

# Flood Risk Management (Scotland) Act 2009:

## FINAL PROGRESS REPORT Local Flood Risk Management Plan (2016-2022)

### Ayrshire Local Plan District



Published December 2022



North Ayrshire Council  
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## Foreword

This Final Report for the Local Flood Risk Management Plan shows the progress made in delivering the actions to avoid and reduce the risk of flooding, to allow us to prepare and protect ourselves and our communities across the breadth of the local plan district. The report also marks the completion of Cycle 1 as we now transition into Cycle 2.

*“The impacts of flooding experienced by individuals, communities and businesses can be devastating and long lasting. It is vital that we continue to reduce the risk of any such future events and improve Scotland’s ability to manage and recover from any events which do occur.”*

(Ayrshire Local Flood Risk Management Plan, June 2016)

The publication of this Final Report shows that the co-ordinated and collaborative efforts of public bodies can be brought together to deliver sustainable outcomes.

This Final Report is published by North Ayrshire Council as Lead Local Authority for the Ayrshire Local Plan District (LPD) - a partnership comprising of North Ayrshire Council, East Ayrshire Council and South Ayrshire Council as well as SEPA and Scottish Water.

Individuals are the first line of defence against flooding and have responsibilities to protect themselves from flooding. Through self-help and property level protection, awareness raising and signing up to Floodline ([www.floodlinescotland.org.uk](http://www.floodlinescotland.org.uk)), individuals, businesses and communities can and have made key contributions to the delivery of the actions in the Local Flood Risk Management Plan (the ‘Plan’).

Since the publication of the Plan in June 2016, public sector finances in Scotland have continued to be under considerable pressure. This placed an even greater responsibility on SEPA, local authorities, Scottish Water and other responsible authorities to deliver their flood risk management responsibilities in an effective and sustainable way. During Cycle 1 we have also had to respond to the challenges of the COVID-19 pandemic.

SEPA, local authorities, Scottish Water, and other responsible authorities will continue to work collaboratively to implement the actions set out in the 2nd planning cycle to June 2028

# 1. Background

The Final Report is a legal requirement of the Flood Risk Management (Scotland) Act 2009 (Section 38). The Final Report presents:

- an assessment of the progress made towards implementing the Ayrshire LFRMP (the 'Plan');
- a summary of the planned actions that were not implemented, with reasons for their non-implementation; and
- a description of any other actions implemented since the plan was finalised that the lead authority considers to have contributed to the achievement of the objectives.

A copy of the Plan can be found at the follow link.

<https://www.north-ayrshire.gov.uk/community-safety/flooding/flood-risk-management-plan.aspx>

Further details on flood risk management responsibilities in Scotland and the legal requirement for the publication of this Final Report can be found in Appendix 1.

## 2. Review of the Ayrshire Local FRM Plan

This section presents a review of the Plan including progress highlights, a statement on the planned actions not implemented, the significant challenges faced and the next steps to be taken forward during the 2nd planning cycle.

### Progress Highlights

A selection of progress highlights since publication of the First Ayrshire Local Flood Risk management Plan in June 2016 and the interim progress report in March 2019 are noted below to give a flavour of the work being undertaken across the Ayrshire Local Plan District to reduce flood risk. A summary of progress against every action in the Plan is presented in Section 4.

- The Upper Garnock Flood Protection Scheme has progressed to construction and is almost complete;
- The River Garnock Flood Warning scheme has been completed;
- The detailed design of the Millport Coastal Flood Protection Scheme has been completed and the construction of the scheme has been tendered;
- The prospective Upper and Lower Irvine Valley flood protection schemes were submitted for national prioritisation;
- The Mill Burn Scheme has progressed to detailed design stage;

- The Ayrshire Shoreline Management Plan is completed and was adopted by both North and South Ayrshire Councils;
- The Girvan Flood Risk Assessment Study and Options Appraisal phase are completed. The chosen option has been submitted for national prioritisation;
- The Troon Coastal Flood Study is ongoing and programmed to be completed in January 2023;
- The scoping phase for the Pow Burn Flood Risk Assessment has been completed and the study is scheduled to commence in Spring 2023;
- The Meadowhead Integrated Catchment Study Options Appraisal stage was completed in June 2021. Scottish Water are leading on detailed design for a phased approach to reduce surface water and sewer flooding in Prestwick. Scottish Water have created a multi-agency stakeholder group to assist the design and communication process for this project;
- The Stevenston Point Integrated Catchment Study has been completed;
- The Strategic Mapping and Modelling dataset for Largs, Cartineholm, Girvan, Underwood Cumnock and the Meadowhead Catchment completed by Scottish Water;
- The Brodick and Lamash Flood Risk Assessments and the Option Appraisal has been completed;
- Surface Water Management Plans have been completed for Saltcoats, Ardrossan, Stevenston & Kilwinning (SASK); Irvine, Kilmarnock, Ayr, Prestwick and Dundonald; and
- Beach nourishment actions in Ayr and Troon continue to be successful in the propagation of natural sand dunes.

### Significant Deviations from the Plan

The status of the planned actions is summarised in Figure 2 on page 11 of this report. Further details are included in the relevant PVA summary table in Section 4 of this report.

No significant deviations from the Plan are considered to have occurred.

### Significant Challenges

Based on a review of the assessment of the progress of actions detailed in this Final Report, the following key challenges and issues have been identified, some of which have had an impact on the delivery of actions to manage flood risk. Where these challenges have had an impact on the delivery of specific actions, this impact is detailed in the relevant PVA Summary Table in Section 4 of this report.

#### *Significant weather events*

Whilst occasional flooding has occurred within the Ayrshire LPD over recent years, the area has

generally not experienced the exceptional flooding witnessed in other parts of Scotland e.g. Ballater and the Scottish Borders. Storms over the 2015/16 winter period, including Storm Frank, brought some flooding to the area. When flooding does occur, resources are directed away from strategic planning to respond to the incident.

### *COVID-19 Pandemic*

The COVID pandemic has impacted the delivery of Cycle 1 actions including a requirement to suspend flood risk management construction works as part of the national effort to minimise the spread of the virus during the first national lockdown. The pandemic also disrupted flood risk management studies and flood modelling due to the transition to home working and the challenges of effectively consulting and engaging with flood vulnerable communities. These impacts have resulted in higher implementation costs and programme delays.

### *Resources*

Whilst the majority of actions have either been progressed in line or have advanced further than set out in the Plan, the primary reason for actions not progressing as far as intended was a challenging resource environment. A range of resources were required to progress the actions set out in the Plan to reduce flood risk. These include the authorities responsible for progressing individual actions being able to allocate sufficient funding for that purpose.

The available human resource, with the necessary skills to manage and develop solutions to reduce flood risk, has also constrained progress. Much of this human resource pressure has arisen from the increased level of investment in flood risk management across Scotland and the wider UK, leading to challenging recruitment. This pressure is compounded by flood risk management demanding particular technical skills. This human resource pressure has been observed within the authorities responsible for progressing individual actions and the engineering consultants that these authorities seek to engage to support the development of solutions.

### *Technical Complexity*

Developing an understanding of how flooding occurs and the most appropriate combination of solutions to reduce flood risk is technically challenging, including the need to build complex computer models to understand how storm events, tides, watercourse geometry, topography, land use and climate change all interact to cause flooding. This challenge has impacted progress on a number of actions which has delayed progress on subsequent actions. More appropriate technical solutions have also been identified for a number of actions, compared to the way forward envisaged when the Plan was prepared but these enhanced solutions, particularly in relation to strategic mapping and modelling, have taken longer to implement.

## *Cyber-attack on SEPA*

On 24 December 2020, SEPA was subject to a serious and complex cyber-attack, which significantly impacted the organisation, staff, public and private partners, and the communities who rely on SEPA's services. Since the attack, SEPA has worked with Scottish Government, Police Scotland, the National Cyber Security Centre (NCSC) and the Scottish Business Resilience Centre (SBRC), to a clear recovery strategy. The incident has, however, temporarily impacted progress on a number of actions such as new flood warnings, mapping and modelling projects and some engagement activities. Many of these projects are still going ahead but the timescales for them have been adjusted.

## The Next Planning Cycle

This report marks the completion of Cycle 1 and we are now transitioning into Cycle 2. The Flood Risk Management Plan for Cycle 2 can be accessed via the following link:

<https://www2.sepa.org.uk/frmplans/documents/lpd12-ayrshire-frmp-2021.pdf>

The Cycle 2 Local Flood Risk Management Plan was published in December 2022 and can be accessed via the following link:

<https://www.north-ayrshire.gov.uk/community-safety/flooding/flood-risk-management-plan.aspx>

Many of the Cycle 1 actions were to undertake studies that have led to the identification of further actions to be implemented in Cycle 2 and beyond. For example, a flood protection study may recommend that a community flood action group is set up to increase resilience to flooding, or that flood defences are constructed.

## Conclusions

Overall, through partnership working, by delivering the actions set out in the Ayrshire LFRMP we have reduced flood risk and helped to inform future actions to further reduce flood risk that will be progressed during Cycle 2 and subsequent cycles. Whilst the majority of actions have either been progressed in line or have advanced further than set out in the Plan, a number of actions have not progressed as far as intended, primarily due to a lack of resources. Other actions have been delayed where they have been dependent on the results from earlier studies. Some actions have also been superseded by a change in approach that will deliver better outputs but at a later date.

### 3. Assessment of Progress

This section sets out an assessment of the progress towards implementing the actions set out in the Local Flood Risk Management Plan. There are actions that apply across the whole of the Ayrshire LPD and actions that are specific to each of the 19 Potentially Vulnerable Areas (as defined under Section 13 of the Act) in the Ayrshire LPD, which are shown below in Figure 1.

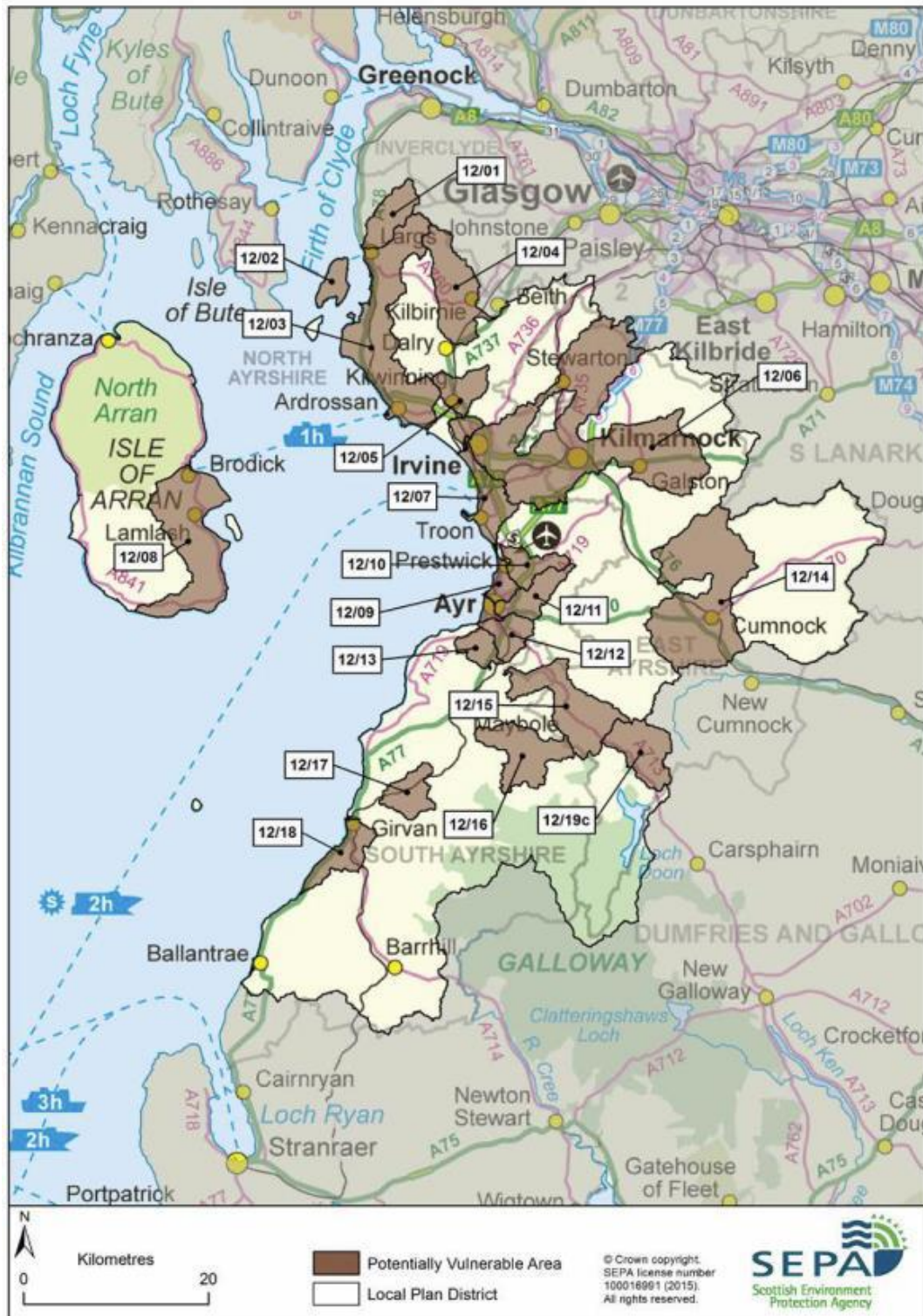


Figure 1: The Ayrshire Local Plan District with Potentially Vulnerable Areas identified [Reproduced from Ayrshire Local Plan District Flood Risk Management Strategy, SEPA (December 2015)]



A progress summary of the actions set out in the First Ayrshire Local Flood Risk Management Plan is shown overleaf in Figure 2.

Progress is shown using a traffic light system based on data collected during February 2022, where each item is marked as Red, Amber or Green (RAG) to describe the status of the action as follows:

**Green** – Action has been completed.

**Amber** – Action has commenced but has not progressed as far as envisaged in the Plan.

**Red** – Action has not commenced.

The distribution of actions by Potentially Vulnerable Area is shown in Figure 2. Further detail on specific actions can be found in the relevant Potentially Vulnerable Area section within Section 4.

Potentially Vulnerable Area	Flood protection schemes / works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan / study	Strategic mapping and modelling Scottish	Strategic mapping & modelling SEPA (coastal)	Strategic mapping and modelling SEPA (Surface Water)	Strategic mapping and modelling SEPA (Rivers)	Maintain flood protection scheme	Maintain flood warning	Flood forecasting	Property level protection scheme	Community flood action groups	Self help	Awareness raising	Maintenance	Emergency plans / response	Planning policies
12/01 Noddsdale Water				✓			✓						✓		✓	✓	✓	✓	✓	✓
12/02 Great Cumbrae Island				✓							✓	✓	✓			✓	✓	✓	✓	✓
12/03 Largs to Stevenston				✓		✓	✓				✓	✓	✓		✓	✓	✓	✓	✓	✓
12/04 Upper Garnock Catchment	✓		✓		✓		✓						✓			✓	✓	✓	✓	✓
12/05 Kilwinning			✓	✓		✓	✓						✓			✓	✓	✓	✓	✓
12/06 River Irvine and Annick Water			✓	✓		✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
12/07 Irvine to Troon		✓		✓		✓	✓				✓	✓	✓			✓	✓	✓	✓	✓
12/08 Isle of Arran				✓							✓	✓	✓			✓	✓	✓	✓	✓
12/09 Prestwick to Ayr		✓		✓		✓	✓				✓	✓	✓			✓	✓	✓	✓	✓
12/10 Pow Burn Catchment			✓			✓	✓						✓			✓	✓	✓	✓	✓
12/11 River Ayr			✓			✓	✓						✓			✓	✓	✓	✓	✓
12/12 Ayr east							✓				✓		✓			✓	✓	✓	✓	✓
12/13 Ayr south							✓						✓			✓	✓	✓	✓	✓
12/14 Cumnock and Catrine							✓						✓	✓		✓	✓	✓	✓	✓
12/15 Dalrymple and Patna				✓						✓			✓			✓	✓	✓	✓	✓
12/16 Straiton													✓			✓	✓	✓	✓	✓
12/17 Dailly													✓			✓	✓	✓	✓	✓
12/18 Girvan				✓			✓			✓	✓	✓	✓			✓	✓	✓	✓	✓
12/19c Dalmellington				✓									✓			✓	✓	✓	✓	✓

Figure 2: Summary of progress of actions to manage flood risk in the Potentially Vulnerable Areas (PVAs) of the Ayrshire Local Plan District

Note: ticked boxes confirm that the action is complete or that it is envisaged to be complete by the publication date of this final progress report.

## 4. Progress with PVA-specific Actions

### Actions applicable across the Local Plan District

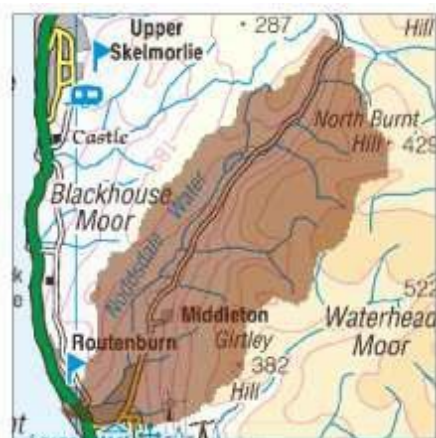
Some flood risk management objectives and actions apply to all areas, whether designated as a Potentially Vulnerable Area or not. For example, flood risk can be managed through national planning policy or as part of ongoing statutory duties discharged by local authorities.

The Local Plan District-wide actions are reported in the following Summary of Progress Tables for each PVA but are denoted by an asterisk.

This section sets out an assessment of the progress towards implementing both the actions that are specific to each of the 19 Potentially Vulnerable Areas (PVAs) and the area-wide actions that apply to Ayrshire Local Plan District.

## 4.1 Noddsdale Water (Potentially Vulnerable Area 12/01)

Local Plan District	Local authority	Main catchment
Ayrshire	North Ayrshire Council	Noddsdale Water



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### Summary of Progress for Noddsdale Water

There are approximately 30 residential properties at risk of flooding. The Annual Average Damages are approximately £68,000. Further information can be found in the Ayrshire Local FRMP under PVA 12/01 please click [here](#).

Progress has been made with the completion of the Flood Study for the Brisbane Glen Culvert, including natural flood management options and the viability of property level protection. Largs has not been exposed to any significant recent weather events.

### Overview of actions to manage flooding in Noddsdale Water

PVA	Flood protection scheme / works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan / study	Strategic mapping & modelling (Scottish Water)	Strategic mapping & modelling (Coastal)	Strategic mapping & modelling (Surface Water)	Strategic mapping & modelling (Rivers)	Maintain flood protection scheme*	Maintain flood warning	Flood forecasting	Property level protection scheme	Community flood action groups	Self help	Awareness raising	Maintenance	Emergency plans / response	Planning policies
12/01				G			G		A				G		G	G	G	G	G	G

## Summary of progress of actions to manage flood risk in the Noddsdale Water (PVA 12/01)

Action	Status	Description	Dates	Progress in Delivery, including key deliverables and dates	Revised dates and planned actions to complete / address delay
Flood protection study	G	The Council will assess the flood mitigation options identified by the Largs Culvert Realignment Feasibility Report completed in early 2016 in order to determine the outline design work for a flood protection scheme.	01/01/2016-31/12/2016	<p>A flood study with option appraisal for the culvert realignment was completed in early 2016, which investigated the feasibility of a flood protection scheme focussing on realigning culverts in the Brisbane Glen Road area and property level protection. This study also considered the potential for natural flood management to reduce runoff to the small burns in the area and other actions to select the most sustainable combination of actions. The Cost Benefit Ratio is around 0.43</p> <p>The completed study found that the prospective options for improving the culverts at Brisbane Glen Road would not be economically viable. No further studies are planned but the culverts shall continue to be assessed by North Ayrshire Council for clearance and repair works to minimise flood risk.</p>	N/A.

Strategic mapping and modelling - Section 16 assessment		Scottish Water will undertake further investigation and modelling in the Largs sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.	01/01/2018-31/12/2020	The Scottish Water assessment of flood risk within the sewer catchment has been completed. The assessment is now completed and has been shared with the Local Authority.	N/A.
Strategic mapping and modelling – Surface Water	A	SEPA will be seeking to incorporate additional surface water hazard mapping information into the flood maps to improve understanding of flood risk. Approximately 2,100km <sup>2</sup> of improved data is currently available within this Local Plan District.	01/06/2016-22/06/2022	SEPA's current Surface water hazard maps use design rainfall estimates based on FEH99 methodology, this has now been superseded by FEH22 methodology. The FEH22 dataset contains the latest science and understanding of rainfall across Scotland and represents a significant change in rainfall amounts compared to FEH99 dataset, as such it is no longer consider appropriate to deliver this action as originally intended. This action will not be taken forwards as described. A major national update of the surface water maps is underway which will deliver updated surface water flooding maps for Scotland representing the latest scientific understanding.	The national surface water flooding modelling project will be completed in 2023. The outputs from this will be used to update SEPA maps early in cycle 2 and will inform SEPA's flood risk assessments for the next flood risk management cycle.

Flood forecasting*	G	<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information please visit SEPA's website.</p>	22/12/2015-22/06/2022	<p>SEPA continues to improve the Scottish Flood Forecasting Service with the Met Office, with daily Flood Guidance Statements and regional Flood Alerts issued as required to enable communities and responders to reduce the impacts of flooding. SEPA in partnership with the Met Office has developed a public version of the daily Flood Guidance Statement, the Scottish Flood Forecast, to provide better and earlier information to the public. A beta version of this product was launched in May 2022. It will be refined in the wake of user feedback. A more focussed version of the product, producing guidance at a local level, is planned for the next flood risk management cycle. Options for developing forecasts of surface water flooding have been published in 2022 to help urban areas and the transport network improve their resilience to and preparedness for flooding. The development and wider roll-out of this service is being considered alongside the technical, resource and</p>	N/A.
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				communication challenges associated with providing surface water flooding guidance.	
Self help*	G	<p>Everyone is responsible for protecting themselves and their property from flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline</p> <p>The Councils, SEPA and Scottish Water will continue to engage with responsible Authorities and all other stakeholders, including community groups and the public, to raise awareness of flood risk and how those affected can be better prepared. Further detail can be found in the Council's and Scottish Flood Forum websites.</p>	01/06/2016-22/06/2022	<p>North Ayrshire Council raised awareness about flood risk via a separate action noted for this PVA. Specific awareness raising about flood risk matters was achieved when the Council's flooding team responded to reported flood incidents, enquiries from prospective developers &amp; flood risk consultants and when responding to planning application consultations.</p>	N/A.
Community flood action groups	G	<p>Although not part of a community flood action group the public take an active interest in flooding issues within Largs and inform the</p>	01/06/2016-22/06/2022	<p>North Ayrshire Council engaged with responsible authorities and all other stakeholders, including community groups and the public to raise</p>	N/A.



		<p>Council about debris in the watercourse. North Ayrshire Council will liaise with the group through Community Council meetings and directly to the public.</p>		<p>awareness of flood risk and how those affected can be better prepared.</p>	
<p>Awareness raising*</p>	<p>G</p>	<p>North Ayrshire Council, SEPA and Scottish Water collectively work to raise awareness of flood risk and how those affected can be better prepared. Through the continued development of flood schemes and studies at higher risk locations, officers from the Council's Flood Risk Management Team attend community council events to discuss elements of flood risk management. Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Scottish Water will provide targeted flooding communications for Scottish Water</p>	<p>22/12/2015-22/06/2022</p>	<p>SEPA continues to work with others to raise awareness of flood risk and its flood warning service. It has participated in local activities including school / education and community resilience activities when able. Some planned activities notably in person joint events have been limited or delayed due to Covid 19.</p> <p>North Ayrshire Council raised awareness about flood risk matters by updating the Council's website and by supporting Local Flood Emergency Groups.</p> <p>Project related public consultations affecting Largs were carried out by North Ayrshire Council.</p>	<p>N/A.</p>

		specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.			
Maintenance*	G	Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. They produce schedules of clearance and repair works and make these available for public inspection. Scottish Water undertake 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.	01/06/2016-01/06/2022	North Ayrshire Council inspected trash screens, watercourses and coastal flood protection structures in accordance with the published inspection programme throughout the 1 <sup>st</sup> Local Flood Risk Management Plan cycle.	N/A.
Emergency plans/response*	G	Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on	01/06/2016-01/06/2022	North Ayrshire Council commissioned emergency plans, aimed at Category 1 and 2 responders, for population centres within North Ayrshire that have a notable flood risk. These plans were completed in September 2020.	N/A.

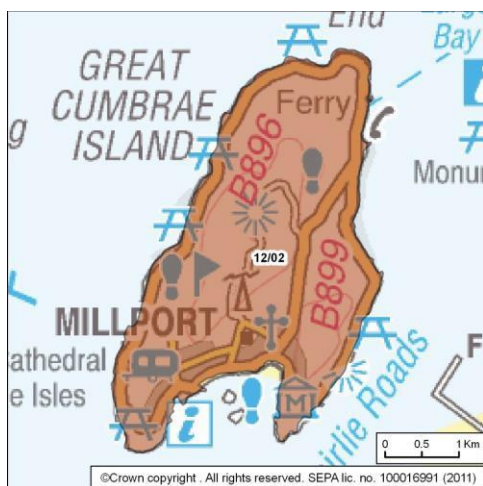
		<p>emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders. Scottish Water are a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required. The emergency response by these organisations is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p>			
Planning policies*	G	<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the</p>	01/06/2016-01/06/2022	<p>SEPA continues to exercise its planning functions with a view to reducing overall flood risk. We effectively contribute to the delivery of sustainable flood risk management and we support the delivery of FRM Plans and Local FRM Plans. In line with the management actions that accord with national planning policies, we have and will continue to object to</p>	N/A.

	<p>resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p>	<p>development at medium to high risk of flooding when it is contrary to the risk framework set out in Scottish Planning Policy. We have and will continue to engage from the start of the development plan process and encourage planning authorities to undertake a Strategic Flood Risk Assessment to inform their spatial strategy. We remain committed to exercising our planning functions with a view to reducing overall flood risk, and when a new national planning policy context is finalised later in 2022 via the National Planning Framework 4, we will take the same approach.</p> <p>North Ayrshire Council completed a Strategic Flood Risk Assessment for LDP2 in May 2018. In addition, the Ayrshire Shoreline Management Plan (SMP), which prompts land use, policy changes and further studies to allow physical protective measures to take place in the future was adopted by North Ayrshire Council and South Ayrshire Council in September 2018.</p>	
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				National Planning Framework 4 is expected to be adopted by the Scottish Parliament later in 2022 and will become part of the Development Plan, ensuring national planning policies on flooding are applied in local decision making.	
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## 4.2 Great Cumbrae Island (Potentially Vulnerable Area 12/02)

<b>Local Plan District</b>	<b>Local authority</b>	<b>Main catchment</b>
Ayrshire	North Ayrshire Council	Great Cumbrae coastal



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### Summary of Progress for Great Cumbrae Island

Local studies have shown approximately 800 properties to be at risk. The Annual Average Damages are approximately £2.2 million. Further information can be found in Ayrshire Local FRMP under PVA 12/02, please click [here](#).

Key progress has been made in Millport with the confirmation of the Millport Coastal Flood Protection Scheme and the Mill Burn Flood Protection Scheme. The Ayrshire Shoreline Management Plan was adopted by both North and South Ayrshire Councils in September/October 2018.

## Overview of actions to manage flooding in Great Cumbrae Island

PVA	Flood protection scheme / works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan / study	Strategic mapping & modelling (Scottish Water)	Strategic mapping & modelling (Coastal)	Strategic mapping & modelling (Surface Water)	Strategic mapping & modelling (Rivers)	Maintain flood protection scheme*	Maintain flood warning	Flood forecasting	Property level protection scheme	Community flood action groups	Self help	Awareness raising	Maintenance	Emergency plans / response	Planning policies
12/02	A			G					A		G	G	G			G	G	G	G	G

## Summary of progress of actions to manage flood risk in the Great Cumbrae Island (PVA 12/02)

Action	Status	Description	Dates	Progress in Delivery, including key deliverables and dates	Revised dates and planned actions to complete / address delay
Flood protection scheme/works	A	Future investigations will look to identify the most sustainable flood mitigation option to manage coastal flooding in Millport. The current option includes the creation of a breakwater with flood walls. It is recommended that the options are further developed, including an assessment of property level protection to supplement the primary actions.	01/06/2016-01/06/2022	North Ayrshire Council confirmed the Millport Coastal Flood Protection Scheme on the 10 <sup>th</sup> of November 2020. The detailed design is complete and the scheme is planned to be implemented during the 2 <sup>nd</sup> Local Flood Risk Management Plan cycle (2022-2028).	The scheme is planned to be implemented during the 2nd Local Flood Risk Management Plan cycle (2022-2028).
	A	It is recommended that the council progress work on the proposed flood protection work on the Mill Burn in Millport. The Mill Burn Flood Risk Assessment has provided information along with an economic appraisal which identifies potential options to mitigate flooding. Initial remedial work has helped to reduce	01/06/2016-01/06/2022	North Ayrshire Council confirmed the Mill Burn Flood Protection Scheme on the 15 <sup>th</sup> of June 2021. The detailed design is underway and the scheme is planned to be implemented during the 2nd Local Flood Risk Management Plan cycle (2022-2028).	The scheme is planned to be implemented during the 2nd Local Flood Risk Management Plan cycle (2022-2028).

Flood protection scheme/works		the level of risk in the area however further analysis should be carried out to establish the remaining level of risk and the most sustainable combination of actions to manage this risk.			
Flood protection study	G	A shoreline management plan is recommended, this study is not limited to Potentially Vulnerable Areas but should cover the whole of the Ayrshire coastline and any areas beyond this which may be influenced by changes in coastal processes. The study should investigate flooding and coastal erosion, wave overtopping and the current coastal protection offered. The study will help to develop an understanding of coastal issues and identify where further work may be required to mitigate against flooding.		The Ayrshire Shoreline Management Plan was completed and was adopted by both North Ayrshire Council and South Ayrshire Council in September/October 2018.	N/A.
Strategic mapping and modelling – Surface Water	A	SEPA will update strategic surface water mapping in some parts of this catchment to improve understanding of flood risk.	01/01/2016-31/12/2016	SEPA's current Surface water hazard maps use design rainfall estimates based on FEH99 methodology, this has now been superseded by FEH22 methodology. The FEH22 dataset contains the latest science and	The national surface water flooding modelling project will be completed in 2023. The outputs from this will be used to update SEPA maps early in cycle 2 and will inform SEPA's flood risk



				understanding of rainfall across Scotland and represents a significant change in rainfall amounts compared to FEH99 dataset, as such it is no longer consider appropriate to deliver this action as originally intended. This action will not be taken forwards as described. A major national update of the surface water maps is underway which will deliver updated surface water flooding maps for Scotland representing the latest scientific understanding.	assessments for the next flood risk management cycle.
Maintain flood protection scheme	G	North Ayrshire Council to continue to inspect and maintain the existing Millport Coastal Flood defences, which will continue to manage flooding according to the design standard at the time of construction.	01/06/2016-01/02/2022	The Millport coastal flood defence structures were either inspected on an annual basis throughout the 1 <sup>st</sup> Local Flood Risk Management Plan cycle and were subject to a principal inspection every three years or were inspected in accordance with the inspection schedule published by North Ayrshire Council.	N/A.
Maintain flood warning Millport Seafront flood warning area	G	SEPA will continue to maintain the Millport Seafront flood warning area, which is part of the Firth of Clyde coastal flood warning scheme. When flood events occur in an area	22/12/2015-22/06/2022	SEPA has continued to operate the flood warning service.	N/A.

		with a flood warning service, SEPA will seek to verify and validate the warning service. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.			
Flood forecasting*	G	SEPA will continue to maintain the the Millport Seafront flood warning area, which is part of the Firth of Clyde coastal flood warning scheme. When flood events occur in an area with a flood warning service, SEPA will seek to verify and validate the warning service. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.	22/12/2015-22/06/2022	SEPA continues to improve the Scottish Flood Forecasting Service with the Met Office, with daily Flood Guidance Statements and regional Flood Alerts issued as required to enable communities and responders to reduce the impacts of flooding. SEPA in partnership with the Met Office has developed a public version of the daily Flood Guidance Statement, the Scottish Flood Forecast, to provide better and earlier information to the public. A beta version of this product was launched in May 2022. It will be refined in the wake of user feedback. A more focussed version of the product, producing guidance at a local level, is planned for the next flood risk management cycle. Options for developing forecasts of surface water flooding have been published in 2022	N/A

				to help urban areas and the transport network improve their resilience to and preparedness for flooding. The development and wider roll-out of this service is being considered alongside the technical, resource and communication challenges associated with providing surface water flooding guidance.	
Self help*	G	<p>Everyone is responsible for protecting themselves and their property from flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline</p> <p>The Councils, SEPA and Scottish Water will continue to engage with responsible Authorities and all other stakeholders, including community groups and the public to raise awareness of flood risk and how those affected can be better prepared. Further detail can be</p>	01/06/2016-22/06/2022	<p>North Ayrshire Council raised awareness about flood risk via a separate action noted for this PVA. Specific awareness raising about flood risk matters was achieved when the Council's flooding team responded to reported flood incidents, enquiries from prospective developers &amp; flood risk consultants and when responding to planning application consultations.</p>	N/A.

		found in the Councils and Scottish Flood Forum websites.			
Awareness raising*	G	<p>North Ayrshire Council, SEPA and Scottish Water collectively work to raise awareness of flood risk and how those affected can be better prepared. Through the continued development of flood schemes and studies at higher risk locations, officers from the Council's Flood Risk Management Team attend community council events to discuss elements of flood risk management. Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the</p>	22/12/2015-22/06/2022	<p>SEPA continues to work with others to raise awareness of flood risk and its flood warning service. It has participated in local activities including school / education and community resilience activities when able. Some planned activities notably in person joint events have been limited or delayed due to Covid 19.</p> <p>North Ayrshire Council raised awareness about flood risk matters by updating the Council's website and by supporting Local Flood Emergency Groups.</p> <p>Project related public consultations affecting the Great Cumbrae PVA were carried out by North Ayrshire Council.</p>	N/A

		public on large capital projects and detailed local studies.			
Maintenance*	G	Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. They produce schedules of clearance and repair works and make these available for public inspection. Scottish Water undertake 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.	01/06/2016-01/06/2022	North Ayrshire Council inspected trash screens, watercourses and coastal flood protection structures in accordance with the published inspection programme throughout the 1st Local Flood Risk Management Plan cycle.	N/A.
Emergency plans/response*	G	Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2	01/06/2016-01/06/2022	North Ayrshire Council commissioned emergency plans, aimed at Category 1 and 2 responders, for population centres within North Ayrshire that have a notable flood risk. These plans were completed in September 2020.	N/A.

		<p>Responders. Scottish Water are a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required. The emergency response by these organisations is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p>			
Planning policies*	G	<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach,</p>	01/06/2016-01/06/2022	<p>SEPA continues to exercise its planning functions with a view to reducing overall flood risk. We effectively contribute to the delivery of sustainable flood risk management and we support the delivery of FRM Plans and Local FRM Plans. In line with the management actions that accord with national planning policies, we have and will continue to object to development at medium to high risk of flooding when it is contrary to the risk framework set out in Scottish Planning Policy. We have and will continue to engage from the start of the development plan process and</p>	N/A.

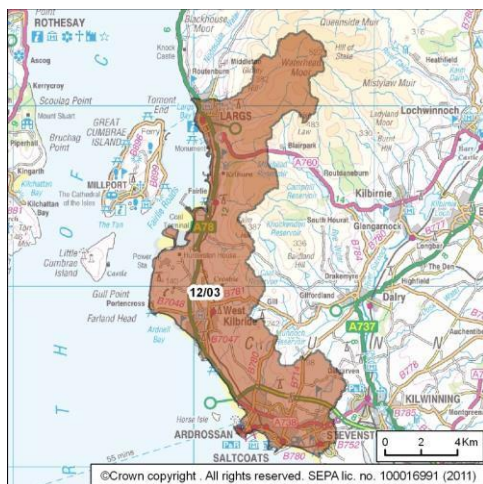
		<p>new development in areas with medium to high likelihood of flooding should be avoided.</p>		<p>encourage planning authorities to undertake a Strategic Flood Risk Assessment to inform their spatial strategy. We remain committed to exercising our planning functions with a view to reducing overall flood risk, and when a new national planning policy context is finalised later in 2022 via the National Planning Framework 4, we will take the same approach.</p> <p>North Ayrshire Council completed a Strategic Flood Risk Assessment for LDP2 in May 2018. In addition, the Ayrshire Shoreline Management Plan (SMP), which prompts land use, policy changes and further studies to allow physical protective measures to take place in the future was adopted by North Ayrshire Council and South Ayrshire Council in September 2018. National Planning Framework 4 is expected to be adopted by the Scottish Parliament later in 2022 and will become part of the Development Plan, ensuring national planning policies on</p>	
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				flooding are applied in local decision making.	
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## 4.3 Largs to Stevenston (Potentially Vulnerable Area 12/03)

Local Plan District	Local authority	Main catchment
Ayrshire	North Ayrshire Council	Saltcoats to Largs coastal



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### Summary of Progress for Largs to Stevenston

There are approximately 960 residential properties at risk of flooding. The Annual Average Damages are approximately £1.2 million. Further information can be found in the Ayrshire Local FRMP under PVA 12/03, please click [here](#).

Key progress has been made with the completion of the Stevenston Point ICS Study and the associated Saltcoats, Ardrossan, Stevenston & Kilwinning (SASK) Surface Water Management Plan. The Ayrshire Shoreline Management Plan was completed and adopted by both North and South Ayrshire Councils in September/October 2018.

The preferred option for the upgrade of the Keppen Burn culvert has been identified and the design of the Fairlie Flood Protection Scheme is an action in the published Cycle 2 Flood Risk Management Plan.

### Overview of actions to manage flooding in Largs to Stevenston

PVA	Flood protection scheme / works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan / study	Strategic mapping & modelling (Scottish Water)	Strategic mapping & modelling (Coastal)	Strategic mapping & modelling (Surface Water)	Strategic mapping & modelling (Rivers)	Maintain flood protection scheme*	Maintain flood warning	Flood forecasting	Property level protection scheme	Community flood action groups	Self help	Awareness raising	Maintenance	Emergency plans / response	Planning policies
12/03	A			G		G	G	A	A		G	G	G		G	G	G	G	G	G

## Summary of progress of actions to manage flood risk in the Largs to Stevenston (PVA 12/03)

Action	Status	Description	Dates	Progress in Delivery, including key deliverables and dates	Revised dates and planned actions to complete / address delay
Flood protection scheme/works	A	North Ayrshire Council, Transport Scotland and Network Rail are all working in partnership on the Keppen Burn Culvert upgrade. All three organisations have an approved prioritised worklist for the next 3-5 years based on the organisations own objectives and funding availability. The Keppen Burn Culvert upgrade will be assessed by all three organisations separately and will fit into the already prioritised worklist.	01/06/2016-01/06/2022	The preferred option for the Keppen Burn Culvert upgrade has been identified and design work is programmed to be completed during the 2 <sup>nd</sup> Local Flood Risk Management Plan cycle (2022-2028), depending on the scheme qualifying for Scottish Government capital grant funding.	The design of the Fairlie Flood Protection Scheme is programmed to be completed during the 2nd Local Flood Risk Management Plan cycle (2022-2028), depending on the scheme qualifying for Scottish Government capital grant funding.
Flood protection scheme/works	G	Network Rail will carry out civil engineering work which will reduce flood risk to identified sections of the rail network within this PVA, including work to Saltcoats Coastal Defence.	01/01/2019-31/12/2024	Network Rail repaired Saltcoats Coastal Defence (asset ref. CD 200/433) in 2016. The works included the filling of voids, wall toe protection and concrete repairs along 700m length of wall to prevent water ingress.	N/A.
Flood protection study	G	A study is planned to further investigate the river and coastal	01/06/2016-01/06/2022	The Gogo Water Flood Risk Assessment Update was completed in	N/A

		flood risk in Largs and if there is significant interaction between the two. The study will look at updating the existing modelling on the Gogo Water, and further investigate enhancing and extending the existing coastal defences.		2020, the Largs Coastal Flood Risk Appraisal was completed in 2019 the Ayrshire Shoreline Management Plan was completed in 2018. A Natural Flood Management Study for the Gogo Water has been completed.	
Flood protection study	G	A shoreline management plan is recommended, this study is not limited to Potentially Vulnerable Areas but should cover the whole of the Ayrshire coastline and any areas beyond this which may be influenced by changes in coastal processes. The study should investigate flooding and coastal erosion, wave overtopping and the current coastal protection offered. The study will help to develop an understanding of coastal issues and identify where further work may be required to mitigate against flooding.	01/06/2016-01/06/2022	The Ayrshire Shoreline Management Plan was completed and was adopted by both North Ayrshire Council and South Ayrshire Council in September/October 2018.	N/A.
Surface water plan/study	G	An integrated catchment study covering the Stevenston Point catchment will be carried out. This study will help support the surface water management planning	01/06/2016-01/06/2022	The Integrated Catchment Study for Stevenston Point has been completed. Outputs have been shared with local authorities to inform Surface Water Management Plans.	N/A.

		process in Kilwinning, Saltcoats, Ardrossan and Stevenston. The study will improve knowledge and understanding of the interactions between the above ground and below ground drainage network e.g. with the sewer network, watercourses and the sea.			
Surface water plan/study		North Ayrshire Council will develop a surface water management plan or plans to cover Kilwinning, Saltcoats, Ardrossan and Stevenston which set objectives for the management of surface water flood risk and identify the most sustainable actions to achieve the objectives. Scottish Water will provide local knowledge and understanding of the sewer network. This includes Scottish Water corporate data (as applicable) and outputs of the Stevenston Point integrated catchment study and Section 16 modelling, to assist with the surface water management planning process.	01/06/2016-01/06/2022	The Saltcoats, Ardrossan, Stevenston & Kilwinning (SASK) Surface Water Management Plan was completed in 2021.	N/A.

Strategic mapping and modelling - Section 16 assessment		Scottish Water will undertake further investigation and modelling in the Three Town sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.	01/01/2018-31/12/2020	The Scottish Water assessment of flood risk within the sewer catchment has been completed.	N/A.
Strategic mapping and modelling – Coastal	A	SEPA will seek to develop flood mapping in the Ayr to Ardrossan area to improve understanding of coastal flood risk. The extent and timing of improvements will depend on detailed scoping and data availability. Where this work coincides with local authority studies, SEPA will work collaboratively to ensure consistent modelling approaches are applied. The coastal mapping and modelling process will start in 2016, with early work focussing on methodology development and data collection. Once this stage has been completed a thorough review will be carried out to identify the final mapping	22/12/2015-22/06/2022	Work completed to date includes the production of key data sets including extreme water levels and offshore wave and wind conditions to support future coastal modelling work.	SEPA will complete a review of coastal flood hazard mapping in south west Scotland including in this area. This includes identifying where taking account of the impact of waves on flooding from the sea may be required. SEPA will collect the required coastal defence asset and other information necessary to progress with improved flood modelling and mapping in the highest priority areas taking account of wave overtopping where required. SEPA will look for opportunities to progress future modelling work in a way that best supports improvements to SEPA's Coastal Flood Warning Schemes.

		improvements that can be made in the area.			Expected to progress to the next stage around the middle of cycle 2 and complete early in the following cycle, subject to funding.
Strategic mapping and modelling – Surface water	A	SEPA will be seeking to incorporate additional surface water hazard mapping information into the flood maps to improve understanding of flood risk. Approximately 2,100km <sup>2</sup> of improved data is currently available within this Local Plan District.	01/06/2016-22/06/2022	SEPA's current Surface water hazard maps use design rainfall estimates based on FEH99 methodology, this has now been superseded by FEH22 methodology. The FEH22 dataset contains the latest science and understanding of rainfall across Scotland and represents a significant change in rainfall amounts compared to FEH99 dataset, as such it is no longer consider appropriate to deliver this action as originally intended. This action will not be taken forwards as described. A major national update of the surface water maps is underway which will deliver updated surface water flooding maps for Scotland representing the latest scientific understanding.	The national surface water flooding modelling project will be completed in 2023. The outputs from this will be used to update SEPA maps early in cycle 2 and will inform SEPA's flood risk assessments for the next flood risk management cycle.
Maintain flood protection scheme	G	Largs Flood Protection Scheme was constructed in 2002 and consists of a concrete seawall from Old Fish Quay to Gogo Water. This scheme	01/06/2016-01/06/2022	The Largs coastal flood defence structures were inspected on an annual basis throughout the 1st Local Flood Risk Management Plan cycle	N/A.

		<p>built to provide protection to the area up to a 200-year flood.</p> <p>The Gogo Street Flood Protection Scheme was completed in 2013.</p>		<p>and were subject to a principal inspection every three years.</p> <p>Other flood risk management assets were inspected in accordance with the inspection schedule published by North Ayrshire Council.</p>	
Maintain flood protection scheme		<p>Saltcoats Flood Protection Scheme was constructed in 2006 and consists of breakwaters, seawalls and flood banks at Outer Nebbock. This scheme provides protection to the area up to a 200-year flood.</p>	01/06/2016-01/06/2022	<p>The Saltcoats flood defences were either inspected on an annual basis throughout the 1st Local Flood Risk Management Plan cycle and were subject to a principal inspection every three years or were inspected in accordance with the inspection schedule published by North Ayrshire Council.</p>	N/A.
Maintain flood warning Largs Fort Street, Largs Seafront and Saltcoats Harbour flood warning areas	G	<p>SEPA will continue to maintain the Largs Fort Street, Largs Seafront and Saltcoats Harbour flood warning areas, which are part of the Firth of Clyde coastal flood warning scheme. When flood events occur in an area with a flood warning service, SEPA will seek to verify and validate the warning service. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.</p>	22/12/2015-22/06/2022	<p>SEPA has continued to operate the flood warning service.</p>	N/A.

Flood forecasting*	G	<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information please visit SEPA's website.</p>	22/12/2015-22/06/2022	<p>SEPA continues to improve the Scottish Flood Forecasting Service with the Met Office, with daily Flood Guidance Statements and regional Flood Alerts issued as required to enable communities and responders to reduce the impacts of flooding. SEPA in partnership with the Met Office has developed a public version of the daily Flood Guidance Statement, the Scottish Flood Forecast, to provide better and earlier information to the public. A beta version of this product was launched in May 2022. It will be refined in the wake of user feedback. A more focussed version of the product, producing guidance at a local level, is planned for the next flood risk management cycle. Options for developing forecasts of surface water flooding have been published in 2022 to help urban areas and the transport network improve their resilience to and preparedness for flooding. The development and wider roll-out of this service is being considered alongside the technical, resource and</p>	N/A.
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				communication challenges associated with providing surface water flooding guidance.	
Self help*	G	<p>Everyone is responsible for protecting themselves and their property from flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline</p> <p>The Councils, SEPA and Scottish Water will continue to engage with responsible Authorities and all other stakeholders, including community groups and the public to raise awareness of flood risk and how those affected can be better prepared. Further detail can be found in the Councils and Scottish Flood Forum websites.</p>	01/04/2016-22/06/2022	<p>North Ayrshire Council raised awareness about flood risk via a separate action noted for this PVA. Specific awareness raising about flood risk matters was achieved when the Council's flooding team responded to reported flood incidents, enquiries from prospective developers &amp; flood risk consultants and when responding to planning application consultations.</p>	N/A.
Community flood action groups	G	<p>Although not part of a community flood action group the public take an active interest in flooding issues within Largs and inform the</p>	01/06/2016-22/06/2022	<p>North Ayrshire Council engaged with responsible authorities and all other stakeholders, including community groups and the public to raise</p>	N/A.

		Council about debris in the watercourse. North Ayrshire Council will liaise with the group through Community Council meetings and directly to the public.		awareness of flood risk and how those affected can be better prepared.	
Maintenance*	G	Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. They produce schedules of clearance and repair works and make these available for public inspection. Scottish Water undertake 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.	01/06/2016-01/06/2022	North Ayrshire Council inspected trash screens, watercourses and coastal flood protection structures in accordance with the published inspection programme throughout the 1st Local Flood Risk Management Plan cycle.	N/A.
Emergency plans/response*	G	Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on	01/06/2016-01/06/2022	North Ayrshire Council commissioned emergency plans, aimed at Category 1 and 2 responders, for population centres within North Ayrshire that have a notable flood risk. These plans were completed in September 2020.	N/A.

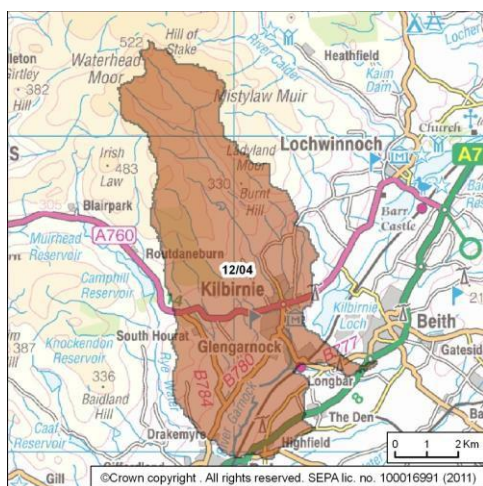
		<p>emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders. Scottish Water are a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required. The emergency response by these organisations is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p>			
Planning policies*	G	<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and</p>	01/06/2016-01/06/2022	<p>SEPA continues to exercise its planning functions with a view to reducing overall flood risk. We effectively contribute to the delivery of sustainable flood risk management and we support the delivery of FRM Plans and Local FRM Plans. In line with the management actions that accord with national planning policies, we have and will continue to object to development at medium to high risk of flooding when it is contrary to the risk framework set out in Scottish Planning</p>	

	<p>to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p>	<p>Policy. We have and will continue to engage from the start of the development plan process and encourage planning authorities to undertake a Strategic Flood Risk Assessment to inform their spatial strategy. We remain committed to exercising our planning functions with a view to reducing overall flood risk, and when a new national planning policy context is finalised later in 2022 via the National Planning Framework 4, we will take the same approach.</p> <p>North Ayrshire Council completed a Strategic Flood Risk Assessment for LDP2 in May 2018. In addition, the Ayrshire Shoreline Management Plan (SMP), which prompts land use, policy changes and further studies to allow physical protective measures to take place in the future was adopted by North Ayrshire Council and South Ayrshire Council in September 2018. National Planning Framework 4 is expected to be adopted by the Scottish Parliament later in 2022 and will</p>	
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				become part of the Development Plan, ensuring national planning policies on flooding are applied in local decision making.	
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## 4.4 Upper Garnock Catchment (Potentially Vulnerable Area 12/04)

Local Plan District	Local authority	Main catchment
Ayrshire	North Ayrshire Council, Renfrewshire Council	River Garnock Catchment



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### Summary of Progress for Upper Garnock Catchment

There are approximately 810 residential properties at risk of flooding. The Annual Average Damages are approximately £790,000. Further information can be found in the Ayrshire Local FRMP under PVA 12/04, please click [here](#).

Key progress has been made with the Upper Garnock Flood Protection Scheme, which is under construction and is projected to be completed by Autumn 2022. The scheme includes the creation of a dam and upstream reservoir north of Kilbirnie and some limited flood walls throughout Glengarnock and Dalry that will protect over 200 properties and businesses in the Garnock Valley.

### Overview of actions to manage flooding in Upper Garnock Catchment

PVA	Flood protection scheme / works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan / study	Strategic mapping & modelling (Scottish Water)	Strategic mapping & modelling (Coastal)	Strategic mapping & modelling (Surface Water)	Strategic mapping & modelling (Rivers)	Maintain flood protection scheme*	Maintain flood warning	Flood forecasting	Property level protection scheme	Community flood action groups	Self help	Awareness raising	Maintenance	Emergency plans / response	Planning policies
12/04	A		G		G		G		A				G			G	G	G	G	G

## Summary of progress of actions to manage flood risk in the Upper Garnock Catchment (PVA 12/04)

Action	Status	Description	Dates	Progress in Delivery, including key deliverables and dates	Revised dates and planned actions to complete / address delay
Flood protection scheme/works	A	North Ayrshire Council are progressing work on the proposed flood protection scheme on the upper River Garnock. The Outline design of the Upper Garnock Flood Protection Scheme and notification period completed in October 2015. A total of five objections were received during this period and the Council is currently trying to resolve these objections with the individuals before making a decision to confirm the scheme either with or without an unresolved objection.	01/06/2016-01/06/2022	North Ayrshire Council confirmed the Upper Garnock Flood Protection Scheme on the 2 <sup>nd</sup> of October 2018. The detailed design was completed and construction of the scheme began in August 2020. Construction work is ongoing and is due to be completed in 2022.	The Upper Garnock Flood Protection Scheme is under construction, which will be completed in the early part of 2 <sup>nd</sup> Local Flood Risk Management Plan cycle (2022-2028).
New flood warning River Garnock	G	SEPA will continue with the development and implementation of a flood warning scheme on the River Garnock. Detail of communities that will benefit from the warnings will be determined during scheme development.	22/12/2015-31/12/2016	SEPA has continued to operate the flood warning service since it was completed earlier in the FRM cycle.	N/A.

Natural Flood Management Study	G	Further investigations will be undertaken which will focus on the potential benefits of natural flood management, including runoff control and sediment, to the tributaries of the River Garnock, and how these combined actions may reduce flood risk on the River Garnock.	01/06/2016-01/06/2022	The Upper Garnock Natural Flood Management Study was completed in 2020.	N/A.
Strategic mapping and modelling – Section 16 assessment	G	Scottish Water will undertake further investigation and modelling in the Stevenson Point sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.	01/01/16-31/12/2020	The Scottish Water assessment of flood risk within the sewer catchment has been completed.	The assessment is now completed and has been shared with Local Authority.
Strategic mapping and modelling – Surface water	A	SEPA will be seeking to incorporate additional surface water hazard mapping information into the flood maps to improve understanding of flood risk. Approximately 2,100km <sup>2</sup> of improved data is currently available within this Local Plan District.	01/06/2016-22/06/2022	SEPA's current Surface water hazard maps use design rainfall estimates based on FEH99 methodology, this has now been superseded by FEH22 methodology. The FEH22 dataset contains the latest science and understanding of rainfall across Scotland and represents a significant change in rainfall amounts compared to FEH99 dataset, as such it is no longer considered appropriate to deliver	The national surface water flooding modelling project will be completed in 2023. The outputs from this will be used to update SEPA maps early in cycle 2 and will inform SEPA's flood risk assessments for the next flood risk management cycle.



				<p>this action as originally intended. This action will not be taken forwards as described. A major national update of the surface water maps is underway which will deliver updated surface water flooding maps for Scotland representing the latest scientific understanding.</p>	
Flood forecasting*	G	<p>SEPA will continue with the development and implementation of a flood warning scheme on the River Garnock. Detail of communities that will benefit from the warnings will be determined during scheme development.</p>	22/12/2015-22/12/2022	<p>SEPA continues to improve the Scottish Flood Forecasting Service with the Met Office, with daily Flood Guidance Statements and regional Flood Alerts issued as required to enable communities and responders to reduce the impacts of flooding. SEPA in partnership with the Met Office has developed a public version of the daily Flood Guidance Statement, the Scottish Flood Forecast, to provide better and earlier information to the public. A beta version of this product was launched in May 2022. It will be refined in the wake of user feedback. A more</p>	N/A

				<p>focused version of the product, producing guidance at a local level, is planned for the next flood risk management cycle. Options for developing forecasts of surface water flooding have been published in 2022 to help urban areas and the transport network improve their resilience to and preparedness for flooding. The development and wider roll-out of this service is being considered alongside the technical, resource and communication challenges associated with providing surface water flooding guidance.</p>	
Self help*	G	<p>Everyone is responsible for protecting themselves and their property from flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline</p> <p>The Councils, SEPA and Scottish Water will continue to engage with responsible</p>	01/04/2016-22/06/2022	<p>North Ayrshire Council raised awareness about flood risk via a separate action noted for this PVA. Specific awareness raising about flood risk matters was achieved when the Council's flooding team responded to reported flood incidents, enquiries from prospective developers &amp; flood risk consultants and when</p>	N/A.

		Authorities and all other stakeholders, including community groups and the public to raise awareness of flood risk and how those affected can be better prepared. Further detail can be found in the Councils and Scottish Flood Forum websites.		responding to planning application consultations.	
Awareness raising*	G	North Ayrshire Council, SEPA and Scottish Water collectively work to raise awareness of flood risk and how those affected can be better prepared. Through the continued development of flood schemes and studies at higher risk locations, officers from the Council's Flood Risk Management Team attend community council events to discuss elements of flood risk management. Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Scottish Water will provide targeted flooding communications for Scottish Water	22/12/2015-22/06/2022	SEPA continues to work with others to raise awareness of flood risk and its flood warning service. It has participated in local activities including school / education and community resilience activities when able. Some planned activities notably in person joint events have been limited or delayed due to Covid 19.  North Ayrshire Council's general awareness raising was a continuous activity via updates to the Council's website. Supporting Local Flood Emergency Groups was an occasional activity in the Upper Garnock PVA.	N/A

		specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.		Project related public consultations affecting the Upper Garnock PVA were carried out.	
Maintenance*	G	Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. They produce schedules of clearance and repair works and make these available for public inspection. Scottish Water undertake 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.	01/06/2016-01/06/2022	North Ayrshire Council inspected trash screens, watercourses and coastal flood protection structures in accordance with the published inspection programme throughout the 1st Local Flood Risk Management Plan cycle.	N/A.
Emergency plans/response*	G	Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders. Scottish Water are a	01/06/2016-01/06/2022	North Ayrshire Council commissioned emergency plans, aimed at Category 1 and 2 responders, for population centres within North Ayrshire that have a notable flood risk. These plans were completed in September 2020.	N/A.

		Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required. The emergency response by these organisations is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.			
Planning policies*	G	Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.	01/06/2016-01/06/2022	SEPA continues to exercise its planning functions with a view to reducing overall flood risk. We effectively contribute to the delivery of sustainable flood risk management and we support the delivery of FRM Plans and Local FRM Plans. In line with the management actions that accord with national planning policies, we have and will continue to object to development at medium to high risk of flooding when it is contrary to the risk framework set out in Scottish Planning Policy. We have and will continue to engage from the start of the development plan process and encourage planning	N/A

				<p>authorities to undertake a Strategic Flood Risk Assessment to inform their spatial strategy. We remain committed to exercising our planning functions with a view to reducing overall flood risk, and when a new national planning policy context is finalised later in 2022 via the National Planning Framework 4, we will take the same approach.</p> <p>North Ayrshire Council completed a Strategic Flood Risk Assessment for LDP2 in May 2018.</p> <p>National Planning Framework 4 is expected to be adopted by the Scottish Parliament later in 2022 and will become part of the Development Plan, ensuring national planning policies on flooding are applied in local decision making.</p>	
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## 4.5 Kilwinning (Potentially Vulnerable Area 12/05)

<b>Local Plan District</b>	<b>Local authority</b>	<b>Main catchment</b>
Ayrshire	North Ayrshire Council	River Garnock



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### Summary of Progress for Kilwinning

There are approximately 170 residential properties at risk of flooding. The Annual Average Damages is approximately £400,000. Further information can be found in the Ayrshire Local FRMP under PVA 12/05, please click [here](#).

Key progress has been made with the completion of the Stevenston Point Integrated Catchment Study and the Saltcoats, Ardrossan, Stevenston & Kilwinning (SASK) Surface Water Management Plan.

### Overview of actions to manage flooding in Kilwinning

PVA	Flood protection scheme / works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan / study	Strategic mapping & modelling (Scottish Water)	Strategic mapping & modelling (Coastal)	Strategic mapping & modelling (Surface Water)	Strategic mapping & modelling (Rivers)	Maintain flood protection scheme*	Maintain flood warning	Flood forecasting	Property level protection scheme	Community flood action groups	Self help	Awareness raising	Maintenance	Emergency plans / response	Planning policies
12/05			G	G		G	G		A				G			G	G	G	G	G

## Summary of progress of actions to manage flood risk in the Kilwinning (PVA 12/05)

Action	Status	Description	Dates	Progress in Delivery, including key deliverables and dates	Revised dates and planned actions to complete / address delay
New flood warning	G	<p>SEPA will continue with the development and implementation of a flood warning scheme on the River Garnock. Detail of communities that will benefit from the warnings will be determined during scheme development.</p> <p>Once implemented SEPA will continue to maintain the flood warning scheme. When flood events occur in an area with a flood warning service, SEPA will seek to verify and validate the warning service.</p> <p>SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.</p>	22/12/2015-22/06/2022	SEPA has continued to operate the flood warning service since it was completed earlier in the FRM cycle.	N/A.
Surface water plan/study		An integrated catchment study covering the Meadowhead catchment was carried out in SR10 2010-2015 to support the surface	22/12/2015-31/12/2021	The Meadowhead ICS has been completed. No areas within this PVA were included to be taken forwards for	N/A.



		water management planning process in Kilmarnock, Greenholme, Irvine, Prestwick and Ayr. The study will improve knowledge and understanding of the interactions between the above ground and below ground drainage network e.g. with the sewer network, watercourses and the sea.		optioneering as priority areas under the ICS.	
Surface water plan/study	G	North Ayrshire Council will develop a surface water management plan or plans to cover Irvine and Kilwinning which set objectives for the management of surface water flood risk and identify the most sustainable actions to achieve the objectives.	01/06/2016-01/06/2022	The Irvine surface water management plan was completed in 2020 and the Saltcoats, Ardrossan, Stevenston & Kilwinning (SASK) Surface Water Management Plan was completed in 2021.	N/A.
Surface water plan/study	G	An integrated catchment study covering the Stevenston Point catchment will be carried out to support the surface water management planning process in Kilwinning, Saltcoats, Ardrossan and Stevenston. The study will improve knowledge and understanding of the interactions between the above ground and below ground drainage	01/06/2016-01/06/2022	The Integrated Catchment Study for Stevenston Point has been completed. Outputs have been shared with local authorities to inform Surface Water Management Plans.	N/A

		network e.g. with the sewer network, watercourses and the sea.			
Surface water plan/study	G	North Ayrshire Council will develop a surface water management plan or plans to cover Kilwinning, Saltcoats, Ardrossan and Stevenston which set objectives for the management of surface water flood risk and identify the most sustainable actions to achieve the objectives. Scottish Water will provide local knowledge and understanding of the sewer network. This includes Scottish Water corporate data (as applicable) and outputs of the Stevenston Point integrated catchment study and Section 16 modelling, to assist with the surface water management planning process.	01/06/2016-01/06/2022	The Saltcoats, Ardrossan, Stevenston & Kilwinning (SASK) Surface Water Management Plan was completed in 2021.	N/A.
Strategic mapping and modelling - Section 16 assessment	G	Scottish Water will undertake further investigation and modelling in the Three Town sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of	01/01/2016-31/12/2020	The Scottish Water assessment of flood risk within the sewer catchment has been completed.	The assessment is now completed and has been shared with the Local Authority.

		the Flood Risk Management (Scotland) Act 2009.			
Strategic mapping and modelling – surface water	A	SEPA will be seeking to incorporate additional surface water hazard mapping information into the flood maps to improve understanding of flood risk. Approximately 2,100km <sup>2</sup> of improved data is currently available within this Local Plan District.	01/06/2016-22/06/2022	SEPA's current Surface water hazard maps use design rainfall estimates based on FEH99 methodology, this has now been superseded by FEH22 methodology. The FEH22 dataset contains the latest science and understanding of rainfall across Scotland and represents a significant change in rainfall amounts compared to FEH99 dataset, as such it is no longer consider appropriate to deliver this action as originally intended. This action will not be taken forwards as described. A major national update of the surface water maps is underway which will deliver updated surface water flooding maps for Scotland representing the latest scientific understanding.	The national surface water flooding modelling project will be completed in 2023. The outputs from this will be used to update SEPA maps early in cycle 2 and will inform SEPA's flood risk assessments for the next flood risk management cycle.
Flood forecasting*	G	SEPA has continued to operate the Scottish Flood Forecasting Service (SFFS) Partnership with the Met Office with daily, national flood guidance statements issued to Category 1 and 2 agencies (such as	22/12/2015-22/06/2022	SEPA continues to improve the Scottish Flood Forecasting Service with the Met Office, with daily Flood Guidance Statements and regional Flood Alerts issued as required to enable communities and responders to	N/A

		<p>emergency responders, local authorities and other organisations with flooding management duties). Each daily statement gives an assessment of the risk of flooding for the next five days to help enable these organisations to put preparations in place to reduce the impact of flooding. SEPA's Flood Alert service is freely available to everyone and helps enable communities to be aware and prepared to reduce the impacts of flooding.</p>		<p>reduce the impacts of flooding. SEPA in partnership with the Met Office has developed a public version of the daily Flood Guidance Statement, the Scottish Flood Forecast, to provide better and earlier information to the public. A beta version of this product was launched in May 2022. It will be refined in the wake of user feedback. A more focussed version of the product, producing guidance at a local level, is planned for the next flood risk management cycle. Options for developing forecasts of surface water flooding have been published in 2022 to help urban areas and the transport network improve their resilience to and preparedness for flooding. The development and wider roll-out of this service is being considered alongside the technical, resource and communication challenges associated with providing surface water flooding guidance.</p>	
Self help*	G	<p>Everyone is responsible for protecting themselves and their property from flooding. Property and</p>	01/04/2016-22/06/2022	<p>North Ayrshire Council raised awareness about flood risk via a separate action noted for this PVA.</p>	N/A.

		<p>business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline The Councils, SEPA and Scottish Water will continue to engage with responsible Authorities and all other stakeholders, including community groups and the public to raise awareness of flood risk and how those affected can be better prepared. Further detail can be found in the Councils and Scottish Flood Forum websites.</p>		<p>Specific awareness raising about flood risk matters was achieved when the Council's flooding team responded to reported flood incidents, enquiries from prospective developers &amp; flood risk consultants and when responding to planning application consultations.</p>	
Awareness raising*	G	<p>North Ayrshire Council, SEPA and Scottish Water collectively work to raise awareness of flood risk and how those affected can be better prepared. Through the continued development of flood schemes and studies at higher risk locations, officers from the Council's Flood Risk Management Team attend community council events to discuss</p>	22/12/2015-22/06/2022	<p>SEPA continues to work with others to raise awareness of flood risk and its flood warning service. It has participated in local activities including school / education and community resilience activities when able. Some planned activities notably in person joint events have been limited or delayed due to Covid 19.</p>	N/A.

		<p>elements of flood risk management. Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.</p>		<p>North Ayrshire Council raised awareness about flood risk matters by updating the Council's website and by supporting Local Flood Emergency Groups.</p>	
Maintenance*	G	<p>Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. They produce schedules of clearance and repair works and make these available for public inspection. Scottish Water undertake risk based inspection, maintenance and repair on the</p>	01/06/2016-01/06/2022	<p>North Ayrshire Council inspected trash screens, watercourses and coastal flood protection structures in accordance with the published inspection programme throughout the 1st Local Flood Risk Management Plan cycle.</p>	N/A.

		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.			
Emergency plans/response*	G	Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders. Scottish Water are a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required. The emergency response by these organisations is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.	01/06/2016-01/06/2022	North Ayrshire Council commissioned emergency plans, aimed at Category 1 and 2 responders, for population centres within North Ayrshire that have a notable flood risk. These plans were completed in September 2020.	N/A.

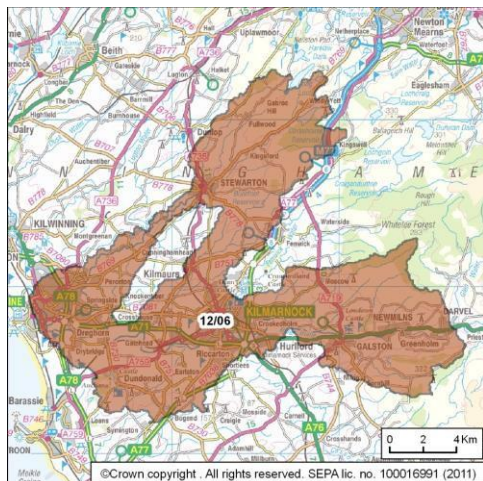
Planning policies*	G	<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p>	01/06/2016-01/06/2022	<p>SEPA continues to exercise its planning functions with a view to reducing overall flood risk. We effectively contribute to the delivery of sustainable flood risk management and we support the delivery of FRM Plans and Local FRM Plans. In line with the management actions that accord with national planning policies, we have and will continue to object to development at medium to high risk of flooding when it is contrary to the risk framework set out in Scottish Planning Policy. We have and will continue to engage from the start of the development plan process and encourage planning authorities to undertake a Strategic Flood Risk Assessment to inform their spatial strategy. We remain committed to exercising our planning functions with a view to reducing overall flood risk, and when a new national planning policy context is finalised later in 2022 via the National Planning Framework 4, we will take the same approach.</p>	N/A
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			<p>North Ayrshire Council completed a Strategic Flood Risk Assessment for LDP2 in May 2018.</p> <p>National Planning Framework 4 is expected to be adopted by the Scottish Parliament later in 2022 and will become part of the Development Plan, ensuring national planning policies on flooding are applied in local decision making.</p>	
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## 4.6 River Irvine and Annick Water (Potentially Vulnerable Area 12/06)

Local Plan District	Local authority	Main catchment
Ayrshire	East Ayrshire Council, East Renfrewshire Council, North Ayrshire Council, South Ayrshire Council,	River Irvine



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### Summary of Progress for River Irvine and Annick Water

There are approximately 2,900 residential properties at risk of flooding. The Annual Average Damages are approximately £7.1 million. Further information can be found in the Ayrshire Local FRMP under PVA 12/06, please click [here](#).

Key progress has been made with the completion of the Upper and Lower Irvine Valley Flood Protection Studies, including option appraisal.

The River Irvine Catchment has been exposed to a number of significant recent weather events during Storm Edmund and Storm Frank in 2016.

### Overview of actions to manage flooding in River Irvine and Annick Water

PVA	Flood protection scheme / works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan / study	Strategic mapping & modelling (Scottish Water)	Strategic mapping & modelling (Coastal)	Strategic mapping & modelling (Surface Water)	Strategic mapping & modelling (Rivers)	Maintain flood protection scheme*	Maintain flood warning	Flood forecasting	Property level protection scheme	Community flood action groups	Self help	Awareness raising	Maintenance	Emergency plans / response	Planning policies
12/06			G	G		G	G		A	G	G	G	G		G	G	G	G	G	G

## Summary of progress of actions to manage flood risk in the River Irvine and Annick Water (PVA 12/06)

Action	Status	Description	Dates	Progress in Delivery, including key deliverables and dates	Revised dates and planned actions to complete / address delay
New Flood Warning Newmilns, Galston, Kilmarnock, Irvine and Stewarton	G	<p>The scope of a new flood warning for the River Irvine is currently being examined. The area under consideration for a new flood warning includes properties in Newmilns affected by flooding from the River Irvine. The risk to Galston will be reviewed using the councils new flood study for the River Irvine. This could impact on the potential for provision of warnings at Galston. For areas where the risk is from the Irvine an update to the flood forecasting system will be required. Another area under consideration includes properties in Kilmarnock affected by flooding from the Kilmarnock Water and River Irvine. An update to the existing flood forecasting system will be required to deliver flood warning in this</p>	20/03/2016 - 19/06/2020	<p>The River Irvine flood forecasting system has been updated in Kilmarnock to include an operational warning at Burnside and a new flood warning area on the Kilmarnock Water in Kilmarnock and continues to cover the Queens drive, New Mill Road and Samson Avenue area.</p> <p>A new flood warning service for the Annick Water has been completed, with three new flood warning areas provided for Stewarton, Perceton and the Annick Water in Irvine.</p> <p>New flood warning areas have also been provided for Shewalton and Springbank industrial estates, as well as updating the Low Green (previously waterside) flood warning area.</p>	N/A.

		location. Flood warning is also required for properties mainly in Irvine and Stewarton affected by flooding from the Annick Water. Full scoping, infrastructure and a flood forecasting system will be required to develop a new flood warning scheme in this area.			
Flood protection study	G	Upper Irvine Valley Flood Study and option appraisal	01/06/2016-01/06/2022	<p>The Upper River Irvine Valley Flood Study including fluvial modelling is complete. The option appraisal is complete and a Scheme was submitted for prioritisation in December 2018.</p> <p>The submitted scheme offers a 1:100 year level of protection and was valued at £27M at time of submission.</p>	Awaiting outcome of Scottish Government Prioritisation of Flood Schemes and Funding Review.
Surface water plan/study		An integrated catchment study covering the Meadowhead catchment was carried out in SR10 (2010-2015). This study will help to support the surface water management planning process in	01/06/2016-01/06/2022	Pre Optioneering Catchment Plan and prioritisation stages completed. The Optioneering Phase was completed. The implementation of the findings will be considered in	N/A.

		Kilmarnock, Greenholm, Irvine, Prestwick and Ayr. The study has improved knowledge and understanding of flood risk and interactions between the above ground and below ground drainage network e.g. with the sewer network and watercourses. The Optioneering phase of this study, to establish the preferred solution(s) to the flooding issues, is now being progressed.		coordination with Scottish Water in the next cycle of FRM Plan.	
Surface water plan/study	G	North and East Ayrshire Council will develop a surface water management plan or plans to cover Irvine and Kilmarnock which set objectives for the management of surface water flood risk and identify the most sustainable actions to achieve the objectives.	01/06/2016-01/06/2022	The Irvine Surface Water Management Plan was completed in 2020. The report was issued to Scottish Water and SEPA. Most issues are for either Scottish Water or East Ayrshire Council and both authorities will action as appropriate.	N/A.
Strategic mapping and modelling - River Irvine mapping improvements	G	SEPA will work with East Ayrshire Council to improve the understanding of flood risk along the River Irvine. The Council are leading on the production of the River Irvine modelling with SEPA providing	01/01/2016-31/12/2020	Action complete. Updated river flood hazard mapping for the River Irvine was published on the SEPA website in November 2020.	N/A

		advice and reviewing information during the process. SEPA will update strategic surface water mapping in some parts of this catchment to improve understanding of flood risk. The inclusion of additional surface water hazard data resulting from the completion of local authority surface water management plans will be considered as these projects are completed.			
Strategic mapping and modelling - surface water	A	SEPA will update strategic surface water mapping in some parts of this catchment to improve understanding of flood risk. The inclusion of additional surface water hazard data resulting from the completion of local authority surface water management plans will be considered as these projects are completed.	01/01/2016-31/12/2020	SEPA's current surface water hazard maps use design rainfall estimates based on FEH99 methodology, this has now been superseded by FEH22 methodology. The FEH22 dataset contains the latest science and understanding of rainfall across Scotland and represents a significant change in rainfall amounts compared to FEH99 dataset, as such it is no longer consider appropriate to deliver this action as originally intended. This action will not be taken forwards as described. A major national update of the surface water maps is underway	The national surface water flooding modelling project will be completed in 2023. The outputs from this will be used to update SEPA maps early in cycle 2 and will inform SEPA's flood risk assessments for the next flood risk management cycle.

				which will deliver updated surface water flooding maps for Scotland representing the latest scientific understanding.	
Strategic mapping and modelling - Section 16 Assessment		Scottish Water will undertake further investigation and modelling in the Meadowhead Point sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.	01/01/2016-31/12/2020	The Meadowhead ICS has been completed. No areas within this PVA were included to be taken forwards for optioneering as priority areas under the ICS.	N/A
Maintain flood protection scheme	G	The Kilmarnock Flood Protection Scheme was designed to mitigate flooding from the River Irvine in the Riccarton and Crookedholm areas of Kilmarnock. The scheme has a standard of protection of 100 years. The schemes currently constructed form two main types: Walled structures maintained under the Annual Flap valve and Penstock Maintenance Contract; and earth embankments maintained by Panel engineers and supported by the annual grass cutting contract (to allow inspection).	01/06/2016-01/06/2022	East Ayrshire Council continues to carry out its maintenance contracts. The Council will continue to inspect and maintain the flood protection structures within the catchment.	N/A.

Maintain flood protection scheme	G	Defences along the banks of the Irvine River protect properties in the Waterside up to a 20 year flood. North Ayrshire Council will continue to inspect and maintain the River Irvine flood defences at Waterside, which will continue to manage flooding according to the design standard at the time of construction. Given the relatively minor nature of the structures, the inspection works will be scheduled as part of the Council's duties in accordance with Sections 18 of the Flood Risk Management (Scotland) Act 2009. In 2014 the River embankment stabilisation was carried out, and recently the surface water outfall valves were inspected and proposed to be lowered/replaced as part of the surface water flood mitigation effort for the area. If the defences remain the same, levels of flood risk are likely to increase over time as a consequence of climate change.	01/06/2016-01/06/2022	The flood defences at Waterside, Irvine were inspected by North Ayrshire Council in accordance with the Council's published inspection schedule.	N/A.
Maintain flood warning	G	SEPA will continue to maintain the Irvine Waterside/Low Green flood	22/12/2015-22/06/2022	The River Irvine flood forecasting system has been updated in	N/A



Irvine Waterside/Low Green flood warning areas in Irvine and the Queen's Drive, New Mill Road and Samson Avenue flood warning areas in Kilmarnock		warning area in Irvine and the Queen's Drive, New Mill Road and Samson Avenue flood warning areas in Kilmarnock which are part of the Irvine river flood warning scheme. When flood events occur in an area with a flood warning service, SEPA will seek to verify and validate the warning service. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.		<p>Kilmarnock to include an operational warning at Burnside and a new flood warning area on the Kilmarnock Water in Kilmarnock and continues to cover the Queens Drive, New Mill Road and Samson Avenue area.</p> <p>A new flood warning service for the Annick Water has been completed, with three new flood warning areas provided for Stewarton, Perceton and the Annick Water in Irvine.</p> <p>New flood warning areas have also been provided for Shewalton and Springbank industrial estates, as well as updating the Low Green (previously waterside) flood warning area.</p>	
Flood forecasting*	G	The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The service also provides information which allows SEPA to issue flood warnings,	22/12/2015-22/06/2022	SEPA continues to improve the Scottish Flood Forecasting Service with the Met Office, with daily Flood Guidance Statements and regional Flood Alerts issued as required to enable communities and responders to reduce the impacts of flooding. SEPA in partnership with the Met Office has developed a public version of the daily	N/A

		giving people a better chance of reducing the impact of flooding on their home or business. For more information please visit SEPA's website.		Flood Guidance Statement, the Scottish Flood Forecast, to provide better and earlier information to the public. A beta version of this product was launched in May 2022. It will be refined in the wake of user feedback. A more focussed version of the product, producing guidance at a local level, is planned for the next flood risk management cycle. Options for developing forecasts of surface water flooding have been published in 2022 to help urban areas and the transport network improve their resilience to and preparedness for flooding. The development and wider roll-out of this service is being considered alongside the technical, resource and communication challenges associated with providing surface water flooding guidance.	
Community flood action groups	G	Although not part of a community flood action group the public take an active interest in flooding issues within Galston and inform the Council about debris in the watercourse. East Ayrshire Council	01/06/2016-22/06/2022	East Ayrshire Council, SEPA and Scottish Water will continue to engage with responsible authorities and all other stakeholders, including community groups and the public to raise awareness of flood risk and how	N/A.

		will liaise with the group through Community Council meetings and directly to the public.		those affected can be better prepared. EAC will continue the ongoing support for the Community Flood Group.	
Self help*	G	<p>Everyone is responsible for protecting themselves and their property from flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline</p> <p>The Councils, SEPA and Scottish Water will continue to engage with responsible Authorities and all other stakeholders, including community groups and the public to raise awareness of flood risk and how those affected can be better prepared. Further detail can be found in the Councils and Scottish Flood Forum websites.</p>	01/04/2016-22/06/2022	North Ayrshire Council and East Ayrshire Council raised awareness about flood risk via a separate action noted for this PVA. Specific awareness raising about flood risk matters was achieved when the Councils' flooding teams responded to reported flood incidents, enquiries from prospective developers & flood risk consultants and when responding to planning application consultations.	N/A.
Awareness raising*	G	North Ayrshire Council, SEPA and Scottish Water collectively work to raise awareness of flood risk and how those affected can be better	22/12/2015-22/06/2022	SEPA continues to work with others to raise awareness of flood risk and its flood warning service. It has participated in local activities including	N/A.

<p>Awareness raising*</p>	<p>prepared. Through the continued development of flood schemes and studies at higher risk locations, officers from the Council's Flood Risk Management Team attend community council events to discuss elements of flood risk management. Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies. Further Information is provided on North Ayrshire Council, SEPA, Scottish Water websites.</p>		<p>school / education and community resilience activities when able. Some planned activities notably in person joint events have been limited or delayed due to Covid 19.</p> <p>North Ayrshire Council raised awareness about flood risk matters by updating the Council's website and by supporting Local Flood Emergency Groups.</p>	
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Awareness raising*	G	<p>East Ayrshire Council, SEPA and Scottish Water collectively work to raise awareness of flood risk and how those affected can be better prepared.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline).</p> <p>Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.</p> <p>Further Information is provided on East Ayrshire Council, SEPA, Scottish Water and Ayrshire Road Alliance websites.</p>	01/04/2016-22/06/2022	<p>East Ayrshire Council and SEPA has delivered a range of awareness raising activities through campaigning, education activities and partnership delivery. We have run national and local digital and direct engagement campaigns to raise awareness of flood risk and SEPA's flood warning service, Floodline. We publish and publicise an electronic newsletter (Flooding Gateway) four times a year which is distributed to a wide audience. SEPA are working with Education Scotland and Scottish Government Resilience team to embed flooding awareness within the Curriculum for Excellence, and resilience partners in Safer Communities programmes. We have also developed an online tool that helps everyone share information on current flooding issues (Report-a-Flood). We have worked in partnership with local authorities, emergency services and community organisations (e.g. Neighbourhood Watch Scotland, Citizens Advice Scotland and others) to share our resources and help to</p>	<p>East Ayrshire Council and SEPA will continue to raise awareness of flood risk through campaigning, developing education and engagement tools, creating new partnerships and improving the flood warning and forecasting service. Many of our awareness raising activities currently underway will continue. Our focus will be on promoting flood warning and forecasting service, innovation, education and engagement with partners, customers and the public.</p>
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				promote preparedness and understanding of how we manage flood risk in Scotland. We have actively supported the Scottish Flood Forum and worked closely with UK agencies to develop joint flooding information.	
Maintenance – North Ayrshire Council*	G	Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. They produce schedules of clearance and repair works and make these available for public inspection. Scottish Water undertake 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.	01/06/2016-01/06/2022	North Ayrshire Council inspected trash screens, watercourses and coastal flood protection structures in accordance with the published inspection programme throughout the 1st Local Flood Risk Management Plan cycle.	N/A.
Maintenance – East Ayrshire Council*	G	East Ayrshire Council in accordance with Section 18 of the FR Scotland Act 2009 undertake assessment of water bodies to determine whether	01/06/2016-01/06/2022	High risk locations such as those with screens and smaller culverts are inspected in a scheduled basis. The majority of inspections are to be	The Council will continue to inspect and maintain watercourses, screens and other relevant Council assets.

		works of clearance and repair would substantially reduce risk of flooding. This information is used to produce a schedule of works, which is available for the public to inspect		undertaken in the winter months when flows are higher and water born debris can be an issue.	
Emergency plans/response*	G	Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders. Scottish Water are a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required. The emergency response by these organisations is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.	01/06/2016-01/06/2022	North Ayrshire Council commissioned emergency plans, aimed at Category 1 and 2 responders, for population centres within North Ayrshire that have a notable flood risk. These plans were completed in September 2020.	N/A.
Planning policies*	G	Scottish Planning Policy and accompanying Planning Advice	01/06/2016-01/06/2022	SEPA continues to exercise its planning functions with a view to	N/A.

	<p>Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p>	<p>reducing overall flood risk. We effectively contribute to the delivery of sustainable flood risk management and we support the delivery of FRM Plans and Local FRM Plans. In line with the management actions that accord with national planning policies, we have and will continue to object to development at medium to high risk of flooding when it is contrary to the risk framework set out in Scottish Planning Policy. We have and will continue to engage from the start of the development plan process and encourage planning authorities to undertake a Strategic Flood Risk Assessment to inform their spatial strategy. We remain committed to exercising our planning functions with a view to reducing overall flood risk, and when a new national planning policy context is finalised later in 2022 via the National Planning Framework 4, we will take the same approach.</p>	
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				<p>North Ayrshire Council completed a Strategic Flood Risk Assessment for LDP2 in May 2018.</p> <p>National Planning Framework 4 is expected to be adopted by the Scottish Parliament later in 2022 and will become part of the Development Plan, ensuring national planning policies on flooding are applied in local decision making.</p> <p>East Ayrshire Council are Planning to update their LDP in 2022 – 23. East Ayrshire Council has prepared and consulted on its Proposed Plan LDP2. As part of the preparation of the Plan, the Council engaged early with SEPA on sites it was considering allocating and took on board comments from SEPA. In addition, The Council has worked extensively with SEPA and the KAG on issues pertaining to flooding in Kilmarnock and has undertaken a series of flood workshops with the Key Agencies. The new proposed plan contains flood</p>	
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			policies reflective of SEPA's stance and of NPF4.	
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## 4.6 Irvine to Troon (Potentially Vulnerable Area 12/07)

Local Plan District	Local authority	Main catchment
Ayrshire	North Ayrshire Council, South Ayrshire Council	Monkton to Irvine coastal



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### Summary of Progress for Irvine to Troon

There are approximately 1,000 residential properties at risk of flooding. The Annual Average Damages are approximately £1.3 million. Further information can be found in the Ayrshire Local FRMP under PVA 12/07, please click [here](#).

The Ayrshire Shoreline Management Plan was completed and adopted by both North and South Ayrshire Councils in September 2018. The Meadowhead Integrated Catchment Study and the Irvine Surface Water Management Plan were also completed. Natural flood risk measures in South Ayrshire in the form of sand dune propagation have successfully continued throughout the reporting period.

### Overview of actions to manage flooding in Irvine to Troon

PVA	Flood protection scheme / works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan / study	Strategic mapping & modelling (Scottish Water)	Strategic mapping & modelling (Coastal)	Strategic mapping & modelling (Surface Water)	Strategic mapping & modelling (Rivers)	Maintain flood protection scheme*	Maintain flood warning	Flood forecasting	Property level protection scheme	Community flood action groups	Self help	Awareness raising	Maintenance	Emergency plans / response	Planning policies
12/07		G		G		G	G	A	A		G	G	G			G	G	G	G	G

## Summary of progress of actions to manage flood risk in the Irvine to Troon (PVA 12/07)

Action	Status	Description	Dates	Progress in Delivery, including key deliverables and dates	Revised dates and planned actions to complete / address delay
Natural flood management works	G	South Ayrshire Council are currently undertaking sand dune propagation in Troon, and some of the benefits of these actions are to help reduce the risk of coastal erosion and flooding. It is recommended that this should continue.	22/12/2015-22/06/2022	This work continues to be carried out on an annual basis.	The Council will continue to undertake sand dune propagation.
Flood protection study	G	A shoreline management plan is recommended, this study is not limited to Potentially Vulnerable Areas but should cover the whole of the Ayrshire coastline and any areas beyond this which may be influenced by changes in coastal processes. The study should investigate flooding and coastal erosion, wave overtopping and the current coastal protection offered. The study will help to develop an understanding of coastal issues and identify where further work may be required to mitigate against flooding.	01/06/2016-01/06/2022	The Ayrshire Shoreline Management Plan was completed and was adopted by both North Ayrshire Council and South Ayrshire Council in September/October 2018.	N/A.

Surface Water Management Plan	G	An integrated catchment study covering the Meadowhead catchment was carried out in SR10 (2010-2015). This study will help to support the surface water management planning process in Kilmarnock, Greenholm, Irvine, Prestwick and Ayr. The study has improved knowledge and understanding of flood risk and interactions between the above ground and below ground drainage network e.g. with the sewer network and watercourses. The Optioneering phase of this study, to establish the preferred solution(s) to the flooding issues, is now being progressed.	01/06/2016-01/06/2022	The Meadowhead ICS has been completed. No areas of this PVA were included to be taken forwards for optioneering as priority areas under the ICS.	N/A.
Surface water plan/study	G	North Ayrshire Council will develop a surface water management plan or plans to cover Irvine town which set objectives for the management of surface water flood risk and identify the most sustainable actions to achieve the objectives.	01/06/2016-01/06/2022	The Irvine Surface Water Management Plan was completed in 2020.	N/A.
	A	SEPA will seek to develop flood mapping in the Ayr to Ardrossan	22/12/2016 – 01/06/2022	Work completed to date includes the production of key data sets	SEPA will complete a review of coastal flood hazard mapping in

Strategic mapping and modelling - coastal		<p>area to improve understanding of coastal flood risk. The extent and timing of improvements will depend on detailed scoping and data availability. The coastal mapping and modelling process will start in 2016, with early work focussing on methodology development and data collection. Once this stage has been completed a thorough review will be carried out to identify the final mapping improvements that can be made in the area. Where this work coincides with local authority studies, SEPA will work collaboratively to ensure consistent modelling approaches are applied.</p>		<p>including extreme water levels and offshore wave and wind conditions to support future coastal modelling work.</p>	<p>south west Scotland including in this area. This includes identifying where taking account of the impact of waves on flooding from the sea may be required. SEPA will collect the required coastal defence asset and other information necessary to progress with improved flood modelling and mapping in the highest priority areas taking account of wave overtopping where required. SEPA will look for opportunities to progress future modelling work in a way that best supports improvements to SEPA's Coastal Flood Warning Schemes. Expected to progress to the next stage around the middle of cycle 2 and complete early in the following cycle, subject to funding.</p>
Strategic mapping and modelling – Surface water	A	<p>SEPA will be seeking to incorporate additional surface water hazard mapping information into the flood maps to improve understanding of flood risk. Approximately 2,100km<sup>2</sup> of improved data is currently</p>	01/06/2016-22/06/2022	<p>SEPA's current Surface water hazard maps use design rainfall estimates based on FEH99 methodology, this has now been superseded by FEH22 methodology. The FEH22</p>	<p>The national surface water flooding modelling project will be completed in 2023. The outputs from this will be used to update SEPA maps early in cycle 2 and will inform SEPA's flood risk</p>

		available within this Local Plan District.		dataset contains the latest science and understanding of rainfall across Scotland and represents a significant change in rainfall amounts compared to FEH99 dataset, as such it is no longer consider appropriate to deliver this action as originally intended. This action will not be taken forwards as described. A major national update of the surface water maps is underway which will deliver updated surface water flooding maps for Scotland representing the latest scientific understanding.	assessments for the next flood risk management cycle.
Strategic mapping and modelling- Section 16 assessment		Scottish Water will undertake further investigation and modelling in the Meadowhead sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.	01/01/2016-31/12/2020	The Meadowhead ICS has been completed. No areas within this PVA were included to be taken forwards for optioneering as priority areas under the ICS.	N/A.
Maintain flood protection scheme	G	In Troon there are sections of seawalls, rock armour and gabion mattresses running from the golf	01/06/2016-01/06/2022	This work continues to be carried out on an annual basis.	N/A.

		club to the harbour and north of the harbour to Beach Road. These defences offer some level of protection to the properties in this area. These defences will be maintained and will continue to manage flooding according to the design standard at the time of construction.		South Ayrshire Council will continue to inspect and maintain the flood protection structures within the catchment.	
Maintain flood warning Troon Coastal, Troon Central and Prestwick Links Road flood warning areas	G	SEPA will continue to maintain the Troon Coastal, Troon Central and Prestwick Links Road flood warning areas which are part of the Firth of Clyde coastal flood warning scheme. When flood events occur in an area with a flood warning service, SEPA will seek to verify and validate the warning service. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.	22/12/2015- 22/06/2022	SEPA has continued to operate the flood warning service.	N/A
Flood forecasting*	G	The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2	22/12/2015- 22/06/2022	SEPA continues to improve the Scottish Flood Forecasting Service with the Met Office, with daily Flood Guidance Statements and regional Flood Alerts issued as required to	N/A



	<p>Responders. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information please visit SEPA's website.</p>	<p>enable communities and responders to reduce the impacts of flooding. SEPA in partnership with the Met Office has developed a public version of the daily Flood Guidance Statement, the Scottish Flood Forecast, to provide better and earlier information to the public. A beta version of this product was launched in May 2022. It will be refined in the wake of user feedback. A more focussed version of the product, producing guidance at a local level, is planned for the next flood risk management cycle. Options for developing forecasts of surface water flooding have been published in 2022 to help urban areas and the transport network improve their resilience to and preparedness for flooding. The development and wider roll-out of this service is being considered alongside the technical, resource and</p>	
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				communication challenges associated with providing surface water flooding guidance.	
Self help*	G	<p>Everyone is responsible for protecting themselves and their property from flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline</p> <p>The Councils, SEPA and Scottish Water will continue to engage with responsible Authorities and all other stakeholders, including community groups and the public to raise awareness of flood risk and how those affected can be better prepared. Further detail can be found in the Councils and Scottish Flood Forum websites.</p>	01/04/2016-22/06/2022	North Ayrshire Council and South Ayrshire Council raised awareness about flood risk via a separate action noted for this PVA. Specific awareness raising about flood risk matters was achieved when the Councils' flooding team responded to reported flood incidents, enquiries from prospective developers & flood risk consultants and when responding to planning application consultations.	N/A.
Awareness raising*	G	North Ayrshire Council, South Ayrshire Council, SEPA and Scottish Water collectively work to raise awareness of flood risk and	22/12/2015-22/06/2022	SEPA continues to work with others to raise awareness of flood risk and its flood warning service. It has participated in	N/A.

		<p>how those affected can be better prepared. Through the continued development of flood schemes and studies at higher risk locations, officers from the Council's Flood Risk Management Team attend community council events to discuss elements of flood risk management. Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.</p>		<p>local activities including school / education and community resilience activities when able. Some planned activities notably in person joint events have been limited or delayed due to Covid 19.</p> <p>North Ayrshire Council raised awareness about flood risk matters by updating the Council's website and by supporting Local Flood Emergency Groups.</p> <p>Awareness raising is a continuous activity for South Ayrshire Council which is actioned by updating the Council's website, working with partners and engagement with relevant stakeholders as appropriate.</p>	
Maintenance*	G	<p>Local authorities have a duty to assess watercourses and carry out clearance and repair works where</p>	01/06/2016-01/06/2022	<p>North Ayrshire Council inspected trash screens, watercourses and coastal flood</p>	N/A.

		<p>such works would substantially reduce flood risk. They produce schedules of clearance and repair works and make these available for public inspection. Scottish Water undertake 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.</p>		<p>protection structures in accordance with the published inspection programme throughout the 1st Local Flood Risk Management Plan cycle.</p> <p>South Ayrshire Council carry out monthly inspections and clearance work where necessary on 17 debris screens where there is a known flood risk from blockage. Watercourse inspections are carried out on a regular basis where there are known flood risk issues. 25km of coastal protection structures are inspected annually.</p>	
Maintain flood Protection Schemes	G	<p>In Troon there are sections of seawalls, rock armour and gabion mattresses running from the golf club to the harbour and north of the harbour to Beach Road. These defences offer some level of protection to the properties in this area. These defences will be maintained and will continue to manage flooding according to the</p>	01/06/2016-01/06/2022	<p>This work continues to be carried out on an annual basis.</p> <p>The Council will continue to inspect and maintain the flood protection structures within the catchment.</p>	N/A.

		design standard at the time of construction.			
Emergency plans/response*	G	<p>Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders. Scottish Water are a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required. The emergency response by these organisations is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p>	01/06/2016-01/06/2022	<p>North Ayrshire Council commissioned emergency plans, aimed at Category 1 and 2 responders, for population centres within North Ayrshire that have a notable flood risk. These plans were completed in September 2020.</p> <p>The Ayrshire Civil Contingency Team has developed emergency plans for major flooding incidents in the South Ayrshire Council area in partnership with Category 1 and 2 responders.</p>	N/A.
Planning policies*	G	<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the</p>	01/06/2016-01/06/2022	<p>SEPA continues to exercise its planning functions with a view to reducing overall flood risk. We effectively contribute to the delivery of sustainable flood risk</p>	N/A.

	<p>development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p>	<p>management and we support the delivery of FRM Plans and Local FRM Plans. In line with the management actions that accord with national planning policies, we have and will continue to object to development at medium to high risk of flooding when it is contrary to the risk framework set out in Scottish Planning Policy. We have and will continue to engage from the start of the development plan process and encourage planning authorities to undertake a Strategic Flood Risk Assessment to inform their spatial strategy. We remain committed to exercising our planning functions with a view to reducing overall flood risk, and when a new national planning policy context is finalised later in 2022 via the National Planning Framework 4, we will take the same approach.</p>	
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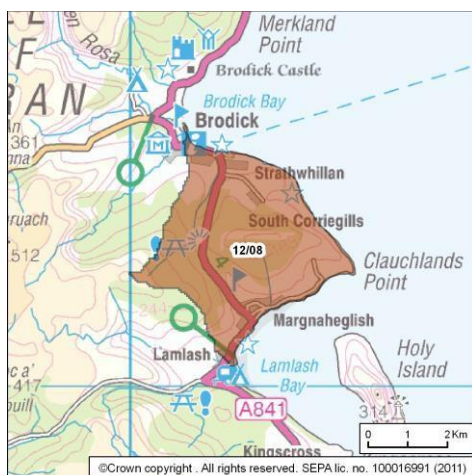
				<p>North Ayrshire Council completed a Strategic Flood Risk Assessment for LDP2 in May 2018. In addition, the Ayrshire Shoreline Management Plan (SMP), which prompts land use, policy changes and further studies to allow physical protective measures to take place in the future was adopted by North Ayrshire Council and South Ayrshire Council in September 2018.</p> <p>National Planning Framework 4 is expected to be adopted by the Scottish Parliament later in 2022 and will become part of the Development Plan, ensuring national planning policies on flooding are applied in local decision making.</p> <p>The South Ayrshire Council Local Development Plan recognises the importance of</p>	
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				<p>sustainable flood risk management in both urban and rural developments and is in alignment with Scottish Planning Policy. The Local Development Plan was published in February 2022.</p>	
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## 4.8 Isle of Arran (Potentially Vulnerable Area 12/08)

Local Plan District	Local authority	Main catchment
Ayrshire	North Ayrshire Council	Brodick to Kilmory – Arran coastal



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### Summary of Progress for Isle of Arran

There are approximately 120 residential properties at risk of flooding. The Annual Average Damages are approximately £390,000. Further information can be found in the Ayrshire Local FRMP under PVA 12/08, please click [here](#).

Key progress has been made with the completion of the Ayrshire Shoreline Management Plan and the completion of the flood study at Brodick and Lamlash. The design of the Brodick Flood Protection Scheme, which also includes measures in Lamlash is an action in the published Cycle 2 Flood Risk Management Plan .

### Overview of actions to manage flooding in Isle of Arran

PVA	Flood protection scheme / works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan / study	Strategic mapping & modelling (Scottish Water)	Strategic mapping & modelling (Coastal)	Strategic mapping & modelling (Surface Water)	Strategic mapping & modelling (Rivers)	Maintain flood protection scheme*	Maintain flood warning	Flood forecasting	Property level protection scheme	Community flood action groups	Self help	Awareness raising	Maintenance	Emergency plans / response	Planning policies
12/08				G					A		G	G	G			G	G	G	G	G

## Summary of progress of actions to manage flood risk in the Isle of Arran (PVA 12/08)

Action	Status	Description	Dates	Progress in Delivery, including key deliverables and dates	Revised dates and planned actions to complete / address delay
Flood protection study	G	A study will be undertaken to further investigate river flood risk combined with coastal flood risk to Brodick and Lamlash. This study should build on the work within the shoreline management plan to provide a detailed investigation of the current and future risk. The study should examine the most sustainable combination of actions to manage flooding.	01/04/2018-13/03/2020	The study identified a preferred option for the Brodick Flood Protection Scheme, which includes measures in the neighbouring village of Lamlash.  The design of the Brodick Flood Protection Scheme is an action identified in the Flood Risk Management Plan, published by SEPA in 2021.	N/A.
Flood protection study	G	A shoreline management plan is recommended, this study is not limited to Potentially Vulnerable Areas but should cover the whole of the Ayrshire coastline and any areas beyond this which may be influenced by changes in coastal processes. The study should investigate flooding and coastal erosion, wave overtopping and the current coastal protection offered. The study will help to develop an	01/06/2016-01/06/2022	The Ayrshire Shoreline Management Plan was completed and was adopted by both North Ayrshire Council and South Ayrshire Council in September/October 2018.	N/A.

		understanding of coastal issues and identify where further work may be required to mitigate against flooding.			
Strategic mapping and modelling – surface water	A	SEPA will be seeking to incorporate additional surface water hazard mapping information into the flood maps to improve understanding of flood risk. Approximately 2,100km <sup>2</sup> of improved data is currently available within this Local Plan District.	01/06/2016-22/06/2022	SEPA's current Surface water hazard maps use design rainfall estimates based on FEH99 methodology, this has now been superseded by FEH22 methodology. The FEH22 dataset contains the latest science and understanding of rainfall across Scotland and represents a significant change in rainfall amounts compared to FEH99 dataset, as such it is no longer consider appropriate to deliver this action as originally intended. This action will not be taken forwards as described. A major national update of the surface water maps is underway which will deliver updated surface water flooding maps for Scotland representing the latest scientific understanding.	The national surface water flooding modelling project will be completed in 2023. The outputs from this will be used to update SEPA maps early in cycle 2 and will inform SEPA's flood risk assessments for the next flood risk management cycle.
Maintain flood protection scheme	G	There are a range of formal and informal coastal defences in Brodick and Lamlash. These defences offer some level of protection to the properties in this area. North	01/06/2016-01/06/2022	The coastal flood defence structures in Brodick and Lamlash were either inspected on an annual basis throughout the 1st Local Flood Risk Management Plan cycle and were	N/A.

		Ayrshire Council will continue to inspect and maintain the Brodick and Lamlash coastal flood defences, which will continue to manage flooding according to the design standard at the time of construction.		subject to a principal inspection every three years or were inspected in accordance with the inspection schedule published by North Ayrshire Council.	
Maintain flood warning Arran Lamlash Cordon and Arran Seafront and Montrose Terrace flood warning areas	G	SEPA will continue to maintain the Arran Lamlash Cordon and the Arran Seafront and Montrose Terrace flood warning areas which are part of the Firth of Clyde coastal flood warning scheme.	22/12/2015-22/06/2022	SEPA has continued to operate the flood warning service.	N/A
Flood forecasting*	G	The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information please visit SEPA's website.	22/12/2015-22/06/2022	SEPA continues to improve the Scottish Flood Forecasting Service with the Met Office, with daily Flood Guidance Statements and regional Flood Alerts issued as required to enable communities and responders to reduce the impacts of flooding. SEPA in partnership with the Met Office has developed a public version of the daily Flood Guidance Statement, the Scottish Flood Forecast, to provide better and earlier information to the public. A beta version of this product was launched in May 2022. It will be	N/A.

				refined in the wake of user feedback. A more focussed version of the product, producing guidance at a local level, is planned for the next flood risk management cycle. Options for developing forecasts of surface water flooding have been published in 2022 to help urban areas and the transport network improve their resilience to and preparedness for flooding. The development and wider roll-out of this service is being considered alongside the technical, resource and communication challenges associated with providing surface water flooding guidance.	
Self help*	G	Everyone is responsible for protecting themselves and their property from flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline	01/04/2016-22/06/2022	North Ayrshire Council raised awareness about flood risk via a separate action noted for this PVA. Specific awareness raising about flood risk matters was achieved when the Council's flooding team responded to reported flood incidents, enquiries from prospective developers & flood risk consultants and when responding to planning application consultations.	N/A.

		The Councils, SEPA and Scottish Water will continue to engage with responsible Authorities and all other stakeholders, including community groups and the public to raise awareness of flood risk and how those affected can be better prepared. Further detail can be found in the Councils and Scottish Flood Forum websites.			
Awareness raising*	G	North Ayrshire Council, SEPA and Scottish Water collectively work to raise awareness of flood risk and how those affected can be better prepared. Through the continued development of flood schemes and studies at higher risk locations, officers from the Council's Flood Risk Management Team attend community council events to discuss elements of flood risk management. Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing	22/12/2015-22/06/2022	SEPA continues to work with others to raise awareness of flood risk and its flood warning service. It has participated in local activities including school / education and community resilience activities when able. Some planned activities notably in person joint events have been limited or delayed due to Covid 19.  North Ayrshire Council raised awareness about flood risk matters by updating the Council's website and by supporting Local Flood Emergency Groups.	N/A.

		activity and promotion of SEPA's flood forecasting and warning services (Floodline). Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.			
Maintenance*	G	Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. They produce schedules of clearance and repair works and make these available for public inspection. Scottish Water undertake 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.	01/06/2016-01/06/2022	North Ayrshire Council inspected trash screens, watercourses and coastal flood protection structures in accordance with the published inspection programme throughout the 1st Local Flood Risk Management Plan cycle.	N/A.

Emergency plans/response*	G	<p>Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders. Scottish Water are a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required. The emergency response by these organisations is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p>	01/06/2016-01/06/2022	<p>North Ayrshire Council commissioned emergency plans, aimed at Category 1 and 2 responders, for population centres within North Ayrshire that have a notable flood risk. These plans were completed in September 2020.</p>	N/A.
Planning policies*	G	<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the</p>	01/06/2016-01/06/2022	<p>SEPA continues to exercise its planning functions with a view to reducing overall flood risk. We effectively contribute to the delivery of sustainable flood risk management and we support the delivery of FRM Plans and Local FRM Plans. In line</p>	N/A.

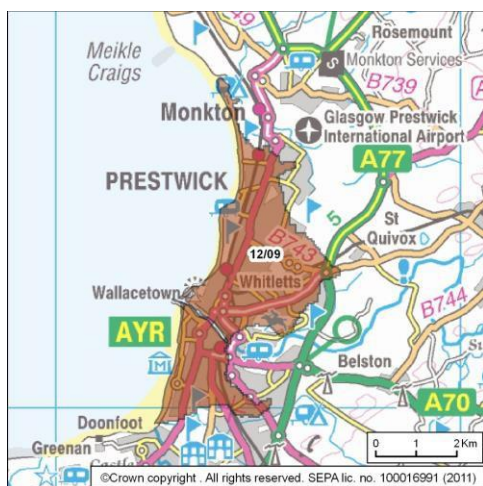


	<p>policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p>	<p>with the management actions that accord with national planning policies, we have and will continue to object to development at medium to high risk of flooding when it is contrary to the risk framework set out in Scottish Planning Policy. We have and will continue to engage from the start of the development plan process and encourage planning authorities to undertake a Strategic Flood Risk Assessment to inform their spatial strategy. We remain committed to exercising our planning functions with a view to reducing overall flood risk, and when a new national planning policy context is finalised later in 2022 via the National Planning Framework 4, we will take the same approach.</p> <p>North Ayrshire Council completed a Strategic Flood Risk Assessment for LDP2 in May 2018. In addition, the Ayrshire Shoreline Management Plan (SMP), which prompts land use, policy changes and further studies to allow physical protective measures to take</p>	
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			<p>place in the future was adopted by North Ayrshire Council and South Ayrshire Council in September 2018.</p> <p>National Planning Framework 4 is expected to be adopted by the Scottish Parliament later in 2022 and will become part of the Development Plan, ensuring national planning policies on flooding are applied in local decision making.</p>	
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## 4.9 Prestwick to Ayr (Potentially Vulnerable Area 12/09)

Local Plan District	Local authority	Main catchment
Ayrshire	South Ayrshire Council	Doonfoot to Monkton coastal



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### Summary of Progress for Prestwick to Ayr

There are approximately 300 residential properties at risk of flooding. The Annual Average Damages are approximately £240,000. Further information can be found in the Ayrshire Local FRMP under PVA 12/09, please click [here](#).

The Ayrshire Shoreline Management Plan has been completed and was adopted by both North and South Ayrshire Councils in September/October 2018. The Meadowhead Integrated Catchment Study and Surface Water Management Plans for Ayr and Prestwick are complete.

Natural flood risk measures in South Ayrshire in the form of sand dune propagation have successfully continued through the reporting period.

### Overview of actions to manage flooding in Prestwick to Ayr

PVA	Flood protection scheme / works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan / study	Strategic mapping & modelling (Scottish Water)	Strategic mapping & modelling (Coastal)	Strategic mapping & modelling (Surface Water)	Strategic mapping & modelling (Rivers)	Maintain flood protection scheme*	Maintain flood warning	Flood forecasting	Property level protection scheme	Community flood action groups	Self help	Awareness raising	Maintenance	Emergency plans / response	Planning policies
12/09		G		G		G	G	A	A		G	G	G			G	G	G	G	G

## Summary of progress of actions to manage flood risk in the Prestwick to Ayr (PVA 12/09)

Action	Status	Description	Dates	Progress in Delivery, including key deliverables and dates	Revised dates and planned actions to complete / address delay
Natural flood management works	G	South Ayrshire Council are currently undertaking sand dune propagation at Prestwick North Beach and Ayr South Beach. Some of the benefits of these actions are to help reduce the risk of coastal erosion and flooding. It is recommended that this should continue.	22/12/2015-22/06/2022	This work continues to be carried out on an annual basis.  The Council will continue to undertake sand dune propagation.	N/A.
Flood protection study	G	A shoreline management plan is recommended; this study is not limited to Potentially Vulnerable Areas but should cover the whole of the Ayrshire coastline and any areas beyond this which may be influenced by changes in coastal processes. The study should investigate flooding and coastal erosion, wave overtopping and the current coastal protection offered. The study will help to develop an understanding of coastal issues and	01/06/2016-01/06/2022	The Ayrshire Shoreline Management Plan is completed and adopted by both North and South Ayrshire Councils in September/October 2018.  The Ayrshire Shoreline Management Plan will be reviewed every 6 years.	N/A.

		identify where further work may be required to mitigate against flooding.			
Surface water plan/study	G	An integrated catchment study covering the Meadowhead catchment was carried out in SR10 (2010-2015). This study will help to support the surface water management planning process in Kilmarnock, Greenholm, Irvine, Prestwick and Ayr. The study has improved knowledge and understanding of flood risk and interactions between the above ground and below ground drainage network e.g. with the sewer network and watercourses. The Optioneering phase of this study, to establish the preferred solution(s) to the flooding issues, is now being progressed.	01/06/2016-01/06/2022	Pre Optioneering Catchment Plan and prioritisation stages completed.  The Optioneering Phase was completed in June 2021.  The implementation of the findings are currently being considered in coordination with Scottish Water and detailed design has commenced. This will continue in the next cycle of the FRM Plan.	N/A.
Surface water plan/study	G	South Ayrshire Council will develop a surface water management plan or plans to cover Prestwick and Ayr which set objectives for the management of surface water flood risk and identify the most	01/06/2016-01/06/2022	The Surface water management Plan for South Ayrshire Council catchments was completed in November 2021. The implementation of the findings will be considered in the next cycle of FRM Plan.	N/A.

		sustainable actions to achieve the objectives.			
Strategic mapping and modelling Section 16 Assessment		Scottish Water will undertake further investigation and modelling in the Prestwick and Ayr sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.	01/01/2016-31/12/2020	The Optioneering phase of the ICS has been completed. This has identified potential solutions to reduce surface water flood risk in priority areas within Prestwick.	N/A.
Strategic mapping and modelling – surface water	A	SEPA will be seeking to incorporate additional surface water hazard mapping information into the flood maps to improve understanding of flood risk. Approximately 2,100km <sup>2</sup> of improved data is currently available within this Local Plan District.	01/06/2016-22/06/2022	SEPA's current Surface water hazard maps use design rainfall estimates based on FEH99 methodology, this has now been superseded by FEH22 methodology. The FEH22 dataset contains the latest science and understanding of rainfall across Scotland and represents a significant change in rainfall amounts compared to FEH99 dataset, as such it is no longer consider appropriate to deliver this action as originally intended. This action will not be taken forwards as described. A major national update of the surface water maps is underway which will deliver updated surface water flooding maps for Scotland	The national surface water flooding modelling project will be completed in 2023. The outputs from this will be used to update SEPA maps early in cycle 2 and will inform SEPA's flood risk assessments for the next flood risk management cycle.

				representing the latest scientific understanding.	
Strategic mapping and modelling - coastal	A	SEPA will seek to develop flood mapping in the Ayr to Ardrossan area to improve understanding of coastal flood risk. The extent and timing of improvements will depend on detailed scoping and data availability. Where this work coincides with local authorities.	01/06/2016-01/06/2022	Work completed to date includes the production of key data sets including extreme water levels and offshore wave and wind conditions to support future coastal modelling work.	SEPA will complete a review of coastal flood hazard mapping in south west Scotland including in this area. This includes identifying where taking account of the impact of waves on flooding from the sea may be required. SEPA will collect the required coastal defence asset and other information necessary to progress with improved flood modelling and mapping in the highest priority areas taking account of wave overtopping where required. SEPA will look for opportunities to progress future modelling work in a way that best supports improvements to SEPA's Coastal Flood Warning Schemes. Expected to progress to the next stage around the middle of cycle 2 and complete early in the following cycle, subject to funding.

Maintain flood protection scheme	G	<p>The South Pier protects the entrance of Ayr Harbour from the action of waves while also reducing siltation in the channel. An existing seawall runs from the South Pier to the mouth of the River Doon, the purpose of which is to protect coastal erosion however it also provides a limited level of flood protection to the area. There are similar coastal defences in Prestwick. These will be maintained, and will continue to manage flooding according to the design standard at the time of construction. An annual inspection is carried out on all</p>	01/06/2016-01/06/2022	<p>The coastal protection structures are on a scheduled inspection and maintenance programme.</p> <p>The Council will continue to inspect and maintain the flood protection structures within the catchment.</p>	N/A.
Maintain flood warning Ayr Seafield and Prestwick Links Road flood warning areas	G	<p>SEPA will continue to maintain the Ayr Seafield the Prestwick Links Road flood warning areas which are part of the Firth of Clyde coastal flood warning scheme. When flood events occur in an area with a flood warning service, SEPA will seek to verify and validate the warning service. SEPA will use feedback and post-event data to ensure that our</p>	22/12/2015 - 22/06/2022	SEPA has continued to operate the flood warning service.	N/A



		flood warning service is timely and accurate.			
Flood forecasting*	G	The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information please visit SEPA's website.	22/12/2015 - 22/06/2022	SEPA continues to improve the Scottish Flood Forecasting Service with the Met Office, with daily Flood Guidance Statements and regional Flood Alerts issued as required to enable communities and responders to reduce the impacts of flooding. SEPA in partnership with the Met Office has developed a public version of the daily Flood Guidance Statement, the Scottish Flood Forecast, to provide better and earlier information to the public. A beta version of this product was launched in May 2022. It will be refined in the wake of user feedback. A more focussed version of the product, producing guidance at a local level, is planned for the next flood risk management cycle. Options for developing forecasts of surface water flooding have been published in 2022 to help urban areas and the transport network improve their resilience to and preparedness for flooding. The development and wider roll-out of this	N/A

				service is being considered alongside the technical, resource and communication challenges associated with providing surface water flooding guidance.	
Self help*	G	<p>Everyone is responsible for protecting themselves and their property from flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline</p> <p>The Councils, SEPA and Scottish Water will continue to engage with responsible Authorities and all other stakeholders, including community groups and the public to raise awareness of flood risk and how those affected can be better prepared. Further detail can be found in the Councils and Scottish Flood Forum websites.</p>	01/04/2016-22/06/2022	Community Engagement includes, PLP exhibitions, selection, surveys and appropriate and relevant information to enable clients to make the right decisions.	Ongoing community support, PLP training, Flood Warden and resilience group promotion.
Awareness raising*	G	South Ayrshire Council, SEPA and Scottish Water collectively work to	22/12/2015-22/06/2022	SEPA continues to work with others to raise awareness of flood risk and its	N/A.

		<p>raise awareness of flood risk and how those affected can be better prepared. Through the continued development of flood schemes and studies at higher risk locations, officers from the Council's Flood Risk Management Team attend community council events to discuss elements of flood risk management. Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.</p>		<p>flood warning service. It has participated in local activities including school / education and community resilience activities when able. Some planned activities notably in person joint events have been limited or delayed due to Covid 19.</p> <p>Awareness raising is a continuous activity for South Ayrshire Council which is actioned by updating the Council's website, working with partners and engagement with relevant stakeholders as appropriate.</p>	
Maintenance*	G	Local authorities have a duty to assess watercourses and carry out	01/06/2016-01/06/2022	South Ayrshire Council carry out monthly inspections and clearance	N/A.

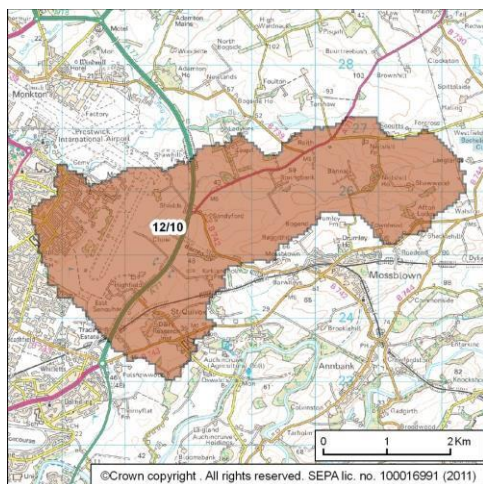
		<p>clearance and repair works where such works would substantially reduce flood risk. They produce schedules of clearance and repair works and make these available for public inspection. Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network. Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk.</p>		<p>work where necessary on 17 debris screens where there is a known flood risk from blockage. Watercourse inspections are carried out on a regular basis where there are known flood risk issues. 25km of coastal protection structures are inspected annually.</p> <p>The Council will continue to inspect and maintain watercourses, screens and other relevant Council assets.</p>	
Emergency plans/response*	G	<p>Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders. Scottish Water are a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local</p>	01/06/2016-01/06/2022	<p>For South Ayrshire Council, the Ayrshire Civil Contingencies maintain and update all emergency response plans. These are updated every 3 years or as required after an incident. This is done in conjunction with the relevant department and external agency.</p> <p>The Ayrshire Civil Contingencies team is responsible for producing the Civil Contingencies Plan, which outlines the management and operational</p>	N/A.

		<p>resilience partnerships as required. The emergency response by these organisations is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p>		<p>arrangements that the Councils will follow in the event of an emergency as well as encouraging other agencies to prepare for their role. The Councils will contribute to the production and review of the Civil Contingencies Plan and the Emergency Plan for Severe Weather and Flooding, as required. This response may be supported by the work of voluntary organisations.</p>	
	G	<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with</p>	<p>01/06/2016-01/06/2022</p>	<p>SEPA continues to exercise its planning functions with a view to reducing overall flood risk. We effectively contribute to the delivery of sustainable flood risk management and we support the delivery of FRM Plans and Local FRM Plans. In line with the management actions that accord with national planning policies, we have and will continue to object to development at medium to high risk of flooding when it is contrary to the risk framework set out in Scottish Planning Policy. We have and will continue to engage from the start of the development plan process and encourage planning authorities to</p>	<p>N/A.</p>

Planning policies*		medium to high likelihood of flooding should be avoided.		<p>undertake a Strategic Flood Risk Assessment to inform their spatial strategy. We remain committed to exercising our planning functions with a view to reducing overall flood risk, and when a new national planning policy context is finalised later in 2022 via the National Planning Framework 4, we will take the same approach.</p> <p>The South Ayrshire Council Local Development Plan recognises the importance of sustainable flood risk management in both urban and rural developments and is in alignment with Scottish Planning Policy. The Local Development Plan was published in February 2022.</p>	
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## 4.10 Pow Burn Catchment (Potentially Vulnerable Area 12/10)

Local Plan District	Local authority	Main catchment
Ayrshire	South Ayrshire Council	Pow Burn



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### Summary of Progress for Pow Burn Catchment

There are approximately 410 residential properties at risk of flooding. The Annual Average Damages are approximately £940,000. Further information can be found in the Ayrshire Local FRMP under PVA 12/01, please click [here](#).

The Meadowhead Integrated Catchment study and Surface Water Management Plans for Ayr and Prestwick are complete.

### Overview of actions to manage flooding in Pow Burn Catchment

PVA	Flood protection scheme / works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan / study	Strategic mapping & modelling (Scottish Water)	Strategic mapping & modelling (Coastal)	Strategic mapping & modelling (Surface Water)	Strategic mapping & modelling (Rivers)	Maintain flood protection scheme*	Maintain flood warning	Flood forecasting	Property level protection scheme	Community flood action groups	Self help	Awareness raising	Maintenance	Emergency plans / response	Planning policies
12/10			G			G	G		A				G			G	G	G	G	G

## Summary of progress of actions to manage flood risk in the Pow Burn Catchment (PVA 12/10)

Action	Status	Description	Dates	Progress in Delivery, including key deliverables and dates	Revised dates and planned actions to complete / address delay
New Flood Warning	G	The area under consideration includes properties in Prestwick affected by flooding from the Pow Burn. Further feasibility assessment will be required to assess the delivery potential of a flood warning scheme in this location.	01/01/2016-31/12/2016	Action not progressed (action not going ahead after initial scoping).	N/A
Surface water plan/study	G	An integrated catchment study covering the Meadowhead catchment was carried out in SR10 (2010-2015). This study will help to support the surface water management planning process in Kilmarnock, Greenholm, Irvine, Prestwick and Ayr. The study has improved knowledge and understanding of flood risk and interactions between the above ground and below ground drainage network e.g. with the sewer network and watercourses. The Optioneering	01/06/2016-01/06/2022	Pre Optioneering Catchment Plan and prioritisation stages completed. The Optioneering Phase was completed in June 2021.  The implementation of the findings are currently being considered in coordination with Scottish Water.	N/A.



		phase of this study, to establish the preferred solution(s) to the flooding issues, is now being progressed.			
Surface water plan/study	G	South Ayrshire Council will develop a surface water management plan or plans to cover Prestwick and Ayr which set objectives for the management of surface water flood risk and identify the most sustainable actions to achieve the objectives.	01/06/2016-01/06/2022	The Surface water management Plan for South Ayrshire Council catchments was completed in November 2021. The implementation of the findings will be considered in the next cycle of FRM Plan	N/A.
Strategic mapping and modelling – surface water	A	SEPA will seek to incorporate additional surface water data into the flood maps to improve understanding of flood risk. Approximately 1,300km <sup>2</sup> of improved surface water data is currently available within this Local Plan District.	01/06/2016-01/06/2022	SEPA's current Surface water hazard maps use design rainfall estimates based on FEH99 methodology, this has now been superseded by FEH22 methodology. The FEH22 dataset contains the latest science and understanding of rainfall across Scotland and represents a significant change in rainfall amounts compared to FEH99 dataset, as such it is no longer considered appropriate to deliver this action as originally intended. This action will not be taken forwards as described. A major national update of the surface water maps is underway	The national surface water flooding modelling project will be completed in 2023. The outputs from this will be used to update SEPA maps early in cycle 2 and will inform SEPA's flood risk assessments for the next flood risk management cycle.

				which will deliver updated surface water flooding maps for Scotland representing the latest scientific understanding.	
Strategic mapping and modelling Section 16 Assessment	G	Scottish Water will undertake further investigation and modelling in the Meadowhead sewer catchment to improve knowledge and understanding of flood risk in this area and as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.	01/01/2016-31/12/2020	The Meadowhead ICS has been completed. No areas within this PVA were included to be taken forwards for optioneering as priority areas under the ICS.	
New flood warning Prestwick	G	The potential benefits and feasibility of a new flood warning scheme for the Pow Burn in Prestwick will be assessed in 2016.	01/01/2016 – 2017	Scoping was completed by SEPA in 2017. Actions carried out along the Pow Burn meant that a new flood warning scheme was no longer beneficial. This decision was discussed and agreed with the local authority.	No further actions will be carried out.
Flood forecasting*	G	The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The service also provides information which allows	22/12/2015-01/06/2022	SEPA continues to improve the Scottish Flood Forecasting Service with the Met Office, with daily Flood Guidance Statements and regional Flood Alerts issued as required to enable communities and responders to reduce the impacts of flooding. SEPA in partnership with the Met Office has	N/A

		SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information please visit SEPA's website.		developed a public version of the daily Flood Guidance Statement, the Scottish Flood Forecast, to provide better and earlier information to the public. A beta version of this product was launched in May 2022. It will be refined in the wake of user feedback. A more focussed version of the product, producing guidance at a local level, is planned for the next flood risk management cycle. Options for developing forecasts of surface water flooding have been published in 2022 to help urban areas and the transport network improve their resilience to and preparedness for flooding. The development and wider roll-out of this service is being considered alongside the technical, resource and communication challenges associated with providing surface water flooding guidance.	
Self help*	G	Everyone is responsible for protecting themselves and their property from flooding. Property and business owners can take simple steps to reduce damage and	01/06/2016-22/06/2022	Community Engagement includes, PLP exhibitions, selection, surveys and appropriate and relevant information to enable clients to make the right decisions.	Ongoing community PLP training, Flood Warden and resilience group promotion.

		<p>disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline The Councils, SEPA and Scottish Water will continue to engage with responsible Authorities and all other stakeholders, including community groups and the public to raise awareness of flood risk and how those affected can be better prepared. Further detail can be found in the Councils and Scottish Flood Forum websites.</p>			
Awareness raising*	G	<p>South Ayrshire Council, SEPA and Scottish Water collectively work to raise awareness of flood risk and how those affected can be better prepared. Through the continued development of flood schemes and studies at higher risk locations, officers from the Council's Flood Risk Management Team attend community council events to discuss elements of flood risk management. Across Scotland, SEPA will create</p>	22/12/2015-22/06/2022	<p>SEPA continues to work with others to raise awareness of flood risk and its flood warning service. It has participated in local activities including school / education and community resilience activities when able. Some planned activities notably in person joint events have been limited or delayed due to Covid 19.</p> <p>Awareness raising is a continuous activity for South Ayrshire Council</p>	N/A.

		and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.		which is actioned by updating the Council's website, working with partners and engagement with relevant stakeholders as appropriate.	
Maintenance*	G	Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. They produce schedules of clearance and repair works and make these available for public inspection. Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network. Asset owners and riparian landowners are	01/06/2016-01/06/2022	South Ayrshire Council carry out monthly inspections and clearance work where necessary on 17 debris screens where there is a known flood risk from blockage. Watercourse inspections are carried out on a regular basis where there are known flood risk issues. 25km of coastal protection structures are inspected annually.	N/A.

		responsible for the maintenance and management of their own assets including those which help to reduce flood risk.		The Council will continue to inspect and maintain watercourses, screens and other relevant Council assets.	
Emergency plans/response*	G	<p>Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders. Scottish Water are a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required. The emergency response by these organisations is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p>	01/06/2016-01/06/2022	<p>For South Ayrshire Council, the Ayrshire Civil Contingencies maintain and update all emergency response plans. These are updated every 3 years or as required after an incident. This is done in conjunction with the relevant department and external agency.</p> <p>The Ayrshire Civil Contingencies team is responsible for producing the Civil Contingencies Plan, which outlines the management and operational arrangements that the Councils will follow in the event of an emergency as well as encouraging other agencies to prepare for their role. The Councils will contribute to the production and review of the Civil Contingencies Plan and the Emergency Plan for Severe Weather and Flooding, as required. This response may be supported by the work of voluntary organisations.</p>	N/A.

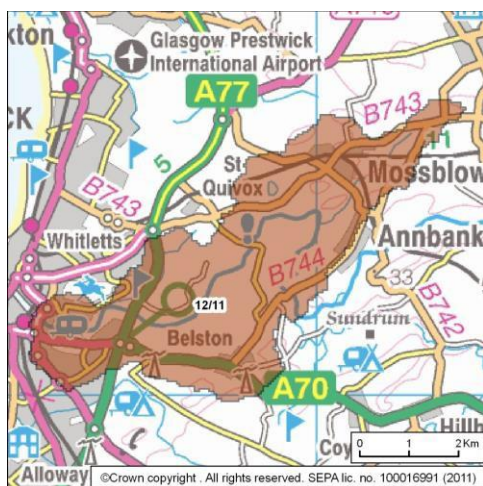
<p>Planning policies*</p>	<p>G</p>	<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p>	<p>01/06/2016-01/06/2022</p>	<p>SEPA continues to exercise its planning functions with a view to reducing overall flood risk. We effectively contribute to the delivery of sustainable flood risk management and we support the delivery of FRM Plans and Local FRM Plans. In line with the management actions that accord with national planning policies, we have and will continue to object to development at medium to high risk of flooding when it is contrary to the risk framework set out in Scottish Planning Policy. We have and will continue to engage from the start of the development plan process and encourage planning authorities to undertake a Strategic Flood Risk Assessment to inform their spatial strategy. We remain committed to exercising our planning functions with a view to reducing overall flood risk, and when a new national planning policy context is finalised later in 2022 via the National Planning Framework 4, we will take the same approach.</p>	<p>N/A.</p>
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				<p>The South Ayrshire Council Local Development Plan recognises the importance of sustainable flood risk management in both urban and rural developments and is in alignment with Scottish Planning Policy. The Local Development Plan was published in February 2022</p>	
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## 4.11 River Ayr (Potentially Vulnerable Area 12/11)

Local Plan District	Local authority	Main catchment
Ayrshire	South Ayrshire Council	River Ayr



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### Summary of Progress for River Ayr

There are approximately 90 residential properties at risk of flooding. The Annual Average Damages are approximately £72,000. Further information can be found in the Ayrshire Local FRMP under PVA 12/11, please click [here](#).

The Meadowhead Integrated Catchment study and Surface Water Management Plans for Ayr and Prestwick are complete, which has identified surface water flood risk in the area.

### Overview of actions to manage flooding in River Ayr

PVA	Flood protection scheme / works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan / study	Strategic mapping & modelling (Scottish Water)	Strategic mapping & modelling (Coastal)	Strategic mapping & modelling (Surface Water)	Strategic mapping & modelling (Rivers)	Maintain flood protection scheme*	Maintain flood warning	Flood forecasting	Property level protection scheme	Community flood action groups	Self help	Awareness raising	Maintenance	Emergency plans / response	Planning policies
12/11			G			G	G		A				G			G	G	G	G	G

## Summary of progress of actions to manage flood risk in the River Ayr (PVA 12/11)

Action	Status	Description	Dates	Progress in Delivery, including key deliverables and dates	Revised dates and planned actions to complete / address delay
New flood warning River Ayr	G	The area under consideration for a new flood warning includes properties affected by flooding from the River Ayr. Full scoping, infrastructure and a flood forecasting system will be required before a flood warning service can be delivered in this area. Communities that will benefit from a warning will be identified during development of the scheme.	01/06/2016-30/09/2018	A new flood warning service for the River Ayr has been delivered, with three new flood warning areas provided in Sorn, Catrine and Failford. SEPA has continued to operate the flood warning service since it was completed.	N/A
Surface water plan/study	G	An integrated catchment study covering the Meadowhead catchment was carried out in SR10 (2010-2015). This study will help to support the surface water management planning process in Kilmarnock, Greenholm, Irvine, Prestwick and Ayr. The study has improved knowledge and understanding of flood risk and interactions between the above	01/06/2016-01/06/2022	Pre Optioneering Catchment Plan and prioritisation stages completed. The Optioneering Phase was completed in June 2021.  The implementation of the findings are currently being considered in coordination with Scottish Water.	N/A.

		ground and below ground drainage network e.g. with the sewer network and watercourses. The Optioneering phase of this study, to establish the preferred solution(s) to the flooding issues, is now being progressed.			
Surface water plan/study	G	South Ayrshire Council will develop a surface water management plan or plans to cover Prestwick and Ayr which set objectives for the management of surface water flood risk and identify the most sustainable actions to achieve the objectives.	01/06/2016-01/06/2022	The Surface water management Plan for South Ayrshire Council catchments was completed in November 2021. The implementation of the findings will be considered in the next cycle of FRM Plan.	N/A.
Strategic mapping and modelling – Section 16 assessment	G	Scottish Water will undertake further investigation and modelling in the Meadowhead sewer catchment to improve knowledge and understanding of flood risk in this area and as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.	01/01/2016-31/12/2020	The Scottish Water assessment of flood risk within the sewer catchment has been completed.	The assessment is now completed and has been shared with Local Authority.
Strategic mapping and modelling – Surface water	A	SEPA will be seeking to incorporate additional surface water hazard mapping information into the flood maps to improve understanding of	01/06/2016-22/06/2022	SEPA's current Surface water hazard maps use design rainfall estimates based on FEH99 methodology, this has now been superseded by FEH22	The national surface water flooding modelling project will be completed in 2023. The outputs from this will be used to update

		<p>flood risk. Approximately 2,100km<sup>2</sup> of improved data is currently available within this Local Plan District.</p>		<p>methodology. The FEH22 dataset contains the latest science and understanding of rainfall across Scotland and represents a significant change in rainfall amounts compared to FEH99 dataset, as such it is no longer consider appropriate to deliver this action as originally intended. This action will not be taken forwards as described. A major national update of the surface water maps is underway which will deliver updated surface water flooding maps for Scotland representing the latest scientific understanding.</p>	<p>SEPA maps early in cycle 2 and will inform SEPA's flood risk assessments for the next flood risk management cycle.</p>
Flood forecasting*	G	<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The service</p>	<p>22/12/2015-01/06/2022</p>	<p>SEPA continues to improve the Scottish Flood Forecasting Service with the Met Office, with daily Flood Guidance Statements and regional Flood Alerts issued as required to enable communities and responders to reduce the impacts of flooding. SEPA in partnership with the Met Office has developed a public version of the daily Flood Guidance Statement, the Scottish Flood Forecast, to provide better and earlier information to the</p>	<p>N/A</p>

				<p>public. A beta version of this product was launched in May 2022. It will be refined in the wake of user feedback. A more focussed version of the product, producing guidance at a local level, is planned for the next flood risk management cycle. Options for developing forecasts of surface water flooding have been published in 2022 to help urban areas and the transport network improve their resilience to and preparedness for flooding. The development and wider roll-out of this service is being considered alongside the technical, resource and communication challenges associated with providing surface water flooding guidance.</p>	
Self help*	G	<p>Everyone is responsible for protecting themselves and their property from flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan</p>	01/04/2016-22/06/2022	<p>Community Engagement includes, PLP exhibitions, selection, surveys and appropriate and relevant information to enable clients to make the right decisions.</p>	<p>Ongoing community PLP training, Flood Warden and resilience group promotion.</p>

		and flood kit, installing property level protection, signing up to Floodline The Councils, SEPA and Scottish Water will continue to engage with responsible Authorities and all other stakeholders, including community groups and the public to raise awareness of flood risk and how those affected can be better prepared. Further detail can be found in the Councils and Scottish Flood Forum websites.			
Awareness raising*	G	South Ayrshire Council, SEPA and Scottish Water collectively work to raise awareness of flood risk and how those affected can be better prepared. Through the continued development of flood schemes and studies at higher risk locations, officers from the Council's Flood Risk Management Team attend community council events to discuss elements of flood risk management. Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These	22/12/2015-22/06/2022	SEPA continues to work with others to raise awareness of flood risk and its flood warning service. It has participated in local activities including school / education and community resilience activities when able. Some planned activities notably in person joint events have been limited or delayed due to Covid 19.  Awareness raising is a continuous activity for South Ayrshire Council which is actioned by updating the Council's website, working with	N/A.

		resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.		partners and engagement with relevant stakeholders as appropriate.	
Maintenance*	G	Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. They produce schedules of clearance and repair works and make these available for public inspection. Scottish Water undertake 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	01/06/2016-01/06/2022	South Ayrshire Council carry out monthly inspections and clearance work where necessary on 17 debris screens where there is a known flood risk from blockage. Watercourse inspections are carried out on a regular basis where there are known flood risk issues. 25km of coastal protection structures are inspected annually.  South Ayrshire Council will continue to maintain watercourses, screens and other relevant Council assets.	N/A.

		including those which help to reduce flood risk.			
Emergency plans/response*	G	<p>Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders. Scottish Water are a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required. The emergency response by these organisations is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p>	01/06/2016-01/06/2022	<p>For South Ayrshire Council, the Ayrshire Civil Contingencies maintain and update all emergency response plans. These are updated every 3 years or as required after an incident. This is done in conjunction with the relevant department and external agency.</p> <p>The Ayrshire Civil Contingencies team is responsible for producing the Civil Contingencies Plan, which outlines the management and operational arrangements that the Councils will follow in the event of an emergency as well as encouraging other agencies to prepare for their role. The Councils will contribute to the production and review of the Civil Contingencies Plan and the Emergency Plan for Severe Weather and Flooding, as required. This response may be supported by the work of voluntary organisations.</p>	N/A.
Planning policies*	G	Scottish Planning Policy and accompanying Planning Advice	01/06/2016-01/06/2022	SEPA continues to exercise its planning functions with a view to	N/A.

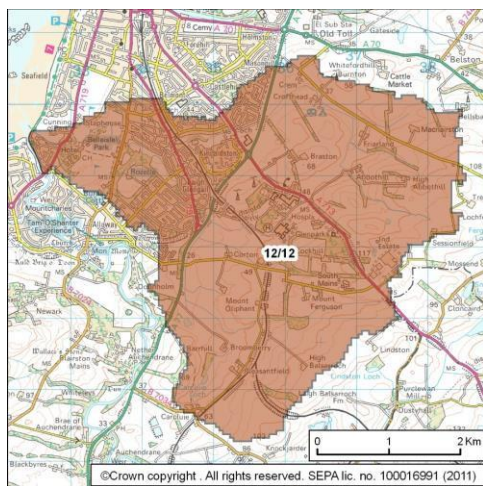


	<p>Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p>	<p>reducing overall flood risk. We effectively contribute to the delivery of sustainable flood risk management and we support the delivery of FRM Plans and Local FRM Plans. In line with the management actions that accord with national planning policies, we have and will continue to object to development at medium to high risk of flooding when it is contrary to the risk framework set out in Scottish Planning Policy. We have and will continue to engage from the start of the development plan process and encourage planning authorities to undertake a Strategic Flood Risk Assessment to inform their spatial strategy. We remain committed to exercising our planning functions with a view to reducing overall flood risk, and when a new national planning policy context is finalised later in 2022 via the National Planning Framework 4, we will take the same approach.</p> <p>The South Ayrshire Council Local Development Plan recognises the</p>	
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				importance of sustainable flood risk management in both urban and rural developments and is in alignment with Scottish Planning Policy. The Local Development Plan was published in February 2022.	
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## 4.12 Ayr East (Potentially Vulnerable Area 12/12)

Local Plan District	Local authority	Main catchment
Ayrshire	South Ayrshire Council	River Ayr



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### Summary of Progress for Ayr East

There are approximately 290 residential properties at risk of flooding. The Annual Average Damages are approximately £720,000. Further information can be found in the Ayrshire Local FRMP under PVA 12/12, please click [here](#).

The Meadowhead Integrated Catchment study and Surface Water Management Plans for Ayr and Prestwick are complete. A new 'Ayr to Troon' flood warning area was added to the existing Firth of Clyde coastal flood warning scheme.

### Overview of actions to manage flooding in Ayr East

PVA	Flood protection scheme / works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan / study	Strategic mapping & modelling (Scottish Water)	Strategic mapping & modelling (Coastal)	Strategic mapping & modelling (Surface Water)	Strategic mapping & modelling (Rivers)	Maintain flood protection scheme*	Maintain flood warning	Flood forecasting	Property level protection scheme	Community flood action groups	Self help	Awareness raising	Maintenance	Emergency plans / response	Planning policies
12/12							G	A	A			G	G			G	G	G	G	G

## Summary of progress of actions to manage flood risk in the Ayr East (PVA 12/12)

Action	Status	Description	Dates	Progress in Delivery, including key deliverables and dates	Revised dates and planned actions to complete / address delay
Strategic mapping and modelling - coastal	A	<p>SEPA will update strategic coastal mapping in the Ayr to Ardrossan area to improve understanding of flood risk. The extent and timing of improvements will depend on detailed scoping and data availability. Where this work coincides with local authority studies, SEPA will work collaboratively to ensure consistent modelling approaches are applied.</p> <p>The coastal mapping and modelling process will start in 2016, with early work focussing on methodology development and data collection.</p> <p>Once this stage has been completed a thorough review will be carried out to identify the final mapping improvements that can be made in the area.</p>	01/01/2016-31/12/2018	<p>Work completed to date includes the production of key data sets including extreme water levels and offshore wave and wind conditions to support future coastal modelling work.</p> <p>Although this work has not been completed to the timescale described in the plan, the work that will be progressed will deliver a more comprehensive update of the coastal flood hazard maps across the whole area.</p>	<p>SEPA will complete a review of coastal flood hazard mapping in south west Scotland including in this area. This includes identifying where taking account of the impact of waves on flooding from the sea may be required. SEPA will collect the required coastal defence asset and other information necessary to progress with improved flood modelling and mapping in the highest priority areas taking account of wave overtopping where required.</p> <p>SEPA will look for opportunities to progress future modelling work in a way that best supports improvements to SEPA's Coastal Flood Warning Schemes.</p> <p>Expected to progress to the next stage around the middle of cycle</p>

					2 and complete early in the following cycle, subject to funding.
Strategic mapping and modelling – surface water	A	SEPA will be seeking to incorporate additional surface water hazard mapping information into the flood maps to improve understanding of flood risk. Approximately 2,100km <sup>2</sup> of improved data is currently available within this Local Plan District.	01/06/2016-22/06/2022	SEPA's current Surface water hazard maps use design rainfall estimates based on FEH99 methodology, this has now been superseded by FEH22 methodology. The FEH22 dataset contains the latest science and understanding of rainfall across Scotland and represents a significant change in rainfall amounts compared to FEH99 dataset, as such it is no longer consider appropriate to deliver this action as originally intended. This action will not be taken forwards as described. A major national update of the surface water maps is underway which will deliver updated surface water flooding maps for Scotland representing the latest scientific understanding.	The national surface water flooding modelling project will be completed in 2023. The outputs from this will be used to update SEPA maps early in cycle 2 and will inform SEPA's flood risk assessments for the next flood risk management cycle.
Strategic mapping and modelling - Section 16 Assessment		Scottish Water will undertake further investigation and modelling in the Meadowhead sewer catchment to improve knowledge and understanding of flood risk in this area and as required under Section	01/01/2016-31/12/2020	The Scottish Water assessment of flood risk within the sewer catchment has been completed.	The assessment is now completed and has been shared with Local Authority.

		16 of the Flood Risk Management (Scotland) Act 2009.			
Maintain Flood Warning Ayr Seafield flood warning area	G	SEPA will continue to maintain the Ayr Seafield flood warning area which is part of the Firth of Clyde coastal flood warning scheme. When flood events occur in an area with a flood warning service, SEPA will seek to verify and validate the warning service. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.	22/12/2015- 22/06/2022	SEPA has recently reviewed and recalibrated the Firth of Clyde flood forecasting model. SEPA has continued to maintain the Ayr Seafield flood warning area within a new 'Ayr to Troon' flood warning area which is part of the Firth of Clyde coastal flood warning scheme.	SEPA will continue to operate the flood warning service.
Flood forecasting*	G	The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information please visit SEPA's website.	22/12/2015- 01/06/2022	SEPA continues to improve the Scottish Flood Forecasting Service with the Met Office, with daily Flood Guidance Statements and regional Flood Alerts issued as required to enable communities and responders to reduce the impacts of flooding. SEPA in partnership with the Met Office has developed a public version of the daily Flood Guidance Statement, the Scottish Flood Forecast, to provide better and earlier information to the public. A beta version of this product was launched in May 2022. It will be	N/A

				refined in the wake of user feedback. A more focussed version of the product, producing guidance at a local level, is planned for the next flood risk management cycle. Options for developing forecasts of surface water flooding have been published in 2022 to help urban areas and the transport network improve their resilience to and preparedness for flooding. The development and wider roll-out of this service is being considered alongside the technical, resource and communication challenges associated with providing surface water flooding guidance.	
Self help*	G	Everyone is responsible for protecting themselves and their property from flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline	01/06/2016-22/06/2022	Community Engagement includes, PLP exhibitions, selection, surveys and appropriate and relevant information to enable clients to make the right decisions.	Ongoing community PLP training, Flood Warden and resilience group promotion.

		The Councils, SEPA and Scottish Water will continue to engage with responsible Authorities and all other stakeholders, including community groups and the public to raise awareness of flood risk and how those affected can be better prepared. Further detail can be found in the Councils and Scottish Flood Forum websites.			
Awareness raising*	G	South Ayrshire Council, SEPA and Scottish Water collectively work to raise awareness of flood risk and how those affected can be better prepared. Through the continued development of flood schemes and studies at higher risk locations, officers from the Council's Flood Risk Management Team attend community council events to discuss elements of flood risk management. Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing	22/12/2015-22/06/2022	SEPA continues to work with others to raise awareness of flood risk and its flood warning service. It has participated in local activities including school / education and community resilience activities when able. Some planned activities notably in person joint events have been limited or delayed due to Covid 19.  Awareness raising is a continuous activity for South Ayrshire Council which is actioned by updating the Council's website, working with partners and engagement with relevant stakeholders as appropriate.	N/A.



		activity and promotion of SEPA's flood forecasting and warning services (Floodline). Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.			
Maintenance*	G	Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. They produce schedules of clearance and repair works and make these available for public inspection. Scottish Water undertake 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.	01/06/2016-01/06/2022	South Ayrshire Council carry out monthly inspections and clearance work where necessary on 17 debris screens where there is a known flood risk from blockage. Watercourse inspections are carried out on a regular basis where there are known flood risk issues. 25km of coastal protection structures are inspected annually.  South Ayrshire Council will continue to inspect and maintain watercourses, screens and other relevant Council assets.	N/A.

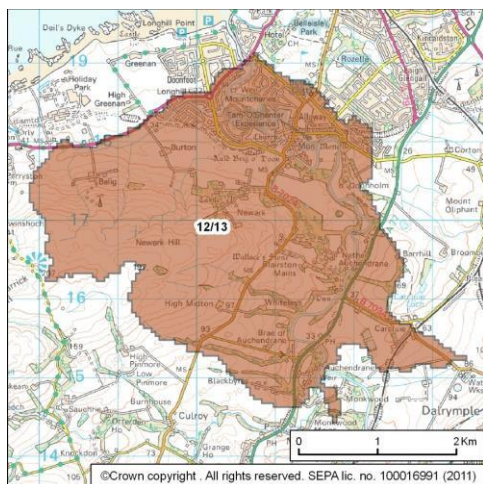
Emergency plans/response*	G	<p>Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders. Scottish Water are a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required. The emergency response by these organisations is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p>	01/06/2016-01/06/2022	<p>For SAC Ayrshire Civil Contingencies maintain and update all emergency response plans. These are updated every 3 years or as required after an incident. This is done in conjunction with the relevant department and external agency.</p> <p>The Ayrshire Civil Contingencies team is responsible for producing the Civil Contingencies Plan, which outlines the management and operational arrangements that the Councils will follow in the event of an emergency as well as encouraging other agencies to prepare for their role. The Councils will contribute to the production and review of the Civil Contingencies Plan and the Emergency Plan for Severe Weather and Flooding, as required. This response may be supported by the work of voluntary organisations.</p>	N/A.
Planning policies*	G	<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the</p>	01/06/2016-01/06/2022	<p>SEPA continues to exercise its planning functions with a view to reducing overall flood risk. We effectively contribute to the delivery of sustainable flood risk management</p>	N/A.

	<p>development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p>	<p>and we support the delivery of FRM Plans and Local FRM Plans. In line with the management actions that accord with national planning policies, we have and will continue to object to development at medium to high risk of flooding when it is contrary to the risk framework set out in Scottish Planning Policy. We have and will continue to engage from the start of the development plan process and encourage planning authorities to undertake a Strategic Flood Risk Assessment to inform their spatial strategy. We remain committed to exercising our planning functions with a view to reducing overall flood risk, and when a new national planning policy context is finalised later in 2022 via the National Planning Framework 4, we will take the same approach.</p> <p>The South Ayrshire Council Local Development Plan recognises the importance of sustainable flood risk management in both urban and rural developments and is in alignment with</p>	
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				Scottish Planning Policy. The Local Development Plan was published in February 2022.	
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## 4.13 Ayr South (Potentially Vulnerable Area 12/13)

<b>Local Plan District</b>	<b>Local authority</b>	<b>Main catchment</b>
Ayrshire	South Ayrshire Council	River Doon



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### Summary of Progress for Ayr South

There are approximately 20 residential properties at risk of flooding. The Annual Average Damages are approximately £40,000. Further information can be found in the Ayrshire Local FRMP under PVA 12/13, please click [here](#).

Throughout the period South Ayrshire Council have carried out inspection and maintenance works at known high flood risk locations such as debris screens and small culverts.

The Meadowhead Integrated Catchment study and Surface Water Management Plans for Ayr and Prestwick are complete.

### Overview of actions to manage flooding in Ayr South

PVA	Flood protection scheme / works	Natural flood management management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan / study	Strategic mapping & modelling (Scottish Water)	Strategic mapping & modelling (Coastal)	Strategic mapping & modelling (Surface Water)	Strategic mapping & modelling (Rivers)	Maintain flood protection scheme*	Maintain flood warning	Flood forecasting	Property level protection scheme	Community flood action groups	Self help	Awareness raising	Maintenance	Emergency plans / response	Planning policies
12/13							G		A				G			G	G	G	G	G

## Summary of progress of actions to manage flood risk in the Ayr South (PVA 12/13)

Action	Status	Description	Dates	Progress in Delivery, including key deliverables and dates	Revised dates and planned actions to complete / address delay
Strategic mapping and modelling - Section 16 Assessment	G	Scottish Water will undertake further investigation and modelling in the Meadowhead sewer catchment to improve knowledge and understanding of flood risk in this area and as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.	01/01/2016-31/12/2020	The Scottish Water assessment of flood risk within the sewer catchment has been completed.	The assessment is now completed and has been shared with Local Authority.
Strategic mapping and modelling – surface water	A	SEPA will be seeking to incorporate additional surface water hazard mapping information into the flood maps to improve understanding of flood risk. Approximately 2,100km <sup>2</sup> of improved data is currently available within this Local Plan District.	01/06/2016-22/06/2022	SEPA's current Surface water hazard maps use design rainfall estimates based on FEH99 methodology, this has now been superseded by FEH22 methodology. The FEH22 dataset contains the latest science and understanding of rainfall across Scotland and represents a significant change in rainfall amounts compared to FEH99 dataset, as such it is no longer consider appropriate to deliver this action as originally intended. This action will not be taken forwards as described. A major national update of	The national surface water flooding modelling project will be completed in 2023. The outputs from this will be used to update SEPA maps early in cycle 2 and will inform SEPA's flood risk assessments for the next flood risk management cycle.

				the surface water maps is underway which will deliver updated surface water flooding maps for Scotland representing the latest scientific understanding.	
Flood forecasting*	G	The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information please visit SEPA's website.	22/12/2015-01/06/2022	SEPA continues to improve the Scottish Flood Forecasting Service with the Met Office, with daily Flood Guidance Statements and regional Flood Alerts issued as required to enable communities and responders to reduce the impacts of flooding. SEPA in partnership with the Met Office has developed a public version of the daily Flood Guidance Statement, the Scottish Flood Forecast, to provide better and earlier information to the public. A beta version of this product was launched in May 2022. It will be refined in the wake of user feedback. A more focussed version of the product, producing guidance at a local level, is planned for the next flood risk management cycle. Options for developing forecasts of surface water flooding have been published in 2022 to help urban areas and the transport	N/A

				network improve their resilience to and preparedness for flooding. The development and wider roll-out of this service is being considered alongside the technical, resource and communication challenges associated with providing surface water flooding guidance.	
Self help*	G	<p>Everyone is responsible for protecting themselves and their property from flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline The Councils, SEPA and Scottish Water will continue to engage with responsible Authorities and all other stakeholders, including community groups and the public to raise awareness of flood risk and how those affected can be better prepared. Further detail can be</p>	01/06/2016-22/06/2022	Community Engagement includes, PLP exhibitions, selection, surveys and appropriate and relevant information to enable clients to make the right decisions.	Ongoing community PLP training, Flood Warden and resilience group promotion.



		found in the Councils and Scottish Flood Forum websites.			
Awareness raising*	G	<p>South Ayrshire Council, SEPA and Scottish Water collectively work to raise awareness of flood risk and how those affected can be better prepared. Through the continued development of flood schemes and studies at higher risk locations, officers from the Council's Flood Risk Management Team attend community council events to discuss elements of flood risk management. Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the</p>	22/12/2015-22/06/2022	<p>SEPA continues to work with others to raise awareness of flood risk and its flood warning service. It has participated in local activities including school / education and community resilience activities when able. Some planned activities notably in person joint events have been limited or delayed due to Covid 19.</p> <p>Awareness raising is a continuous activity for South Ayrshire Council which is actioned by updating the Council's website, working with partners and engagement with relevant stakeholders as appropriate.</p>	N/A.

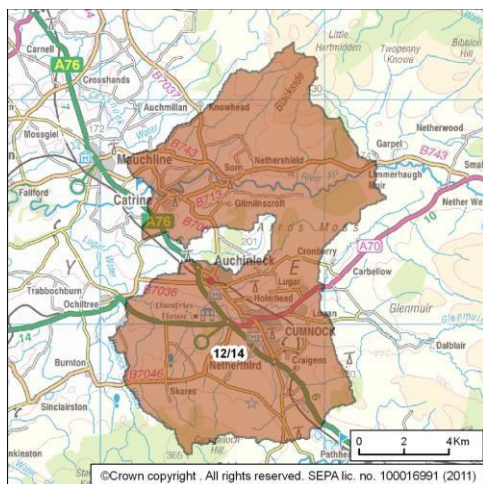
		public on large capital projects and detailed local studies.			
Maintenance*	G	Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. They produce schedules of clearance and repair works and make these available for public inspection. Scottish Water undertake 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.	01/06/2016-01/06/2022	<p>South Ayrshire Council carry out monthly inspections and clearance work where necessary on 17 debris screens where there is a known flood risk from blockage. Watercourse inspections are carried out on a regular basis where there are known flood risk issues.</p> <p>South Ayrshire Council will continue to inspect and maintain watercourses, screens and other relevant Council Assets.</p>	N/A.
Emergency plans/response*	G	Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2	01/06/2016-01/06/2022	For South Ayrshire Council, the Ayrshire Civil Contingencies maintain and update all emergency response plans. These are updated every 3 years or as required after an incident. This is done in conjunction with the relevant department and external agency.	N/A.

		<p>Responders. Scottish Water are a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required. The emergency response by these organisations is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary</p>		<p>The Ayrshire Civil Contingencies team is responsible for producing the Civil Contingencies Plan, which outlines the management and operational arrangements that the Councils will follow in the event of an emergency as well as encouraging other agencies to prepare for their role. The Councils will contribute to the production and review of the Civil Contingencies Plan and the Emergency Plan for Severe Weather and Flooding, as required. This response may be supported by the work of voluntary organisations.</p>	
Planning policies*	G	<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and</p>	01/06/2016-01/06/2022	<p>SEPA continues to exercise its planning functions with a view to reducing overall flood risk. We effectively contribute to the delivery of sustainable flood risk management and we support the delivery of FRM Plans and Local FRM Plans. In line with the management actions that accord with national planning policies, we have and will continue to object to development at medium to high risk of flooding when it is contrary to the risk framework set out in Scottish Planning</p>	N/A.

		<p>to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p>	<p>Policy. We have and will continue to engage from the start of the development plan process and encourage planning authorities to undertake a Strategic Flood Risk Assessment to inform their spatial strategy. We remain committed to exercising our planning functions with a view to reducing overall flood risk, and when a new national planning policy context is finalised later in 2022 via the National Planning Framework 4, we will take the same approach.</p> <p>The South Ayrshire Council Local Development Plan recognises the importance of sustainable flood risk management in both urban and rural developments and is in alignment with Scottish Planning Policy. The Local Development Plan was published in February 2022.</p>	
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## 4.14 Cumnock and Catrine (Potentially Vulnerable Area 12/14)

Local Plan District	Local authority	Main catchment
Ayrshire	East Ayrshire Council	River Ayr



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### Summary of Progress for Cumnock and Catrine

There are approximately 330 residential properties and 240 non-residential properties at risk of flooding. The Annual Average Damages are approximately £970,000. Further information can be found in the Ayrshire Local FRMP under PVA 12/14, please click here.

Key progress has been made with the installation of River Monitors on the Lugar and Glaisnock Waters. These are being used in conjunction with the SEPA monitor on the River Ayr at Catrine, to gather hydraulic data to inform the planned combined Flood study (2020 -2023) for these watercourses. The Flood study will inform Cycle 2 flooding actions for these locations.

### Overview of actions to manage flooding in Cumnock and Catrine

PVA	Flood protection scheme / works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan / study	Strategic mapping & modelling (Scottish Water)	Strategic mapping & modelling (Coastal)	Strategic mapping & modelling (Surface Water)	Strategic mapping & modelling (Rivers)	Maintain flood protection scheme*	Maintain flood warning	Flood forecasting	Property level protection scheme	Community flood action groups	Self help	Awareness raising	Maintenance	Emergency plans / response	Planning policies
12/14				A			G		A				G	G		G	G	G	G	G

## Summary of progress of actions to manage flood risk in the Cumnock and Catrine (PVA 12/14)

Action	Status	Description	Dates	Progress in Delivery, including key deliverables and dates	Revised dates and planned actions to complete / address delay
Flood protection study	A	A study will investigate the feasibility of a flood protection scheme along the River Ayr at Sorn/Catrine and further investigate any measures required in Cumnock.	01/06/2016-22/06/2022	Progress has been made with the installation of River Monitors on the Lugar and Glaisnock Waters. These are being used in conjunction with the SEPA monitor on the River Ayr at Catrine, to gather hydraulic data to inform the planned combined Flood study (2020 -2022) for these watercourses. The Flood study will inform Cycle 2 flooding actions for these locations.	Additional resourcing is required in order procure these works out to tender. These works are expected to progress on schedule.
Strategic mapping and modelling – surface water	A	SEPA will be seeking to incorporate additional surface water hazard mapping information into the flood maps to improve understanding of flood risk. Approximately 2,100km <sup>2</sup> of improved data is currently available within this Local Plan District.	01/06/2016-22/06/2022	SEPA's current Surface water hazard maps use design rainfall estimates based on FEH99 methodology, this has now been superseded by FEH22 methodology. The FEH22 dataset contains the latest science and understanding of rainfall across Scotland and represents a significant change in rainfall amounts compared to FEH99 dataset, as such it is no	The national surface water flooding modelling project will be completed in 2023. The outputs from this will be used to update SEPA maps early in cycle 2 and will inform SEPA's flood risk assessments for the next flood risk management cycle.

				longer consider appropriate to deliver this action as originally intended. This action will not be taken forwards as described. A major national update of the surface water maps is underway which will deliver updated surface water flooding maps for Scotland representing the latest scientific understanding.	
Strategic mapping and modelling - Section 16 assessment	G	Scottish Water will undertake further investigation and modelling in the Catrineholm and Underwood Cumnock sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.	01/01/2016-31/12/2019	The Scottish Water assessment of flood risk within the sewer catchment has been completed.	The assessment is now completed and has been shared with Local Authority.
Flood forecasting*	G	The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The service also provides information which allows SEPA to issue flood warnings,	22/12/2015-01/06/2022	SEPA continues to improve the Scottish Flood Forecasting Service with the Met Office, with daily Flood Guidance Statements and regional Flood Alerts issued as required to enable communities and responders to reduce the impacts of flooding. SEPA in partnership with the Met Office has developed a public version of the daily	N/A

		giving people a better chance of reducing the impact of flooding on their home or business. For more information please visit SEPA's website.		Flood Guidance Statement, the Scottish Flood Forecast, to provide better and earlier information to the public. A beta version of this product was launched in May 2022. It will be refined in the wake of user feedback. A more focussed version of the product, producing guidance at a local level, is planned for the next flood risk management cycle. Options for developing forecasts of surface water flooding have been published in 2022 to help urban areas and the transport network improve their resilience to and preparedness for flooding. The development and wider roll-out of this service is being considered alongside the technical, resource and communication challenges associated with providing surface water flooding guidance.	
Property level protection scheme	G	East Ayrshire Council is currently procuring suitable flow and level monitoring installations on appropriate watercourses identified for studies, with the intention of informing those studies in areas	01/06/2016-22/06/2022	The Flood Study for the River Ayr for Catrine and Lugar and Glaisnock in Cumnock informed property level protection requirements for the area and the monitors will form the basis for	N/A.



		<p>known to have little or no information currently available. Information gaps and proposed locations are being identified in co-operation with SEPA. Once this in place the Flood Study for the River Ayr will inform any property level protection requirements for the area and the monitors will form the basis for a Flood Warning scheme to support the placement.</p>		<p>a Flood Warning scheme to support the placement.</p> <p>East Ayrshire Council made PLP available to all residents in EAC, who would benefit from there use, and will continue to do so.</p>	
Self help*	G	<p>Everyone is responsible for protecting themselves and their property from flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline. The Councils, SEPA and Scottish Water will continue to engage with responsible Authorities and all other stakeholders, including community groups and the public to raise awareness of flood risk and how</p>	01/04/2016-22/06/2022	<p>Community Engagement included, PLP exhibitions, selection, surveys and appropriate and relevant information to enable clients to make the right decisions.</p> <p>Ongoing community PLP training, Flood Warden and resilience group promotion will continue to be supported.</p>	N/A.

		those affected can be better prepared. Further detail can be found in the Councils and Scottish Flood Forum websites.			
Awareness raising*	G	<p>East Ayrshire Council, SEPA and Scottish Water collectively work to raise awareness of flood risk and how those affected can be better prepared.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline).</p> <p>Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.</p> <p>Further Information is provided on East Ayrshire Council, SEPA,</p>	01/04/2016-22/06/2022	<p>Ayr &amp; Annick Flood Warning Scheme, which includes the communities of Catrine and Sorn, launched in 2020. It was a soft launch due to Covid-19 pandemic but awareness raising to promote the new service was carried out in February 2022.</p> <p>Ayr &amp; Annick Flood Warning Scheme, which includes the communities of Catrine and Sorn, launched in 2020. It was a soft launch due to Covid-19 pandemic but awareness raising to promote the new service was carried out in February 2022.</p> <p>East Ayrshire Council and SEPA has delivered a range of awareness raising activities through campaigning, education activities and partnership delivery. We have run national and local digital and direct engagement campaigns to raise awareness of flood</p>	<p>East Ayrshire Council and SEPA will continue to raise awareness of flood risk through campaigning, developing education and engagement tools, creating new partnerships and improving the flood warning and forecasting service. Many of our awareness raising activities currently underway will continue. Our focus will be on promoting flood warning and forecasting service, innovation, education and engagement with partners, customers and the public.</p>

		<p>Scottish Water and Ayrshire Road Alliance websites.</p>	<p>risk and SEPA's flood warning service, Floodline. We publish and publicise an electronic newsletter (Flooding Gateway) four times a year which is distributed to a wide audience. SEPA are working with Education Scotland and Scottish Government Resilience team to embed flooding awareness within the Curriculum for Excellence, and resilience partners in Safer Communities programmes. We have also developed an online tool that helps everyone share information on current flooding issues (Report-a-Flood). We have worked in partnership with local authorities, emergency services and community organisations (e.g. Neighbourhood Watch Scotland, Citizens Advice Scotland and others) to share our resources and help to promote preparedness and understanding of how we manage flood risk in Scotland. We have actively supported the Scottish Flood Forum and worked closely with UK agencies to develop joint flooding information.</p>	
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Maintenance*	G	<p>East Ayrshire Council in accordance with Section 18 of the Flood Risk Management (Scotland) Act 2009 undertake assessment of water bodies to determine whether works of clearance and repair would substantially reduce the risk of flooding. This information is used to produce a schedule of works which is available for the public to inspect.</p>	01/04/2016-22/06/2022	<p>High risk locations such as those with screens and some smaller culverts were inspected on a scheduled basis. The majority of inspections tended to be undertaken in the winter months when flows are higher, and leaves and other waterborne debris can be an issue.</p> <p>Works of clearance were carried out during these inspections which are not specifically "scheduled". The main water bodies, and other water bodies, within urban areas were subject to an annual visual inspection and any works were undertaken where it would be expedient and in the interests of good flood risk management to do so.</p> <p>East Ayrshire Council will continue to inspect and maintain watercourses, screens and other relevant Council assets.</p>	N/A.
Emergency plans/response*	G	<p>The Civil Contingencies Team ensures that the Council will be able to respond speedily and effectively in a major emergency. North,</p>	01/04/2016-22/06/2022	<p>Emergency Response Planning is carried out by Ayrshire Civil Contingencies Team (ACCT) this is an all Ayrshire shared service. ACCT</p>	N/A.

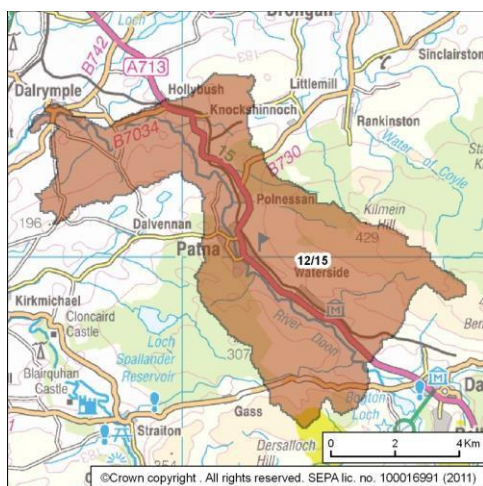
	<p>South and East Ayrshire teams are a shared service team known as the Ayrshire Civil Contingencies Team. If disaster strikes, or if emergencies develop in Ayrshire, communities will look to the Council for support and advice. The Ayrshire Civil Contingencies Team ensures that the Council will be able to respond speedily and effectively in a major emergency in accordance with the Civil Contingencies Act 2004 (Contingency Planning) (Scotland) Regulations 2005. Our responsibilities include preparing comprehensive and robust contingency plans and procedures irrespective of the nature of the emergency. The main aim is to preserve life and property. Every emergency plan also sets out to:</p> <ul style="list-style-type: none"> <li>Mitigate the harmful effects of the emergency on the environment;</li> <li>bring about a swift return to normal life in the communities and environment affected; and</li> </ul>		<p>update and co-ordinate (all Emergency Responders) the emergency response plans (ERP) as required (in direct consultation with ARA, where appropriate). In addition to the ERP, EAC has implemented a system of river monitors in known areas and a rota of Flood Scouts (FS) is maintained who are tasked to monitor and report back on status on receipt of any alarm.</p> <p>Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders. Scottish Water are a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required. The emergency response by these organisations is coordinated through</p>	
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		encourage all agencies and organisations to prepare for their role.		regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.	
Planning policies*	G	<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p>	01/06/2016-22/06/2022	<p>SEPA continues to exercise its planning functions with a view to reducing overall flood risk. We effectively contribute to the delivery of sustainable flood risk management and we support the delivery of FRM Plans and Local FRM Plans. In line with the management actions that accord with national planning policies, we have and will continue to object to development at medium to high risk of flooding when it is contrary to the risk framework set out in Scottish Planning Policy. We have and will continue to engage from the start of the development plan process and encourage planning authorities to undertake a Strategic Flood Risk Assessment to inform their spatial strategy. We remain committed to exercising our planning functions with a view to reducing overall flood risk, and when a new national planning</p>	N/A.

				<p>policy context is finalised later in 2022 via the National Planning Framework 4, we will take the same approach.</p> <p>East Ayrshire Council has prepared and consulted on its Proposed Plan LDP2. As part of the preparation of the Plan, the Council engaged early with SEPA on sites it was considering allocating and took on board comments from SEPA. In addition, The Council has worked extensively with SEPA and the KAG on issues pertaining to flooding in Kilmarnock and has undertaken a series of flood workshops with the Key Agencies. The new proposed plan contains flood policies reflective of SEPA's stance and of NPF4.</p> <p>National Planning Framework 4 is expected to be adopted by the Scottish Parliament later in 2022 and will become part of the Development Plan, ensuring national planning policies on flooding are applied in local decision making.</p>	
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## 4.15 Dalrymple and Patna (Potentially Vulnerable Area 12/15)

Local Plan District	Local authority	Main catchment
Ayrshire	East Ayrshire Council, South Ayrshire Council	River Doon



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### Summary of Progress for Dalrymple and Patna

There are approximately 90 residential properties at risk of flooding. The Annual Average Damages are approximately £120,000. Further information can be found in the Ayrshire Local FRMP under PVA 12/15, please click [here](#).

Key progress has been made with the installation of River Monitors on the Taiglum and Primpton Burns and on the River Doon at Dalrymple Bridge, to gather hydraulic data to inform the completed combined Flood study (2020 -2022) for these watercourses. The Flood study has informed Cycle 2 flooding actions for these locations.

### Overview of actions to manage flooding in Dalrymple and Patna

PVA	Flood protection scheme / works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan / study	Strategic mapping & modelling (Scottish Water)	Strategic mapping & modelling (Coastal)	Strategic mapping & modelling (Surface Water)	Strategic mapping & modelling (Rivers)	Maintain flood protection scheme*	Maintain flood warning	Flood forecasting	Property level protection scheme	Community flood action groups	Self help	Awareness raising	Maintenance	Emergency plans / response	Planning policies
12/15				G					A		G		G			G	G	G	G	G



## Summary of progress of actions to manage flood risk in the Dalrymple and Patna (PVA 12/15)

Action	Status	Description	Dates	Progress in Delivery, including key deliverables and dates	Revised dates and planned actions to complete / address delay
Flood protection study	G	A study will investigate the feasibility of a flood protection scheme, including modification of conveyance through a historic bridge and Construction of direct defences. The study will also examine the current operating procedure of Loch Doon to increase the level of storage, this will be carried out in coordination with Scottish Power	01/06/2016-22/06/2022	<p>Progress has been made with the installation of River Monitors on the Taiglum and Primpton Burns and the River Doon, to gather hydraulic data to inform the completed combined Flood study (2020 -2022) for these watercourses. The Flood study will inform Cycle 2 flooding actions for these locations.</p> <p>Additional resourcing was required in order to procure these works. This study has now been completed. The anticipated rescheduling is not envisaged to affect the ability to report as intended in Cycle 2.</p>	N/A.
Strategic mapping and modelling - surface water	A	SEPA will seek to incorporate additional surface water data into the flood maps to improve understanding of flood risk. Approximately	01/01/2016-31/12/2016	SEPA's current surface water hazard maps use design rainfall estimates based on FEH99 methodology, this has now been superseded by FEH22 methodology. The FEH22 dataset	The national surface water flooding modelling project will be completed in 2023. The outputs from this will be used to update SEPA maps early in cycle 2 and

		1,300km <sup>2</sup> of improved surface water data is currently available within this Local Plan District.		contains the latest science and understanding of rainfall across Scotland and represents a significant change in rainfall amounts compared to FEH99 dataset, as such it is no longer consider appropriate to deliver this action as originally intended. This action will not be taken forwards as described. A major national update of the surface water maps is underway which will deliver updated surface water flooding maps for Scotland representing the latest scientific understanding.	will inform SEPA's flood risk assessments for the next flood risk management cycle.
Maintain flood protection scheme*	G	An existing overflow channel on the Primpton Burn reduces the flood risk from the watercourse. The Council should investigate the current benefit which is offered by the scheme. This channel will be maintained and will continue to manage flooding according to the design standard at the time of construction. Levels of flood risk are likely to increase over time as a consequence of climate change.	01/06/2016-22/06/2022	Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. They produce schedules of clearance and repair works and make these available for public inspection. Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network. Asset owners and riparian landowners are responsible for the maintenance and management of	N/A.

		<p>The Primpton Burn is particularly prone to high water levels in the River Doon. East Ayrshire Council/ACCT have held meetings with Scottish Power to liaison on the operating protocols of the Doon Dam. Scottish Power have agreed to release more water earlier to mitigate against the need to open the gates only in an emergency. This earlier release is intended to lessen the impact during heavy rainfall events. This section of the Doon is an area that has been identified for a future study (2016-2021) to establish any further works required here.</p>		<p>their own assets including those which help to reduce flood risk.</p> <p>The Council will continue to inspect and maintain the flood protection structures within the Catchment.</p>	
Flood forecasting*	G	<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of</p>	22/12/2015-01/06/2022	<p>SEPA continues to improve the Scottish Flood Forecasting Service with the Met Office, with daily Flood Guidance Statements and regional Flood Alerts issued as required to enable communities and responders to reduce the impacts of flooding. SEPA in partnership with the Met Office has developed a public version of the daily Flood Guidance Statement, the</p>	N/A

		reducing the impact of flooding on their home or business. For more information please visit SEPA's website.		Scottish Flood Forecast, to provide better and earlier information to the public. A beta version of this product was launched in May 2022. It will be refined in the wake of user feedback. A more focussed version of the product, producing guidance at a local level, is planned for the next flood risk management cycle. Options for developing forecasts of surface water flooding have been published in 2022 to help urban areas and the transport network improve their resilience to and preparedness for flooding. The development and wider roll-out of this service is being considered alongside the technical, resource and communication challenges associated with providing surface water flooding guidance.	
Self help*	G	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.	01/06/2016-22/06/2022	Community Engagement included, PLP exhibitions, selection, surveys and appropriate and relevant information to enable clients to make the right decisions. Responsible Authorities shall continue to provide ongoing community PLP	N/A.

		<p>This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline</p> <p>The Councils, SEPA and Scottish Water will continue to engage with responsible Authorities and all other stakeholders, including community groups and the public to raise awareness of flood risk and how those affected can be better prepared. Further detail can be found in the Councils and Scottish Flood Forum websites.</p>		<p>training, Flood Warden and resilience group promotion.</p>	
Awareness raising*	G	<p>East Ayrshire Council, South Ayrshire Council, SEPA and Scottish Water collectively work to raise awareness of flood risk and how those affected can be better prepared.</p>	<p>01/06/2016-22/06/2022</p>	<p>SEPA continues to work with others to raise awareness of flood risk and its flood warning service. It has participated in local activities including school / education and community resilience activities when able. Some planned activities notably in person joint events have been limited or delayed due to Covid 19.</p> <p>East Ayrshire Council and SEPA has delivered a range of awareness raising activities through campaigning, education activities and partnership</p>	<p>N/A.</p>

			<p>delivery. We have run national and local digital and direct engagement campaigns to raise awareness of flood risk and SEPA's flood warning service, Floodline. We publish and publicise an electronic newsletter (Flooding Gateway) four times a year which is distributed to a wide audience. SEPA are working with Education Scotland and Scottish Government Resilience team to embed flooding awareness within the Curriculum for Excellence, and resilience partners in Safer Communities programmes. We have also developed an online tool that helps everyone share information on current flooding issues (Report-a-Flood). We have worked in partnership with local authorities, emergency services and community organisations (e.g. Neighbourhood Watch Scotland, Citizens Advice Scotland and others) to share our resources and help to promote preparedness and understanding of how we manage flood risk in Scotland. We have actively supported the Scottish Flood</p>	
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				<p>Forum and worked closely with UK agencies to develop joint flooding information.</p> <p>Awareness raising is a continuous activity for South Ayrshire Council which is actioned by updating the Council's website, working with partners and engagement with relevant stakeholders as appropriate.</p>	
Maintenance*	G	<p>East Ayrshire Council in accordance with Section 18 of the Flood Risk Management (Scotland) Act 2009 undertake assessment of water bodies to determine whether works of clearance and repair would substantially reduce the risk of flooding. This information is used to produce a schedule of works which is available for the public to inspect.</p>	01/06/2016-22/06/2022	<p>High risk locations such as those with screens and some smaller culverts were inspected on a scheduled basis. The majority of inspections tended to be undertaken in the winter months when flows are higher, and leaves and other waterborne debris can be an issue. Works of clearance were carried out during these inspections which are not specifically "scheduled". The main water bodies, and other water bodies, within urban areas were subject to an annual visual inspection and any works were undertaken where it would be expedient and in the interests of good flood risk management to do so.</p>	N/A.

				East Ayrshire Council will continue to inspect and maintain watercourses, screens and other relevant Council assets.	
Emergency plans/response*	G	The Civil Contingencies Team ensures that the Council will be able to respond speedily and effectively in a major emergency. North, South and East Ayrshire teams are a shared service team known as the Ayrshire Civil Contingencies Team. If disaster strikes, or if emergencies develop in Ayrshire, communities will look to the Council for support and advice. The Ayrshire Civil Contingencies Team ensures that the Council will be able to respond speedily and effectively in a major emergency in accordance with the Civil Contingencies Act 2004 (Contingency Planning) (Scotland) Regulations 2005. Our responsibilities include preparing comprehensive and robust contingency plans and procedures irrespective of the nature of the	01/06/2016-22/06/2022	<p>Emergency Response Planning is carried out by Ayrshire Civil Contingencies Team (ACCT) this is an all Ayrshire shared service. ACCT update and co-ordinate (all Emergency Responders) the emergency response plans (ERP) as required (in direct consultation with ARA, where appropriate).</p> <p>In addition to the ERP EAC has implemented a system of river monitors in known areas and a rota of Flood Scouts (FS). Is maintained who are tasked to monitor and report back on status on receipt of any alarm.</p> <p>Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on</p>	N/A.



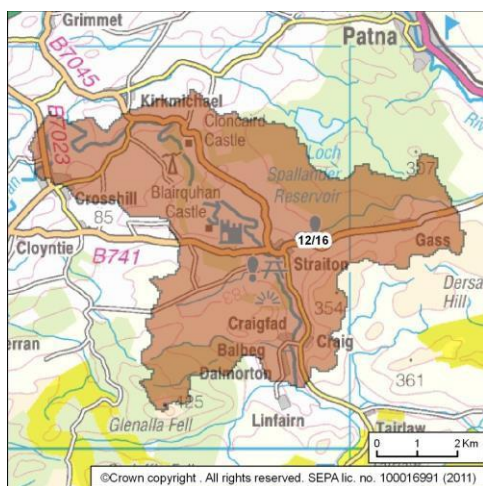
		<p>emergency. The main aim is to preserve life and property. Every emergency plan also sets out to:</p> <p>Mitigate the harmful effects of the emergency on the environment;</p> <p>bring about a swift return to normal life in the communities and environment affected; and</p> <p>encourage all agencies and organisations to prepare for their role.</p>		<p>emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders. Scottish Water are a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required. The emergency response by these organisations is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p>	
<p>Planning policies*</p>	G	<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and</p>	<p>01/06/2016-01/06/2022</p>	<p>SEPA continues to exercise its planning functions with a view to reducing overall flood risk. We effectively contribute to the delivery of sustainable flood risk management and we support the delivery of FRM Plans and Local FRM Plans. In line with the management actions that accord with national planning policies, we have and will continue to object to development at medium to high risk of flooding when it is contrary to the risk framework set out in Scottish Planning</p>	<p>N/A.</p>

	<p>to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p>	<p>Policy. We have and will continue to engage from the start of the development plan process and encourage planning authorities to undertake a Strategic Flood Risk Assessment to inform their spatial strategy. We remain committed to exercising our planning functions with a view to reducing overall flood risk, and when a new national planning policy context is finalised later in 2022 via the National Planning Framework 4, we will take the same approach.</p> <p>East Ayrshire Council has prepared and consulted on its Proposed Plan LDP2. As part of the preparation of the Plan, the Council engaged early with SEPA on sites it was considering allocating and took on board comments from SEPA. In addition, The Council has worked extensively with SEPA and the KAG on issues pertaining to flooding in Kilmarnock and has undertaken a series of flood workshops with the Key Agencies. The new proposed plan contains flood</p>	
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				<p>policies reflective of SEPA's stance and of NPF4.</p> <p>National Planning Framework 4 is expected to be adopted by the Scottish Parliament later in 2022 and will become part of the Development Plan, ensuring national planning policies on flooding are applied in local decision making.</p> <p>The South Ayrshire Council Local Development Plan recognises the importance of sustainable flood risk management in both urban and rural developments and is in alignment with Scottish Planning Policy. The Local Development Plan was published in February 2022.</p>	
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## 4.16 Straiton (Potentially Vulnerable Area 12/16)

Local Plan District	Local authority	Main catchment
Ayrshire	East Ayrshire Council, South Ayrshire Council	Water of Girvan



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### Summary of Progress for Straiton

There are approximately 20 residential properties at risk of flooding. The Annual Average Damages are approximately £45,000. Further information can be found in the Ayrshire Local FRMP under PVA 12/16, please click [here](#).

Key progress has been made with the installation of River Monitors on the Muck Water along with others in the Doon Valley, to gather hydraulic data to inform the planned combined Flood study (2020-2022) for these watercourses. The Flood study will inform Cycle 2 flooding actions for these locations

### Overview of actions to manage flooding in Straiton

PVA	Flood protection scheme / works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan / study	Strategic mapping & modelling (Scottish Water)	Strategic mapping & modelling (Coastal)	Strategic mapping & modelling (Surface Water)	Strategic mapping & modelling (Rivers)	Maintain flood protection scheme*	Maintain flood warning	Flood forecasting	Property level protection scheme	Community flood action groups	Self help	Awareness raising	Maintenance	Emergency plans / response	Planning policies
12/16									A				G			G	G	G	G	G

## Summary of progress of actions to manage flood risk in the Straiton (PVA 12/16)

Action	Status	Description	Dates	Progress in Delivery, including key deliverables and dates	Revised dates and planned actions to complete / address delay
Strategic mapping and modelling – surface water	A	SEPA will be seeking to incorporate additional surface water hazard mapping information into the flood maps to improve understanding of flood risk. Approximately 2,100km <sup>2</sup> of improved data is currently available within this Local Plan District.	01/06/2016-22/06/2022	SEPA's current Surface water hazard maps use design rainfall estimates based on FEH99 methodology, this has now been superseded by FEH22 methodology. The FEH22 dataset contains the latest science and understanding of rainfall across Scotland and represents a significant change in rainfall amounts compared to FEH99 dataset, as such it is no longer consider appropriate to deliver this action as originally intended. This action will not be taken forwards as described. A major national update of the surface water maps is underway which will deliver updated surface water flooding maps for Scotland representing the latest scientific understanding.	The national surface water flooding modelling project will be completed in 2023. The outputs from this will be used to update SEPA maps early in cycle 2 and will inform SEPA's flood risk assessments for the next flood risk management cycle.
Flood forecasting*		The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that	22/12/2015-01/06/2022	SEPA continues to improve the Scottish Flood Forecasting Service with the Met Office, with daily Flood	N/A

	<p>produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information please visit SEPA's website.</p>	<p>Guidance Statements and regional Flood Alerts issued as required to enable communities and responders to reduce the impacts of flooding. SEPA in partnership with the Met Office has developed a public version of the daily Flood Guidance Statement, the Scottish Flood Forecast, to provide better and earlier information to the public. A beta version of this product was launched in May 2022. It will be refined in the wake of user feedback. A more focussed version of the product, producing guidance at a local level, is planned for the next flood risk management cycle. Options for developing forecasts of surface water flooding have been published in 2022 to help urban areas and the transport network improve their resilience to and preparedness for flooding. The development and wider roll-out of this service is being considered alongside the technical, resource and communication challenges associated with providing surface water flooding guidance.</p>	
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Self help*	G	<p>Everyone is responsible for protecting themselves and their property from flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline</p> <p>The Councils, SEPA and Scottish Water will continue to engage with responsible Authorities and all other stakeholders, including community groups and the public to raise awareness of flood risk and how those affected can be better prepared. Further detail can be found in the Councils and Scottish Flood Forum websites.</p>	01/06/2016-22/06/2022	<p>Community Engagement included, PLP exhibitions, selection, surveys and appropriate and relevant information to enable clients to make the right decisions.</p> <p>Responsible Authorities shall continue to support Ongoing community PLP training, Flood Warden and resilience group promotion.</p>	N/A.
Awareness raising*	G	<p>South Ayrshire Council, SEPA and Scottish Water collectively work to raise awareness of flood risk and how those affected can be better prepared. Through the continued development of flood schemes and studies at higher risk locations,</p>	22/12/2015-22/06/2022	<p>SEPA continues to work with others to raise awareness of flood risk and its flood warning service. It has participated in local activities including school / education and community resilience activities when able. Some planned activities notably in person</p>	N/A.

		<p>officers from the Council's Flood Risk Management Team attend community council events to discuss elements of flood risk management. Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.</p>		<p>joint events have been limited or delayed due to Covid 19.</p> <p>Awareness raising is a continuous activity for South Ayrshire Council which is actioned by updating the Council's website, working with partners and engagement with relevant stakeholders as appropriate.</p>	
Maintenance*	G	<p>Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. They produce schedules of clearance and repair</p>	01/06/2016-01/06/2022	<p>South Ayrshire Council carry out monthly inspections and clearance work where necessary on 17 debris screens where there is a known flood risk from blockage. Watercourse inspections are carried out on a</p>	N/A.



		works and make these available for public inspection. Scottish Water 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.		regular basis where there are known flood risk issues.  South Ayrshire Council will continue to inspect and maintain the flood protection structures within the Catchment.	
Emergency plans/response*	G	Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders. Scottish Water are a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required. The emergency response by these organisations is coordinated through regional and local resilience	01/06/2016-01/06/2022	For SAC Ayrshire Civil Contingencies maintain and update all emergency response plans. These are updated every 3 years or as required after an incident. This is done in conjunction with the relevant department and external agency.  The Ayrshire Civil Contingencies team is responsible for producing the Civil Contingencies Plan, which outlines the management and operational arrangements that the Councils will follow in the event of an emergency as well as encouraging other agencies to prepare for their role. The Councils will contribute to the production and review	N/A.

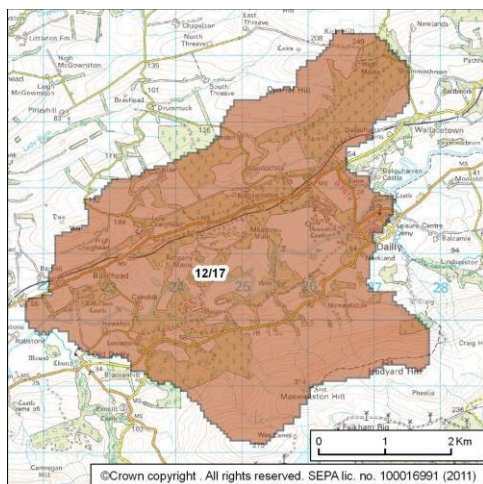
		partnerships. This response may be supported by the work of voluntary organisations.		of the Civil Contingencies Plan and the Emergency Plan for Severe Weather and Flooding, as required. This response may be supported by the work of voluntary organisations.	
Planning policies*	G	Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.	01/06/2016-01/06/2022	SEPA continues to exercise its planning functions with a view to reducing overall flood risk. We effectively contribute to the delivery of sustainable flood risk management and we support the delivery of FRM Plans and Local FRM Plans. In line with the management actions that accord with national planning policies, we have and will continue to object to development at medium to high risk of flooding when it is contrary to the risk framework set out in Scottish Planning Policy. We have and will continue to engage from the start of the development plan process and encourage planning authorities to undertake a Strategic Flood Risk Assessment to inform their spatial strategy. We remain committed to exercising our planning functions with a view to reducing overall flood risk,	N/A.

				<p>and when a new national planning policy context is finalised later in 2022 via the National Planning Framework 4, we will take the same approach.</p> <p>East Ayrshire Council has prepared and consulted on its Proposed Plan LDP2. As part of the preparation of the Plan, the Council engaged early with SEPA on sites it was considering allocating and took on board comments from SEPA. In addition, The Council has worked extensively with SEPA and the KAG on issues pertaining to flooding in Kilmarnock and has undertaken a series of flood workshops with the Key Agencies. The new proposed plan contains flood policies reflective of SEPA's stance and of NPF4.</p> <p>National Planning Framework 4 is expected to be adopted by the Scottish Parliament later in 2022 and will become part of the Development Plan, ensuring national planning policies on flooding are applied in local decision making.</p>	
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				<p>The South Ayrshire Council Local Development Plan recognises the importance of sustainable flood risk management in both urban and rural developments and is in alignment with Scottish Planning Policy. The Local Development Plan was published in February 2022.</p>	
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## 4.17 Dailly (Potentially Vulnerable Area 12/17)

Local Plan District	Local authority	Main catchment
Ayrshire	South Ayrshire Council	Water of Girvan



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### Summary of Progress for Dailly

There are fewer than ten residential properties at risk of flooding. The Annual Average Damages are approximately £38,000. Further information can be found in the Ayrshire Local FRMP under PVA 12/17, please click [here](#).

Throughout the reporting period South Ayrshire Council have carried out inspection and maintenance works at known high flood risk locations such as debris screens and small culverts.

### Overview of actions to manage flooding in Dailly

PVA	Flood protection scheme / works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan / study	Strategic mapping & modelling (Scottish Water)	Strategic mapping & modelling (Coastal)	Strategic mapping & modelling (Surface Water)	Strategic mapping & modelling (Rivers)	Maintain flood protection scheme*	Maintain flood warning	Flood forecasting	Property level protection scheme	Community flood action groups	Self help	Awareness raising	Maintenance	Emergency plans / response	Planning policies
12/17									A				G			G	G	G	G	G

## Summary of progress of actions to manage flood risk in the Dailly (PVA 12/17)

Action	Status	Description	Dates	Progress in Delivery, including key deliverables and dates	Revised dates and planned actions to complete / address delay
Strategic mapping and modelling – surface water	A	SEPA will be seeking to incorporate additional surface water hazard mapping information into the flood maps to improve understanding of flood risk. Approximately 2,100km <sup>2</sup> of improved data is currently available within this Local Plan District.	01/06/2016-22/06/2022	SEPA's current Surface water hazard maps use design rainfall estimates based on FEH99 methodology, this has now been superseded by FEH22 methodology. The FEH22 dataset contains the latest science and understanding of rainfall across Scotland and represents a significant change in rainfall amounts compared to FEH99 dataset, as such it is no longer consider appropriate to deliver this action as originally intended. This action will not be taken forwards as described. A major national update of the surface water maps is underway which will deliver updated surface water flooding maps for Scotland representing the latest scientific understanding.	The national surface water flooding modelling project will be completed in 2023. The outputs from this will be used to update SEPA maps early in cycle 2 and will inform SEPA's flood risk assessments for the next flood risk management cycle.
Flood forecasting*	G	The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that	22/12/2015-01/06/2022	SEPA continues to improve the Scottish Flood Forecasting Service with the Met Office, with daily Flood	N/A

	<p>produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information please visit SEPA's website.</p>	<p>Guidance Statements and regional Flood Alerts issued as required to enable communities and responders to reduce the impacts of flooding. SEPA in partnership with the Met Office has developed a public version of the daily Flood Guidance Statement, the Scottish Flood Forecast, to provide better and earlier information to the public. A beta version of this product was launched in May 2022. It will be refined in the wake of user feedback. A more focussed version of the product, producing guidance at a local level, is planned for the next flood risk management cycle. Options for developing forecasts of surface water flooding have been published in 2022 to help urban areas and the transport network improve their resilience to and preparedness for flooding. The development and wider roll-out of this service is being considered alongside the technical, resource and communication challenges associated with providing surface water flooding guidance.</p>	
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Self help*	G	<p>Everyone is responsible for protecting themselves and their property from flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline</p> <p>The Councils, SEPA and Scottish Water will continue to engage with responsible Authorities and all other stakeholders, including community groups and the public to raise awareness of flood risk and how those affected can be better prepared. Further detail can be found in the Councils and Scottish Flood Forum websites.</p>	01/06/2016-22/06/2022	<p>Community Engagement includes, PLP exhibitions, selection, surveys and appropriate and relevant information to enable clients to make the right decisions.</p> <p>Ongoing community PLP training, Flood Warden and resilience group promotion.</p>	N/A.
Awareness raising*	G	<p>South Ayrshire Council, SEPA and Scottish Water collectively work to raise awareness of flood risk and how those affected can be better prepared. Through the continued development of flood schemes and studies at higher risk locations,</p>	22/12/2015-22/06/2022	<p>SEPA continues to work with others to raise awareness of flood risk and its flood warning service. It has participated in local activities including school / education and community resilience activities when able. Some planned activities notably in person</p>	N/A.



		<p>officers from the Council's Flood Risk Management Team attend community council events to discuss elements of flood risk management. Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Scottish Water will provide targeted flooding communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies</p>		<p>joint events have been limited or delayed due to Covid 19.</p> <p>Awareness raising is a continuous activity for South Ayrshire Council which is actioned by updating the Council's website, working with partners and engagement with relevant stakeholders as appropriate.</p>	
Maintenance*	G	<p>Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. They produce schedules of clearance and repair works and make these available for</p>	01/06/2016-01/06/2022	<p>South Ayrshire Council carry out monthly inspections and clearance work where necessary on 17 debris screens where there is a known flood risk from blockage. Watercourse inspections are carried out on a</p>	N/A.

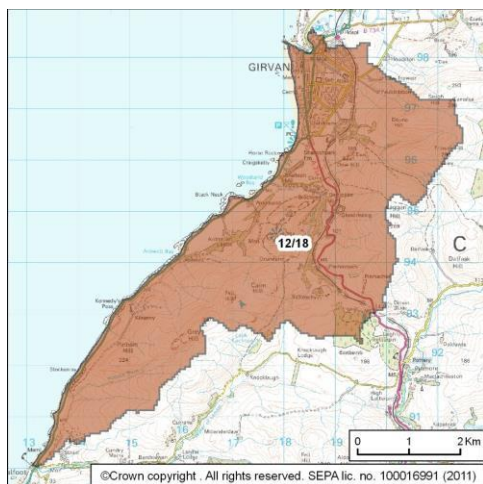
		public inspection. Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network. Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk.		regular basis where there are known flood risk issues.  South Ayrshire Council will continue to inspect and maintain watercourses, screens and other relevant Council assets.	
Emergency plans/response*	G	Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders. Scottish Water are a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required. The emergency response by these organisations is coordinated through regional and local resilience partnerships. This response may be	01/06/2016-01/06/2022	For South Ayrshire Council, the Ayrshire Civil Contingencies maintain and update all emergency response plans. These are updated every 3 years or as required after an incident. This is done in conjunction with the relevant department and external agency.  The Ayrshire Civil Contingencies team is responsible for producing the Civil Contingencies Plan, which outlines the management and operational arrangements that the Councils will follow in the event of an emergency as well as encouraging other agencies to prepare for their role. The Councils will contribute to the production and review	

		supported by the work of voluntary organisations.		of the Civil Contingencies Plan and the Emergency Plan for Severe Weather and Flooding, as required. This response may be supported by the work of voluntary organisations.	
Planning policies*	G	<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p>	01/06/2016-01/06/2022	<p>SEPA continues to exercise its planning functions with a view to reducing overall flood risk. We effectively contribute to the delivery of sustainable flood risk management and we support the delivery of FRM Plans and Local FRM Plans. In line with the management actions that accord with national planning policies, we have and will continue to object to development at medium to high risk of flooding when it is contrary to the risk framework set out in Scottish Planning Policy. We have and will continue to engage from the start of the development plan process and encourage planning authorities to undertake a Strategic Flood Risk Assessment to inform their spatial strategy. We remain committed to exercising our planning functions with a view to reducing overall flood risk,</p>	N/A.

			<p>and when a new national planning policy context is finalised later in 2022 via the National Planning Framework 4, we will take the same approach.</p> <p>The South Ayrshire Council Local Development Plan recognises the importance of sustainable flood risk management in both urban and rural developments and is in alignment with Scottish Planning Policy. The Local Development Plan was published in February 2022.</p>	
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## 4.18 Girvan (Potentially Vulnerable Area 12/18)

Local Plan District	Local authority	Main catchment
Ayrshire	South Ayrshire Council	Girvan to Lendalfoot coastal



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### Summary of Progress for Girvan

There are approximately 110 residential properties at risk of flooding. The Annual Average Damages are approximately £220,000. Further information can be found in the Ayrshire Local FRMP under PVA 12/18, please click [here](#).

The Ayrshire Shoreline Management Plan has been completed and adopted by both North and South Ayrshire Councils in September/October 2018.

The Mill Burn and Girvan Water Flood Study has been completed.

### Overview of actions to manage flooding in Girvan

PVA	Flood protection scheme / works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan / study	Strategic mapping & modelling (Scottish Water)	Strategic mapping & modelling (Coastal)	Strategic mapping & modelling (Surface Water)	Strategic mapping & modelling (Rivers)	Maintain flood protection scheme*	Maintain flood warning	Flood forecasting	Property level protection scheme	Community flood action groups	Self help	Awareness raising	Maintenance	Emergency plans / response	Planning policies
12/18				G			G	A	A		G	G	G			G	G	G	G	G

## Summary of progress of actions to manage flood risk in the Girvan (PVA 12/18)

Action	Status	Description	Dates	Progress in Delivery, including key deliverables and dates	Revised dates and planned actions to complete / address delay
Flood protection study	G	A shoreline management plan is recommended; this study is not limited to Potentially Vulnerable Areas but should cover the whole of the Ayrshire coastline and any areas beyond this which may be influenced by changes in coastal processes. The study should investigate flooding and coastal erosion, wave overtopping and the current coastal protection offered. The study will help to develop an understanding of coastal issues and identify where further work may be required to mitigate against flooding.	01/06/2016-01/06/2022	The Ayrshire Shoreline Management Plan is completed and adopted by both North and South Ayrshire Councils in September/October 2018.  The Ayrshire Shoreline Management Plan will be reviewed every 6 years.	N/A.
Flood protection study		A flood study will be carried out to further investigate river flood risk combined with coastal flood risk to Girvan. This study will build on the work within the shoreline management plan to provide a	01/06/2016-01/06/2022	Mill Burn & Girvan Water Flood Study including fluvial modelling has been completed. The options appraisal has been completed and a flood scheme was submitted for national prioritisation in December 2018. The submitted	N/A.

		<p>detailed investigation of the current and future flood risk. The study should examine the most sustainable combinations of actions to manage flooding.</p>		<p>flood scheme would provide a 1 in 200 year level of flood protection and was valued at £3M at the time of submission.</p> <p>Awaiting the outcome of the Scottish Government prioritisation process and scheme funding review.</p>	
<p>Strategic mapping and modelling - coastal</p>	A	<p>SEPA will seek to develop flood mapping in the Ayr to Ardrossan area to improve understanding of coastal flood risk. The extent and timing of improvements will depend on detailed scoping and data availability. Where this work coincides with local authority studies, SEPA will work collaboratively to ensure consistent modelling approaches are applied. The coastal mapping and modelling process will start in 2016, with early work focussing on methodology development and data collection. Once this stage has been completed a thorough review will be carried out to identify</p>	<p>01/01/2016-31/12/2018.</p>	<p>Work completed to date includes the production of key data sets including extreme water levels and offshore wave and wind conditions to support future coastal modelling work. Although this work has not been completed to the timescale described in the plan, the work that will be progressed will deliver a more comprehensive update of the coastal flood hazard maps across the whole area.</p>	<p>SEPA will complete a review of coastal flood hazard mapping in south west Scotland including in this area. This includes identifying where taking account of the impact of waves on flooding from the sea may be required. SEPA will collect the required coastal defence asset and other information necessary to progress with improved flood modelling and mapping in the highest priority areas taking account of wave overtopping where required. SEPA will look for opportunities to progress future modelling work in a way that best supports improvements to SEPA's Coastal Flood Warning Schemes.</p>

		the final mapping improvements that can be made in the area.			Expected to progress to the next stage around the middle of cycle 2 and complete early in the following cycle, subject to funding.
Strategic mapping and modelling – surface water	A	SEPA will be seeking to incorporate additional surface water hazard mapping information into the flood maps to improve understanding of flood risk. Approximately 2,100km <sup>2</sup> of improved data is currently available within this Local Plan District.	01/06/2016-22/06/2022	SEPA's current Surface water hazard maps use design rainfall estimates based on FEH99 methodology, this has now been superseded by FEH22 methodology. The FEH22 dataset contains the latest science and understanding of rainfall across Scotland and represents a significant change in rainfall amounts compared to FEH99 dataset, as such it is no longer consider appropriate to deliver this action as originally intended. This action will not be taken forwards as described. A major national update of the surface water maps is underway which will deliver updated surface water flooding maps for Scotland representing the latest scientific understanding.	The national surface water flooding modelling project will be completed in 2023. The outputs from this will be used to update SEPA maps early in cycle 2 and will inform SEPA's flood risk assessments for the next flood risk management cycle.
Strategic mapping and modelling Section 16 Assessment		Scottish Water will undertake further investigation and modelling in the Girvan sewer catchment to improve knowledge and	01/01/2018 – 31/12/2020	The Scottish Water assessment of flood risk within the sewer catchment has been completed.	The assessment is now completed and has been shared with Local Authority.



		understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.			
Maintain flood protection scheme	G	There are a number of sections of coastal defences in Girvan which provide some protection to the area. These defences will be maintained, and will continue to manage flooding according to the design standard at the time of construction. An annual inspection is carried out on all coastal protection structures in South Ayrshire with maintenance works carried out on a priority basis within available resources. Additional inspections are carried out in response to external defect reports or following severe storm events.	01/06/2016-01/06/2022	This work continues to be carried out on an annual basis.  South Ayrshire Council will continue to inspect and maintain the flood protection structures within the catchment.	N/A.
Maintain flood warning Girvan Esplanade flood warning area	G	SEPA will continue to maintain the Girvan Esplanade flood warning area which is part of the Firth of Clyde coastal flood warning scheme. When flood events occur	22/12/2015-22/06/2022	SEPA has continued to operate the flood warning service.	N/A.

		in an area with a flood warning service, SEPA will seek to verify and validate the warning service. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.			
Flood forecasting*	G	The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information please visit SEPA's website.	22/12/2015-01/06/2022	SEPA continues to improve the Scottish Flood Forecasting Service with the Met Office, with daily Flood Guidance Statements and regional Flood Alerts issued as required to enable communities and responders to reduce the impacts of flooding. SEPA in partnership with the Met Office has developed a public version of the daily Flood Guidance Statement, the Scottish Flood Forecast, to provide better and earlier information to the public. A beta version of this product was launched in May 2022. It will be refined in the wake of user feedback. A more focussed version of the product, producing guidance at a local level, is planned for the next flood risk management cycle. Options for developing forecasts of surface water	N/A

				<p>flooding have been published in 2022 to help urban areas and the transport network improve their resilience to and preparedness for flooding. The development and wider roll-out of this service is being considered alongside the technical, resource and communication challenges associated with providing surface water flooding guidance.</p>	
Self help*	G	<p>Everyone is responsible for protecting themselves and their property from flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline. The Councils, SEPA and Scottish Water will continue to engage with responsible Authorities and all other stakeholders, including community groups and the public to raise awareness of flood risk</p>	01/06/2016-01/06/2022	<p>Community Engagement includes, PLP exhibitions, selection, surveys and appropriate and relevant information to enable clients to make the right decisions.</p>	<p>Ongoing community PLP training, Flood Warden and resilience group promotion.</p>

		and how those affected can be better prepared. Further detail can be found in the Councils and Scottish Flood Forum websites.			
Awareness raising*	G	South Ayrshire Council, SEPA and Scottish Water collectively work to raise awareness of flood risk and how those affected can be better prepared. Through the continued development of flood schemes and studies at higher risk locations, officers from the Council's Flood Risk Management Team attend community council events to discuss elements of flood risk management. Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Scottish Water will provide targeted flooding	22/12/2015-22/06/2022	SEPA continues to work with others to raise awareness of flood risk and its flood warning service. It has participated in local activities including school / education and community resilience activities when able. Some planned activities notably in person joint events have been limited or delayed due to Covid 19.  Awareness raising is a continuous activity for South Ayrshire Council which is actioned by updating the Council's website, working with partners and engagement with relevant stakeholders as appropriate.	N/A.

		communications for Scottish Water specific activities and raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies			
Maintenance*	G	Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. They produce schedules of clearance and repair works and make these available for public inspection. Scottish Water undertake 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.	01/06/2016-01/06/2022	<p>South Ayrshire Council carry out monthly inspections and clearance work where necessary on 17 debris screens where there is a known flood risk from blockage. Watercourse inspections are carried out on a regular basis where there are known flood risk issues.</p> <p>South Ayrshire Council will continue to inspect and maintain watercourses, screens and other Council assets.</p>	N/A.
Emergency plans/response*	G	Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective	01/06/2016-01/06/2022	For South Ayrshire Council, the Ayrshire Civil Contingencies maintain and update all emergency response plans. These are updated every 3 years or as required after an incident.	N/A.

		<p>management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders. Scottish Water are a Category 2 responder under the Civil Contingencies Act 2004 and will support regional and local resilience partnerships as required. The emergency response by these organisations is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p>		<p>This is done in conjunction with the relevant department and external agency.</p> <p>The Ayrshire Civil Contingencies team is responsible for producing the Civil Contingencies Plan, which outlines the management and operational arrangements that the Councils will follow in the event of an emergency as well as encouraging other agencies to prepare for their role. The Councils will contribute to the production and review of the Civil Contingencies Plan and the Emergency Plan for Severe Weather and Flooding, as required. This response may be supported by the work of voluntary organisations.</p>	
Planning policies*	G	<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable</p>	01/06/2016-01/06/2022	<p>SEPA continues to exercise its planning functions with a view to reducing overall flood risk. We effectively contribute to the delivery of sustainable flood risk management and we support the delivery of FRM Plans and Local FRM Plans. In line with the management actions that accord with national planning policies,</p>	N/A.

	<p>flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p>	<p>we have and will continue to object to development at medium to high risk of flooding when it is contrary to the risk framework set out in Scottish Planning Policy. We have and will continue to engage from the start of the development plan process and encourage planning authorities to undertake a Strategic Flood Risk Assessment to inform their spatial strategy. We remain committed to exercising our planning functions with a view to reducing overall flood risk, and when a new national planning policy context is finalised later in 2022 via the National Planning Framework 4, we will take the same approach.</p> <p>The South Ayrshire Council Local Development Plan recognises the importance of sustainable flood risk management in both urban and rural developments and is in alignment with Scottish Planning Policy. The Local Development Plan was published in February 2022.</p>	
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## 4.19 Dalmellington (Potentially Vulnerable Area 12/19c)

Local Plan District	Local authority	Main catchment
Ayrshire	East Ayrshire Council	East Ayrshire Council Muck Water



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### Summary of Progress for Dalmellington

There are approximately 50 residential properties at risk of flooding. The total Annual Average Damages are approximately £140,000. Further information can be found in the Ayrshire Local FRMP under PVA 12/019c, please click [here](#).

Key progress has been made with the installation of River Monitors on the Muck Water along with others in the Doon Valley to gather hydraulic data to inform the completed combined Flood study (2020 -2022) for these watercourses. The Flood study will inform Cycle 2 flooding actions for these locations

### Overview of actions to manage flooding in Dalmellington

PVA	Flood protection scheme / works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan / study	Strategic mapping & modelling (Scottish Water)	Strategic mapping & modelling (Coastal)	Strategic mapping & modelling (Surface Water)	Strategic mapping & modelling (Rivers)	Maintain flood protection scheme*	Maintain flood warning	Flood forecasting	Property level protection scheme	Community flood action groups	Self help	Awareness raising	Maintenance	Emergency plans / response	Planning policies
12/19c				G					A				G			G	G	G	G	G



## Summary of progress of actions to manage flood risk in the Dalmellington (PVA 12/19c)

Action	Status	Description	Dates	Progress in Delivery, including key deliverables and dates	Revised dates and planned actions to complete / address delay
Flood protection study	G	<p>A study will investigate the feasibility of a flood protection scheme along the Muck Water. East Ayrshire Council is currently procuring suitable flow and level monitoring installations on appropriate watercourses identified for studies, with the intention of informing those studies in areas known to have little or no information currently available. Information gaps and proposed locations are being identified in co-operation with SEPA. Once this information is available the study will look to refine understanding of the current and future flood risk in the area and investigate the feasibility of actions to reduce flooding, as prioritised in the Ayrshire Flood Risk Management Strategy.</p>	01/06/2016-22/06/2022	<p>Progress has been made with the installation of River Monitors on the Muck Water along with others in the Doon Valley, to gather hydraulic data to inform the planned combined Flood study (2020 -2022) for these watercourses. The Flood study will inform Cycle 2 flooding actions for these locations.</p> <p>Additional resourcing was required in order to procure these works. This study has now been completed. The anticipated rescheduling is not envisaged to affect the ability to report as intended in Cycle 2.</p>	N/A.

<p>Flood forecasting*</p>	<p>G</p>	<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information please visit SEPA's website.</p>	<p>20/122015-22/06/2022</p>	<p>SEPA continues to improve the Scottish Flood Forecasting Service with the Met Office, with daily Flood Guidance Statements and regional Flood Alerts issued as required to enable communities and responders to reduce the impacts of flooding. SEPA in partnership with the Met Office has developed a public version of the daily Flood Guidance Statement, the Scottish Flood Forecast, to provide better and earlier information to the public. A beta version of this product was launched in May 2022. It will be refined in the wake of user feedback. A more focussed version of the product, producing guidance at a local level, is planned for the next flood risk management cycle. Options for developing forecasts of surface water flooding have been published in 2022 to help urban areas and the transport network improve their resilience to and preparedness for flooding. The development and wider roll-out of this service is being considered alongside the technical, resource and</p>	<p>N/A</p>
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				communication challenges associated with providing surface water flooding guidance.	
Strategic mapping and modelling – surface water	A	SEPA will be seeking to incorporate additional surface water hazard mapping information into the flood maps to improve understanding of flood risk. Approximately 2,100km <sup>2</sup> of improved data is currently available within this Local Plan District.	01/06/2016-22/06/2022	SEPA's current Surface water hazard maps use design rainfall estimates based on FEH99 methodology, this has now been superseded by FEH22 methodology. The FEH22 dataset contains the latest science and understanding of rainfall across Scotland and represents a significant change in rainfall amounts compared to FEH99 dataset, as such it is no longer consider appropriate to deliver this action as originally intended. This action will not be taken forwards as described. A major national update of the surface water maps is underway which will deliver updated surface water flooding maps for Scotland representing the latest scientific understanding.	The national surface water flooding modelling project will be completed in 2023. The outputs from this will be used to update SEPA maps early in cycle 2 and will inform SEPA's flood risk assessments for the next flood risk management cycle.
Self help*	G	Everyone is responsible for protecting themselves and their property from flooding. Property and business owners can take simple steps to reduce damage and	01/06/2016-22/06/2022	Community Engagement includes, PLP exhibitions, selection, surveys and appropriate and relevant information to enable clients to make the right decisions.	

		<p>disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline The Councils, SEPA and Scottish Water will continue to engage with responsible Authorities and all other stakeholders, including community groups and the public to raise awareness of flood risk and how those affected can be better prepared. Further detail can be found in the Councils and Scottish Flood Forum websites.</p>		<p>Responsible Authorities shall continue to support ongoing community PLP training, Flood Warden and resilience group promotion.</p>	
Awareness raising*	G	<p>East Ayrshire Council, South Ayrshire Council, SEPA and Scottish Water collectively work to raise awareness of flood risk and how those affected can be better prepared.</p>	<p>01/06/2016-22/06/2022</p>	<p>SEPA continues to work with others to raise awareness of flood risk and its flood warning service. It has participated in local activities including school / education and community resilience activities when able. Some planned activities notably in person joint events have been limited or delayed due to Covid 19.</p> <p>East Ayrshire Council and SEPA has delivered a range of awareness raising</p>	<p>N/A.</p>

			<p>activities through campaigning, education activities and partnership delivery. We have run national and local digital and direct engagement campaigns to raise awareness of flood risk and SEPA's flood warning service, Floodline. We publish and publicise an electronic newsletter (Flooding Gateway) four times a year which is distributed to a wide audience. SEPA are working with Education Scotland and Scottish Government Resilience team to embed flooding awareness within the Curriculum for Excellence, and resilience partners in Safer Communities programmes. We have also developed an online tool that helps everyone share information on current flooding issues (Report-a-Flood). We have worked in partnership with local authorities, emergency services and community organisations (e.g. Neighbourhood Watch Scotland, Citizens Advice Scotland and others) to share our resources and help to promote preparedness and understanding of how we manage</p>	
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				flood risk in Scotland. We have actively supported the Scottish Flood Forum and worked closely with UK agencies to develop joint flooding information.	
Maintenance*	G	East Ayrshire Council in accordance with Section 18 of the Flood Risk Management (Scotland) Act 2009 undertake assessment of water bodies to determine whether works of clearance and repair would substantially reduce the risk of flooding. This information is used to produce a schedule of works which is available for the public to inspect.	01/06/2016-22/06/2022	High risk locations such as those with screens and some smaller culverts were inspected on a scheduled basis. The majority of inspections tended to be undertaken in the winter months when flows are higher, and leaves and other waterborne debris can be an issue.  Works of clearance were carried out during these inspections which are not specifically "scheduled". The main water bodies, and other water bodies, within urban areas were subject to an annual visual inspection and any works	The Council will continue to inspect and maintain watercourses, screens and other relevant Council assets.
Emergency plans/response*	G	The Civil Contingencies Team ensures that the Council will be able to respond speedily and effectively in a major emergency. North, South and East Ayrshire teams are a shared service team known as the Ayrshire Civil Contingencies Team.	01/06/2016-22/06/2022	Emergency Response Planning (ERP) is carried out by Ayrshire Civil Contingencies Team (ACCT). This is an all Ayrshire shared service. ACCT update and co-ordinate (all Emergency Responders) the emergency response plans (ERP) as	N/A.

	<p>If disaster strikes, or if emergencies develop in Ayrshire, communities will look to the Council for support and advice. The Ayrshire Civil Contingencies Team ensures that the Council will be able to respond speedily and effectively in a major emergency in accordance with the Civil Contingencies Act 2004 (Contingency Planning) (Scotland) Regulations 2005. Our responsibilities include preparing comprehensive and robust contingency plans and procedures irrespective of the nature of the emergency. The main aim is to preserve life and property. Every emergency plan also sets out to:</p> <ul style="list-style-type: none"> <li>Mitigate the harmful effects of the emergency on the environment;</li> <li>bring about a swift return to normal life in the communities and environment affected; and</li> <li>encourage all agencies and organisations to prepare for their role.</li> </ul>		<p>required (in direct consultation with ARA, where appropriate).</p> <p>In addition to the ERP, East Ayrshire Council has implemented a system of river monitors in known areas and a rota of Flood Scouts is maintained. The Flood Scouts are tasked to monitor and report back on status on receipt of any alarm.</p>	
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Planning policies*	G	<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p>	01/06/2016-22/06/2022	<p>SEPA continues to exercise its planning functions with a view to reducing overall flood risk. We effectively contribute to the delivery of sustainable flood risk management and we support the delivery of FRM Plans and Local FRM Plans. In line with the management actions that accord with national planning policies, we have and will continue to object to development at medium to high risk of flooding when it is contrary to the risk framework set out in Scottish Planning Policy. We have and will continue to engage from the start of the development plan process and encourage planning authorities to undertake a Strategic Flood Risk Assessment to inform their spatial strategy. We remain committed to exercising our planning functions with a view to reducing overall flood risk, and when a new national planning policy context is finalised later in 2022 via the National Planning Framework 4, we will take the same approach.</p>	N/A.
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			<p>East Ayrshire Council has prepared and consulted on its Proposed Plan LDP2. As part of the preparation of the Plan, the Council engaged early with SEPA on sites it was considering allocating and took on board comments from SEPA. In addition, The Council has worked extensively with SEPA and the KAG on issues pertaining to flooding in Kilmarnock and has undertaken a series of flood workshops with the Key Agencies. The new proposed plan contains flood policies reflective of SEPA's stance and of NPF4.</p>	
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## 4.20 Other actions

This section sets out details of additional significant actions undertaken in the LPD by local authorities to contribute to the implementation of the current actions in the plan and the achievement of the objectives in the plan.

<b>Action</b>	<b>Status</b>	<b>Description</b>	<b>Dates</b>	<b>Progress in Delivery, including key deliverables and dates</b>	<b>Revised dates and planned actions to complete / address delay</b>
Flood protection study	G	A study needs to be undertaken to further investigate river flood risk at the Lower Irvine Valley catchment and re-evaluate the fluvial flood risk. The study should examine the most sustainable combination of actions to manage flooding.	01/06/2016-01/06/2022	The River Irvine and Annick Water fluvial modelling is complete. The study included a regional climate change sensitivity assessment and was approved by SEPA in July 2018. The option appraisal is complete, and the design of a flood protection scheme is an action that has been identified in the Flood Risk Management Plan, published in 2021 by SEPA.	N/A

# Appendix 1: Roles and Responsibilities

Individuals are the first line of defence against flooding. However, public bodies have responsibilities too and are working together to reduce the impacts of flooding in Scotland.

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

## Your responsibilities

It is your responsibility to manage your own flood risk and protect yourself, your family, property or business. There are steps you can take now to be flood prepared and reduce the damage and disruption flooding can have on your life.

- View SEPA's flood maps (available online at <https://www.sepa.org.uk/environment/water/flooding/flood-maps/>) to check if your area is affected by flooding;
- Sign up to Floodline (available online at <https://www.sepa.org.uk/environment/water/flooding/floodline/>) to receive messages when flooding is forecast in your area
- Know who to contact if flooding happens (by refer to the information available at [https://www.sepa.org.uk/media/28952/who\\_to\\_contact\\_2014.pdf](https://www.sepa.org.uk/media/28952/who_to_contact_2014.pdf))
- Other useful tools and advice on how to be prepared are available on the Floodline website.

## SEPA

SEPA is Scotland's national flood forecasting, flood warning authority and strategic flood risk management authority. SEPA:

- works in partnership with the Met Office to forecast for flooding and operate Floodline in Scotland to warn the public and emergency responders when flooding is likely;
- produce Scotland's Flood Risk Management Strategies, now called Flood Risk Management Plans;
- works closely with other organisations responsible for managing flood risk to ensure that a nationally consistent approach to flood risk management is adopted;
- provides flood risk advice to land use planning in Scotland when requested;
- raises awareness of flooding at a national level through education initiatives, community engagement and campaigns.

## Local authorities

Local authorities are responsible for producing Scotland's Local Flood Risk Management Plans and work in partnership with SEPA, Scottish Water and other responsible authorities to develop these.

It is the responsibility of your local authority to implement and maintain flood protection actions. Local authorities also inspect, clear and repair watercourses to reduce flood risk and routinely maintain road gullies on public roads and highways.

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

The Lead Local Authority for the Ayrshire Local Plan District is: **North Ayrshire Council**

Other local authorities who are responsible authorities for the Ayrshire Local Plan District are: **East Ayrshire Council** and **South Ayrshire Council**.

### **Scottish Water**

Scottish Water is responsible for the drainage of surface water from roofs and paved ground surfaces within a property boundary. Scottish Water can help to protect properties from flooding caused by overflowing or blocked sewers.

Scottish Water is a responsible authority for flood risk management and is working closely with SEPA, local authorities and other responsible authorities to manage flood risk in Scotland.

### **Scottish Government**

Scottish Government oversees the implementation of the Flood Risk Management (Scotland) Act 2009 which established the requirement for Flood Risk Management Plan (previously called Strategies) and Local Flood Risk Management Plans to be produced. Scottish Ministers are responsible for setting the policy framework for implementing how we manage flooding in Scotland and will ultimately be responsible for approving the objectives and actions set out in the Flood Risk Management Plans.

### **Met Office**

The Met Office provides a wide range of forecasts and weather warnings. SEPA and the Met Office work together through the Scottish Flood Forecasting Service, combining SEPA's hydrological expertise and the Met Office's meteorological data to predict the likelihood and timing of river, coastal and surface water flooding.

### **Other Responsible Authorities**

**Forestry and Land Scotland** (formerly Forestry Commission Scotland) also supports the development of the Flood Risk Management Plans and Local Flood Risk Management Plans.

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

## Appendix 2: Glossary

### **Commonly used terms**

A glossary of commonly used flood risk management terms is available on SEPA's website at <https://www2.sepa.org.uk/frmplans/documents/glossary.pdf>

## Appendix 3: Acknowledgements

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

### **SEPA**

Local authorities acknowledge the inclusion of Figures, Maps and text generated by SEPA in preparation of the Ayrshire Flood Risk Management Strategy. Figures and Maps produced by SEPA for the Ayrshire Flood Risk Management Strategy have been reproduced in the Ayrshire Local Flood Risk Management Plan with authorisation from SEPA under SEPA Licence number 100016991 (2015).

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### **The Met Office**

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### **Local authorities**

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

### **Scottish Water**

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