Solway Local Plan District (LPD 14)

Flood risk management plan 2022-2028



This document has been produced in collaboration with:

Dumfries & Galloway Council

South Lanarkshire Council

East Ayrshire Council
Comhairle Siorrachd Àir an Ear

Scottish Water
Trusted to serve Scotland

South Ayrshire Council
Comhairle Siorrachd Àir a Deas

Scottish Borders Council

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

This is second local flood risk management plan for the Solway Local Plan District, building on the success of the first cycle, describing the new actions which will make a real difference to managing the risks of flooding and recovery from any future flood events. The task now for us – local authorities, Scottish Water, the Scottish Environment Protection Agency (SEPA), the Scottish Government and all other responsible authorities and public bodies – is to continue to deliver actions that have been set into motion through the current and previous plans.

Foreword

The impacts of flooding experienced by individuals, communities and businesses can be devastating and long lasting. As a society, we need to take action to manage the risk of flooding and its impacts on our lives, recognising that the risk can't ever be removed entirely. The publication of this second Local Flood Risk Management Plan (LFRMP) takes our knowledge and understanding of flooding and the impacts of climate change and turns it into a set of actions that are planned, prioritised and co-ordinated to tackle flooding in the communities where it affects us the most. It is led and is published by Dumfries and Galloway Council on behalf of a partnership comprising three local authorities: Dumfries and Galloway Council, East Ayrshire Council and Scottish Borders Council; Scottish Water; SEPA; Forestry and Land Scotland and Forestry Scotland.

This plan describes the ambition for managing flooding and the priorities for actions that we believe are most important. It is based on the fact that how we plan for and manage our flood risk has far reaching consequences for our communities. The plan set the local direction of future flood risk management, helping to target investment and coordinate actions across public bodies. They explain what causes flooding in high-risk areas as well as the impacts when flooding does occur. This information is used as a basis for better decision-making across flood risk management organisations.

In summary, 34 areas have been identified as being objective target areas to flood risk across the Solway Local Plan District. These include 7,579 homes and businesses, rising to 9,735 homes and businesses by the 2080s due to climate change.

This LFRMP presents actions to avoid and reduce the risk of flooding, and prepare and protect us, and our communities, within these potentially vulnerable areas and across the Local Plan District. These actions include continuation of three flood protection schemes carried forward from Cycle 1 plan; flood studies; as well as flood warning schemes, and surface water management plans. The delivery of many of these actions may be dependent on the availability of funding, however, we can all play our part in managing flood risk as we are able. Individuals are the first line of defence against flooding and have responsibilities to protect themselves from

flooding. The publication of this local plan shows that the coordinated and collaborative efforts of public bodies can be brought together to deliver sustainable outcomes. However, the actions can only be delivered with the support of all the public bodies, the Scottish Government, and most importantly you and your communities. This LFRMP therefore provides the blueprint upon which SEPA, local authorities and Scottish Water and any other responsible authorities will deliver their flood risk management responsibilities and that all steps should be taken to manage flooding in a sustainable manner. I would like to thank all those who contributed to the development of this LFRMP, which will help shape the way in which floods and their impacts are managed across the Solway Local Plan District.

Contents

Section 1: Flood Risk Management in Scotland

1.1. What is a flood risk management plan?

The Local Flood Risk Management Plan (the 'Local Plan') has been developed to set out Actions to reduce the impact of flooding in the Solway Local Plan District. The Plan supplements the Flood Risk Management Plan (the 'SEPA Plan' developed and published by SEPA in partnership with other responsible authorities), which sets out Objectives and Actions to reduce flood risk from rivers, the sea and surface water. The SEPA Plan identifies where the risk of flooding and benefit of investment is greatest. The Local Plan supplements the Flood Risk Management Plan and sets out how and when prioritised Actions will be delivered with this investment.

Local Plans will be delivered over a six-year cycle with the current cycle between 2022 and 2028.

The Local Plan provides information to help individuals and communities to become more resilient to flooding. Everyone can take action with the confidence of what others are doing and with the clear knowledge when they are doing it.

The contents of the Local Plan have been agreed with the lead authority and every other responsible authority which has flood risk related functions exercisable in or in relation to the Local Plan District and SEPA.

The Local Plan is published by Dumfries and Galloway Council, lead authority for the Solway Local Plan District, in agreement with:

- Dumfries and Galloway Council
- East Ayrshire Council
- South Ayrshire Council
- South Lanarkshire Council
- Scottish Borders Council
- Scottish Water
- SEPA
- Forestry and Land Scotland and Scottish Forestry

The Local Plan is a requirement under the Flood Risk Management (Scotland) Act 2009.

1.2. Managing Flood Risk in Scotland

Flooding needs to be managed sustainably so that flood risk is reduced without moving the problem elsewhere. It must be done in a way that contributes to the health and wellbeing of communities, supports the protection and regeneration of the environment, improves resilience to climate change and enables a sustainable economy. Actions are needed on all sources of flooding – including from rivers, the sea, surface water and groundwater – to meet the needs of present and future generations while also protecting and enhancing the environment.

Using a 6-year planning cycle enables new data, improved techniques and developing knowledge and understanding to be incorporated regularly into the national approach to tackle flooding. Using all the latest information to regularly review our assessment of flood risk forms the foundation of a risk-based, plan-led approach to managing flooding sustainably. We have outlined below the key stages of the flood risk management process.

1.3. How to read this plan

This Local Plan should be read in parallel with the SEPA Plan for the Solway Local Plan District. Where appropriate the Local Plan will refer the reader to the SEPA Plan.

The SEPA Plan contains detailed information on flood risk and the impact it has on communities in the designated Potentially Vulnerable Areas (PVAs). The SEPA Plan was published in December 2022 and provides additional background information and national context.

The SEPA Plan can be viewed at https://www2.sepa.org.uk/frmplans/

The Solway Local Plan can be viewed at http://www.dumgal.gov.uk/flooding/

The layout of the Solway Local Plan follows that of the SEPA Plan:

- Section 1 contains background information on the approach taken in Scotland to manage flooding. It explains the duties and aims of relevant organisations, including how they work together and how flood risk management planning is linked to other government policies and initiatives. And, most importantly, how

flood risk management planning is delivered locally to each Local Plan District through a Local Flood Risk Management Plan.

- Section 2 includes an overview of the Solway Local Plan District (LPD); a summary of the communities at greatest risk in our area and the Objectives and Actions that will be applied across the whole LPD. This section is the most important section for those individuals and communities seeking to understand their flood risk and its management. For communities at the greatest risk of flooding (called Potentially Vulnerable Areas) there is a short description of the sources and consequences of flooding. Each PVA includes Objectives to reduce the risk of flooding from significant sources. Most importantly, the Actions that will achieve the Objectives are described, including when they will be implemented, which organisation is responsible, and how they are to be funded.
- Annexes to the Local Plan provide supporting documents and references at the end of the document.

Both the SEPA Plan and the Local Plan will be updated every six years.

1.3.1 Coordination, collaboration and partnership working

The Solway Local Plan has been developed in partnership with the following organisations:

Local Authorities work together for flood risk management planning purposes through a single 'Lead Authority' which has the responsibility to coordinate, prepare, publish and report on the Local Flood Risk Management Plan. Dumfries and Galloway Council was nominated Lead Local Authority for the Solway Local Plan District, with East Ayrshire, South Ayrshire, South Lanarkshire and Scottish Borders Council's as partners.

Scottish Environment Protection Agency (SEPA) has a duty to deliver a strategic approach to flood risk management within Scotland and is also responsible for providing national flood forecasting and flood warning service. On 23rd December 2015, SEPA published the first Flood Risk Management Plan for the Solway LPD, and which this Local Plan builds upon.

Scottish Water has the public drainage duty and is responsible for foul drainage and the drainage of rainwater run-off from roofs and any paved ground surface from the

boundary of properties. Additionally, Scottish Water helps to protect homes from flooding caused by sewers either overflowing or becoming blocked. Scottish Water is not responsible for private pipework or guttering within the property boundary.

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

Further detail on the roles and responsibilities of these organisations can be found in Annex 3

1.3.2 Consultation, engagement and advice

Two public consultations have been held during the development of the flood risk management plans. The first taken forward by SEPA was on the national flood risk assessment and the identification of PVAs (2018); the second, held jointly with Lead local authorities, was on the understanding of flooding in these priority areas and on the objectives and actions to manage flooding (2021). The latter, most recent consultation ran from December 2020 to October 2021, in two parts. From December 2020, information on the Local Plan Districts, the PVAs and the communities identified as target areas were made available. Further information on the objectives and actions planned for each target area were added in July 2021. SEPA published a public consultation digest. A summary of responses can be found on the SEPA website.

1.3.3 Strategic Environmental Assessment (SEA) and Habitats Regulation Appraisal (HRA)

A Strategic Environmental Assessment (SEA) was carried out by SEPA on the SEPA Plan for the Solway Local Plan District. This included an Environmental Report, and Post Adoption Statement (taking account of consultee's comments).

The Local Plan sits below the SEPA Plan, and reflects the measures proposed within the SEPA Plan. While no additional SEA has been undertaken, a screening document was submitted to ensure none of the additional information contained within the local plan constituted enough change to require its own assessment. It was deemed that no further work would be required at this stage.

A Habitats Regulations Appraisal (HRA) was undertaken for the SEPA Plan and in keeping with this process a screening document was submitted for the Local Plan in order to ensure there was no changes that may constitute further assessment. This response confirmed no further work is required at this stage and will be dealt with at project level.

1.4. Identification of Objectives, Appraisal, and Priortisation of actions

The identification of Objectives and Appraisal of Actions to reduce flood risk has been led by SEPA with significant consultation and contribution from Dumfries and Galloway, South Ayrshire, and Scottish Borders Councils, and Scottish Water. The setting of Objectives and selecting the most sustainable Actions to reduce flood risk in each Local Plan District will provide the long-term vision for Flood Risk Management in Scotland.

1.4.1 Flood Maps

In 2014, SEPA developed new river, coastal and surface water maps for the whole of Scotland. This was supplemented with more detailed, local assessments where available and suitable for use. Since 2014 the maps have been updated and revised.

In developing the flood maps SEPA have:

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

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

These maps were a requirement of Section 21 of the Flood Risk Management Scotland Act, and the conclusions that were drawn from these maps helped inform the direction of this Local Plan (see SEPA website for further information).

Objectives were then set to focus on the main sources and impacts of flooding identified in each Potentially Vulnerable Area. A wide range of Actions were appraised, including Flood Protection Schemes (or Works), Flood Protection Studies, Flood Warning Schemes, Surface Water Management Plans, and Natural Flood Management Studies (or Works).

To prioritise actions, SEPA separated the technical, risk-based assessment of priorities from aspects of local, practical deliverability. The costs and impacts of actions were used alongside information from delivery and funding bodies jointly to agree priorities and identify indicative delivery dates for actions. A National Prioritisation Advisory Group guided SEPA on the relative priority of flood risk management actions, having considered both the technical ranking and issues of local priority. This group included representatives from SEPA, local authorities, Scottish Water, Convention of Scottish Local Authorities (CoSLA) and Scottish Government.

Possible Actions were initially appraised against Technical, Financial and Practical considerations, before a more detailed appraisal taking account of the benefit to cost ratio and a non-monetised score, including factors that are less tangible such as environmental benefit.

The SEPA Plan provided the list of prioritised actions for the current six-year flood risk management planning cycle, 2022 to 2028. The Local Plan identifies who will be responsible for delivering each Action, when it will be undertaken, the funding arrangements to deliver each Action and any coordination activities – see Sections 2 and 3.

The agreed actions identified for the first six-year cycle were based on the current level of funding, where available. However, future spending reviews and annualised financial settlements may affect each party's ability to deliver these actions.

Implementation of the Local Plan will be monitored through the Steering Group, which will meet from time to time throughout the second cycle. Progress will be reported through each responsible authority's governance process.

1.5. Links with other plans, policies and legislative requirements

The Local Plan does not stand in isolation. As far as is practicable, an integrated approach to land and water management has been pursued. When developing the SEPA Plan and Local Plan, early links were made with other relevant aspects of water and land management including Local Development Plans, River Basin Management Plans, and emergency plans. In turn, the Responsible Authorities will work proactively to ensure the findings from these flood risk management plans and strategies will influence other planning initiatives in an interactive and iterative cycle. Making these links has helped identify opportunities to deliver multiple benefits from flood risk management goals, Objectives and Actions.

1.5.1 Duty to assess bodies of water and schedule clearance and repair works

Under Section 18 of the Flood Risk Management (Scotland) Act (2009), local authorities assess relevant bodies of water for the purposes of ascertaining whether the condition of any such body of water gives rise to a risk of flooding of land within or out with its area and prepare a schedule where it considers that clearance and repair works would substantially reduce that risk.

Dumfries and Galloway Council has implemented a plan-led, risk-based approach to assessing bodies of water that may give rise to flooding, and routinely assess the risk of flooding to a number of watercourses across the region on an annual basis.

1.5.2 River Basin Management Planning

River basin management aims to protect and improve the condition of our rivers, lochs, estuaries and coastal waters.

Developing a planned approach to tackling flood risk has provided an opportunity to connect with plans to improve the quality of Scotland's water environment at the same time. For example, coordination between river basin management and flood risk management can reduce flood risk, whilst improving water quality and biodiversity.

SEPA has led the delivery of River Basin Management Plans and Flood Risk Management Plans, and they have worked with Dumfries and Galloway Council in the development of the Local Flood Risk Management Plans to ensure that there is appropriate consistency and coordination in both Plans.

1.5.3 Land Use and Spatial Planning

Dumfries and Galloway Council review and update their Local Development Plans. These plans set out the Strategy for delivering appropriate development within each area and take into account a number of constraints including flood risk.

The current Local Development Plan (LDP2) was adopted in October 2019 and contains the vast majority of the Council's general planning policies, including those relating to flood risk. The plan will likely be reviewed again following publication of the new National Planning Framework 4 (NPF4). The Planning (Scotland) Act 2021 introduced that NPF4 (which will include general policies) will become part of the Development Plan for the first time and therefore will be essential for considering how Dumfries and Galloway Council policy is taken forward. In any event, the Development Plan will continue to take account of flood risk and the actions proposed in this Local Flood Risk Management Plan. The second Local Development Plan can be viewed here https://www.dumgal.gov.uk/ldp2

Section 2: Solway Local Plan District (LPD14)

Local Flood Risk Management Plan 2022 - 2028

The Solway Local Plan District covers an area of around 7,000km² and has a population of approximately 160,000. It covers a large area of the southwest of Scotland, extending from Drummore and Portpatrick in the west, to beyond Langholm and Newcastleton in the east. The coastline has a length of around 625km from Downan Point to Gretna, with many bays including Wigtown Bay and Luce Bay. It includes the urban areas of Dumfries, Stranraer and Annan.

The area is largely rural with the main land cover of woodland and agricultural land. There are many lochs and reservoirs in the area including Loch Ken, Clatteringshaws Loch, Loch Grannoch, Loch Dee and Castle Loch. The main rivers are the Nith, Esk, Annan, Cree and Dee (Galloway).

There are river, surface water and coastal flooding risks in the Local Plan District. There have been several large floods, including in January 2018 when Storm Georgina caused considerable damage through river flooding. More recently, in February 2019, Storm Erik caused significant damage throughout the area.

Currently it is estimated there are around 16,000 people and 10,000 homes and businesses at risk from flooding. This may increase to 20,000 people and 13,000 homes and businesses by the 2080s due to climate change. The expected annual cost of flooding is around £15 million. Note, however that flooding from wave overtopping is not fully represented in the assessment of flood risk and the impact of coastal flooding may be underestimated.

SEPA lead development of the flood risk management plans for Scotland and delivery of flood warning services. Local flood risk management planning in this Local Plan District is led by Dumfries and Galloway Council (the lead local authority). Other responsible authorities include Scottish Water and 4 more local authorities. 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.

A Cross Border Advisory Group is in place in the Solway Local Plan District to advise the Environment Agency, SEPA and local authorities on flooding issues that straddle the border. The group considers how the relevant authorities should coordinate their work in order to ensure that they understand how the impact of flood risk on one side of the border is affected by actions or inactions on the other side of the border.

2.1 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 6 years, and most of these are carried out on an ongoing basis.

	Awareness raising
Action	Local Authorities, SEPA and other organisations such as the Scottish Flood Forum work together through national and local initiatives to help communities understand the risk of flooding and what actions individuals can take. Improved awareness of flood risk and actions that prepare individuals, homes and businesses for flooding can reduce the overall impact of flooding. Local authorities undertake additional awareness raising activities when developing any specific project proposals and will engage with community resilience groups and local communities. Scottish 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.
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement. Local authorities fund activities through the block grant settlement allocation.

Co-ordination	Delivery of actions to raise awareness will be coordinated by the responsible authorities through the Local Plan District Partnership.
Timing	2022-2028

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

	Emergency plans
Action	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.
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement. Local authorities fund activities through the block grant settlement allocation.
Co-ordination	Delivery of emergency plans will be coordinated by the regional partnerships through civil contingencies arrangements.
Timing	2022-2028

	Flood forecasting
Action	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. In 2022 a new 3-day daily Scottish Flood Forecast was launched for the public. 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.
Funding	SEPA work in partnership with the Met Office and will work closely with all other authorities involved in emergency response to flooding.
Co-ordination	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.
Timing	2022 - 2028

	Flood warning development framework
Action	SEPA published a new flood warning development framework in 2022, which details the ambition and strategic actions to maintain and improve the flood warning service across Scotland. SEPA will further develop phase 1 of the Scottish Flood Forecast based on feedback gathered during public beta release before fully launching the service to the public formally in early 2023. Phase 1 is the national 3-day flood forecast and

	the starting point of our journey in providing the public with earlier and improved flood information. SEPA will continue to follow the service design approach for phase 2 of the Scottish Flood Forecast, which will provide the public with more localised flood forecast information. User research will determine what information will be displayed on the regional flood forecast webpages. It is anticipated that the final service will bring together all live information such as flood warnings, river levels and rainfall data into a central hub that is easily accessible for the public. Working in close partnership with the Met Office through the Scottish Flood Forecasting Service, SEPA will develop its capability in surface water flooding forecasting, focusing initially on the transport sector to support climate-ready infrastructure. SEPA will also undertake a prioritised improvement programme of existing river and coastal flood warning schemes to provide more accurate forecasting with improved lead time.
Funding	SEPA work in partnership with the Met Office. Appropriate engagement with the other authorities involved in emergency response will happen as the flood warning developments are progressed.
Co-ordination	SEPA work in partnership with the Met Office. Appropriate engagement with the other authorities involved in emergency response will happen as the flood warning developments are progressed.
Timing	2022 - 2028

	Future flood risk management planning
Action	The years covered by the lifetime of this plan are crucial. Radical progress is needed in how we reduce our impact on the climate and respond to the effects of climate change. How we plan to manage flooding to our communities is on the front line of the challenges of this decade. The 2027 flood risk management plans will be more ambitious than ever before. The plans will look to develop long term plans for more flood resilient communities prepared for the impacts of climate change. The priority areas which will be the focus points of the next flood risk management plans will be identified in 2024 with the designation of PVAs. A 3-month public consultation will be held

	to inform the PVA designation. We will plan for a better future by publishing our flooding services strategy in 2023 with a clear and measurable delivery plan. We will put greener, fairer communities at the heart of our ambitions. SEPA has set its own target to be a regenerative organisation by 2030 and the next set of plans will further this ambition. During this plan cycle, SEPA will work to develop new partnerships with a wider range of stakeholders, including businesses and commercial sectors. We will investigate alternative sources of finance to tackle flooding and drive forward practical options for adaptation.
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement. Local authorities fund activities through the block grant settlement allocation.
Co-ordination	SEPA will lead the work, in partnership with the Scottish Government and other responsible authorities. A wider range of partners and stakeholders will be developed to support the action. SEPA will carry out a full consultation on the next draft flood risk management plans in 2026.
Timing	Ongoing / 2022-2028 Flooding services strategy 2023 Next flood risk management plans 2027

	Guidance development
Action	The Scottish Government and SEPA will develop and update guidance to inform flood risk management projects. This guidance will be produced in 2022 and will look at how best to adapt to the long-term impacts of climate change and the most appropriate methods of assessing the benefits of flood risk management actions. Technical guidance to support flood risk management partners will be reviewed and updated by SEPA where required. Forest Research in collaboration with Scottish Forestry and its UK counterparts has recently published a UK Forestry Standard Practice Guide titled 'Guidance on designing and managing forests and woodlands to reduce flood risk'. The Practice Guide provides advice to landowners, forest and woodland managers,

	planners, practitioners and flooding authorities, on how forests, forest management and woodland creation can affect flood flows and flood water storage. Guidance will be developed to help local authorities understand the requirements for mapping relevant bodies of water and sustainable urban drainage systems in their areas.
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.
Co-ordination	The Scottish Government, SEPA and Scottish Forestry all have lead roles in delivering the new or updated guidance outlined. A range of forums will be used to help coordinate and develop the guidance with the appropriate input from others, including SAIFF (The Scottish Advisory Implementation Forum for Flooding) and cross-party working groups.
Timing	Draft flood studies guidance (SEPA) 2023 Options appraisal & Adaptation guidance (SG & SEPA) 2023 Other guidance & updates 2023-2028

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

	Land use planning
Action	Local authorities, SEPA and Scottish Water all have a responsibility under the Flood Risk Management (Scotland) Act 2009 to support sustainable flood risk management through the land use planning process. National planning policies set out the Scottish Ministers' priorities for the development and use of land. Under this approach, new development in areas with medium to high likelihood of flooding should generally be avoided. Current national planning policies aim to restrict development within the floodplain and limit exposure of new receptors to flood risk, promote flood reduction via natural and structural flood management measures and restoration of natural features, and avoid increased surface water flooding through sustainable drainage and the minimisation of impermeable surfaces. Locally determined planning policies may place further requirements within their area of operation to restrict inappropriate development and prevent unacceptable risk.
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement. Local authorities fund activities through the block grant settlement allocation.
Co-ordination	SEPA delivery statutory advice on flooding on both planning applications and Local Development Plans and will continue to work with the other responsible authorities to support the land use planning process. Each Planning Authority coordinates the responses of statutory authorities and any other relevant organisations when considering new planning applications. Local Development Plans are reviewed periodically and undergo a widespread and lengthy consultation (called the Main Issues Report) - coordinated by the Planning Authorities
Timing	2022 - 2028

	Maintenance
Action	Local authorities have a duty to assess bodies of water and to carry out clearance and repair works where such works would substantially reduce flood risk. Local authorities are also responsible for the drainage of roads. In addition, local authorities may also be responsible for maintenance of any existing flood protection schemes or works. Scottish Water will continue to undertake risk-based inspection,

	maintenance and repair on the public sewer network. Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk.
Funding	Local authorities fund activities through the block grant settlement allocation, specific activities will be dependent on funds made available on an annual basis.
Co-ordination	Local authorities assess and prioritise clearance and repair works which are published annually in a schedule, some activities require co-ordinated work between different responsible authorities.
Timing	2022-2028

	Natural flood management mapping
Action	SEPA will continue to support activities that improve our understanding of how to effectively target and deliver natural flood management. As part of this, SEPA will review and update the opportunities mapping for natural flood management. This will include linking blue-green infrastructure with the surrounding natural catchment and coastline. Natural flood management seeks to store or slow down flood waters through measures such as the planting of woodlands, wetland creation, river restoration, or the creation of intertidal habitats. In addition to flooding benefits, natural flood management measures can also provide many additional benefits to biodiversity, water quality, recreation, and carbon storage.
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.
Co-ordination	SEPA will work with key stakeholders to review and update the opportunities mapping.
Timing	2025

	National flood risk assessment
Action	SEPA will use the most suitable data to review and update the national flood risk assessment (NFRA) undertaken in 2018. This update will be used to identify future potentially vulnerable areas and focus flood risk management planning.

Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.
Co-ordination	SEPA will work with others as the NFRA is updated, including to keep other responsible authorities informed through the Local Plan District Partnerships.
Timing	December 2024

	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 6-year cycle SEPA will look to vastly improve its national understanding of surface flood risk by undertaking a wholescale update of the national surface water maps to reflect developments in data and understanding, including the impact of climate change.
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.
Co-ordination	SEPA is currently working with a contractor to develop the modelling needed to deliver the flood maps. As the mapping is developed, local authorities and Scottish Water will continue to be engaged in opportunities to verify, shape and understand the new mapping products.
Timing	2024

	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.
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.
Co-ordination	SEPA will work with others as required, to deliver the regulatory duties and to develop flood warning capabilities. Others will include reservoir managers and operators, and Civil Contingencies Act responders who share duties for emergency response.

Timing	Ongoing / 2022-2028 Flood warning developments 2022-2024

	Scottish Flood Defence Asset Database
Action	The Scottish Flood Defence Asset Database provides information on existing flood protection schemes. National data on flood protection infrastructure is needed to understand flood risk and to develop adaptation planning for Scotland. SEPA will continue to host SFDAD and look for opportunities to support the development of our understanding of how and when Scotland's flood defence assets should be adapted to continue to maintain protection from flooding in the future.
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.
Co-ordination	SEPA will work with the local authorities to ensure accurate data on existing and new schemes is made available for the Scottish Flood Defence Asset Database.
Timing	2022-2028

	Self help
Action	Everyone is responsible for protecting themselves and their property from flooding. People can take steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property flood resilience measures, signing up to Floodline, engaging with their local flood group, and ensuring that properties and businesses are insured against flood damage. The following places offer help with taking steps to protect yourself: https://www.floodre.co.uk/ https://www.biba.org.uk/current-issues/flood-insurance/ https://floodlinescotland.org.uk/ https://scottishfloodforum.org/ 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.

Funding	Individuals, in some cases grant funding may be available.
Co-ordination	A combined effort by responsible authorities to promote self-help through different avenues.
Timing	2022-2028

More specific local actions to manage flood risk in target areas are detailed in the potentially vulnerable areas (PVAs) sections below. All of the actions above are delivered as on-going continuous processes and are funded by each responsible authority separately, the specific activities vary by responsibility and by what is most appropriate for an activity or a community.

2.2 Potentially vulnerable areas

Potentially vulnerable areas (PVAs) were designated in 2018 based on the potential current or future risk from all sources of flooding. This designation was informed by the national flood risk assessment (available to view at https://www.sepa.org.uk/data-visualisation/nfra2018/). As part of continued analysis of flood risk, the national flood risk assessment and potentially vulnerable areas (PVAs) will be reviewed every 6 years to take on board any new information. There are 24 potentially vulnerable areas (PVAs) in this Local Plan District. Following sections provide more information on these areas.

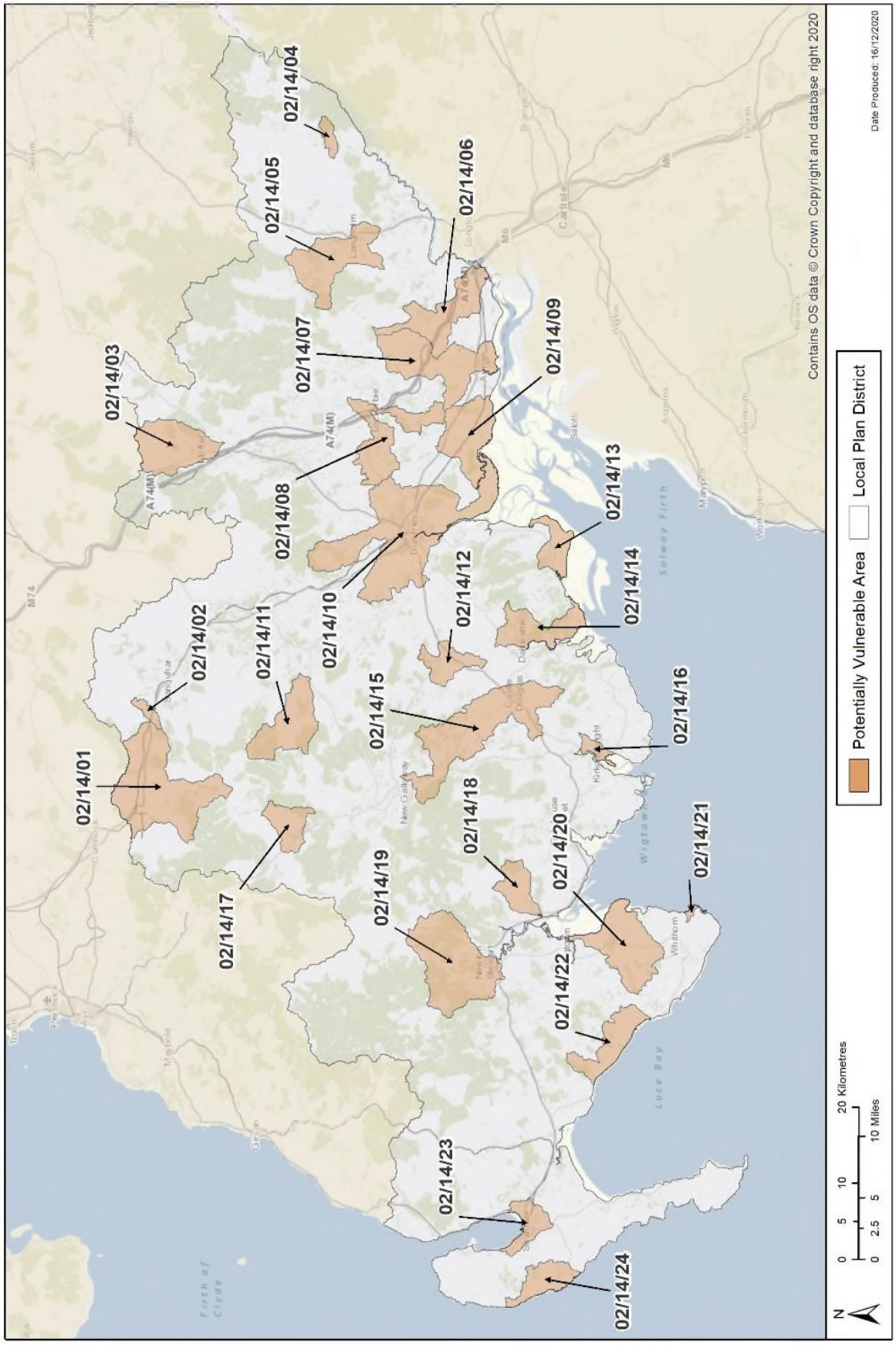


Figure 1. Potentially vulnerable areas in the Solway Local Plan District

2.3 LPD 14 Solway – List of PVAs

Click the blue text to select your area of interest

PVA Ref	PVA Name	Local authority area
02/14/01	New Cumnock	East Ayrshire
02/14/02	Kirkconnel	Dumfries & Galloway
02/14/03	Moffat	Dumfries & Galloway
02/14/04	Newcastleton	Scottish Borders
02/14/05	Langholm	Dumfries & Galloway
02/14/06	Gretna and Kirtle Water catchment	Dumfries & Galloway
02/14/07	Ecclefechan - Annan	Dumfries & Galloway
02/14/08	Lochmaben - Lockerbie	Dumfries & Galloway
02/14/09	Powfoot	Dumfries & Galloway
02/14/10	Dumfries and lower Nith catchment	Dumfries & Galloway
02/14/11	Moniaive	Dumfries & Galloway
02/14/12	Springholm	Dumfries & Galloway
02/14/13	Southerness and Carsethorn	Dumfries & Galloway
02/14/14	Dalbeattie	Dumfries & Galloway
02/14/15	River Dee catchment	Dumfries & Galloway
02/14/16	Kirkcudbright	Dumfries & Galloway
02/14/17	Carsphairn	Dumfries & Galloway
02/14/18	Creetown	Dumfries & Galloway
02/14/19	Newton Stewart	Dumfries & Galloway
02/14/20	Garlieston	Dumfries & Galloway
02/14/21	Isle of Whithorn	Dumfries & Galloway
02/14/22	Port William	Dumfries & Galloway
02/14/23	Stranraer	Dumfries & Galloway
02/14/24	Portpatrick	Dumfries & Galloway

2.4 New Cumnock (02/14/01)

This area is designated as a potentially vulnerable area due to flood risk to New Cumnock.

The main sources of flooding are from the Afton Water, the River Nith, and surface water. Recent river flooding has occurred in the area.

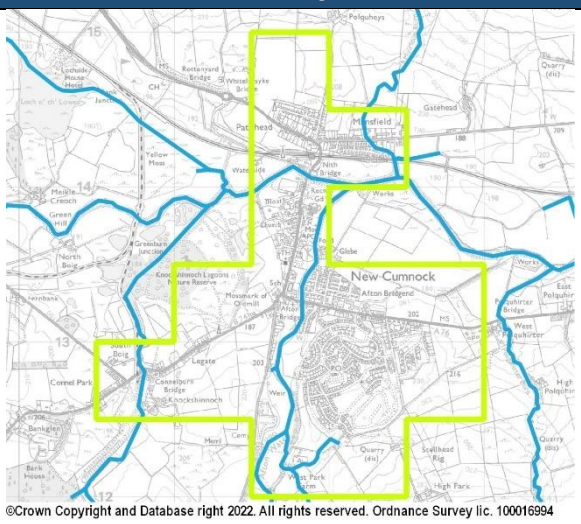
There is 1 target area in this potentially vulnerable area, which has been the focus of further assessment, this is identified below. Further information on the objectives and actions to manage flood risk within this area is provided below.

List of target areas

New Cummock	(target area 138)

Local Flood Risk Management plan datasheet

2.4.1 New Cumnock (target area 138)

Summary	Location Map
New Cumnock is a town located adjacent to the River Nith and Afton Water. It is in the East Ayrshire Council area. The main source of flooding in New Cumnock is river flooding, however there is also a risk of surface water flooding. There are approximately 550 people and 300 homes and businesses currently at risk from flooding. This is likely to increase to 610 people and 330 homes and businesses by the 2080s due to climate change.	

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 and surface water. The national level assessment is improved for river flooding by the flood warning scheme and the studies and design supporting the present development of the New Cumnock Flood Protection Scheme. There is a long record of flooding in this target area.

ID	Objective	Description
1381	Avoid flood risk	Avoid an increase in flood risk by the appropriate management and maintenance of New Cumnock Flood Protection Scheme
1382	Avoid flood risk	Avoid inappropriate development that increases flood risk in New Cumnock
1383	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in New Cumnock
1384	Reduce flood risk	Reduce the risk of flooding in New Cumnock

Action ID	New Cumnock		13801
Action Type	Flood scheme or works implementation		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2028
Description	East Ayrshire Council to complete the New Cumnock Flood Protection Scheme. This should include consideration of the impacts of climate change on scheme performance. An adaptation plan may need to be developed to address changes of flood risk due to climate change. As built drawings should be completed 1-2 years after construction is complete and made available for inclusion in the flood defence asset database.		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is East Ayrshire Council in coordination with SEPA.		

Action ID	New Cumnock		13802
Action Type	Flood defence maintenance		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2028
Description	East Ayrshire Council is to inspect and maintain the New Cumnock Flood Protection Scheme.		
Funding	Local Authority funds from block grant allocation		
Coordination	Action delivery lead is East Ayrshire Council and coordination will be determined once the actions have been finalised.		

Action ID	New Cumnock		13803
Action Type	Strategic mapping improvements		
Action Delivery Lead	SEPA	Indicative Delivery	2025 - 2028
Description	SEPA will await the conclusion of river restoration works and associated modelling in the upper Nith catchment before progressing with this action. This will include a review of local		

	authorities studies including the New Cumnock Flood Protection Scheme.
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.
Coordination	SEPA will work with the local authority on the potential to coordinate the flood map update with any other actions being carried out to understand or reduce coastal flooding.

2.5 Kirkconnel (02/14/02)

This area is designated as a potentially vulnerable area due to flood risk to Kirkconnel. The main sources of flooding are from the river Nith and surface water. There are a number of recorded floods, with recent flooding being caused by flooding from the river Nith.

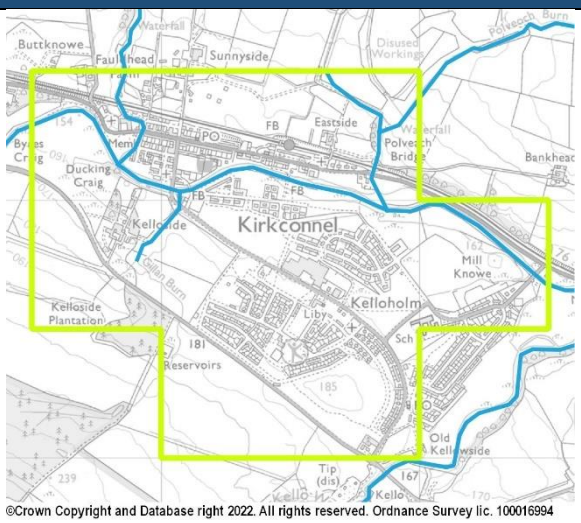
There is 1 target area in this potentially vulnerable area, which has been the focus of further assessment, this is identified below. Further information on the objectives and actions to manage flood risk within this area is provided below.

List of target areas

Kirkconnel **(target area 133)**

Local Flood Risk Management plan datasheet

2.5.1 Kirkconnel (target area 133)

Summary	Location Map
Kirkconnel is in Dumfries and Galloway local authority area and is located on the banks of the River Nith. The main source of flooding in Kirkconnel is river flooding, however there is also risk from surface water flooding. There are approximately 190 people and 110 homes and businesses currently at risk from flooding. This is likely to increase to 230 people and 140 homes and businesses by the 2080s due to climate change.	

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 level assessment is improved for river flooding by the Kirkconnel Flood Study (2016) and flood warning scheme. Understanding is also improved for surface water flooding by a sewer flood risk assessment. There is a long record of flooding in this target area.

ID	Objective	Description
1331	Avoid flood risk	Avoid inappropriate development that increases flood risk in Kirkconnel
1332	Avoid flood risk	Avoid an increase in flood risk by the appropriate management and maintenance of the Polbower, Kirkconnel Flood Protection Scheme
1333	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Kirkconnel
1334	Reduce flood risk	Reduce the risk of flooding in Kirkconnel

Action ID	Kirkconnel		13301
Action Type	Flood scheme or works design		
Action Delivery Lead	Local Authority	Indicative Delivery	2024 - 2028
Description	Dumfries and Galloway to develop detailed design of the Kirkconnel Flood Protection Scheme based on the preferred option from the flood study if viable. An adaptation plan may need to be developed to address changes of flood risk due to climate change. The responsible authority proposes this action as the best viable option for managing flood risk in this community.		
Action Delivery Lead is Taking	Dumfries and Galloway council will intially assess the feasibility of a flood protection scheme as a stand alone project or in combination with other options.		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council in coordination with SEPA.		

Action ID	Kirkconnel		13302
Action Type	Flood scheme or works implementation		
Action Delivery Lead	Local Authority	Indicative Delivery	2026 - 2028
Description	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 capital funding being made available Dumfries and Galloway Council may progress the process of promoting a flood protection scheme for Kirkconnel if a formal scheme is found to be the most appropriate action. Should a scheme not be viable, alternative measures to manage flood risk will be considered. Upon completion of the scheme Dumfries and Galloway Council should submit all as built and scheme information to SEPA for registration on the Scottish Flood Defence Asset Database.		
Action Delivery Lead is Taking	Provided that the feasibility study shows a flood protection scheme to be viable, the council will progress detailed design, tender and construction.		

Funding	The delivery of this action is subject to capital funding being made available.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate this action with an update to SFDAD and flood warning actions.

Action ID	**Kirkconnel**		**13303**
Action Type	**Community engagement**		
Action Delivery Lead	Local Authority	**Indicative Delivery**	2022 - 2028
Description	Community engagement should continue through the development of the Kirkconnel Flood Protection Scheme.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.		

Action ID	**Kirkconnel**		**13304**
Action Type	**Flood defence maintenance**		
Action Delivery Lead	Local Authority	**Indicative Delivery**	2022 - 2028
Description	Dumfries and Galloway Council is to continue to inspect and maintain the Polbower, Kirkconnel Flood Protection Scheme.		
Action Delivery Lead is Taking	Ongoing assessment of scheme to be undertaken as part of the Councils duties in accordance with Section 18.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.		

Action ID	**Kirkconnel**		**13305**
Action Type	**Flood warning maintenance**		
Action Delivery Lead	SEPA	**Indicative Delivery**	Ongoing
Description	SEPA should maintain the Upper Nith flood warning scheme.		

Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.
Coordination	SEPA will work with Dumfries & Galloway Council on the potential to use information on the flood scheme to inform ongoing flood warning. SEPA will continue to raise awareness of flood warning, and engage with communities about the service when required.

Action ID	**Kirkconnel**		**13306**
Action Type	**Strategic mapping improvements**		
Action Delivery Lead	SEPA	**Indicative Delivery**	2022 - 2028
Description	River restoration works and associated modelling is being progressed in the Upper Nith catchment. When the work is concluded, SEPA will review the modelling along with the other available studies of the catchment, including the New Cumnock Flood Protection Scheme work, to determine whether the flood hazard maps should be updated for the area. SEPA are reviewing how flood map updates can be done more effectively, which may affect how any updates are progressed.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with the local authority on the potential to coordinate delivery of this action with other studies of the catchment that are available.		

2.6 Moffat (02/14/03)

This area is designated as a potentially vulnerable area due to flood risk to Moffat. The main sources of flooding are from river and surface water. Recent floods have been caused by both river and surface water flooding.

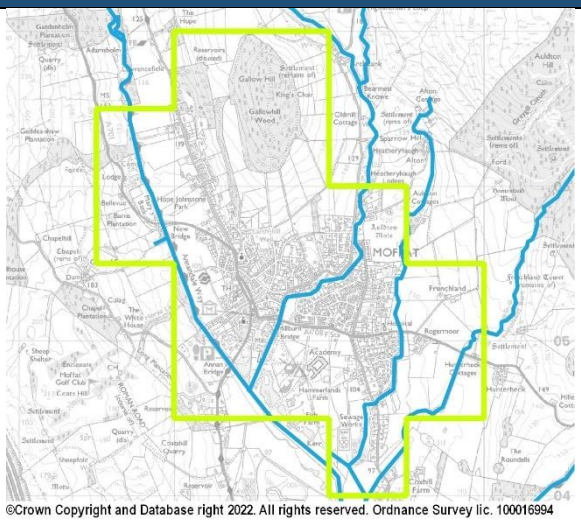
There is 1 target area in this potentially vulnerable area, which has been the focus of further assessment, this is identified below. Further information on the objectives and actions to manage flood risk within this area is provided below.

List of target areas

Moffat	**(target area 136)**

Local Flood Risk Management plan datasheet

2.6.1 Moffat (target area 136)

Summary	Location Map
Moffat is located on the banks of the River Annan and is within the Dumfries and Galloway local authority area. The main source of flooding in Moffat is river flooding, however there is also risk from surface water flooding. There are approximately 178 homes and businesses at risk from flooding. This is likely to increase to 228 homes and businesses by the 2080s due to climate change.	

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 level assessment is improved for river flooding by the Moffat Flood Study (2018) and improved for surface water flooding by a sewer flood risk assessment. There is a long record of flooding in this target area.

ID	Objective	Description
1361	Avoid flood risk	Avoid inappropriate development that increases flood risk in Moffat
1362	Avoid flood risk	Avoid an increase in flood risk by the appropriate management and maintenance of Moffat Well Road Flood Protection Scheme
1363	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Moffat
1364	Reduce flood risk	Reduce the risk of flooding in Moffat

Action ID	Moffat		13601
Action Type	Flood scheme or works design		
Action Delivery Lead	Local Authority	Indicative Delivery	2025 - 2028
Description	The selected preferred approach for managing flood risk is to be designed following the completion of the quick wins report, including consideration of the long-term impacts of climate change. These will include small scale works or works to improve catchment management. This should guide adaptive planning to allow for the impacts of climate change to be monitored, understood and managed.		
Action Delivery Lead is Taking	Dumfries and Galloway council will intially assess the feasibility of a flood protection scheme as a stand alone project or in combination with other options.		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.		

Action ID	Moffat		13602
Action Type	Flood scheme or works implementation		
Action Delivery Lead	Local Authority	Indicative Delivery	2027 - 2028
Description	Dumfries and Galloway Council to complete the implementation of any 'quick win' actions following on from the options appraisal process. The responsible authority proposes this action as the best viable option for managing flood risk in this community.		
Action Delivery Lead is Taking	Provided that the feasibility study shows a flood protection scheme to be viable, the council will progress detailed design, tender and construction.		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.		

	SEPA will work with the local authority on the potential to coordinate this action with an update to SFDAD.

Action ID	**Moffat**		**13603**
Action Type	**Flood defence maintenance**		
Action Delivery Lead	Local Authority	**Indicative Delivery**	2022 - 2028
Description	Dumfries and Galloway Council is to continue to inspect and maintain any flood protection structures (Well Road).		
Action Delivery Lead is Taking	Ongoing assessment of scheme to be undertaken as part of the Councils duties in accordance with Section 18.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.		

2.7 Newcastleton (02/14/04)

This area is designated as a potentially vulnerable area due to flood risk in Newcastleton.

The main source of flooding is from the Liddel Water, with some risk from surface water. There are reports of flooding in the area. Recent floods have been caused by both river and surface water flooding.

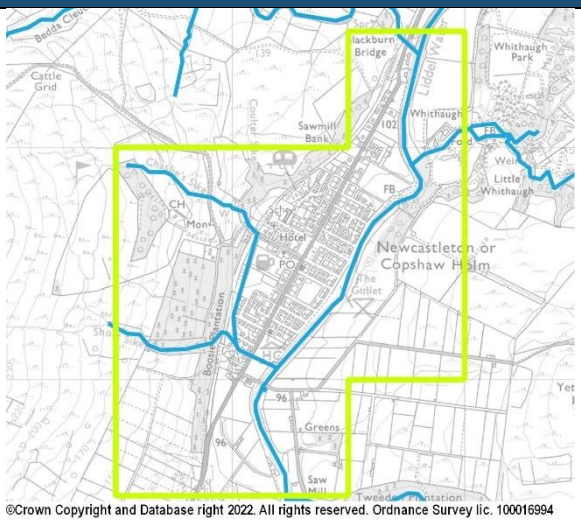
There is 1 target area in this potentially vulnerable area, which has been the focus of further assessment, this is identified below. Further information on the objectives and actions to manage flood risk within this area is provided below.

List of target areas

Newcastleton	**(target area 139)**

Local Flood Risk Management plan datasheet

2.7.1 Newcastleton (target area 139)

Summary	Location Map
Newcastleton is a village in the Scottish Borders on the banks of the Liddel Water. The main sources of flooding in Newcastleton are river flooding and surface water flooding. The local authority has carried out a flood study in this area. The study showed that there are approximately 410 people and 260 homes and businesses currently at risk from flooding, which is a significant proportion of the community. This is likely to increase to 510 people and 320 homes and businesses by the 2080s due to climate change.	

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 for river flooding is improved by a flood study for Newcastleton which considers river flood risk from the Liddel Water, Charlie Sike and the Short Sike. Understanding of surface water flooding is improved by a surface water management plan carried out by the local authority and a sewer flood risk assessment carried out by Scottish Water. There are records of frequent and significant flooding in this area. Newcastleton was flooded during Storm Dennis in February 2020 when the Liddel Water overtopped its banks, flooding a large number of homes and businesses and leading to an emergency response including evacuations. In February 2021 more than 20 homes and businesses were flooded and 2 residents were rescued following heavy rain. Roads were also flooded.

ID	Objective	Description
1391	Avoid flood risk	Avoid inappropriate development that increases flood risk in Newcastleton
1392	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Newcastleton

ID	Objective	Description
1393	Reduce flood risk	Reduce the risk of surface water flooding and river flooding from the Liddel Water and the Lakes in Newcastleton

Action ID	Newcastleton		13901
Action Type	**Flood scheme or works design**		
Action Delivery Lead	Local Authority	**Indicative Delivery**	2022 - 2028
Description	A flood protection scheme has been proposed for Newcastleton. Based on the outcomes of the flood study and surface water management plan, the preferred option consists of direct defences, new channels and floodplain widening. The scheme delivers protection to approximately 180 homes and businesses. The scheme should be taken forward into outline design and detailed design. There should be consideration of the current and long term flood risk and how the area will adapt to changes in flood risk through development of an adaptation plan. In accordance with the flood risk management plan, as part of the scheme or works, the responsible authority should aim to ensure the action will not have an adverse effect on the integrity of the Langholm - Newcastleton Hills Special Protection Area.		
Funding	Funding for the Flood Protection Scheme will be subject to budget allocations over the six years of the plan, 2022 - 2028.		
Coordination	Action delivery lead is Scottish Borders Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate this action with flood warning actions.		

Action ID	Newcastleton		13902
Action Type	Flood scheme or works implementation		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2028
Description	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. Scottish Borders Council should progress the formal process of promoting a flood protection scheme for Newcastleton. Procurement of a contractor for the construction phase should begin once formal approval to progress with a scheme has been given and detailed design is complete. Upon completion of the scheme Scottish Borders Council should submit all as built and scheme information to SEPA for registration on the Scottish Flood Defence Asset Database.		
Funding	Funding for the Flood Protection Scheme will be subject to budget allocations over the six years of the plan, 2022 - 2028.		
Coordination	Action delivery lead is Scottish Borders Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate this action with an update to SFDAD and flood warning actions.		

Action ID	Newcastleton		13903
Action Type	Community engagement		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2028
Description	Community engagement should continue through the development of a flood protection scheme for Newcastleton.		
Funding	The delivery of this action is subject to funding through the block capital grant		

Coordination	Action delivery lead is Scottish Borders Council. Action will be coordinated with the responsible authorities, Scottish Flood Forum and other actions in the area.

Action ID	**Newcastleton**		**13904**
Action Type	**Community resilience group**		
Action Delivery Lead	Community group	**Indicative Delivery**	2022 - 2028
Description	The ongoing activities of the Newcastleton Community Resilience Group and Newcastleton Community Council should continue to be supported by Scottish Borders Council.		
Funding	Scottish Borders Council Revenue and Capital Budgets.		
Coordination	Action delivery leads are Scottish Borders Council and the community. Coordination will be determined once the actions have been finalised.		

Action ID	**Newcastleton**		**13905**
Action Type	**Flood warning maintenance**		
Action Delivery Lead	SEPA	**Indicative Delivery**	Second half of cycle
Description	SEPA should maintain the Liddel flood warning scheme. The scheme should be investigated for improvement and/or recalibration.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with Scottish Borders Council on the potential to coordinate flood warning improvements with the development of Newcastleton flood protection scheme. SEPA will continue to raise awareness of flood warning, and engage with communities about the service when required.		

2.8 Langholm (02/14/05)

This area is designated as a potentially vulnerable area due to flood risk to Langholm. The main source of flooding is from the River Esk, with some risk from surface water. Recent flooding occurred from the River Esk.

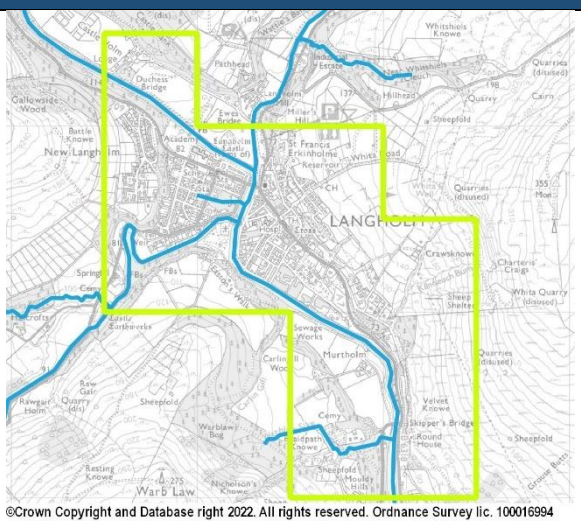
There is 1 target area in this potentially vulnerable area, which has been the focus of further assessment, this is identified below. Further information on the objectives and actions to manage flood risk within this area is provided below.

List of target areas

Langholm	**(target area 135)**

Local Flood Risk Management plan datasheet

2.8.1 Langholm (target area 135)

Summary	Location Map
Langholm is a village in Dumfries and Galloway local authority area. The main source of flooding Langholm is from river flooding, however there is also a risk of surface water flooding. There are approximately 450 people and 260 homes and businesses currently at risk from flooding. This is likely to increase to 720 people and 410 homes and businesses by the 2080s due to climate change.	

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 level assessment is improved for river flooding by assessments carried out for the Langholm Flood Protection Scheme and improved for surface water flooding by a sewer flood risk assessment. Understanding is also improved for river flooding by the flood warning scheme. There is a long record of flooding in this target area.

ID	Objective	Description
1351	Avoid flood risk	Avoid inappropriate development that increases flood risk in Langholm
1352	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Langholm
1353	Reduce flood risk	Reduce the risk of flooding in Langholm

Action ID	Langholm		13501
Action Type	Flood scheme or works design		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2028
Description	Dumfries and Galloway Council to develop detailed design of the Langholm Flood Protection Scheme. This should include consideration of the impacts of climate change on scheme performance. An adaptation plan may need to be developed to address changes of flood risk due to climate change.		
Action Delivery Lead is Taking	An outline design has been undertaken, the next step is to undertake an EIA and progress detailed design and construction subject to further community engagement.		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate this action with flood warning actions.		

Action ID	Langholm		13502
Action Type	Flood scheme or works implementation		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2028
Description	Dumfries and Galloway Council should progress the formal process of promoting a flood protection scheme for Langholm. Procurement of a contractor for the construction phase should begin once formal approval to progress with a scheme has been given and detailed design is complete. Upon completion of the scheme Dumfries and Galloway Council should submit all as built and scheme information to SEPA for registration on the Scottish Flood Defence Asset Database.		
Action Delivery Lead is Taking	Outline design is complete, further community engagement is the next step in the process.		
Funding	The delivery of this action is subject to capital funding being made available.		

Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate this action with an update to SFDAD and flood warning actions.

Action ID	**Langholm**		**13503**
Action Type	**Community engagement**		
Action Delivery Lead	Local Authority	**Indicative Delivery**	2022 - 2028
Description	Community engagement should continue through the development of the Langholm Flood Protection Scheme.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.		

Action ID	**Langholm**		**13504**
Action Type	**Flood warning maintenance**		
Action Delivery Lead	SEPA	**Indicative Delivery**	Ongoing
Description	SEPA should maintain the River Esk flood warning scheme.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with Dumfries & Galloway Council on the potential to use information on the Langholm flood scheme to inform ongoing flood warning. SEPA will continue to raise awareness of flood warning, and engage with communities about the service when required.		

2.9 Gretna and Kirtle Water catchment (02/14/06)

This area is designated as a potentially vulnerable area due to flood risk to Eaglesfield and Gretna. There is flooding from river, coastal and surface water. Recent flooding was caused by surface water flooding.

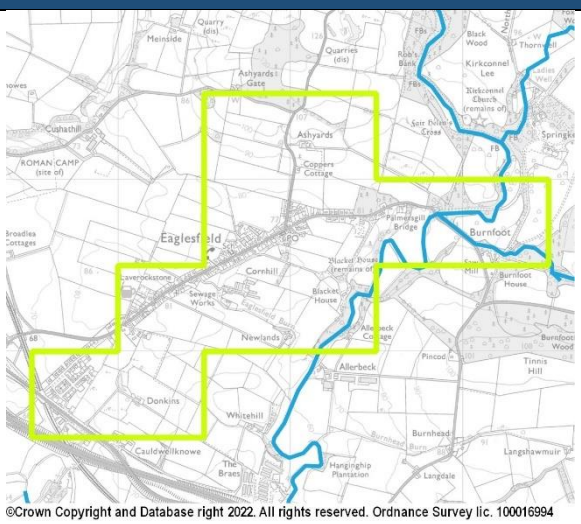
There are 2 target areas in this potentially vulnerable area, which have been the focus of further assessment, these are listed below. Further information on the objectives and actions to manage flood risk within this area is provided below.

List of target areas

Eaglesfield	(target area 33)
Gretna	(target area 132)

Local Flood Risk Management plan datasheet

2.9.1 Eaglesfield (target area 33)

Summary	Location Map
The small village of Eaglesfield is located 10km north of the Solway Firth, within the Dumfries and Galloway local authority area. The main source of flooding in Eaglesfield is surface water flooding, however there is also a risk of river flooding. There are approximately 20 people and 20 homes and businesses at risk from flooding. This is estimated to remain the same by the 2080s irrespective of climate change.	

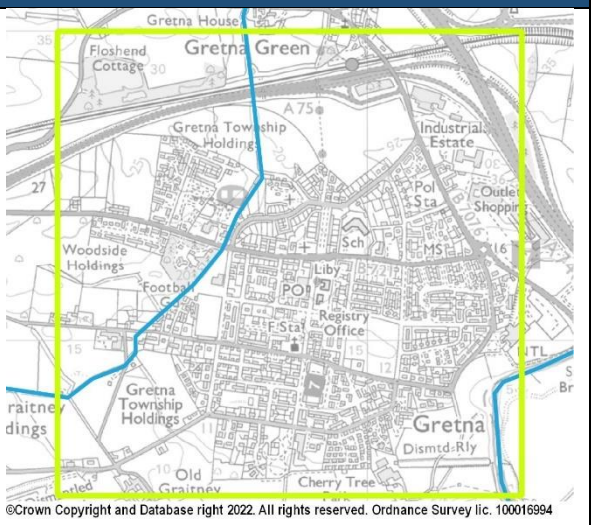
What is the Current understanding of Flood risk

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 and this information has highlighted the risk of flooding in this target area. Eaglesfield has therefore been identified as a new target area for the 2021 flood risk management plans. There are periodic records of flooding in this target area.

ID	Objective	Description
331	Avoid flood risk	Avoid inappropriate development that increases flood risk in Eaglesfield
332	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Eaglesfield
333	Reduce flood risk	Reduce the risk of flooding in Eaglesfield

Action ID	Eaglesfield		3301
Action Type	Surface Water Management Plan		
Action Delivery Lead	Local Authority	Indicative Delivery	2025 - 2025
Description	Dumfries and Galloway Council to develop and implement a surface water management plan working with Scottish Water as appropriate. The feasibility of a range of flood risk management options should be considered.		
Action Delivery Lead is Taking	The council has undertaken initial modelling work and will assess feasibility of the preferred option.		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council in coordination with Scottish Water.		

Local Flood Risk Management plan datasheet
2.9.2 Gretna (target area 132)

Summary	Location Map
The small village of Gretna is located near the River Esk and Kirtle Water. The area is located within the Dumfries and Galloway local authority area. The main source of flooding in Gretna is surface water flooding, however this is not reflected in the SEPA strategic mapping. There are approximately 30 people and 20 homes and businesses at risk from flooding. This is likely to remain the same by the 2080s irrespective to climate change.	

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 level assessment is improved for coastal flooding by the shoreline management plan (draft consultation 2021) and by the flood warning scheme. Understanding is also improved for surface water flooding by a sewer flood risk assessment. There is a long record of flooding in this target area.

ID	Objective	Description
1321	Avoid flood risk	Avoid inappropriate development that increases flood risk in Gretna
1322	Improve data and understanding	Improve data and understanding of flooding in Gretna
1323	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Gretna

Action ID	Gretna		13201
Action Type	Data collection		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2028
Description	This may include data collection and monitoring to improve the confidence in flood sources, mechanisms and risk. A review may be required to assess the need for rain and/or river gauges. Post flood event surveys may be required to collect data on flooding mechanisms, risk and damage caused.		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate this action with flood warning actions and opportunities for joint data collection activities.		

Action ID	Gretna		13202
Action Type	Shoreline management plan (coastal adaptive plan)		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2023
Description	Dumfries and Galloway Council to complete the review of the 2005 Solway Shoreline Management Plan. This management plan will also identify the need for more detailed assessments of any existing coastal defences and interactions with other flood sources.		
Action Delivery Lead is Taking	The plan has been consulted upon; feedback will be incorporated with publication anticipated by summer 2023		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate this action with work on coastal flood mapping.		

Action ID	Gretna		13203
Action Type	Flood warning maintenance		
Action Delivery Lead	SEPA	Indicative Delivery	2022 - 2028
Description	SEPA should maintain the Solway coastal flood warning scheme.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with the local authorities on the potential to use information from the flood studies and data collection along the Solway coast to inform ongoing flood warning. SEPA will continue to raise awareness of flood warning, and engage with communities about the service when required.		

2.10 Ecclefechan – Annan (02/14/07)

This area is designated as a potentially vulnerable area due to flood risk in Annan and Ecclefechan. There is flooding from river, coastal and surface water. Recent flooding occurred in the area and was caused by surface water flooding.

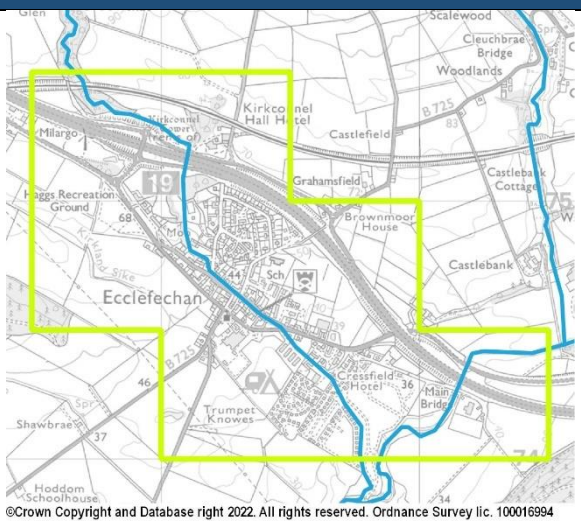
There are 2 target areas in this potentially vulnerable area, which have been the focus of further assessment, these are listed below. Further information on the objectives and actions to manage flood risk within this area is provided below.

List of target areas

Ecclefechan	(target area 31)
Annan	(target area 129)

Local Flood Risk Management plan datasheet

2.10.1 Ecclefechan (target area 31)

Summary	Location Map
The settlement of Ecclefechan lies in the valley of the Mein Water. The area is located within the Dumfries and Galloway local authority area. The only source of flooding in Ecclefechan is from river flooding. There are approximately 200 people and 140 homes and businesses at risk from flooding. This is estimated to increase to 230 people and 160 homes and businesses by the 2080s due to climate change.	

What is the Current understanding of Flood risk

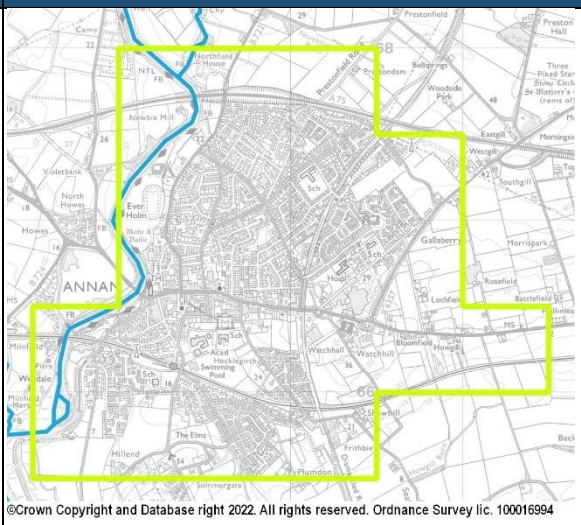
This section provides a summary of information, which has helped to develop an understanding of flood risk in the area. Since 2011 SEPA has developed and updated national level assessments of flooding from rivers, surface water and coastal sources, and this information has highlighted the risk of flooding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

ID	Objective	Description
311	Avoid flood risk	Avoid inappropriate development that increases flood risk in Ecclefechan
312	Improve data and understanding	Improve data and understanding of river flooding in Ecclefechan
313	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Ecclefechan

Action ID	Ecclefechan		3101
Action Type	Data collection		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2028
Description	This may include data collection and monitoring to improve the confidence in flood sources, mechanisms and risk. A review may be required to assess the need for rain and/or river gauges. Post flood event surveys may be required to collect data on flooding mechanisms, risk and damage caused.		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate opportunities for joint data collection activities.		

Local Flood Risk Management plan datasheet

2.10.2 Annan (target area 129)

Summary	Location Map
Annan is a town located on the eastern bank of the River Annan, and along the coast of the Inner Solway Firth. The area is located within the Dumfries and Galloway local authority area. The main sources of flooding in Annan are surface water and coastal flooding, however there is also a risk of river flooding. There are approximately 860 people and 530 properties currently at risk from flooding. This is likely to increase to 1,100 people and 670 properties by the 2080s due to climate change.	

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 level assessment is improved for coastal flooding by the shoreline management plan (draft consultation 2021) and by the flood warning scheme. Understanding is also improved for surface water flooding by a sewer flood risk assessment. There is a long record of flooding in this target area.

ID	Objective	Description
1291	Avoid flood risk	Avoid inappropriate development that increases flood risk in Annan
1292	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Annan
1293	Reduce flood risk	Reduce the risk of flooding in Annan

Action ID	Annan		12901
Action Type	Shoreline management plan (coastal adaptive plan)		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2023
Description	Dumfries and Galloway Council to complete the review of the 2005 Solway Shoreline Management Plan. This management plan will also identify the need for more detailed assessments of any existing coastal defences and interactions with other flood sources.		
Action Delivery Lead is Taking	The plan has been consulted upon; feedback will be incorporated with publication anticipated by summer 2023		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate this action with work on coastal flood mapping.		

Action ID	Annan		12902
Action Type	Sewer flood risk assessment		
Action Delivery Lead	Scottish Water	Indicative Delivery	2022 - 2028
Description	Scottish Water will carry out an assessment of sewer flood risk within the highest priority sewer catchments, which includes Annan sewer catchment in this target area. This will help to improve knowledge and understanding of potential surface water flood risk.		
Funding	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.		

Action ID	Annan		12903
Action Type	Surface water management plan		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2028
Description	Dumfries and Galloway Council to develop a surface water management plan, working with Scottish Water as appropriate to gain an understanding of the hotspots of flooding and potential interaction with coastal and river flooding. The results of the sewer flood risk assessment should be considered. Opportunities to disconnect surface water from the sewerage system should be identified. The impacts of climate change on flood risk should be assessed. The plan should be reviewed and updated regularly.		
Action Delivery Lead is Taking	The council will engage with Scottish Water to refine the existing data to better our understanding of surface water flooding and where to prioritise resources following extensive works by Scottish Water in Cycle 1.		
Funding	The delivery of this action is subject to revenue funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council in coordination with Scottish Water.		

Action ID	Annan		12904
Action Type	Flood warning maintenance		
Action Delivery Lead	SEPA	Indicative Delivery	Ongoing
Description	SEPA should maintain the Solway coastal flood warning scheme.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with the local authorities on the potential to use information from the flood studies and data collection along the Solway coast to inform ongoing flood warning. SEPA will continue to raise awareness of flood warning, and engage with communities about the service when required.		

Action ID	Annan		12905
Action Type	Strategic mapping improvements		
Action Delivery Lead	SEPA	Indicative Delivery	2023 - 2026
Description	SEPA will be undertaking a review of coastal flood modelling in this target area to identify where it may be appropriate to include the impact of waves on coastal flooding. We will progress with improved flood modelling and mapping in the highest priority areas taking account of availability of data to support the modelling work.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with the local authority on the potential to coordinate the flood map update with any other actions being carried out to understand or reduce coastal flooding.		

2.11 Lochmaben – Lockerbie (02/14/08)

This area is designated as a potentially vulnerable area due to flood risk to Greenhill, Lochmaben and Lockerbie. The main source of flooding is from surface water, however there is also risk from the River Annan. Recent river and surface water flooding has occurred in the area.

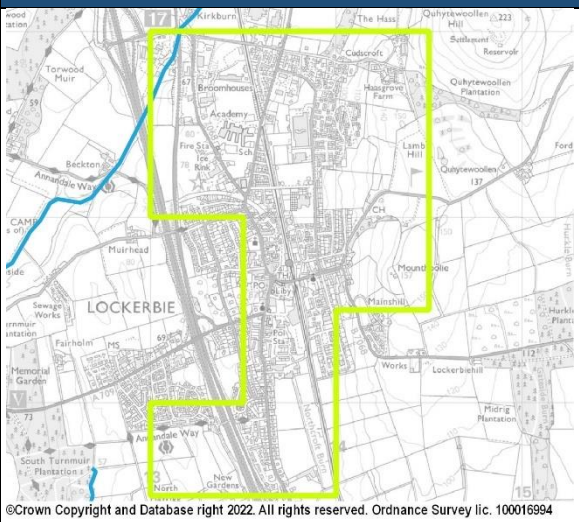
There are 3 target areas in this potentially vulnerable area, which have been the focus of further assessment, these are listed below. Further information on the objectives and actions to manage flood risk within this area is provided below.

List of target areas

Lockerbie	**(target area 150)**
Lochmaben	**(target area 163)**
Heck and Greenhill	**(target area 16310)**

Local Flood Risk Management plan datasheet

2.11.1 Lockerbie (target area 150)

Summary	Location Map
Lockerbie is a town located in south west Scotland within the Dumfries and Galloway local authority area. The main source of flooding in Lockerbie is surface water flooding, however there is also a risk from river flooding. There are approximately 180 people and 120 homes and businesses at risk of flooding. This is estimated to increase to 250 people and 160 homes and businesses by the 2080s due to climate change.	

What is the Current understanding of Flood risk

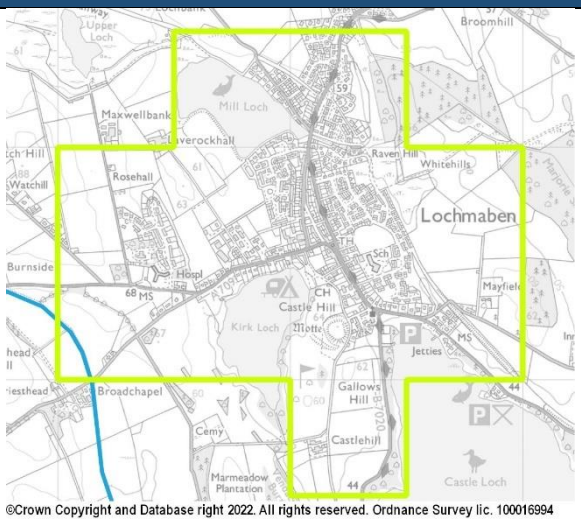
This section provides a summary of information, which has helped to develop an understanding of flood risk in the area. Since 2011 SEPA has developed and updated national level assessments of flooding from rivers, surface water and coastal sources. The national level assessment is improved for surface water flooding by a sewer flood risk assessment. There is a long record of flooding in this target area.

ID	Objective	Description
1501	Avoid flood risk	Avoid inappropriate development that increases flood risk in Lockerbie
1502	Improve data and understanding	Improve data and understanding of flooding in Lockerbie
1503	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Lockerbie

Action ID	Lockerbie		15001
Action Type	Data collection		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2028
Description	This may include data collection and monitoring to improve the confidence in flood sources, mechanisms and risk. A review may be required to assess the need for rain and/or river gauges. Post flood event surveys may be required to collect data on flooding mechanisms, risk and damage caused.		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate opportunities for joint data collection activities.		

Local Flood Risk Management plan datasheet

2.11.2 Lochmaben (target area 163)

Summary	Location Map
Lochmaben is within the Dumfries and Galloway local authority area. The main source of flooding in Lochmaben is river flooding; however there is also a risk of surface water flooding. There are approximately 110 people and 60 homes and businesses currently at risk from flooding. This is estimated to increase to 150 people and 90 homes and businesses by the 2080s due to climate change.	

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 level assessment is improved for surface water flooding by a sewer flood risk assessment. This information has highlighted the risk of flooding in this target area. Lochmaben has therefore been identified as a new target area for the 2021 flood risk management plans. There is a long record of flooding in this target area.

ID	Objective	Description
1631	Avoid flood risk	Avoid inappropriate development that increases flood risk in Lochmaben
1632	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Lochmaben
1633	Improve data and understanding	Improve data and understanding of flooding in Lochmaben

Action ID	Lochmaben		16301
Action Type	Data collection		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2028
Description	This may include data collection and monitoring to improve the confidence in flood sources, mechanisms and risk. A review may be required to assess the need for rain and/or river gauges. Post flood event surveys may be required to collect data on flooding mechanisms, risk and damage caused.		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate opportunities for joint data collection activities.		

Local Flood Risk Management plan datasheet
2.11.3 Heck and Greenhill (target area 16310)

Summary	Location Map
The small villages of Heck and Greenhill are located near the River Annan. The area is located within the Dumfries and Galloway local authority area. The main source of flooding in Heck and Greenhill is river flooding. There are approximately 40 people and 30 homes and businesses currently at risk of flooding which is a significant proportion of the community. This is estimated to increase to 50 people and 40 properties by the 2080s due to climate change.	

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, and this information has highlighted the risk of flooding in this target area. There is a long record of flooding in this target area.

ID	Objective	Description
163101	Avoid flood risk	Avoid inappropriate development that increases flood risk in this target area
163102	Improve data and understanding	Improve data and understanding of flooding in Heck and Greenhill
163103	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in this target area

Action ID	Heck and Greenhill		1631001
Action Type	Data collection		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2028
Description	This may include data collection and monitoring to improve the confidence in flood sources, mechanisms and risk. A review may be required to assess the need for rain and/or river gauges. Post flood event surveys may be required to collect data on flooding mechanisms, risk and damage caused.		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate this action with flood warning actions and opportunities for joint data collection activities.		

Action ID	Heck and Greenhill		1631002
Action Type	Flood warning scoping		
Action Delivery Lead	SEPA	Indicative Delivery	Second half of cycle
Description	Scoping for a river flood warning scheme will be carried out in Heck and Greenhill.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	Action delivery lead is SEPA and coordination will be determined once the action has been finalised. SEPA will work with Dumfries & Galloway Council on the potential to coordinate flood warning development with the data collection.		

2.12 Powfoot (02/14/09)

This area is designated as a potentially vulnerable area due to flood risk in Powfoot and Cummertrees. There is flooding from coastal, river and surface water. There are reports of flooding within the area, with recent flooding being caused by both river and surface water flooding

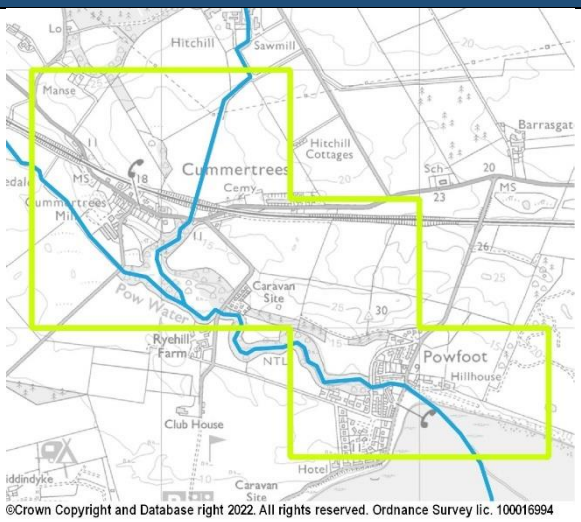
There is 1 target area in this potentially vulnerable area, which has been the focus of further assessment, this is identified below. Further information on the objectives and actions to manage flood risk within this area is provided below.

List of target areas

Powfoot and Cummertrees (target area 118)

Local Flood Risk Management plan datasheet

2.12.1 Powfoot and Cummertrees (target area 118)

Summary	Location Map
Powfoot and Cummertrees has been newly identified for inclusion in the 2021 flood risk management plans. Powfoot and Cummertrees are coastal villages located along the northern shore of the Firth of Solway. They are in the Dumfries and Galloway local authority area. The main source of flooding in Powfoot and Cummertrees is coastal flooding as the tidal impact reaches up the river. There is also a risk of river flooding. There are approximately 100 people and 50 homes and businesses currently at risk from flooding. This is likely to increase to 170 people and 90 homes and businesses by the 2080s due to climate change.	

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 level assessment is improved for coastal flooding by the shoreline management plan (draft consultation 2021) and by the flood warning scheme. Together, this information has highlighted the risk of flooding, including that risk associated with climate change in this target area. Powfoot and Cummertrees has therefore been identified as a new target area for the 2021 flood risk management plans. There are limited records of flooding in this target area.

The Dynamic Coast project has shown that parts of the shoreline in or adjacent to this target area are subject to erosion at present or are considered likely to erode in the future. Consideration should be given to how erosion might impact flood risk. Any actions taken should aim to support building natural resilience to flooding and not lead to an increase in erosion.

ID	Objective	Description
1181	Avoid flood risk	Avoid inappropriate development that increases flood risk in this target area
1182	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in this target area
1183	Reduce flood risk	Reduce the risk of flooding in this target area

Action ID	**Powfoot and Cummertrees**		**11801**
Action Type	**Shoreline management plan (coastal adaptive plan)**		
Action Delivery Lead	Local Authority	**Indicative Delivery**	2022 - 2023
Description	Dumfries and Galloway Council to complete the review of the 2005 Solway Shoreline Management Plan. This management plan will also identify the need for more detailed assessments of any existing coastal defences and interactions with other flood sources.		
Action Delivery Lead is Taking	The plan has been consulted upon; feedback will be incorporated with publication anticipated by summer 2023.		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate this action with work on coastal flood mapping.		

Action ID	**Powfoot and Cummertrees**		**11802**
Action Type	**Flood warning maintenance**		
Action Delivery Lead	SEPA	**Indicative Delivery**	Ongoing
Description	SEPA should maintain the Solway coastal flood warning scheme.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		

Coordination	SEPA will work with the local authorities on the potential to use information from the flood studies and data collection along the Solway coast to inform ongoing flood warning. SEPA will continue to raise awareness of flood warning, and engage with communities about the service when required.

Action ID	**Powfoot and Cummertrees**		**11803**
Action Type	**Strategic mapping improvements**		
Action Delivery Lead	SEPA	**Indicative Delivery**	2023 - 2028
Description	SEPA will be undertaking a review of coastal flood modelling in this target area to identify where it may be appropriate to include the impact of waves on coastal flooding. We will progress with improved flood modelling and mapping in the highest priority areas taking account of availability of data to support the modelling work.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate the flood map update with any other actions being carried out to understand or reduce coastal flooding.		

2.13 Dumfries and lower Nith catchment (02/14/10)

This area is designated as a potentially vulnerable area due to flood risk to Cargenbridge,

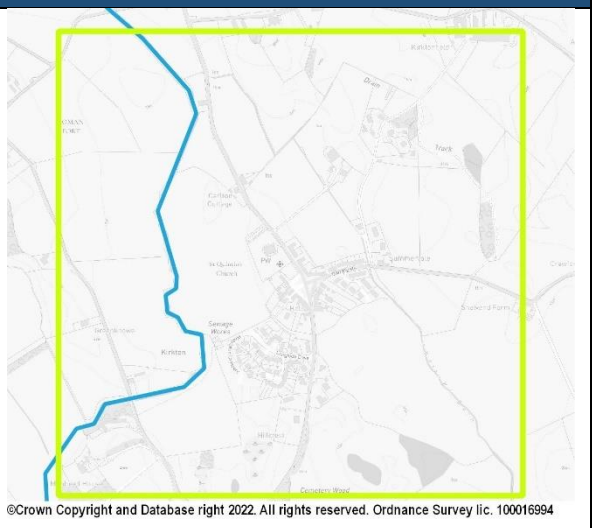
Dumfries, Kirkton and Locharbriggs. There is flooding from river, coastal and surface water. Recent floods occurred in January 2018 and February 2019, caused by coastal, surface water and river flooding.

There are 4 target areas in this potentially vulnerable area, which have been the focus of further assessment, these are listed below. Further information on the objectives and actions to manage flood risk within this area is provided below.

List of target areas

Kirkton	**(target area 34)**
Cargenbridge	**(target area 37)**
Locharbriggs	**(target area 38)**
Dumfries	**(target area 39)**

Local Flood Risk Management plan datasheet
2.13.1 Kirkton (target area 34)

Summary	Location Map
Kirkton is a small village located just north of Dumfries. The area is located within the Dumfries and Galloway local authority area. The main source of flooding in Kirkton is river flooding. There are around 60 people and 40 homes and businesses at risk of flooding. This is likely to increase to 140 people and 70 homes and businesses by the 2080s due to climate change.	

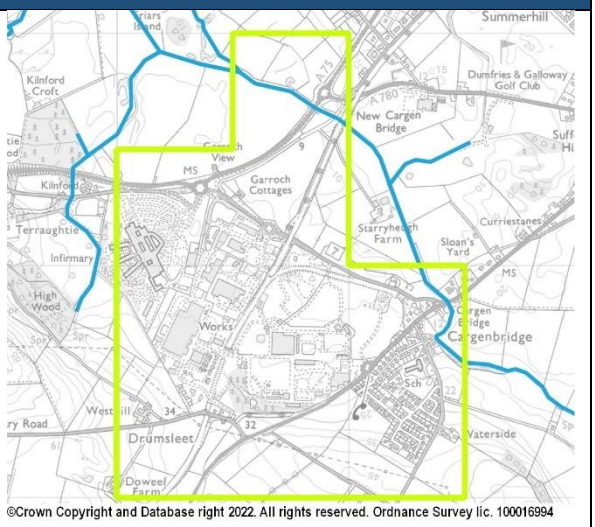
What is the Current understanding of Flood risk
This section provides a summary of information, which has helped to develop an understanding of flood risk in the area. Since 2011 SEPA has developed and updated national level assessments of flooding from rivers, surface water and coastal sources, and this information has highlighted the risk of flooding in this target area. Kirkton has therefore been identified as a new target area for the 2021 flood risk management plans. There is a long record of flooding in this target area.

ID	Objective	Description
341	Avoid flood risk	Avoid inappropriate development that increases flood risk in Kirkton
342	Improve data and understanding	Improve data and understanding of river flooding in Kirkton
343	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Kirkton

Action ID	Kirkton		3401
Action Type	Data collection		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2028
Description	This may include data collection and monitoring to improve the confidence in flood sources, mechanisms and risk. A review may be required to assess the need for rain and/or river gauges. Post flood event surveys may be required to collect data on flooding mechanisms, risk and damage caused.		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate opportunities for joint data collection activities.		

Local Flood Risk Management plan datasheet

2.13.2 Cargenbridge (target area 37)

Summary	Location Map
Cargenbirdge has been newly identified for inclusion in the 2021 flood risk management plans. The small village of Cargenbridge is located on the bank of the Cargen Pow, southwest of the town of Dumfries. The area is located within the Dumfries and Galloway local authority area. Within Cargenbridge there is risk from river flooding. There are approximately 20 people and 20 homes and businesses currently at risk of flooding. This is not likely to increase significantly by the 2080s due to climate change.	

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, and this information has highlighted the risk of flooding, including that risk associated with climate change in this target area. Cargenbridge has therefore been identified as a new target area for the 2021 flood risk management plans. There are periodic records of flooding in this target area.

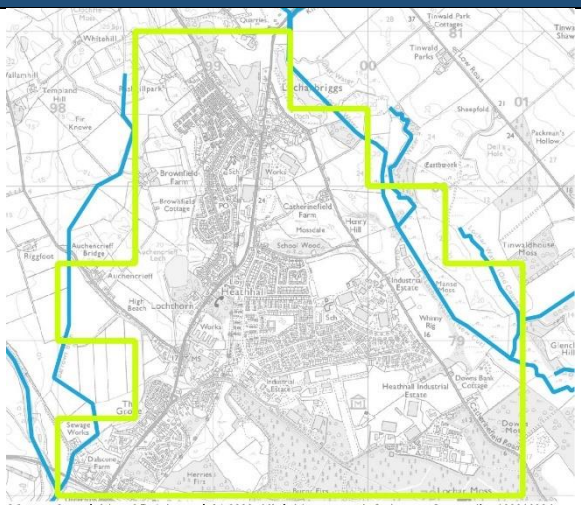
ID	Objective	Description
371	Avoid flood risk	Avoid inappropriate development that increases flood risk in this target area
372	Improve data and understanding	Improve data and understanding of flooding in Cargenbridge
373	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in this target area

Action ID	Cargenbridge		3701
Action Type	Data collection		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2028
Description	This may include data collection and monitoring to improve the confidence in flood sources, mechanisms and risk. A review may be required to assess the need for rain and/or river gauges. Post flood event surveys may be required to collect data on flooding mechanisms, risk and damage caused.		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate this action with flood warning actions and opportunities for joint data collection activities.		

Action ID	Cargenbridge		3702
Action Type	Sewer flood risk assessment		
Action Delivery Lead	Scottish Water	Indicative Delivery	2022 - 2028
Description	Scottish Water will carry out an assessment of sewer flood risk within the highest priority sewer catchments, which includes Troqueer 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.		
Funding	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.		

Action ID	Cargenbridge		3703
Action Type	Flood warning scoping		
Action Delivery Lead	SEPA	Indicative Delivery	Second half of cycle
Description	Scoping for a river flood warning scheme will be carried out in Cargenbridge.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with Dumfries & Galloway Council on the potential to coordinate flood warning development with the data collection.		

Local Flood Risk Management plan datasheet
2.13.3 Locharbriggs (target area 38)

Summary	Location Map
The village of Locharbriggs is located near the Lochar Water, within the Dumfries and Galloway local authority area. The main source of flooding in Locharbriggs is surface water flooding, however there is also a risk of river flooding. There are approximately 240 people at risk from flooding and approximately 160 homes and businesses. This is estimated to increase to 380 people and 240 homes and businesses by the 2080s due to climate change.	

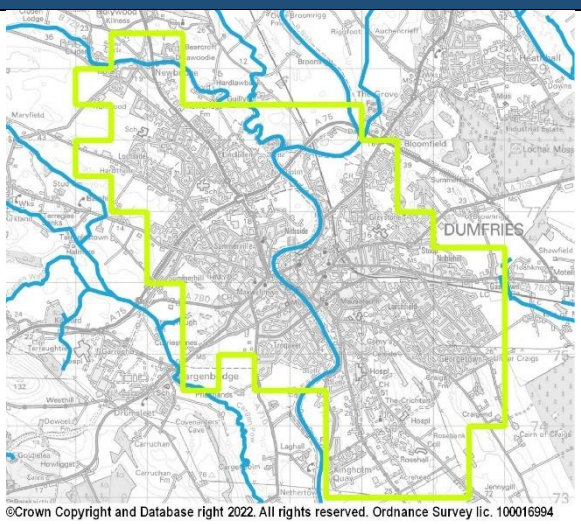
What is the Current understanding of Flood risk
This section provides a summary of information, which has helped to develop an understanding of flood risk in the area. Since 2011 SEPA has developed and updated national level assessments of flooding from rivers, surface water and coastal sources, and this information has highlighted the risk of flooding, including that risk associated with climate change in this target area. Locharbriggs has therefore been identified as a new target area for the 2021 flood risk management plans. There are periodic records of flooding in this target area.

ID	Objective	Description
381	Avoid flood risk	Avoid inappropriate development that increases flood risk in this target area
382	Improve data and understanding	Improve data and understanding of flooding in Locharbriggs
383	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in this target area

Action ID	Locharbriggs		3801
Action Type	Data collection		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2028
Description	This may include data collection and monitoring to improve the confidence in flood sources, mechanisms and risk. A review may be required to assess the need for rain and/or river gauges. Post flood event surveys may be required to collect data on flooding mechanisms, risk and damage caused.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate opportunities for joint data collection activities.		

Local Flood Risk Management plan datasheet

2.13.4 Dumfries (target area 39)

Summary	Location Map
Dumfries is located near the mouth of the River Nith which flows into Solway Firth. The area is located within the Dumfries and Galloway local authority area. The main source of flooding is river flooding, However there is also risk of coastal and surface water flooding. There are approximately 3,800 people and 2,300 homes and businesses at risk from flooding. This is likely to increase to 5,000 people and 2,900 homes and businesses by the 2080s due to climate change.	

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 level assessment is improved for river flooding by the flood studies caried out for the proposed Whitesands flood protection scheme and improved for coastal flooding by the shoreline management plan (draft consultation 2021). Understanding is also improved for river flooding by the flood warning scheme. There is a long record of flooding in this target area as well as frequent records of flooding.

ID	Objective	Description
391	Avoid flood risk	Avoid inappropriate development that increases flood risk in this target area
392	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in this target area
393	Reduce flood risk	Reduce the risk of flooding in this target area

Action ID	Dumfries		3901
Action Type	Flood scheme or works design		
Action Delivery Lead	Local Authority	Indicative Delivery	2023 - 2025
Description	Dumfries and Galloway Council to develop detailed design of the Whitesands Flood Protection Scheme. This should include consideration of the impacts of climate change on scheme performance. An adaptation plan may need to be developed to address changes of flood risk due to climate change.		
Action Delivery Lead is Taking	The scheme is planned to progress to detailed design in 2023.		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate this action with work on coastal flood mapping and flood warning actions.		

Action ID	Dumfries		3902
Action Type	Flood scheme or works implementation		
Action Delivery Lead	Local Authority	Indicative Delivery	2025 - 2028
Description	Dumfries and Galloway Council should progress the formal process of promoting a flood protection scheme for Dumfries. Procurement of a contractor for the construction phase should begin once formal approval to progress with a scheme has been given and detailed design is complete. Upon completion of the scheme Dumfries and Galloway Council should submit all as built and scheme information to SEPA for registration on the Scottish Flood Defence Asset Database.		
Action Delivery Lead is Taking	The council plan to progress to tender the scheme late 2024 with a construction start prior to January 2026.		
Funding	The delivery of this action is subject to capital funding being made available.		

Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate this action with an update to SFDAD, work on coastal flood mapping and flood warning actions.

Action ID	**Dumfries**		**3903**
Action Type	**Community engagement**		
Action Delivery Lead	Local Authority	**Indicative Delivery**	2022 - 2028
Description	Community engagement should continue through the development of the Whitesands flood protection scheme for Dumfries.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.		

Action ID	**Dumfries**		**3904**
Action Type	**Shoreline management plan (coastal adaptive plan)**		
Action Delivery Lead	Local Authority	**Indicative Delivery**	2022 - 2023
Description	Dumfries and Galloway Council to complete the review of the 2005 Solway Shoreline Management Plan. This management plan will also identify the need for more detailed assessments of any existing coastal defences and interactions with other flood sources.		
Action Delivery Lead is Taking	The plan has been consulted upon; feedback will be incorporated with publication anticipated by summer 2023		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate this action with work on coastal flood mapping.		

Action ID	Dumfries		3905
Action Type	Sewer flood risk assessment		
Action Delivery Lead	Scottish Water	Indicative Delivery	2022 - 2028
Description	Scottish Water will carry out an assessment of sewer flood risk within the highest priority sewer catchments, which includes Troqueer 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.		
Funding	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.		

Action ID	Dumfries		3906
Action Type	Surface water management plan		
Action Delivery Lead	Local Authority	Indicative Delivery	2024 - 2028
Description	Dumfries and Galloway Council to develop and implement a surface water management plan, working with Scottish Water as appropriate, to gain an understanding of the hotspots of flooding and potential interaction with coastal and river flooding. The impacts of climate change on flood risk should be assessed. The results of the sewer flood risk assessment should be considered. Opportunities to disconnect surface water from the sewerage system should be identified. The plan should be reviewed and updated regularly.		
Action Delivery Lead is Taking	The council will engage with Scottish Water to refine the existing data to better our understanding of surface water flooding and where to prioritise resources.		
Funding	The delivery of this action is subject to revenue funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council in coordination with Scottish Water.		

Action ID	Dumfries		3907
Action Type	Flood warning maintenance		
Action Delivery Lead	SEPA	Indicative Delivery	Second half of cycle
Description	SEPA should maintain the River Nith flood warning scheme. The scheme should be investigated for improvement and/or recalibration.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with Dumfries & Galloway Council on the potential to coordinate flood warning with the Whitesands flood scheme work. SEPA will continue to raise awareness of flood warning, and engage with communities about the service when required.		

Action ID	Dumfries		3908
Action Type	Strategic mapping improvements		
Action Delivery Lead	SEPA	Indicative Delivery	2023 - 2026
Description	SEPA will be undertaking a review of coastal flood modelling in this target area to identify where it may be appropriate to include the impact of waves on coastal flooding. We will progress with improved flood modelling and mapping in the highest priority areas taking account of availability of data to support the modelling work.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with the local authority on the potential to coordinate the flood map update with any other actions being carried out to understand or reduce coastal flooding.		

2.14 Moniaive (02/14/11)

This area is designated as a potentially vulnerable area due to flood risk to Moniaive. The main source of flooding is from river, with some risk from surface water. Frequent historic flooding has been reported, with recent floods being caused by both river and surface water flooding.

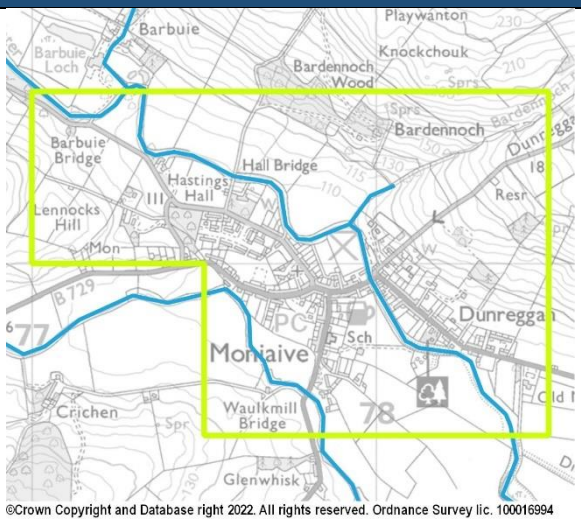
There is 1 target area in this potentially vulnerable area, which has been the focus of further assessment, this is identified below. Further information on the objectives and actions to manage flood risk within this area is provided below.

List of target areas

Moniaive **(target area 137)**

Local Flood Risk Management plan datasheet

2.14.1 Moniaive (target area 137)

Summary	Location Map
Moniaive is a village in the Dumfries and Galloway local authority area on the banks of Dalwhat Water and Craigdarroch Water. The main source of flooding in Moniaive is river flooding, however there is also risk from surface water flooding. There are approximately 60 people and 40 homes and businesses currently at risk from flooding. This is likely to increase to 70 people and 50 homes and businesses by the 2080s due to climate change.	

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 level assessment is improved for river and surface water flooding by the Moniaive Flood Study (2016). There are periodic records of flooding in this target area.

ID	Objective	Description
1371	Avoid flood risk	Avoid inappropriate development that increases flood risk in Moniaive
1372	Avoid flood risk	Avoid an increase in flood risk by the appropriate management and maintenance of the Moniaive flood protection scheme 1963
1373	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Moniaive
1374	Reduce flood risk	Reduce the risk of river flooding in Moniaive

Action ID	Moniaive		13701
Action Type	Flood defence maintenance		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2028
Description	Moniaive Flood Protection Scheme (1963) consists of Realignment and widening of bed of the Dalwhat Water, Construction of a steel sheet pile wall and masonry wall along Dalwhat Water, and installation of pipes. Dumfries and Galloway Council will continue to maintain the scheme and monitor the performance under any significant events.		
Action Delivery Lead is Taking	Ongoing assessment of scheme to be undertaken as part of the Councils duties in accordance with Section 18.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.		

2.15 Springholm (02/14/12)

This area is designated as a potentially vulnerable area due to the future flood risk as a result of climate change. The assessment has shown a potential increase in flood risk to homes and businesses in Springholm. The main source of flooding is from small burns within the catchment.

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

List of target areas

Springholm **(target area 69)**

Local Flood Risk Management plan datasheet
2.15.1 Springholm (target area 69)

Summary	Location Map
The area contains the village of Springholm and is within the Dumfries and Galloway local authority area. The main source of flooding in Springholm is river flooding, however there is also risks from surface water flooding. There are approximately 70 people and 40 homes and businesses currently at risk from flooding. This is likely to increase to 100 people and 50 homes and businesses by the 2080s due to climate change.	

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, and this information has highlighted the risk of flooding in this target area. Springholm has therefore been identified as a new target area for the 2021 flood risk management plans. There are periodic records of flooding in this target area.

ID	Objective	Description
691	Avoid flood risk	Avoid inappropriate development that increases flood risk in Springholm
692	Improve data and understanding	Improve data and understanding of climate change related to flooding in Springholm
693	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Springholm

Action ID	Springholm		6901
Action Type	Data collection		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2028
Description	This may include data collection and monitoring to improve the confidence in flood sources, mechanisms and risk. A review may be required to assess the need for rain and/or river gauges. Post flood event surveys may be required to collect data on flooding mechanisms, risk and damage caused.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate opportunities for joint data collection activities.		

Action ID	Springholm		6902
Action Type	Flood defence maintenance		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2028
Description	Dumfries and Galloway Council will continue to inspect and maintain any flood protection structures.		
Action Delivery Lead is Taking	Ongoing assessment of scheme to be undertaken as part of the Councils duties in accordance with Section 18.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.		

2.16 Southerness and Carsethorn (02/14/13)

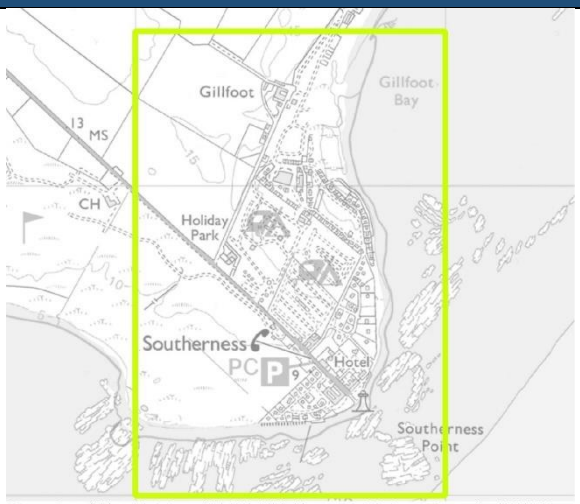
This area is designated as a potentially vulnerable area due to flood risk to Southerness and Carsethorn. The main source of flooding is from coastal, with surface water flooding also affecting Southerness. There is a history of flooding in the area with recent floods caused by surface water and coastal flooding.

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

List of target areas

Southerness	(target area 125)
Carsethorn	(target area 128)

Local Flood Risk Management plan datasheet
2.16.1 Southerness (target area 125)

Summary	Location Map
The village of Southerness is located along the north shore of the Solway Firth. The area is located within the Dumfries and Galloway local authority area. The main source of flooding to Southerness is coastal flooding, however there is also a risk from surface water. There are approximately 90 people and 50 homes and businesses currently at risk of flooding. This is likely to increase to 140 people and 70 homes and businesses by the 2080s due to climate change.	

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 level assessment is improved for coastal flooding by the shoreline management plan (draft consultation 2021) and by the flood warning scheme. There is a long record of flooding in this target area.

The Dynamic Coast project has shown that parts of the shoreline in or adjacent to this target area are subject to erosion at present or are considered likely to erode in the future. Consideration should be given to how erosion might impact flood risk. Any actions taken should aim to support building natural resilience to flooding and not lead to an increase in erosion.

ID	Objective	Description
1251	Avoid flood risk	Avoid inappropriate development that increases flood risk in Southerness
1252	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Southerness
1253	Reduce flood risk	Reduce the risk of flooding in Southerness

Action ID	Southerness		12501
Action Type	Shoreline management plan (coastal adaptive plan)		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2023
Description	Dumfries and Galloway Council to complete the review of the 2005 Solway Shoreline Management Plan. This management plan will also identify the need for more detailed assessments of any existing coastal defences and interactions with other flood sources.		
Action Delivery Lead is Taking	The plan has been consulted upon; feedback will be incorporated with publication anticipated by summer 2023		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate this action with work on coastal flood mapping.		

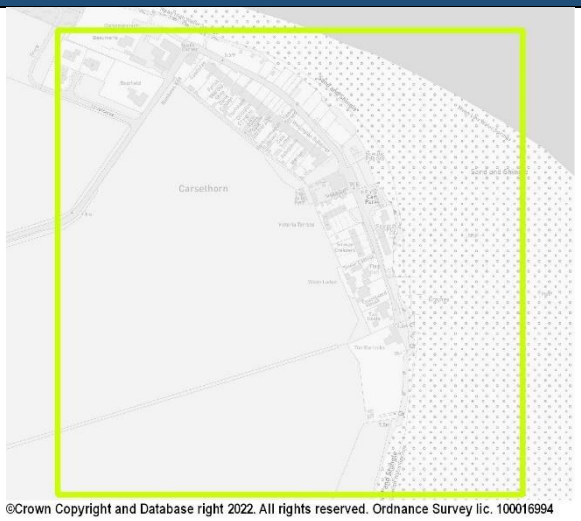
Action ID	Southerness		12502
Action Type	Flood defence maintenance		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2028
Description	Dumfries and Galloway Council will continue to inspect and maintain any flood protection structures.		
Action Delivery Lead is Taking	Ongoing assessment of scheme to be undertaken as part of the Councils duties in accordance with Section 18.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.		

Action ID	Southerness		12503
Action Type	Flood warning maintenance		
Action Delivery Lead	SEPA	Indicative Delivery	Ongoing
Description	SEPA should maintain the Solway coastal flood warning scheme.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with the local authorities on the potential to use information from the flood studies and data collection along the Solway coast to inform ongoing flood warning. SEPA will continue to raise awareness of flood warning, and engage with communities about the service when required.		

Action ID	Southerness		12504
Action Type	Strategic mapping improvements		
Action Delivery Lead	SEPA	Indicative Delivery	2023 - 2026
Description	SEPA will be undertaking a review of coastal flood modelling in this target area to identify where it may be appropriate to include the impact of waves on coastal flooding. We will progress with improved flood modelling and mapping in the highest priority areas taking account of availability of data to support the modelling work.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with the local authority on the potential to coordinate the flood map update with any other actions being carried out to understand or reduce coastal flooding.		

Local Flood Risk Management plan datasheet

2.16.2 Carsethorn (target area 128)

Summary	Location Map
Carsethorn is a small coastal village located along the shore of the Solway Firth. The area is located within the Dumfries and Galloway local authority area. The main source of flooding in Carsethorn is coastal flooding. There are approximately 30 people and 20 homes and businesses currently at risk of flooding, which is a significant proportion of the community. This is likely to increase to 80 people and 50 homes and businesses by the 2080s due to climate change.	

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 level assessment is improved for coastal flooding by the shoreline management plan (draft consultation 2021) and by the flood warning scheme. There is a long record of flooding in this target area.

The Dynamic Coast project has shown that parts of the shoreline in or adjacent to this target area are subject to erosion at present or are considered likely to erode in the future. Consideration should be given to how erosion might impact flood risk. Any actions taken should aim to support building natural resilience to flooding and not lead to an increase in erosion.

ID	Objective	Description
1281	Avoid flood risk	Avoid inappropriate development that increases flood risk in Carsethorn
1282	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Carsethorn

ID	Objective	Description
1283	Reduce flood risk	Reduce the risk of flooding in Carsethorn

Action ID	Carsethorn		12801
Action Type	Shoreline management plan (coastal adaptive plan)		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2023
Description	Dumfries and Galloway Council to complete the review of the 2005 Solway Shoreline Management Plan. This management plan will also identify the need for more detailed assessments of any existing coastal defences and interactions with other flood sources.		
Action Delivery Lead is Taking	The plan has been consulted upon; feedback will be incorporated with publication anticipated by summer 2023		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate this action with work on coastal flood mapping.		

Action ID	Carsethorn		12802
Action Type	Flood warning maintenance		
Action Delivery Lead	SEPA	Indicative Delivery	Ongoing
Description	SEPA should maintain the Solway coastal flood warning scheme.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with the local authorities on the potential to use information from the flood studies and data collection along the Solway coast to inform ongoing flood warning. SEPA will continue to raise awareness of flood warning and engage with communities about the service when required.		

Action ID	Carsethorn		12803
Action Type	Strategic mapping improvements		
Action Delivery Lead	SEPA	Indicative Delivery	2023 - 2026
Description	SEPA will be undertaking a review of coastal flood modelling in this target area to identify where it may be appropriate to include the impact of waves on coastal flooding. We will progress with improved flood modelling and mapping in the highest priority areas taking account of availability of data to support the modelling work.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with the local authority on the potential to coordinate the flood map update with any other actions being carried out to understand or reduce coastal flooding.		

2.17 Dalbeattie (02/14/14)

This area is designated as a potentially vulnerable area due to flood risk to Dalbeattie. There is flooding from river, coastal and surface water. There are numerous records of flooding in Dalbeattie with recent coastal flooding reported in the area.

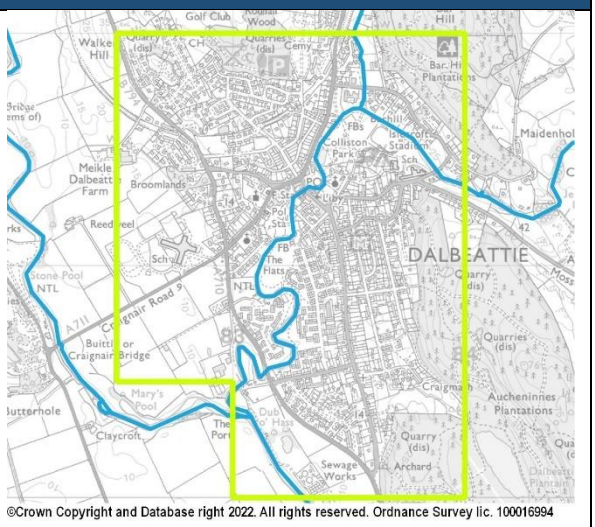
There is 1 target area in this potentially vulnerable area, which has been the focus of further assessment, this is identified below. Further information on the objectives and actions to manage flood risk within this area is provided below.

List of target areas

Dalbeattie **(target area 131)**

Local Flood Risk Management plan datasheet

2.17.1 Dalbeattie (target area 131)

Summary	Location Map
Dalbeattie is located inland from the Solway Firth and is within the Dumfries and Galloway local authority area. The main sources of flooding in Dalbeattie are coastal and river flooding, however there is also a risk of surface water flooding. There are approximately 790 people and 510 homes and businesses currently at risk from flooding. This is likely to increase to 1,100 people and 660 homes and businesses by the 2080s due to climate change.	

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 level assessment is improved for river, coastal and surface water flooding by the Dalbeattie Flood Study (2016) and improved for surface water flooding by a sewer flood risk assessment. There is a long record of flooding in this target area.

ID	Objective	Description
1311	Avoid flood risk	Avoid inappropriate development that increases flood risk in this target area
1312	Avoid flood risk	Avoid an increase in flood risk by the appropriate management and maintenance of the Dalbeattie Flood Protection Scheme 1981
1313	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in this target area
1314	Reduce flood risk	Reduce the risk of flooding in this target area

Action ID	Dalbeattie		13101
Action Type	Flood warning scoping		
Action Delivery Lead	SEPA	Indicative Delivery	2025 - 2028
Description	Scoping for a river and coastal flood warning scheme will be carried out in Dalbeattie.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with Dumfries & Galloway Council on the potential to coordinate flood warning development with other actions in the area.		

Action ID	Dalbeattie		13102
Action Type	Strategic mapping improvements		
Action Delivery Lead	SEPA	Indicative Delivery	2023 - 2026
Description	SEPA will be undertaking a review of coastal flood modelling in this target area to identify where it may be appropriate to include the impact of waves on coastal flooding. We will progress with improved flood modelling and mapping in the highest priority areas taking account of availability of data to support the modelling work.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with the local authority on the potential to coordinate the flood map update with any other actions being carried out to understand or reduce coastal flooding.		

Action ID	Dalbeattie		13103
Action Type	Flood defence maintenance		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2028
Description	Dumfries and Galloway Council is to continue to inspect and maintain the Dalbeattie Flood Protection Scheme 1981.		
Action Delivery Lead is Taking	Ongoing assessment of scheme to be undertaken as part of the Councils duties in accordance with Section 18.		

Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

2.18 River Dee Catchment (02/14/15)

This area is designated as a potentially vulnerable area due to flood risk to Bridge of Dee and Castle Douglas. The main source of flooding is from the River Dee, with some risk from surface water. Recent floods have occurred in the area due to river and surface water flooding.

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

List of target areas

Bridge of Dee	**(target area 35)**
Castle Douglas	**(target area 36)**

Local Flood Risk Management plan datasheet
2.18.1 Bridge of Dee (target area 35)

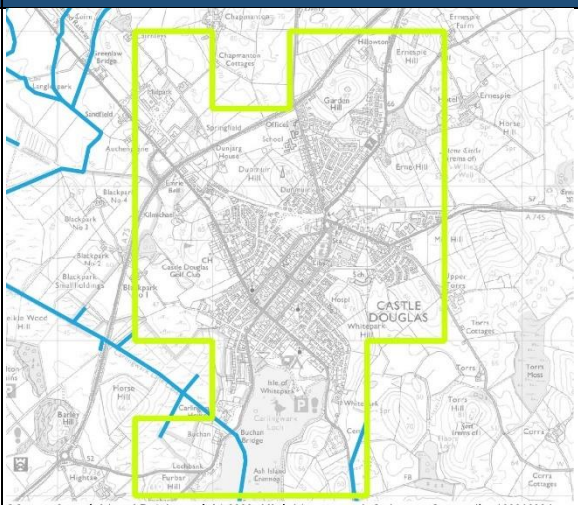
Summary	Location Map
Bridge of Dee has been newly identified for inclusion in the 2021 flood risk management plans. The Bridge of Dee is located on the River Dee, near the town of Castle Douglas. The area is located within the Dumfries and Galloway local authority area. Within Bridge of Dee there is risk from river and surface water flooding. There are approximately 60 people and 30 homes and businesses at risk from flooding. This is estimated to increase to 80 people and 40 homes and businesses by the 2080s due to climate change.	

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 level assessment is improved for river flooding by the Galloway Glens Natural Flood Management Scoping Study (2016). Together, this information has highlighted the risk of flooding (principally associated with climate change) in this target area. Bridge of Dee has therefore been identified as a new target area for the 2021 flood risk management plans. There are limited records of flooding in this target area.

ID	Objective	Description
351	Avoid flood risk	Avoid inappropriate development that increases flood risk in Bridge of Dee
352	Improve data and understanding	Improve data and understanding of climate change related to flooding in Bridge of Dee
353	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Bridge of Dee

Action ID	Bridge of Dee		3501
Action Type	Data collection		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2028
Description	This may include data collection and monitoring to improve the confidence in flood sources, mechanisms and risk. A review may be required to assess the need for rain and/or river gauges. Post flood event surveys may be required to collect data on flooding mechanisms, risk and damage caused.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate opportunities for joint data collection activities.		

Local Flood Risk Management plan datasheet
2.18.2 Castle Douglas (target area 36)

Summary	Location Map
The area contains the town of Castle Douglas and the villages of Kilmichael and Hillowton. The area is located within the Dumfries and Galloway local authority area. The main source of flooding in Castle Douglas is river flooding, however there is also a risk from surface water flooding. There are approximately 640 people and 390 homes and businesses at risk from flooding. This is estimated to increase to 850 people and 520 homes and businesses by the 2080s due to climate change.	

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 level assessment is improved for river flooding by the Galloway Glens Natural Flood Management Scoping Study (2016) and the Castle Douglas flood risk assessment (published 2013 and reviewed 2015) and improved for surface water flooding by a sewer flood risk assessment. There is a long record of flooding in this target area.

ID	Objective	Description
361	Avoid flood risk	Avoid inappropriate development that increases flood risk in this target area
362	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in this target area

Action ID	Castle Douglas	3601
Action Type	Flood risk management review	
Action Delivery Lead	SEPA	Indicative Delivery: 2022 - 2028
Description	No local actions specific to this target area have been identified yet. However, there are national actions to be taken forward which will help identify future needs in this area. SEPA are updating surface water mapping to enhance the understanding of current and future surface water flood risks. Scotlands most vulnerable areas will be reviewed to take account of any new information, which will be published in 2024. Long term flood management actions will be reviewed in 2026. SEPA will continue to collect information on any flooding that occurs in the area, to inform the review process.	
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.	
Coordination	SEPA will work with the other responsible authorities to review flood risk management for this area, through the Local Plan District Partnerships. A public consultation on priority areas will be held in 2024 by SEPA, which will be open for three months. A public consultation on future flood management actions will be held in December 2026 and will be open for at least three months.	

2.19 Kirkcudbright (02/14/16)

This area is designated as a potentially vulnerable area due to flood risk in Kirkcudbright. There is flooding from coastal, river and surface water. There are records of flooding in the area including recent coastal flooding.

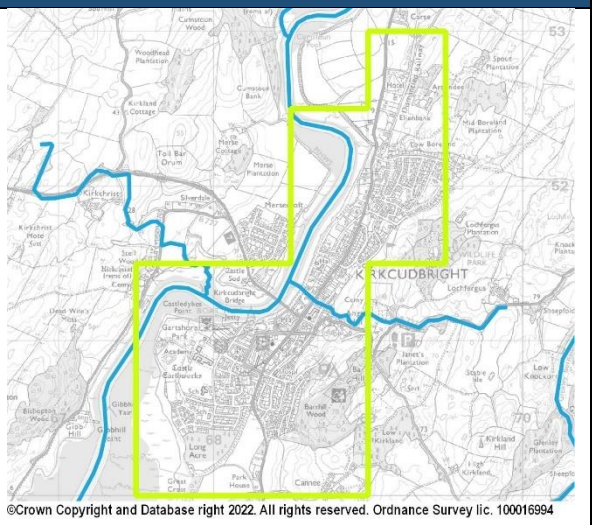
There is 1 target area in this potentially vulnerable area, which has been the focus of further assessment, this is identified below. Further information on the objectives and actions to manage flood risk within this area is provided below.

List of target areas

Kirkcudbright	(target area 134)

Local Flood Risk Management plan datasheet

2.19.1 Kirkcudbright (target area 134)

Summary	Location Map
Kirkcudbright is a town at the mouth of the River Dee, where it discharges into Kirkcudbright Bay. The area is located within the Dumfries and Galloway local authority area. The main source of flooding in Kirkcudbright is coastal flooding, however there are also risks from river and surface water flooding. There are approximately 610 people and 380 homes and businesses currently at risk from flooding. This is likely to increase to 780 people and 500 homes and businesses by the 2080s due to climate change.	

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 level assessment is improved for coastal flooding by the shoreline management plan (draft consultation 2021) and flood warning scheme. Understanding is also improved for river flooding by the Galloway Glens Natural Flood Management Scoping Study (2016) and for surface water flooding by a sewer flood risk assessment. There is a long record of flooding in this target area.

ID	Objective	Description
1341	Avoid flood risk	Avoid inappropriate development that increases flood risk in this target area
1342	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in this target area
1343	Reduce flood risk	Reduce the risk of flooding in this target area

Action ID	Kirkcudbright		13401
Action Type	Shoreline management plan (coastal adaptive plan)		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2023
Description	Dumfries and Galloway Council to complete the review of the 2005 Solway Shoreline Management Plan. This management plan will also identify the need for more detailed assessments of any existing coastal defences and interactions with other flood sources.		
Action Delivery Lead is Taking	The plan has been consulted upon; feedback will be incorporated with publication anticipated by summer 2023		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate this action with work on coastal flood mapping.		

Action ID	Kirkcudbright		13402
Action Type	Flood warning maintenance		
Action Delivery Lead	SEPA	Indicative Delivery	Ongoing
Description	SEPA should maintain the Solway coastal flood warning scheme.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with the local authorities on the potential to use information from the flood studies and data collection along the Solway coast to inform ongoing flood warning. SEPA will continue to raise awareness of flood warning, and engage with communities about the service when required.		

Action ID	Kirkcudbright		13403
Action Type	Strategic mapping improvements		
Action Delivery Lead	SEPA	Indicative Delivery	2023 - 2026
Description	SEPA will be undertaking a review of coastal flood modelling in this target area to identify where it may be appropriate to include the impact of waves on coastal flooding. We will progress with improved flood modelling and mapping in the highest priority areas taking account of availability of data to support the modelling work.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with the local authority on the potential to coordinate delivery of this action with other studies of the catchment that are available.		

2.20 Carsphairn (02/14/17)

This area is designated as a potentially vulnerable area due to flood risk in Carsphairn. The main source of flooding is from the Water of Deugh. There are records of flooding in the area including recent river flooding.

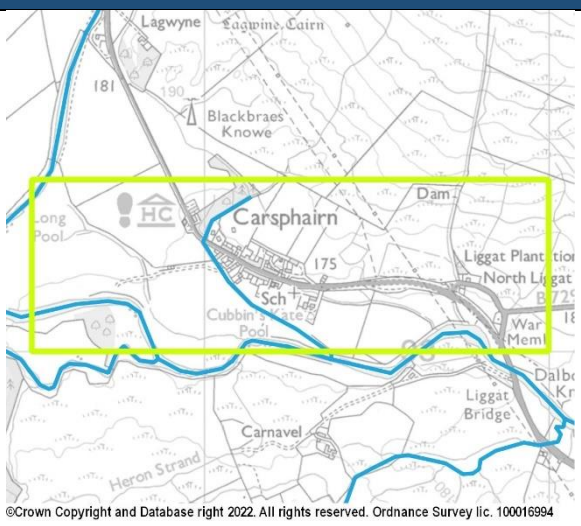
There is 1 target area in this potentially vulnerable area, which has been the focus of further assessment, this is identified below. Further information on the objectives and actions to manage flood risk within this area is provided below.

List of target areas

Carsphairn	(target area 127)

Local Flood Risk Management plan datasheet

2.20.1 Carsphairn (target area 127)

Summary	Location Map
Carsphairn is a village in the south west of Scotland on the banks of Water of Deugh. The area is located within the Dumfries and Galloway local authority area. The main source of flooding in Carsphairn is river flooding. There are approximately 31 homes and businesses currently at risk from flooding. This is likely to increase to 32 properties by the 2080s due to climate change.	

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 level assessment is improved for river flooding by the Carsphairn Flood Study (2015). There is a long record of flooding in this target area including notable flooding in December 2015 when multiple properties flooded from the Water of Deugh.

ID	Objective	Description
1271	Avoid flood risk	Avoid inappropriate development that increases flood risk in Carsphairn
1272	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Carsphairn
1273	Reduce flood risk	Reduce the risk of river flooding in Carsphairn

Action ID	Carsphairn		12701
Action Type	Flood scheme or works design		
Action Delivery Lead	Local Authority	Indicative Delivery	2024 - 2028
Description	Dumfries and Galloway Council to develop detailed design of the Carsphairn Flood Protection Scheme based on the preferred option from the flood study. The preferred option consists of flood walls and earth embankments. Recommendations are for further topographic survey to increase confidence in the model. An adaptation plan may need to be developed to address changes of flood risk due to climate change.		
Action Delivery Lead is Taking	Assessment work will be undertaken to ascertain current protection afforded by temporary scheme followed by feasibility analysis of a permanent flood protection scheme,		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.		

Action ID	Carsphairn		12702
Action Type	Flood scheme or works implementation		
Action Delivery Lead	Local Authority	Indicative Delivery	2026 - 2028
Description	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 capital funding being made available. Dumfries and Galloway Council should progress the formal process of promoting a flood protection scheme for Carsphairn. Procurement of a contractor for the construction phase should begin once formal approval to progress with a scheme has been given and detailed design is complete. Upon completion of the scheme Dumfries and Galloway Council should submit all as built and scheme information to SEPA for registration on the Scottish Flood Defence Asset Database.		

Action Delivery Lead is Taking	Provided that the feasibility study shows a flood protection scheme to be viable, the council will progress detailed design, tender and construction. The council may consider options to make the existing temporary scheme a permanent scheme should feasibility for a larger scheme not be favourable.
Funding	The delivery of this action is subject to capital funding being made available.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate this action with an update to SFDAD.

Action ID	**Carsphairn**		**12703**
Action Type	**Community engagement**		
Action Delivery Lead	Local Authority	**Indicative Delivery**	2022 - 2028
Description	Community engagement should continue through the development of the Carsphairn Flood Protection Scheme.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.		

2.21 Creetown (02/14/18)

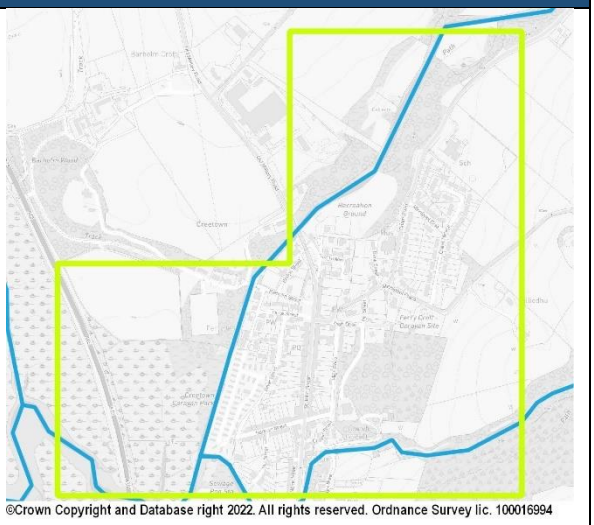
This area is designated as a potentially vulnerable area due to flood risk to Creetown. The main sources of flooding are from river and coastal flooding. There are reports of flooding in the area, with recent floods caused by coastal and river flooding.

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

List of target areas

Creetown (target area 130)

Local Flood Risk Management plan datasheet
2.21.1 Creetown (target area 130)

Summary	Location Map
Creetown is a small coastal town which is located between the Moneypool Burn and Balloch Burn on the River Cree estuary at Wigtown Bay. The area is located within the Dumfries and Galloway local authority area. The main source of flooding in Creetown is coastal flooding, however there are also risks of river and surface water flooding. There are approximately 180 people and 130 homes and businesses currently at risk from flooding. This is likely to increase to 220 people and 150 homes and businesses by the 2080s due to climate change.	

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 level assessment is improved for coastal flooding by the shoreline management plan (draft consultation 2021) and by the flood warning scheme. There is a long record of flooding in this target area.

ID	Objective	Description
1301	Avoid flood risk	Avoid inappropriate development that increases flood risk in this target area
1302	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in this target area
1303	Reduce flood risk	Reduce the risk of flooding in this target area

Action ID	Creetown		13001
Action Type	Shoreline management plan (coastal adaptive plan)		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2023
Description	Dumfries and Galloway Council to complete the review of the 2005 Solway Shoreline Management Plan. This management plan will also identify the need for more detailed assessments of any existing coastal defences and interactions with other flood sources.		
Action Delivery Lead is Taking	The plan has been consulted upon; feedback will be incorporated with publication anticipated by summer 2023		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate this action with work on coastal flood mapping.		

Action ID	Creetown		13002
Action Type	Flood warning maintenance		
Action Delivery Lead	SEPA	Indicative Delivery	Ongoing
Description	SEPA should maintain the Solway coastal flood warning scheme.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with the local authorities on the potential to use information from the flood studies and data collection along the Solway coast to inform ongoing flood warning. SEPA will continue to raise awareness of flood warning, and engage with communities about the service when required.		

Action ID	Creetown		13003
Action Type	Strategic mapping improvements		
Action Delivery Lead	SEPA	Indicative Delivery	2023 - 2026
Description	SEPA will be undertaking a review of coastal flood modelling in this target area to identify where it may be appropriate to include the impact of waves on coastal flooding. We will progress with improved flood modelling and mapping in the highest priority areas taking account of availability of data to support the modelling work.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with the local authority on the potential to coordinate the flood map update with any other actions being carried out to understand or reduce coastal flooding.		

2.22 Newton Stewart (02/14/19)

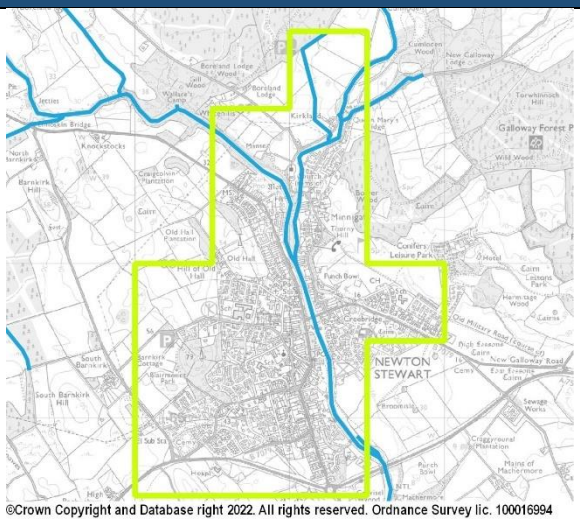
This area is designated as a potentially vulnerable area due to flood risk to Newton Stewart. The main sources of flooding are from the River Cree and the Penkiln Burn. Recent floods have been caused by river flooding.

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

List of target areas

Newton Stewart **(target area 140)**

Local Flood Risk Management plan datasheet
2.22.1 Newton Stewart (target area 140)

Summary	Location Map
Newton Stewart is a town located on the banks of the River Cree. The area is located within the Dumfries and Galloway local authority area. The main source of flooding in Newton Stewart is river flooding, however there is also a risk from surface water flooding. There are approximately 510 people and 350 homes and businesses currently at risk from flooding. This is likely to increase to 650 people and 430 homes and businesses by the 2080s due to climate change.	

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 level assessment is improved for river flooding by assessments carried out for the Newton Stewart Flood Protection Scheme and flood warning scheme, improved for coastal flooding by the shoreline management plan (draft consultation 2021) and improved for surface water flooding by a sewer flood risk assessment. There are periodic records of flooding in this target area, most notably flooding in December 2015.

ID	Objective	Description
1401	Avoid flood risk	Avoid inappropriate development that increases flood risk in this target area
1402	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in this target area
1403	Reduce flood risk	Reduce the risk of flooding in this target area

Action ID	Newton Stewart		14001
Action Type	Flood scheme or works design		
Action Delivery Lead	Local Authority	Indicative Delivery	2023 - 2028
Description	Dumfries and Galloway Council to develop detailed design of the Newton Stewart Flood Protection Scheme. This should include consideration of the impacts of climate change on scheme performance. An adaptation plan may need to be developed to address changes of flood risk due to climate change.		
Action Delivery Lead is Taking	Scheme to be published early 2023 and detailed design to be progressed on confirmation of the scheme by Scottish Ministers.		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate this action with flood warning actions.		

Action ID	Newton Stewart		14002
Action Type	Flood scheme or works implementation		
Action Delivery Lead	Local Authority	Indicative Delivery	2026 - 2028
Description	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. Dumfries and Galloway Council should progress the formal process of promoting a flood protection scheme for Newton Stewart. Procurement of a contractor for the construction phase should begin once formal approval to progress with a scheme has been given and detailed design is complete. Upon completion of the scheme Dumfries and Galloway Council should submit all as built and scheme information to SEPA for registration on the Scottish Flood Defence Asset Database.		

Action Delivery Lead is Taking	Once detailed design is complete the scheme will progress through tendering process with construction expected to begin early 2026.
Funding	The delivery of this action is subject to capital funding being made available.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate this action with an update to SFDAD and flood warning actions.

Action ID	**Newton Stewart**		**14003**
Action Type	**Community engagement**		
Action Delivery Lead	Local Authority	**Indicative Delivery**	2022 - 2028
Description	Community engagement should continue through the development of the Newton Stewart Flood Protection Scheme.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.		

Action ID	**Newton Stewart**		**14004**
Action Type	**Flood warning maintenance**		
Action Delivery Lead	SEPA	**Indicative Delivery**	Ongoing
Description	SEPA should maintain the River Cree flood warning scheme.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with Dumfries & Galloway Council on the potential to use information on the Newton Stewart flood scheme to inform ongoing flood warning. SEPA will continue to raise awareness of flood warning, and engage with communities about the service when required.		

2.23 Garlieston (02/14/20)

This area is designated as a potentially vulnerable area due to flood risk to Sorbie and Garlieston. There is flooding from river, coastal and surface water. There is a history of flooding in the area, with recent flooding occurring in 2018 due to Storm Eleanor.

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

List of target areas

Sorbie	**(target area 70)**
Garlieston	**(target area 126)**

Local Flood Risk Management plan datasheet

2.23.1 Sorbie (target area 70)

Summary	Location Map
The small village of Sorbie is located within the Dumfries and Galloway local authority area. The main source of flooding in Sorbie is river flooding, however there is also a risk of surface water flooding. There are approximately 40 people at risk from flooding and 20 homes and businesses. This is estimated to increase to 50 people and 30 homes and businesses by the 2080s due to climate change.	

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, and this information has highlighted the risk of flooding in this target area. Sorbie has therefore been identified as a new target area for the 2021 flood risk management plans. There are periodic records of flooding in this target area.

ID	Objective	Description
701	Avoid flood risk	Avoid inappropriate development that increases flood risk in Sorbie
702	Improve data and understanding	Improve data and understanding of flooding in Sorbie
703	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Sorbie

Action ID	Sorbie		7001
Action Type	Data collection		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2028
Description	This may include data collection and monitoring to improve the confidence in flood sources, mechanisms and risk. A review may be required to assess the need for rain and/or river gauges. Post flood event surveys may be required to collect data on flooding mechanisms, risk and damage caused.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate opportunities for joint data collection activities.		

Local Flood Risk Management plan datasheet

2.23.2 Garlieston (target area 126)

Summary	Location Map
Garlieston is a small coastal village located in Garlieston Bay 7km north east of Whithorn. The area is located within the Dumfries and Galloway local authority area. The main source of flooding in Garlieston is coastal flooding, however there is also a risk of river flooding. There are approximately 180 people and 100 homes and businesses currently at risk from flooding, which is a significant proportion of the community. This is likely to increase to 230 people and 140 homes and businesses by the 2080s due to climate change.	

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 level assessment is improved for coastal flooding by the shoreline management plan (draft consultation 2021) and by the flood warning scheme. There are limited records of flooding in this target area.

The Dynamic Coast project has shown that parts of the shoreline in or adjacent to this target area are subject to erosion at present or are considered likely to erode in the future. Consideration should be given to how erosion might impact flood risk. Any actions taken should aim to support building natural resilience to flooding and not lead to an increase in erosion.

ID	Objective	Description
1261	Avoid flood risk	Avoid inappropriate development that increases flood risk in Garlieston
1262	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Garlieston

ID	Objective	Description
1263	Reduce flood risk	Reduce the risk of flooding in Garlieston

Action ID	Garlieston		12601
Action Type	Shoreline management plan (coastal adaptive plan)		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2023
Description	Dumfries and Galloway Council to complete the review of the 2005 Solway Shoreline Management Plan. This managementplan will also identify the need for more detailed assessments of any existing coastal defences and interactions with other flood sources.		
Action Delivery Lead is Taking	The plan has been consulted upon; feedback will be incorporated with publication anticipated by summer 2023		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate this action with work on coastal flood mapping.		

Action ID	Garlieston		12602
Action Type	Flood warning maintenance		
Action Delivery Lead	SEPA	Indicative Delivery	Ongoing
Description	SEPA should maintain the Solway coastal flood warning scheme.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with the local authorities on the potential to use information from the flood studies and data collection along the Solway coast to inform ongoing flood warning. SEPA will continue to raise awareness of flood warning, and engage with communities about the service when required.		

Action ID	Garlieston		12603
Action Type	Strategic mapping improvements		
Action Delivery Lead	SEPA	Indicative Delivery	2023 -2026
Description	SEPA will be undertaking a review of coastal flood modelling in this target area to identify where it may be appropriate to include the impact of waves on coastal flooding. We will progress with improved flood modelling and mapping in the highest priority areas taking account of availability of data to support the modelling work.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with the local authority on the potential to coordinate the flood map update with any other actions being carried out to understand or reduce coastal flooding.		

2.24 Isle of Whithorn (02/14/21)

This area is designated as a potentially vulnerable area due to flood risk in Isle of Whithorn. The main sources of flooding are river and coastal. Recent floods occurred in January 2018 and February 2019, which were caused by coastal flooding.

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

List of target areas

Isle of Whithorn	**(target area 144)**

Local Flood Risk Management plan datasheet
2.24.1 Isle of Whithorn (target area 144)

Summary	Location Map
The Isle of Whithorn is located on the coast north east of Burrow Head, within the Dumfries and Galloway local authority area. The main source of flooding in Isle of Whithorn is from coastal flooding, however there is also a risk from river flooding. There are approximately 110 people and 70 homes and businesses currently at risk from flooding, which is a significant proportion of the community. This is likely to increase to 130 people and 75 homes and businesses by the 2080s due to climate change.	

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 level assessment is improved for coastal flooding by the shoreline management plan (draft consultation 2021) and flood warning scheme. There are periodic records of flooding in this target area.

ID	Objective	Description
1441	Avoid flood risk	Avoid inappropriate development that increases flood risk in Isle of Whithorn
1442	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Isle of Whithorn
1443	Reduce flood risk	Reduce the risk of coastal flooding in Isle of Whithorn

Action ID	Isle of Whithorn		14401
Action Type	Shoreline management plan (coastal adaptive plan)		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2023
Description	Dumfries and Galloway Council to complete the review of the 2005 Solway Shoreline Management Plan. This management plan will also identify the need for more detailed assessments of any existing coastal defences and interactions with other flood sources.		
Action Delivery Lead is Taking	The plan has been consulted upon; feedback will be incorporated with publication anticipated by summer 2023		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate this action with work on coastal flood mapping.		

Action ID	Isle of Whithorn		14402
Action Type	Flood warning maintenance		
Action Delivery Lead	SEPA	Indicative Delivery	Ongoing
Description	SEPA should maintain the Solway coastal flood warning scheme.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with the local authorities on the potential to use information from the flood studies and data collection along the Solway coast to inform ongoing flood warning. SEPA will continue to raise awareness of flood warning, and engage with communities about the service when required.		

Action ID	Isle of Whithorn		14403
Action Type	Strategic mapping improvements		
Action Delivery Lead	SEPA	Indicative Delivery	2023 - 2026
Description	SEPA will be undertaking a review of coastal flood modelling in this target area to identify where it may be appropriate to include the impact of waves on coastal flooding. We will progress with improved flood modelling and mapping in the highest priority areas taking account of availability of data to support the modelling work.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with the local authority on the potential to coordinate the flood map update with any other actions being carried out to understand or reduce coastal flooding.		

2.25 Port William (02/14/22)

This area is designated as a potentially vulnerable area due to flood risk to Port William. The main source of flooding is from coastal flooding, however there is also a risk of surface water and river flooding. There is a history of flooding in the area, with recent flooding caused by coastal and surface water flooding.

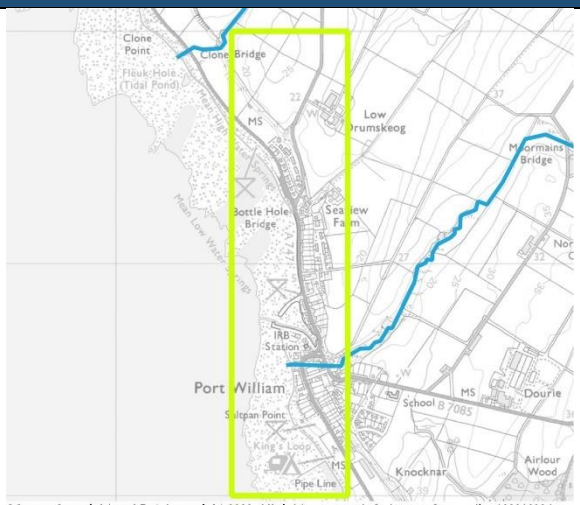
There is 1 target area in this potentially vulnerable area, which has been the focus of further assessment, this is identified below. Further information on the objectives and actions to manage flood risk within this area is provided below.

List of target areas

Port William **(target area 143)**

Local Flood Risk Management plan datasheet

2.25.1 Port William (target area 143)

Summary	Location Map
Port William is a small coastal village located on the eastern shore of Luce Bay. The area is located within the Dumfries and Galloway local authority area. The main sources of flooding in Port William are from coastal and river flooding. There are approximately 40 people and 40 homes and businesses currently at risk from flooding. This is likely to remain the same by the 2080s irrespective of climate change.	

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 level assessment is improved for coastal flooding by the shoreline management plan (draft consultation 2021) and flood warning scheme. This information has highlighted the risk of flooding in this target area. Port William has therefore been identified as a new target area for the 2021 flood risk management plans. There is a long record of flooding in this target area.

The Dynamic Coast project has shown that parts of the shoreline in or adjacent to this target area are subject to erosion at present or are considered likely to erode in the future. Consideration should be given to how erosion might impact flood risk. Any actions taken should aim to support building natural resilience to flooding and not lead to an increase in erosion.

ID	Objective	Description
1431	Avoid flood risk	Avoid inappropriate development that increases flood risk in Port William
1432	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Port William

ID	Objective	Description
1433	Reduce flood risk	Reduce the risk of flooding in Port William

Action ID	Port William		14301
Action Type	Shoreline management plan (coastal adaptive plan)		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2023
Description	Dumfries and Galloway Council to complete the review of the 2005 Solway Shoreline Management Plan. This management plan will also identify the need for more detailed assessments of any existing coastal defences and interactions with other flood sources.		
Action Delivery Lead is Taking	The plan has been consulted upon; feedback will be incorporated with publication anticipated by summer 2023		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate this action with work on coastal flood mapping.		

Action ID	Port William		14302
Action Type	Flood warning maintenance		
Action Delivery Lead	SEPA	Indicative Delivery	Ongoing
Description	SEPA should maintain the Solway coastal flood warning scheme.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with the local authorities on the potential to use information from the flood studies and data collection along the Solway coast to inform ongoing flood warning. SEPA will continue to raise awareness of flood warning, and engage with communities about the service when required.		

Action ID	Port William		14303
Action Type	Strategic mapping improvements		
Action Delivery Lead	SEPA	Indicative Delivery	2023 - 2026
Description	SEPA will be undertaking a review of coastal flood modelling in this target area to identify where it may be appropriate to include the impact of waves on coastal flooding. We will progress with improved flood modelling and mapping in the highest priority areas taking account of availability of data to support the modelling work.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with the local authority on the potential to coordinate the flood map update with any other actions being carried out to understand or reduce coastal flooding.		

2.26 Stranraer (02/14/23)

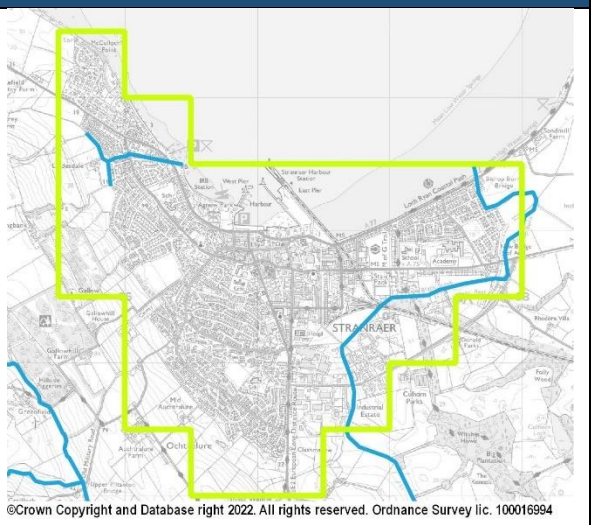
This area is designated as a potentially vulnerable area due to flood risk to Stranraer. There is flooding from river, coastal and surface water. Recent flooding has occurred due to surface water flooding.

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

List of target areas

Stranraer	(target area 142)

Local Flood Risk Management plan datasheet
2.26.1 Stranraer (target area 142)

Summary	Location Map
Stranraer is a coastal town located on the shores of Loch Ryan. The area is located within the Dumfries and Galloway local authority area. The main source of flooding in Stranraer is coastal flooding, however there are also risks from river and surface water flooding. There are approximately 1,000 people and 630 homes and businesses currently at risk from flooding. This is likely to increase to 1,300 people and 820 homes and businesses by the 2080s due to climate change.	

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 level assessment is improved for coastal flooding by the shoreline management plan (draft consultation 2021) and flood warning scheme, and for river flooding by assessments carried out for the Stranraer Flood Protection Scheme. Understanding is also improved for surface water flooding by a sewer flood risk assessment. There are periodic records of flooding in this target area.

ID	Objective	Description
1421	Avoid flood risk	Avoid inappropriate development that increases flood risk in Stranraer
1422	Avoid flood risk	Avoid an increase in flood risk by the appropriate management and maintenance of the Stranraer flood protection works
1423	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Stranraer area

ID	Objective	Description
1424	Reduce flood risk	Reduce the risk of flooding in Stranraer

Action ID	Stranraer		14201
Action Type	Shoreline management plan (coastal adaptive plan)		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2023
Description	Dumfries and Galloway Council to complete the review of the 2005 Solway Shoreline Management Plan. This management plan will also identify the need for more detailed assessments of any existing coastal defences and interactions with other flood sources.		
Action Delivery Lead is Taking	The plan has been consulted upon; feedback will be incorporated with publication anticipated by summer 2023		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate this action with work on coastal flood mapping.		

Action ID	Stranraer		14202
Action Type	Flood defence maintenance		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2028
Description	Dumfries and Galloway Council to inspect and maintain the Stranraer Flood Protection Scheme which reduces flood risk from the Sheuchan Burn, Town Burn and the Black Stank.		
Action Delivery Lead is Taking	Ongoing assessment of scheme to be undertaken as part of the Councils duties in accordance with Section 18.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.		

Action ID	Stranraer		14203
Action Type	Flood warning maintenance		
Action Delivery Lead	SEPA	Indicative Delivery	Ongoing
Description	SEPA should maintain the Solway coastal flood warning scheme.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with the local authorities on the potential to use information from the flood studies and data collection along the Solway coast to inform ongoing flood warning. SEPA will continue to raise awareness of flood warning, and engage with communities about the service when required.		

Action ID	Stranraer		14204
Action Type	Strategic mapping improvements		
Action Delivery Lead	SEPA	Indicative Delivery	2023 – 2026
Description	SEPA will be undertaking a review of coastal flood modelling in this target area to identify where it may be appropriate to include the impact of waves on coastal flooding. We will progress with improved flood modelling and mapping in the highest priority areas taking account of availability of data to support the modelling work.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with the local authority on the potential to coordinate the flood map update with any other actions being carried out to understand or reduce coastal flooding.		

2.27 Portpatrick (02/14/24)

This area is designated as a potentially vulnerable area due to flood risk to Portpatrick. There is flooding from river, coastal and surface water. A flood protection scheme was built in 2004 and has reduced the risk of river flooding. Recent coastal flooding has occurred in the area.

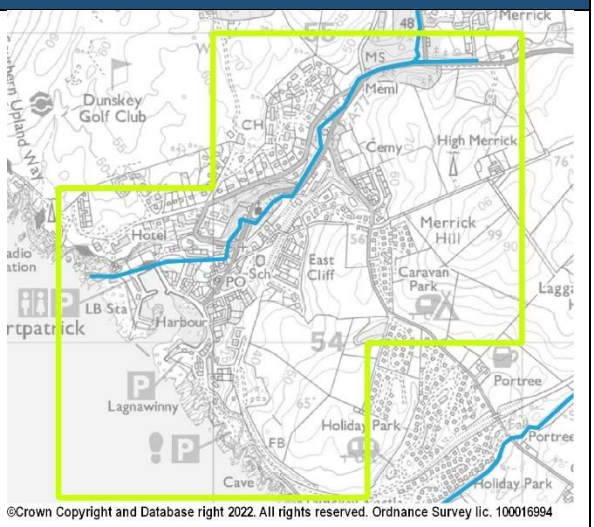
There is 1 target area in this potentially vulnerable area, which has been the focus of further assessment, this is identified below. Further information on the objectives and actions to manage flood risk within this area is provided below.

List of target areas

Portpatrick (target area 141)

Local Flood Risk Management plan datasheet

2.27.1 Portpatrick (target area 141)

Summary	Location Map
Portpatrick is a coastal village located on the western shore of the Rhins of Galloway peninsula. The area is located within the Dumfries and Galloway local authority area. The main source of flooding in the Portpatrick is from coastal flooding, however there is also a risk from river flooding. There are approximately 40 people and 40 homes and businesses currently at risk from flooding. This is likely to remain the same irrespective of climate change by the 2080s.	

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 level assessment is improved for coastal flooding by the shoreline management plan (draft consultation 2021) and by the flood warning scheme. There are periodic records of flooding in this target area.

ID	Objective	Description
1411	Avoid flood risk	Avoid inappropriate development that increases flood risk in Portpatrick
1412	Avoid flood risk	Avoid an increase in flood risk by the appropriate management and maintenance of the Portpatrick flood protection scheme 2003
1413	Prepare for flooding	Prepare for current flood risk and future flooding as a result of climate change in Portpatrick
1414	Reduce flood risk	Reduce the risk of flooding in Portpatrick

Action ID	Portpatrick		14101
Action Type	Shoreline management plan (coastal adaptive plan)		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2023
Description	Dumfries and Galloway Council to complete the review of the 2005 Solway Shoreline Management Plan. This management plan will also identify the need for more detailed assessments of any existing coastal defences and interactions with other flood sources.		
Action Delivery Lead is Taking	The plan has been consulted upon; feedback will be incorporated with publication anticipated by summer 2023		
Funding	The delivery of this action is subject to capital funding being made available.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised. SEPA will work with the local authority on the potential to coordinate this action with work on coastal flood mapping.		

Action ID	Portpatrick		14102
Action Type	Flood defence maintenance		
Action Delivery Lead	Local Authority	Indicative Delivery	2022 - 2028
Description	Dumfries and Galloway Council will continue to inspect and maintain the Portpatrick Flood Protection Scheme 2003.		
Action Delivery Lead is Taking	Ongoing assessment of scheme to be undertaken as part of the Councils duties in accordance with Section 18.		
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.		

Action ID	Portpatrick		14103
Action Type	Flood warning maintenance		
Action Delivery Lead	SEPA	Indicative Delivery	Ongoing
Description	SEPA should maintain the Solway coastal flood warning scheme.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with the local authorities on the potential to use information from the flood studies and data collection along the Solway coast to inform ongoing flood warning. SEPA will continue to raise awareness of flood warning, and engage with communities about the service when required.		

Action ID	Portpatrick		14104
Action Type	Strategic mapping improvements		
Action Delivery Lead	SEPA	Indicative Delivery	2023 - 2026
Description	SEPA will be undertaking a review of coastal flood modelling in this target area to identify where it may be appropriate to include the impact of waves on coastal flooding. We will progress with improved flood modelling and mapping in the highest priority areas taking account of availability of data to support the modelling work.		
Funding	SEPA's role in this action is funded by Scottish Government through SEPA's grant in aid settlement.		
Coordination	SEPA will work with the local authority on the potential to coordinate the flood map update with any other actions being carried out to understand or reduce coastal flooding.		

Section 3: Other flood risk activities by local authorities in Solway Local Plan District

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

3.1 Section 18 & 59: Works of Clearance and Repair

Based on an assessment of the condition of a body of water, local authorities must prepare a schedule of clearance and repair works that would substantially reduce the risk of flooding of land. This is commonly referred to as a Schedule 18, which is made available by each local authority within the LPD for public inspection. Under s.59 of the Act, the local authority must carry out the works in the Schedule 18 if it considers that this will contribute to the implementation of actions in the Plan, but that these works will not affect the implementation of actions in this Plan. Details of how to access Schedule 18s for each local authority in the LPD are included in Annex 2 of the Plan.

3.2 Section 56: General Power to manage flood risk

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

This may include carrying out flood protection works, which may not be identified as actions in the Plan. Where a local authority has a commitment to carry out such flood protection works or any other activities within the period of the current FRM cycle and not included as actions in this Plan, these works are identified in Annex 2.

Annex 1: Consultation and engagement

Flood Risk Management Plans Consultation Summary

Asking for and listening to input from stakeholders and the public is a key part of flood risk management in Scotland. SEPA and the lead local authorities undertook a joint consultation, which ran in 2 phases between December 2020 and October 2021. Phase 1, opened in December 2020 and included a summary of flooding in each Local Plan District, a description of the potentially vulnerable areas and the identified local target areas. Phase 2 opened for responses on 30th July 2021 and closed on 31st October 2021. Phase 2 identified the objectives for each target area and the actions needed to achieve these objectives. It also included prioritisation of the actions by 6-year cycle. Local authorities provided more detail in the draft local flood risk management plans, which included an expanded description of the actions, and who would lead and coordinate delivery.

The consultation was open to everyone with an interest in flood risk management.

The communications campaign to publicise the consultation aimed to encourage anyone with an interest in flooding to have their say on how flood risk is managed across Scotland.

Communication activities included:

- A public notice in the Edinburgh Gazette and The Herald
- A national press release
- Social media posts on Facebook, Twitter, LinkedIn, Instagram
- A national targeted, paid social media campaign on Facebook, Twitter, and Instagram.

In total SEPA received 677 responses nationally. These included 654 online responses via the consultation platform Citizen Space and 23 e-mail responses received via SEPA's consultation mailbox. Compared to the first consultation on the flood risk management strategies in 2014, there has been a welcome three-fold increase in the number of responses. The majority of the responses (520) were from

members of the public. This reflects increased public awareness of flooding and flood risk management, and the increasing risk due to climate change. This information was shared with the relevant local authorities and amendments made to reflect public input.

Acting on consultation feedback

Several changes were made to the final flood risk management plans as a result of the input received during the consultation. Full details will be provided in the consultation digest to be published by SEPA in Spring 2022.

Annex 2: Links to other plans, policies, strategies and legislative requirements

S18 Schedule of Clearance and Repair

The following are links for each local authority to access schedules of clearance and repair under Section 18 of the Flood Risk Management (Scotland) Act 2009:

Local Authority Method of public access to the S18 Schedule:

- Dumfries and Galloway Council – https://www.dumgal.gov.uk/article/15220/Watercourse-inspections-and-clearance
- South Ayrshire Council –
- South Lanarkshire Council - Flood Risk Management Plans - South Lanarkshire Council Flooding - South Ayrshire Council (south-ayrshire.gov.uk)
- East Ayrshire Council – https://www.ayrshireroadsalliance.org/Winter-Information/Flooding.aspx
- Scottish Borders Council - https://www.scotborders.gov.uk/info/20013/environment/602/flood_protection

Annex 3: Roles and Responsibilities

Roles and responsibilities for flood risk management

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

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

a) Your responsibilities

Organisations and individuals have responsibilities to protect themselves from flooding. It is your responsibility to manage your own flood risk and being prepared by knowing what to do and who to contact if flooding happens can help you reduce the damage and disruption flooding can have on your life.

- View SEPA flood maps to check if your area is affected by flooding https://map.sepa.org.uk/floodmaps
- Sign up to Floodline to receive messages when flooding is forecast in your area https://www.floodlinescotland.org.uk/
- Know who to contact if flooding happens https://www.sepa.org.uk/media/28952/who_to_contact_2014.pdf.
- Other useful tools and advice on how to be prepared are available on the website http://www.floodlinescotland.org.uk/ website.
- Ready Scotland has some information to prepare for and recover from flooding at https://ready.scot/respond/severe-weather/rain-and-flooding

b) SEPA

SEPA is Scotland's national flood forecasting, flood warning and strategic flood risk management authority. SEPA work in partnership with the Met Office to forecast flooding and operate Floodline to warn the public and emergency responders when

flooding is likely. SEPA produce Scotland's flood risk management plans, working closely with other organisations responsible for managing flood risk to ensure that a nationally consistent approach to flood risk management is adopted. SEPA also provide flood risk advice on land use planning when requested and raise awareness of flooding at a national level through education initiatives, community engagement and campaigns.

c) Local Authorities and Lead Local Authorities

Local authorities are responsible for working together to produce Scotland's local flood risk management plans and work in partnership with SEPA, Scottish Water and other responsible authorities to develop these.

It is the responsibility of local authorities to implement action(s) to manage flooding and maintain flood defences. Local authorities also inspect, clear and repair watercourses to reduce flood risk and routinely maintain road gullies on public roads and highways.

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

The lead authority for the Solway Local Plan District is:

- Dumfries and Galloway Council.

Other local authorities who are responsible authorities for the Solway Local Plan District are:

- East Ayrshire Council
- South Lanarkshire Council
- South Ayrshire Council
- Scottish Borders Council.

d) Scottish Water

Scottish Water is a responsible authority for flood risk management and is working closely with SEPA, local authorities and others to coordinate plans to manage flood risk. Scottish Water has the public drainage duty and is responsible for draining

wastewater from properties and businesses, and rainwater run-off from roofs and paved areas within the boundary of properties. Pipework and guttering within the boundary, are the responsibility of the property owner.

Scottish Water helps to protect homes from flooding caused by sewers either overflowing or becoming blocked. This is done in a way that is fair and consistent to customers across the country, with sewer flooding investment prioritised to provide the biggest benefit for customers and the environment first. Currently investment to reduce the risk of sewer flooding is prioritised towards properties that have experienced internal sewer flooding and are at the highest risk of repeat occurrence of sewer

Other Organisations

a) Scottish Government

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

b) Scottish Forestry & Forestry and Land Scotland

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

c) Met Office

The **Met Office** provides a wide range of forecasts and weather warnings. SEPA and the Met Office work together through the Scottish Flood Forecasting Service,

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

The **emergency services** provide emergency relief when flooding occurs and can coordinate evacuations. You should call the emergency services on 999 if you are concerned about your safety or the safety of others and act immediately on any advice provided.

d) Scottish Flood Forum

The **Scottish Flood Forum** is a Scottish charitable organisation that provides support for those who are affected by, or are at risk of, flooding. It provides flood advice, information, awareness, education and training to individuals and communities to help reduce the risk of flooding; in partnership with the local authority, provides support during the recovery process following a flood incident and aims to support the development of a network of community resilience groups in flood risk areas, equipping communities to cope with flooding.

e) NatureScot

NatureScot has provided general and local advice in the development of this Flood Risk Management Strategy. Flooding is seen as natural process that can maintain the features of interest at many designated sites, so NatureScot helps to ensure that any changes to patterns of flooding do not adversely affect the environment. NatureScot also provides advice on the impact of Flood Protection Schemes and other land use development on designated sites and species.

f) Network Rail and Transport Scotland

During the preparation of the first flood risk management plans Network Rail and Transport Scotland have undertaken works to address flooding at a number of frequently flooded sites. In the Solway Local Plan District Network were the lead organisation on some actions in Stranraer during the Cycle 1 plan, Further engagement is planned with SEPA and local authorities to identify areas of future work. There is the opportunity for further works to be undertaken during the second flood risk management planning cycle although locations for these works are yet to be confirmed.

g) Utility companies

Utility companies have undertaken site specific flood risk studies for their primary assets and have management plans in place to mitigate the effects of flooding to their assets, and also minimise the impacts on customers.

h) Historic Environment Scotland

Historic Environment Scotland considers flooding as part of their regular site assessments. As such, flooding is considered as one of the many factors which inform the development and delivery of its management and maintenance programmes.

Annex 4: Supporting information

Sources of flooding described in this plan

This flood risk management plan targets the risk of flooding from rivers, the coast, surface water and groundwater. The risk of flooding from rivers is usually due to heavy or prolonged rainfall causing a river to rise above the top of the bank. Water spreads out and floods nearby areas. Coastal flooding is where the risk is from the sea. Sea levels can be higher than usual due to normal tidal cycles or stormy weather systems. Over the longer term, sea levels and coastal flood risk will increase due to climate change. Surface water flooding happens when rainwater does not drain away through the normal drainage systems or soak into the ground. Instead, it collects or flows over the ground. There can be interactions between these sources of flooding.

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

The following aspects of flooding have not been incorporated into this plan:

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

The Flood Risk Management (Scotland) Act 2009 does not require SEPA or responsible authorities to assess or manage coastal erosion. However, SEPA has included consideration of coastal erosion in the flood risk management plans by identifying areas that are likely to be susceptible to erosion and where erosion can exacerbate flood risk.

As part of considering where actions might deliver multiple benefits, SEPA have looked to see where the focus of coastal flood risk management studies coincides with areas at risk of coastal erosion as identified by the Dynamic Coast project. Subsequent detailed flood studies and scheme design will need to consider coastal erosion in these areas. This includes ensuring that actions to manage flood risk do not contribute to increased coastal erosion and where appropriate, help to manage risks from coastal erosion now and in the future.

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

Commonly used terms

Below are explanatory notes for commonly used terms in this plan. A glossary of terms is also available at the end of this document.

Reference to flood risk

To develop this plan, flood risk has been assessed over a range of likelihoods. For consistency in reporting information, unless otherwise stated, all references to properties or other receptors being ‘at risk of flooding’ refer to a medium likelihood flood (up to a 0.5% chance of flooding in any given year). By exception, references will be made to high or low risk flooding, which should be taken to mean a 10% chance/likelihood or 0.1% chance/likelihood of flooding in any given year respectively.

Chance / likelihood of flooding		
Likelihood	**Return Period**	**Annual Exceedance Probability**

High	1 in 10 year	10%
Medium	1 in 200 year	0.5%
Low	1 in 1000 year	0.1%

An **annual cost of flooding** is given as an assessment of the economic impact of flooding within an area. Depending on its size or severity each flood will cause a different amount of damage to a given area. Annual average damages are the theoretical average economic damages caused by flooding when considered over many years. It does not mean that value of damage will occur every year: in many years there will be no damages and in some years the damages will be minor. In most places, there will be a very small number of years when much bigger floods occur, and that is when the highest damage costs will occur. To assess the annual cost, this is averaged over many years. In some areas, smaller floods which happen frequently contribute more to the annual cost than much larger events which are rarer. Within the plans, the annual cost of flooding has been calculated based on the methods set out in the Flood Hazard Research Centre's Multi-Coloured Handbook (2016).

History of flooding

Where the plans refer to a history of past flooding, flood events up to 2019/20 have been taken into account.

Flood risk management planning process

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

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

Identifying priority areas at significant flood risk

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

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

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

Improving the understanding of flooding

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

In 2012 SEPA also developed an **assessment of the potential for natural flood management**. The assessment produced the first national source of information on where natural flood management actions would be most effective within Scotland.

Flood hazard and flood risk maps and the assessment of the potential for natural flood management can be viewed on the SEPA website www.sepa.org.uk.

Identifying objectives and selecting actions

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

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

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

Annex 5: SEA Gateway Response to Solway Local Plan District Local Flood Risk Management Plan

18 November 2022

Our ref: CEA168771

Dear [redacted]

ENVIRONMENTAL ASSESSMENT (SCOTLAND) ACT 2005
01768 SCREENING - DUMFRIES AND GALLOWAY COUNCIL - SOLWAY LOCAL FLOOD RISK MANAGEMENT PLAN 2022 -2028.

Thank you for your consultation on the above screening report.
Nature Scot has considered your screening report in accordance with section 9(3) of the Environment Assessment (Scotland) Act 2005. We have reviewed using criteria set out in schedule 2 for determining the likely significance of effects on the environment.
We are of the view that significant environmental effects are unlikely, it is the Responsible Authority to make a formal determination taking into account the consultation responses received.

If you have any questions please contact me.
Yours sincerely,
[redacted]
Operations Officer – South Scotland
[redacted]

Dear [redacted]

Environmental Assessment (Scotland) Act 2005
Dumfries and Galloway Council - Solway Local Flood Risk Management Plan 2022 -2028

Screening Report

Thank you for your consultation which we received on 24 October 2022 about the above screening report. We have reviewed this report in our role as a Consultation Authority under the above Act, in accordance with the requirements of Section 9(3). In doing so we have used the criteria set out in Schedule 2 for determining the likely significance of the effects on the environment.

Historic Environment Scotland's view
In light of the information and reasoning set out within the screening report, we **agree** with your view that there are **unlikely to be significant environmental effects for the historic environment.**

Historic Environment Scotland's comments
We understand that this Local Flood Risk Management Plan (LFRMP) acts as the implementation plan for the Solway Local Plan District Flood Risk Management Plan (FRMP). We note that you are of the view that, as the overarching FRMP has been subject to full environmental assessment and that the LFRMP does not include additional actions likely to have significant environmental effects beyond those assessed as part of the FRMP, significant effects on the historic environment as a result of the LFRMP are unlikely. We are content to agree with this view.

Next steps
The Environmental Assessment (Scotland) Act 2005 requires you as the Responsible Authority to determine whether an environmental assessment is required. You must then notify the Consultation Authorities within 28 days of making this determination. This may be done via the SEA Gateway (sea_gateway@gov.scot).

We hope our advice is helpful to you in making this determination. Please feel welcome to contact us if you have any questions about this response. The officer managing this case is Andrew Stevenson who can be contacted [redacted].

Yours sincerely

Historic Environment Scotland

Annex 6: Acknowledgements

The information described in this Annex relates to the Figures and Maps that have been generated by SEPA and have been reproduced in this Local Flood Risk

Management Plan from the Solway Flood Risk Management Strategy. The Solway Local Plan District Partners gratefully acknowledges the cooperation and input that various parties have provided, including inter alia, the following organisations:

SEPA

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British Geological Survey

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Local authorities

Lead authorities acknowledge the provision of flood models and other supporting data and information from local authorities in Scotland and their collaboration in the production of flood risk management information.

Scottish Water

Local authorities acknowledge the inclusion of surface water flooding data generated by Scottish Water in preparation of flood risk information.

The Flood Hazard Research Centre

Multi-coloured Manual and Multi-coloured Handbook 2016.

All contributors to the **2018 NFRA**, more information on which can be found at https://www.sepa.org.uk/data-visualisation/nfra2018/

Annex 7: Compliance with Section 34 of the Flood Risk Management (Scotland) Act 2009

The Solway LPD LFRMP has been produced in conjunction with the Responsible Authorities. Section 34 of the Flood Risk Management (Scotland) Act 2009 sets out that the lead local authority shall prepare Local Flood Risk Management Plan and describes the requirements. It places duties upon lead local authorities, other responsible authorities and SEPA to agree these plans, and in agreeing to these plans they must agree not only their actions contained in the plans, but that the plans comply with Section 34 and Schedule 1. Table 4 was provided by Dumfries and Galloway Council to assist each responsible authority with providing their agreement to the Plan.

Clause of Section 34	Detail on how Clause has been met
S34(1)	The Solway Local Flood Risk Management Plan ('the Plan') was prepared by Dumfries and Galloway Council – designated lead local authority for this LPD.
S34(2a & 2b)	The Plan does not identify the supplemental and implementation part separately, but both are integral to the Plan.
S34(3a)	The Plan includes (within Sections 2 & 3) a summary and description of the objectives (for the LPD and PVA's); the measures and 'other information' (where relevant) to paras 1 to 3 of Schedule 1.
S34(3bi, ii & iii)	The Plan includes (within Sections 2 & 3) maps and other information where objectives, measures or other information may alter (including enhance) or restore natural features and characteristics. It also includes any 'further information' the lead authority considers relevant to flood risk management within the LPD.
S34(3ci)	The Plan includes (within Section 1.3 and 4.2) a summary of the steps (1 to 6) of S35, describing the public consultation of the draft Flood Risk Management Strategy for the LPD.
S34(3cii&3ciii)	The Plan includes (within Section 4.2) details of other consultation activities carried out by the lead authority in the preparation of the Plan and any changes to it as a result.
S34(4ai & 4aii)	The Plan includes (within Sections 2 & 3) a description and timetable of how/ when measures (actions) are to be implemented (for measures yet to be commenced) and completed (for existing measures).
S34(4bi & 4bii)	The Plan includes (within Sections 2 & 3) a description of who is responsible for implementing the measure and arrangements for

Clause of Section 34	Detail on how Clause has been met
	funding the measure.
S34(4ci & 4cii) & 4d	The Plan includes (within Sections 2 & 3) a description of how the functions of those identified under S34b will coordinate the implementation of the measures, and specifically, any that may relate to the alteration of (including enhancement) or restoration of natural features and characteristics and surface water run off or urban drainage, and other information the lead authority considers relevant to the implementation of the proposed measure.
S34(5)	The Plan contains, within Section 3.27, other flood risk management activities by local authorities in the Solway Local Plan District that are outwith PVAs.
S34(6)	Scottish Ministers have made no further specifications by regulation for inclusion in the Plan.
S34(7)	See S34(6).
S34(8)	The Plan has been developed from the Flood Risk Management Strategy for the Solway Local Plan District and is consistent with it.
S34(9-11)	These clauses are descriptive and have no requirements to be satisfied.

Table 4 – details on compliance of Solway LPD LFRMP with Section 34

Paragraph of Schedule 1	Detail on how paragraph has been met
Para 1(a)	The Plan includes (within Section 3) a description of the objectives set by SEPA for management of the flood risks within each PVA.
Para 1(b)	The Plan includes (within Section 3) a description of the measures identified for achieving the objectives.
Para 1(ci-ciii)	The Plan includes (within Section 3) a detailed timetable for each measure (including anticipated start and end date), indicating when the measure will be implemented in relation to the 6 year cycle, and review dates as specified in the Act.
Para 2	The Plan includes (within Section 2) a map of the Local Plan District Area and the Potentially Vulnerable Areas as concluded from the National Flood Risk Assessment 2011.
Para 3	The Plan includes within Section 2.1.1 a description on the development of the flood hazard and risk maps (prepared under Section 21 of the Act) and provides links to the where these can be viewed on the SEPA website. The conclusions drawn from the maps are presented in the form of graphs and maps detailing annual average damages within Section 2.2 and within

	Chapter 3 for each of the 26 Potentially Vulnerable Areas.

Table 5 – Schedule 1 of the Flood Risk Management (Scotland) Act 2009

Glossary

Term	Definition
Accretion	Accumulation of sediment.
Actions	Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation. Selection of actions to deliver the agreed objectives has been based on a detailed assessment and comparison of economic, social and environmental criteria.
Annual Average Damages (AAD)	Depending on its size or severity each flood will cause a different amount of damage to a 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 Strategies 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 the costs, benefits, risks and uncertainties before a decision is made. The FRM Strategy appraisal method is designed to set objectives and identify the most sustainable combination of actions to tackle flooding from rivers, sea and surface water.
Appraisal baseline	Defines the existing level of flood risk under the current flood risk management regime.
Awareness raising	Public awareness, participation and community support are essential components of sustainable flood risk management. SEPA and the responsible authorities have a duty to raise public awareness of flood risk. This is undertaken both individually and collaboratively by a range of organisations. Improved awareness of flood risk and actions that prepare individuals, homes and businesses for flooding can reduce the overall impact.
Bathing waters	Bathing waters are classed as protected areas under Annex IV of the Water Framework Directive (WFD). There are 84 designated bathing waters in Scotland [i].

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 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 [ii]), wetlands, rivers, canals (and their banks) and other watercourses.
Candidate Potentially Vulnerable Area (PVAc)	Candidate PVAs are those areas identified after the National Flood Risk Assessment (2011), as a result of new information, where the impact of flooding is potentially sufficient to justify further assessment and appraisal. They will be considered for inclusion as new PVAs in the next flood risk management planning cycle.
Catchment	All the land drained by a river and its tributaries.
Category 1 and 2 Responders (Cat 1 / 2)	Category 1 and 2 Responders are defined as part of the Civil Contingencies Act 2004 which seeks to minimise disruption in the event of an emergency. Category 1 Responders are 'core' responders: local authorities, police, fire and rescue services, ambulance service, NHS health boards, SEPA and the Maritime and Coastguard Agency. Category 2 Responders are key co-operating responders in support of Category 1 Responders. These include gas and electricity companies, rail and air transport operators, harbour authorities, telecommunications providers, Scottish Water, the Health and Safety Executive and NHS National Services Scotland [iii].
Channel improvement	Where work has been carried out on a river channel allowing an increase in the volume of water it can carry.
Characterisation	Provides a description of the natural characteristics of 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

Term	Definition
	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.
Community facility	Within the FRM Strategies this term includes: Emergency Services (Police, Fire, Ambulance, Coastguard, 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.
Cultural heritage site	Historic Environment Scotland maintains lists of buildings of special architectural or historic interest; these buildings are referred to as ‘listed buildings’. The highest level of designation is a World Heritage Site. Other designations included in this assessment are scheduled monuments, gardens and designed landscapes, and battlefields.
Culvert	A pipe, channel or tunnel used for the conveyance of a watercourse or surface drainage water under a road, railway, canal or other obstacle.
Damages	Flood damages are categorised as direct or indirect i.e. as a result of the flood water itself, or subsequent knock on effects. Damage to buildings and contents caused by flood water are an example of direct damages, whilst loss of industrial production, travel disruption or stress and anxiety are indirect. Some damages can be quantified in monetary terms, and

Term	Definition
	others can only be described. The potential damages avoided by implementation of a flood risk management action are commonly referred to as the benefits of that action. When comparing the effectiveness of different actions, it is useful to consider estimated damages and damages avoided across the lifespan of the action. Within the FRM Strategies, a 100 year appraisal period has been used as standard. This allows costs, damages and benefits across this time frame to be compared in present value terms. See also 'Annual Average Damages'
Demountable defences	A temporary flood barrier is one that is only installed when the need arises, that is, when flooding is forecast. A demountable flood defence is a particular type of temporary defence that requires built-in parts and therefore can only be deployed in one specific location [iv].
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	Areas formally designated for environmental importance, such as Sites of Special Scientific Interest (SSSI), Special Protection Area (SPA) or Special Areas of Conservation (SAC).

Term	Definition
designated sites	
Episodic erosion	Erosion induced by a single event, such as a storm.
Erosion	A natural process leading to the removal of sediment from a river bed, bank or floodplain or coastline.
Estuarine surge attenuation	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.
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 FRM 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, embankments or flood storage 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.

Term	Definition
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 FRM Act, hazard refers to the characteristics (extent, depth, velocity) of a flood.
Flood hazard map	Flood hazard maps are required by the FRM Act to show information that describes the nature of a flood in terms of the source, extent, water level or depth and, 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 FRM 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.
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

Term	Definition
	and the environment.
Flood Risk Assessment (FRA)	Flood Risk Assessments are detailed studies of an area where flood risk may be present. These are often used to inform planning decisions, may help to develop flood schemes and have also contributed to the National Flood Risk Assessment.
Flood Risk Management (Scotland) Act 2009 (FRM Act)	The flood risk management legislation for Scotland. It transposes the EC Floods Directive into Scots Law and aims to reduce the adverse consequences of flooding on communities, the environment, cultural heritage and economic activity.
Flood risk management cycle	Under the FRM 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 Prevention (Scotland) Act 1961	The Flood Prevention (Scotland) Act 1961 gave local authorities discretionary powers to make and build flood prevention schemes. It was superseded by the Flood Risk Management (Scotland) Act 2009.
Flood Risk Management Local Advisory Groups	FRM Local Advisory Groups are stakeholder groups convened to advise SEPA and lead local authorities in the preparation of Flood Risk Management Plans. SEPA and lead local authorities must have regard to the advice they provide.
Flood Risk Management Plans (FRM Plans)	A term used in the FRM Act. FRM Plans set out the actions that will be taken to reduce flood risk in a Local Plan District. They comprise Flood Risk Management Strategies, developed by SEPA, and Local Flood Risk Management Plans produced by lead local authorities.
Flood Risk Management Strategy (FRM Strategy)	Sets out a long-term vision for the overall reduction of flood risk. They contain a summary of flood risk in each Local Plan District, together with information on catchment characteristics and a summary of objectives and actions for Potentially Vulnerable Areas.
Flood risk map	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 area (FWA)	A Flood Warning area is where SEPA operates a formal Flood Monitoring Scheme to issue targeted Flood Warning messages for properties located in the area [v].

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 [vi].
Floodplain	Area of land that borders a watercourse, an estuary or the sea, over which water flows in time of flood, or would naturally flow but for the presence of flood defences and other structures where they exist.
Floodplain storage	Floodplains naturally store water during high flows. Storage can be increased through natural or man-made features to increase flood depth or slow flows in order to reduce flooding elsewhere.
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

Term	Definition
	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.
Likelihood of flooding	The chance of flooding occurring. **High likelihood**: A flood is likely to occur in the defined area on average once in every ten years (1:10). Or a 10% chance of happening in any one year. **Medium likelihood:** A flood is likely to occur in the defined area on average once in every two hundred years (1:200). Or a 0.5% chance of happening in any one year. **Low likelihood:** A flood is likely to occur in the defined area on average once in every thousand years (1:1000). Or a 0.1% chance of happening in any one year.
Local Flood Risk Management Plans (LFRMP)	Local Flood Risk Management Plans, produced by lead local authorities, will take forward the objectives and actions set out in Flood Risk Management Strategies. They will provide detail on the funding, timeline of delivery, arrangements and co-ordination of actions at the local level during each six year FRM 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 [vii].
Local Plan District	Geographical areas for the purposes of flood risk management planning. There are 14 Local Plan Districts in Scotland.
Local Plan District Partnerships	Each LPD has established a local partnership comprised of local authorities, SEPA, Scottish Water and others as appropriate. These partnerships are distinct from the FRM Local Advisory Groups and they retain clear responsibility for delivery of the FRM actions set out in the Local Flood Risk Management Plans. It is the local partnership that makes decisions and supports the delivery of these plans.
Maintenance	Sections 18 and 59 of the Flood Risk Management (Scotland) Act 2009 put duties of watercourse inspection, clearance and repair on local authorities. In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or defences.
Montane habitat	This habitat encompasses a range of natural or near-natural vegetation occurring in the montane zone, lying above or beyond the natural tree-line.

Term	Definition
National Flood Management Advisory Group (NFMAG)	The National Flood Management Advisory Group provides advice and support to SEPA and, where required, Scottish Water, local authorities and other responsible authorities on the production of FRM Strategies and Local FRM Plans.
National Flood Risk Assessment (NFRA)	A national analysis of flood risk from all sources of flooding which also considers climate change impacts. Completed in December 2011 this provides the information required to undertake a strategic approach to flood management that identifies areas at flood risk that require further appraisal. The NFRA will be reviewed and updated for the second cycle of FRM Planning by December 2018.
Natural flood management (NFM)	A set of flood management techniques that aim to work with natural processes (or nature) to manage flood risk.
Non-residential properties	Properties that are not used for people to live in, such as shops or other 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’.
Planning policies	Current national planning policies, Scottish Planning Policy and accompanying Planning Advice notes restrict development within the floodplain and limit exposure of new receptors to flood risk. In addition to national policies, local planning policies may place further requirements within their area of operation to restrict inappropriate development and prevent unacceptable risk.
Potentially Vulnerable Areas (PVA)	Catchments identified as being at risk of flooding and where the impact of flooding is sufficient to justify further assessment and appraisal. There were 243 PVAs identified by SEPA in the National Flood Risk Assessment and these are the focus of the first FRM planning cycle.
Property Flood Resilience	Property Flood Resilience includes flood gates, sandbags and other temporary barriers that can be used to prevent water from entering individual properties during a flood.
Property Flood Resilience scheme	Some responsible authorities may have a formal scheme to provide, install and maintain property flood resilience measures for properties.
Quality and Standards (Q&S)	The process governing costs and outputs, through which the planning and delivery of improvements to the public drinking

Term	Definition
	water and sewerage services in Scotland is carried out.
Ramsar sites	Ramsar sites are wetlands of international importance designated under the Ramsar Convention.
Receptor	Refers to the entity that may be impacted by flooding (a person, property, infrastructure or habitat). The vulnerability of a receptor can be reduced by increasing its resilience to flooding.
Residual risk	The risk that remains after risk management and mitigation. This may include risk due to very severe (above design standard) storms or risks from unforeseen hazards.
Resilience	The ability of an individual, community or system to recover from flooding.
Responsible authority	Designated under the FRM (Scotland) Act 2009 and associated legislation as local authorities, Scottish Water and, from 21 December 2013, the National Park Authorities and Forestry Commission Scotland. Responsible authorities, along with SEPA and Scottish Ministers, have specific duties in relation to their flood risk related functions.
Return period	A measure of the rarity of a flood event. It is the statistical average length of time separating flood events of a similar size. (see likelihood)
Revetment	Sloping structures placed on banks or at the foot of cliffs in such a way as to deflect the energy of incoming water.
Riparian	The riparian area is the interface between land and a river or stream. For the purposes of FRM 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	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

Term	Definition
Flooding (SAIFF)	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 [viii].
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 [viii].
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

Term	Definition
	Directive), and for regularly occurring migratory species [viii].
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 and modelling	Strategic mapping and modelling actions have been identified in locations where SEPA is planning to undertake additional modelling or analysis of catchments and coastlines, working collaboratively with local authorities where appropriate, to improve the national understanding of flood risk.
Surcharge	Watercourses and culverts can carry a limited amount of water. When they can no longer cope, they overflow, or 'surcharge'.
Surface water flooding	Flooding that occurs when rainwater does not drain away through the normal drainage systems or soak into the ground, but lies on or flows over the ground instead [ix]
Surface water management plan (SWMP)	A plan that takes an integrated approach to drainage accounting for all aspects of urban drainage systems and produces long term and sustainable actions. The aim is to ensure that during a flood the flows created can be managed in a way that will cause minimum harm to people, buildings, the environment and business.
Surface water plan/study	The management of flooding from surface water sewers, drains, small watercourses and ditches that occurs, primarily in urban areas, during heavy rainfall. FRM Strategy actions in this category include: Surface Water Management Plans, Integrated Catchment Studies and assessment of flood risk from sewerage systems (FRM Act Section 16) by Scottish

Term	Definition
	Water. These have been selected as appropriate for each Potentially Vulnerable Area.
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.
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 SRES A1F1 emission scenario. See Annex 1 of the UKCP09 Climate change projections report for details [x].
Utility assets	Within the FRM Strategies 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.

[i] http://apps.sepa.org.uk/bathingwaters/

[ii] http://www.susdrain.org/delivering-suds/using-suds/suds-components/swales-and-conveyance-channels/swales.html

[iii] http://www.legislation.gov.uk/ukpga/2004/36/schedule/1

[iv] https://assets.publishing.service.gov.uk/media/60549b2e8fa8f545dca2c57a/FDG_chapter_9_-_Floodwalls_and_flood_embankments.pdf

v https://floodline.sepa.org.uk/floodupdates/

vi https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32007L0060&qid=1671387788947

vii https://www.legislation.gov.uk/ukpga/1949/97/pdfs/ukpga_19490097_en.pdf

viii http://www.snh.gov.uk/

ix https://map.sepa.org.uk/floodmaps

x http://ukclimateprojections.metoffice.gov.uk