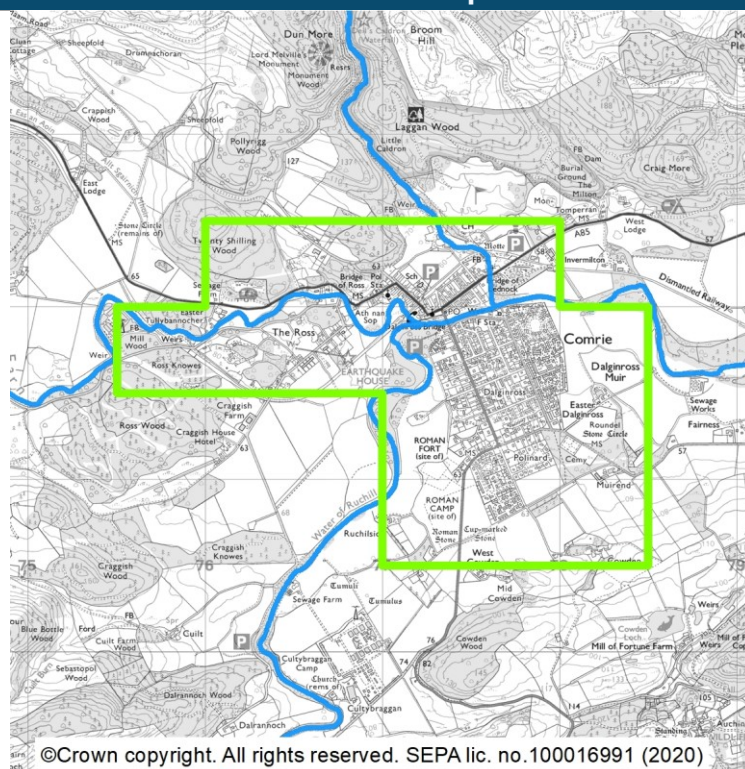
Comrie (target area 213)

Comrie (target area 213)

Summary

Comrie is located in the Perth and Kinross Council area. 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.

Location map



What is the 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 studies supporting the on-going development of the proposed Comrie Flood Protection Scheme. The national understanding of surface water is also improved by the sewer flood risk assessment.

There is a long record of flooding in this area. In August 2012, approximately 60 properties were flooded in Dalginross from the Water of Ruchill. In November 2012 the Water of Ruchill flooded again, inundating approximately 150 homes. The most recent flood was recorded in January 2016 when the fire service was called to attend a localised flooding issue.

What are the objectives for the area?

In each target area, SEPA and the responsible authorities have set objectives for the management of flood risk. In some locations, the objectives provide a short-term direction that will be reviewed and updated when more information is available. In others they provide a long-term direction for the management of flooding within a community. The objectives along with the current understanding of flood risk help to identify the actions that are required in the short and long term. It may take several years or multiple 6 year cycles to achieve the identified objectives, but they set a common goal for multiple agencies. The following package of objectives have been established for this area. The objectives must be considered alongside national principles to manage flood risk. These include:

- Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.
- Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.
- Consider whole catchments and coastlines and work with natural processes and the environment to deliver multiple outcomes.

Objective ref	Objective type	Objective description
2131	Avoid flood risk	Avoid development that increases flood risk in Comrie
2132	Avoid flood risk	Avoid an increase in flood risk by the appropriate management and maintenance of the flood protection scheme in Comrie
2133	Prepare for flooding	Prepare for current flood risk and/or future flooding as a result of climate change in Comrie
2134	Reduce flood risk	Reduce the risk of river flooding from the River Earn, River Lednock and the Water of Ruchill in Comrie
2135	Reduce flood risk	Reduce the risk of surface water flooding in Comrie

What actions are proposed for this area?

This section provides information on the draft proposed actions for this target area. The proposed actions take account of the understanding of flood risk and the package of objectives set for the area. Actions will be coordinated to achieve maximum benefit; this will be determined once the actions have been finalised. The proposed actions are draft for consultation and are provided for comment. Your comments will help shape future flood risk management. The delivery of the proposed actions is subject to available funding and resources.

Actions proposed to start before June 2028

Flood protection scheme (Ref: 21301)	
Action	The selected preferred approach for managing flood risk is to be designed, including consideration of the long-term impacts of climate change. The flood scheme is to be built once statutory approval has been secured.
Action detail	The pending Comrie Flood Protection Scheme will be progressed through the remaining statutory process as set out under the Flood Risk Management (Scotland) Act 2009. The detailed design will be completed thereafter, followed by procurement and construction. The development of the proposals will continue to be informed by community engagement. 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	The action delivery lead is Perth and Kinross Council. The Comrie Flood Protection Scheme will be coordinated through the Tay Local Plan District Partnership. The flood protection scheme will be coordinated with related actions.

Sewer flood risk assessment (Ref: 21302)	
Action	The volume of water that would overwhelm the sewer system and cause flooding from man-holes or inside our homes is to be assessed, to support understanding of the performance of the urban drainage network
Action detail	Scottish Water will carry out an assessment of sewer flood risk within the highest priority sewer catchments, which includes Comrie sewer catchment in this target area. This will help to improve knowledge and understanding of potential surface water flood risk. Funding for this action is secured through Scottish Water's strategic planning commitments.
Coordination	Action delivery lead is Scottish Water in coordination with the local authority and SEPA.

Community resilience group (Ref: 21303)	
Action	The group of community volunteers work to prepare and put in practice their Community Resilience Plan and be supported by the local authority.
Action detail	Perth and Kinross Council will continue to liaise with the Comrie Community Resilience Group.
Coordination	The action delivery lead is the community. Perth and Kinross Council will continue to coordinate with the Comrie Community Resilience Group on a priority needs basis where resources allow.

Community engagement (Ref: 21304)

Action	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk.
Action detail	Community engagement will continue in connection with ongoing projects and activities. Perth and Kinross Council will continue to coordinate with the Comrie Community Resilience Group on a priority needs basis where resources allow.
Coordination	The action delivery lead is Perth and Kinross Council. Awareness raising and community engagement will take place around any projects and will be coordinated through the Local Plan District Partnership.

Surface water management plan (Ref: 21305)

Action	Areas at risk of heavy or prolonged rainfall causing flooding due to water ponding on man-made surfaces or overwhelming the drainage system are to be identified. These priority areas will provide a baseline for the identification of next steps in managing water ponding or over-whelmed drainage systems. This should guide adaptive planning to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	Residual surface water flood risk has been identified in Comrie. Perth and Kinross Council will develop a surface water management plan for the area. The plan will assess and analyse surface water flooding hotspots, identifying locations where further detailed studies or works are required. Short and long term flood risk will be considered and how the area may adapt to changes in risk due to climate change.
Coordination	The action delivery lead is Perth and Kinross Council. Perth and Kinross Council will engage consulting engineers to investigate the surface water flood risk and identify potential options for managing that risk. The plan will be coordinated through the Tay Local Plan District Partnership and with other related actions. Scottish Water will work with and support surface water management planning through ensuring that best available knowledge and data is used to input into the surface water management plans.

Maintain flood protection scheme (Ref: 21306)

Action	The existing flood defences are to be maintained by the asset owner to ensure they are in good condition.
Action detail	Perth and Kinross Council will continue to maintain existing flood defences and flood protection works in Comrie. 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	The action delivery lead is Perth and Kinross Council. Perth and Kinross Council's Roads Maintenance Partnership will maintain any existing flood protection scheme through a programme of inspections carried out in accordance with the recommendations set out in the scheme maintenance manuals. Maintenance works will be coordinated with SEPA, SNH, landowners and other stakeholders as required. The maintenance of the flood scheme will also be coordinated with related actions.

Flood warning maintenance (Ref: 21307)

Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the Comrie flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

Actions proposed after June 2028

The following actions are proposed to take place after June 2028. These will be reviewed in 2026, considering added information at that time, to ensure they are still the most appropriate actions for the community.

Flood scheme or works implementation (Ref: 21308)	
Action	The flood scheme/works is to be built following agreement of the design, costs and timescales.
Action detail	Transport Scotland will carry out civil engineering work which will reduce the risk of flooding on identified sections of the trunk road. Transport Scotland will manage the reduction through the operation of the trunk road via the routine and cyclic maintenance programme. Transport Scotland maintains an on-going review of areas of known historic flood locations and should areas such as Comrie be identified as such an area, Transport Scotland will seek funding in due course based on a prioritised criteria to support the routine and cyclic maintenance programme at these locations.
Coordination	The action delivery lead is Transport Scotland. The management of repairs and improvements to existing trunk road structure assets that will reduce the physical risk, or disruption risk, related to areas at risk of flooding on the trunk road is led by Transport Scotland's Network Maintenance team (with support from the regular maintenance and inspection regimes undertaken by Transport Scotland's Operating Companies). For new major road scheme construction, the lead will fall with Transport Scotland's Major Transport Infrastructure Projects Directorate. The development and delivery of the flood protection schemes and works on new or existing assets will be co-ordinated, with all appropriate stakeholders to ensure an integrated and collaborative approach is demonstrated. The Scottish Climate Change Adaptation Programme Transport Steering Group will have oversight of flooding mitigation undertaken on existing major roads, with contributions from both Transport Scotland and SCOTS; feedback from this Group into the SCOTS Flooding Group is envisaged in order to keep authorities informed of the related action activities for the PVA. Periodic discussion and advice from SEPA will also be sought. The management of unplanned disruptions from flooding is being coordinated in Transport Scotland via an Unplanned Disruption Working Group, which comprises various teams across the Trunk Road and Bus Operations (TRBO) Directorate.

Adaptation plan (Ref: 21309)	
Action	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.
Action detail	An adaptation plan will be developed to cover existing flood protection schemes in the Perth and Kinross Council area. The plan will aim to monitor the impacts of climate change on flood risk, including the impact on existing flood schemes, and to develop a long-term flood risk management approach.
Coordination	The action delivery lead is Perth and Kinross Council. The adaptation plan will be coordinated through the Local Plan District Partnership and with other related actions.

SEPA and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

Working in partnership is at the heart of flood risk management, responsible authorities and SEPA regularly work together in all areas to improve the coordination of flood management. Working across organisations and groups contributes to sustainable ways of managing current and future flood risk in a community. The potential for joint working will be further explored following the consultation feedback.

02/08/14 (Bridge of Earn)

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.

There is 1 area in this Potentially Vulnerable Area, which has been the focus of further assessment, this is identified below. Further information on the proposed objectives and actions to manage flood risk within this area is provided below.

List of target areas

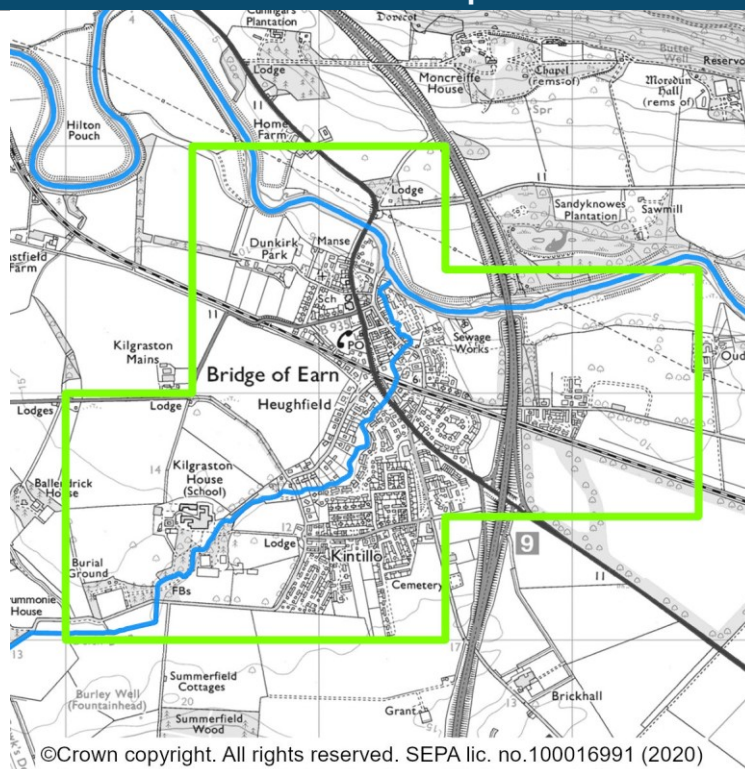
Bridge of Earn (target area 205)

Bridge of Earn (target area 205)

Summary

The town of Bridge of Earn is located on the River Earn and within the Perth and Kinross Council area. 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.

Location map



What is the 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 is 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 June 2016 intense rainfall caused flooding to homes, roads and a local school. The most recent flood occurred in August 2020 when heavy rain flooded 1 property and some roads.

What are the objectives for the area?

In each target area, SEPA and the responsible authorities have set objectives for the management of flood risk. In some locations, the objectives provide a short-term direction that will be reviewed and updated when more information is available. In others they provide a long-term direction for the management of flooding within a community. The objectives along with the current understanding of flood risk help to identify the actions that are required in the short and long term. It may take several years or multiple 6 year cycles to achieve the identified objectives, but they set a common goal for multiple agencies. The following package of objectives have been established for this area. The objectives must be considered alongside national principles to manage flood risk. These include:

- Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.
- Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.
- Consider whole catchments and coastlines and work with natural processes and the environment to deliver multiple outcomes.

Objective ref	Objective type	Objective description
2051	Avoid flood risk	Avoid development that increases flood risk in Bridge of Earn
2052	Avoid flood risk	Avoid an increase in flood risk by the appropriate management and maintenance of the Bridge of Earn Flood Protection Scheme
2053	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Bridge of Earn
2054	Reduce flood risk	Reduce the risk of surface water flooding in Bridge of Earn.

What actions are proposed for this area?

This section provides information on the draft proposed actions for this target area. The proposed actions take account of the understanding of flood risk and the package of objectives set for the area. Actions will be coordinated to achieve maximum benefit; this will be determined once the actions have been finalised. The proposed actions are draft for consultation and are provided for comment. Your comments will help shape future flood risk management. The delivery of the proposed actions is subject to available funding and resources.

Actions proposed to start before June 2028

Community engagement (Ref: 20501)	
Action	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk.
Action detail	Community engagement will continue in connection with projects in the area. Perth and Kinross Council will continue to coordinate with the local community council and other groups on a priority needs basis where resources allow.
Coordination	The action delivery lead is Perth and Kinross Council. Awareness raising and community engagement will take place around any projects and will be coordinated through the Local Plan District Partnership.

Sewer flood risk assessment (Ref: 20502)	
Action	The volume of water that would overwhelm the sewer system and cause flooding from man-holes or inside our homes is to be assessed, to support understanding of the performance of the urban drainage network
Action detail	Scottish Water will carry out an assessment of sewer flood risk within the highest priority sewer catchments, which includes Perth City sewer catchment in this target area. This will help to improve knowledge and understanding of potential surface water flood risk. Funding for this action is secured through Scottish Water's strategic planning commitments.
Coordination	Action delivery lead is Scottish Water in coordination with the local authority and SEPA.

Flood study (Ref: 20503)	
Action	An understanding of flood risk and associated issues in the area is to be developed, which may include surveys and modelling and should consider the impacts of climate change on flood risk.
Action detail	A flood study should be carried out in order to better understand the integrated flooding mechanisms in Bridge of Earn. The study should 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 should be incorporated. Current and long term flood risk should be considered.
Coordination	The action delivery lead is Perth and Kinross Council. Perth and Kinross Council will engage consulting engineers to investigate the surface water 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. Scottish Water will work with and support flood risk management planning through ensuring that best available knowledge and data is used to input into the flood study.

Maintain flood protection scheme (Ref: 20504)

Action	The existing flood defences are to be maintained by the asset owner to ensure they are in good condition.
Action detail	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	The action delivery lead is Perth and Kinross Council. Perth and Kinross Council's Roads Maintenance Partnership will maintain any existing flood protection scheme through a programme of inspections carried out in accordance with the recommendations set out in the scheme maintenance manuals. Maintenance works will be coordinated with SEPA, SNH, landowners and other stakeholders as required. The maintenance of the flood scheme will also be coordinated with related actions.

Flood warning maintenance (Ref: 20505)

Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the Earn flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

Actions proposed after June 2028

The following actions are proposed to take place after June 2028. These will be reviewed in 2026, considering added information at that time, to ensure they are still the most appropriate actions for the community.

Adaptation plan (Ref: 20506)

Action	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.
Action detail	An adaptation plan will be developed to cover existing flood protection schemes in the Perth and Kinross Council area. The plan will aim to monitor the impacts of climate change on flood risk, including the impact on existing flood schemes, and to develop a long-term flood risk management approach.
Coordination	The action delivery lead is Perth and Kinross Council. The adaptation plan will be coordinated through the Local Plan District Partnership and with other related actions.

SEPA and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

Working in partnership is at the heart of flood risk management, responsible authorities and SEPA regularly work together in all areas to improve the coordination of flood management. Working across organisations and groups contributes to sustainable ways of managing current and future flood risk in a community. The potential for joint working will be further explored following the consultation feedback.

Flood Risk Management Glossary

July 2021



Term	Definition
Accretion	Accumulation of sediment.
Actions	Activities undertaken to reduce the impact of flooding. Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities. The actions presented in the consultation are draft and will be finalised after the consultation. Selection of actions to deliver the agreed objectives has been based on a detailed assessment and comparison of economic, social and environmental criteria.
Annual Average Damages (AAD)	Depending on its size or severity each flood will cause a different amount of damage to a given area. Annual Average Damages are the theoretical average economic damages caused by flooding when considered over a very long period of time. It does not mean that damage will occur every year: in many years there will be no damages, in some years minor damages and in a few years major damages may occur. High likelihood events, which occur more regularly, contribute proportionally more to 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 Handbook (2010).
Appraisal	Appraisal is the process of defining objectives, examining options and weighing up costs, benefits, risks and uncertainties before a decision is made. The flood risk management plans appraisal method is designed to set objectives and identify the most sustainable combination of actions to tackle flooding from rivers, the sea and surface water.
Awareness raising	Public awareness, participation and community support are essential components of sustainable flood risk management. SEPA and the responsible authorities have a duty to raise public awareness of flood risk. This is undertaken both individually and collaboratively by a range of organisations. Improved awareness of flood risk and actions that prepare individuals, homes and businesses for flooding can reduce overall impact.
Bathing waters	Bathing waters are classed as protected areas under Annex IV of the Water Framework Directive (WFD). There are 84 designated bathing waters in Scotland.

Term	Definition
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 of 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 acknowledged that it is not always possible to accurately estimate economic values for all elements of benefit, and BCR is just one of a number of techniques used in appraisal.
Blue infrastructure	Blue infrastructure is often complementary to 'green infrastructure' and includes sustainable drainage systems, swales (shallow, broad and vegetated channels designed to store and/or convey runoff and remove pollutants), wetlands, rivers, canals (and their banks) and all watercourses.
Business and services	Properties that are not used for people to live in, such as shops or other public, commercial or industrial buildings.
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 improvement	Where work has been carried out on the river's channel allowing an increase in the volume of water it can carry.
Characterisation	Provides a description of the natural characteristics of catchments, coastlines and urban areas in terms of hydrology, geomorphology, topography and land use. It also includes the characterisation of existing levels of flood risk and existing flood risk management activity.
Coastal flooding	Flooding that results from 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.
Combined sewer	Combined sewers transport sewage from homes and industry as well as carrying surface water runoff from gutters, drains and some highways. Heavy or prolonged rainfall can rapidly increase the flow in a combined sewer until the amount of water exceeds sewer capacity.
Combined sewer (overflow) (CSO)	Combined sewer overflows are purposely designed structures to ensure any excess water from sewerage systems is discharged in a controlled way and at a specific managed location.

Term	Definition
Community facility	Within the flood risk management plans this term 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.
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 four lead local flood authorities located within the Solway Tweed River Basin District.
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	<p>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.</p> <p>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 flood risk management 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.</p> <p>See also 'Annual Average Damages'</p>

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 type of temporary defence that requires built-in parts and therefore can only be deployed in one specific location.
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Term	Definition
Deposition	A natural process leading to an accumulation of sediment on a river bed, floodplain or coastline.
Economic Impact	An assessment of the economic value of the positive and negative effects of flooding and/or the actions taken to manage floods.
Embankment	Flood embankments are engineered earthfill 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 impacts, both negative and positive, of a proposal.
Environmental sites / environmental designated areas/ environmentally designated sites	Areas formally designated for environmental importance, such as Sites of Special Scientific Interest (SSSI) Special Protection Area (SPA) or Special Areas of Conservation (SAC).
Episodic erosion	Erosion induced by a single event, such as a storm.
Erosion	A natural process leading to the removal of sediment from a river bed, bank, floodplain or coastline.
Estuarine surge attenuation	A reduction in the wave energy caused by storm surge. Breakwaters (barriers built out into the sea to protect a coast or harbour from the force of waves) or habitats such as saltmarsh can slow down and reduce the inland impact of storm surges (the rising of the sea due to wind and atmospheric pressure changes associated with storms), thereby reducing coastal flood risk.
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.

Flash flood	A flood that occurs 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 a short time for warning or actions.
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Term	Definition
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 Act, '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 from one or more sources for a particular likelihood.
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 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 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. Flood hazard and risk maps are referred to collectively as flood maps and are available on the SEPA website.

Flood Prevention Scheme / Flood Protection Scheme (FPS)	A flood protection scheme, as defined by the Flood Risk Management Act, is a scheme by a local authority for the management of flood risk within the authority area. This includes defence measures (flood prevention schemes) formerly promoted under the Flood Prevention (Scotland) Act 1961.
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Term	Definition
Flood Prevention (Scotland) Act 1961	The Flood Prevention (Scotland) Act 1961 gave local authorities discretionary powers to make and build flood prevention schemes. It was superseded by the Flood Risk Management (Scotland) Act 2009.
Flood protection study	Flood protection studies aim to refine understanding of the hazard and risk associated with flooding in a particular area, catchment or coastline. They will involve detailed assessment of flood hazard and / or risk and may develop options for managing flood risk.
Flood protection works	Flood protection works can include the same flood defence measures that would make up a formal Flood Protection Scheme but without the legal process, protections and requirements that would come by delivering the works as a scheme.
Flood risk	A measure of the combination of the likelihood of flooding occurring and the associated impacts on people, the economy and the environment.
Flood Risk Assessment	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 Act, flood risk management planning is undertaken in six year cycles. The first planning cycle is 2015 – 2021. The first delivery cycle is lagged by approximately 6 months and is from 2016-2022.
Flood Risk Management Local Advisory Groups	Flood risk management local advisory groups are stakeholder groups convened to advise SEPA and lead local authorities in the preparation of flood risk management plans. SEPA and lead local authorities must have regard to the advice they provide.
Flood Risk Management Plan (FRM Plans)	A term used in the Flood Risk Management Act. Flood risk management plans set out a long-term vision for the overall management of flood risk. They contain a summary of flood risk in each Local Plan District, together with information on catchment characteristics and a summary of objectives and actions within Potentially Vulnerable Areas.
Flood Risk Management Strategy (FRM Strategy)	The term used for the first set of flood risk management plans, which were published in December 2015. These are now referred to as the flood risk management plans to keep consistency with the Flood Risk Management Act and other areas of the UK.

Flood risk map	Complements the flood hazard maps published on the SEPA website 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 wall	A flood defence feature used to defend an area from flood water to a specified standard of protection.
Flood Warning Target Area (FWTA)	A Flood Warning target area is where SEPA operates a formal Flood Monitoring Scheme to issue targeted flood warning messages for properties located in the area.

Term	Definition
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.
Floodplain	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.
Fluvial flooding	Flooding from a river or other watercourse.
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 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.
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 leading the production, consultation, publication and review of a Local flood risk management plan.

Term	Definition
Likelihood of flooding	<p>The chance of flooding occurring.</p> <p>High likelihood: A flood event is likely in the defined area on average once in every ten years (1:10). Or a 10% chance of happening in any one year.</p> <p>Medium likelihood: A flood event is likely 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.</p> <p>Low likelihood: A flood event is likely in the defined area on average once in every thousand years (1:1000). Or a 0.1% chance of happening in any one year.</p>
Local Flood Risk Management Plans (Local FRM Plan)	Local flood risk management plans, produced by lead local authorities, will take forward the objectives and actions set out in flood risk management plans. They will provide detail on the funding, timeline of delivery, arrangements and co-ordination of actions at the local level during each six year, flood risk management planning cycle.
Local Nature Reserve (LNR)	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	Geographical areas for the purposes of flood risk management planning. There are 14 Local Plan Districts (LPDs) in Scotland.
Local Plan District Partnerships	Each LPD has established a local partnership comprised of local authorities, SEPA and Scottish Water and others as appropriate. These partnerships are distinct from the flood risk management plans 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 tree-line.

National Flood Management Advisory Group (NFMAG)	The National Flood Management Advisory Group provides advice and support to SEPA and, where required, Scottish Water, local authorities and other responsible authorities on the production of flood risk management plans and Local flood risk management plans.
National Flood Risk Assessment (NFRA)	A national analysis of flood risk from all sources of flooding which also considers climate change impacts. First published in December 2011 this provides the information required to undertake a strategic approach to flood management that identifies areas at flood risk that require further appraisal. The NFRA was reviewed and updated for the second cycle of flood risk management planning in 2018.

Term	Definition
Natural flood management (NFM)	A set of flood management techniques that aim to work with natural processes (or nature) to manage flood risk.
Non-residential properties	Properties that are not used for people to live in, such as shops or other public, commercial or industrial buildings.
Objectives	Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding.
One in 200 year flood	See 'likelihood of flooding' and 'return period'.
Options appraisal study	An options appraisal study looks to identify and assess 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)	Catchments identified as being at risk of flooding and where the impact of flooding is sufficient to justify further assessment and appraisal. There were 243 PVAs identified by SEPA in the 2011 National Flood Risk Assessment and were the focus of the first flood risk management planning cycle. There are 233 PVAs identified for the 2018 National Flood Risk Assessment.
Preferred option	A preferred option identifies the collection of flood management options which combined offer the most suitable way of managing flooding within an area. Based on the economic, social and environmental benefits of the options.

Property level protection	Property level protection includes flood gates, sandbags and other temporary barriers that can be used to prevent water from entering individual properties during a flood.
Property level protection scheme	Some responsible authorities may have a formal scheme to provide, install and maintain property level protection for properties.
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 reduced by increasing its resilience to flooding.
Residual risk	The risk which remains after risk management and mitigation. This may include risk due to very severe (above design standard) storms or risks from unforeseen hazards.
Resilience	The ability of an individual, community or system to recover from flooding.
Responsible authority	Designated under the Flood Risk Management (Scotland) Act 2009 and associated legislation as local authorities, Scottish Water and, from 21 December 2013, the National Park Authorities and Forestry Commission Scotland. Responsible authorities, along with SEPA and Scottish Ministers, have specific duties in relation to their flood risk related functions.
Return period	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).

Term	Definition
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 plans this commonly refers to the riparian owner, which denotes ownership of the land area beside a river or stream.
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 the framework 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.

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.
Sediment management	Sediment management covers a wide range of activities that includes anything from the small scale removal of dry gravels to the dredging of whole river channels and the reintroduction of removed sediment into the water environment. Historically, sediment management has been carried out for several reasons, including reducing flood risk, reducing bank erosion, for use as aggregate and to improve land drainage.
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.
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.
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.

Term	Definition
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 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 improvements	Strategic mapping improvement 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 Act, Section 16) by Scottish Water. These have been selected as appropriate for each Potentially Vulnerable Area.
Term	Definition
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 three pillars of sustainability – environmental, social and economic.
Sustainable drainage systems (SuDS)	A set of techniques designed to slow the flow of water. They can contribute to reducing flood risk by absorbing some of the initial rainfall and then releasing it gradually, thereby reducing the flood peak and helping to mitigate downstream problems. SuDS encourage us to take account of quality, quantity and amenity / biodiversity.
Target area	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. To benefit the community, actions may apply to outside the target area. National flood risk management efforts and funding should be targeted to benefit these target areas.

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.
Voe	A dialect term, common in place names and used to refer to a small bay or creek in Orkney or Shetland.
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 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.