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

Solway Local Plan District (LPD 14)

Draft flood risk management plans 2022-2028

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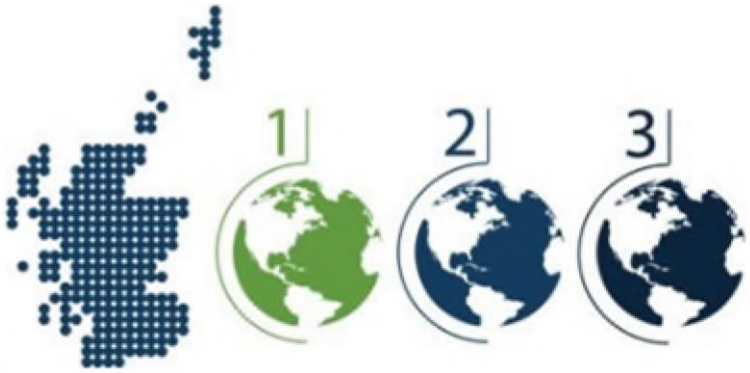
We call this One Planet Prosperity



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Solway Local Plan District (LPD 14)

Draft flood risk management plans 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 south west 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 is a river, surface water and coastal flood risk 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 floo d warning services. Local flood risk management planning in this Local Plan District is led by the Dumfries and Galloway Council (the lead local authority). Other responsible authorities include Scottish Water and four 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 consider 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.

Actions across the Local Plan District

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

	Awareness raising
Action	SEPA the responsible authorities and other organisations such as the Scottish Flood Forum work together to help communities understand the risk of flooding and what actions individuals can take through national and local initiatives. Improved awareness of flood risk and actions that prepare individuals, homes and businesses for flooding can reduce the overall impact of flooding. 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.

	Emergency response and 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.

	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. 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.

	Flood Warning Development Framework
Action	SEPA will publish a new Flood Warning Development Framework by March 2022, which will detail its ambitions and strategic actions to maintain and improve our flood warning service across Scotland. SEPA will continue to develop the Scottish Flood Forecast, a 3 day forecast of flood risk across Scotland and bring together all live information such as flood warnings, river levels and rainfall data into a central hub easily accessible for the public. Working in close partnership with the Met Office through the Scottish Flood Forecasting Service, SEPA will develop its capability in surface water flooding forecasting, focusing initially on the transport sector to support climate-ready infrastructure. SEPA will also undertake a prioritised improvement programme of existing river and coastal flood warning schemes to provide more accurate forecast with improved lead time.

	Guidance development
Action	The Scottish Government and SEPA will develop and update guidance to inform flood risk management projects. This guidance will be produced by June 2022 and will look at how best to adapt to the long-term impacts of climate change and the most appropriate methods of assessing the benefits of flood risk management actions. Technical guidance to support flood risk management partners will also be reviewed and updated by SEPA where required.

	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. (Flood Maps link) SEPA will continue to develop the hazard mapping viewer to make it easier for the public, partners and stakeholders to access data on the likelihood of flooding.

	Land use planning
Action	National planning policies set out the Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. Under this approach, new development in areas with medium to high likelihood of flooding should generally be avoided. Current national planning policies, the Scottish Planning Policy and accompanying Planning Advice notes restrict development within the floodplain and limit exposure of new receptors to flood risk. Local planning policies may place further requirements within their area of operation to restrict inappropriate development and prevent unacceptable risk. Local authorities, SEPA and Scottish Water all have a role to support sustainable development.

	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.

	Natural flood management mapping
Action	SEPA will review and update the opportunities mapping for natural flood management. This work will focus on the suburban environment and look at linking blue-green infrastructure with the surrounding natural catchment. Natural flood management seeks to store or slow down flood waters through measures such as the planting of woodlands, wetland creation, river restoration, or the creation of intertidal habitats. In addition to flooding benefits, natural flood management measures can also provide many additional benefits to biodiversity, water quality and recreation.

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

	National surface water mapping
Action	The National Flood Risk Assessment 2018 identified that surface water flooding has the potential to impact more properties in Scotland than any other source of flooding. Over the next six-year cycle SEPA will look to vastly improve its national understanding of surface flood risk by undertaking a wholescale update of the national surface water maps to reflect developments in data and understanding, including the impact of climate change.

	Reservoirs
Action	SEPA will continue to develop its assessment of flood risk from dam failure and use these assessments to direct a proportionate regulatory approach to ensure reservoir safety. Over the next management cycle we will implement further developments of our flood warning capabilities in the unlikely event of reservoir failure.

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

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

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Potentially Vulnerable Areas

Potentially Vulnerable Areas (PVA) 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 (link). As part of continued analysis of flood risk, the National Flood Risk Assessment and Potentially Vulnerable Areas (PVA) will be reviewed every six years to take on board any new information. There are 24 Potentially Vulnerable Areas (PVA) in this Local Plan District. Following sections provide more information on these areas

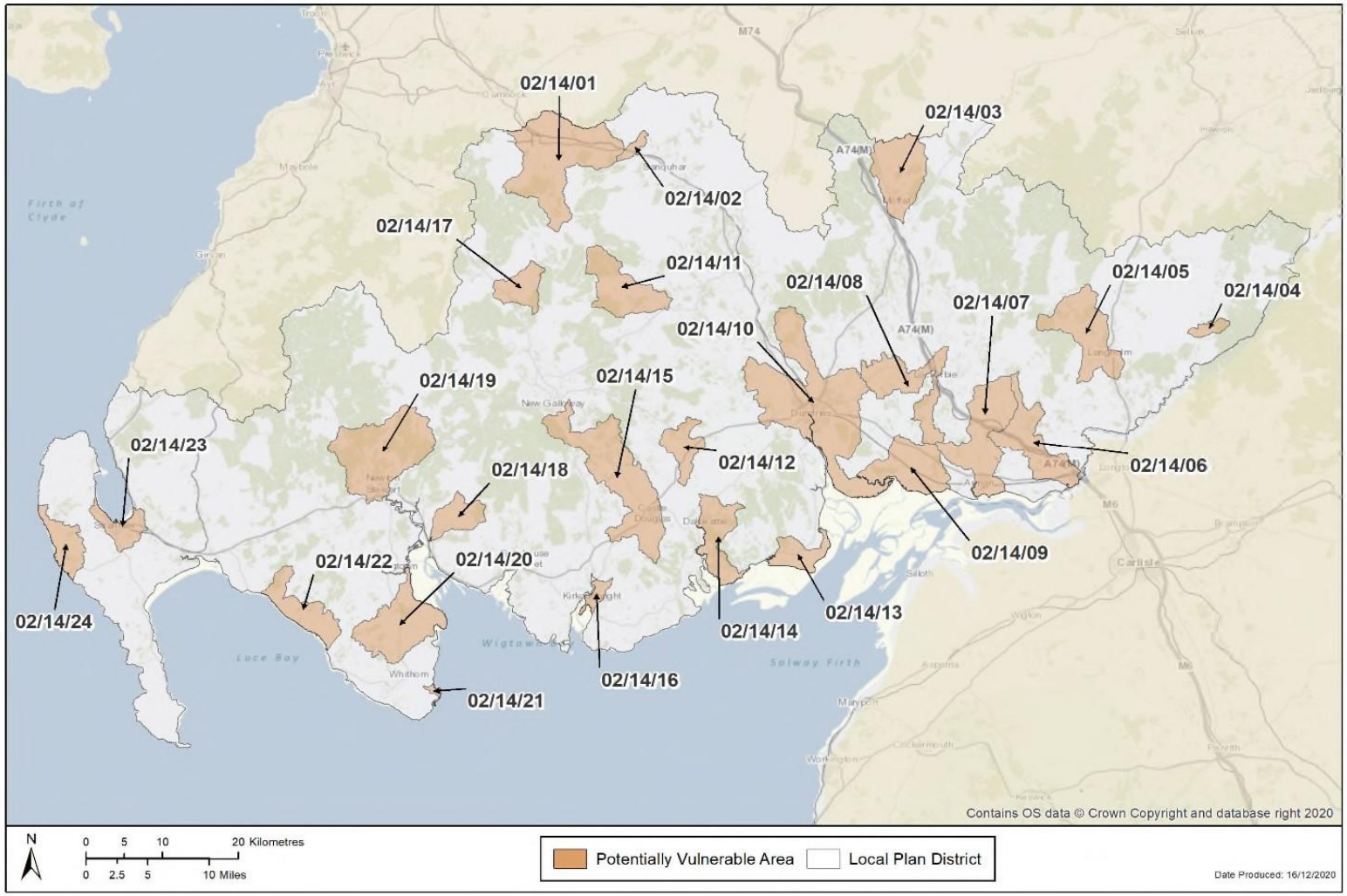

Figure 1. Potentially Vulnerable Areas in Solway Local Plan District

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Click the blue text to select your area of interest

PVA Ref	PVA NAME	Local authority
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

02/14/01 (New Cumnock)

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

List of target areas

New Cummock (target area 138)

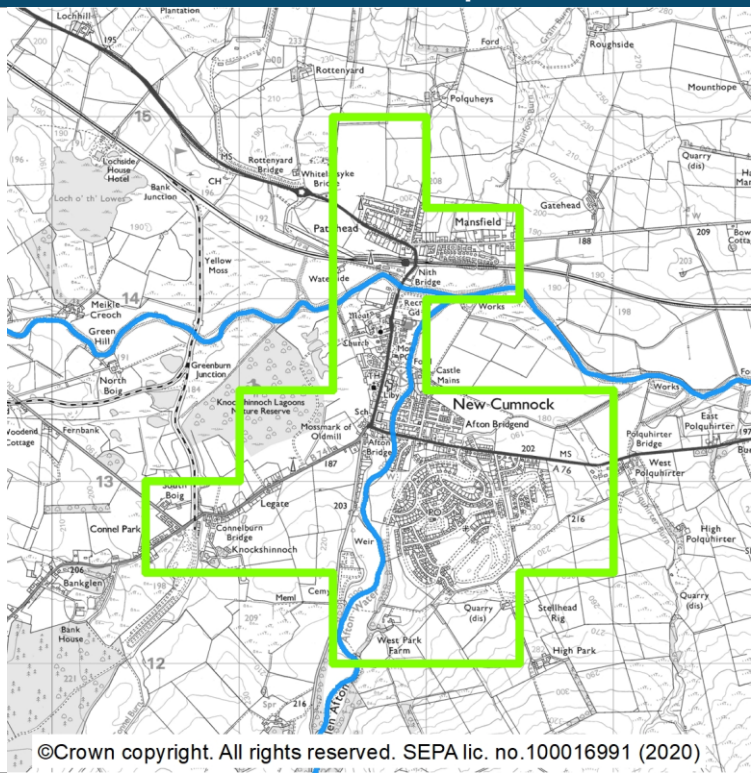
Flood risk management plan datasheet

New Cummock (target area 138)

Summary

New Cumnock is a town located on the River Nith. It is in the East Ayrshire local authority 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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Flood scheme or works implementation (Ref: 13801)
Action	The flood scheme/works is to be built following agreement of the design, costs and timescales.
Action detail	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.
Coordination	Action delivery lead is East Ayrshire Council in coordination with SEPA.

	Flood defence maintenance (Ref: 13802)
Action	The existing flood defences are to be maintained by the asset owner to ensure they are in good condition.
Action detail	East Ayrshire Council is to inspect and maintain the New Cumnock Flood Protection Scheme.
Coordination	Action delivery lead is East Ayrshire Council and coordination will be determined once the actions have been finalised.

	Strategic mapping improvements (Ref: 13803)
Action	SEPA will continue to update flood maps based on new information.
Action detail	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.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

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

What are the opportunities for joint working?

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

02/14/02 (Kirkconnel)

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

List of target areas

Kirkconnel	(target area 133)

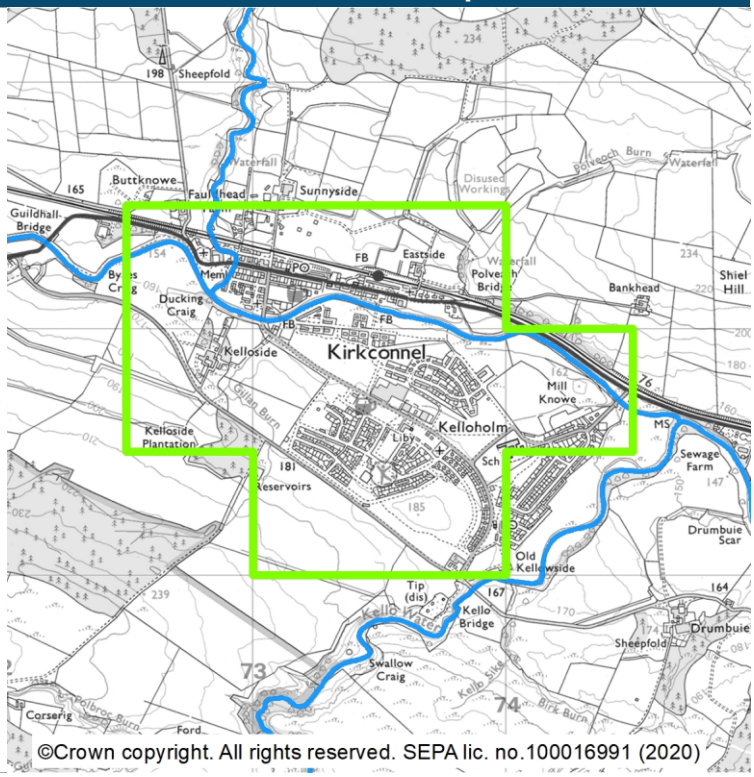
Flood risk management plan datasheet

Kirkconnel (target area 133)

Summary

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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Flood scheme or works design (Ref: 13301)
Action	The selected preferred approach for managing flood risk is to be designed on the basis of the flood study, including consideration of the long-term impacts of climate change. These can 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 detail	Dumfries and Galloway to develop detailed design of the Kirkconnel Flood Protection Scheme based on the preferred option from the flood study. 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. 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.

	Flood scheme or works implementation (Ref: 13302)
Action	The flood scheme/works is to be built following agreement of the design, costs and timescales.
Action detail	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 Kirkconnel. 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.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Community engagement (Ref: 13303)
Action	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk.
Action detail	Community engagement 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.

	Flood defence maintenance (Ref: 13304)
Action	The existing flood defences are to be maintained by the asset owner to ensure they are in good condition.
Action detail	Dumfries and Galloway Council is to continue to inspect and maintain the Polbower, Kirkconnel Flood Protection Scheme.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Flood warning maintenance (Ref: 13305)
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the Upper Nith flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

	Strategic mapping improvements (Ref: 13306)
Action	SEPA will continue to update flood maps based on new information.
Action detail	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.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

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

What are the opportunities for joint working?

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

02/14/03 (Moffat)

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

List of target areas

Moffat	(target area 136)

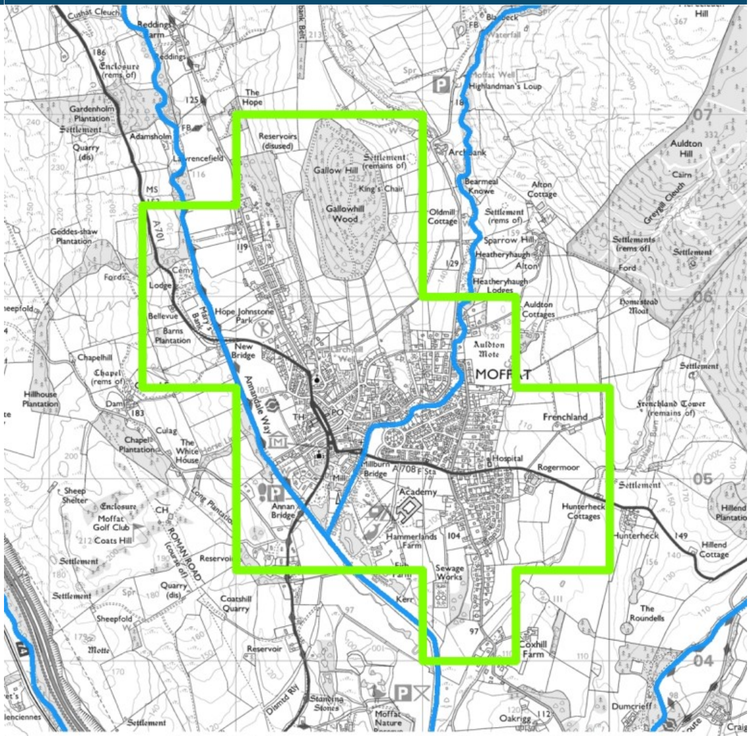
Flood risk management plan datasheet

Moffat (target area 136)

Summary

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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Flood scheme or works design (Ref: 13601)
Action	The selected preferred approach for managing flood risk is to be designed on the basis of the flood study, including consideration of the long-term impacts of climate change. These can 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 detail	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.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Flood scheme or works implementation (Ref: 13602)
Action	The flood scheme/works is to be built following agreement of the design, costs and timescales.
Action detail	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. 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.

	Flood defence maintenance (Ref: 13603)
Action	The existing flood defences are to be maintained by the asset owner to ensure they are in good condition.
Action detail	Dumfries and Galloway Council is to continue to inspect and maintain any flood protection structures (Well Road).
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

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

What are the opportunities for joint working?

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

02/14/04 (Newcastleton)

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 with recent floods have been caused by both river and surface water flooding.

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

List of target areas

Newcastleton (target area 139)

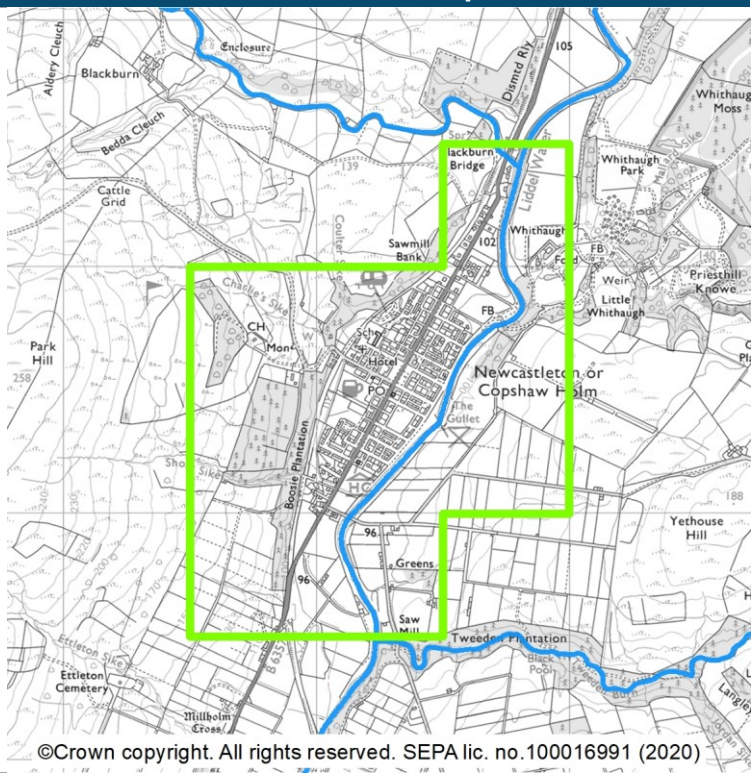
Flood risk management plan datasheet

Newcastleton (target area 139)

Summary

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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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
1393	Reduce flood risk	Reduce the risk of surface water flooding and river flooding from the Liddel Water and the Lakes in Newcastleton

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Flood scheme or works design (Ref: 13901)
Action	The selected preferred approach for managing flood risk is to be designed following the completion of the flood study, including consideration of the long-term impacts of climate change. These can 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 detail	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.
Coordination	Action delivery lead is Scottish Borders Council and coordination will be determined once the actions have been finalised.

	Flood scheme or works implementation (Ref: 13902)
Action	The flood scheme/works is to be built following agreement of the design, costs and timescales.
Action detail	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.
Coordination	Action delivery lead is Scottish Borders Council and coordination will be determined once the actions have been finalised.

	Community engagement (Ref: 13903)
Action	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk.
Action detail	Community engagement should continue through the development of a flood protection scheme for Newcastleton.
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.

	Community resilience group (Ref: 13904)
Action	The group of community volunteers work to prepare and put in practice their Community Resilience Plan and be supported by the local authority.
Action detail	The ongoing activities of the Newcastleton Community Resilience Group and Newcastleton Community Council should continue to be supported by Scottish Borders Council.
Coordination	Action delivery leads are Scottish Borders Council and the community. Coordination will be determined once the actions have been finalised.

	Flood warning maintenance (Ref: 13905)
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the Liddel flood warning scheme. The scheme should be investigated for improvement and/or recalibration.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

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

What are the opportunities for joint working?

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

02/14/05 (Langholm)

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

List of target areas

Langholm	(target area 135)

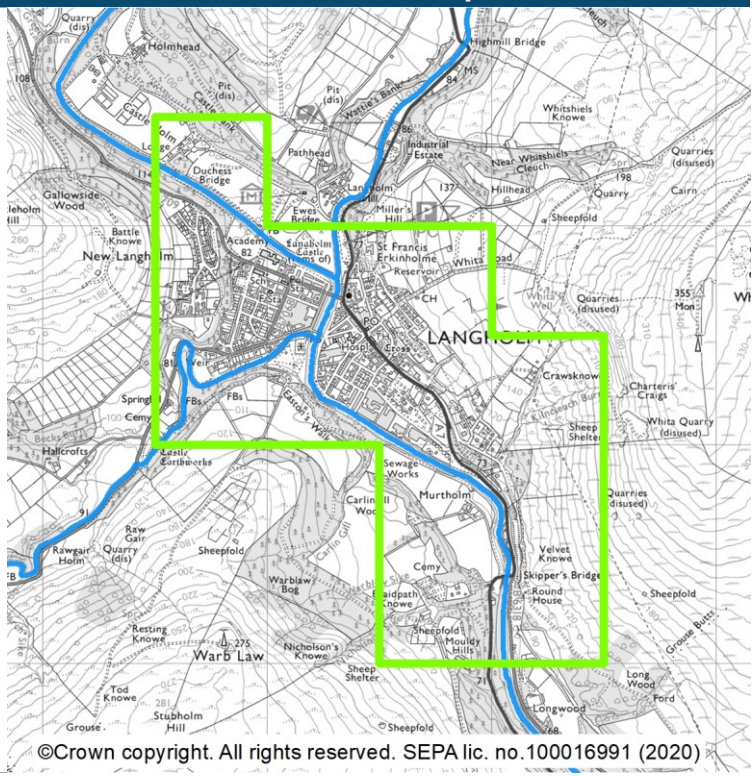
Flood risk management plan datasheet

Langholm (target area 135)

Summary

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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Flood scheme or works design (Ref: 13501)
Action	The selected preferred approach for managing flood risk is to be designed on the basis of the flood study, including consideration of the long-term impacts of climate change. These can 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 detail	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.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Flood scheme or works implementation (Ref: 13502)
Action	The flood scheme/works is to be built following agreement of the design, costs and timescales.
Action detail	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.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Community engagement (Ref: 13503)
Action	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk.
Action detail	Community engagement 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.

	Flood warning maintenance (Ref: 13504)
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the River Esk (D&G) flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

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

What are the opportunities for joint working?

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

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

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

List of target areas

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

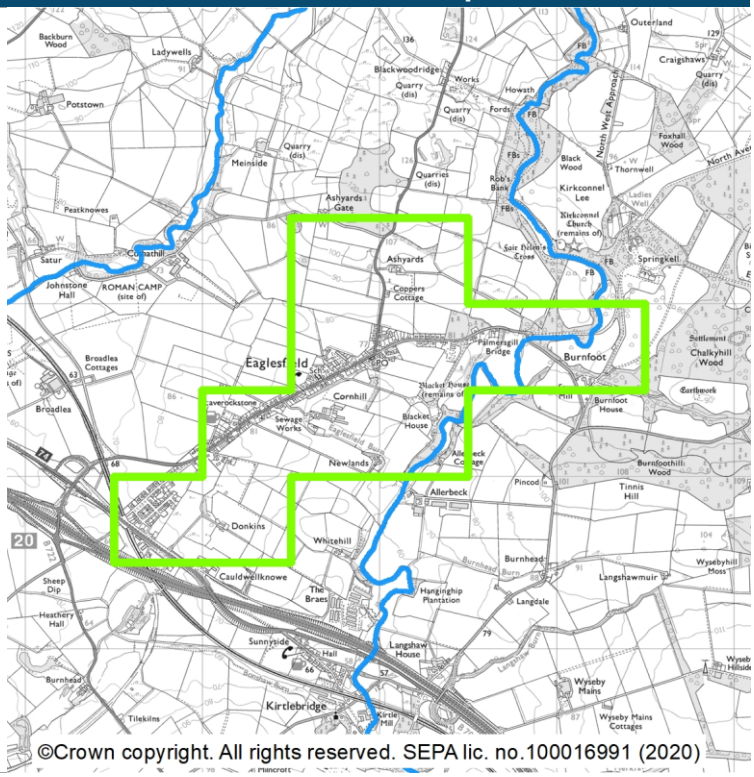
Flood risk management plan datasheet

Eaglesfield (target area 33)

Summary

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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Surface Water Management Plan (Ref: 3301)
Action	Areas at risk of heavy or prolonged rainfall causing flooding due to water ponding on man-made surfaces or overwhelming the drainage system are to be identified. These priority areas will provide a baseline for the identification of next steps in managing water ponding or over-whelmed drainage systems. This should guide adaptive planning to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	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.
Coordination	Action delivery lead is Dumfries and Galloway Council in coordination with Scottish Water.

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

What are the opportunities for joint working?

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

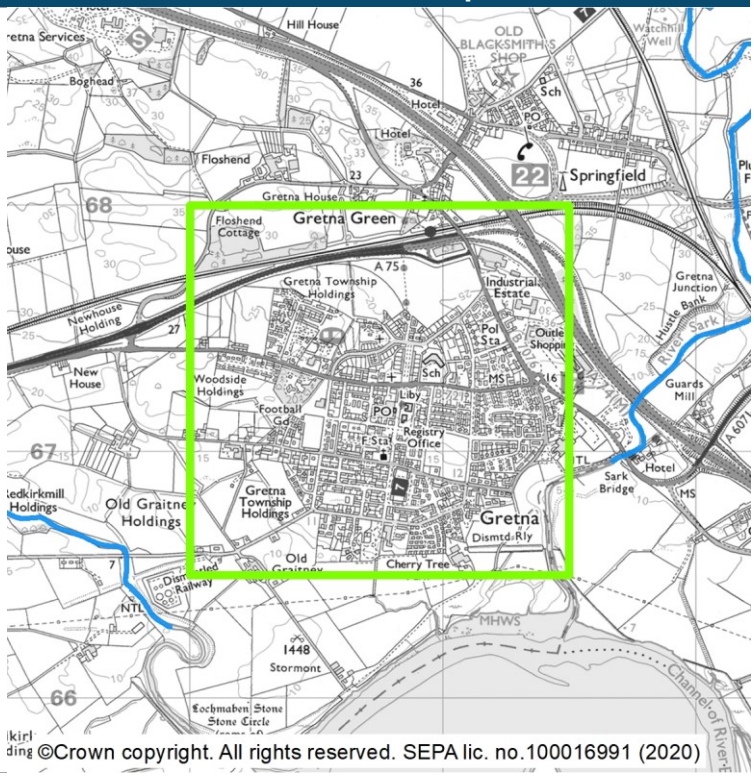
Flood risk management plan datasheet

Gretna (target area 132)

Summary

The small village of Gretna is located near the River Esk and Kirtle Water. It is in 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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Data collection (Ref: 13201)
Action	Equipment that measures rainfall, river levels, erosion, ground levels or wave height may be installed and maintained to improve our understanding of flood risk. This can be done over short term or to measure longer term impacts.
Action detail	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.

	Shoreline Management Plan (Coastal Adaptive Plan) (Ref: 13202)
Action	The existing assessment of coastal flood and erosion risk is to be reviewed and updated as required. The plan should include assessment of climate change and develop adaptive approaches to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	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.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Flood warning maintenance (Ref: 13203)
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the Solway coastal flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

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

What are the opportunities for joint working?

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

02/14/07 (Ecclefechan – Annan)

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

List of target areas

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

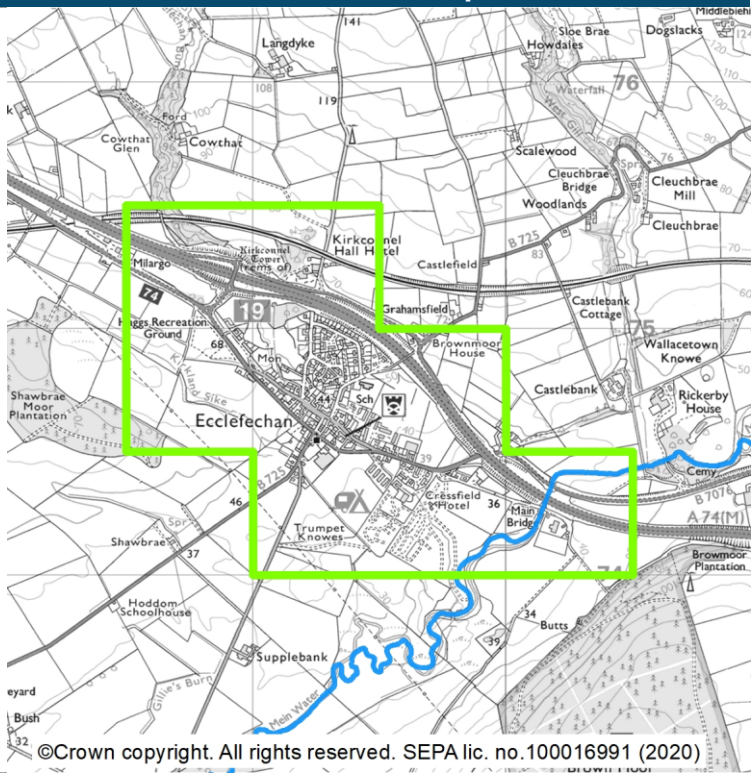
Flood risk management plan datasheet

Ecclefechan (target area 31)

Summary

The settlement of Ecclefechan lies in the valley of the Mein Water. The area is within 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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Data collection (Ref: 3101)
Action	Equipment that measures rainfall, river levels, erosion, ground levels or wave height may be installed and maintained to improve our understanding of flood risk. This can be done over short term or to measure longer term impacts.
Action detail	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 and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

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

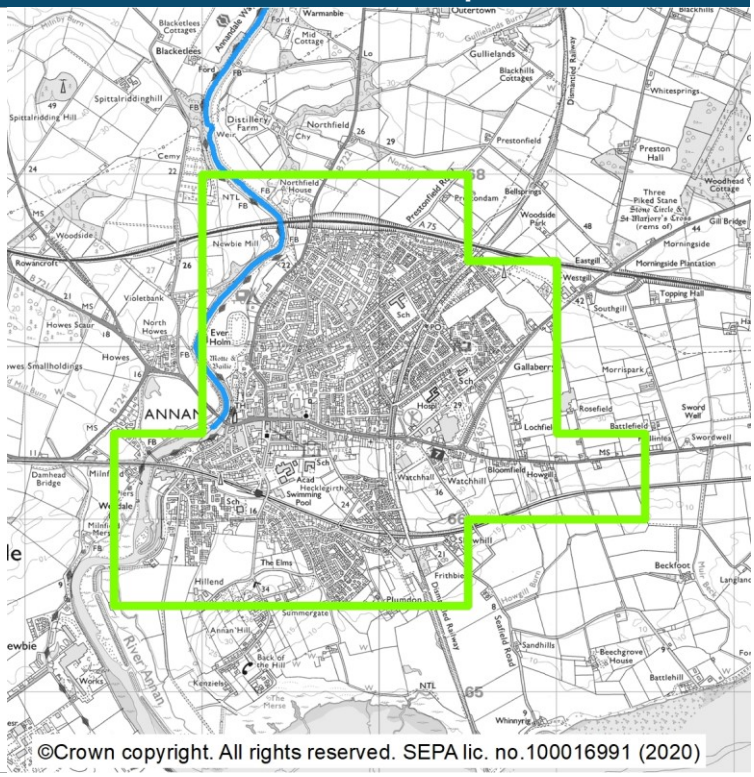
Flood risk management plan datasheet

Annan (target area 129)

Summary

Annan is a town located on the eastern bank of the River Annan, and along the coast of the Inner Solway Firth. It is 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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Shoreline Management Plan (Coastal Adaptive Plan) (Ref: 12901)
Action	The existing assessment of coastal flood and erosion risk is to be reviewed and updated as required. The plan should include assessment of climate change and develop adaptive approaches to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	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.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Sewer flood risk assessment (Ref: 12902)
Action	The volume of water that would overwhelm the sewer system and cause flooding from man-holes or inside our homes is to be assessed, to support understanding of the performance of the urban drainage network
Action detail	Scottish Water will carry out an assessment of sewer flood risk within the highest priority sewer catchments, which includes Annan sewer catchment in this target area. This will help to improve knowledge and understanding of potential surface water flood risk. Funding for this action is secured through Scottish Water's strategic planning commitments.
Coordination	Action delivery lead is Scottish Water in coordination with the local authority and SEPA.

	Surface water management plan (Ref: 12903)
Action	Areas at risk of heavy or prolonged rainfall causing flooding due to water ponding on man-made surfaces or overwhelming the drainage system are to be identified. These priority areas will provide a baseline for the identification of next steps in managing water ponding or over-whelmed drainage systems. This should guide adaptive planning to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	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.
Coordination	Action delivery lead is Dumfries and Galloway Council in coordination with Scottish Water.

	Flood warning maintenance (Ref: 12904)
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the Solway coastal flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

	Strategic mapping improvements (Ref: 12905)
Action	SEPA will continue to update flood maps based on new information.
Action detail	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.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

Actions proposed after June 2028

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

	Flood study (options appraisal) (Ref: 12906)
Action	In areas where flood risk is confirmed, a range of possible options to manage flood risk are to be identified, including natural flood management actions where suitable, and a preferred approach is to be chosen. This should include adaptive planning to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	Dumfries and Galloway Council to identify a range of possible flood risk management options, following the outcomes of the surface water management plan where areas with higher risk of flooding have been identified.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

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

What are the opportunities for joint working?

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

02/14/08 (Lochmaben – Lockerbie)

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

List of target areas

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

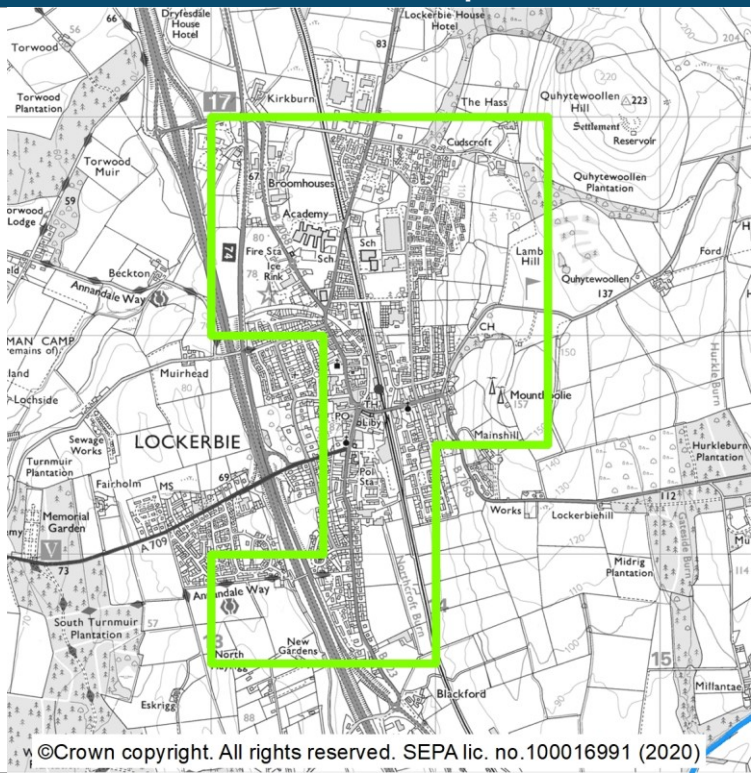
Flood risk management plan datasheet

Lockerbie (target area 150)

Summary

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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Data collection (Ref: 15001)
Action	Equipment that measures rainfall, river levels, erosion, ground levels or wave height may be installed and maintained to improve our understanding of flood risk. This can be done over short term or to measure longer term impacts.
Action detail	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 and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

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

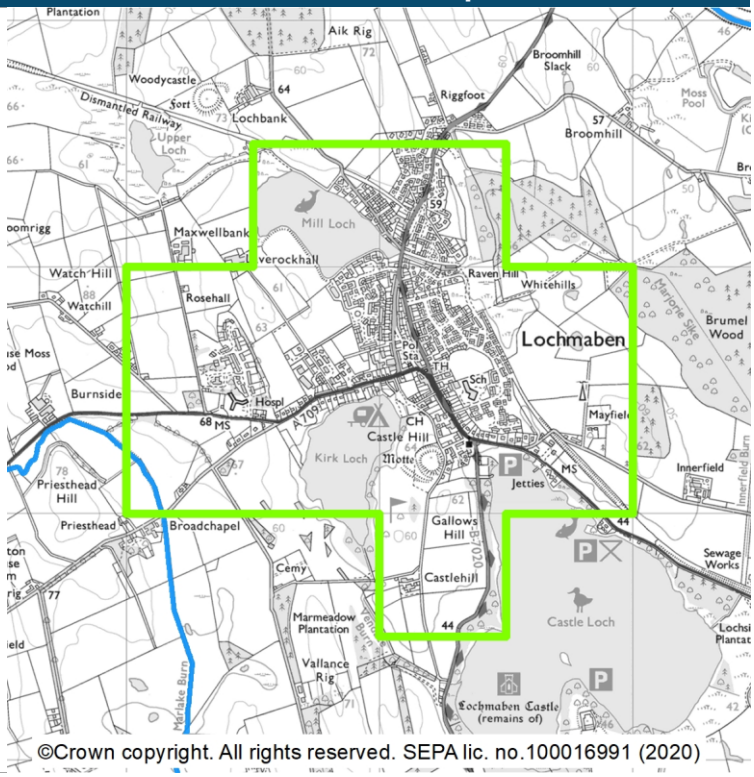
Flood risk management plan datasheet

Lochmaben (target area 163)

Summary

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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Data collection (Ref: 16301)
Action	Equipment that measures rainfall, river levels, erosion, ground levels or wave height may be installed and maintained to improve our understanding of flood risk. This can be done over short term or to measure longer term impacts.
Action detail	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 and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

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

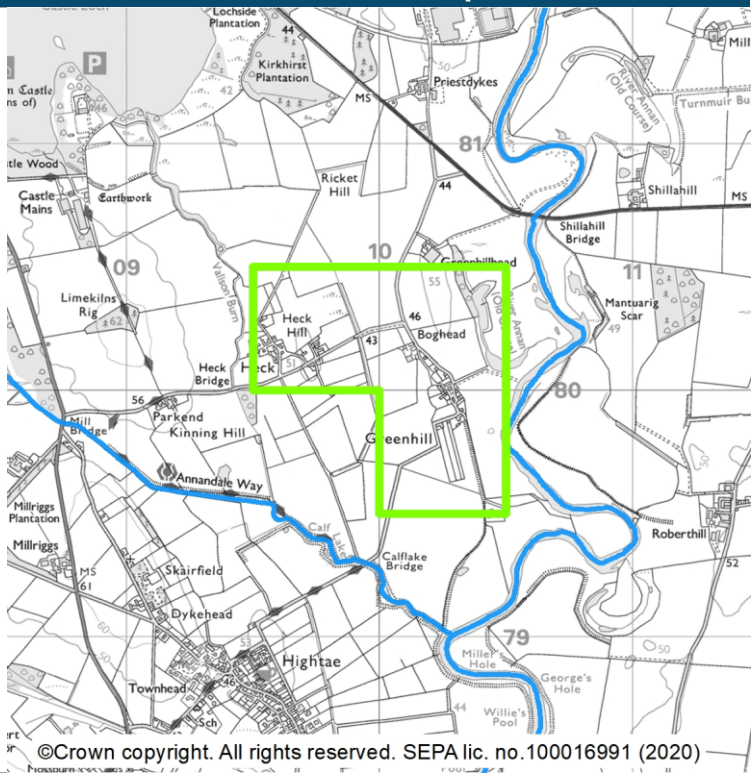
Flood risk management plan datasheet

Heck and Greenhill (target area 16310)

Summary

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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Data collection (Ref: 1631001)
Action	Equipment that measures rainfall, river levels, erosion, ground levels or wave height may be installed and maintained to improve our understanding of flood risk. This can be done over short term or to measure longer term impacts.
Action detail	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.

	Flood warning scoping (Ref: 1631002)
Action	The potential to provide a new flood warning scheme is to be considered by SEPA. Flood warnings are only effective where it is possible to send a warning message with sufficient time to allow communities to take appropriate actions before flooding occurs.
Action detail	Scoping for a river flood warning scheme will be carried out in Heck and Greenhill.
Coordination	Action delivery lead is SEPA and coordination will be determined once the action has been finalised.

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

What are the opportunities for joint working?

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

02/14/09 (Powfoot)

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

List of target areas

Powfoot and Cummertrees (target area 118)

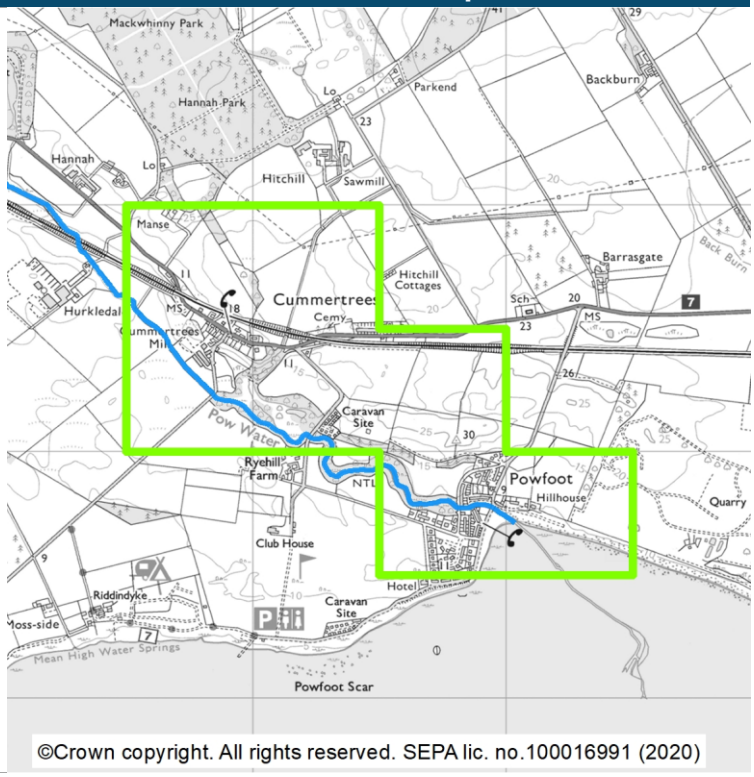
Flood risk management plan datasheet

Powfoot and Cummertrees (target area 118)

Summary

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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Shoreline Management Plan (Coastal Adaptive Plan) (Ref: 11801)
Action	The existing assessment of coastal flood and erosion risk is to be reviewed and updated as required. The plan should include assessment of climate change and develop adaptive approaches to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	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.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Flood warning maintenance (Ref: 11802)
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the Solway coastal flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

	Strategic mapping improvements (Ref: 11803)
Action	SEPA will continue to update flood maps based on new information.
Action detail	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.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

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

What are the opportunities for joint working?

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

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

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

List of target areas

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

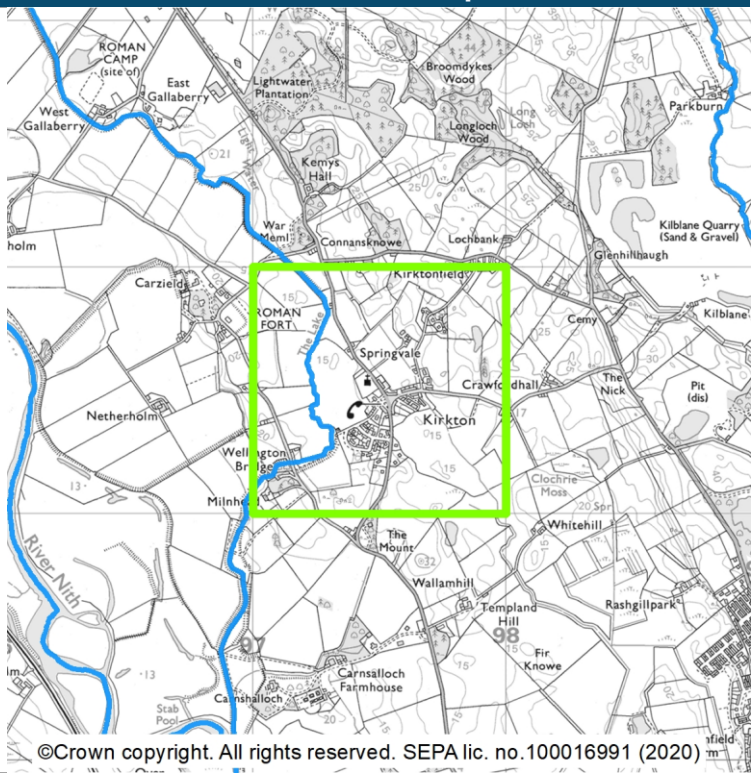
Flood risk management plan datasheet

Kirkton (target area 34)

Summary

Kirkton is a small village located just north of Dumfries. The area is within 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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Data collection (Ref: 3401)
Action	Equipment that measures rainfall, river levels, erosion, ground levels or wave height may be installed and maintained to improve our understanding of flood risk. This can be done over short term or to measure longer term impacts.
Action detail	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 and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

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

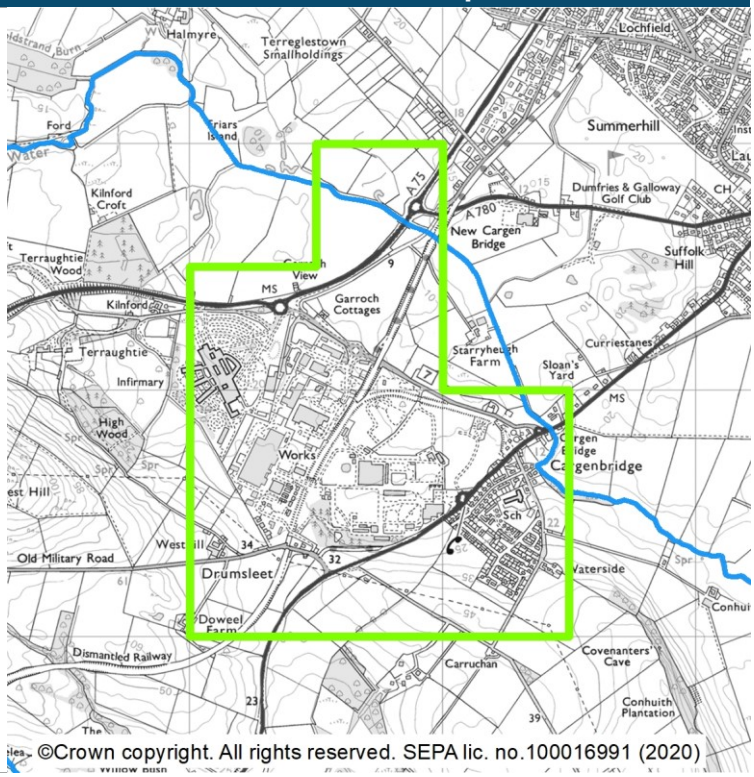
Flood risk management plan datasheet

Cargenbridge (target area 37)

Summary

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 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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Data collection (Ref: 3701)
Action	Equipment that measures rainfall, river levels, erosion, ground levels or wave height may be installed and maintained to improve our understanding of flood risk. This can be done over short term or to measure longer term impacts.
Action detail	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.

	Sewer flood risk assessment (Ref: 3702)
Action	The volume of water that would overwhelm the sewer system and cause flooding from man-holes or inside our homes is to be assessed, to support understanding of the performance of the urban drainage network
Action detail	Scottish Water will carry out an assessment of sewer flood risk within the highest priority sewer catchments, which includes 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.
Coordination	Action delivery lead is Scottish Water in coordination with the local authority and SEPA.

	Flood warning scoping (Ref: 3703)
Action	The potential to provide a new flood warning scheme is to be considered by SEPA. Flood warnings are only effective where it is possible to send a warning message with sufficient time to allow communities to take appropriate actions before flooding occurs.
Action detail	Scoping for a river flood warning scheme will be carried out in Cargenbridge.
Coordination	Action delivery lead is SEPA and coordination will be determined once the action has been finalised.

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

What are the opportunities for joint working?

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

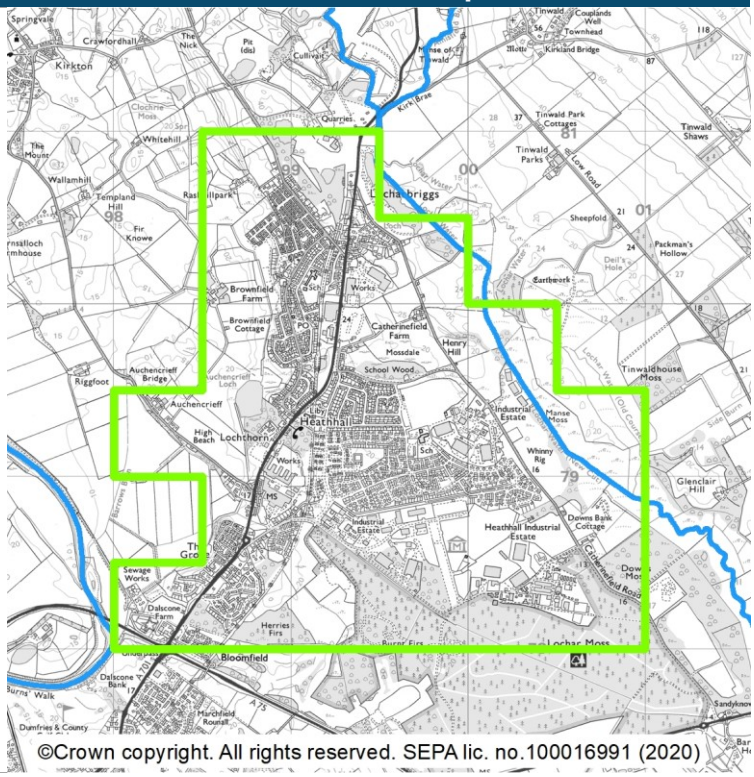
Flood risk management plan datasheet

Locharbriggs (target area 38)

Summary

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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Data collection (Ref: 3801)
Action	Equipment that measures rainfall, river levels, erosion, ground levels or wave height may be installed and maintained to improve our understanding of flood risk. This can be done over short term or to measure longer term impacts.
Action detail	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 and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

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

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

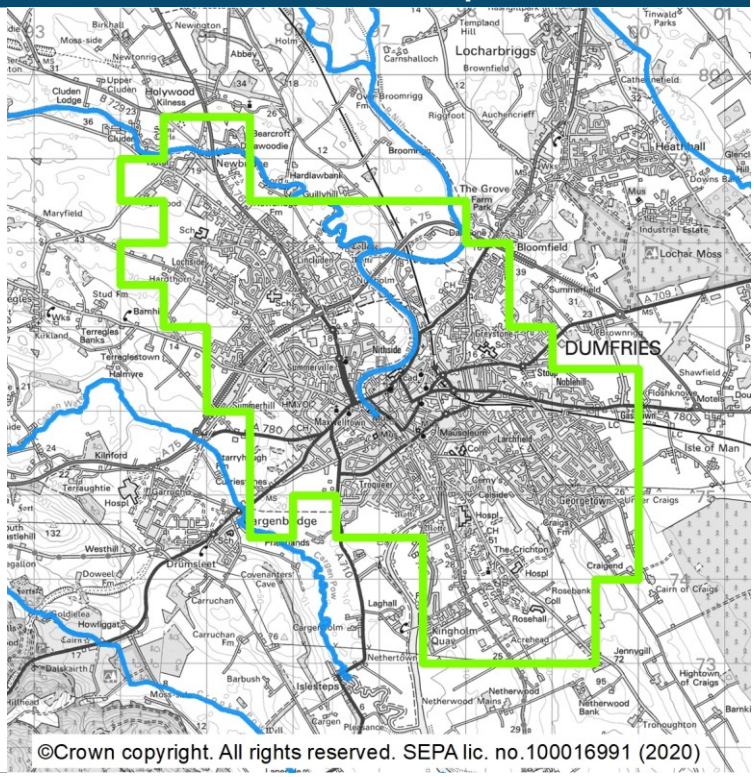
Flood risk management plan datasheet

Dumfries (target area 39)

Summary

Dumfries is located near the mouth of the River Nith which flows into Solway Firth. The area is 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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Flood scheme or works design (Ref: 3901)
Action	The selected preferred approach for managing flood risk is to be designed on the basis of the flood study, including consideration of the long-term impacts of climate change. These can 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 detail	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.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Flood scheme or works implementation (Ref: 3902)
Action	The flood scheme/works is to be built following agreement of the design, costs and timescales.
Action detail	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.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Community engagement (Ref: 3903)
Action	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk.
Action detail	Community engagement 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.

	Shoreline Management Plan (Coastal Adaptive Plan) (Ref: 3904)
Action	The existing assessment of coastal flood and erosion risk is to be reviewed and updated as required. The plan should include assessment of climate change and develop adaptive approaches to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	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.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Sewer flood risk assessment (Ref: 3905)
Action	The volume of water that would overwhelm the sewer system and cause flooding from man-holes or inside our homes is to be assessed, to support understanding of the performance of the urban drainage network
Action detail	Scottish Water will carry out an assessment of sewer flood risk within the highest priority sewer catchments, which includes 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.
Coordination	Action delivery lead is Scottish Water in coordination with the local authority and SEPA.

	Surface water management plan (Ref: 3906)
Action	Areas at risk of heavy or prolonged rainfall causing flooding due to water ponding on man-made surfaces or overwhelming the drainage system are to be identified. These priority areas will provide a baseline for the identification of next steps in managing water ponding or over-whelmed drainage systems. This should guide adaptive planning to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	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.
Coordination	Action delivery lead is Dumfries and Galloway Council in coordination with Scottish Water.

	Flood warning maintenance (Ref: 3907)
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the River Nith flood warning scheme. The scheme should be investigated for improvement and/or recalibration.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

	Strategic mapping improvements (Ref: 3908)
Action	SEPA will continue to update flood maps based on new information.
Action detail	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.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

Actions proposed after June 2028

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

	Flood study (options appraisal) (Ref: 3909)
Action	In areas where flood risk is confirmed, a range of possible options to manage flood risk are to be identified, including natural flood management actions where suitable, and a preferred approach is to be chosen. This should include adaptive planning to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	Dumfries and Galloway Council to identify a range of possible flood risk management options, following the outcomes of the surface water management plan where areas with higher risk of flooding have been identified.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

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

What are the opportunities for joint working?

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

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

02/14/11 (Moniaive)

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 area in this Potentially Vulnerable Area, which has been the focus of further assessment, this is identified below. Further information on the proposed objectives and actions to manage flood risk within this area will be provided in Phase 2 of the consultation (launching on 22nd March 2021).

List of target areas

Moniaive	(target area 137)

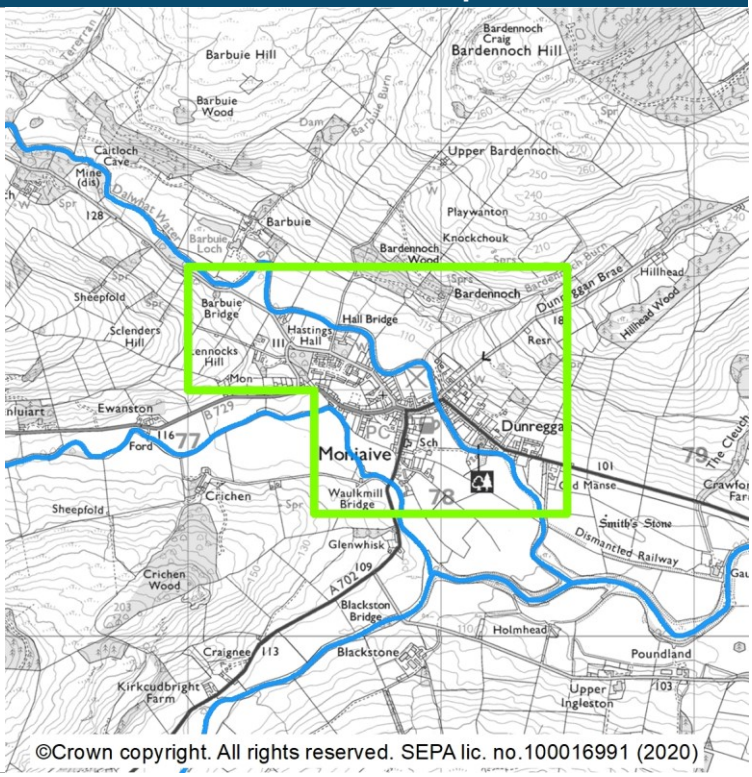
Flood risk management plan datasheet

Moniaive (target area 137)

Summary

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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Flood defence maintenance (Ref: 13701)
Action	The existing flood defences are to be maintained by the asset owner to ensure they are in good condition.
Action detail	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 & Galloway Council will continue to maintain the scheme and monitor the performance under any significant events.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

Actions proposed after June 2028

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

	Flood scheme or works design (Ref: 13702)
Action	The selected preferred approach for managing flood risk is to be designed on the basis of the flood study, including consideration of the long-term impacts of climate change. These can 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 detail	Dumfries and Galloway to develop detailed design of the improvements to the Moniaive Flood Protection Scheme based on the preferred option from the flood study. Further study is required to consider the latest climate change projections. This information will underpin the development of an adaptation plan for the long term protection of the community. 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
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Flood scheme or works implementation (Ref: 13703)
Action	The flood scheme/works is to be built following agreement of the design, costs and timescales.
Action detail	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 Moniaive. 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.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Community engagement (Ref: 13704)
Action	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk.
Action detail	Community engagement should continue through the development of the Moniaive Flood Protection Scheme.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

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

What are the opportunities for joint working?

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

02/14/12 (Springholm)

This area is designated as a PVA 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 area in this Potentially Vulnerable Area, which has been the focus of further assessment, this is identified below. Further information on the proposed objectives and actions to manage flood risk within this area will be provided in Phase 2 of the consultation (launching on 22nd March 2021).

List of target areas

Springholm	(target area 69)

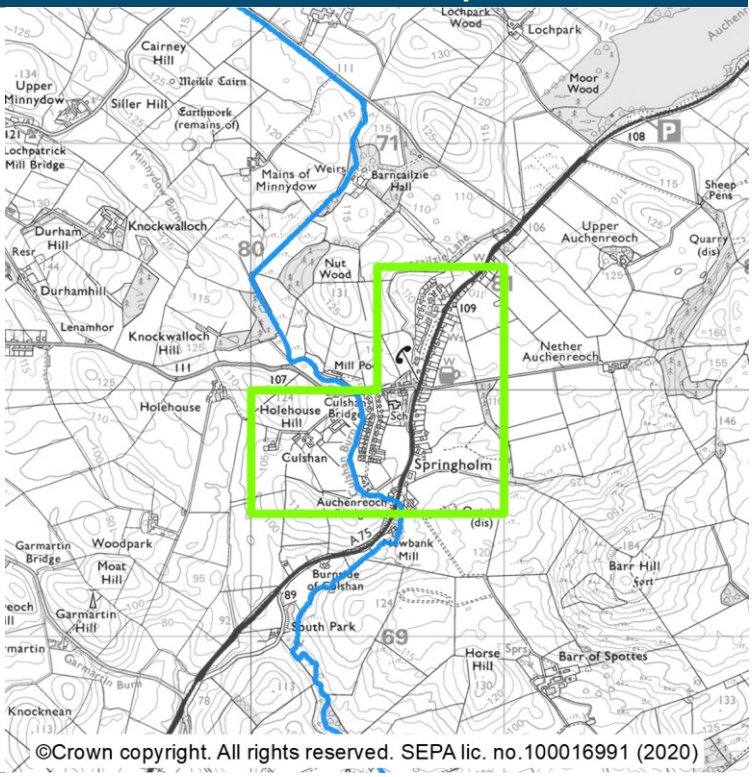
Flood risk management plan datasheet

Springholm (target area 69)

Summary

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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Data collection (Ref: 6901)
Action	Equipment that measures rainfall, river levels, erosion, ground levels or wave height may be installed and maintained to improve our understanding of flood risk. This can be done over short term or to measure longer term impacts.
Action detail	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.

	Flood defence maintenance (Ref: 6902)
Action	The existing flood defences are to be maintained by the asset owner to ensure they are in good condition.
Action detail	Dumfries and Galloway Council will continue to inspect and maintain any flood protection structures.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

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

What are the opportunities for joint working?

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

02/14/13 (Southerness and Carsethorn)

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 affecting Southerness. There is a history of flooding in the area with recent floods being caused by surface water and coastal flooding.

There are 2 areas in this Potentially Vulnerable Area, which have been the focus of further assessment, these are listed below. Further information on the proposed objectives and actions to manage flood risk within this area will be provided in Phase 2 of the consultation (launching on 22nd March 2021).

List of target areas

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

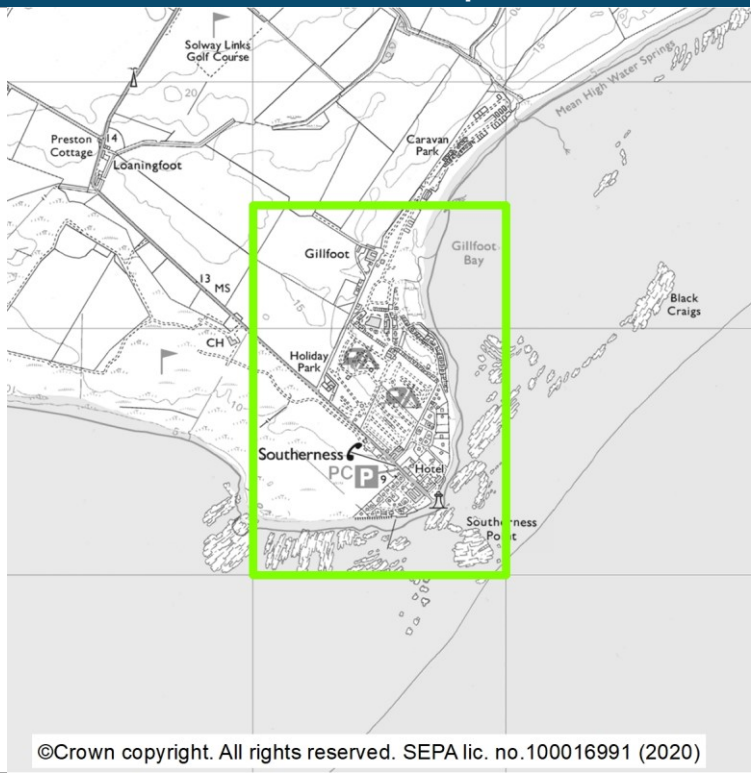
Flood risk management plan datasheet

Southerness (target area 125)

Summary

The village of Southerness is located along the north shore of the Solway Firth. This area is 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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Shoreline Management Plan (Coastal Adaptive Plan) (Ref: 12501)
Action	The existing assessment of coastal flood and erosion risk is to be reviewed and updated as required. The plan should include assessment of climate change and develop adaptive approaches to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	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.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Strategic mapping improvements (Ref: 12502)
Action	SEPA will continue to update flood maps based on new information.
Action detail	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.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

	Flood defence maintenance (Ref: 12503)
Action	The existing flood defences are to be maintained by the asset owner to ensure they are in good condition.
Action detail	Dumfries & Galloway Council will continue to inspect and maintain any flood protection structures.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Flood warning maintenance (Ref: 12504)
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the Solway coastal flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

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

What are the opportunities for joint working?

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

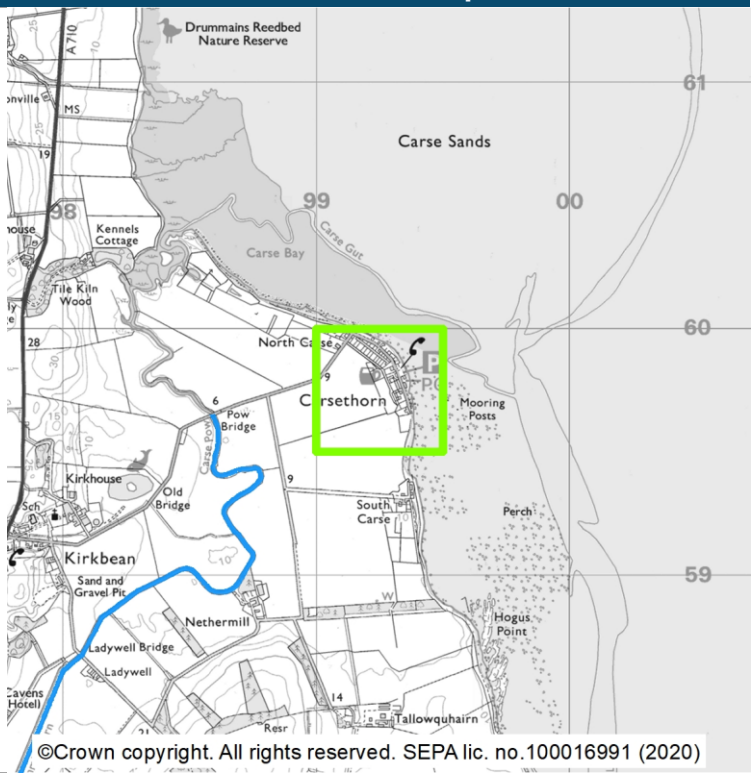
Flood risk management plan datasheet

Carsethorn (target area 128)

Summary

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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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
1283	Reduce flood risk	Reduce the risk of flooding in Carsethorn

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Shoreline Management Plan (Coastal Adaptive Plan) (Ref: 12801)
Action	The existing assessment of coastal flood and erosion risk is to be reviewed and updated as required. The plan should include assessment of climate change and develop adaptive approaches to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	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.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Flood warning maintenance (Ref: 12802)
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the Solway coastal flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

	Strategic mapping improvements (Ref: 12803)
Action	SEPA will continue to update flood maps based on new information.
Action detail	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.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

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

What are the opportunities for joint working?

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

02/14/14 (Dalbeattie)

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 having been reported in the area.

There is 1 area in this Potentially Vulnerable Area, which has been the focus of further assessment, this is identified below. Further information on the proposed objectives and actions to manage flood risk within this area will be provided in Phase 2 of the consultation (launching on 22nd March 2021).

List of target areas

Dalbeattie	(target area 131)

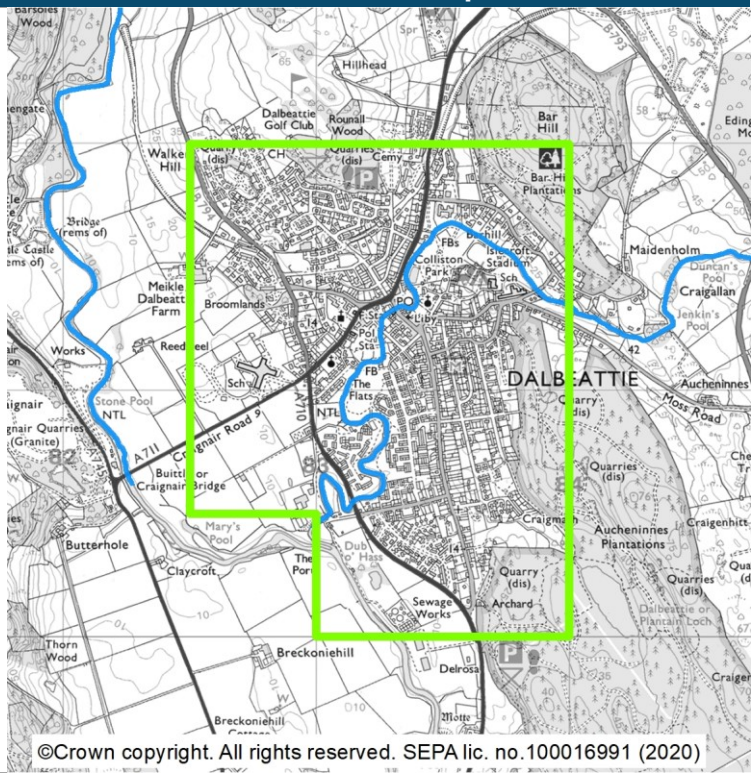
Flood risk management plan datasheet

Dalbeattie (target area 131)

Summary

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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Flood warning scoping (Ref: 13101)
Action	The potential to provide a new flood warning scheme is to be considered by SEPA. Flood warnings are only effective where it is possible to send a warning message with sufficient time to allow communities to take appropriate actions before flooding occurs.
Action detail	Scoping for a river and coastal flood warning scheme will be carried out in Dalbeattie.
Coordination	Action delivery lead is SEPA and coordination will be determined once the action has been finalised.

	Flood defence maintenance (Ref: 13102)
Action	The existing flood defences are to be maintained by the asset owner to ensure they are in good condition.
Action detail	Dumfries and Galloway Council is to continue to inspect and maintain the Dalbeattie Flood Protection Scheme 1981.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Strategic mapping improvements (Ref: 13103)
Action	SEPA will continue to update flood maps based on new information.
Action detail	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.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

Actions proposed after June 2028

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

	Flood scheme or works design (Ref: 13104)
Action	The selected preferred approach for managing flood risk is to be designed on the basis of the flood study, including consideration of the long-term impacts of climate change. These can 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. The performance and condition of the existing flood defences is to be evaluated, including consideration of the likely impacts of climate change. This should guide adaptive planning to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	Dumfries and Galloway to develop detailed design of the Dalbeattie Flood Protection Scheme based on the preferred option from the flood study. The preferred option consists of raised defences and property flood resilience. Further study is required to consider the latest climate change projections, including a review of the Dalbeattie Flood Protection Scheme 1981 to assess performance and the predicted standard of protection for a number of climate change scenarios. This information will underpin the development of an adaptation plan for the long term protection of the community.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Flood scheme or works implementation (Ref: 13105)
Action	The flood scheme/works is to be built following agreement of the design, costs and timescales.
Action detail	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 Dalbeattie. 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.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Community engagement (Ref: 13106)
Action	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk.
Action detail	Community engagement should continue through the development of the Dalbeattie Flood Protection Scheme.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

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

What are the opportunities for joint working?

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

02/14/15 (River Dee Catchment)

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 are due to river and surface water flooding.

There are 2 areas in this Potentially Vulnerable Area, which have been the focus of further assessment, these are listed below. Further information on the proposed objectives and actions to manage flood risk within this area will be provided in Phase 2 of the consultation (launching on 22nd March 2021).

List of target areas

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

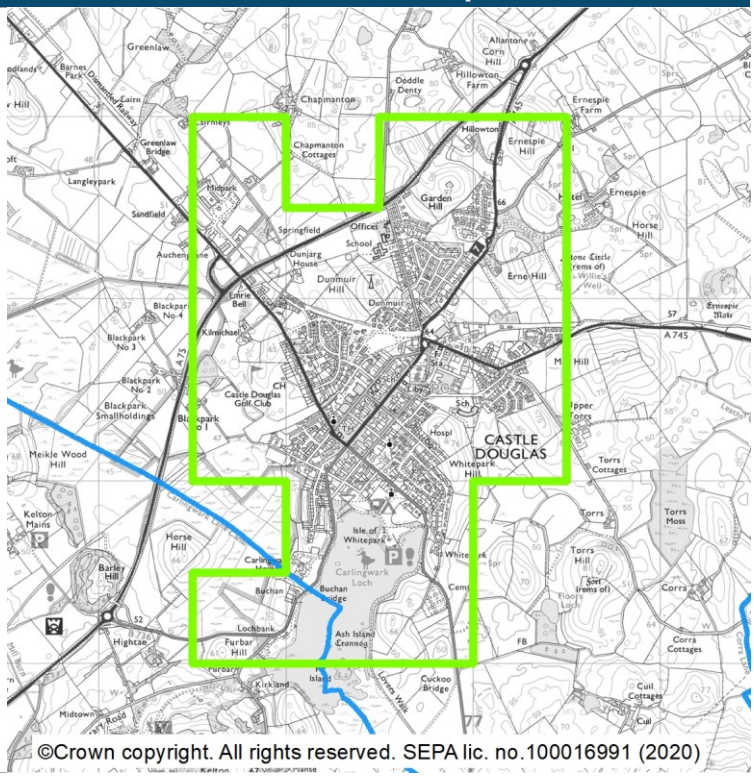
Flood risk management plan datasheet

Castle Douglas (target area 36)

Summary

The area contains the town of Castle Douglas and the villages of Kilmichael and Hillowton. The area is 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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Flood risk management review (Ref: 3601)
Action	During each 6 year planning cycle, we update our understanding of flooding to include all new data and information that has become available. This includes information on any flooding that has happened and the latest predictions on the impacts of climate change. The updated understanding is used to set any appropriate objectives and actions for areas at risk of flooding
Action detail	No local actions specific to this target area have been identified yet. There are national actions planned that will cover this area, including an update to SEPA's surface water flood maps and an update to the national flood risk assessment. These, along with other actions that are carried out across the whole local plan district covering this area, will help to manage flood risk in the long term. The need for actions for this area will be reviewed again in 2026.
Coordination	Action delivery lead is SEPA and coordination will be determined once the action has been finalised.

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

What are the opportunities for joint working?

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

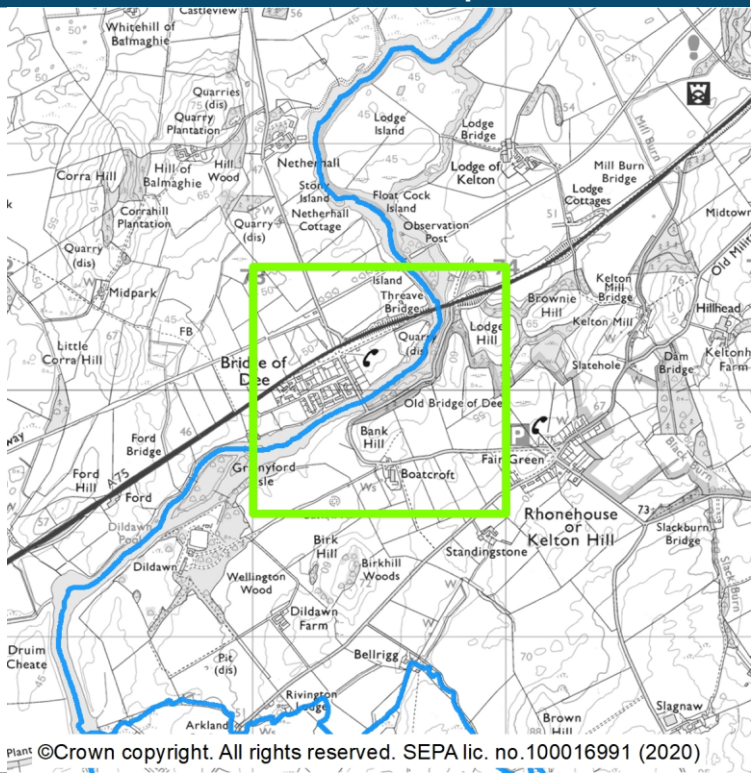
Flood risk management plan datasheet

Bridge of Dee (target area 35)

Summary

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 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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Data collection (Ref: 3501)
Action	Equipment that measures rainfall, river levels, erosion, ground levels or wave height may be installed and maintained to improve our understanding of flood risk. This can be done over short term or to measure longer term impacts.
Action detail	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 and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

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

02/14/16 (Kirkcudbright)

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 area in this Potentially Vulnerable Area, which has been the focus of further assessment, this is identified below. Further information on the proposed objectives and actions to manage flood risk within this area will be provided in Phase 2 of the consultation (launching on 22nd March 2021).

List of target areas

Kirkcudbright	(target area 134)

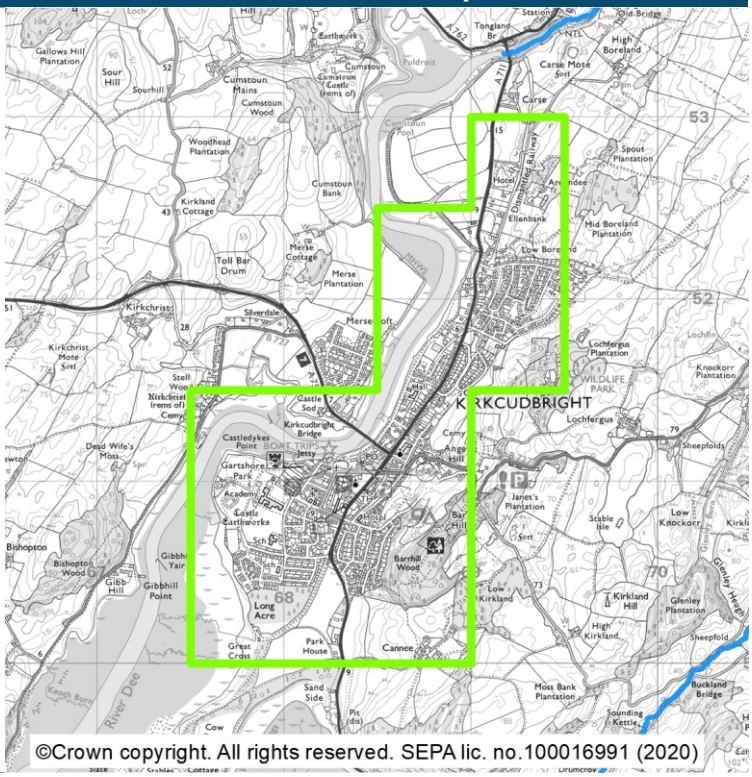
Flood risk management plan datasheet

Kirkcudbright (target area 134)

Summary

Kirkcudbright is a town at the mouth of the River Dee, where it discharges into Kirkcudbright Bay. It is in 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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Shoreline Management Plan (Coastal Adaptive Plan) (Ref: 13401)
Action	The existing assessment of coastal flood and erosion risk is to be reviewed and updated as required. The plan should include assessment of climate change and develop adaptive approaches to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	Dumfries & 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.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Flood warning maintenance (Ref: 13402)
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the Solway coastal flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

	Strategic mapping improvements (Ref: 13403)
Action	SEPA will continue to update flood maps based on new information.
Action detail	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.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

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

What are the opportunities for joint working?

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

02/14/17 (Carsphairn)

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 area in this Potentially Vulnerable Area, which has been the focus of further assessment, this is identified below. Further information on the proposed objectives and actions to manage flood risk within this area will be provided in Phase 2 of the consultation (launching on 22nd March 2021).

List of target areas

Carsphairn (target area 127)

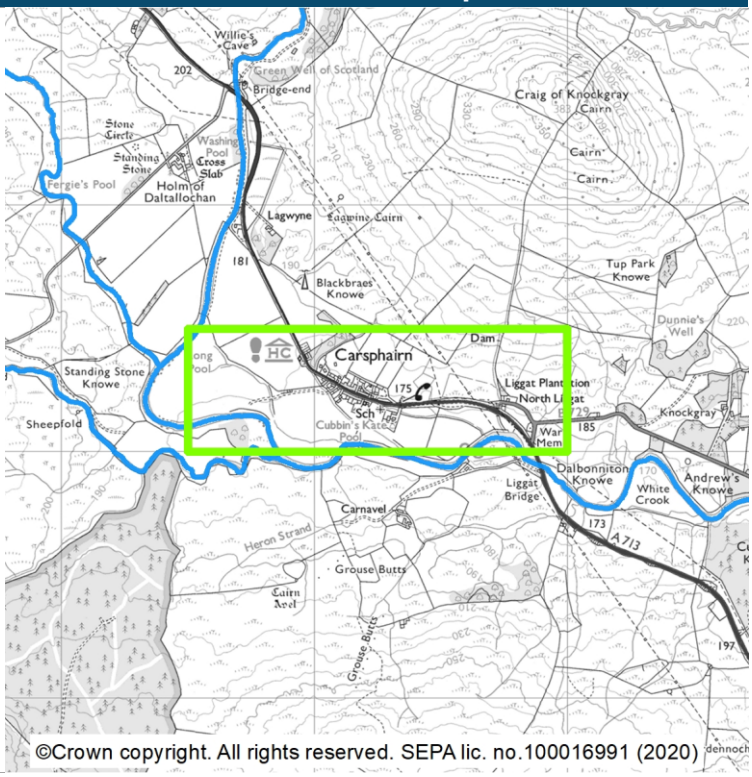
Flood risk management plan datasheet

Carsphairn (target area 127)

Summary

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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Flood scheme or works design (Ref: 12701)
Action	The selected preferred approach for managing flood risk is to be designed on the basis of the flood study, including consideration of the long-term impacts of climate change. These can 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 detail	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.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Flood scheme or works implementation (Ref: 12702)
Action	The flood scheme/works is to be built following agreement of the design, costs and timescales.
Action detail	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.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Community engagement (Ref: 12703)
Action	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk.
Action detail	Community engagement 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.

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

What are the opportunities for joint working?

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

02/14/18 (Creetown)

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 being caused by coastal and river flooding.

There is 1 area in this Potentially Vulnerable Area, which has been the focus of further assessment, this is identified below. Further information on the proposed objectives and actions to manage flood risk within this area will be provided in Phase 2 of the consultation (launching on 22nd March 2021).

List of target areas

Creetown (target area 130)

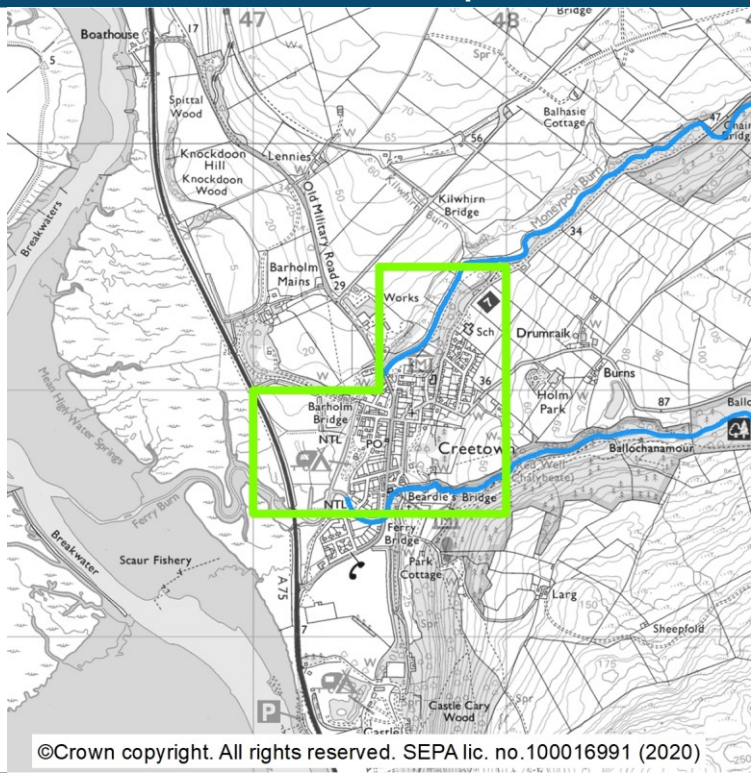
Flood risk management plan datasheet

Creetown (target area 130)

Summary

Creetown is a small coastal town which is located between the Moneypool Burn and Balloch Burn on the River Cree estuary at Wigtown Bay. It is in 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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Shoreline Management Plan (Coastal Adaptive Plan) (Ref: 13001)
Action	The existing assessment of coastal flood and erosion risk is to be reviewed and updated as required. The plan should include assessment of climate change and develop adaptive approaches to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	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.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Flood warning maintenance (Ref: 13002)
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the Solway coastal flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

	Strategic mapping improvements (Ref: 13003)
Action	SEPA will continue to update flood maps based on new information.
Action detail	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.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

Actions proposed after June 2028

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

	Flood study (Ref: 13004)
Action	An understanding of flood risk and associated issues in the area is to be developed, which may include surveys and modelling and should consider the impacts of climate change on flood risk.
Action detail	Following completion of the Shoreline Management Plan in early 2022, Dumfries & Galloway Council to carry out a flood study to address risk from interaction of the Moneypool and Balloch Burns with the tidal River Cree. Where flood risk is confirmed, scoping of the next steps should be completed, subject to available resources and funding.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

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

What are the opportunities for joint working?

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

02/14/19 (Newton Stewart)

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 area in this Potentially Vulnerable Area, which has been the focus of further assessment, this is identified below. Further information on the proposed objectives and actions to manage flood risk within this area will be provided in Phase 2 of the consultation (launching on 22nd March 2021).

List of target areas

Newton Stewart (target area 140)

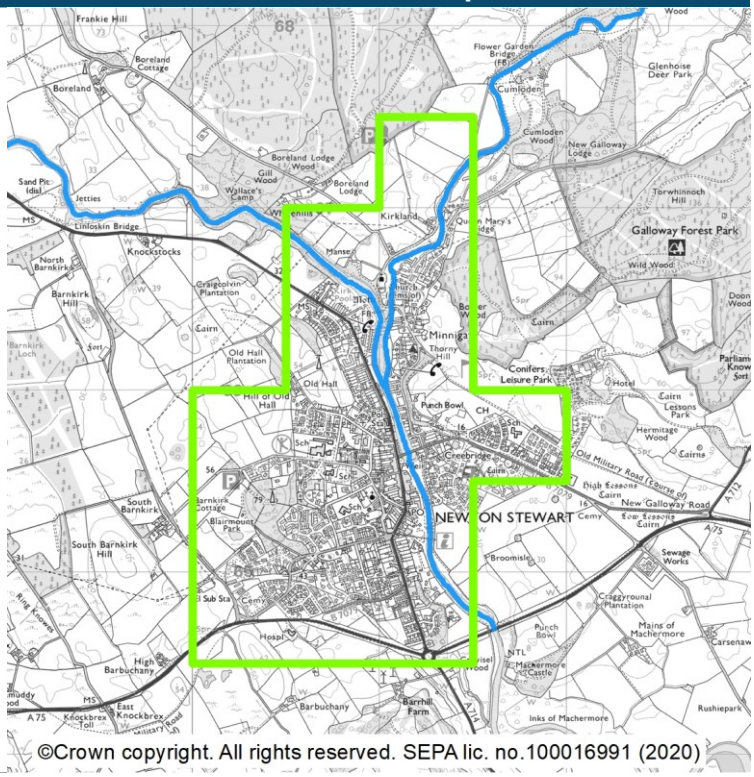
Flood risk management plan datasheet

Newton Stewart (target area 140)

Summary

Newton Stewart is a town located on the banks of the River Cree. It is in 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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Flood scheme or works design (Ref: 14001)
Action	The selected preferred approach for managing flood risk is to be designed on the basis of the flood study, including consideration of the long-term impacts of climate change. These can 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 detail	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.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Flood scheme or works implementation (Ref: 14002)
Action	The flood scheme/works is to be built following agreement of the design, costs and timescales.
Action detail	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.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Community engagement (Ref: 14003)
Action	Community engagement is to continue to be carried out in the area by the responsible authorities to raise awareness of flood risk.
Action detail	Community engagement 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.

	Flood warning maintenance (Ref: 14004)
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the River Cree flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

Actions proposed after June 2028

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

	Flood warning maintenance (Ref: 14005)
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should investigate improvements to the River Cree flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

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

What are the opportunities for joint working?

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

02/14/20 (Garlieston)

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 areas in this Potentially Vulnerable Area, which have been the focus of further assessment, these are listed below. Further information on the proposed objectives and actions to manage flood risk within this area will be provided in Phase 2 of the consultation (launching on 22nd March 2021).

List of target areas

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

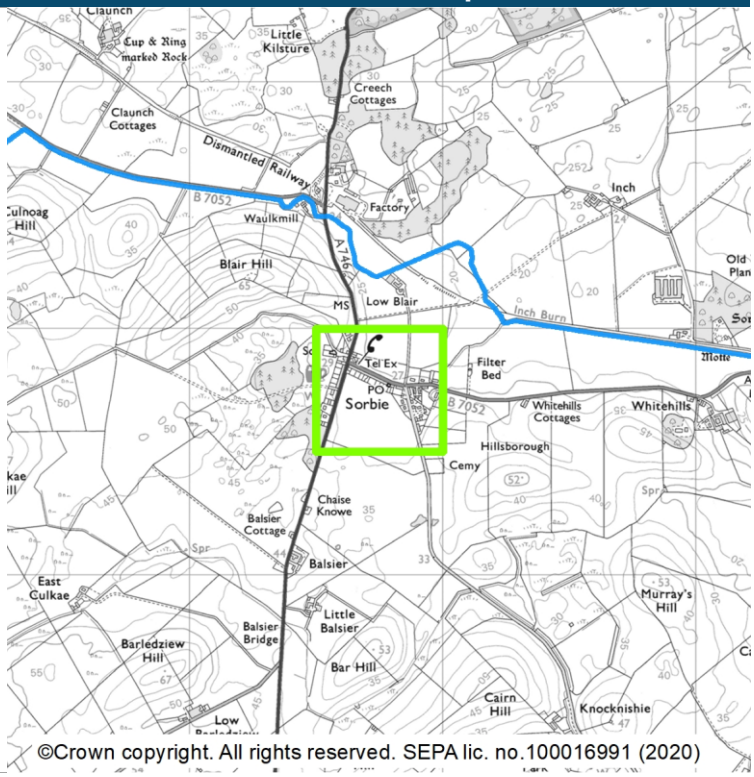
Flood risk management plan datasheet

Sorbie (target area 70)

Summary

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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Data collection (Ref: 7001)
Action	Equipment that measures rainfall, river levels, erosion, ground levels or wave height may be installed and maintained to improve our understanding of flood risk. This can be done over short term or to measure longer term impacts.
Action detail	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 and responsible authorities carry out actions in all areas which help to manage current and future flooding. These actions help to ensure that key aspects of flood risk management are taken forward in all locations. They ensure that for example new housing developments occur in the right places, and that critical flood risk information is developed and updated for all areas. A description of these actions is included in the Local Plan District section at the start of this document.

What are the opportunities for joint working?

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

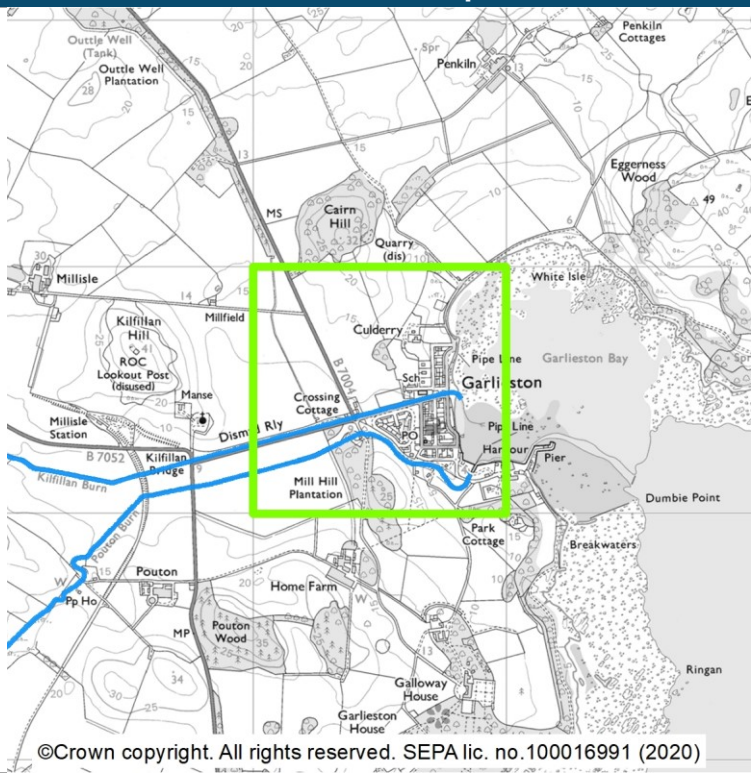
Flood risk management plan datasheet

Garlieston (target area 126)

Summary

Garlieston is a small coastal village located in Garlieston Bay 7km north east of Whithorn. It is 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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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
1263	Reduce flood risk	Reduce the risk of flooding in Garlieston

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Shoreline Management Plan (Coastal Adaptive Plan) (Ref: 12601)
Action	The existing assessment of coastal flood and erosion risk is to be reviewed and updated as required. The plan should include assessment of climate change and develop adaptive approaches to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	Dumfries & 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.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Flood warning maintenance (Ref: 12602)
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the Solway coastal flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

	Strategic mapping improvements (Ref: 12603)
Action	SEPA will continue to update flood maps based on new information.
Action detail	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.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

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

What are the opportunities for joint working?

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

02/14/21 (Isle of Whithorn)

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 area in this Potentially Vulnerable Area, which has been the focus of further assessment, this is identified below. Further information on the proposed objectives and actions to manage flood risk within this area will be provided in Phase 2 of the consultation (launching on 22nd March 2021).

List of target areas

Isle of Whithorn (target area 144)

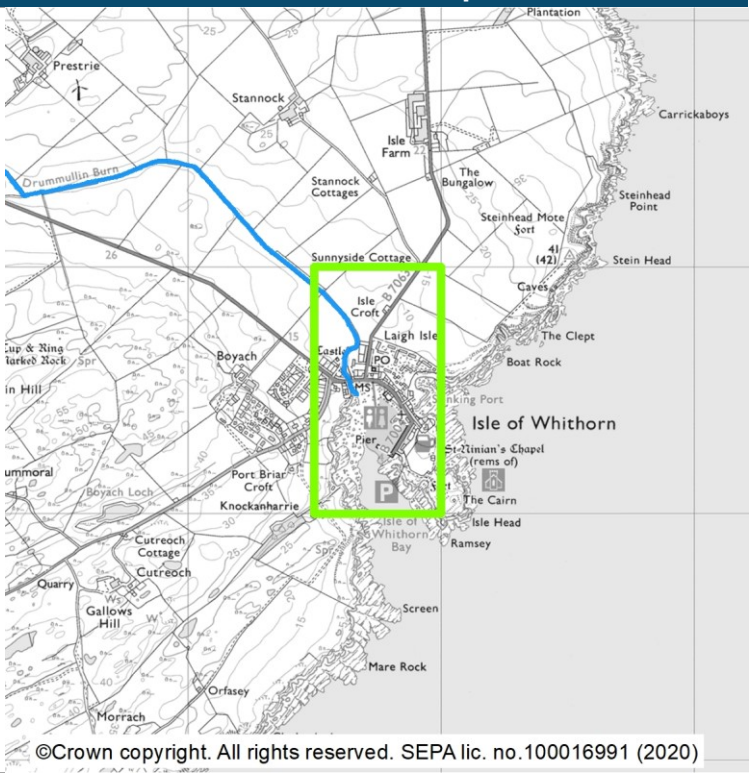
Flood risk management plan datasheet

Isle of Whithorn (target area 144)

Summary

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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Shoreline Management Plan (Coastal Adaptive Plan) (Ref: 14401)
Action	The existing assessment of coastal flood and erosion risk is to be reviewed and updated as required. The plan should include assessment of climate change and develop adaptive approaches to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	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.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Flood warning maintenance (Ref: 14402)
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the Solway coastal flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

	Strategic mapping improvements (Ref: 14403)
Action	SEPA will continue to update flood maps based on new information.
Action detail	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.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

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

What are the opportunities for joint working?

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

02/14/22 (Port William)

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 flooding. There is a history of flooding in the area, with recent flooding being caused by coastal and surface water flooding.

There is 1 area in this Potentially Vulnerable Area, which has been the focus of further assessment, this is identified below. Further information on the proposed objectives and actions to manage flood risk within this area will be provided in Phase 2 of the consultation (launching on 22nd March 2021).

List of target areas

Port William	(target area 143)

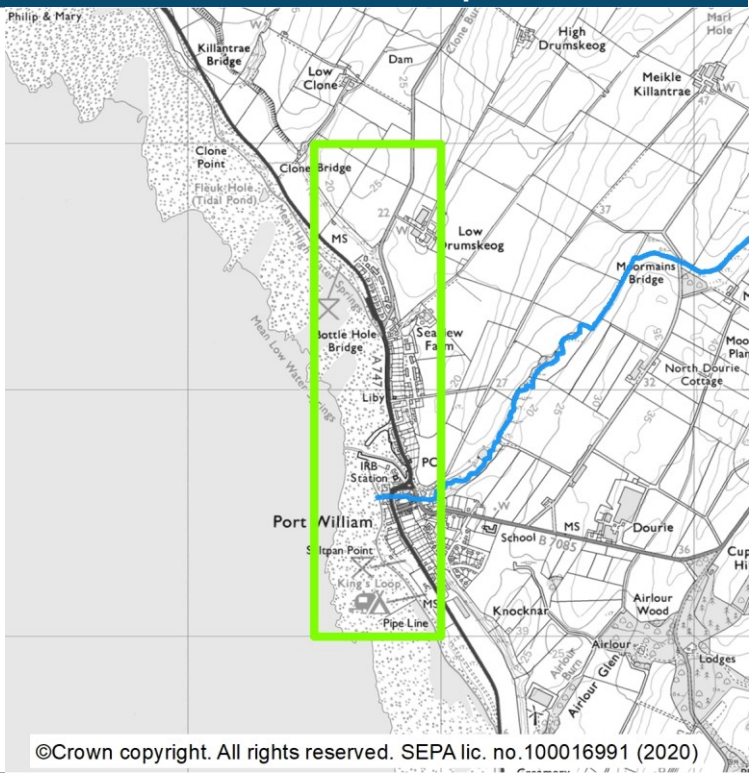
Flood risk management plan datasheet

Port William (target area 143)

Summary

Port William is a small coastal village located on the eastern shore of Luce Bay. It is in 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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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
1433	Reduce flood risk	Reduce the risk of flooding in Port William

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Shoreline Management Plan (Coastal Adaptive Plan) (Ref: 14301)
Action	The existing assessment of coastal flood and erosion risk is to be reviewed and updated as required. The plan should include assessment of climate change and develop adaptive approaches to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	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.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Flood warning maintenance (Ref: 14302)
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the Solway coastal flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

	Strategic mapping improvements (Ref: 14303)
Action	SEPA will continue to update flood maps based on new information.
Action detail	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.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

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

What are the opportunities for joint working?

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

02/14/23 (Stranraer)

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 area in this Potentially Vulnerable Area, which has been the focus of further assessment, this is identified below. Further information on the proposed objectives and actions to manage flood risk within this area will be provided in Phase 2 of the consultation (launching on 22nd March 2021).

List of target areas

Stranraer (target area 142)

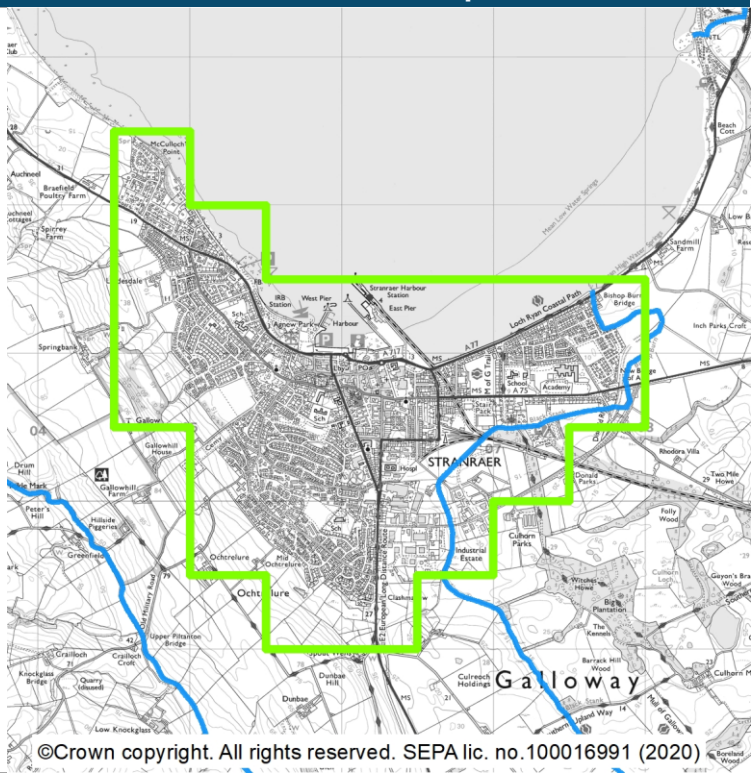
Flood risk management plan datasheet

Stranraer (target area 142)

Summary

Stranraer is a coastal town located on the shores of Loch Ryan. It is in 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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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
1424	Reduce flood risk	Reduce the risk of flooding in Stranraer

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Shoreline Management Plan (Coastal Adaptive Plan) (Ref: 14201)
Action	The existing assessment of coastal flood and erosion risk is to be reviewed and updated as required. The plan should include assessment of climate change and develop adaptive approaches to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	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.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Flood defence maintenance (Ref: 14202)
Action	The existing flood defences are to be maintained by the asset owner to ensure they are in good condition.
Action detail	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.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Flood warning maintenance (Ref: 14203)
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the Solway coastal flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

	Strategic mapping improvements (Ref: 14204)
Action	SEPA will continue to update flood maps based on new information.
Action detail	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.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

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

What are the opportunities for joint working?

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

02/14/24 (Portpatrick)

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 area in this Potentially Vulnerable Area, which has been the focus of further assessment, this is identified below. Further information on the proposed objectives and actions to manage flood risk within this area will be provided in Phase 2 of the consultation (launching on 22nd March 2021).

List of target areas

Portpatrick (target area 141)

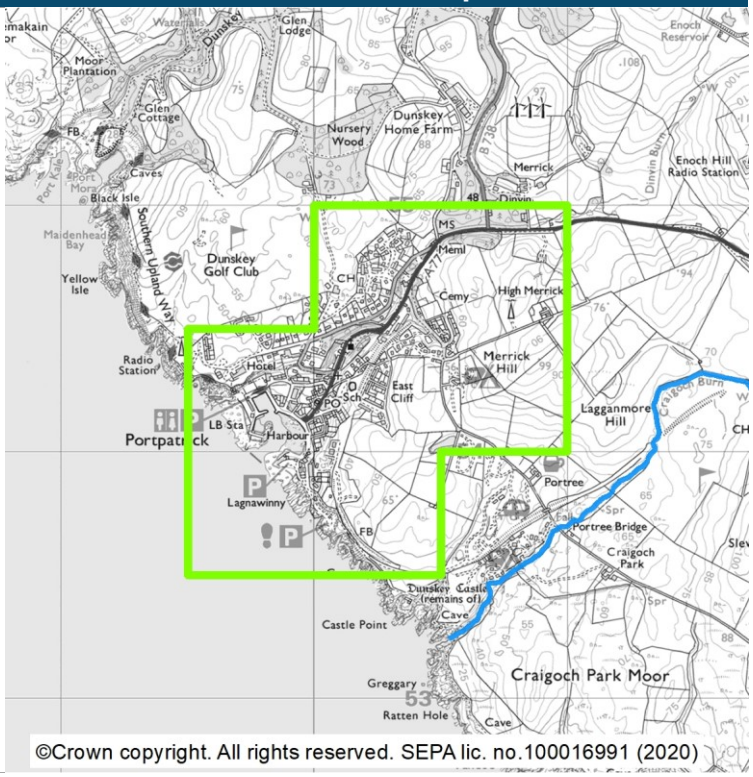
Flood risk management plan datasheet

Portpatrick (target area 141)

Summary

Portpatrick is a coastal village located on the western shore of the Rhins of Galloway peninsula. It is in 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.

Location map



What is the current understanding of flood risk?

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

What are the objectives for the area?

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

• Take a long term, risk-based approach to flood risk management decisions and one that considers the impacts of and adaptability to climate change.

• Deliver coordinated and integrated flood risk management by engaging with communities and working in partnership, sharing data, expertise, services, and resources.

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

Objective ref	Objective type	Objective description
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

What actions are proposed for this area?

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

Actions proposed to start before June 2028

	Shoreline Management Plan (Coastal Adaptive Plan) (Ref: 14101)
Action	The existing assessment of coastal flood and erosion risk is to be reviewed and updated as required. The plan should include assessment of climate change and develop adaptive approaches to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	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.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Flood defence maintenance (Ref: 14102)
Action	The existing flood defences are to be maintained by the asset owner to ensure they are in good condition.
Action detail	Dumfries & Galloway Council will continue to inspect and maintain the Portpatrick Flood Protection Scheme 2003.
Coordination	Action delivery lead is Dumfries and Galloway Council and coordination will be determined once the actions have been finalised.

	Flood warning maintenance (Ref: 14103)
Action	The Floodline flood warning service is to be kept operational through maintenance to the existing system and updates being undertaken as required.
Action detail	SEPA should maintain the Solway coastal flood warning scheme.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

	Strategic mapping improvements (Ref: 14104)
Action	SEPA will continue to update flood maps based on new information.
Action detail	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.
Coordination	Action delivery lead is SEPA and coordination will be determined once the actions have been finalised.

Actions proposed after June 2028

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

	Flood study (existing flood defences) (Ref: 14105)
Action	The performance and condition of the existing flood defences are to be evaluated, including consideration of the likely impacts of climate change. This should guide adaptive planning to allow for the impacts of climate change to be monitored, understood and managed.
Action detail	Dumfries and Galloway Council to assess the performance of the Portpatrick Flood Protection Scheme. The Scheme was constructed in 2003. Since then new modelling techniques and data have emerged. The impacts of climate change on flood risk should also be considered. The need for an adaptation plan should be evaluated.
Coordination	Action delivery lead is Dumfries and Galloway Council in coordination with SEPA.

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

What are the opportunities for joint working?

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

Flood Risk Management Glossary

July 2021

Scottish Environment Protection Agency
Buidheann Dìon Àrainneachd na h-Alba

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

Term	Definition
Benefit cost ratio (BCR)	A benefit cost ratio summarises the overall value for money of an action or project. It is expressed as the ratio of benefits to costs (both expressed as present value monetary values). A ratio of greater than 1:1 indicates that the economic benefits associated with an action are greater than the economic costs of implementation; therefore this is taken as the threshold of economic viability. It should be acknowledged that it is not always possible to accurately estimate economic values for all elements of benefit, and BCR is just one of a number of techniques used in appraisal.
Blue infrastructure	Blue infrastructure is often complementary to 'green infrastructure' and includes sustainable drainage systems, swales (shallow, broad and vegetated channels designed to store and/or convey runoff and remove pollutants), wetlands, rivers, canals (and their banks) and all watercourses.
Business and services	Properties that are not used for people to live in, such as shops or other public, commercial or industrial buildings.
Catchment	All the land drained by a river and its tributaries.
Category 1 and 2 responders (Cat 1 / 2)	Category 1 and 2 Responders are defined as part of the Civil Contingencies Act 2004 which seeks to minimise disruption in the event of an emergency. Category 1 Responders are 'core' responders: local authorities, police, fire and rescue services, ambulance service, NHS health boards, SEPA and the Maritime and Coastguard Agency. Category 2 Responders are key co-operating responders in support of Category 1 Responders. These include gas and electricity companies, rail and air transport operators, harbour authorities, telecommunications providers, Scottish Water, the Health and Safety Executive and NHS National Services Scotland.
Channel improvement	Where work has been carried out on the river's channel allowing an increase in the volume of water it can carry.
Characterisation	Provides a description of the natural characteristics of catchments, coastlines and urban areas in terms of hydrology, geomorphology, topography and land use. It also includes the characterisation of existing levels of flood risk and existing flood risk management activity.
Coastal flooding	Flooding that results from high sea levels or a combination of high sea levels and stormy conditions. The term coastal flooding is used under the Flood Risk Management (Scotland) Act 2009, but in some areas it is also referred to as tidal flooding and covers areas such as estuaries and river channels that are influenced by tidal flows.
Combined sewer	Combined sewers transport sewage from homes and industry as well as carrying surface water runoff from gutters, drains and some highways. Heavy or prolonged rainfall can rapidly increase the flow in a combined sewer until the amount of water exceeds sewer capacity.
Combined sewer (overflow) (CSO)	Combined sewer overflows are purposely designed structures to ensure any excess water from sewerage systems is discharged in a controlled way and at a specific managed location.

Term	Definition
Community facility	Within the flood risk management plans this term includes: Emergency Services (Police, Fire, Ambulance, Coastguard, and Mountain Rescue) Educational Buildings (crèche, nursery, primary, secondary, further, higher and special education premises) Healthcare facilities: hospitals, health centres and residential care homes.
Community flood action groups	Community flood action groups are community based resilience groups which, on behalf of local residents and business, help to prepare for and minimise the effects of flooding. They reflect the interests of their local communities and may differ in composition and remit. There are over 60 groups already established in Scotland. The Scottish Flood Forum provides support for both new and existing groups.
Confluence	Where two or more rivers meet.
Conveyance	Conveyance is a measure of the carrying capacity of a watercourse. Increasing conveyance enables flow to pass more rapidly and reducing conveyance slows flow down. Both actions can be effective in managing flood risk depending on local conditions.
Cross Border Advisory Group (CBAG)	The Cross Border Advisory Group is a statutory group made up of representatives from the Environment Agency, SEPA, Scottish Water and the four lead local flood authorities located within the Solway Tweed River Basin District.
Cultural heritage site	Historic Environment Scotland maintains lists of buildings of special architectural or historic interest; these buildings are referred to as 'listed buildings'. The highest level of designation is a World Heritage Site. Other designations included in this assessment are scheduled monuments, gardens and designed landscapes, and battlefields.
Culvert	A pipe, channel or tunnel used for the conveyance of a watercourse or surface drainage water under a road, railway, canal or other obstacle.
Damages	Flood damages are categorised as direct or indirect i.e. as a result of the flood water itself, or subsequent knock on effects. Damage to buildings and contents caused by flood water are an example of direct damages, whilst loss of industrial production, travel disruption or stress and anxiety are indirect. Some damages can be quantified in monetary terms, and others can only be described. The potential damages avoided by implementation of a flood risk management action are commonly referred to as the benefits of that action. When comparing the effectiveness of different actions, it is useful to consider estimated damages and damages avoided across the lifespan of the action. Within the flood risk management plans, a 100 year appraisal period has been used as standard. This allows costs, damages and benefits across this time frame to be compared in present value terms. 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.

Term	Definition
Deposition	A natural process leading to an accumulation of sediment on a river bed, floodplain or coastline.
Economic Impact	An assessment of the economic value of the positive and negative effects of flooding and/or the actions taken to manage floods.
Embankment	Flood embankments are engineered earthfill structures designed to contain high river levels or protect against coastal flooding. They are commonly grass-covered, but may need additional protection against erosion by swiftly flowing water, waves or overtopping.
Emergency plans / response	Emergency response plans are applicable for all types of flooding. They set out the steps to be taken during flooding in order to maximise safety and minimise impacts where possible. Under the Civil Contingencies Act, Category 1 Responders have a duty to maintain emergency plans. Emergency plans may also be prepared by individuals, businesses, organisations or communities.
Environmental Impact	A change in the environment as a result of an action or activity. Impacts can be positive or negative and may vary in significance, scale and duration.
Environmental Impact Assessment (EIA)	Environmental Impact Assessment (EIA) is a process which identifies the potential environmental impacts, both negative and positive, of a proposal.
Environmental sites / environmental designated areas/ environmentally designated sites	Areas formally designated for environmental importance, such as Sites of Special Scientific Interest (SSSI) Special Protection Area (SPA) or Special Areas of Conservation (SAC).
Episodic erosion	Erosion induced by a single event, such as a storm.
Erosion	A natural process leading to the removal of sediment from a river bed, bank, floodplain or coastline.
Estuarine surge attenuation	A reduction in the wave energy caused by storm surge. Breakwaters (barriers built out into the sea to protect a coast or harbour from the force of waves) or habitats such as saltmarsh can slow down and reduce the inland impact of storm surges (the rising of the sea due to wind and atmospheric pressure changes associated with storms), thereby reducing coastal flood risk.
Estuary	A coastal body of water usually found where a river meets the sea; the part of the river that is affected by tides.
Fault (fault line)	A break or fracture in the earth's crust as a result of the displacement of one side with respect to the other. In Scotland the Great Glen Fault is a major geological fault line cutting diagonally across the Highlands from Fort William to Inverness.

Flash flood	A flood that occurs a short period of time after high intensity rainfall or a sudden snow melt. A sudden increase in the level and velocity of the water body is often characteristic of these events, leaving a short time for warning or actions.

Term	Definition
Flashy watercourse	A 'flashy' river or watercourse has a short lag time (the delay between peak rainfall intensity and peak river discharge), high peak discharge, and quickly returns to average flow. Rivers with these characteristics can be prone to flooding and leave a short time for warning or actions.
Flood	In the terms of the Flood Risk Management Act, 'flood' means a temporary covering by water, from any source, of land not normally covered by water. This does not include a flood solely from a sewerage system, as a result of normal weather or infrastructure drainage. A flood can cause significant adverse impacts on people, property and the environment.
Flood bund	A constructed retaining wall, embankment or dyke designed to protect against flooding to a specified standard of protection.
Flood defence	Infrastructure, such as flood walls and embankments, intended to protect an area against flooding, to a specified standard of protection.
Flood extent	The area that has been affected by flooding, or is at risk of flooding from one or more sources for a particular likelihood.
Flood forecasting	SEPA operates a network of over 250 rainfall, river and coastal monitoring stations throughout Scotland that generate data 24 hours a day. This hydrological information is combined with meteorological information from the Met Office. A team of experts then predict the likelihood and timing of river, coastal and surface water flooding. This joint initiative between SEPA and the Met Office forms the Scottish Flood Forecasting Service.
Flood frequency	The probability that a particular size/severity of flood will occur in a given year (see likelihood).
Flood gate	An adjustable, sometimes temporary, barrier used as a flood defence to control the flow of water within a water system or during a flood. Flood gates can also be part of operational flood defences or protect individual buildings or sites.
Flood guard	Flood guards cover a variety of types of door and window barriers that can be fitted to individual properties and operated by the owners / occupiers prior to a flood event. They act as a physical barrier to water entering the property and can provide protection against frequent and relatively shallow flooding.
Flood hazard	In terms of the Flood Risk Management Act, hazard refers to the characteristics (extent, depth, velocity) of a flood.
Flood hazard map	Flood hazard maps are required by the Flood Risk Management Act to show information that describes the nature of a flood in terms of the source, extent, water level or depth and, where appropriate, velocity of water. Flood hazard and risk maps are referred to collectively as flood maps and are available on the SEPA website.

Flood Prevention Scheme / Flood Protection Scheme (FPS)	A flood protection scheme, as defined by the Flood Risk Management Act, is a scheme by a local authority for the management of flood risk within the authority area. This includes defence measures (flood prevention schemes) formerly promoted under the Flood Prevention (Scotland) Act 1961.

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

Flood risk map	Complements the flood hazard maps published on the SEPA website providing detail on the impacts of flooding on people, the economy and the environment. Flood hazard and risk maps are referred to collectively as flood maps and are available on the SEPA website.
Flood wall	A flood defence feature used to defend an area from flood water to a specified standard of protection.
Flood Warning Target Area (FWTA)	A Flood Warning target area is where SEPA operates a formal Flood Monitoring Scheme to issue targeted flood warning messages for properties located in the area.

Term	Definition
Flood warning scheme	A flood warning scheme is the network of monitoring on a coastal stretch or river, which provides SEPA with the ability to issue flood warnings.
Floods directive	European Directive 2007/60/EC on the Assessment and Management of Flood Risks builds on and is closely related to the Water Framework Directive (see river basin management planning). It was transposed into Scots Law by the Flood Risk Management (Scotland) Act 2009. The Directive requires Member States to assess if all watercourses and coastlines are at risk from flooding, to map the flood extent, assets and humans at risk in these areas and to take adequate and coordinated measures to reduce this flood risk.
Floodplain	Area of land that borders a watercourse, an estuary or the sea, over which water flows in time of flood, or would flow but for the presence of flood defences and other structures where they exist.
Floodplain storage	Floodplains naturally store water during high flows. Storage can be increased through natural or man-made features to increase flood depth or slow flows in order to reduce flooding elsewhere.
Fluvial flooding	Flooding from a river or other watercourse.
Gabion	A metal cage filled with rocks often used in river bank protection.
Green infrastructure	The European Commission defines green infrastructure as “the use of ecosystems, green spaces and water in strategic land use planning to deliver environmental and quality of life benefits. It includes parks, open spaces, playing fields, woodlands, wetlands, road verges, allotments and private gardens. Green infrastructure can contribute to climate change mitigation and adaptation, natural disaster risk mitigation, protection against flooding and erosion as well as biodiversity conservation.” See also ‘blue infrastructure’.
Groundwater flooding	This type of flooding is caused by water rising up from underlying rocks or flowing from springs. In Scotland groundwater is generally a contributing factor to flooding rather than the primary source.
Integrated catchment study (ICS)	In urban areas, the causes of flooding are complex because of the interactions between rivers, surface water drainage and combined sewer systems and tidal waters. Scottish Water works with SEPA and local authorities to assess these interactions through detailed studies.

Land use planning (LUP)	The process undertaken by public authorities to identify, evaluate and decide on different options for the use of land, including consideration of long term economic, social and environmental objectives and the implications for different communities and interest groups.
Lead local authority	A local authority responsible for leading the production, consultation, publication and review of a Local flood risk management plan.

Term	Definition
Likelihood of flooding	The chance of flooding occurring. **High likelihood**: A flood event is likely in the defined area on average once in every ten years (1:10). Or a 10% chance of happening in any one year. **Medium likelihood**: A flood event is likely in the defined area on average once in every two hundred years (1:200). Or a 0.5% chance of happening in any one year. **Low likelihood**: A flood event is likely in the defined area on average once in every thousand years (1:1000). Or a 0.1% chance of happening in any one year.
Local Flood Risk Management Plans (Local FRM Plan)	Local flood risk management plans, produced by lead local authorities, will take forward the objectives and actions set out in flood risk management plans. They will provide detail on the funding, timeline of delivery, arrangements and co-ordination of actions at the local level during each six year, flood risk management planning cycle.
Local Nature Reserve (LNR)	A Local Nature Reserve is a protected area of land designated by a local authority because of its local special natural interest and / or educational value. Local authorities select and designate local nature reserves using their powers under the National Parks and Access to the Countryside Act 1949.
Local Plan District	Geographical areas for the purposes of flood risk management planning. There are 14 Local Plan Districts (LPDs) in Scotland.
Local Plan District Partnerships	Each LPD has established a local partnership comprised of local authorities, SEPA and Scottish Water and others as appropriate. These partnerships are distinct from the flood risk management plans local advisory groups and they retain clear responsibility for delivery of the flood risk management actions set out in the Local flood risk management plans. It is the local partnership that makes decisions and supports the delivery of these plans.
Maintenance	Sections 18 and 59 of the Flood Risk Management (Scotland) Act 2009 put duties of watercourse inspection, clearance and repair on local authorities. In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or defences.
Montane habitat	This habitat encompasses a range of natural or near-natural vegetation occurring in the montane zone, lying above or beyond the natural tree-line.

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

Term	Definition
Natural flood management (NFM)	A set of flood management techniques that aim to work with natural processes (or nature) to manage flood risk.
Non-residential properties	Properties that are not used for people to live in, such as shops or other public, commercial or industrial buildings.
Objectives	Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding.
One in 200 year flood	See 'likelihood of flooding' and 'return period'.
Options appraisal study	An options appraisal study looks to identify and assess a range of options that achieve flood risk management objectives whilst delivering other economic, social and environmental benefits. This helps to inform the decision-making process and identify how options work together to identify a preferred option for managing flooding within an area.
Planning policies	Current national planning policies, Scottish Planning Policy and accompanying Planning Advice notes restrict development within the floodplain and limit exposure of new receptors to flood risk. In addition to national policies, local planning policies may place further requirements within their area of operation to restrict inappropriate development and prevent unacceptable risk.
Potentially Vulnerable Areas (PVA)	Catchments identified as being at risk of flooding and where the impact of flooding is sufficient to justify further assessment and appraisal. There were 243 PVAs identified by SEPA in the 2011 National Flood Risk Assessment and were the focus of the first flood risk management planning cycle. There are 233 PVAs identified for the 2018 National Flood Risk Assessment.
Preferred option	A preferred option identifies the collection of flood management options which combined offer the most suitable way of managing flooding within an area. Based on the economic, social and environmental benefits of the options.

Property level protection	Property level protection includes flood gates, sandbags and other temporary barriers that can be used to prevent water from entering individual properties during a flood.
Property level protection scheme	Some responsible authorities may have a formal scheme to provide, install and maintain property level protection for properties.
Ramsar sites	Ramsar sites are wetlands of international importance designated under the Ramsar Convention.
Receptor	Refers to the entity that may be impacted by flooding (a person, property, infrastructure or habitat). The vulnerability of a receptor can be reduced by increasing its resilience to flooding.
Residual risk	The risk which remains after risk management and mitigation. This may include risk due to very severe (above design standard) storms or risks from unforeseen hazards.
Resilience	The ability of an individual, community or system to recover from flooding.
Responsible authority	Designated under the Flood Risk Management (Scotland) Act 2009 and associated legislation as local authorities, Scottish Water and, from 21 December 2013, the National Park Authorities and Forestry Commission Scotland. Responsible authorities, along with SEPA and Scottish Ministers, have specific duties in relation to their flood risk related functions.
Return period	A measure of the rarity of a flood event. It is the statistical average length of time separating flood events of a similar size. (See Likelihood).

Term	Definition
Revetment	Sloping structures placed on banks or at the foot of cliffs in such a way as to deflect the energy of incoming water.
Riparian	The riparian area is the interface between land and a river or stream. For the purposes of flood risk management plans this commonly refers to the riparian owner, which denotes ownership of the land area beside a river or stream.
River basin management planning (RBMP)	The Water Environment and Water Services (Scotland) Act 2003 transposed the European Water Framework Directive into Scots law. The Act created the River Basin Management Planning process to achieve environmental improvements to protect and improve our water environment. It also provided the framework for regulations to control the negative impacts of all activities likely to have an impact on the water environment.
Runoff reduction	Actions within a catchment or sub-catchment to reduce the amount of runoff during rainfall events. This can include intercepting rainfall, storing water, diverting flows or encouraging infiltration.
Scottish Advisory and Implementation Forum for Flooding (SAIFF)	The stakeholder forum on flooding set up by the Scottish Government to ensure legislative and policy aims are met and to provide a platform for sharing expertise and developing common aspirations and approaches to reducing the impact of flooding on Scotland's communities, environment, cultural heritage and economy.

Sediment balance	Within a river where erosion and deposition processes are equal over the medium to long-term resulting in channel dimensions (width, depth, slope) that are relatively stable.
Sediment management	Sediment management covers a wide range of activities that includes anything from the small scale removal of dry gravels to the dredging of whole river channels and the reintroduction of removed sediment into the water environment. Historically, sediment management has been carried out for several reasons, including reducing flood risk, reducing bank erosion, for use as aggregate and to improve land drainage.
Self help	Self help actions can be undertaken by any individuals, businesses, organisations or communities at risk of flooding. They are applicable to all sources, frequency and scales of flooding. They focus on awareness raising and understanding of flood risk.
Sewer flooding (and other artificial drainage system flooding)	Flooding as a result of the sewer or other artificial drainage system (e.g. road drainage) capacity being exceeded by rainfall runoff or when the drainage system cannot discharge water at the outfall due to high water levels (river and sea levels) in receiving waters.
Site protection plans	Site protection plans are developed to identify whether normal operation of a facility can be maintained during a flood. This may be due to existing protection or resilience of the facility or the network.
Shoreline Management Plan (SMP)	A Shoreline Management Plan is a large scale assessment of the coastal flood and erosion risks to people and the developed, historic and natural environment. It sets out a long-term framework for the management of these risks in a sustainable manner.
Site of Special Scientific Interest (SSSI)	Sites of Special Scientific Interest are protected by law under the Nature Conservation (Scotland) Act 2004 to conserve their plants, animals and habitats, rocks and landforms.

Term	Definition
Source of flooding	The type of flooding. This can be coastal, river, surface water or groundwater.
Special Area of Conservation (SAC)	Special Areas of Conservation are strictly protected sites designated under the European Habitats Directive. The Directive requires the establishment of a European network of protected areas which are internationally important for threatened habitats and species.
Special Protection Areas (SPA)	Special Protection Areas are strictly protected sites classified in accordance with the European Birds Directive. They are classified for rare and vulnerable birds (as listed in the Directive), and for regularly occurring migratory species.
Standard of protection (SoP)	All flood protection structures are designed to be effective up to a specified flood likelihood (Standard of Protection). For events beyond this standard, flooding will occur. The chosen Standard of Protection will determine the required defence height and / or capacity.
Storage area	A feature that can be used to store floodwater, this can be natural in the form of low lying land or manmade such as a reservoir or modified landform.

Strategic Environmental Assessment (SEA)	A process for the early identification and assessment of the likely significant environmental effects, positive and negative, of activities. Often considered before actions are approved or adopted.
Strategic Flood Risk Assessment (SFRA)	A Strategic Flood Risk Assessment is designed for the purposes of specifically informing the Development Plan Process. A SFRA involves the collection, analysis and presentation of all existing and readily available flood risk information (from any source) for the area of interest. It constitutes a strategic overview of flood risk.
Strategic mapping improvements	Strategic mapping improvement actions have been identified in locations where SEPA is planning to undertake additional modelling or analysis of catchments and coastlines, working collaboratively with local authorities where appropriate, to improve the national understanding of flood risk.
Surcharge	Watercourses and culverts can carry a limited amount of water. When they can no longer cope, they overflow, or 'surcharge'.
Surface water flooding	Flooding that occurs when rainwater does not drain away through the normal drainage systems or soak into the ground, but lies on or flows over the ground instead.
Surface Water Management Plan (SWMP)	A plan that takes an integrated approach to drainage accounting for all aspects of urban drainage systems and produces long term and sustainable actions. The aim is to ensure that during a flood the flows created can be managed in a way that will cause minimum harm to people, buildings, the environment and business.
Surface water plan / study	The management of flooding from surface water sewers, drains, small watercourses and ditches that occurs, primarily in urban areas, during heavy rainfall. Flood risk management plan actions in this category include: Surface Water Management Plans, Integrated Catchment Studies and assessment of flood risk from sewerage systems (Flood Risk Management Act, Section 16) by Scottish Water. These have been selected as appropriate for each Potentially Vulnerable Area.
Term	**Definition**
Sustainable flood risk management	The sustainable flood risk management approach aims to meet human needs, whilst preserving the environment so that these needs can be met not only in the present, but also for future generations. The delivery of sustainable development is generally recognised to reconcile three pillars of sustainability – environmental, social and economic.
Sustainable drainage systems (SuDS)	A set of techniques designed to slow the flow of water. They can contribute to reducing flood risk by absorbing some of the initial rainfall and then releasing it gradually, thereby reducing the flood peak and helping to mitigate downstream problems. SuDS encourage us to take account of quality, quantity and amenity / biodiversity.
Target area	Target areas are based on communities at risk of flooding. These are situated within Potentially Vulnerable Areas and should benefit from actions to reduce flood risk. To benefit the community, actions may apply to outside the target area. National flood risk management efforts and funding should be targeted to benefit these target areas.

UK Climate Change Projections (UKCP18)	The leading source of climate change information for the UK. It can help users to assess their climate risks and plan how to adapt to a changing climate. The high emissions scenario refers to the RCP8.5 emission scenario. See the UKCP18 climate change projections report for details.
Utility assets	Within the flood risk management plans this refers to electricity sub stations, mineral and fuel extraction sites, telephone assets, television and radio assets.
Voe	A dialect term, common in place names and used to refer to a small bay or creek in Orkney or Shetland.
Vulnerability	A measure of how likely someone or something is to suffer long-term damage as a result of flooding. It is a combination of the likelihood of suffering harm or damage during a flood (susceptibility) and the ability to recover following a flood (resilience).
Wave energy dissipation	Process by which a wave loses its energy.
Wave overtopping	Wave overtopping occurs when water passes over a flood wall or other structure as a result of wave action. Wave overtopping may lead to flooding particularly in exposed coastal locations.