Flood Risk Management (Scotland) Act 2009:

INTERIM PROGRESS REPORT Local Flood Risk Management Plan

Ayrshire Local Plan District



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Foreword

This Interim Report to the Local Flood Risk Management Plan shows the progress made in delivering the actions to avoid and reduce the risk of flooding and to prepare and protect ourselves and our communities across the local plan district.

"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 the Interim Report shows that the coordinated and collaborative efforts of public bodies can be brought together to deliver sustainable outcomes.

The Interim Report is published by North Ayrshire Council on behalf of a partnership comprising three local authorities - North Ayrshire Council, East Ayrshire Council and South Ayrshire Council - as well as Scottish Water, SEPA and Forestry Commission Scotland.

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), individuals, businesses and communities can and have made key contributions to the delivery of the actions in the LFRMP (the 'Plan'), which are detailed in this Interim Report.

Since the publication of the Plan in June 2016, public sector finances in Scotland have continued to be under considerable pressure. This has place an even greater responsibility on SEPA, local authorities, Scottish Water and other responsible authorities to deliver their flood risk management responsibilities and, in particular, the actions identified by the Plan to manage flooding in a sustainable way.

SEPA, local authorities, Scottish Water and other responsible authorities will continue to work collaboratively to implement the actions in the Plan to its conclusion in June 2022.

1. Background

The Interim Report is a legal requirement of the Flood Risk Management (Scotland) Act 2009 (Section 37). The Interim Report is required to be published between July 2018 and June 2019. The Interim Report includes the conclusions of a review of the Ayrshire Local Flood Risk Management Plan ('the Ayrshire Local FRM Plan'), published in June 2016 and includes information on the progress that has been made towards implementing the actions identified in the Plan.

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

2. Review of the Ayrshire Local FRM Plan

This section presents the review of the Ayrshire Local FRM Plan including progress highlights, a statement on the currency of the Plan, the significant challenges faced, the prioritisation of actions for the next planning cycle, arrangements to complete the remaining actions and the next steps.

Progress Highlights

A selection of progress highlights since publication of the Plan in June 2016 are noted below to give a flavor 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 the Detailed Design Phase;
- River Garnock Flood Warning scheme has been completed;
- The Millport Coastal Flood Protection Scheme is nearing the end of Outline Design Phase;
- The Upper and Lower Irvine Valley Flood Risk Assessments and the Option Appraisal is completed for the Lower Irvine Valley;
- The Mill Burn Scheme started in 2018 ahead of schedule;
- The Ayrshire Shoreline Management Plan is completed and adopted by Both North and South Ayrshire Councils;
- The Girvan Flood Risk Assessment Study has been completed and the Option Appraisal phase is progressing;
- The scoping phase has started for the Troon Flood Risk Assessment Study;
- The scoping phase Pow Burn Flood Risk Assessment Study started in 2019 ahead of schedule;
- The Model Build and Verification stages of the Meadowhead Integrated Catchment Study are complete and the Option Appraisal phase is progressing;
- The Model Build stage of the Stevenston Point Integrated Catchment Study is complete;

- The Strategic Mapping and Modelling dataset for Largs, Cartineholm, Girvan, Underwood Cumnock and the Meadowhead Catchment completed by Scottish Water.
- The Brodick and Lamlash Flood Risk Assessments are complete and the Option Appraisal is nearing to completion;
- The Ayrshire-wide Surface Water Management Plans are progressing according to the Ayrshire Local FRM Plan delivery commitments,
- Beach nourishment actions in Ayr and Troon continue to be successful in the propagation of natural sand dunes.

How current is the Local FRM Plan?

The Plan was published in June 2016 supplementing the Flood Risk Management Strategy published by SEPA in December 2015, and available here - https://www.north-ayrshire.gov.uk/community-safety/flooding/flooding.aspx. The Ayrshire Local FRM Plan details how the actions identified in the Strategy were to be implemented over the period 2016 to 2022. The Ayrshire Local FRM Strategy and Plan are based on the National Flood Risk Assessment and the designated Potentially Vulnerable Areas at that time.

Since the identification of the actions in the Ayrshire Local FRM Plan, there have been, and continue to be, advancements in our knowledge and development of assessment techniques. These include the publication by SEPA of a new National Flood Risk Assessment and a revision to the designated Potentially Vulnerable Areas, which was completed in December 2018. These advancements may inform the delivery of the actions in this Plan and will be used in the development of future Strategies and Plans.

The planned delivery and actual delivery of actions has changed for some actions as detailed in the 'Assessment of the progress of actions'.

The data summarised in this report was compiled in January 2018, and some actions may have progressed since then.

Significant issues

Based on a review of the 'Assessment of the Progress of Actions' detailed in this Interim Report, the following key themes and issues have been identified that have had, or may have, an impact on the delivery of actions to manage flood risk. Arrangements planned to deliver the remaining actions of the plan are also described below.

Significant weather events

East and South Ayrshire were adversely affected by significant weather events in late 2015 and early 2016, which had impact on for the delivery of actions in the Ayrshire Local FRM Plan from June 2016 onwards. For example, East and South Ayrshire Council's resources were deployed to respond to emergency events as well as the follow up activities and necessary works. This has had consequential delays to the planned delivery of

actions as staff, who would normally have been engaged in delivering the planned actions, were required to respond to the emergency events and associated follow-up activities and works.

Arrangements planned to deliver the remaining actions affected by significant weather events are described below and detailed in the 'Assessment of the Progress of Actions' section of this Interim Report.

On the 31st of December 2013 and December 2015 an equivalent of 1 in 100 year flood event occurred, causing significant flooding to the area. The first event triggered the New Cumnock flood scheme and the second event verified the model outputs. These events had a galvanizing affect to develop the flood scheme for the New Cumnock area.

Funding

The actions in the Ayrshire Local FRM Plan to meet agreed goals and objectives in the first six-year cycle considered what would be achievable assuming a similar level of funding for flood risk management activities from The Scottish Government. However, given the timing of spending reviews and annualised financial settlements for local government, the actual ability to deliver all the actions set in the Strategies in December 2015 and detailed in this Plan will be dependent on the availability of the necessary funding in each year of the six year Plan', (Ayrshire Local FRM Plan, June 2016).

The level of funding from Scottish Government for flood risk activities for the first years of the six year Plan has been at the levels anticipated. As per the principals of financial settlements for local government, the funding is not 'ring fenced' and local authorities may have allocated these funds to the delivery of other priorities.

In South Ayrshire Council, access to previously allocated Scottish Government funding requires the submission of an individual capital business case for each proposed action as funding is not 'ring fenced'; therefore, considerable resources are required to secure funding.

Allocation of Resources

The impact on the level of funding from the Scottish Government in general settlements for local government may also have had an effect on the availability and allocation of resources within local authorities.

The budgets directly available for delivering flood risk actions has been a limiting factor in some areas. This has caused consequential delays in the planned delivery of actions.

The availability and retention of skilled staff to deliver flood risk actions has been a limiting factor in some areas. This has caused consequential delays in the planned delivery of actions.

Arrangements planned to deliver the remaining actions affected by allocation of resource issues are described below and detailed in the 'Assessment of the Progress of Actions' section of this Interim Report.

Use of Consultants

The availability and performance of consultants and professional advisors has not been a limiting factor in Ayrshire LPD.

Cost increases

Cost increases as actions are detailed and developed have also been a limiting factor in some areas. This has also caused consequential delays in the planned delivery of actions.

In North Ayrshire, the Upper Garnock FPS development was delayed significantly due to objections. The process to remove these objections added to the overall project cost and subsequently will have an effect on the completion of the scheme. The Millport Coastal FPS cost increased significantly due to the changing scope and design parameters. The justification of the increased scheme cost to Scottish Government required significant resourcing and caused delays.

Arrangements planned to deliver the remaining actions affected by cost increase issues are described below and detailed in the 'Assessment of the Progress of Actions' section of this Interim Report.

Other actions

North Ayrshire Council carried out the Lower Irvine Valley Catchment Study and re-evaluated the fluvial flood risk. The River Irvine and Annick Water fluvial modelling is completed including the regional climate change sensitivity assessment and approved by SEPA in July 2018. The option appraisal is completed according to programme and submitted to SEPA for review.

If feasible option identified that will be submitted to the National Prioritisation process to seek fund from Scottish Government for implementation.

Prioritisation of actions for next plan cycle

At this stage there are no significant number of actions anticipated to be moved to the next FRM delivery cycle 2022-2028 apart from SEPA's strategic mapping and modelling work.

SEPA are developing new surface water and coastal hazard maps which affect multiple PVA's within the Ayrshire Local Plan District. These two projects are currently assessed to be at red status.

The improvements to the surface water hazard map provided by the new rainfall dataset will reflect a significant shift in the understanding of rainfall amounts. The new national surface water flood hazard maps will be completed over the remainder of Cycle 1. It is anticipated that updated flood mapping from this revised action will be available early in Cycle 2, however the new rainfall dataset is already shared with Responsible Authorities to progress with local projects.

Alongside this, SEPA will investigate the feasibility of developing an interim approach to assess the change in surface water hazard (and risk) associated with FEH13, such that we could consider it in the development of the 2021 FRM Strategies.

For the coastal improvements, the new datasets represent a significant change in our understanding and it was deemed necessary to wait until these data were available nationally.

Following the establishment of a coastal flood hazard map development framework and characterisation of the coastline, several projects are currently underway, including:

- The development of a national coastal joint probability dataset, and;
- An update to the UK design extreme sea level dataset.

It is anticipated that this action will progress to a study prior to the end of Cycle 1 however completion is likely to be in early Cycle 2 due to both the geographical extent and technical complexity of the mapping improvements required.

Arrangements planned to deliver the remaining actions

The actions in the Ayrshire Local FRM Plan will continue to be delivered over the remainder of the 2016 to 2022 period, with any variations to the planned approach noted in Sections 4 and 5 of this Interim Report.

Final Report

A Final Report on the Ayrshire Local FRM Plan will be published between July 2021 and June 2022. This will include an updated assessment of the progress made towards implementing the current actions, a summary of the current measures that were not implemented (with reasons for their non-implementation) and a description of any other measures implemented since the plan was finalized, which the lead authority considers have contributed to the achievement of the flood risk objectives.

Conclusions

North, East and South Ayrshire Councils along with SEPA, Scottish Water and other responsible authorities have worked together successfully to progress delivery of all actions contained within the Ayrshire Local FRM Plan. It is predicted that all actions will be delivered in accordance with the original programme with the exception of the Doon Valley Flood study which has been rescheduled as a result of resource demand issues, however this study is still planned to be completed within the 1st Cycle of the Ayrshire Local FRM Plan and as such it is anticipated that this will not impact on the planned timings for the 2nd Cycle of the Ayrshire Local FRM Plan.

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It is anticipated that this action will progress to a study prior to the end of Cycle 1 however completion is likely to be in early Cycle 2 due to both the geographical extent and technical complexity of the mapping improvements required.

Scottish Water is making good progress on all actions. A number of Section 16 assessments are complete with the remainder due to complete within this cycle. Good progress is also being made in relation to the Meadowhead and Stevenston Integrated Catchment Studies.

Implementation of the Ayrshire Local FRM Plan has and will continue to reduce flood risk for communities across Ayrshire and gives strategic direction for the management of flood risk in Ayrshire now and in the future.

3. Assessment of Progress

This section sets out an assessment of the progress towards implementing the actions set out in the LOCAL FRMP.

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)

The actions that apply to an individual PVA across the Ayrshire LPD are shown overleaf in Figure 2. The summary of the assessment of progress is shown using the traffic light system, where each item is marked as Red, Amber or Green (RAG) and where:

- GREEN Action is on programme and within budget;
- AMBER Action is behind programme and / or over budget but the key dates are anticipated still to be met.
- RED Action is behind programme and / or over budget with key dates unlikely to be met and / or the outputs are unlikely to achieve what was anticipated by the Local FRM Plan.

Clarification was sought on the meaning of these definitions, see below:

• What is meant by 'programme'?

It was agreed that this is the Local FRM Plan dates.

What is meant by 'key dates'?

It was agreed that this is the FRM cycle dates namely prioritisation December 2019 and end of cycle. For SEPA actions only the end of cycle will apply.

What is the 'Budget'?

It was agreed that the delivery to programme was more important for this report and 'Budget' means the budget an organisation has set aside for this work not any rough budget proposed in the Local FRM Plan.

Will awareness raising actions have RAG?

Status for all generic actions is to be produced. This discussion moved away from the RAG guidance below. There was a consensus that if awareness raising was supporting an action that was Amber or Red then the awareness raising itself would likely be Amber or Red.

Further detail on specific actions can be found in the relevant Potentially Vulnerable Area within Section4.

Potentially Vulnerable Areas by actions	Flood protections shemes /works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan / study	Strategic mapping and modeling Scottish Water	Strategic mapping and modeling SEPA	Maintain flood protection scheme	Maintain flood warning	Flood forecasting	Property level protection scheme	Community flood action groups	Self help	Avareness raising	Maintanance	Emergency plans / response	Planning policies
12/01 Noddsdale Water				✓			✓		N/A	N/A	✓		✓	✓	✓	✓	✓	✓
12/02 Great Cumbrae Island	✓			✓					✓	✓	✓			✓	✓	✓	✓	✓
12/03 Largs to Stevenston	✓			✓		✓			✓	✓	✓		✓	✓	✓	✓	✓	✓
12/04 Upper Garnock Catchment	✓		✓		✓		✓		N/A	N/A	✓			✓	✓	✓	✓	✓
12/05 Kilwinning			✓	✓		✓	✓		N/A	N/A	✓			✓	✓	✓	✓	✓
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			✓			✓			N/A	N/A	✓			✓	✓	✓	✓	✓
12/11 River Ayr						✓			N/A	N/A	✓			✓	✓	✓	✓	✓
12/12 Ayr east									N/A	N/A	✓			✓	✓	✓	✓	✓
12/13 Ayr south							✓		N/A	N/A	✓			✓	✓	✓	✓	✓
12/14 Cumnock and Catrine				✓			✓		N/A	N/A	✓	✓		✓	✓	✓	✓	✓
12/15 Dalrymple and Patna									✓	N/A	✓			✓	✓	✓	✓	✓
12/16 Straiton									N/A	N/A	✓			✓	√	✓	✓	✓
12/17 Dailly									N/A	N/A	✓			✓	√	1	✓	✓
12/18 Girvan				✓			✓		✓	✓	✓			✓	✓	✓	✓	✓
12/19c Dalmellington									N/A	N/A	✓			✓	✓	✓	✓	✓

Figure 2: Summary of progress of actions to manage flood risk in the Potentially Vulnerable Areas of the Ayrshire LDP

4. Progress with PVA-specific Actions

This section sets out an assessment of the progress towards implementing actions that are specific to each of the 19 Potentially Vulnerable Areas (PVA) as shown in Figure 2. Assessments of the progress of actions within each PVA are presented.

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 background information sets the scene for the planned actions to manage flooding that have been prioritised for delivery between 2016 and 2022. The Potentially Vulnerable Area level action tables set out the flood management objective that is to be achieved, provide a description of the action, identify who will be responsible for the delivery and implementation and a timetable of when the actions will be undertaken.

The flood management objectives are the shared aims for managing flooding. Actions describe where and how flood risk will be managed. Objectives and actions have been set by SEPA and agreed by the flood risk management responsible authorities following consultation.

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, the findings of which are currently under consideration. Large has not been exposed to any significant recent weather events.

Overview of actions to manage flooding in Noddsdale Water

PVA	Flood protections scheme/works	atura anage wor	New flood warning	Flood protection study	Natural flood management study	Surface water plan/study	Strategic mapping and modelling	Strategic mapping and modelling SEPA	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				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	Revised dates and planned
				deliverables and dates	actions to complete / address
					delay
		The Council will assess the flood	01/01/2016-	A flood study with option appraisal for	Action completed but because of
		mitigation options identified by the	31/12/2016	the culvert realignment was completed	the low Cost Benefit Ratio, the
		study completed in early 2016 in		in early 2016, which investigated the	Council need to consider it in the
		order to determine the outline		feasibility of a flood protection scheme	wider prioritisation. The next step is
		design work for a flood protection		focussing on realigning culverts in the	to inform the Council's Local
		scheme.		Brisbane Glen Road area and property	Planning Partnership. The project is
	G			level protection. This study also	unlikely to progress to the next
				considered the potential for natural	stage. PLP option to be
				flood management to reduce runoff to	investigated further.
				the small burns in the area and other	
				actions to select the most sustainable	
Flood protection				combination of actions. The Cost	
study				Benefit Ratio is around 0.43	
,		Scottish Water will undertake further	01/01/2018-	The Scottish Water assessment of	The assessment is now completed
		investigation and modelling in the	31/12/2020	flood risk within the sewer catchment	and to be shared with Local
		Largs sewer catchment to improve		has been completed.	Authority.
		knowledge and understanding of			
Strategic mapping		flood risk in this area as required			
and modelling - Section 16		under Section 16 of the Flood Risk			
assessment		Management (Scotland) Act 2009.			
	_	The Scottish Flood Forecasting	22/12/2015-	SEPA has continued to operate the	SEPA will continue and improve the
Flood forecasting	G	Service is a joint initiative between	22/06/2022	Scottish Flood Forecasting Service	Scottish Flood Forecasting Service

		SEPA and the Met Office that		(SFFS) Partnership with the Met Office	(SFFS) with the Met Office, with
		produces daily, national flood		with daily, national Flood Guidance	daily Flood Guidance Statements
		guidance statements which are		Statements issued to Category 1 and 2	and regional Flood Alerts issued as
		issued to Category 1 and 2		agencies (such as emergency	required to enable communities
		Responders. The service also		responders, local authorities and other	and responders to reduce the
		provides information which allows		organisations with flooding	impacts of flooding. SEPA is
		SEPA to issue flood warnings,		management duties) and regional	currently exploring options to
		giving people a better chance of		Flood Alerts issued to the public. Each	develop a public version of the daily
		reducing the impact of flooding on		daily statement gives an assessment	Flood Guidance Statement to
		their home or business. For more		of the risk of flooding for the next five	provide better and earlier
		information please visit		days to enable these organisations to	information to the public.
		SEPA's website.		put preparations in place to reduce the	
				impact of flooding. SEPA's Flood Alert	
				service is freely available to everyone	
				and enables communities to be aware	
				and prepared to reduce the impacts of	
				flooding.	
		Everyone is responsible for	01/06/2016-	Community Engagement includes,	Ongoing community PLP training,
		protecting themselves and their	22/06/2022	PLP exhibitions, selection, surveys and	Flood Warden and resilience group
		property from flooding. Property and		appropriate and relevant information to	promotion.
		business owners can take simple		enable clients to make the right	
		steps to reduce damage and		decisions.	
	G	disruption to their homes and			
		businesses should flooding happen.			
		This includes preparing a flood plan			
		and flood kit, installing property level			
Self help		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 Council's and Scottish			
		Flood Forum websites.			
		Although not part of a community	01/06/2016-	North Ayrshire Council, SEPA and	NAC will continue the ongoing
		flood action group the public take an	22/06/2022	Scottish Water will continue to engage	support for the Community Flood
		active interest in flooding issues		with responsible authorities and all	Group.
		within Largs and inform the		other stakeholders, including	
	G	Council about debris in the		community groups and the public to	
		watercourse. North Ayrshire Council		raise awareness of flood risk and how	
		will liaise with the group through		those affected can be better prepared.	
Community flood		Community Council meetings and			
action groups		directly to the public.			
		North Ayrshire Council, SEPA and	22/12/2015-	SEPA's principle awareness raising	SEPA will continue to raise
		Scottish Water collectively work to	22/06/2022	approaches have been through:	awareness of flood risk through
		raise awareness of flood risk and		Direct campaigning and general	direct campaigning, general
		how those affected can be better		awareness raising;	awareness raising, developing
	G	prepared. Through the continued		2. Education and tools, and	education and engagement tools,
		development of flood schemes and		3. Partnership delivery development.	creating new partnerships and
		studies at higher risk locations,		North Ayrshire Council's general	improving its flood forecasting and
Awareness raising		officers from the Council's Flood		awareness raising is a continuous	warning services (e.g. Scottish

		Risk Management Team attend		activity via the NAC website for all	Flood Forecasting Service and
		community council events to discuss		Ayrshire.	Floodline). This will continue with
		elements of flood risk management.		Supporting Local Flood Emergency	many of the actions reported for the
		Across Scotland, SEPA will create		Groups is an occasional activity in	interim progress summary. Further
		and share communication and		Largs,	information is contained within
		education resources with other		Project related public consultations	SEPA's Flood Warning
		responsible authorities. These		affecting Largs are being carried out.	Development Framework,
		resources will include awareness			published in 2017 and for the
		campaigns, media and marketing			period 2017 to 2021.
		activity and promotion of SEPA's			Raising Awareness will form part of
		flood forecasting and warning			each of the 3 key themes identified:
		services (Floodline). Scottish			Aim 1: Maintenance of existing
		Water will provide targeted flooding			and delivery of new flood warning
		communications for Scottish Water			schemes.
		specific activities and raise			Aim 2: Development and
		awareness by producing and			innovation.
		supplying targeted information to the			Aim 3: Engagement with partners
		public on large capital projects and			and customers
		detailed local studies.			Campaign Calendar for 2018/19 in
					March/April 2019 Proposed for
					North Ayrshire;
					Focus weeks - on flooding
					proposed in 2018/19 for North
					Ayrshire;
		Local authorities have a duty to	01/06/2016-	NAC has a 4 weekly maintenance	The schedules of clearance and
	G	assess watercourses and carry out	01/06/2022	regime for 50 trash screens, biennially	repair works to be periodically
Maintenance		clearance and repair works where		we carry out 35km length watercourse	updated and more awareness

		such works would substantially		inspections within the mainland and	raising required with asset owners
		reduce flood risk. They produce		Arran. NAC have 225km coastline	and riparian landowners who are
		schedules of clearance and repair		which has just under 300 identified	responsible for the maintenance
		works and make these available for		coastal flood protection structures. The	and management of their own
		public inspection. Scottish Water		regularity of coastal inspections are	assets. The Council will continue to
		undertake risk based inspection,		risk based and varies between 6	inspect and maintain watercourses,
		maintenance and repair on the		month and 3 years.	screens and other relevant Council
		public sewer network. Asset owners			assets.
		and riparian landowners are			
		responsible for the maintenance and			
		management of their own assets			
		including those which help to reduce			
		flood risk.			
		Providing an emergency response	01/06/2016-	NAC is in the last stage of reviewing	The Ayrshire Civil Contingencies
		to flooding is the responsibility of	01/06/2022	the newly developed town by town	team is responsible for producing
		many organisations, including local		based Emergency Plans.	the Civil Contingencies Plan, which
		authorities, the emergency services			outlines the management and
		and SEPA. Effective management of			operational arrangements that the
		an emergency response relies on			Councils will follow in the event of
	_	emergency plans that are prepared			an emergency as well as
	G	under the Civil Contingencies Act			encouraging other agencies to
		2004 by Category 1 and 2			prepare for their role. The Councils
		Responders. Scottish Water are a			will contribute to the production and
		Category 2 responder under the			review of the Civil Contingencies
		Civil Contingencies Act 2004 and			Plan and the Emergency Plan for
Emergency		will support regional and local			Severe Weather and Flooding, as
plans/response		resilience partnerships as required.			required. This response may be

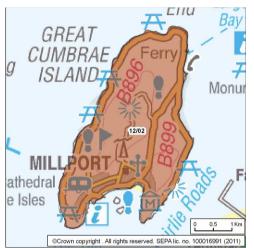
		The emergency response by these			supported by the work of voluntary
		organisations is coordinated through			organisations. Completion of the
		regional and local resilience			town by town Emergency Plan for
		partnerships. This response may be			North Ayrshire is expected in 2019
		supported by the work of voluntary			
		organisations.			
		Scottish Planning Policy and	01/06/2016-	The Proposed Local Development	The proposed LPD2 to be
		accompanying Planning Advice	01/06/2022	Plan (LDP) 2, which was subject to	examined by Scottish Ministers
		Notes set out Scottish Ministers'		public consultation in 2017/18, was	before adoption of the plan. The
		priorities for the operation of the		approved by the Council on the 17	Ayrshire Shoreline Management
		planning system and for the		April 2018. The next step towards the	Plan adopted by both NAC and
		development and use of land. In		adoption of LDP 2 is the examination	SAC in September 2018.
		terms of flood risk management, the		stage by Scottish Ministers. The	The Council's planning policies will
		policy supports a catchment-scale		Council completed a Strategic Flood	be reviewed periodically to ensure
	G	approach to sustainable flood risk		Risk Assessment for the proposed	that all current national policies are
		management and aims to build the		LDP2. In addition, we are developing	implemented and that the
		resilience of our cities and towns,		(in partnership with South Ayrshire	recommendations of strategic
		encourage sustainable land		Council) an Ayrshire Shoreline	studies, such as the Ayrshire
		management in our rural areas, and		Management Plan (SMP). This study	Shoreline Management Plan,
		to address the long-term		will prompt land use and policy	Surface Water Management Plans
		vulnerability of parts of our coasts		changes and recommend further	etc., are considered.
		and islands. Under this approach,		studies to allow physical protective	
Planning policies		new development in areas with		measures to take place in the future.	

Ayrshire Local Flood Risk Management Plan 2016-2022: INTERIM REPORT

	medium to high likelihood of flooding		
	should be avoided.		

4.2 Great Cumbrae Island (Potentially Vulnerable Area 12/02)

Local Plan District	Local authority	Main catchment
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 start of Millport Coastal Flood Protection Scheme with the option appraisal phase now been completed. The Scheme Recommendation Report supported Option 2, in which an offshore breakwater connecting up two small islands with flood walls along the shoreline; no works are undertaken to timber section of Millport Pier. Community consultation completed in February 2019, which showed strong community support to the preferred option. The Ayrshire Shoreline Management Plan was adopted by both North and South Ayrshire Councils in September/October 2018.

The Mill Burn scheme is currently in the option appraisal stage and is planned to be completed within the 1 FRM Cycle delivery timescale.

Overview of actions to manage flooding in Great Cumbrae Island

PVA	Flood protections scheme/works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan/study	Strategic mapping and modelling	Strategic mapping and modelling SEPA	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	G			G				R	G	G	G			O	G	G	G	G	l

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	Revised dates and planned
				deliverables and dates	actions to complete / address
					delay
		Future investigations will look to	01/06/2016-	The Millport Coastal FPS is nearing	A geo-environmental survey is
		identify the most sustainable flood	01/06/2022	the completion of the Optioneering	programmed for Spring/early
		mitigation option to manage coastal		stage.	summer 2019.
		flooding in Millport. The current		The Option Recommendation Report	
		option includes the creation of a		supports Option 2, which is a	
		breakwater with flood walls. It is		combination of measures of offshore	
	0	recommended that the options are		breakwater connecting up two small	
	G	further developed, including an		islands with flood walls along the	
		assessment of property level		shoreline protection up to a 1 in	
		protection to supplement the primary		200year return period event. The	
		actions.		estimated value is £27,5M. Community	
				consultation completed in February	
Flood protections				2019, which showed strong community	
scheme/works				support to the preferred option.	
		It is recommended that the council	01/06/2016-	The Mill Burn Flood Outline Options	The Mill Burn Scheme is
		progress work on the proposed flood	01/06/2022	are currently under review and the	progressing well and planned to
		protection work on the Mill Burn in		option appraisal stage will follow to	be completed within the 1 FRM
	G	Millport. The Mill Burn Flood Risk		establish the remaining level of risk	Cycle delivery timescale as
		Assessment has provided		and the most sustainable combination	outlined in the Ayrshire Local
		information along with an economic		of actions to manage this risk.	Flood Risk Management Plan.

					,
		appraisal which identifies potential			
		options to mitigate flooding. Initial			
		remedial work has helped to reduce			
		the level of risk in the area however			
		further analysis should be carried			
Flood protections scheme/works		out to establish the remaining level			
scriente/ works		of risk and the most sustainable			
		combination of actions to manage			
		this risk.			
		A shoreline management plan is		The Ayrshire Shoreline Management	The Ayrshire Shoreline
		recommended, this study is not		Plan is completed and adopted by both	Management Plan will be
		limited to Potentially Vulnerable		North and South Ayrshire Councils in	reviewed in every 6 years.
		Areas but should cover the whole of		September/October 2018.	
		the Ayrshire coastline and any areas			
		beyond this which may be			
		influenced by changes in coastal			
	G	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			
Flood protection		identify where further work may be			
study		required to mitigate against flooding.			
,		SEPA will update strategic surface	01/01/2016-	SEPA's current Surface water hazard	This action will not be taken
Strategic mapping	R	water mapping in some parts of this	31/12/2016	maps use design rainfall estimates	forwards as described. SEPA will
and modelling				based on FEH99 methodology, this	develop new Surface water flood
		•			

		catchment to improve understanding		has now been superseded by FEH13	hazard maps over the remainder
		of flood risk.		methodology. The FEH13 dataset	of Cycle 1. It is anticipated that
				contains the latest science and	updated flood mapping from this
				understanding of rainfall across	revised action will be available
				Scotland and represents a significant	early in Cycle 2. Alongside this
				change in rainfall amounts compared	SEPA is investigating the
				to FEH99 dataset, as such it is no	feasibility of developing an interim
				longer consider appropriate to deliver	approach to assess the change in
				this action as originally intended.	Surface water hazard (and risk)
					associated with FEH13, such that
					we could consider it in the
					development of the 2021 FRM
					Strategies.
		North Ayrshire Council to continue	01/06/2016-	The Millport Flood defences have an	The sea defences are maintained
		to inspect and maintain the existing	01/02/2022	annual inspection regime along with a	as part of the Council`s coastal
		Millport Coastal Flood defences,		principal inspection every 3 years, to	asset management programme.
	G	which will continue to manage		ensure integrity and peak efficiency.	The Council will continue to
		flooding according to the design			inspect and maintain the flood
Maintain flood protection		standard at the time of construction.			protection structures within the
scheme*					catchment.
		SEPA will continue to maintain the	22/12/2015-	SEPA has recently reviewed and	SEPA will continue to operate the
		Millport Seafront flood warning area,	22/06/2022	recalibrated the Firth of Clyde flood	flood warning service
		which is part of the Firth of Clyde		forecasting model. SEPA has updated	
	G	coastal flood warning scheme.		the Millport Seafront flood warning	
Maintain flood		When flood events occur in an area		area (part of the Firth of Clyde coastal	
warning Millport Seafront		with a flood warning service, SEPA		flood warning scheme) renaming this	
flood warning area		will seek to verify and validate the		to 'Millport'.	

		warning service. SEPA will use			
		feedback and post-event data to			
		ensure that our flood warning			
		service is timely and accurate.			
		SEPA will continue to maintain the	22/12/2015-	SEPA has continued to operate the	SEPA will continue and improve
		the Millport Seafront flood warning	22/06/2022	Scottish Flood Forecasting Service	the Scottish Flood Forecasting
		area, which is part of the Firth of		(SFFS) Partnership with the Met Office	Service (SFFS) with the Met
		Clyde coastal flood warning		with daily, national Flood Guidance	Office, with daily Flood Guidance
		scheme. When flood events occur in		Statements issued to Category 1 and 2	Statements and regional Flood
		an area with a flood warning service,		agencies (such as emergency	Alerts issued as required to
		SEPA will seek to verify and validate		responders, local authorities and other	enable communities and
		the warning service.		organisations with flooding	responders to reduce the impacts
		SEPA will use feedback and post-		management duties) and regional	of flooding. SEPA is currently
	G	event data to ensure that our flood		Flood Alerts issued to the public. Each	exploring options to develop a
		warning service is timely and		daily statement gives an assessment	public version of the daily Flood
		accurate.		of the risk of flooding for the next five	Guidance Statement to provide
				days to enable these organisations to	better and earlier information to
				put preparations in place to reduce the	the public.
				impact of flooding. SEPA's Flood Alert	
				service is freely available to everyone	
				and enables communities to be aware	
				and prepared to reduce the impacts of	
Flood forecasting				flooding.	
		Everyone is responsible for	01/06/2016-	Community Engagement includes,	
		protecting themselves and their	22/06/2022	PLP exhibitions, selection, surveys	
	G	property from flooding. Property and		and appropriate and relevant	
Self help		business owners can take simple			

		steps to reduce damage and		information to enable clients to make	
		disruption to their homes and		the right decisions.	
		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.			
		North Ayrshire Council, SEPA and	22/12/2015-	SEPA's principle awareness raising	SEPA will continue to raise
		Scottish Water collectively work to	22/06/2022	approaches have been through:	awareness of flood risk through
		raise awareness of flood risk and		Direct campaigning and general	direct campaigning, general
		how those affected can be better		awareness raising	awareness raising, developing
		prepared. Through the continued		2. Education and tools	education and engagement tools,
	G	development of flood schemes and		3. Partnership delivery development	creating new partnerships and
		studies at higher risk locations,		North Ayrshire Council general	improving its flood forecasting and
		officers from the Council's Flood		awareness raising is a continuous	warning services (e.g. Scottish
		Risk Management Team attend		activity via NAC website for all	Flood Forecasting Service and
		community council events to discuss		Ayrshire,	Floodline). This will continue with
Awareness raising		elements of flood risk management.			many of the actions reported for

		Across Scotland, SEPA will create		Supporting Local Flood Emergency	the interim progress summary.
		and share communication and		Groups is an occasional activitiy,	Further information is contained
		education resources with other		Project related public consultations	within SEPA's Flood Warning
		responsible authorities. These		affecting Largs carried out.	Develop- ment Framework,
		resources will include awareness			published in 2017 and for the
		campaigns, media and marketing			period 2017 to 2021.
		activity and promotion of SEPA's			Raising Awareness will form part
		flood forecasting and warning			of each of the 3 key themes
		services (Floodline). Scottish			identified:
		Water will provide targeted flooding			Aim 1: Maintenance of existing
		communications for Scottish Water			and delivery of new flood warning
		specific activities and raise			schemes.
		awareness by producing and			Aim 2: Development and
		supplying targeted information to the			innovation.
		public on large capital projects and			Aim 3: Engagement with
		detailed local studies.			partners and customers
					Campaign Calendar for 2018/19
					in March/April 2019 Proposed for
					North Ayrshire;
					Focus weeks - on flooding
					proposed in 2018/19 for North
					Ayrshire;
		Local authorities have a duty to	01/06/2016-	NAC is inspecting and monitoring the	The Council will continue to
		assess watercourses and carry out	01/06/2022	Local Authority owned coastal flood	inspect and maintain watercourse
	G	clearance and repair works where		protection structures in Great	screens and other relevant
		such works would substantially		Cumbrae. The regularity of coastal	Council assets.
Maintenance		reduce flood risk. They produce			

		schedules of clearance and repair		inspections are risk based and varies	
		works and make these available for		between 6 month and 3 years.	
		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.			
		Providing an emergency response	01/06/2016-	NAC is in the last stage to review the	The Ayrshire Civil Contingencies
		to flooding is the responsibility of	01/06/2022	newly developed town by town-based	team is responsible for producing
		many organisations, including local		Emergency Plans,	the Civil Contingencies Plan,
		authorities, the emergency services			which outlines the management
		and SEPA. Effective management of			and operational arrangements
		an emergency response relies on			that the Councils will follow in the
		emergency plans that are prepared			event of an emergency as well as
		under the Civil Contingencies Act			encouraging other agencies to
	G	2004 by Category 1 and 2			prepare for their role. The
		Responders. Scottish Water are a			Councils will contribute to the
		Category 2 responder under the			production and review of the Civil
		Civil Contingencies Act 2004 and			Contingencies Plan and the
		will support regional and local			Emergency Plan for Severe
		resilience partnerships as required.			Weather and Flooding, as
Emorgoney		The emergency response by these			required. This response may be
Emergency plans/response		organisations is coordinated through			supported by the work of

		regional and local resilience			voluntary organisations.
		partnerships. This response may be			Completion of the town by town
		supported by the work of voluntary			Emergency Plan for North
		organisations.			Ayrshire is expected in 2019
		Scottish Planning Policy and	01/06/2016-	The Proposed Local Development	The Council's planning policies
		accompanying Planning Advice	01/06/2022	Plan (LDP) 2 has gone through public	will be reviewed periodically to
		Notes set out Scottish Ministers'		Consultation in 2017/18 approved by	ensure that all current national
		priorities for the operation of the		the Council ion the 17 April 2018. The	policies are implemented and that
		planning system and for the		next stage is the examination stage by	the recommendations of strategic
		development and use of land. In		Scottish Minister. The Council	studies, such as the Ayrshire
		terms of flood risk management, the		completed a Strategic Flood Risk	Shoreline Management Plan,
		policy supports a catchment-scale		Assessment for the proposed LDP2.	Surface Water Management
		approach to sustainable flood risk		In addition, we are developing (in	Plans etc., are considered.
	G	management and aims to build the		partnership with South Ayrshire	
		resilience of our cities and towns,		Council) an Ayrshire Shoreline	
		encourage sustainable land		Management Plan (SMP). This study	
		management in our rural areas, and		will prompt land use and policy	
		to address the long-term		changes and recommend further	
		vulnerability of parts of our coasts		studies to allow physical protective	
		and islands. Under this approach,		measures to take place in the future.	
		new development in areas with			
		medium to high likelihood of flooding			
Planning policies		should be avoided.			

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 start of the Stevenston Point ICS Study, which will be followed by the Surface Water Management Plan for the Three Towns and Kilwinning. The Ayrshire Shoreline Management Plan is completed and adopted by both North and South Ayrshire Councils in September/October 2018.

The detailed design is complete for the Keppen Burn, Fairlie Project and will be submitted for National Prioritisation.

Overview of actions to manage flooding in Largs to Stevenston

PVA	Flood protections scheme/works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan/study	Strategic mapping and modelling	Strategic mapping and modelling SEPA	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	G			G		G		R	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	Revised dates and planned
				deliverables and dates	actions to complete / address
					delay
		North Ayrshire Council, Transport	01/06/2016-	The Keppen Burn Culvert Detailed	Additional hydraulic checks needs
		Scotland and Network Rail are all	01/06/2022	design is completed with economic	to be carried prior to submitting
		working in partnership on the		assessment.	the scheme to SEPAs National
		Keppen Burn Culvert upgrade. All			Prioritisation process to seek
		three organisations have an			Government fund.
		approved prioritises 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			
Flood protections		separately and will fit into the			
scheme/works		already prioritised worklist.			
		Network Rail will carry out civil	01/01/2019-	Saltcoats Coastal Defence (CD	Scheme completed.
		engineering work which will reduce	31/12/2024	200/433). Works completed in 2016	
		flood risk to identified sections of the		included filling voids, wall toe	
	G	rail network within this PVA,		protection and concrete repairs along	
Flood protections		including work to Saltcoats Coastal		700m length of wall to prevent water	
scheme/works		Defence.		ingress.	

		A study is planned to further	01/06/2016-	Gogo Water model upgrade with NFM	The Study completed.
		investigate the river and coastal	01/06/2022	consideration is completed.	
		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			
Flood protection		enhancing and extending the			
study		existing coastal defences.			
		A shoreline management plan is	01/06/2016-	The Ayrshire Shoreline Management	The Ayrshire Shoreline
		recommended, this study is not	01/06/2022	Plan is completed and adopted by both	Management Plan will be
		limited to Potentially Vulnerable		North and South Ayrshire Councils in	reviewed in every 6 years.
		Areas but should cover the whole of		September/October 2018.	
		the Ayrshire coastline and any areas			
		beyond this which may be			
		influenced by changes in coastal			
	G	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			
Flood protection		identify where further work may be			
study		required to mitigate against flooding.			
		An integrated catchment study	01/06/2016-	Flow surveys, manhole surveys and	Model verification and Catchment
Surface water	G	covering the Stevenston Point	01/06/2022	ancillary surveys have been	Flood Assessment to be
plan/study		catchment will be carried out. This		completed. The Integrated Catchment	completed.

	study will help support the surface		Model has been built and the	
	water management planning		verification is ongoing.	On track to deliver within agreed
	process in Kilwinning, Saltcoats,			LOCAL FRMP timescales.
	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.			
	North Ayrshire Council will develop	01/06/2016-	The Surface Water Management Plan	The initial data gathering and
	a surface water management plan	01/06/2022	for the three Town Area and Kiwinning	review is ongoing. The
	or plans to cover Kilwinning,		is started in June 2018.	Stevenston Point ICS Needs
	Saltcoats, Ardrossan and			Report will assist in producing this
	Stevenston which set objectives for			plan when available.
	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			
Surface water	integrated catchment study and			
plan/study	Section 16 modelling, to assist with			

		the surface water management			
		planning process.			
		SEPA will seek to develop flood	22/12/2015-	Following the establishment of a	It is anticipated that this action will
		mapping in the Ayr to Ardrossan	22/06/2022	coastal flood hazard map development	progress to a study prior to the
		area to improve understanding of		framework and characterisation of the	end of Cycle 1 however
		coastal flood risk. The extent and		coastline, several projects are	completion is likely to be in early
		timing of improvements will depend		currently underway at this location:	Cycle 2. Topographic survey will
		on detailed scoping and data		Development of a national coastal	be necessary prior to any
		availability. Where this work		joint probability dataset;	modelling study.
		coincides with local authority		Update to the UK design extreme sea	
		studies, SEPA will work		level dataset These projects/ datasets	
		collaboratively to ensure consistent		will inform a future coastal modelling	
	R	modelling approaches are applied.		and mapping project for the Firth of	
		The coastal mapping and modelling		Clyde.	
		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			
Strategic mapping		improvements that can be made in			
and modelling		the area.			
		Scottish Water will undertake further	01/01/2018-	The Scottish Water assessment of	The assessment is now
		investigation and modelling in the	31/12/2020	flood risk within the sewer catchment has been completed.	completed and to be shared with
Strategic mapping		Three Town sewer catchment to		'	Local Authority.
and modelling - Section 16		improve knowledge and			
assessment		understanding of flood risk in this			

		area as required under Section 16 of			
		the Flood Risk Management			
		(Scotland) Act 2009.			
		Largs Flood Protection Scheme was	01/06/2016-	North Ayrshire Council will continue to	Review of asset performance and
		constructed in 2002 and consists of	01/06/2022	inspect and maintain these schemes.	maintenance work is ongoing for
		a concrete seawall from Old Fish		The Largs Flood Protection Scheme	Largs Sea wall. The Council will
		Quay to Gogo Water. This scheme		has an annual inspection regime and	continue to inspect and maintain
	G	built to provide protection to the area		in every 3 years a principal inspection	the flood protection structures
		up to a 200-year flood.		will be carried. The defences will be	within the catchment.
		The Gogo Street Flood Protection		maintained as part of the Council`s	
Maintain flood protection		Scheme was completed in 2013.		asset management programme.	
scheme*					
		Saltcoats Flood Protection Scheme	01/06/2016-	North Ayrshire Council will continue to	Review of asset performance is
		was constructed in 2006 and	01/06/2022	inspect and maintain these schemes.	ongoing for Saltcoats Sea wall.
		consists of breakwaters, seawalls		The Largs Flood Protection Scheme	The Council will continue to
		and flood banks at Outer Nebbock.		has an annual inspection regime and	inspect and maintain the flood
		This scheme provides protection to		in every 3 years a principal inspection	protection structures within the
		the area up to a 200-year flood.		will be carried. The defences will be	catchment.
Maintain flood				maintained as part of the Council`s	
protection scheme*				asset management programme.	
		SEPA will continue to maintain the	22/12/2015-	SEPA has recently reviewed and	SEPA will continue to operate the
		Largs Fort Street, Largs Seafront	22/06/2022	recalibrated the Firth of Clyde flood	flood warning service.
Maintain flood warning		and Saltcoats Harbour flood warning		forecasting model. SEPA has merged	
Largs Fort Street,	G	areas, which are part of the Firth of		the Largs Seafront and the Largs Fort	
Largs Seafront and		Clyde coastal flood warning		Street flood warning areas (part of the	
Saltcoats Harbour		scheme. When flood events occur in		Firth of Clyde coastal flood warning	
flood warning areas		an area with a flood warning service,		scheme) to create a new flood warning	
areas		an area with a nood warning service,		Scrience) to create a new nood warning	

1					<u> </u>
		SEPA will seek to verify and validate		area for 'Largs'. SEPA will continue to	
		the warning service. SEPA will use		maintain the Saltcoats Harbour flood	
		feedback and post-event data to		warning area.	
		ensure that our flood warning			
		service is timely and accurate.			
		The Scottish Flood Forecasting	22/12/2015-	SEPA has continued to operate the	SEPA will continue and improve
		Service is a joint initiative between	22/06/2022	Scottish Flood Forecasting Service	the Scottish Flood Forecasting
		SEPA and the Met Office that		(SFFS) Partnership with the Met Office	Service (SFFS) with the Met
		produces daily, national flood		with daily, national Flood Guidance	Office, with daily Flood Guidance
		guidance statements which are		Statements issued to Category 1 and 2	Statements and regional Flood
		issued to Category 1 and 2		agencies (such as emergency	Alerts issued as required to
		Responders. The		responders, local authorities and other	enable communities and
		service also provides information		organisations with flooding	responders to reduce the impacts
		which allows SEPA to issue flood		management duties) and regional	of flooding. SEPA is currently
	G	warnings, giving people a better		Flood Alerts issued to the public. Each	exploring options to develop a
		chance of reducing the impact of		daily statement gives an assessment	public version of the daily Flood
		flooding on their home or business.		of the risk of flooding for the next five	Guidance Statement to provide
		For more information please visit		days to enable these organisations to	better and earlier information to
		SEPA's website.		put preparations in place to reduce the	the public.
				impact of flooding. SEPA's Flood Alert	
				service is freely available to everyone	
				and enables communities to be aware	
				and prepared to reduce the impacts of	
Flood forecasting				flooding.	
		Everyone is responsible for	01/04/2016-	Community Engagement includes,	Ongoing community PLP training,
	G	protecting themselves and their	22/06/2022	PLP exhibitions, selection, surveys	Flood Warden and resilience
Self help		property from flooding. Property and		and appropriate and relevant	group promotion.
-					

		business owners can take simple		information to enable clients to make	
		steps to reduce damage and		the right decisions.	
		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.			
		Although not part of a community	01/06/2016-	North Ayrshire Council, SEPA and	NAC will continue the ongoing
		flood action group the public take an	22/06/2022	Scottish Water will continue to engage	support for the Community Flood
		active interest in flooding issues		with responsible authorities and all	Group.
		within Largs and inform the		other stakeholders, including	
	G	Council about debris in the		community groups and the public to	
		watercourse. North Ayrshire Council		raise awareness of flood risk and how	
		will liaise with the group through		those affected can be better prepared.	
Community flood		Community Council meetings and			
action groups		directly to the public.			

		Local authorities have a duty to	01/06/2016-	NAC has a 4 weekly maintenance	The Council will continue to
		assess watercourses and carry out	01/06/2022	regime for 50 trash screens, biennially	inspect and maintain
		clearance and repair works where		we carry out 35km length watercourse	watercourses, screens and other
		such works would substantially		inspections within the mainland and	relevant Council assets.
		reduce flood risk. They produce		Arran. NAC have 225km coastline	
		schedules of clearance and repair		which has just under 300 identified	
		works and make these available for		coastal flood protection structures. The	
		public inspection. Scottish Water		regularity of coastal inspections are	
	G	undertake risk based inspection,		risk based and varies between 6	
		maintenance and repair on the		month and 3 years.	
		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			
Maintenance		flood risk.			
		Providing an emergency response	01/06/2016-	NAC is in the last stage to review the	The Ayrshire Civil Contingencies
		to flooding is the responsibility of	01/06/2022	newly developed town by town based	team is responsible for producing
		many organisations, including local		Emergency Plans,	the Civil Contingencies Plan,
		authorities, the emergency services			which outlines the management
		and SEPA. Effective management of			and operational arrangements
	G	an emergency response relies on			that the Councils will follow in the
		emergency plans that are prepared			event of an emergency as well as
		under the Civil Contingencies Act			encouraging other agencies to
		2004 by Category 1 and 2			prepare for their role. The
Emorgone		Responders. Scottish Water are a			Councils will contribute to the
Emergency plans/response		Category 2 responder under the			production and review of the Civil

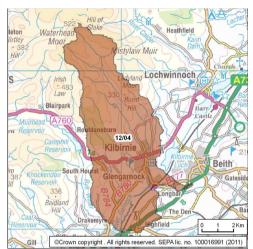
		Civil Contingencies Act 2004 and			Contingencies Plan and the
		will support regional and local			Emergency Plan for Severe
		resilience partnerships as required.			Weather and Flooding, as
		The emergency response by these			required. This response may be
		organisations is coordinated through			supported by the work of
		regional and local resilience			voluntary organisations.
		partnerships. This response may be			Completion of the town by town
		supported by the work of voluntary			Emergency Plan for North
		organisations.			Ayrshire is expected in 2019
		Scottish Planning Policy and	01/06/2016-	The Proposed Local Development	The Council's planning policies
		accompanying Planning Advice	01/06/2022	Plan (LDP) 2 has gone through public	will be reviewed periodically to
		Notes set out Scottish Ministers'		Consultation in 2017/18 approved by	ensure that all current national
		priorities for the operation of the		the Council ion the 17 April 2018. The	policies are implemented and that
		planning system and for the		next stage is the examination stage by	the recommendations of strategic
		development and use of land. In		Scottish Minister. The Council	studies, such as the Ayrshire
		terms of flood risk management, the		completed a Strategic Flood Risk	Shoreline Management Plan,
		policy supports a catchment-scale		Assessment for the proposed LDP2.	Surface Water Management
	G	approach to sustainable flood risk		In addition, we are developing (in	Plans etc., are considered.
		management and aims to build the		partnership with South Ayrshire	
		resilience of our cities and towns,		Council) an Ayrshire Shoreline	
		encourage sustainable land		Management Plan (SMP). This study	
		management in our rural areas, and		will prompt land use and policy	
		to address the long-term		changes and recommend further	
		vulnerability of parts of our coasts		studies to allow physical protective	
		and islands. Under this approach,		measures to take place in the future.	
Planning policies		new development in areas with			

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	medium to high likelihood of flooding		
	should be avoided.		

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. An outline design was reached after extensive modelling and public consultation which includes creation of a dam and upstream reservoir north of Kilbirnie and some limited flood walls throughout Glengarnock and Dalry will protect over 200 properties and businesses in the Garnock Valley. The objections to the scheme are now resolved and the project is progressed to the detailed design stage.

The Garnock Valley has not been exposed to any significant recent weather events.

Overview of actions to manage flooding in Upper Garnock Catchment

PVA	Flood protections scheme/works	atural flo anageme works	New flood warning	Flood protection study	Natural flood management study	Surface water plan/study	Strategic mapping and modelling	Strategic mapping and modelling SEPA	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	G		G		G		G				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	Revised dates and planned
				key deliverables and dates	actions to complete / address
					delay
		Council are progressing work on the	01/06/2016-	An outline design was reached	Complete detailed design,
		proposed flood protection scheme on the	01/06/2022	after extensive modelling and	construction work planned to begin
		upper River Garnock. The Outline design		public consultation which includes	in Summer 2020.
		of the Upper Garnock Flood Protection		creation of a dam and upstream	
		Scheme and notification period		reservoir north of Kilbirnie and	
		completed in October 2015. A total of five		some limited flood walls	
		objections were received during this		throughout Glengarnock and	
		period and the Council is currently trying		Dalry will protect over 200	
	G	to resolve these objections with the		properties and businesses in the	
		individuals before making a decision to		Garnock Valley. The objections to	
		confirm the scheme either with or without		the scheme are now resolved and	
		an unresolved objection.		the project is progressed to the	
				detailed design stage. Deemed	
				Planning Permissions Application	
Flood protections				is being granted by Scottish	
scheme/works				Government in January 2019.	
2 2, 12112		SEPA will continue with the development	22/12/2015-	SEPA has completed	SEPA will continue to operate the
		and implementation of a flood warning	31/12/2016	development of a flood	flood warning service.
Now flood was:	G	scheme on the River Garnock. Detail of		forecasting model for the River	
New flood warning River Garnock		communities that will benefit from the		Garnock and has worked with	

		warnings will be determined during		local authorities to develop	
		scheme development.		procedures for the new flood	
				warning service. A new flood	
				warning area has been	
				introduced.	
		Further investigations will be undertaken	01/06/2016-	The NFM Study will be	The work will be completed with
		which will focus on the potential benefits	01/06/2022	considered in the second half of	close cooperation with SEPA.
		of natural flood management, including		the delivery period starting 2020.	
	G	runoff control and sediment, to the			
		tributaries of the River Garnock, and how			
Natural Flood		these combined actions may reduce			
Management Study		flood risk on the River Garnock.			
		Scottish Water will undertake further	01/01/16-	The Scottish Water assessment	The assessment is on track to
		investigation and modelling in the	31/12/2020	of flood risk within the sewer catchment has started.	deliver within agreed LOCAL FRMP timescales.
		Stevenson Point sewer catchment to		caterinion has started.	imossaise.
	G	improve knowledge and understanding of			
		flood risk in this area as required under			
Ctuata aia mananaina		Section 16 if the Flood Risk Management			
Strategic mapping and modelling		(Scotland) Act 2009.			
3		SEPA will continue with the development	22/12/2015-	SEPA has continued to operate	SEPA will continue and improve the
		and implementation of a flood warning	22/12/2022	the Scottish Flood Forecasting	Scottish Flood Forecasting Service
		scheme on the River Garnock. Detail of		Service (SFFS) Partnership with	(SFFS) with the Met Office, with
		communities that will benefit from the		the Met Office with daily, national	daily Flood Guidance Statements
	G	warnings will be determined during		Flood Guidance Statements	and regional Flood Alerts issued as
		scheme development.		issued to Category 1 and 2	required to enable communities
				agencies (such as emergency	and responders to reduce the
Flood forecasting				responders, local authorities and	impacts of flooding. SEPA is

				other organisations with flooding	currently exploring options to
				management duties) and regional	develop a public version of the daily
				Flood Alerts issued to the public.	Flood Guidance Statement to
				Each daily statement gives an	provide better and earlier
				assessment of the risk of flooding	information to the public.
				for the next five days to 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 enables	
				communities to be aware and	
				prepared to reduce the impacts of	
				flooding.	
		Everyone is responsible for protecting	01/04/2016-	Community Engagement	Ongoing community PLP training,
		themselves and their property from	22/06/2022	includes, PLP exhibitions,	Flood Warden and resilience group
		flooding. Property and business owners		selection, surveys and	promotion.
		can take simple steps to reduce damage		appropriate and relevant	
		and disruption to their homes and		information to enable clients to	
		businesses should flooding happen. This		make the right decisions.	
	G	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,			
Self help		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.			
		North Ayrshire Council, SEPA and	22/12/2015-	SEPA's principle awareness	SEPA will continue to raise
		Scottish Water collectively work to raise	22/06/2022	raising approaches have been	awareness of flood risk through
		awareness of flood risk and how those		through:	direct campaigning, general
		affected can be better prepared. Through		1. Direct campaigning and	awareness raising, developing
		the continued development of flood		general awareness raising	education and engagement tools,
		schemes and studies at higher risk		2. Education and tools	creating new partnerships and
		locations, officers from the Council's		3. Partnership delivery	improving its flood forecasting and
		Flood Risk Management Team attend		development	warning services (e.g. Scottish
		community council events to discuss		North Ayrshire Council general	Flood Forecasting Service and
		elements of flood risk management.		awareness raising is a continuous	Floodline). This will continue with
		Across Scotland, SEPA will create and		activity via NAC website for all	many of the actions reported for the
	G	share communication and education		Ayrshire,	interim progress summary. Further
		resources with other responsible		Supporting Local Flood	information is contained within
		authorities. These resources will include		Emergency Groups is an	SEPA's Flood Warning
		awareness campaigns, media and		occasional activity in Largs,	Development Framework,
		marketing activity and promotion of		Project related public	published in 2017 and for the
		SEPA's flood forecasting and warning		consultations affecting Largs	period 2017 to 2021.
		services (Floodline). Scottish Water will		carried out.	Raising Awareness will form part of
		provide targeted flooding			each of the 3 key themes identified:
		communications for Scottish Water			Aim 1: Maintenance of existing
		specific activities and raise awareness by			and delivery of new flood warning
Awareness raising		producing and supplying targeted			schemes.

		information to the public on large capital			Aim 2: Development and
		projects and detailed local studies.			innovation.
					Aim 3: Engagement with partners
					and customers
					Campaign Calendar for 2018/19 in
					March/April 2019 Proposed for
					North Ayrshire;
					Focus weeks - on flooding
					proposed in 2018/19 for North
					Ayrshire;
		Local authorities have a duty to assess	01/06/2016-	NAC has a 4 weekly maintenance	The Council will continue to inspect
		watercourses and carry out clearance	01/06/2022	regime for trash screens,	and maintain watercourses,
		and repair works where such works		biennially we carry out	screens and other relevant Council
		would substantially reduce flood risk.		watercourse inspections within	assets.
		They produce schedules of clearance		the catchment.	
		and repair works and make these			
	0	available for public inspection. Scottish			
	G	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			
Maintenance		help to reduce flood risk.			
		Providing an emergency response to	01/06/2016-	NAC is in the last stage to review	The Ayrshire Civil Contingencies
Emergency	G	flooding is the responsibility of many	01/06/2022	the newly developed town by	team is responsible for producing
plans/response		organisations, including local authorities,		town-based Emergency Plans,	the Civil Contingencies Plan, which

		the emergency services and SEPA.			outlines the management and
		Effective management of an emergency			operational arrangements that the
		response relies on emergency plans that			Councils will follow in the event of
		are prepared under the Civil			an emergency as well as
		Contingencies Act 2004 by Category 1			encouraging other agencies to
		and 2 Responders. Scottish Water are a			prepare for their role. The Councils
		Category 2 responder under the Civil			will contribute to the production and
		Contingencies Act 2004 and will support			review of the Civil Contingencies
		regional and local resilience partnerships			Plan and the Emergency Plan for
		as required. The emergency response by			Severe Weather and Flooding, as
		these organisations is coordinated			required. This response may be
		through regional and local resilience			supported by the work of voluntary
		partnerships. This response may be			organisations. Completion of the
		supported by the work of voluntary			town by town Emergency Plan for
		organisations.			North Ayrshire is expected in 2019
		Scottish Planning Policy and	01/06/2016-	The Proposed Local Development	The Council's planning policies will
		accompanying Planning Advice Notes set	01/06/2022	Plan (LDP) 2 has gone through	be reviewed periodically to ensure
		out Scottish Ministers' priorities for the		public Consultation in 2017/18	that all current national policies are
		operation of the planning system and for		approved by the Council ion the	implemented and that the
		the development and use of land. In		17 April 2018. The next stage is	recommendations of strategic
		terms of flood risk management, the		the examination stage by Scottish	studies, such as the Ayrshire
	G	policy supports a catchment-scale		Minister. The Council completed	Shoreline Management Plan,
		approach to sustainable flood risk		a Strategic Flood Risk	Surface Water Management Plans
		management and aims to build the		Assessment for the proposed	etc., are considered.
		resilience of our cities and towns,		LDP2. In addition, we are	
		encourage sustainable land management		developing (in partnership with	
Planning policies		in our rural areas, and to address the		South Ayrshire Council) an	

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long-term vulnerability of parts of our		Ayrshire Shoreline Management	
coasts and islands. Under this approach,		Plan (SMP). This study will	
new development in areas with medium		prompt land use and policy	
to high likelihood of flooding should be		changes and recommend further	
avoided.		studies to allow physical	
		protective measures to take place	
		in the future.	
	coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be	coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be	coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided. Plan (SMP). This study will prompt land use and policy changes and recommend further studies to allow physical protective measures to take place

4.5 Kilwinning (Potentially Vulnerable Area 12/05)

Local Plan District	Local authority	Main catchment
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 <u>here</u>.

Key progress has been made with the start of the Stevenston Point Integrated Catchment Study being developed in partnership with Scottish Water and the Surface Water Management Plan, which is due to be completed by 2019.

Overview of actions to manage flooding in Kilwinning

PVA	Flood protections scheme/works	floo emen ks	New flood warning	Flood protection study	Natural flood management study	Surface water plan/study	trat ppir ode	0 0 m	in f	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				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	Revised dates and planned
				deliverables and dates	actions to complete / address
					delay
		SEPA will continue with the	22/12/2015-	SEPA has completed development of	SEPA will continue to operate the
		development and implementation of	22/06/2022	a flood forecasting model for the River	flood warning service
		a flood warning scheme on the River		Garnock and has worked with local	
		Garnock. Detail of communities that		authorities to develop procedures for	
		will benefit from the warnings will be		the new flood warning service. A new	
		determined during scheme		flood warning area has been	
		development.		introduced.	
		Once implemented SEPA will			
	0	continue to maintain the flood			
	G	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			
New flood warning		accurate.			
5		An integrated catchment study	22/12/2015-	Pre-Optioneering Catchment Plan and	Optioneering Stages of study to be
		covering the Meadowhead	31/12/2021	prioritisation stages completed.	completed.
Surface water		catchment was carried out in SR10			
plan/study		2010-2015 to support the surface			

		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.			
		North Ayrshire Council will develop	01/06/2016-	The Surface Water Management Plan	The implementation of the findings
		a surface water management plan	01/06/2022	for the Irvine, Meadowhead catchment	will be considered in the next cycle
		or plans to cover Irvine and		is progressing. The initial data	of FRM Plan.
		Kilwinning which set objectives for		gathering and review is ongoing and	
	G	the management of surface water		planned to be completed by late spring	
		flood risk and identify the most		2019.	
Surface water		sustainable actions to achieve the			
plan/study		objectives.			
		An integrated catchment study	01/06/2016-	Flow surveys, manhole surveys and	Model verification and Catchment
		covering the Stevenston Point	01/06/2022	ancillary surveys have been	Flood Assessment to be
		catchment will be carried out to		completed. The Integrated Catchment	completed. On track to deliver
		support the surface water		Model has been built and the	within agreed LOCAL FRMP
	0	management planning process in		verification is ongoing.	timescales.
	G	Kilwinning, Saltcoats, Ardrossan and			
		Stevenston. The study will improve			
		knowledge and understanding of the			
Surface water		interactions between the above			
plan/study		ground and below ground drainage			

		network e.g. with the sewer network,			
		watercourses and the sea.			
		North Ayrshire Council will develop	01/06/2016-	The Surface Water Management Plan	The initial data gathering and
		a surface water management plan	01/06/2022	for the three Town Area and Kiwinning	review is ongoing. The Stevenston
		or plans to cover Kilwinning,		is started in June 2018.	Point ICS Needs Report will assist
		Saltcoats, Ardrossan and			in producing this plan when
		Stevenston which set objectives for			available.
		the management of surface water			
		flood risk and identify the most			
		sustainable actions to achieve the			
		objectives. Scottish Water will			
	G	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			
Surface water		the surface water management			
plan/study		planning process.			
		Scottish Water will undertake further	01/01/2016-	The Scottish Water assessment of	The assessment is now completed
		investigation and modelling in the	31/12/2020	flood risk within the sewer catchment	and shared with Local Authority.
	_	Three Town sewer catchment to		has been completed.	
Strategic mapping	G	improve knowledge and			
and modelling - Section 16		understanding of flood risk in this			
assessment		area as required under Section 16 of			

		the Flood Risk Management			
		(Scotland) Act 2009.			
		SEPA has continued to operate the	22/12/2015-	SEPA has continued to operate the	SEPA will continue and improve the
		Scottish Flood Forecasting Service	22/06/2022	Scottish Flood Forecasting Service	Scottish Flood Forecasting Service
		(SFFS) Partnership with the Met		(SFFS) Partnership with the Met Office	(SFFS) with the Met Office, with
		Office with daily, national flood		with daily, national Flood Guidance	daily Flood Guidance Statements
		guidance statements issued to		Statements issued to Category 1 and 2	and regional Flood Alerts issued as
		Category 1 and 2 agencies (such as		agencies (such as emergency	required to enable communities
		emergency responders, local		responders, local authorities and other	and responders to reduce the
		authorities and other organisations		organisations with flooding	impacts of flooding. SEPA is
		with flooding management duties).		management duties) and regional	currently exploring options to
	_	Each daily statement gives an		Flood Alerts issued to the public. Each	develop a public version of the daily
	G	assessment of the risk of flooding		daily statement gives an assessment	Flood Guidance Statement to
		for the next five days to help enable		of the risk of flooding for the next five	provide better and earlier
		these organisations to put		days to enable these organisations to	information to the public.
		preparations in place to reduce the		put preparations in place to reduce the	
		impact of flooding. SEPA's Flood		impact of flooding. SEPA's Flood Alert	
		Alert service is freely available to		service is freely available to everyone	
		everyone and helps enable		and enables communities to be aware	
		communities to be aware and		and prepared to reduce the impacts of	
		prepared to reduce the impacts of		flooding.	
Flood forecasting		flooding.			
5		Everyone is responsible for	01/04/2016-	Community Engagement includes,	Ongoing community PLP training,
		protecting themselves and their	22/06/2022	PLP exhibitions, selection, surveys	Flood Warden and resilience group
	G	property from flooding. Property and		and appropriate and relevant	promotion.
		business owners can take simple		information to enable clients to make	
Self help		steps to reduce damage and		the right decisions.	

		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.			
		North Ayrshire Council, SEPA and	22/12/2015-	SEPA's principle awareness raising	SEPA will continue to raise
		Scottish Water collectively work to	22/06/2022	approaches have been through:	awareness of flood risk through
		raise awareness of flood risk and		Direct campaigning and general	direct campaigning, general
		how those affected can be better		awareness raising	awareness raising, developing
		prepared. Through the continued		2. Education and tools	education and engagement tools,
	0	development of flood schemes and		3. Partnership delivery development	creating new partnerships and
	G	studies at higher risk locations,		North Ayrshire Council general	improving its flood forecasting and
		officers from the Council's Flood		awareness raising is a continuous	warning services (e.g. Scottish
		Risk Management Team attend		activity via NAC website for all	Flood Forecasting Service and
		community council events to discuss		Ayrshire,	Floodline). This will continue with
		elements of flood risk management.			many of the actions reported for the
Awareness raising		Across Scotland, SEPA will create			interim progress summary. Further

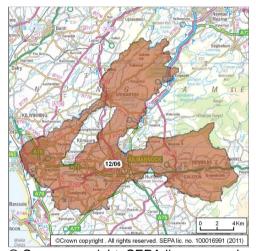
		and share communication and		Supporting Local Flood Emergency	information is contained within
		education resources with other		Groups is an occasional activity in	SEPA's Flood Warning
		responsible authorities. These		Largs,	Development Framework,
		resources will include awareness		Project related public consultations	published in 2017 and for the
		campaigns, media and marketing		affecting Largs carried out.	period 2017 to 2021.
		activity and promotion of SEPA's			Raising Awareness will form part of
		flood forecasting and warning			each of the 3 key themes identified:
		services (Floodline). Scottish			Aim 1: Maintenance of existing
		Water will provide targeted flooding			and delivery of new flood warning
		communications for Scottish Water			schemes.
		specific activities and raise			Aim 2: Development and
		awareness by producing and			innovation.
		supplying targeted information to the			Aim 3: Engagement with partners
		public on large capital projects and			and customers
		detailed local studies.			Campaign Calendar for 2018/19 in
					March/April 2019 Proposed for
					North Ayrshire;
					Focus weeks - on flooding
					proposed in 2018/19 for North
					Ayrshire;
		Local authorities have a duty to	01/06/2016-	NAC has a 4 weekly maintenance	The Council will continue to inspect
		assess watercourses and carry out	01/06/2022	regime for 50 trash screens, biennially	and maintain watercourses,
		clearance and repair works where		we carry out 35km length watercourse	screens and other relevant Council
	G	such works would substantially		inspections within the mainland and	assets.
		reduce flood risk. They produce		Arran. NAC have 225km coastline	
		schedules of clearance and repair		which has just under 300 identified	
Maintenance		works and make these available for		coastal flood protection structures. The	

		public inspection. Scottish Water		regularity of coastal inspections are	
		undertake risk based inspection,		risk based and varies between 6	
		maintenance and repair on the		month and 3 years.	
		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.			
		Providing an emergency response	01/06/2016-	NAC is in the last stage to review the	The Ayrshire Civil Contingencies
		to flooding is the responsibility of	01/06/2022	newly developed town by town based	team is responsible for producing
		many organisations, including local		Emergency Plans,	the Civil Contingencies Plan, which
		authorities, the emergency services			outlines the management and
		and SEPA. Effective management of			operational arrangements that the
		an emergency response relies on			Councils will follow in the event of
		emergency plans that are prepared			an emergency as well as
		under the Civil Contingencies Act			encouraging other agencies to
	_	2004 by Category 1 and 2			prepare for their role. The Councils
	G	Responders. Scottish Water are a			will contribute to the production and
		Category 2 responder under the			review of the Civil Contingencies
		Civil Contingencies Act 2004 and			Plan and the Emergency Plan for
		will support regional and local			Severe Weather and Flooding, as
		resilience partnerships as required.			required. This response may be
		The emergency response by these			supported by the work of voluntary
		organisations is coordinated through			organisations. Completion of the
Emorgonov		regional and local resilience			town by town Emergency Plan for
Emergency plans/response		partnerships. This response may be			North Ayrshire is expected in 2019

		supported by the work of voluntary			
		organisations.			
		Scottish Planning Policy and	01/06/2016-	The Proposed Local Development	The Council's planning policies will
		accompanying Planning Advice	01/06/2022	Plan (LDP) 2 has gone through public	be reviewed periodically to ensure
		Notes set out Scottish Ministers'		Consultation in 2017/18 approved by	that all current national policies are
		priorities for the operation of the		the Council ion the 17 April 2018. The	implemented and that the
		planning system and for the		next stage is the examination stage by	recommendations of strategic
		development and use of land. In		Scottish Minister. The Council	studies, such as the Ayrshire
		terms of flood risk management, the		completed a Strategic Flood Risk	Shoreline Management Plan,
		policy supports a catchment-scale		Assessment for the proposed LDP2.	Surface Water Management Plans
		approach to sustainable flood risk		In addition, we are developing (in	etc., are considered.
	G	management and aims to build the		partnership with South Ayrshire	
		resilience of our cities and towns,		Council) an Ayrshire Shoreline	
		encourage sustainable land		Management Plan (SMP). This study	
		management in our rural areas, and		will prompt land use and policy	
		to address the long-term		changes and recommend further	
		vulnerability of parts of our coasts		studies to allow physical protective	
		and islands. Under this approach,		measures to take place in the future.	
		new development in areas with			
		medium to high likelihood of flooding			
Planning policies		should be avoided.			

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	River Irvine
	Council, North Ayrshire Council, South Ayrshire Council,	



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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 start of the Upper and Lower Irvine Valley Flood Protection Study, including option appraisal. A surface water management plan, natural flood management options and the viability of property level protection has also progressed.

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 protections scheme/works	flo eme ks	New flood warning	Flood protection study	Natural flood management study	Surface water plan/study	Strategic mapping and modelling	Strategic mapping and	delling SE	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			Α	G		G	G	R	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	Revised dates and planned
				deliverables and dates	actions to complete / address
					delay
		The scope of a new flood warning	20/03/2016	Scoping is currently being conducted	Full scoping, infrastructure and a
		for the River Irvine is currently being	-	for the River Irvine, Kilmarnock Water	flood forecasting system will be
		examined. The area under	19/06/2020	and Annick Water. A review of the	required to develop a new flood
		consideration for a new flood		flood risk to Galston has established	warning scheme in this area.
		warning includes properties in		that is is not feasible to develop a flood	
		Newmilns affected by flooding from		warning for the main source of risk	
		the River Irvine. The risk to Galston		(Burn Anne).	
		will be reviewed using the councils			
		new flood study for the River Irvine.			
		This could impact on the potential			
	А	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			
New Flood		Kilmarnock Water and River Irvine.			
Warning		An update to the existing flood			
Newmilns, Galston, Kilmarnock, Irvine		forecasting system will be required			
and Stewarton		to deliver flood warning in this			

I					1
		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.develop a new			
		flood warning scheme in this area.			
		Upper Irvine Valley Flood Study and	01/06/2016-	The Upper River Irvine Valley Flood	If feasible options are identified
		option appraisal	01/06/2022	Study including fluvial modelling is	they will be submitted to the
	G			completed. The option appraisal is	National Prioritisation process to
Flood protection				progressing according to programme.	seek funding from Scottish
Flood protection study					Government for implementation.
,		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	01/06/2016- 01/06/2022	Pre Optioneering Catchment Plan and prioritisation stages completed.	The Optioneering Phase to be completed. The implementation of the findings will be considered in coordination with Scottish Water in the next cycle of FRM Plan.
Surface water plan/study		issues, is now being progressed.			

		North and East Ayrshire Council will	01/06/2016-	The Surface Water Management Plan	The implementation of the
		develop a surface water	01/06/2022	for the Irvine, Meadowhead catchment	findings will be considered in the
		management plan		is progressing. The initial data	next cycle of FRM Plan.
		or plans to cover Irvine and		gathering and review is ongoing and	
		Kilmarnock which set objectives for		planned to be completed by February	
	G	the management of surface water		2019.	
		flood risk and identify the most		The Surface water management Plan	
		sustainable actions to achieve the		for East Ayrshire Council catchments	
Confessormation		objectives.		are currently at tender stage and	
Surface water plan/study				planned to be complete within 2020.	
prany coast		SEPA will work with East Ayrshire	01/01/2016-	A screening exercise to characterise	
		Council to improve the	31/12/2020	the catchment and identify the data	
		understanding of flood risk along the		necessary to support mapping	
		River Irvine. The Council are leading		improvements has been undertaken.	
		on the production of the River Irvine		Two local authority studies are	
		modelling with SEPA providing		currently underway at this location.	
		advice and reviewing information		These projects will collectively enable	
		during the process. SEPA will		the revision of flood mapping within the	
	G	update strategic surface water		River Irvine catchment.	
		mapping in some parts of this			
		catchment to improve understanding			
		of flood risk. The inclusion of			
Strategic mapping		additional surface water hazard data			
and modelling		resulting from the completion of			
River Irvine		local authority surface water			
mapping improvements		management plans will be			

		considered as these projects are			
		completed.			
		SEPA will update strategic surface	01/01/2016-	SEPA's current Surface water hazard	This action will not be taken
		water mapping in some parts of this	31/12/2020	maps use design rainfall estimates	forwards as described. SEPA will
		catchment to improve understanding		based on FEH99 methodology, this	develop new Surface water flood
		of flood risk. The inclusion of		has now been superseded by FEH13	hazard maps over the remainder
		additional surface water hazard data		methodology. The FEH13 dataset	of Cycle 1. It is anticipated that
		resulting from the completion of		contains the latest science and	updated flood mapping from this
		local authority surface water		understanding of rainfall across	revised action will be available
		management plans will be		Scotland and represents a significant	early in Cycle 2.
		considered as these projects are		change in rainfall amounts compared	
	R	completed.		to FEH99 dataset, as such it is no	Alongside this SEPA is
				longer consider appropriate to deliver	investigating the feasibility of
				this action as originally intended.	developing an interim approach to
					assess the change in Surface
					water hazard (and risk)
					associated with FEH13, such that
Strategic mapping					we could consider it in the
and modelling					development of the 2021 FRM
Pluvial mapping update					Strategies.
		Scottish Water will undertake further	01/01/2016-	The Meadowhead assessment of flood	The meadowhead assessment is
		investigation and modelling in the	31/12/2020	risk within the sewer catchment has	now completed and shared with
		Meadowhead Point sewer		been completed.	Local Authority.
Strategic mapping		catchment to improve knowledge			
and modelling Section 16		and understanding of flood risk in			
Assessment		this area as required under Section			

		16 of the Flood Risk Management			
		(Scotland) Act 2009.			
		The Kilmarnock Flood Protection	01/06/2016-	EAC continues to carry out its	The Council will continue to
		Scheme was designed to mitigate	01/06/2022	maintenance contracts.	inspect and maintain the flood
		flooding from the River Irvine in the		In addition the Irvine Valley Flood	protection structures within the
		Riccarton and Crookedholm areas		Study is looking to identify any	catchment.
		of Kilmarnock. The scheme has a		measures required to ensure these	
		standard of protection of 100 years.		defences remain effective.	
		The schemes currently constructed			
	G	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			
Maintain flood protection		annual grass cutting contract (to			
scheme*		allow inspection).			
		Defences along the banks of the	01/06/2016-	The Council will continue to inspect	The Council will continue to
		Irvine River protect properties in the	01/06/2022	and maintain the flood protection	inspect and maintain the flood
		Waterside up to a 20 year flood.		structures within the catchment.	protection structures within the
		North Ayrshire Council will continue			catchment.
		to inspect and maintain the River			
	G	Irvine flood defences at Waterside,			
		which will continue to manage			
		flooding according to the design			
Maintain flood protection		standard at the time of construction.			
scheme*		Given the relatively minor nature of			

1		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.			
		SEPA will continue to maintain the	22/12/2015-	SEPA has continued to operate the	SEPA will continue to operate the
		Irvine Waterside/Low Green flood	22/06/2022	flood warning service	flood warning service
		warning area in Irvine and the			
Maintain flood		Queen's Drive, New Mill Road and			
warning Irvine		Samson Avenue flood warning			
Waterside/Low		areas in Kilmarnock which are part			
Green flood	G	of the Irvine river flood warning			
warning areas in		scheme. When flood events occur in			
Irvine and the Queen's Drive,		an area with a flood warning service,			
New Mill Road and		SEPA will seek to verify and validate			
Samson Avenue		the warning service. SEPA will use			
flood warning		feedback and post-event data to			
areas in Kilmarnock		100abaok and post-event data to			

I		ensure that our flood warning			
		service is timely and accurate.			
		The Scottish Flood Forecasting	22/12/2015-	SEPA has continued to operate the	SEPA will continue and improve
		Service is a joint initiative between	22/06/2022	Scottish Flood Forecasting Service	the Scottish Flood Forecasting
		SEPA and the Met Office that		(SFFS) Partnership with the Met Office	Service (SFFS) with the Met
		produces daily, national flood		with daily, national Flood Guidance	Office, with daily Flood Guidance
		guidance statements which are		Statements issued to Category 1 and 2	Statements and regional Flood
		issued to Category 1 and 2		agencies (such as emergency	Alerts issued as required to
		Responders. The service also		responders, local authorities and other	enable communities and
		provides information which allows		organisations with flooding	responders to reduce the impacts
		SEPA to issue flood warnings,		management duties) and regional	of flooding. SEPA is currently
	G	giving people a better chance of		Flood Alerts issued to the public. Each	exploring options to develop a
		reducing the impact of flooding on		daily statement gives an assessment	public version of the daily Flood
		their home or business. For more		of the risk of flooding for the next five	Guidance Statement to provide
		information please visit SEPA's		days to enable these organisations to	better and earlier information to
		website.		put preparations in place to reduce the	the public.
				impact of flooding. SEPA's Flood Alert	
				service is freely available to everyone	
				and enables communities to be aware	
				and prepared to reduce the impacts of	
Flood forecasting				flooding.	
1 1000 Tot cousting		Although not part of a community	01/06/2016-	East Ayrshire Council, SEPA and	EAC will continue the ongoing
		flood action group the public take an	22/06/2022	Scottish Water will continue to engage	support for the Community Flood
		active interest in flooding issues		with responsible authorities and all	Group.
	G	within Galston and inform the		other stakeholders, including	
Company wells and		Council about debris in the		community groups and the public to	
Community flood action groups		watercourse. East Ayrshire Council			

		will liaise with the group through		raise awareness of flood risk and how	
		Community Council meetings and		those affected can be better prepared.	
		directly to the public.			
		Everyone is responsible for	01/04/2016-	Community Engagement includes,	Ongoing community PLP training,
		protecting themselves and their	22/06/2022	PLP exhibitions, selection, surveys	Flood Warden and resilience
		property from flooding. Property and		and appropriate and relevant	group promotion.
		business owners can take simple		information to enable clients to make	
		steps to reduce damage and		the right decisions.	
		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			
	G	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			
Self help		Flood Forum websites.			
·		North and East Ayrshire Councils,	22/12/2015-	SEPA's principle awareness raising	SEPA will continue to raise
		SEPA and Scottish Water	22/06/2022	approaches have been through:	awareness of flood risk through
	G	collectively work to raise awareness		Direct campaigning and general	direct campaigning, general
Awareness raising		of flood risk and how those affected		awareness raising	awareness raising, developing

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.

- 2. Education and tools
- 3. Partnership delivery development
 North Ayrshire Council general
 awareness raising is a continuous
 activity via NAC website for all
 Ayrshire,

Supporting Local Flood Emergency Groups is an occasional activity in the Catchment,

Project related public consultations affecting Kilmarnock carried out.

education and engagement tools, creating new partnerships and improving its flood forecasting and warning services (e.g. Scottish Flood Forecasting Service and Floodline). This will continue with many of the actions reported for the interim progress summary. Further information is contained within SEPA's Flood Warning Development Framework, published in 2017 and for the period 2017 to 2021.

of each of the 3 key themes identified:

- Aim 1: Maintenance of existing and delivery of new flood warning schemes.
- Aim 2: Development and innovation.
- Aim 3: Engagement with partners and customers
 Campaign Calendar for 2018/19 in March/April 2019 Proposed for North Ayrshire;

Awareness raising

					Focus weeks - on flooding
					proposed in 2018/19 for North
					Ayrshire;
		East Ayrshire Council, SEPA and	01/04/2016-	EAC and SEPA has delivered a range	EAC and SEPA will continue to
		Scottish Water collectively work to	22/06/2022	of awareness raising activities through	raise awareness of flood risk
		raise awareness of flood risk and		campaigning, education activities and	through campaigning, developing
		how those affected can be better		partnership delivery. We have run	education and engagement tools,
		prepared.		national and local digital and direct	creating new partnerships and
		Across Scotland, SEPA will create		engagement campaigns to raise	improving the flood warning and
		and share communication and		awareness of flood risk and SEPA's	forecasting service. Many of our
		education resources with other		flood warning service, Floodline. We	awareness raising activities
		responsible authorities. These		publish and publicise an electronic	currently underway will continue.
		resources will include awareness		newsletter (Flooding Gateway) four	Our focus will be on promoting
		campaigns, media and marketing		times a year which is distributed to a	flood warning and forecasting
		activity and promotion of SEPA's		wide audience. SEPA are working with	service, innovation, education and
	G	flood forecasting and warning		Education Scotland and Scottish	engagement with partners,
		services (Floodline).		Government Resilience team to	customers and the public.
		Scottish Water will provide targeted		embed flooding awareness within the	
		flooding communications for		Curriculum for Excellence, and	
		Scottish Water specific activities and		resilience partners in Safer	
		raise awareness by producing and		Communities programmes. We have	
		supplying targeted information to the		also developed an online tool that	
		public on large capital projects and		helps everyone share information on	
		detailed local studies.		current flooding issues (Report-a-	
		Further Information is provided on		Flood). We have worked in partnership	
		East Ayrshire Council, SEPA,		with local authorities, emergency	
Awareness raising				services and community organisations	

		Scottish Water and Ayrshire Road		(e.g. Neighbourhood Watch Scotland,	
		Alliance websites.		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.	
		Local authorities have a duty to	01/06/2016-	NAC has a 4 weekly maintenance	The Council will continue to
		assess watercourses and carry out	01/06/2022	regime for trash screens, biennially we	inspect and maintain
		clearance and repair works where		carry out watercourse inspections	watercourses, screens and other
		such works would substantially		within the catchment.	relevant Council assets.
		reduce flood risk. They produce			
		schedules of clearance and repair			
		works and make these available for			
		public inspection. Scottish Water			
	G	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			
Maintenance		flood risk.			

		East Ayrshire Council in accordance	01/06/2016-	High risk locations such as those with	The Council will continue to
		with Section 18 of the FR Scotland	01/06/2022	screens and smaller culverts are	inspect and maintain
		Act 2009 undertake assessment of		inspected in a scheduled bases. The	watercourses, screens and other
		water bodies to determine whether		majority inspections are tend to be	relevant Council assets.
	G	works of clearance and repair would		undertake in the winter months when	
		substantially reduce risk of flooding.		flows are higher and water born debris	
		This information is used to produce		can be an issue.	
		a schedule of works, which is			
Maintenance		available for the public to inspect			
		Providing an emergency response	01/06/2016-	NAC is in the last stage to review the	The Ayrshire Civil Contingencies
		to flooding is the responsibility of	01/06/2022	newly developed town by town based	team is responsible for producing
		many organisations, including local		Emergency Plans,	the Civil Contingencies Plan,
		authorities, the emergency services			which outlines the management
		and SEPA. Effective management of			and operational arrangements
		an emergency response relies on			that the Councils will follow in the
		emergency plans that are prepared			event of an emergency as well as
		under the Civil Contingencies Act			encouraging other agencies to
		2004 by Category 1 and 2			prepare for their role. The
	G	Responders. Scottish Water are a			Councils will contribute to the
		Category 2 responder under the			production and review of the Civil
		Civil Contingencies Act 2004 and			Contingencies Plan and the
		will support regional and local			Emergency Plan for Severe
		resilience partnerships as required.			Weather and Flooding, as
		The emergency response by these			required. This response may be
		organisations is coordinated through			supported by the work of
Emergency		regional and local resilience			voluntary organisations.
plans/response		partnerships. This response may be			Completion of the town by town

		supported by the work of voluntary			Emergency Plan for North
		organisations.			Ayrshire is expected in 2019.
		Scottish Planning Policy and	01/06/2016-	The Proposed Local Development	The Council's planning policies
		accompanying Planning Advice	01/06/2022	Plan (LDP) 2 has gone through public	will be reviewed periodically to
		Notes set out Scottish Ministers'		Consultation in 2017/18 approved by	ensure that all current national
		priorities for the operation of the		the Council ion the 17 April 2018. The	policies are implemented and that
		planning system and for the		next stage is the examination stage by	the recommendations of strategic
		development and use of land. In		Scottish Minister. The Council	studies, such as the Ayrshire
		terms of flood risk management, the		completed a Strategic Flood Risk	Shoreline Management Plan,
		policy supports a catchment-scale		Assessment for the proposed LDP2.	Surface Water Management
		approach to sustainable flood risk		In addition, we are developing (in	Plans etc., are considered.
	G	management and aims to build the		partnership with South Ayrshire	
		resilience of our cities and towns,		Council) an Ayrshire Shoreline	
		encourage sustainable land		Management Plan (SMP). This study	
		management in our rural areas, and		will prompt land use and policy	
		to address the long-term		changes and recommend further	
		vulnerability of parts of our coasts		studies to allow physical protective	
		and islands. Under this approach,		measures to take place in the future.	
		new development in areas with			
		medium to high likelihood of flooding			
Planning policies		should be avoided.			

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 is completed and adopted by both North and South Ayrshire Councils in September 2018. The Meadowhead Integrated Catchment Study and Surface Water Management Plan for North Ayrshire are progressing according to plan. 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 protections scheme/works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan/study	Strategic mapping and modelling	Strategic mapping and modelling SEPA	in 1 octi	Maintain flood warning	Flood forecasting	Property level protection scheme	nu ac up	Self help	Awareness raising	Maintenance	Emergency plans/response	Planning policies
12/07		G		G		G	G	R	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,	Revised dates and planned
				including key deliverables and	actions to complete / address
				dates	delay
		South Ayrshire Council are currently	22/12/2015-	This work continues to be	The Council will continue to
		undertaking sand dune propagation	22/06/2022	carried out on an annual basis.	undertake sand dune
		in Troon, and some of the benefits			propagation.
	G	of these actions are to help reduce			
		the risk of coastal erosion and			
		flooding. It is recommended that this			
Natural flood management works		should continue.			
management works		A shoreline management plan is	01/06/2016-	The Ayrshire Shoreline	The Ayrshire Shoreline
		recommended, this study is not	01/06/2022	Management Plan is completed	Management Plan will be
		limited to Potentially Vulnerable		and adopted by both North and	reviewed every 6 years.
		Areas but should cover the whole of		South Ayrshire Councils in	
		the Ayrshire coastline and any areas		September/October 2018.	
		beyond this which may be			
		influenced by changes in coastal			
	G	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			
Flood protection study		required to mitigate against flooding.			

		An integrated catchment study	01/06/2016-	Pre-Optioneering Catchment	The Optioneering Phase to be
		covering the Meadowhead	01/06/2022	Plan and prioritisation stages	completed. The implementation of
		catchment was carried out in SR10		completed.	the findings will be considered in
		(2010-2015). This study will help to			coordination with Scottish Water
		support the surface water			in the next cycle of FRM Plan.
		management planning process in			
		Kilmarnock, Greenholm, Irvine,			
		Prestwick and Ayr. The study has			
		improved knowledge and			
	G	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			
Surface Water		issues, is now being progressed.			
Management Plan					
		North Ayrshire Council will develop	01/06/2016-	The Surface Water Management	North Ayrshire Council will
		a surface water management plan	01/06/2022	Plan for the Irvine, Meadowhead	develop a surface water
		or plans to cover Irvine town which		catchment is procured in June	management plan or plans to
		set objectives for the management		2018. The initial data gathering	cover Irvine and Kilmarnock which
	G	of surface water flood risk and		and review is ongoing and	set objectives for the
		identify the most sustainable actions		planned to be completed by	management of surface water
		to achieve the objectives.		February 2019.	flood risk and identify the most
Surface water					sustainable actions to achieve the
plan/study					objectives.

		SEPA will seek to develop flood	22/12/2016 -	Following the establishment of a	It is anticipated that this action will
		mapping in the Ayr to Ardrossan	01/06/2022	coastal flood hazard map	progress to a study prior to the
		area to improve understanding of		development framework and	end of Cycle 1 however
		coastal flood risk. The extent and		characterisation of the coastline,	completion is likely to be in early
		timing of improvements will depend		several projects are currently	Cycle 2. Topographic survey will
		on detailed scoping and data		underway at this location:	be necessary prior to any
		availability. The coastal mapping		Development of a national	modelling study.
		and modelling process will start in		coastal joint probability dataset;	
		2016, with early work focussing on		Update to the UK design	
	R	methodology development and data		extreme sea level dataset	
		collection. Once this stage has been		These projects/datasets will	
		completed a thorough review will be		inform a future coastal modelling	
		carried out to identify the final		and mapping project for the Firth	
		mapping improvements that can be		of Clyde.	
		made in the area. Where this work			
		coincides with local authority			
		studies, SEPA will work			
Strategic mapping and modelling		collaboratively to ensure consistent			
and modelling		modelling approaches are applied.			
		Scottish Water will undertake further	01/01/2016-	The Scottish Water assessment	The assessment is now
		investigation and modelling in the	31/12/2020	of flood risk within the sewer	completed and shared with Local
		Meadowhead sewer catchment to		catchment has been completed.	Authority.
		improve knowledge and			
		understanding of flood risk in this			
Strategic mapping		area as required under Section 16 of			
and modelling- Section 16		the Flood Risk Management			
assessment		(Scotland) Act 2009.			

		In Troon there are sections of	01/06/2016-	This work continues to be	The Council will continue to
		seawalls, rock armour and gabion	01/06/2022	carried out on an annual basis.	inspect and maintain the flood
		mattresses running from the golf			protection structures within the
		club to the harbour and north of the			catchment.
		harbour to Beach Road. These			
	_	defences offer some level of			
	G	protection to the properties in this			
		area. These defences will be			
		maintained and will continue to			
		manage flooding according to the			
Maintain flood protection		design standard at the time of			
scheme*		construction.			
		SEPA will continue to maintain the	22/12/2015-	SEPA has recently reviewed	SEPA will continue to operate the
		Troon Coastal, Troon Central and	22/06/2022	and recalibrated the Firth of	flood warning service.
		Prestwick Links Road flood warning		Clyde flood forecasting model.	
		areas which are part of the Firth of		SEPA has merged the Troon	
		Clyde coastal flood warning		Coastal, Troon Central and the	
	0	scheme. When flood events occur in		Prestwick Links Road flood	
Maintain flood	G	an area with a flood warning service,		warning areas (part of the Firth	
warning		SEPA will seek to verify and validate		of Clyde coastal flood warning	
Troon Coastal,		the warning service. SEPA will use		scheme) to create a new flood	
Troon Central and		feedback and post-event data to		warning area for 'Ayr to Troon'.	
Prestwick Links Road flood warning		ensure that our flood warning			
areas		service is timely and accurate.			
		The Scottish Flood Forecasting	22/12/2015-	SEPA has continued to operate	SEPA will continue and improve
	G	Service is a joint initiative between	22/06/2022	the Scottish Flood Forecasting	the Scottish Flood Forecasting
Flood forecasting		SEPA and the Met Office that		Service (SFFS) Partnership with	Service (SFFS) with the Met

		produces daily, national flood		the Met Office with daily,	Office, with daily Flood Guidance
		guidance statements which are		national Flood Guidance	Statements and regional Flood
		issued to Category 1 and 2		Statements issued to Category 1	Alerts issued as required to
		Responders. The service also		and 2 agencies (such as	enable communities and
		provides information which allows		emergency responders, local	responders to reduce the impacts
		SEPA to issue flood warnings,		authorities and other	of flooding. SEPA is currently
		giving people a better chance of		organisations with flooding	exploring options to develop a
		reducing the impact of flooding on		management duties) and	public version of the daily Flood
		their home or business. For more		regional Flood Alerts issued to	Guidance Statement to provide
		information please visit SEPA's		the public. Each daily statement	better and earlier information to
		website.		gives an assessment of the risk	the public.
				of flooding for the next five days	
				to 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	
				enables communities to be	
				aware and prepared to reduce	
				the impacts of flooding.	
		Everyone is responsible for	01/04/2016-	Community Engagement	Ongoing community PLP training,
		protecting themselves and their	22/06/2022	includes, PLP exhibitions,	Flood Warden and resilience
		property from flooding. Property and		selection, surveys and	group promotion.
	G	business owners can take simple		appropriate and relevant	
		steps to reduce damage and		information to enable clients to	
		disruption to their homes and		make the right decisions.	
Self help		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.			
		North Ayrshire Council, SEPA and	22/12/2015-	SEPA's principle awareness	SEPA will continue to raise
		Scottish Water collectively work to	22/06/2022	raising approaches have been	awareness of flood risk through
		raise awareness of flood risk and		through:	direct campaigning, general
		how those affected can be better		Direct campaigning and	awareness raising, developing
		prepared. Through the continued		general awareness raising	education and engagement tools,
		development of flood schemes and		2. Education and tools	creating new partnerships and
	0	studies at higher risk locations,		3. Partnership delivery	improving its flood forecasting and
	G	officers from the Council's Flood		development	warning services (e.g. Scottish
		Risk Management Team attend		North and South Ayrshire	Flood Forecasting Service and
		community council events to discuss		Councils general awareness	Floodline). This will continue with
		elements of flood risk management.		raising is a continuous activity	many of the actions reported for
		Across Scotland, SEPA will create		via NAC website for all Ayrshire.	the interim progress summary.
		and share communication and			Further information is contained
Awareness raising		education resources with other			within SEPA's Flood Warning

		responsible authorities. These			Development Framework,
		resources will include awareness			published in 2017 and for the
		campaigns, media and marketing			period 2017 to 2021.
		activity and promotion of SEPA's			Raising Awareness will form part
		flood forecasting and warning			of each of the 3 key themes
		services (Floodline). Scottish			identified:
		Water will provide targeted flooding			Aim 1: Maintenance of existing
		communications for Scottish Water			and delivery of new flood warning
		specific activities and raise			schemes.
		awareness by producing and			Aim 2: Development and
		supplying targeted information to the			innovation.
		public on large capital projects and			Aim 3: Engagement with
		detailed local studies.			partners and customers
					Campaign Calendar for 2018/19
					in March/April 2019 Proposed for
					North Ayrshire;
					Focus weeks - on flooding
					proposed in 2018/19 for North
					Ayrshire;
		Local authorities have a duty to	01/06/2016-	NAC has a 4 weekly	The Councils will continue to
		assess watercourses and carry out	01/06/2022	maintenance regime for trash	inspect and maintain
		clearance and repair works where		screens, biennially we carry out	watercourses, screens and other
		such works would substantially		watercourse and coastal	relevant Council assets.
	G	reduce flood risk. They produce		inspections. The regularity of	
		schedules of clearance and repair		coastal inspections are risk	
Maintenance		works and make these available for		based and varies between 6	
General		public inspection. Scottish Water		month and 3 years.	

		undertake risk-based inspection,		South Ayrshire Council carry out	
		maintenance and repair on the		monthly inspections and	
		public sewer network. Asset owners		clearance work where	
		and riparian landowners are		necessary on 17 debris screens	
		responsible for the maintenance and		where there is a known flood	
		management of their own assets		risk from blockage. Watercourse	
		including those which help to reduce		inspections are carried out on a	
		flood risk.		regular basis where there are	
				known flood risk issues. 25km of	
				coastal protection structures are	
				inspected annually	
		In Troon there are sections of	01/06/2016-	This work continues to be	The Council will continue to
		seawalls, rock armour and gabion	01/06/2022	carried out on an annual basis.	inspect and maintain the flood
		mattresses running from the golf			protection structures within the
		club to the harbour and north of the			catchment.
		harbour to Beach Road. These			
	_	defences offer some level of			
	G	protection to the properties in this			
		area. These defences will be			
		maintained and will continue to			
		manage flooding according to the			
Maintain flood		design standard at the time of			
Protection Schemes		construction.			
		Providing an emergency response	01/06/2016-	NAC is in the last stage to	The Ayrshire Civil Contingencies
		to flooding is the responsibility of	01/06/2022	review the newly developed	team is responsible for producing
Emorgone	G	many organisations, including local		town by town based Emergency	the Civil Contingencies Plan,
Emergency plans/response		authorities, the emergency services		Plans,	which outlines the management

		and SEPA. Effective management of			and operational arrangements
		an emergency response relies on			that the Councils will follow in the
		emergency plans that are prepared			event of an emergency as well as
		under the Civil Contingencies Act			encouraging other agencies to
		2004 by Category 1 and 2			prepare for their role. The
		Responders. Scottish Water are a			Councils will contribute to the
		Category 2 responder under the			production and review of the Civil
		Civil Contingencies Act 2004 and			Contingencies Plan and the
		will support regional and local			Emergency Plan for Severe
		resilience partnerships as required.			Weather and Flooding, as
		The emergency response by these			required. This response may be
		organisations is coordinated through			supported by the work of
		regional and local resilience			voluntary organisations.
		partnerships. This response may be			
		supported by the work of voluntary			
		organisations.			
		Scottish Planning Policy and	01/06/2016-	The Proposed Local	The Council's planning policies
		accompanying Planning Advice	01/06/2022	Development Plan (LDP) 2 has	will be reviewed periodically to
		Notes set out Scottish Ministers'		gone through public	ensure that all current national
		priorities for the operation of the		Consultation in 2017/18	policies are implemented and that
		planning system and for the		approved by the Council ion the	the recommendations of strategic
	G	development and use of land. In		17 April 2018. The next stage is	studies, such as the Ayrshire
		terms of flood risk management, the		the examination stage by	Shoreline Management Plan,
		policy supports a catchment-scale		Scottish Minister. The Council	Surface Water Management
		approach to sustainable flood risk		completed a Strategic Flood	Plans etc., are considered.
		management and aims to build the		Risk Assessment for the	
Planning policies		resilience of our cities and towns,		proposed LDP2. In addition, we	

encourage sustainable land are developing (in partnership management in our rural areas, and with South Ayrshire Council) an to address the long-term Ayrshire Shoreline Management vulnerability of parts of our coasts Plan (SMP). This study will and islands. Under this approach, prompt land use and policy new development in areas with changes and recommend further medium to high likelihood of flooding studies to allow physical should be avoided. protective measures to take place in the future. 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 is currently under review with public consultation on the plan scheduled for the end of 2018.

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 risk study. The option appraisal is progressing according to plan with an aim to identify flood protection measures for Brodick and Lamlash.

Overview of actions to manage flooding in Isle of Arran

PVA	Flood protections scheme/works	floo men cs	New flood warning	Flood protection study	Natural flood management study	Surface water plan/study	Strategic mapping and modelling	Strategic mapping and modelling SEPA	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					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	Revised dates and planned
				deliverables and dates	actions to complete / address
					delay
		A study will be undertaken to further	01/04/2018-	The GlenCoyle, Monamore and	If feasible option identified that will
		investigate river flood risk combined	13/03/2020	Benlister Burn fluvial and coastal	be submitted to the National
		with coastal flood risk to Brodick and		modelling is completed including the	Prioritisation process to seek fund
		Lamlash. This study should build on		regional climate change sensitity	from Scottish Government for
		the work within the shoreline		assessment and approved by SEPA in	implementation.
	G	management plan to provide a		July 2018. The option appraisal is	
		detailed investigation of the current		progressing according to programme.	
		and future risk. The study should			
		examine the most sustainable			
Flood protection		combination of actions to manage			
study		flooding.			
		A shoreline management plan is	01/06/2016-	The Ayrshire Shoreline Management	The Ayrshire Shoreline
		recommended, this study is not	01/06/2022	Plan is completed and adopted by both	Management Plan will be
		limited to Potentially Vulnerable		North and South Ayrshire Councils in	reviewed every 6 years.
		Areas but should cover the whole of		September/October 2018.	
		the Ayrshire coastline and any areas			
	G	beyond this which may be			
		influenced by changes in coastal			
		processes. The study should			
		investigate flooding and coastal			
Flood protection		erosion, wave overtopping and the			
study		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.			
		There are a range of formal and	01/06/2016-	The sea defences will be maintained	The Council will continue to
		informal coastal defences in Brodick	01/06/2022	as part of the	inspect and maintain the flood
		and Lamlash. These defences offer		Council`s coastal asset management	protection structures within the
		some level of protection to the		programme. If the defences	catchment.
		properties in this area. North		remain the same, levels of flood risk	
		Ayrshire Council will continue to		are likely to increase over time	
	G	inspect and maintain the Brodick		as a consequence of climate change.	
		and Lamlash coastal flood defences,			
		which will continue to manage			
		flooding according to the design			
Maintain flood		standard at			
protection scheme*		the time of construction.			
		SEPA will continue to maintain the	22/12/2015-	SEPA has recently reviewed and	SEPA will continue to operate the
		Arran Lamlash Cordon and the	22/06/2022	recalibrated the Firth of Clyde flood	flood warning service
		Arran Seafront and Montrose		forecasting model. SEPA has merged	
Maintain flood		Terrace flood warning areas which		the Arran Seafront and Montrose	
warning Arran Lamlash	G	are part of the Firth of Clyde coastal		Terrace and the Arran Lamlash	
Cordon and Arran		flood warning scheme.		Cordon flood warning areas (part of	
Seafront and				the Firth of Clyde coastal flood warning	
Montrose Terrace				scheme) to create a new flood warning	
flood warning areas				area for 'Lamlash to Whiting Bay'.	
- 4. 543		The Scottish Flood Forecasting	22/12/2015-	SEPA has continued to operate the	SEPA will continue and improve
Flood forecasting	G	Service is a joint initiative between	22/06/2022	Scottish Flood Forecasting Service	the Scottish Flood Forecasting
oou for cousting			1		<u>'</u>

		SEPA and the Met Office that		(SFFS) Partnership with the Met Office	Service (SFFS) with the Met
		produces daily, national flood		with daily, national Flood Guidance	Office, with daily Flood Guidance
		guidance statements which are		Statements issued to Category 1 and 2	Statements and regional Flood
		issued to Category 1 and 2		agencies (such as emergency	Alerts issued as required to
		Responders. The service also		responders, local authorities and other	enable communities and
		provides information which allows		organisations with flooding	responders to reduce the impacts
		SEPA to issue flood warnings,		management duties) and regional	of flooding. SEPA is currently
		giving people a better chance of		Flood Alerts issued to the public. Each	exploring options to develop a
		reducing the impact of flooding on		daily statement gives an assessment	public version of the daily Flood
		their home or business. For more		of the risk of flooding for the next five	Guidance Statement to provide
		information please visit SEPA's		days to enable these organisations to	better and earlier information to
		website.		put preparations in place to reduce the	the public.
				impact of flooding. SEPA's Flood Alert	
				service is freely available to everyone	
				and enables communities to be aware	
				and prepared to reduce the impacts of	
				flooding.	
		Everyone is responsible for	01/04/2016-	Community Engagement includes,	Ongoing community PLP training,
		protecting themselves and their	22/06/2022	PLP exhibitions, selection, surveys	Flood Warden and resilience
		property from flooding. Property and		and appropriate and relevant	group promotion.
		business owners can take simple		information to enable clients to make	
		steps to reduce damage and		the right decisions.	
	G	disruption to their homes and			
		businesses should flooding happen.			
		This includes preparing a flood plan			
		and flood kit, installing property level			
Self help		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.			
		North Ayrshire Council, SEPA and	22/12/2015-	SEPA's principle awareness raising	SEPA will continue to raise
		Scottish Water collectively work to	22/06/2022	approaches have been through:	awareness of flood risk through
		raise awareness of flood risk and		Direct campaigning and general	direct campaigning, general
		how those affected can be better		awareness raising	awareness raising, developing
		prepared. Through the continued		2. Education and tools	education and engagement tools,
		development of flood schemes and		3. Partnership delivery development	creating new partnerships and
		studies at higher risk locations,		North Ayrshire Council general	improving its flood forecasting and
		officers from the Council's Flood		awareness raising is a continuous	warning services (e.g. Scottish
	G	Risk Management Team attend		activity via NAC website for all	Flood Forecasting Service and
		community council events to discuss		Ayrshire,	Floodline). This will continue with
		elements of flood risk management.		Supporting Local Flood Emergency	many of the actions reported for
		Across Scotland, SEPA will create		Groups is an occasional activity in	the interim progress summary.
		and share communication and		Largs,	Further information is contained
		education resources with other		Project related public consultations	within SEPA's Flood Warning
		responsible authorities. These		affecting Largs carried out.	Development Framework,
		resources will include awareness			published in 2017 and for the
Awareness raising		campaigns, media and marketing			period 2017 to 2021.

		activity and promotion of SEPA's			Raising Awareness will form part
		flood forecasting and warning			of each of the 3 key themes
		services (Floodline). Scottish Water			identified:
		will provide targeted flooding			Aim 1: Maintenance of existing
		communications for Scottish Water			and delivery of new flood warning
		specific activities and raise			schemes.
		awareness by producing and			Aim 2: Development and
		supplying targeted information to the			innovation.
		public on large capital projects and			Aim 3: Engagement with
		detailed local studies.			partners and customers
					Campaign Calendar for 2018/19
					in March/April 2019 Proposed for
					North Ayrshire;
					Focus weeks - on flooding
					proposed in 2018/19 for North
					Ayrshire;
		Local authorities have a duty to	01/06/2016-	NAC carry out watercourse inspections	The Council will continue to
		assess watercourses and carry out	01/06/2022	within Brodick and Lamlash Isle of	inspect and maintain
		clearance and repair works where		Arran and coastal inspections on NAC	watercourses, screens and other
		such works would substantially		owned structures. The regularity of	relevant Council assets.
		reduce flood risk. They produce		coastal inspections are risk-based and	
	G	schedules of clearance and repair		varies between 6 month and 3 years.	
		works and make these available for			
		public inspection. Scottish Water			
		undertake risk-based inspection,			
		maintenance and repair on the			
Maintenance		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.			
		Providing an emergency response	01/06/2016-	NAC is in the last stage to review the	The Ayrshire Civil Contingencies
		to flooding is the responsibility of	01/06/2022	newly developed town by town based	team is responsible for producing
		many organisations, including local		Emergency Plans,	the Civil Contingencies Plan,
		authorities, the emergency services			which outlines the management
		and SEPA. Effective management of			and operational arrangements
		an emergency response relies on			that the Councils will follow in the
		emergency plans that are prepared			event of an emergency as well as
		under the Civil Contingencies Act			encouraging other agencies to
		2004 by Category 1 and 2			prepare for their role. The
		Responders. Scottish Water are a			Councils will contribute to the
	G	Category 2 responder under the			production and review of the Civil
		Civil Contingencies Act 2004 and			Contingencies Plan and the
		will support regional and local			Emergency Plan for Severe
		resilience partnerships as required.			Weather and Flooding, as
		The emergency response by these			required. This response may be
		organisations is coordinated through			supported by the work of
		regional and local resilience			voluntary organisations.
		partnerships. This response may be			
		supported by the work of voluntary			
Fra a uma a uma cons		organisations.			
Emergency					
plans/response					

		Scottish Planning Policy and	01/06/2016-	The Proposed Local Development	The Council's planning policies
		accompanying Planning Advice	01/06/2022	Plan (LDP) 2 has gone through public	will be reviewed periodically to
		Notes set out Scottish Ministers'		Consultation in 2017/18 approved by	ensure that all current national
		priorities for the operation of the		the Council ion the 17 April 2018. The	policies are implemented and that
		planning system and for the		next stage is the examination stage by	the recommendations of strategic
		development and use of land. In		Scottish Minister. The Council	studies, such as the Ayrshire
		terms of flood risk management, the		completed a Strategic Flood Risk	Shoreline Management Plan,
		policy supports a catchment-scale		Assessment for the proposed LDP2.	Surface Water Management
		approach to sustainable flood risk		In addition, we are developing (in	Plans etc., are considered.
	G	management and aims to build the		partnership with South Ayrshire	
		resilience of our cities and towns,		Council) an Ayrshire Shoreline	
		encourage sustainable land		Management Plan (SMP). This study	
		management in our rural areas, and		will prompt land use and policy	
		to address the long-term		changes and recommend further	
		vulnerability of parts of our coasts		studies to allow physical protective	
		and islands. Under this approach,		measures to take place in the future.	
		new development in areas with			
		medium to high likelihood of flooding			
Planning policies		should be avoided.			

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 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 progressing according to plan.

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 protections scheme/works	flo eme ks	New flood warning	Flood protection study	Natural flood management study	Surface water plan/study	trat ppii ode	Strategic mapping and modelling SEPA	ntaii rote che	Maintain flood warning	Flood forecasting	Property level protection scheme	E 6 3	Self help	Awareness raising	Maintenance	Emergency plans/response	Planning policies
12/09		G		G		G		R	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	Revised dates and planned
				deliverables and dates	actions to complete / address
					delay
		South Ayrshire Council are currently	22/12/2015-	This work continues to be carried out	The Council will continue to
		undertaking sand dune propagation	22/06/2022	on an annual basis.	undertake sand dune
		at Prestwick North Beach and Ayr			propagation.
		South Beach. Some of the benefits			
	G	of these actions are to help reduce			
		the risk of coastal erosion and			
		flooding. It is recommended that this			
Natural flood		should continue.			
management works					
		A shoreline management plan is	01/06/2016-	The Ayrshire Shoreline Management	The Ayrshire Shoreline
		recommended; this study is not	01/06/2022	Plan is completed and adopted by both	Management Plan will be
		limited to Potentially Vulnerable		North and South Ayrshire Councils in	reviewed every 6 years.
		Areas but should cover the whole of		September/October 2018.	
		the Ayrshire coastline and any areas			
	G	beyond this which may be			
		influenced by changes in coastal			
		processes. The study should			
		investigate flooding and coastal			
Flood protection		erosion, wave overtopping and the			
study		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.			
		An integrated catchment study	01/06/2016-	Pre Optioneering Catchment Plan and	The Optioneering Phase to be
		covering the Meadowhead	01/06/2022	prioritisation stages completed.	completed. The implementation of
		catchment was carried out in SR10		7	the findings will be considered in
		(2010-2015). This study will help to			coordination with Scottish Water
		support the surface water			in the next cycle of FRM Plan.
		management planning process in			,
		Kilmarnock, Greenholm, Irvine,			
		Prestwick and Ayr. The study has			
		improved knowledge and			
	G	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			
Confessor		issues, is now being progressed.			
Surface water plan/study					
12.30.1/ 000.00 /		South Ayrshire Council will develop	01/06/2016-	The Surface water management Plan	The implementation of the
		a surface water management plan	01/06/2022	for South Ayrshire Council catchments	findings will be considered in the
	G	or plans to cover Prestwick and Ayr		is currently at tender stage and	next cycle of FRM Plan.
Surface water		which set objectives for the		planned to be complete by end of	
plan/study		management of surface water flood		2019.	

		risk and identify the most			
		sustainable actions to achieve the			
		objectives.			
		Scottish Water will undertake further	01/01/2016-	The Scottish Water assessment of	The assessment is now
		investigation and modelling in the	31/12/2020	flood risk within the sewer catchment has been completed.	completed and shared with Local
		Prestwick and Ayr sewer catchment		nac been completed.	Authority.
		to improve knowledge and			
		understanding of flood risk in this			
Strategic mapping		area as required under Section 16 of			
and modelling		the Flood Risk Management			
Section 16 Assessment		(Scotland) Act 2009.			
		SEPA will seek to develop flood	01/06/2016-	Following the establishment of a	It is anticipated that this action will
		mapping in the Ayr to Ardrossan	01/06/2022	coastal flood hazard map development	progress to a study prior to the
		area to improve understanding of		framework and characterisation of the	end of Cycle 1 however
		coastal flood risk. The extent and		coastline, several projects are	completion is likely to be in early
		timing of improvements will depend		currently underway at this location:	Cycle 2. Topographic survey will
		on detailed scoping and data		Development of a national coastal	be necessary prior to any
	R	availability. Where this work		joint probability dataset;	modelling study.
		coincides with local authorities.		• Update to the UK design extreme sea	
				level dataset	
				These projects/datasets will inform a	
				future coastal modelling and mapping	
Strategic mapping				project for the Firth of Clyde.	
and modelling		The South Dier protects the	01/06/2016-	, ,	The Council will continue to
Maintain flood		The South Pier protects the		The coastal protection structures are	
protection	G	entrance of Ayr Harbour from the	01/06/2022	on a scheduled inspection and	inspect and maintain the flood
scheme*		action of waves while also reducing		maintenance programme.	

		siltation in the channel. An existing			protection structures within the
		seawall runs from the South Pier to			catchment.
		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			
		SEPA will continue to maintain the		SEPA has recently reviewed and	SEPA will continue to operate the
		Ayr Seafield the Prestwick Links	22/12/2015	recalibrated the Firth of Clyde flood	flood warning service.
		Road flood warning areas which are	-	forecasting model. SEPA has merged	
		part of the Firth of Clyde coastal	22/06/2022	the Ayr Seafield and the Prestwick	
		flood warning scheme. When flood		Links Road flood warning areas (part	
		events occur in an area with a flood		of the Firth of Clyde coastal flood	
	G	warning service, SEPA will seek to		warning scheme) to create a new flood	
Maintain flood		verify and validate the warning		warning area for 'Ayr to Troon'.	
warning		service. SEPA will use feedback and			
Ayr Seafield and		post-event data to ensure that our			
Prestwick Links Road flood warning		flood warning service is timely and			
areas		accurate.			

		The Scottish Flood Forecasting	22/12/2015	SEPA has continued to operate the	SEPA will continue and improve
		Service is a joint initiative between	-	Scottish Flood Forecasting Service	the Scottish Flood Forecasting
		SEPA and the Met Office that	22/06/2022	(SFFS) Partnership with the Met Office	Service (SFFS) with the Met
		produces daily, national flood		with daily, national Flood Guidance	Office, with daily Flood Guidance
		guidance statements which are		Statements issued to Category 1 and 2	Statements and regional Flood
		issued to Category 1 and 2		agencies (such as emergency	Alerts issued as required to
		Responders. The service also		responders, local authorities and other	enable communities and
		provides information which allows		organisations with flooding	responders to reduce the impacts
	_	SEPA to issue flood warnings,		management duties) and regional	of flooding. SEPA is currently
	G	giving people a better chance of		Flood Alerts issued to the public. Each	exploring options to develop a
		reducing the impact of flooding on		daily statement gives an assessment	public version of the daily Flood
		their home or business. For more		of the risk of flooding for the next five	Guidance Statement to provide
		information please visit SEPA's		days to enable these organisations to	better and earlier information to
		website.		put preparations in place to reduce the	the public.
				impact of flooding. SEPA's Flood Alert	
				service is freely available to everyone	
				and enables communities to be aware	
Flood forecasting				and prepared to	
		Everyone is responsible for	01/04/2016-	Community Engagement includes,	Ongoing community support, PLP
		protecting themselves and their	22/06/2022	PLP exhibitions, selection, surveys	training, Flood Waden and
		property from flooding. Property and		and appropriate and relevant	resilience group promotion.
		business owners can take simple		information to enable clients to make	
	G	steps to reduce damage and		the right decisions.	
		disruption to their homes and			
		businesses should flooding happen.			
Self help		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.			
		South Ayrshire Council, SEPA and	22/12/2015-	SEPA's principle awareness raising	SEPA will continue to raise
		Scottish Water collectively work to	22/06/2022	approaches have been through:	awareness of flood risk through
		raise awareness of flood risk and		Direct campaigning and general	direct campaigning, general
		how those affected can be better		awareness raising	awareness raising, developing
		prepared. Through the continued		2. Education and tools	education and engagement tools,
		development of flood schemes and		3. Partnership delivery development	creating new partnerships and
		studies at higher risk locations,		South Ayrshire Councils general	improving its flood forecasting and
	G	officers from the Council's Flood		awareness raising is a continuous	warning services (e.g. Scottish
		Risk Management Team attend		activity	Flood Forecasting Service and
		community council events to discuss			Floodline). This will continue with
		elements of flood risk management.			many of the actions reported for
		Across Scotland, SEPA will create			the interim progress summary.
		and share communication and			Further information is contained
		education resources with other			within SEPA's Flood Warning
Awareness raising		responsible authorities. These			Development Framework,

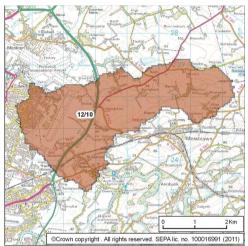
		resources will include awareness			published in 2017 and for the
		campaigns, media and marketing			period 2017 to 2021.
		activity and promotion of SEPA's			Raising Awareness will form part
		flood forecasting and warning			of each of the 3 key themes
		services (Floodline). Scottish			identified:
		Water will provide targeted flooding			Aim 1: Maintenance of existing
		communications for Scottish Water			and delivery of new flood warning
		specific activities and raise			schemes.
		awareness by producing and			Aim 2: Development and
		supplying targeted information to the			innovation.
		public on large capital projects and			Aim 3: Engagement with
		detailed local studies.			partners and customers
		Local authorities have a duty to	01/06/2016-	South Ayrshire Council carry out	The Council will continue to
		assess watercourses and carry out	01/06/2022	monthly inspections and clearance	inspect and maintain
		clearance and repair works where		work where necessary on 17 debris	watercourses, screens and other
		such works would substantially		screens where there is a known flood	relevant Council assets.
		reduce flood risk. They produce		risk from blockage. Watercourse	
		schedules of clearance and repair		inspections are carried out on a	
		works and make these available for		regular basis where there are known	
	G	public inspection. Scottish Water		flood risk issues. 25km of coastal	
		undertake risk based inspection,		protection structures are inspected	
		maintenance and repair on the		annually.	
		public sewer network. Asset owners			
		and riparian landowners are			
		responsible for the maintenance and			
Maintenance		management of their own assets			

		including those which help to reduce			
		flood risk.			
		Providing an emergency response	01/06/2016-	For SAC Ayrshire Civil Contingencies	The Ayrshire Civil Contingencies
		to flooding is the responsibility of	01/06/2022	maintain and update all emergency	team is responsible for producing
		many organisations, including local		response plans. These are updated	the Civil Contingencies Plan,
		authorities, the emergency services		every 3 years or as required after an	which outlines the management
		and SEPA. Effective management of		incident. This is done in conjunction	and operational arrangements
		an emergency response relies on		with the relevant department and	that the Councils will follow in the
		emergency plans that are prepared		external agency.	event of an emergency as well as
		under the Civil Contingencies Act			encouraging other agencies to
		2004 by Category 1 and 2			prepare for their role. The
		Responders. Scottish Water are a			Councils will contribute to the
	G	Category 2 responder under the			production and review of the Civil
		Civil Contingencies Act 2004 and			Contingencies Plan and the
		will support regional and local			Emergency Plan for Severe
		resilience partnerships as required.			Weather and Flooding, as
		The emergency response by these			required. This response may be
		organisations is coordinated through			supported by the work of
		regional and local resilience			voluntary organisations.
		partnerships. This response may be			
Emergency		supported by the work of voluntary			
plans/response		organisations.			
		Scottish Planning Policy and	01/06/2016-	The South Ayrshire Council Local	The Council's planning policies
		accompanying Planning Advice	01/06/2022	Development Plan recognises the	will be reviewed periodically to
	G	Notes set out Scottish Ministers'		importance of sustainable flood risk	ensure that all current national
		priorities for the operation of the		management in both urban and rural	policies are implemented and that
		planning system and for the		developments and is in alignment with	the recommendations of strategic

	development and use of land. In	Scottish Planning Policy. The Local	studies, such as the Ayrshire
	terms of flood risk management, the	Development Plan is currently under	Shoreline Management Plan,
	policy supports a catchment-scale	review with public consultation on the	Surface Water Management
	approach to sustainable flood risk	plan scheduled for the end of 2018.	Plans etc., are considered.
	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		
Diagning policies	medium to high likelihood of flooding		
Planning policies	should be avoided.		

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 progressing according to plan.

In addition to the actions in the LOCAL FRMP a scope has now been developed for a Pow Burn Flood Study which is ready to go through a procurement process once funding has been confirmed.

Overview of actions to manage flooding in Pow Burn Catchment

PVA	Flood protections scheme/works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan/study	Strategic mapping and modelling	Strategic mapping and modelling SEPA	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		R			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	Revised dates and planned
				deliverables and dates	actions to complete / address
					delay
		An integrated catchment study	01/06/2016-	Pre Optioneering Catchment Plan and	The Optioneering Phase to be
		covering the Meadowhead	01/06/2022	prioritisation stages completed.	completed. The implementation of
		catchment was carried out in SR10			the findings will be considered in
		(2010-2015). This study will help to			coordination with Scottish Water
		support the surface water			in the next cycle of FRM Plan.
		management planning process in			
		Kilmarnock, Greenholm, Irvine,			
		Prestwick and Ayr. The study has			
		improved knowledge and			
	G	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.			
Surface water plan/study					

		South Ayrshire Council will develop	01/06/2016-	The Surface water management Plan	The implementation of the
		a surface water management plan	01/06/2022	for South Ayrshire Council catchments	findings will be considered in the
		or plans to cover Prestwick and Ayr		is currently at tender stage and	next cycle of FRM Plan.
		which set objectives for the		planned to be complete by end of	
	G	management of surface water flood		2019.	
		risk and identify the most			
C. C		sustainable actions to achieve the			
Surface water plan/study		objectives.			
pranystady		SEPA will seek to incorporate	01/06/2016-	SEPA's current Surface water hazard	This action will not be taken
		additional surface water data into	01/06/2022	maps use design rainfall estimates	forwards as described. SEPA will
		the flood maps to improve		based on FEH99 methodology, this	develop new Surface water flood
		understanding of flood risk.		has now been superseded by FEH13	hazard maps over the remainder
		Approximately 1,300km ² of		methodology. The FEH13 dataset	of Cycle 1. It is anticipated that
		improved surface water data is		contains the latest science and	updated flood mapping from this
		currently available within this Local		understanding of rainfall across	revised action will be available
		Plan District.		Scotland and represents a significant	early in Cycle 2. Alongside this
	R			change in rainfall amounts compared	SEPA will investigate the
				to FEH99 dataset, as such it is no	feasibility of developing an interim
				longer consider appropriate to deliver	approach to assess the change in
				this action as originally intended.	Surface water hazard (and risk)
					associated with FEH13, such that
					we could consider it in the
Stratogic manning					development of the 2021 FRM
Strategic mapping and modelling					Strategies.
Strategic mapping		Scottish Water will undertake further	01/01/2016-	The Scottish Water assessment of	The assessment is now
and modelling		investigation and modelling in the	31/12/2020	flood risk within the sewer catchment has been completed.	completed and shared with Local
Section 16 Assessment		Meadowhead sewer catchment to		r	Authority.

		improve knowledge and			
		understanding of flood risk in this			
		area and as required under Section			
		16 of the Flood Risk Management			
		(Scotland) Act 2009.			
		The potential benefits and feasibility	01/01/2016	Scoping was completed by SEPA in	No further actions will be carried
		of a new flood warning scheme for	- 2017	2017. Actions carried out along the	out.
		the Pow Burn in Prestwick will be		Pow Burn meant that a new flood	
	G	assessed in 2016.		warning scheme was no longer	
				beneficial. This decision was	
New flood warning				discussed and agreed with the local	
Prestwick				authority.	
		The Scottish Flood Forecasting	22/12/2015-	SEPA has continued to operate the	SEPA will continue and improve
		Service is a joint initiative between	01/06/2022	Scottish Flood Forecasting Service	the Scottish Flood Forecasting
		SEPA and the Met Office that		(SFFS) Partnership with the Met Office	Service (SFFS) with the Met
		produces daily, national flood		with daily, national Flood Guidance	Office, with daily Flood Guidance
		guidance statements which are		Statements issued to Category 1 and 2	Statements and regional Flood
		issued to Category 1 and 2		agencies (such as emergency	Alerts issued as required to
		Responders. The service also		responders, local authorities and other	enable communities and
	G	provides information which allows		organisations with flooding	responders to reduce the impacts
		SEPA to issue flood warnings,		management duties) and regional	of flooding. SEPA is currently
		giving people a better chance of		Flood Alerts issued to the public. Each	exploring options to develop a
		reducing the impact of flooding on		daily statement gives an assessment	public version of the daily Flood
		their home or business. For more		of the risk of flooding for the next five	Guidance Statement to provide
		information please visit SEPA's		days to enable these organisations to	better and earlier information to
		website.		put preparations in place to reduce the	the public.
Flood forecasting				impact of flooding. SEPA's Flood Alert	

				service is freely available to everyone	
				and enables communities to be aware	
				and prepared to reduce the impacts of	
				flooding.	
		Everyone is responsible for	01/06/2016-	Community Engagement includes,	Ongoing community PLP training,
		protecting themselves and their	22/06/2022	PLP exhibitions, selection, surveys	Flood Warden and resilience
		property from flooding. Property and		and appropriate and relevant	group promotion.
		business owners can take simple		information to enable clients to make	
		steps to reduce damage and		the right decisions.	
		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			
	G	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			
Self help		Flood Forum websites.			
'		South Ayrshire Council, SEPA and	22/12/2015-	SEPA's principle awareness raising	SEPA will continue to raise
	G	Scottish Water collectively work to	22/06/2022	approaches have been through:	awareness of flood risk through
Awareness raising		raise awareness of flood risk and			direct campaigning, general

		how those affected can be better		Direct campaigning and general	awareness raising, developing
		prepared. Through the continued		awareness raising	education and engagement tools,
		development of flood schemes and		2. Education and tools	creating new partnerships and
		studies at higher risk locations,		3. Partnership delivery development	improving its flood forecasting and
		officers from the Council's Flood		South Ayrshire Councils general	warning services (e.g. Scottish
		Risk Management Team attend		awareness raising is a continuous	Flood Forecasting Service and
		community council events to discuss		activity	Floodline). This will continue with
		elements of flood risk management.			many of the actions reported for
		Across Scotland, SEPA will create			the interim progress summary.
		and share communication and			Further information is contained
		education resources with other			within SEPA's Flood Warning
		responsible authorities. These			Development Framework,
		resources will include awareness			published in 2017 and for the
		campaigns, media and marketing			period 2017 to 2021.
		activity and promotion of SEPA's			Raising Awareness will form part
		flood forecasting and warning			of each of the 3 key themes
		services (Floodline). Scottish			identified:
		Water will provide targeted flooding			Aim 1: Maintenance of existing
		communications for Scottish Water			and delivery of new flood warning
		specific activities and raise			schemes.
		awareness by producing and			Aim 2: Development and
		supplying targeted information to the			innovation.
		public on large capital projects and			Aim 3: Engagement with
		detailed local studies.			partners and customers.
		Local authorities have a duty to	01/06/2016-	South Ayrshire Council carry out	The Council will continue to
	G	assess watercourses and carry out	01/06/2022	monthly inspections and clearance	inspect and maintain
Maintenance		clearance and repair works where		work where necessary on 17 debris	

		such works would substantially		screens where there is a known flood	watercourses, screens and other
		reduce flood risk. They produce		risk from blockage. Watercourse	relevant Council assets.
		schedules of clearance and repair		inspections are carried out on a	
		works and make these available for		regular basis where there are known	
		public inspection. Scottish Water		flood risk issues. 25km of coastal	
		undertake risk based inspection,		protection structures are inspected	
		maintenance and repair on the		annually.	
		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.			
		Providing an emergency response	01/06/2016-	For SAC Ayrshire Civil Contingencies	The Ayrshire Civil Contingencies
		to flooding is the responsibility of	01/06/2022	maintain and update all emergency	team is responsible for producing
		many organisations, including local		response plans. These are updated	the Civil Contingencies Plan,
		authorities, the emergency services		every 3 years or as required after an	which outlines the management
		and SEPA. Effective management of		incident. This is done in conjunction	and operational arrangements
		an emergency response relies on		with the relevant department and	that the Councils will follow in the
		emergency plans that are prepared		external agency.	event of an emergency as well as
	G	under the Civil Contingencies Act			encouraging other agencies to
		2004 by Category 1 and 2			prepare for their role. The
		Responders. Scottish Water are a			Councils will contribute to the
		Category 2 responder under the			production and review of the Civil
		Civil Contingencies Act 2004 and			Contingencies Plan and the
Emorgone		will support regional and local			Emergency Plan for Severe
Emergency plans/response		resilience partnerships as required.			Weather and Flooding, as

		The emergency response by these			required. This response may be
		organisations is coordinated through			supported by the work of
		regional and local resilience			voluntary organisations.
		partnerships. This response may be			
		supported by the work of voluntary			
		organisations.			
		Scottish Planning Policy and	01/06/2016-	The South Ayrshire Council Local	The Council's planning policies
		accompanying Planning Advice	01/06/2022	Development Plan recognises the	will be reviewed periodically to
		Notes set out Scottish Ministers'		importance of sustainable flood risk	ensure that all current national
		priorities for the operation of the		management in both urban and rural	policies are implemented and that
		planning system and for the		developments and is in alignment with	the recommendations of strategic
		development and use of land. In		Scottish Planning Policy. The Local	studies, such as the Ayrshire
		terms of flood risk management, the		Development Plan is currently under	Shoreline Management Plan,
		policy supports a catchment-scale		review with public consultation on the	Surface Water Management
		approach to sustainable flood risk		plan scheduled for the end of 2018.	Plans etc., are considered.
	G	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			
Planning policies		should be avoided.			

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 <u>here</u>.

The Meadowhead Integrated Catchment study and Surface Water Management Plans for Ayr and Prestwick are progressing according to plan. This will consider the main flood risk in this area which is surface water flooding.

Overview of actions to manage flooding in River Ayr

PVA	Flood protections scheme/works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan/study	Strategic mapping and modelling	Strategic mapping and modelling SEPA	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			Α			G					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	Revised dates and planned
				deliverables and dates	actions to complete / address
					delay
		The area under consideration for a	1/06/2016 -	Scoping work complete and new	New flood forecasting capabilities
		new flood warning includes	30/09/2018	hydrometric infrastructure (river	to be developed.
		properties affected by flooding from		monitoring sites) been installed.	
		the River Ayr. Full scoping,			
		infrastructure and a flood forecasting			
	А	system will be required before a			
		flood warning service can be			
		delivered in this area. Communities			
		that will benefit from a warning will			
New flood warning		be identified during development of			
River Ayr		the scheme.			
- /		An integrated catchment study	01/06/2016-	Pre Optioneering Catchment Plan and	The Optioneering Phase to be
		covering the Meadowhead	01/06/2022	prioritisation stages completed.	completed. The implementation of
		catchment was carried out in SR10			the findings will be considered in
		(2010-2015). This study will help to			coordination with Scottish Water
		support the surface water			in the next cycle of FRM Plan.
	G	management planning process in			
		Kilmarnock, Greenholm, Irvine,			
		Prestwick and Ayr. The study has			
		improved knowledge and			
Surface water		understanding of flood risk and			
plan/study		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.			
		South Ayrshire Council will develop	01/06/2016-	The Surface water management Plan	The implementation of the
		a surface water management plan	01/06/2022	for South Ayrshire Council catchments	findings will be considered in the
		or plans to cover Prestwick and Ayr		is currently at tender stage and	next cycle of FRM Plan.
		which set objectives for the		planned to be complete by end of	
	G	management of surface water flood		2019.	
		risk and identify the most			
Surface water		sustainable actions to achieve the			
plan/study		objectives.			
, ,		Scottish Water will undertake further	01/01/2016	The Scottish Water assessment of	The assessment is now
		investigation and modelling in the	_	flood risk within the sewer catchment	completed and shared with Local
		Meadowhead sewer catchment to	31/12/2020	has been completed.	Authority.
		improve knowledge and			
	G	understanding of flood risk in this			
		area and as required under Section			
Strategic mapping		16 of the Flood Risk Management			
and modelling		(Scotland) Act 2009.			
- 0		The Scottish Flood Forecasting	22/12/2015-	SEPA has continued to operate the	SEPA will continue and improve
	_	Service is a joint initiative between	01/06/2022	Scottish Flood Forecasting Service	the Scottish Flood Forecasting
	G	SEPA and the Met Office that		(SFFS) Partnership with the Met Office	Service (SFFS) with the Met
Flood forecasting		produces daily, national flood		with daily,	Office, with daily Flood Guidance

		guidance statements which are			Statements and regional Flood
		issued to Category 1 and 2			Alerts issued as required to
		Responders. The service			enable communities and
					responders to reduce the impacts
					of flooding. SEPA is currently
					exploring options to develop a
					public version of the daily Flood
					Guidance Statement to provide
					better and earlier information to
					the public.
		Everyone is responsible for	01/04/2016-	Community Engagement includes,	Ongoing community PLP training,
		protecting themselves and their	22/06/2022	PLP exhibitions, selection, surveys	Flood Warden and resilience
		property from flooding. Property and		and appropriate and relevant	group promotion.
		business owners can take simple		information to enable clients to make	
		steps to reduce damage and		the right decisions.	
		disruption to their homes and			
		businesses should flooding happen.			
		This includes preparing a flood plan			
	G	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			
Self help		those affected can be better			

		prepared. Further detail can be			
		found in the Councils and Scottish			
		Flood Forum websites.			
		South Ayrshire Council, SEPA and	22/12/2015-	SEPA's principle awareness raising	SEPA will continue to raise
		Scottish Water collectively work to	22/06/2022	approaches have been through:	awareness of flood risk through
		raise awareness of flood risk and		Direct campaigning and general	direct campaigning, general
		how those affected can be better		awareness raising	awareness raising, developing
		prepared. Through the continued		2. Education and tools	education and engagement tools,
		development of flood schemes and		3. Partnership delivery development	creating new partnerships and
		studies at higher risk locations,		South Ayrshire Councils general	improving its flood forecasting and
		officers from the Council's Flood		awareness raising is a continuous	warning services (e.g. Scottish
		Risk Management Team attend		activity	Flood Forecasting Service and
		community council events to discuss			Floodline). This will continue with
		elements of flood risk management.			many of the actions reported for
	_	Across Scotland, SEPA will create			the interim progress summary.
	G	and share communication and			Further information is contained
		education resources with other			within SEPA's Flood Warning
		responsible authorities. These			Development Framework,
		resources will include awareness			published in 2017 and for the
		campaigns, media and marketing			period 2017 to 2021.
		activity and promotion of SEPA's			Raising Awareness will form part
		flood forecasting and warning			of each of the 3 key themes
		services (Floodline). Scottish			identified:
		Water will provide targeted flooding			Aim 1: Maintenance of existing
		communications for Scottish Water			and delivery of new flood warning
		specific activities and raise			schemes.
Awareness raising		awareness by producing and			

		supplying targeted information to the			Aim 2: Development and
		public on large capital projects and			innovation.
		detailed local studies.			Aim 3: Engagement with
					partners and customers
		Local authorities have a duty to	01/06/2016-	South Ayrshire Council carry out	The Council will continue to
		assess watercourses and carry out	01/06/2022	monthly inspections and clearance	maintain watercourses, screens
		clearance and repair works where		work where necessary on 17 debris	and other relevant Council assets.
		such works would substantially		screens where there is a known flood	
		reduce flood risk. They produce		risk from blockage. Watercourse	
		schedules of clearance and repair		inspections are carried out on a	
		works and make these available for		regular basis where there are known	
		public inspection. Scottish Water		flood risk issues. 25km of coastal	
	G	undertake risk based inspection,		protection structures are inspected	
		maintenance and repair on the		annually.	
		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			
Maintenance		flood risk.			
		Providing an emergency response	01/06/2016-	For SAC Ayrshire Civil Contingencies	The Ayrshire Civil Contingencies
		to flooding is the responsibility of	01/06/2022	maintain and update all emergency	team is responsible for producing
		many organisations, including local		response plans. These are updated	the Civil Contingencies Plan,
	G	authorities, the emergency services		every 3 years or as required after an	which outlines the management
		and SEPA. Effective management of		incident. This is done in conjunction	and operational arrangements
Emorgonov		an emergency response relies on		with the relevant department and	that the Councils will follow in the
Emergency plans/response		emergency plans that are prepared		external agency.	event of an emergency as well as

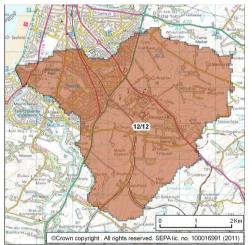
		under the Civil Contingencies Act			encouraging other agencies to
		2004 by Category 1 and 2			prepare for their role. The
		Responders. Scottish Water are a			Councils will contribute to the
		Category 2 responder under the			production and review of the Civil
		Civil Contingencies Act 2004 and			Contingencies Plan and the
		will support regional and local			Emergency Plan for Severe
		resilience partnerships as required.			Weather and Flooding, as
		The emergency response by these			required. This response may be
		organisations is coordinated through			supported by the work of
		regional and local resilience			voluntary organisations.
		partnerships. This response may be			
		supported by the work of voluntary			
		organisations.			
		Scottish Planning Policy and	01/06/2016-	The South Ayrshire Council Local	The Council's planning policies
		accompanying Planning Advice	01/06/2022	Development Plan recognises the	will be reviewed periodically to
		Notes set out Scottish Ministers'		importance of sustainable flood risk	ensure that all current national
		priorities for the operation of the		management in both urban and rural	policies are implemented and that
		planning system and for the		developments and is in alignment with	the recommendations of strategic
		development and use of land. In		Scottish Planning Policy. The Local	studies, such as the Ayrshire
	G	terms of flood risk management, the		Development Plan is currently under	Shoreline Management Plan,
		policy supports a catchment-scale		review with public consultation on the	Surface Water Management
		approach to sustainable flood risk		plan scheduled for the end of 2018.	Plans etc., are considered.
		management and aims to build the			
		resilience of our cities and towns,			
		encourage sustainable land			
Planning policies		management in our rural areas, and			

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	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.		

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 progressing according to plan.

Overview of actions to manage flooding in Ayr East

PVA	Flood protections scheme/works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan/study	Strategic mapping and modelling	Strategic mapping and modelling SEPA	Maintain flood warning	Flood forecasting	Property level protection scheme	_ ^	Self help	Awareness raising	Maintenance	Emergency plans/response	Planning policies
12/12								R		G			O	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	Revised dates and planned
				deliverables and dates	actions to complete / address
					delay
		SEPA will update strategic coastal	01/01/2016-	Following the establishment of a	It is anticipated that this action will
		mapping in the Ayr to Ardrossan	31/12/2018	coastal flood hazard map development	progress to a study prior to the
		area to improve understanding of		framework and characterisation of the	end of Cycle 1 however
		flood risk. The extent and timing of		coastline, several projects are	completion is likely to be in early
		improvements will depend on		currently underway at this location:	Cycle 2 due to both the
		detailed scoping and data		Development of a national coastal	geographical extent and technical
		availability. Where this work		joint probability dataset;	complexity of the mapping
		coincides with local authority		• Update to the UK design extreme sea	improvements required.
		studies, SEPA will work		level dataset	Topographic survey will be
		collaboratively to ensure consistent		These projects/datasets will inform a	necessary prior to any modelling
	R	modelling approaches are applied.		future coastal modelling and mapping	study.
		The coastal mapping and modelling		project for the Firth of Clyde.	
		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			
Charterie accession		the area.			
Strategic mapping and modelling					

		Scottish Water will undertake further	01/01/2016-	The Scottish Water assessment of	The assessment is now
		investigation and modelling in the	31/12/2020	flood risk within the sewer catchment has been completed.	completed and shared with Local
		Meadowhead sewer catchment to		nas been completed.	Authority.
		improve knowledge and			
		understanding of flood risk in this			
Strategic mapping		area and as required under Section			
and modelling		16 of the Flood Risk Management			
Section 16 Assessment		(Scotland) Act 2009.			
		SEPA will continue to maintain the	22/12/2015-	SEPA has recently reviewed and	SEPA will continue to operate the
		Ayr Seafield flood warning area	22/06/2022	recalibrated the Firth of Clyde flood	flood warning service.
		which is part of the Firth of Clyde		forecasting model. SEPA has	
		coastal flood warning scheme.		continued to maintain the Ayr Seafield	
		When flood events occur in an area		flood warning area within a new 'Ayr to	
	G	with a flood warning service, SEPA		Troon' flood warning area which is part	
		will seek to verify and validate the		of the Firth of Clyde coastal flood	
		warning service. SEPA will use		warning scheme.	
Maintain Flood		feedback and post-event data to			
Warning Ayr Seafield flood		ensure that our flood warning			
warning area		service is timely and accurate.			
		The Scottish Flood Forecasting	22/12/2015-	SEPA has continued to operate the	SEPA will continue and improve
		Service is a joint initiative between	01/06/2022	Scottish Flood Forecasting Service	the Scottish Flood Forecasting
		SEPA and the Met Office that		(SFFS) Partnership with the Met Office	Service (SFFS) with the Met
	0	produces daily, national flood		with daily, national Flood Guidance	Office, with daily Flood Guidance
	G	guidance statements which are		Statements issued to Category 1 and 2	Statements and regional Flood
		issued to Category 1 and 2		agencies (such as emergency	Alerts issued as required to
		Responders. The service also		responders, local authorities and other	enable communities and
Flood forecasting		provides information which allows		organisations with flooding	responders to reduce the impacts

		SEPA to issue flood warnings,		management duties) and regional	of flooding. SEPA is currently
		giving people a better chance of		Flood Alerts issued to the public. Each	exploring options to develop a
		reducing the impact of flooding on		daily statement gives an assessment	public version of the daily Flood
		their home or business. For more		of the risk of flooding for the next five	Guidance Statement to provide
		information please visit SEPA's		days to enable these organisations to	better and earlier information to
		website.		put preparations in place to reduce the	the public.
				impact of flooding. SEPA's Flood Alert	
				service is freely available to everyone	
				and enables communities to be aware	
				and prepared to reduce the impacts of	
				flooding.	
		Everyone is responsible for	01/06/2016-	Community Engagement includes,	Ongoing community PLP training,
		protecting themselves and their	22/06/2022	PLP exhibitions, selection, surveys	Flood Warden and resilience
		property from flooding. Property and		and appropriate and relevant	group promotion.
		business owners can take simple		information to enable clients to make	
		steps to reduce damage and		the right decisions.	
		disruption to their homes and			
		businesses should flooding happen.			
		This includes preparing a flood plan			
	G	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			
Self help		awareness of flood risk and how			

I		those affected can be better			
		prepared. Further detail can be			
		found in the Councils and Scottish			
		Flood Forum websites.			
		South Ayrshire Council, SEPA and	22/12/2015-	SEPA's principle awareness raising	SEPA will continue to raise
			22/06/2022		
		Scottish Water collectively work to	22/06/2022	approaches have been through:	awareness of flood risk through
		raise awareness of flood risk and		Direct campaigning and general	direct campaigning, general
		how those affected can be better		awareness raising	awareness raising, developing
		prepared. Through the continued		2. Education and tools	education and engagement tools,
		development of flood schemes and		3. Partnership delivery development	creating new partnerships and
		studies at higher risk locations,		South Ayrshire Councils general	improving its flood forecasting and
		officers from the Council's Flood		awareness raising is a continuous	warning services (e.g. Scottish
		Risk Management Team attend		activity	Flood Forecasting Service and
		community council events to discuss			Floodline). This will continue with
		elements of flood risk management.			many of the actions reported for
	G	Across Scotland, SEPA will create			the interim progress summary.
		and share communication and			Further information is contained
		education resources with other			within SEPA's Flood Warning
		responsible authorities. These			Development Framework,
		resources will include awareness			published in 2017 and for the
		campaigns, media and marketing			period 2017 to 2021.
		activity and promotion of SEPA's			Raising Awareness will form part
		flood forecasting and warning			of each of the 3 key themes
		services (Floodline). Scottish Water			identified:
		will provide targeted flooding			Aim 1: Maintenance of existing
		communications for Scottish Water			and delivery of new flood warning
		specific activities and raise			schemes.
Awareness raising					Solicinos.

		awareness by producing and			Aim 2: Development and
		supplying targeted information to the			innovation.
		public on large capital projects and			Aim 3: Engagement with
		detailed local studies.			partners and customers.
		Local authorities have a duty to	01/06/2016-	South Ayrshire Council carry out	The Council will continue to
		assess watercourses and carry out	01/06/2022	monthly inspections and clearance	inspect and maintain
		clearance and repair works where		work where necessary on 17 debris	watercourses, screens and other
		such works would substantially		screens where there is a known flood	relevant Council assets.
		reduce flood risk. They produce		risk from blockage. Watercourse	
		schedules of clearance and repair		inspections are carried out on a	
		works and make these available for		regular basis where there are known	
		public inspection. Scottish Water		flood risk issues. 25km of coastal	
	G	undertake risk based inspection,		protection structures are inspected	
		maintenance and repair on the		annually.	
		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			
Maintenance		flood risk.			
		Providing an emergency response	01/06/2016-	For SAC Ayrshire Civil Contingencies	The Ayrshire Civil Contingencies
		to flooding is the responsibility of	01/06/2022	maintain and update all emergency	team is responsible for producing
		many organisations, including local		response plans. These are updated	the Civil Contingencies Plan,
	G	authorities, the emergency services		every 3 years or as required after an	which outlines the management
		and SEPA. Effective management of		incident. This is done in conjunction	and operational arrangements
Emorgone		an emergency response relies on		with the relevant department and	that the Councils will follow in the
Emergency plans/response		emergency plans that are prepared		external agency.	event of an emergency as well as

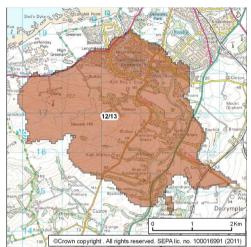
		under the Civil Contingencies Act			encouraging other agencies to
		2004 by Category 1 and 2			prepare for their role. The
		Responders. Scottish Water are a			Councils will contribute to the
		Category 2 responder under the			production and review of the Civil
		Civil Contingencies Act 2004 and			Contingencies Plan and the
		will support regional and local			Emergency Plan for Severe
		resilience partnerships as required.			Weather and Flooding, as
		The emergency response by these			required. This response may be
		organisations is coordinated through			supported by the work of
		regional and local resilience			voluntary organisations.
		partnerships. This response may be			
		supported by the work of voluntary			
		organisations.			
		Scottish Planning Policy and	01/06/2016-	The South Ayrshire Council Local	The Council's planning policies
		accompanying Planning Advice	01/06/2022	Development Plan recognises the	will be reviewed periodically to
		Notes set out Scottish Ministers'		importance of sustainable flood risk	ensure that all current national
		priorities for the operation of the		management in both urban and rural	policies are implemented and that
		planning system and for the		developments and is in alignment with	the recommendations of strategic
		development and use of land. In		Scottish Planning Policy. The Local	studies, such as the Ayrshire
	0	terms of flood risk management, the		Development Plan is currently under	Shoreline Management Plan,
	G	policy supports a catchment-scale		review with public consultation on the	Surface Water Management
		approach to sustainable flood risk		plan scheduled for the end of 2018.	Plans etc., are considered.
		management and aims to build the			
		resilience of our cities and towns,			
		encourage sustainable land			
		management in our rural areas, and			
Planning policies		to address the long-term			

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	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.		

4.13 Ayr South (Potentially Vulnerable Area 12/13)

Local Plan District	Local authority	Main catchment
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 <u>here</u>.

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 progressing according to plan.

Overview of actions to manage flooding in Ayr South

PVA	Flood protections scheme/works	о <u>е</u>	New flood warning	Flood protection study	Natural flood management study	Surface water plan/study	~ ~	Strategic mapping and modelling SEPA	Maintain flood protection scheme*	Maintain flood warning	Flood forecasting	Property level protection scheme	E % X	Self help	Awareness raising	Maintenance	Emergency plans/response	Planning policies
12/13							G				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	Revised dates and planned
				deliverables and dates	actions to complete / address
					delay
		Scottish Water will undertake further	01/01/2016-	The Scottish Water assessment of	The assessment is now completed
		investigation and modelling in the	31/12/2020	flood risk within the sewer catchment has been completed.	and shared with Local Authority.
		Meadowhead sewer catchment to			
	_	improve knowledge and			
	G	understanding of flood risk in this			
Strategic mapping		area and as required under Section			
and modelling Section 16		16 of the Flood Risk Management			
Assessment		(Scotland) Act 2009.			
		The Scottish Flood Forecasting	22/12/2015-	SEPA has continued to operate the	SEPA will continue and improve the
		Service is a joint initiative between	01/06/2022	Scottish Flood Forecasting Service	Scottish Flood Forecasting Service
		SEPA and the Met Office that		(SFFS) Partnership with the Met Office	(SFFS) with the Met Office, with
		produces daily, national flood		with daily, national Flood Guidance	daily Flood Guidance Statements
		guidance statements which are		Statements issued to Category 1 and 2	and regional Flood Alerts issued as
		issued to Category 1 and 2		agencies (such as emergency	required to enable communities
		Responders. The service also		responders, local authorities and other	and responders to reduce the
	G	provides information which allows		organisations with flooding	impacts of flooding. SEPA is
		SEPA to issue flood warnings,		management duties) and regional	currently exploring options to
		giving people a better chance of		Flood Alerts issued to the public. Each	develop a public version of the daily
		reducing the impact of flooding on		daily statement gives an assessment	Flood Guidance Statement to
		their home or business. For more		of the risk of flooding for the next five	provide better and earlier
		information please visit SEPA's		days to enable these organisations to	information to the public.
Flood forecasting		website.		put preparations in place to reduce the	

				impact of flooding. SEPA's Flood Alert	
				service is freely available to everyone	
				and enables communities to be aware	
				and prepared to reduce the impacts of	
				flooding.	
		Everyone is responsible for	01/06/2016-	Community Engagement includes,	Ongoing community PLP training,
		protecting themselves and their	22/06/2022	PLP exhibitions, selection, surveys	Flood Warden and resilience group
		property from flooding. Property and		and appropriate and relevant	promotion.
		business owners can take simple		information to enable clients to make	
		steps to reduce damage and		the right decisions.	
		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			
	G	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			
Self help		Flood Forum websites.			
-		South Ayrshire Council, SEPA and	22/12/2015-	SEPA's principle awareness raising	SEPA will continue to raise
Awareness raising	G	Scottish Water collectively work to	22/06/2022	approaches have been through:	awareness of flood risk through

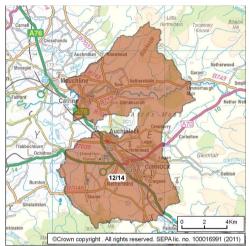
		raise awareness of flood risk and		Direct campaigning and general	direct campaigning, general
		how those affected can be better		awareness raising	awareness raising, developing
		prepared. Through the continued		2. Education and tools	education and engagement tools,
		development of flood schemes and		3. Partnership delivery development	creating new partnerships and
		studies at higher risk locations,		South Ayrshire Councils general	improving its flood forecasting and
		officers from the Council's Flood		awareness raising is a continuous	warning services (e.g. Scottish
		Risk Management Team attend		activity	Flood Forecasting Service and
		community council events to discuss			Floodline). This will continue with
		elements of flood risk management.			many of the actions reported for the
		Across Scotland, SEPA will create			interim progress summary. Further
		and share communication and			information is contained within
		education resources with other			SEPA's Flood Warning
		responsible authorities. These			Development Framework,
		resources will include awareness			published in 2017 and for the
		campaigns, media and marketing			period 2017 to 2021.
		activity and promotion of SEPA's			Raising Awareness will form part of
		flood forecasting and warning			each of the 3 key themes identified:
		services (Floodline). Scottish			Aim 1: Maintenance of existing
		Water will provide targeted flooding			and delivery of new flood warning
		communications for Scottish Water			schemes.
		specific activities and raise			Aim 2: Development and
		awareness by producing and			innovation.
		supplying targeted information to the			Aim 3: Engagement with partners
		public on large capital projects and			and customers.
		detailed local studies.			
		Local authorities have a duty to	01/06/2016-	South Ayrshire Council carry out	The Council will continue to inspect
Maintenance	G	assess watercourses and carry out	01/06/2022	monthly inspections and clearance	and maintain watercourses,

		clearance and repair works where		work where necessary on 17 debris	screens and other relevant Council
		such works would substantially		screens where there is a known flood	Assets.
		reduce flood risk. They produce		risk from blockage. Watercourse	
		schedules of clearance and repair		inspections are carried out on a	
		works and make these available for		regular basis where there are known	
		public inspection. Scottish Water		flood risk issues.	
		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.			
		Providing an emergency response	01/06/2016-	For SAC Ayrshire Civil Contingencies	The Ayrshire Civil Contingencies
		to flooding is the responsibility of	01/06/2022	maintain and update all emergency	team is responsible for producing
		many organisations, including local		response plans. These are updated	the Civil Contingencies Plan, which
		authorities, the emergency services		every 3 years or as required after an	outlines the management and
		and SEPA. Effective management of		incident. This is done in conjunction	operational arrangements that the
		an emergency response relies on		with the relevant department and	Councils will follow in the event of
	G	emergency plans that are prepared		external agency.	an emergency as well as
		under the Civil Contingencies Act			encouraging other agencies to
		2004 by Category 1 and 2			prepare for their role. The Councils
		Responders. Scottish Water are a			will contribute to the production and
		Category 2 responder under the			review of the Civil Contingencies
Emorgoney		Civil Contingencies Act 2004 and			Plan and the Emergency Plan for
Emergency plans/response		will support regional and local			Severe Weather and Flooding, as

		resilience partnerships as required.			required. This response may be
		The emergency response by these			supported by the work of voluntary
		organisations is coordinated through			organisations.
		regional and local resilience			
		partnerships. This response may be			
		supported by the work of voluntary			
		Scottish Planning Policy and	01/06/2016-	The South Ayrshire Council Local	The Council's planning policies will
		accompanying Planning Advice	01/06/2022	Development Plan recognises the	be reviewed periodically to ensure
		Notes set out Scottish Ministers'		importance of sustainable flood risk	that all current national policies are
		priorities for the operation of the		management in both urban and rural	implemented and that the
		planning system and for the		developments and is in alignment with	recommendations of strategic
		development and use of land. In		Scottish Planning Policy. The Local	studies, such as the Ayrshire
		terms of flood risk management, the		Development Plan is currently under	Shoreline Management Plan,
		policy supports a catchment-scale		review with public consultation on the	Surface Water Management Plans
		approach to sustainable flood risk		plan scheduled for the end of 2018.	etc., are considered.
	G	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			
Planning policies		should be avoided.			

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 -2022) 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 protections scheme/works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan/study	Strategic mapping and modelling	Strategic mapping and modelling SEPA	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				G			G	R			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	Revised dates and planned
				deliverables and dates	actions to complete / address
					delay
		A study will investigate the feasibility	01/06/2016-	Progress has been made with the	Additional resourcing is required
		of a flood protection scheme along	22/06/2022	installation of River Monitors on the	in order procure these works out
		the River Ayr at Sorn/Catrine and		Lugar and Glaisnock Waters. These	to tender. These works are
		further investigate any measures		are being used in conjunction with the	expected to progress on
		required in Cumnock.		SEPA monitor on the River Ayr at	schedule.
	G			Catrine, to gather hydraulic data to	
				inform the planned combined Flood	
				study (2020 -2022) for these	
				watercourses. The Flood study will	
Flood protection				inform Cycle 2 flooding actions for	
study				these locations.	
,		SEPA will seek to incorporate	01/06/2016-	SEPA's current Surface water hazard	This action will not be taken
		additional surface water data into	22/06/2022	maps use design rainfall estimates	forwards as described. SEPA will
		the flood maps to improve		based on FEH99 methodology, this	develop new Surface water flood
		understanding of flood risk.		has now been superseded by FEH13	hazard maps over the remainder
	R	Approximately		methodology. The FEH13 dataset	of Cycle 1. It is anticipated that
		1,300km² of improved surface water		contains the latest science and	updated flood mapping from this
		data is currently available within this		understanding of rainfall across	revised action will be available
Stratogic manning		Local Plan District.		Scotland and represents a significant	early in Cycle 2.
Strategic mapping and modelling				change in rainfall amounts compared	

				to FEH99 dataset, as such it is no	Alongside this SEPA will
				longer consider appropriate to deliver	investigate the feasibility of
				this action as originally intended.	developing an interim approach to
					assess the change in Surface
					water hazard (and risk)
					associated with FEH13, such that
					we could consider it in the
					development of the 2021 FRM
					Strategies.
Strategic mapping	G	Scottish Water will undertake further	01/01/2016-	The Scottish Water assessment of	The assessment is now
and modelling -		investigation and modelling in the	31/12/2019	flood risk within the sewer catchment has been completed for both	completed and to be shared with
Section 16 assessment		Catrineholm and Underwood		Catrineholm and Underwood	Local Authority.
		Cumnock sewer catchment to		Cumnock.	
		improve knowledge and			
		understanding of flood risk in this			
		area as required under Section 16 of			
		the Flood Risk Management			
		(Scotland) Act 2009.			
		The Scottish Flood Forecasting	22/12/2015-	SEPA has continued to operate the	SEPA will continue and improve
		Service is a joint initiative between	01/06/2022	Scottish Flood Forecasting Service	the Scottish Flood Forecasting
		SEPA and the Met Office that		(SFFS) Partnership with the Met Office	Service (SFFS) with the Met
		produces daily, national flood		with daily, national Flood Guidance	Office, with daily Flood Guidance
	G	guidance statements which are		Statements issued to Category 1 and 2	Statements and regional Flood
		issued to Category 1 and 2		agencies (such as emergency	Alerts issued as required to
		Responders. The service also		responders, local authorities and other	enable communities and
		provides information which allows		organisations with flooding	responders to reduce the impacts
Flood forecasting		SEPA to issue flood warnings,	_	management duties) and regional	of flooding. SEPA is currently

		giving people a better chance of		Flood Alerts issued to the public. Each	exploring options to develop a
		reducing the impact of flooding on		daily statement gives an assessment	public version of the daily Flood
		their home or business. For more		of the risk of flooding for the next five	Guidance Statement to provide
		information please visit SEPA's		days to enable these organisations to	better and earlier information to
		website.		put preparations in place to reduce the	the public.
				impact of flooding. SEPA's Flood Alert	
				service is freely available to everyone	
				and enables communities to be aware	
				and prepared to reduce the impacts of	
				flooding.	
		East Ayrshire Council is currently	01/06/2016-	The Flood Study for the River Ayr for	EAC have currently made PLP
		procuring suitable flow and level	22/06/2022	Catrine and Lugar and Glaisnock in	available to all residents in EAC,
		monitoring installations on		Cumnock will inform any property level	who would benefit from there use,
		appropriate watercourses identified		protection requirements for the area	and continue to do so.
		for studies, with the intention of		and the monitors will form the basis for	
		informing those studies in areas		a Flood Warning scheme to support	
		known to have little or no		the placement.	
		information currently available.			
	G	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			
Property level		for a Flood Warning scheme to			
protection scheme		support the placement.			

		Everyone is responsible for	01/04/2016-	Community Engagement includes,	Ongoing community PLP training,
		protecting themselves and their	22/06/2022	PLP exhibitions, selection, surveys	Flood Warden and resilience
		property from flooding. Property and		and appropriate and relevant	group promotion.
		business owners can take simple		information to enable clients to make	
		steps to reduce damage and		the right decisions.	
		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.			
	G	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			
Self help		Flood Forum websites.			
·		East Ayrshire Council, SEPA and	01/04/2016-	EAC and SEPA has delivered a range	EAC and SEPA will continue to
		Scottish Water collectively work to	22/06/2022	of awareness raising activities through	raise awareness of flood risk
		raise awareness of flood risk and		campaigning, education activities and	through campaigning, developing
	G	how those affected can be better		partnership delivery. We have run	education and engagement tools,
		prepared.		national and local digital and direct	creating new partnerships and
		Across Scotland, SEPA will create		engagement campaigns to raise	improving the flood warning and
Awareness raising		and share communication and		awareness of flood risk and SEPA's	forecasting service. Many of our

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 East Ayrshire Council, SEPA, Scottish Water and Ayrshire Road

Alliance websites.

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.

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.

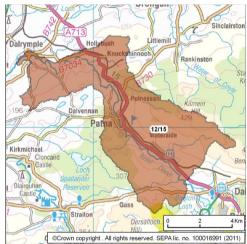
		East Ayrshire Council in accordance	01/04/2016-	High risk locations such as those with	The Council will continue to
		with Section 18 of the Flood	22/06/2022	screens and some smaller culverts are	inspect and maintain
		Risk Management (Scotland) Act		inspected on a scheduled basis. The	watercourses, screens and other
		2009 undertake assessment of		majority of	relevant Council assets.
		water bodies to determine whether		inspections tend to be undertaken in	
		works of clearance and repair		the winter months when flows	
		would substantially reduce the risk		are higher, and leaves and other	
	G	of flooding. This information is		waterborne debris can be an issue.	
		used to produce a schedule of		Works of clearance are carried out	
		works which is available for the		during these inspections which	
		public		are not specifically "scheduled". The	
		to inspect.		main water bodies, and other	
				water bodies, within urban areas are	
				subject to an annual visual	
Maintenance				inspection and any works	
		The Civil Contingencies Team	01/04/2016-	Emergency Response Planning is	Providing an emergency response
		ensures that the Council will be able	22/06/2022	carried out by Ayrshire Civil	to flooding is the responsibility of
		to respond speedily and effectively		Contingencies Team (ACCT) this is an	many organisations, including
		in a major emergency. North,		all Ayrshire shared service. ACCT	local authorities, the emergency
		South and East Ayrshire teams are		update and co-ordinate (all Emergency	services and SEPA. Effective
		a shared service team known as the		Responders) the emergency response	management of an emergency
	G	Ayrshire Civil Contingencies Team.		plans (ERP) as required (in direct	response relies on emergency
		If disaster strikes, or if emergencies		consultation with ARA, where	plans that are prepared under the
		develop in Ayrshire, communities		appropriate). In addition to the ERP	Civil Contingencies Act 2004 by
		will look to the Council for support		EAC has implemented a system of	Category 1 and 2 Responders.
Emergency		and advice. The Ayrshire Civil		river monitors in known areas and a	Scottish Water are a Category 2
plans/response		Contingencies Team ensures that		rota of Flood Scouts (FS).	responder under the Civil

		the Council will be able to respond		Is maintained who are tasked to	Contingencies Act 2004 and will
		speedily and effectively in a major		monitor and report back on status on	support regional and local
		emergency in accordance with the		receipt of any alarm.	resilience partnerships as
		Civil			required. The emergency
		Contingencies Act 2004			response by these organisations
		(Contingency Planning) (Scotland)			is coordinated through regional
		Regulations 2005. Our			and local resilience partnerships.
		responsibilities include preparing			This response may be supported
		comprehensive and robust			by the work of voluntary
		contingency plans and procedures			organisations.
		irrespective of the nature of the			
		emergency. The main aim is to			
		preserve life and property. Every			
		emergency plan also sets out to:			
		Mitigate the harmful effects of the			
		emergency on the environment;			
		bring about a swift return to normal			
		life in the communities and			
		environment affected; and			
		encourage all agencies and			
		organisations to prepare for their			
		role.			
		Scottish Planning Policy and	01/06/2016-	The Local Development Plan (LDP)	The Council's planning policies
		accompanying Planning Advice	22/06/2022	takes cognisance of the Local Flood	will be reviewed periodically to
	G	Notes set out Scottish Ministers'		Risk Management and Plan (LOCAL	ensure that all current national
		priorities for the operation of the		FRMP) is currently in mid cycle. Work	policies are implemented and that
Planning policies		planning system and for the		is progressing on the next LPD.	the recommendations of strategic

	development and use of land. In	Throughout the production of the LPD,	studies, such as the Ayrshire
	terms of flood risk management, the	close liaison is maintained between	Shoreline Management Plan,
	policy supports a catchment-scale	our Development Planners and the	Surface Water Management
	approach to sustainable flood risk	Flood Risk Management team to	Plans etc., are considered.
	management and aims to build the	ensure the Planners are informed of	
	resilience of our cities and towns,	any factors that would impact on the	
	encourage sustainable land	LPD.	
	management in our rural areas, and	Including any new PVA information as	
	to address the long-term	received.	
	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.		

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 <u>here</u>.

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 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 Dalrymple and Patna

PVA	Flood protections scheme/works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan/study	Strategic mapping and modelling		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				Α				R	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	Revised dates and planned		
				deliverables and dates	actions to complete / address		
					delay		
		A study will investigate the feasibility	01/06/2016-	Progress has been made with the	Additional resourcing is required		
		of a flood protection scheme,	22/06/2022	installation of River Monitors on the	in order to procure these work		
		including modification of		Taiglum and Primpton Burns and the	and issue tenders, recruitment is		
		conveyance through a historic		River Doon, to gather hydraulic data to	ongoing for additional staff.		
		bridge and Construction of direct		inform the planned combined Flood	The anticipated rescheduling is		
	А	defences. The study will also		study (2020 -2022) for these	not envisaged to affect the ability		
		examine the current operating		watercourses. The Flood study will	to report as intended in Cycle 2.		
		procedure of Loch Doon to increase		inform Cycle 2 flooding actions for			
Flood protection		the level of storage, this will be		these locations			
study		carried out in coordination with					
		Scottish Power					
		SEPA will seek to incorporate	01/01/2016-	SEPA's current Surface water hazard	This action will not be taken		
		additional surface water data into	31/12/2016	maps use design rainfall estimates	forwards as described. SEPA will		
		the		based on FEH99 methodology, this	develop new Surface water flood		
		flood maps to improve		has now been superseded by FEH13	hazard maps over the remainder		
	R	understanding of flood risk.		methodology. The FEH13 dataset	of Cycle 1. It is anticipated that		
		Approximately		contains the latest science and	updated flood mapping from this		
Strategic mapping		1,300km² of improved surface water		understanding of rainfall across	revised action will be available		
and modelling Pluvial mapping		data is currently available within this		Scotland and represents a significant	early in Cycle 2.		
updates		Local Plan District.		change in rainfall amounts compared			

				to FEH99 dataset, as such it is no	Alongside this SEPA is
				longer consider appropriate to deliver	investigating the feasibility of
				this action as originally intended.	developing an interim approach to
					assess the change in Surface
					water hazard (and risk)
					associated with FEH13, such that
					we could consider it in the
					development of the 2021 FRM
					Strategies.
		An existing overflow channel on the	01/06/2016-	Local authorities have a duty to assess	The Council will continue to
		Primpton Burn reduces the flood risk	22/06/2022	watercourses and carry out clearance	inspect and maintain the flood
		from the watercourse. The Council		and repair works where such works	protection structures within the
		should investigate the current		would substantially reduce flood risk.	Catchment.
		benefit which is offered by the		They produce schedules of clearance	
		scheme. This channel will be		and repair works and make these	
		maintained, and will continue to		available for public inspection. Scottish	
		manage flooding according to the		Water undertake risk based inspection,	
	0	design standard at the time of		maintenance and repair on the public	
	G	construction. Levels of flood risk are		sewer network. Asset owners and	
		likely to increase over time as a		riparian landowners are responsible for	
		consequence of climate change.		the maintenance and management of	
		The Primpton Burn is particularily		their own assets including those which	
		prone to high water levels in the		help to reduce flood risk.	
		River Doon. East Ayrshire			
		Council/ACCT have held meetings			
Maintain flood protection		with Scottish Power to liaison on the			
scheme*		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			
		I identified for a future study (2016-			
		2021) to establish any further works			
		required here.			
		The Scottish Flood Forecasting	22/12/2015-	SEPA has continued to operate the	SEPA will continue and improve
		Service is a joint initiative between	01/06/2022	Scottish Flood Forecasting Service	the Scottish Flood Forecasting
		SEPA and the Met Office that		(SFFS) Partnership with the Met Office	Service (SFFS) with the Met
		produces daily, national flood		with daily, national Flood Guidance	Office, with daily Flood Guidance
		guidance statements which are		Statements issued to Category 1 and 2	Statements and regional Flood
		issued to Category 1 and 2		agencies (such as emergency	Alerts issued as required to
		Responders. The service also		responders, local authorities and other	enable communities and
		provides information which allows		organisations with flooding	responders to reduce the impacts
	G	SEPA to issue flood warnings,		management duties) and regional	of flooding. SEPA is currently
		giving people a better chance of		Flood Alerts issued to the public. Each	exploring options to develop a
		reducing the impact of flooding on		daily statement gives an assessment	public version of the daily Flood
		their home or business. For more		of the risk of flooding for the next five	Guidance Statement to provide
		information please visit SEPA's		days to enable these organisations to	better and earlier information to
		website.		put preparations in place to reduce the	the public.
				impact of flooding. SEPA's Flood Alert	
Flood forecasting				service is freely available to everyone	

				and enables communities to be aware	
				and prepared to reduce the impacts of	
				flooding.	
		Everyone is responsible for	01/06/2016-	Community Engagement includes,	Ongoing community PLP training,
		protecting themselves and their	22/06/2022	PLP exhibitions, selection, surveys	Flood Warden and resilience
		property from flooding. Property and		and appropriate and relevant	group promotion.
		business owners can take simple		information to enable clients to make	
		steps to reduce damage and		the right decisions.	
		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			
	G	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			
Self help		Flood Forum websites.			
- 1-		East Ayrshire Council, South	01/06/2016-	EAC and SEPA has delivered a range	SEPA will continue to raise
		Ayrshire Council, SEPA and	22/06/2022	of awareness raising activities through	awareness of flood risk through
	G	Scottish Water collectively work to		campaigning, education activities and	direct campaigning, general
Awareness raising		raise awareness of flood risk and		partnership delivery. We have run	awareness raising, developing

how those affected can be better. national and local digital and direct education and engagement tools, engagement campaigns to raise prepared. creating new partnerships and awareness of flood risk and SEPA's improving its flood forecasting and warning services (e.g. Scottish flood warning service, Floodline. We publish and publicise an electronic Flood Forecasting Service and newsletter (Flooding Gateway) four Floodline). This will continue with many of the actions reported for times a year which is distributed to a wide audience. SEPA are working with the interim progress summary. Education Scotland and Scottish Further information is contained within SEPA's Flood Warning Government Resilience team to embed flooding awareness within the Development Framework, Curriculum for Excellence, and published in 2017 and for the resilience partners in Safer period 2017 to 2021. Communities programmes. We have Raising Awareness will form part also developed an online tool that of each of the 3 key themes helps everyone share information on identified: current flooding issues (Report-a-• Aim 1: Maintenance of existing and delivery of new flood warning Flood). We have worked in partnership with local authorities, emergency schemes. services and community organisations • Aim 2: Development and (e.g. Neighbourhood Watch Scotland, innovation. Citizens Advice Scotland and others) • Aim 3: Engagement with to share our resources and help to partners and customers. The Council will continually promote preparedness and understanding of how we manage deliver awareness raising evets. flood risk in Scotland. We have actively supported the Scottish Flood

				Forum and worked closely with UK	
				agencies to develop joint flooding	
				information.	
		East Ayrshire Council in accordance	01/06/2016-	High risk locations such as those with	The Council will continue to
		with Section 18 of the Flood Risk	22/06/2022	screens and some smaller culverts are	inspect and maintain the flood
		Management (Scotland) Act 2009		inspected on a scheduled basis. The	protection structures within the
		undertake assessment of water		majority of	catchment.
		bodies to determine whether works		inspections tend to be undertaken in	
		of clearance and repair would		the winter months when flows are	
		substantially reduce the risk of		higher, and leaves and other	
	G	flooding. This information is used to		waterborne debris can be an issue.	
		produce a schedule of works which		Works of clearance are carried out	
		is available for the public to inspect.		during these inspections which are not	
				specifically "scheduled". The main	
				water bodies, and other water bodies,	
				within urban areas are subject to an	
				annual visual inspection and any	
Maintenance				works	
		The Civil Contingencies Team	01/06/2016-	Emergency Response Planning is	Providing an emergency response
		ensures that the Council will be able	22/06/2022	carried out by Ayrshire Civil	to flooding is the responsibility of
		to respond speedily and effectively		Contingencies Team (ACCT) this is an	many organisations, including
		in a major emergency. North,		all Ayrshire shared service.	local authorities, the emergency
	G	South and East Ayrshire teams are		ACCT update and co-ordinate (all	services and SEPA. Effective
		a shared service team known as the		Emergency Responders) the	management of an emergency
		Ayrshire Civil Contingencies Team.		emergency response plans (ERP) as	response relies on emergency
Emorgonsy		If disaster strikes, or if		required (in direct consultation with	plans that are prepared under the
Emergency plans/response				ARA, where appropriate).	Civil Contingencies Act 2004 by

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: Mitigate the harmful effects of the emergency on the environment; bring about a swift return to normal life in the communities and environment affected; and encourage all agencies and organisations to prepare for their role.

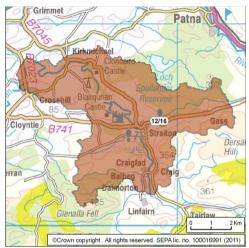
In addition to the ERP EAC has implemented a system of river monitors in known areas and a rota of Flood Scouts (FS). Is maintained who are tasked to monitor and report back on status on receipt of any alarm.

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.

		Scottish Planning Policy and	01/06/2016-	The South Ayrshire Council Local	The Council's planning policies
		accompanying Planning Advice	01/06/2022	Development Plan recognises the	will be reviewed periodically to
		Notes set out Scottish Ministers'		importance of sustainable flood risk	ensure that all current national
		priorities for the operation of the		management in both urban and rural	policies are implemented and that
		planning system and for the		developments and is in alignment with	the recommendations of strategic
		development and use of land. In		Scottish Planning Policy. The Local	studies, such as the Ayrshire
		terms of flood risk management, the		Development Plan is currently under	Shoreline Management Plan,
		policy supports a catchment-scale		review with public consultation on the	Surface Water Management
		approach to sustainable flood risk		plan scheduled for the end of 2018.	Plans etc., are considered.
	G	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			
Planning policies		should be avoided.			

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 <u>here</u>.

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 protections scheme/works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan/study	Strategic mapping and modelling	Strategic mapping and modelling SEPA	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											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	Revised dates and planned
				deliverables and dates	actions to complete / address
					delay
		The Scottish Flood Forecasting	22/12/2015-	SEPA has continued to operate the	SEPA will continue and improve
		Service is a joint initiative between	01/06/2022	Scottish Flood Forecasting Service	the Scottish Flood Forecasting
		SEPA and the Met Office that		(SFFS) Partnership with the Met Office	Service (SFFS) with the Met
		produces daily, national flood		with daily, national Flood Guidance	Office, with daily Flood Guidance
		guidance statements which are		Statements issued to Category 1 and 2	Statements and regional Flood
		issued to Category 1 and 2		agencies (such as emergency	Alerts issued as required to
		Responders. The service also		responders, local authorities and other	enable communities and
		provides information which allows		organisations with flooding	responders to reduce the impacts
		SEPA to issue flood warnings,		management duties) and regional	of flooding. SEPA is currently
		giving people a better chance of		Flood Alerts issued to the public. Each	exploring options to develop a
		reducing the impact of flooding on		daily statement gives an assessment	public version of the daily Flood
		their home or business. For more		of the risk of flooding for the next five	Guidance Statement to provide
		information please visit SEPA's		days to enable these organisations to	better and earlier information to
		website.		put preparations in place to reduce the	the public.
				impact of flooding. SEPA's Flood Alert	
				service is freely available to everyone	
				and enables communities to be aware	
				and prepared to reduce the impacts of	
Flood forecasting				flooding.	
		Everyone is responsible for	01/06/2016-	Community Engagement includes,	Ongoing community PLP training,
	G	protecting themselves and their	22/06/2022	PLP exhibitions, selection, surveys	Flood Warden and resilience
Self help		property from flooding. Property and		and appropriate and relevant	group promotion.

		business owners can take simple		information to enable clients to make	
		steps to reduce damage and		the right decisions.	
		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.			
		South Ayrshire Council, SEPA and	22/12/2015-	SEPA's principle awareness raising	SEPA will continue to raise
		Scottish Water collectively work to	22/06/2022	approaches have been through:	awareness of flood risk through
		raise awareness of flood risk and		Direct campaigning and general	direct campaigning, general
		how those affected can be better		awareness raising	awareness raising, developing
		prepared. Through the continued		2. Education and tools	education and engagement tools,
	G	development of flood schemes and		3. Partnership delivery development	creating new partnerships and
		studies at higher risk locations,		South Ayrshire Councils general	improving its flood forecasting and
		officers from the Council's Flood		awareness raising is a continuous	warning services (e.g. Scottish
		Risk Management Team attend		activity	Flood Forecasting Service and
Awareness raising		community council events to discuss			Floodline). This will continue with

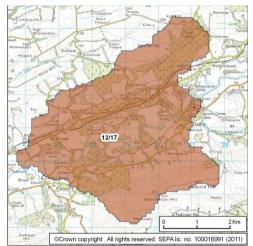
		elements of flood risk management.			many of the actions reported for
		Across Scotland, SEPA will create			the interim progress summary.
		and share communication and			Further information is contained
		education resources with other			within SEPA's Flood Warning
		responsible authorities. These			Development Framework,
		resources will include awareness			published in 2017 and for the
		campaigns, media and marketing			period 2017 to 2021.
		activity and promotion of SEPA's			Raising Awareness will form part
		flood forecasting and warning			of each of the 3 key themes
		services (Floodline). Scottish			identified:
		Water will provide targeted flooding			Aim 1: Maintenance of existing
		communications for Scottish Water			and delivery of new flood warning
		specific activities and raise			schemes.
		awareness by producing and			Aim 2: Development and
		supplying targeted information to the			innovation.
		public on large capital projects and			Aim 3: Engagement with
		detailed local studies.			partners and customers.
		Local authorities have a duty to	01/06/2016-	South Ayrshire Council carry out	The Council will continue to
		assess watercourses and carry out	01/06/2022	monthly inspections and clearance	inspect and maintain the flood
		clearance and repair works where		work where necessary on 17 debris	protection structures within the
		such works would substantially		screens where there is a known flood	Catchment.
	G	reduce flood risk. They produce		risk from blockage. Watercourse	
		schedules of clearance and repair		inspections are carried out on a	
		works and make these available for		regular basis where there are known	
		public inspection. Scottish Water		flood risk issues.	
Maintenance		undertake risk based inspection,			

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

		Scottish Planning Policy and	01/06/2016-	The South Ayrshire Council Local	The Council's planning policies
		accompanying Planning Advice	01/06/2022	Development Plan recognises the	will be reviewed periodically to
		Notes set out Scottish Ministers'		importance of sustainable flood risk	ensure that all current national
		priorities for the operation of the		management in both urban and rural	policies are implemented and that
		planning system and for the		developments and is in alignment with	the recommendations of strategic
		development and use of land. In		Scottish Planning Policy. The Local	studies, such as the Ayrshire
		terms of flood risk management, the		Development Plan is currently under	Shoreline Management Plan,
		policy supports a catchment-scale		review with public consultation on the	Surface Water Management
		approach to sustainable flood risk		plan scheduled for the end of 2018.	Plans etc., are considered.
	G	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			
Planning policies		should be avoided.			

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 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 protections scheme/works	flo ne	New flood warning	Flood protection study	Natural flood management study	Surface water plan/study	Strategic mapping and modelling	Strategic mapping and modelling SEPA	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											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	Revised dates and planned
				deliverables and dates	actions to complete / address
					delay
		The Scottish Flood Forecasting	22/12/2015-	SEPA has continued to operate the	SEPA will continue and improve the
		Service is a joint initiative between	01/06/2022	Scottish Flood Forecasting Service	Scottish Flood Forecasting Service
		SEPA and the Met Office that		(SFFS) Partnership with the Met Office	(SFFS) with the Met Office, with
		produces daily, national flood		with daily, national Flood Guidance	daily Flood Guidance Statements
		guidance statements which are		Statements issued to Category 1 and 2	and regional Flood Alerts issued as
		issued to Category 1 and 2		agencies (such as emergency	required to enable communities
		Responders. The service also		responders, local authorities and other	and responders to reduce the
	G	provides information which allows		organisations with flooding	impacts of flooding. SEPA is
		SEPA to issue flood warnings,		management duties) and regional	currently exploring options to
		giving people a better chance of		Flood Alerts issued to the public. Each	develop a public version of the daily
		reducing the impact of flooding on		daily statement gives an assessment	Flood Guidance Statement to
		their home or business. For more		of the risk of flooding for the next five	provide better and earlier
		information please visit SEPA's		days to enable these organisations to	information to the public.
		website.		put preparations in place to	
Flood forecasting					
		Everyone is responsible for	01/06/2016-	Community Engagement includes,	Ongoing community PLP training,
		protecting themselves and their	22/06/2022	PLP exhibitions, selection, surveys	Flood Warden and resilience group
		property from flooding. Property and		and appropriate and relevant	promotion.
	G	business owners can take simple		information to enable clients to make	
		steps to reduce damage and		the right decisions.	
		disruption to their homes and			
Self help		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.			
		South Ayrshire Council, SEPA and	22/12/2015-	SEPA's principle awareness raising	SEPA will continue to raise
		Scottish Water collectively work to	22/06/2022	approaches have been through:	awareness of flood risk through
		raise awareness of flood risk and		Direct campaigning and general	direct campaigning, general
		how those affected can be better		awareness raising	awareness raising, developing
		prepared. Through the continued		2. Education and tools	education and engagement tools,
		development of flood schemes and		3. Partnership delivery development	creating new partnerships and
		studies at higher risk locations,		South Ayrshire Councils general	improving its flood forecasting and
	G	officers from the Council's Flood		awareness raising is a continuous	warning services (e.g. Scottish
		Risk Management Team attend		activity	Flood Forecasting Service and
		community council events to discuss			Floodline). This will continue with
		elements of flood risk management.			many of the actions reported for the
		Across Scotland, SEPA will create			interim progress summary. Further
		and share communication and			information is contained within
Awareness raising		education resources with other			SEPA's Flood Warning

		responsible authorities. These			Development Framework,
		resources will include awareness			published in 2017 and for the
		campaigns, media and marketing			period 2017 to 2021.
		activity and promotion of SEPA's			Raising Awareness will form part of
		flood forecasting and warning			each of the 3 key themes identified:
		services (Floodline). Scottish			Aim 1: Maintenance of existing
		Water will provide targeted flooding			and delivery of new flood warning
		communications for Scottish Water			schemes.
		specific activities and raise			Aim 2: Development and
		awareness by producing and			innovation.
		supplying targeted information to the			Aim 3: Engagement with partners
		public on large capital projects and			and customers.
		detailed local studies			
		Local authorities have a duty to	01/06/2016-	South Ayrshire Council carry out	The Council will continue to inspect
		assess watercourses and carry out	01/06/2022	monthly inspections and clearance	and maintain watercourses,
		clearance and repair works where		work where necessary on 17 debris	screens and other relevant Council
		such works would substantially		screens where there is a known flood	assets.
		reduce flood risk. They produce		risk from blockage. Watercourse	
		schedules of clearance and repair		inspections are carried out on a	
	_	works and make these available for		regular basis where there are known	
	G	public inspection. Scottish Water		flood risk issues.	
		undertake risk based inspection,			
		maintenance and repair on the			
		public sewer network. Asset owners			
		and riparian landowners are			
		responsible for the maintenance and			
Maintenance		management of their own assets			

		including those which help to reduce			
		flood risk.			
		Providing an emergency response	01/06/2016-	For SAC Ayrshire Civil Contingencies	The Ayrshire Civil Contingencies
		to flooding is the responsibility of	01/06/2022	maintain and update all emergency	team is responsible for producing
		many organisations, including local		response plans. These are updated	the Civil Contingencies Plan, which
		authorities, the emergency services		every 3 years or as required after an	outlines the management and
		and SEPA. Effective management of		incident. This is done in conjunction	operational arrangements that the
		an emergency response relies on		with the relevant department and	Councils will follow in the event of
		emergency plans that are prepared		external agency.	an emergency as well as
		under the Civil Contingencies Act			encouraging other agencies to
		2004 by Category 1 and 2			prepare for their role. The Councils
		Responders. Scottish Water are a			will contribute to the production and
	G	Category 2 responder under the			review of the Civil Contingencies
		Civil Contingencies Act 2004 and			Plan and the Emergency Plan for
		will support regional and local			Severe Weather and Flooding, as
		resilience partnerships as required.			required. This response may be
		The emergency response by these			supported by the work of voluntary
		organisations is coordinated through			organisations.
		regional and local resilience			
		partnerships. This response may be			
Emergency		supported by the work of voluntary			
plans/response		organisations.			
		Scottish Planning Policy and	01/06/2016-	The South Ayrshire Council Local	The Council's planning policies will
		accompanying Planning Advice	01/06/2022	Development Plan recognises the	be reviewed periodically to ensure
	G	Notes set out Scottish Ministers'		importance of sustainable flood risk	that all current national policies are
		priorities for the operation of the		management in both urban and rural	implemented and that the
Planning policies		planning system and for the		developments and is in alignment with	recommendations of strategic

	development and use of land. In	Scottish Planning Policy. The Local	studies, such as the Ayrshire
	terms of flood risk management, the	Development Plan is currently under	Shoreline Management Plan,
	policy supports a catchment-scale	review with public consultation on the	Surface Water Management Plans
	approach to sustainable flood risk	plan scheduled for the end of 2018.	etc., are considered.
	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.		

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 is completed and adopted by both North and South Ayrshire Councils in September/October 2018.

The Mill Burn and Girvan Water Flood Study is ongoing and will be key in determining what options are available to mitigate flood risk in Girvan. The study is planned to be completed in 2019.

Overview of actions to manage flooding in Girvan

PVA	Flood protections scheme/works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan/study	Strategic mapping and modelling	Strategic mapping and modelling SEPA	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	R	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	Revised dates and planned
				deliverables and dates	actions to complete / address
					delay
		A shoreline management plan is	01/06/2016-	The Ayrshire Shoreline Management	The Ayrshire Shoreline
		recommended; this study is not	01/06/2022	Plan is completed and adopted by both	Management Plan will be
		limited to Potentially Vulnerable		North and South Ayrshire Councils in	reviewed every 6 years.
		Areas but should cover the whole		September/October 2018.	
		of the Ayrshire coastline and any			
		areas beyond this which may be			
		influenced by changes in coastal			
		processes. The study should			
	G	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			
Flood protection		may be required to mitigate			
study		against flooding.			
,		A flood study will be carried out to	01/06/2016-	South Ayrshire Council have	Select three options to take
		further investigate river flood risk	01/06/2022	commissioned the Mill Burn & Girvan	forward to the project appraisal
		combined with coastal flood risk to		Water Flood Study. The study is	report. Produce flood extent maps
		Girvan. This study will build on the		ongoing and currently in the high-level	and calculate the benefit costs for
Flood protection		work within the shoreline		assessment of the options appraisal	each of the items by April 2019.
study		management plan to provide a		stage.	

		detailed investigation of the current			
		and future flood risk. The study			
		should examine the most			
		sustainable combinations of			
		actions to manage flooding.			
		SEPA will seek to develop flood	01/01/2016-	Following the establishment of a	It is anticipated that this action will
		mapping in the Ayr to Ardrossan	31/12/2018.	coastal flood hazard map development	progress to a study prior to the
		area to improve understanding of		framework and characterisation of the	end of Cycle 1 however
		coastal flood risk. The extent and		coastline, several projects are currently	completion is likely to be in early
		timing of improvements will		underway at this location:	Cycle 2 due to both the
		depend on detailed scoping and		Development of a national coastal	geographical extent and technical
		data availability. Where this work		joint probability dataset;	complexity of the mapping
		coincides with local authority		Update to the UK design extreme sea	improvements required.
		studies, SEPA will work		level dataset	Topographic survey will be
		collaboratively to ensure consistent		These projects/datasets will inform a	necessary prior to any modelling
	R	modelling approaches are applied.		future coastal modelling and mapping	study.
		The coastal mapping and		project for the Firth of Clyde.	
		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			
Strategic mapping and modelling		that can be made in the area.			

		Scottish Water will undertake	01/01/2018 -	The Scottish Water assessment of	The assessment is now
		further investigation and modelling	31/12/2020	flood risk within the sewer catchment has been completed.	completed and to be shared with
		in the Girvan sewer catchment to		nas been completed.	Local Authority.
		improve knowledge and			
		understanding of flood risk in this			
Strategic mapping		area as required under Section 16			
and modelling		of the Flood Risk Management			
Section 16 Assessment		(Scotland0 Act 2009.			
7135531116116		There are a number of sections of	01/06/2016-	This work continues to be carried out	The Council will continue to
		coastal defences in Girvan which	01/06/2022	on an annual basis.	inspect and maintain the flood
		provide some protection to the			protection structures within the
		area. These defences will be			catchment.
		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			
	G	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			
Maintain flood protection		events.			
scheme*					

		SEPA will continue to maintain the	22/12/2015-	SEPA has recently reviewed and	SEPA will continue to operate the
		Girvan Esplanade flood warning	22/06/2022	recalibrated the Firth of Clyde flood	flood warning service.
		area which is part of the Firth of		forecasting model. SEPA has	
		Clyde coastal flood warning		continued to maintain the Girvan	
		scheme. When flood events occur		Esplanade flood warning area which is	
		in an area with a flood warning		part of the Firth of Clyde coastal flood	
	G	service, SEPA will seek to verify		warning scheme.	
		and validate the warning service.			
		SEPA will use feedback and post-			
Maintain flood		event data to ensure that our flood			
warning Girvan Esplanade		warning service is timely and			
flood warning area		accurate.			
		The Scottish Flood Forecasting	22/12/2015-	SEPA has continued to operate the	SEPA will continue and improve
		Service is a joint initiative between	01/06/2022	Scottish Flood Forecasting Service	the Scottish Flood Forecasting
		SEPA and the Met Office that		(SFFS) Partnership with the Met Office	Service (SFFS) with the Met
		produces daily, national flood		with daily, national Flood Guidance	Office, with daily Flood Guidance
		guidance statements which are		Statements issued to Category 1 and 2	Statements and regional Flood
		issued to Category 1 and 2		agencies (such as emergency	Alerts issued as required to
		Responders. The service also		responders, local authorities and other	enable communities and
	G	provides information which allows		organisations with flooding	responders to reduce the impacts
		SEPA to issue flood warnings,		management duties) and regional	of flooding. SEPA is currently
		giving people a better chance of		Flood Alerts issued to the public. Each	exploring options to develop a
		reducing the impact of flooding on		daily statement gives an assessment	public version of the daily Flood
		their home or business. For more		of the risk of flooding for the next five	Guidance Statement to provide
		information please visit SEPA's		days to enable these organisations to	better and earlier information to
		website.		put preparations in place to reduce the	the public.
Flood forecasting				impact of flooding. SEPA's Flood Alert	

				service is freely available to everyone	
				and enables communities to be aware	
				and prepared to reduce the impacts of	
				flooding.	
		Everyone is responsible for	01/06/2016-	Community Engagement includes,	Ongoing community PLP training,
		protecting themselves and their	01/06/2022	PLP exhibitions, selection, surveys and	Flood Warden and resilience
		property from flooding. Property		appropriate and relevant information to	group promotion.
		and business owners can take		enable clients to make the right	
		simple steps to reduce damage		decisions.	
		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,			
	G	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.			
Self help					

		South Ayrshire Council, SEPA and	22/12/2015-	SEPA's principle awareness raising	SEPA will continue to raise
		Scottish Water collectively work to	22/06/2022	approaches have been through:	awareness of flood risk through
		raise awareness of flood risk and		Direct campaigning and general	direct campaigning, general
		how those affected can be better		awareness raising	awareness raising, developing
		prepared. Through the continued		2. Education and tools	education and engagement tools,
		development of flood schemes and		3. Partnership delivery development	creating new partnerships and
		studies at higher risk locations,		South Ayrshire Councils general	improving its flood forecasting and
		officers from the Council's Flood		awareness raising is a continuous	warning services (e.g. Scottish
		Risk Management Team attend		activity	Flood Forecasting Service and
		community council events to			Floodline). This will continue with
		discuss elements of flood risk			many of the actions reported for
		management. Across Scotland,			the interim progress summary.
		SEPA will create and share			Further information is contained
	G	communication and education			within SEPA's Flood Warning
		resources with other responsible			Development Framework,
		authorities. These resources will			published in 2017 and for the
		include awareness campaigns,			period 2017 to 2021.
		media and marketing activity and			Raising Awareness will form part
		promotion of SEPA's flood			of each of the 3 key themes
		forecasting and warning services			identified:
		(Floodline). Scottish Water will			Aim 1: Maintenance of existing
		provide targeted flooding			and delivery of new flood warning
		communications for Scottish Water			schemes.
		specific activities and raise			Aim 2: Development and
		awareness by producing and			innovation.
		supplying targeted information to			Aim 3: Engagement with
Awareness raising					partners and customers.

		the public on large capital projects			
		and detailed local studies			
		Local authorities have a duty to	01/06/2016-	South Ayrshire Council carry out	The Council will continue to
		assess watercourses and carry out	01/06/2022	monthly inspections and clearance	inspect and maintain
		clearance and repair works where		work where necessary on 17 debris	watercourses, screens and other
		such works would substantially		screens where there is a known flood	Council assets.
		reduce flood risk. They produce		risk from blockage. Watercourse	
		schedules of clearance and repair		inspections are carried out on a regular	
		works and make these available		basis where there are known flood risk	
	_	for public inspection. Scottish		issues.	
	G	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			
Maintenance		which help to reduce flood risk.			
		Providing an emergency response	01/06/2016-	For SAC Ayrshire Civil Contingencies	The Ayrshire Civil Contingencies
		to flooding is the responsibility of	01/06/2022	maintain and update all emergency	team is responsible for producing
		many organisations, including local		response plans. These are updated	the Civil Contingencies Plan,
		authorities, the emergency		every 3 years or as required after an	which outlines the management
	G	services and SEPA. Effective		incident. This is done in conjunction	and operational arrangements
		management of an emergency		with the relevant department and	that the Councils will follow in the
		response relies on emergency		external agency.	event of an emergency as well as
Emergency		plans that are prepared under the			encouraging other agencies to
plans/response		Civil Contingencies Act 2004 by			prepare for their role. The

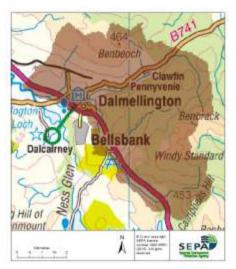
		Category 1 and 2 Responders.			Councils will contribute to the
		Scottish Water are a Category 2			production and review of the Civil
		responder under the Civil			Contingencies Plan and the
		Contingencies Act 2004 and will			Emergency Plan for Severe
		support regional and local			Weather and Flooding, as
		resilience partnerships as required.			required. This response may be
		The emergency response by these			supported by the work of
		organisations is coordinated			voluntary organisations.
		through regional and local resili-			
		ence partnerships. This response			
		may be supported by the work of			
		voluntary organisations.			
		Scottish Planning Policy and	01/06/2016-	The South Ayrshire Council Local	The Council's planning policies
		accompanying Planning Advice	01/06/2022	Development Plan recognises the	will be reviewed periodically to
		Notes set out Scottish Ministers'		importance of sustainable flood risk	ensure that all current national
		priorities for the operation of the		management in both urban and rural	policies are implemented and that
		planning system and for the		developments and is in alignment with	the recommendations of strategic
		development and use of land. In		Scottish Planning Policy. The Local	studies, such as the Ayrshire
		terms of flood risk management,		Development Plan is currently under	Shoreline Management Plan,
	G	the policy supports a catchment-		review with public consultation on the	Surface Water Management
		scale approach to sustainable		plan scheduled for the end of 2018.	Plans etc., are considered.
		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-			
Planning policies		term vulnerability of parts of our			

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	coasts and islands. Under this		
	approach, new development in		
	areas with medium to high		
	likelihood of flooding should be		
	avoided.		

4.19 Dalmellington (Potentially Vulnerable Area 12/19c)

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



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Summary of Progress for Dalmellington

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 Dalmellington

PVA	Flood protections scheme/works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan/study	Strategic mapping and modelling	Strategic mapping and modelling SEPA	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				Α							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	Revised dates and planned
				deliverables and dates	actions to complete / address
					delay
		A study will investigate the feasibility	01/06/2016-	Progress has been made with the	Additional resourcing is required
		of a flood protection scheme along	22/06/2022	installation of River Monitors on the	in order to procure these work.
		the Muck Water. East Ayrshire		Muck Water along with others in the	The anticipated rescheduling is
		Council is currently procuring		Doon Valley, to gather hydraulic data	not envisaged to affect the ability
		suitable flow and level monitoring		to inform the planned combined Flood	to report as intended in Cycle 2.
		installations on appropriate		study (2020 -2022) for these	
		watercourses identified for studies,		watercourses. The Flood study will	
		with the intention of informing those		inform Cycle 2 flooding actions for	
		studies in areas known to have little		these locations	
		or no information currently available.			
	А	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.			
Flood protection study					

		The Scottish Flood Forecasting	20/122015-	SEPA has continued to operate the	SEPA will continue and improve
		Service is a joint initiative between	22/06/2022	Scottish Flood Forecasting Service	the Scottish Flood Forecasting
		SEPA and the Met Office that		(SFFS) Partnership with the Met Office	Service (SFFS) with the Met
		produces daily, national flood		with daily, national Flood Guidance	Office, with daily Flood Guidance
		guidance statements which are		Statements issued to Category 1 and 2	Statements and regional Flood
		issued to Category 1 and 2		agencies (such as emergency	Alerts issued as required to
		Responders. The		responders, local authorities and other	enable communities and
		service also provides information		organisations with flooding	responders to reduce the impacts
		which allows SEPA to issue flood		management duties) and regional	of flooding. SEPA is currently
	G	warnings, giving people a better		Flood Alerts issued to the public. Each	exploring options to develop a
		chance of reducing the impact of		daily statement gives an assessment	public version of the daily Flood
		flooding on their home or business.		of the risk of flooding for the next five	Guidance Statement to provide
		For more information please visit		days to enable these organisations to	better and earlier information to
		SEPA's website.		put preparations in place to reduce the	the public.
				impact of flooding. SEPA's Flood Alert	
				service is freely available to everyone	
				and enables communities to be aware	
				and prepared to reduce the impacts of	
Flood forecasting				flooding.	
9		Everyone is responsible for	01/06/2016-	Community Engagement includes,	Ongoing community PLP training,
		protecting themselves and their	22/06/2022	PLP exhibitions, selection, surveys	Flood Warden and resilience
		property from flooding. Property and		and appropriate and relevant	group promotion.
		business owners can take simple		information to enable clients to make	
	G	steps to reduce damage and		the right decisions.	
		disruption to their homes and			
		businesses should flooding happen.			
Self help		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.			
		East Ayrshire Council, South	01/06/2016-	EAC and SEPA has delivered a range	SEPA will continue to raise
		Ayrshire Council, SEPA and	22/06/2022	of awareness raising activities through	awareness of flood risk through
		Scottish Water collectively work to		campaigning, education activities and	direct campaigning, general
		raise awareness of flood risk and		partnership delivery. We have run	awareness raising, developing
		how those affected can be better		national and local digital and direct	education and engagement tools,
		prepared.		engagement campaigns to raise	creating new partnerships and
				awareness of flood risk and SEPA's	improving its flood forecasting and
	G			flood warning service, Floodline. We	warning services (e.g. Scottish
				publish and publicise an electronic	Flood Forecasting Service and
				newsletter (Flooding Gateway) four	Floodline). This will continue with
				times a year which is distributed to a	many of the actions reported for
				wide audience. SEPA are working with	the interim progress summary.
				Education Scotland and Scottish	Further information is contained
Awareness				Government Resilience team to	within SEPA's Flood Warning
raising				embed flooding awareness within the	Development Framework,

				Curriculum for Excellence, and	published in 2017 and for the
				resilience partners in Safer	period 2017 to 2021.
				Communities programmes. We have	Raising Awareness will form part
				also developed an online tool that	of each of the 3 key themes
				helps everyone share information on	identified:
				current flooding issues (Report-a-	Aim 1: Maintenance of existing
				Flood). We have worked in partnership	and delivery of new flood warning
				with local authorities, emergency	schemes.
				services and community organisations	Aim 2: Development and
				(e.g. Neighbourhood Watch Scotland,	innovation.
				Citizens Advice Scotland and others)	Aim 3: Engagement with
				to share our resources and help to	partners and customers. The
				promote preparedness and	Council will continue to deliver
				understanding of how we manage	awareness raising in the
				flood risk in Scotland. We have	catchment.
				actively supported the Scottish Flood	
				Forum and worked closely with UK	
				agencies to develop joint flooding	
				information.	
		East Ayrshire Council in accordance	01/06/2016-	High risk locations such as those with	The Council will continue to
		with Section 18 of the Flood Risk	22/06/2022	screens and some smaller culverts are	inspect and maintain
		Management (Scotland) Act 2009		inspected on a scheduled basis. The	watercourses, screens and other
		undertake assessment of		majority of inspections tend to be	relevant Council assets.
	G	water bodies to determine whether		undertaken in the winter months when	
		works of clearance and repair would		flows are higher, and leaves and other	
		substantially reduce the risk of		waterborne debris can be an issue.	
Maintenance		flooding. This information is			

		used to produce a schedule of		Works of clearance are carried out	
		works which is available for the		during these inspections which	
		public to inspect.		are not specifically "scheduled". The	
				main water bodies, and other	
				water bodies, within urban areas are	
				subject to an annual visual	
				inspection and any works	
		The Civil Contingencies Team	01/06/2016-	Emergency Response Planning is	Providing an emergency response
		ensures that the Council will be able	22/06/2022	carried out by Ayrshire Civil	to flooding is the responsibility of
		to respond speedily and effectively		Contingencies Team (ACCT) this is an	many organisations, including
		in a major emergency. North,		all Ayrshire shared service.	local authorities, the emergency
		South and East Ayrshire teams are		ACCT update and co-ordinate (all	services and SEPA. Effective
		a shared service team known as the		Emergency Responders) the	management of an emergency
		Ayrshire Civil Contingencies Team.		emergency response plans (ERP) as	response relies on emergency
		If disaster strikes, or if emergencies		required (in direct consultation with	plans that are prepared under the
		develop in Ayrshire, communities		ARA, where appropriate).	Civil Contingencies Act 2004 by
		will look to the Council for support			Category 1 and 2 Responders.
	G	and advice. The Ayrshire Civil		In addition to the ERP EAC has	Scottish Water are a Category 2
		Contingencies Team ensures that		implemented a system of river	responder under the Civil
		the Council will be able to respond		monitors in known areas and a rota of	Contingencies Act 2004 and will
		speedily and		Flood Scouts (FS). Is maintained who	support regional and local
		effectively in a major emergency in		are tasked to monitor and report back	resilience partnerships as
		accordance with the Civil		on status on receipt of any alarm.	required. The emergency
		Contingencies Act 2004			response by these organisations
		(Contingency Planning) (Scotland)			is coordinated through regional
		Regulations 2005. Our			and local resilience partnerships.
Emergency plans/response		responsibilities include preparing			This response may be supported

		comprehensive and robust			by the work of voluntary
		contingency plans and procedures			organisations.
		irrespective of the nature of the			
		emergency. The main aim is to			
		preserve life and property. Every			
		emergency plan also sets out to:			
		Mitigate the harmful effects of the			
		emergency on the environment;			
		bring about a swift return to normal			
		life in the communities and			
		environment affected; and			
		encourage all agencies and			
		organisations to prepare for their			
		role.			
		Scottish Planning Policy and	01/06/2016-	The Local Development Plan (LDP)	The Council's planning policies
		accompanying Planning Advice	22/06/2022	takes cognisance of the Local Flood	will be reviewed periodically to
		Notes set out Scottish Ministers'		Risk Management and Plan (LOCAL	ensure that all current national
		priorities for the operation of the		FRMP) is currently in mid cycle. Work	policies are implemented and that
		planning system and for the		is progressing on the next LPD.	the recommendations of strategic
		development and use of land. In		Throughout the production of the LPD,	studies, such as the Ayrshire
	G	terms of flood risk management, the		close liaison is maintained between	Shoreline Management Plan,
		policy supports a catchment-scale		our Development Planners and the	Surface Water Management
		approach to sustainable flood risk		Flood Risk Management team to	Plans etc., are considered.
		management and aims to build the		ensure the Planners are informed of	
		resilience of our cities and towns,		any factors that would impact on the	
		encourage sustainable land		LPD. Including any new PVA	
Planning policies		management in our rural areas, and		information as received.	

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	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.		

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.

Action	Status	Description	Dates	Progress in Delivery, including key deliverables and dates	Revised dates and planned actions to complete / address delay
		A study needs to be undertaken to further	01/06/2016-	The River Irvine and	If feasible option identified that will
		investigate river flood risk at the Lower Irvine	01/06/2022	Annick Water fluvial	be submitted to the National
		Valley catchment and re-evaluate the fluvial		modelling is completed	Prioritisation process to seek fund
		flood risk. The study should examine the most		including the regional	from Scottish Government for
		sustainable combination of actions to manage		climate change sensitivity	implementation.
		flooding.		assessment and	
	G			approved by SEPA in July	
				2018. The option	
				appraisal is completed	
				according to programme	
Flood protection				and submitted to SEPA	
study				for review.	

Other actions 180

Appendix1: 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. Responsibility for flood risk management planning falls in the main to SEPA, local authorities and Scottish Water. However, individuals have a personal responsibility to protect themselves and their property.

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

Your responsibilities

Organisations and individuals have responsibilities to protect themselves from flooding. Being prepared by knowing what to do and who to contact if flooding happens can help you reduce the damage and disruption flooding can have on your life.

The first step to being prepared is to sign up to Floodline - www.floodlinescotland.org.uk - to receive messages to let you know where and when flooding is likely to happen. Other useful tools and advice on how to be prepared are available on the Floodline website including a quick guide to who to contact in the event of a flood. You can also check how your area could be affected by flooding by looking at SEPA's flood maps - www.sepa.org.uk/environment/water/flooding/flood-maps

SEPA

SEPA is Scotland's national flood forecasting, flood warning and strategic flood risk management authority. SEPA has a statutory duty to produce Scotland's Flood Risk Management Strategies. SEPA works closely with other organisations responsible for managing flood risk through a network of partnerships and stakeholder groups to ensure that a nationally consistent approach to flood risk management is adopted.

SEPA also has a responsibility to identify where in Scotland there is the potential for natural flood management techniques to be introduced. Natural flood management is the use of the natural features of the land to store and slow down the flow of water.

In running Floodline, SEPA provides live flooding information and advice on how to prepare for or cope with the impacts of flooding 24 hours a day, seven days a week. To help forecast for flooding SEPA works closely with the Met Office.

To raise awareness of flooding at a national level, SEPA runs education initiatives, community engagement programmes and an annual campaign to promote the useful advice and information available through Floodline. SEPA works in partnership with local authorities, Neighbourhood Watch Scotland, Ready Scotland and others to share resources and help to promote preparedness and understanding of how flood risk is managed.

SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the FRM Act, 2009. SEPA also has a duty to co-operate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engage in the

planning system, including guidance on flood risk and planning is available on SEPA website www.sepa.org.uk/environment/land/planning

Local authorities

Local authorities work together for flood risk management planning purposes through a single lead authority which has the responsibility to produce a Local Flood Risk Management Plan. Local authorities have been working collaboratively in the manner described above to develop these.

It is the responsibility of your local authority to implement its flood protection actions agreed within the Local Flood Risk Management Plan. You can help your local authority to manage flooding by not dumping material on the banks of a watercourse and by letting them know if flood defences are tampered with.

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

The Lead 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 Council.

Scottish Water

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

Scottish Water has the public drainage duty and is responsible for foul drainage and the drainage of rainwater run-off from roofs and any paved ground surfaces from the boundary of properties. Additionally, Scottish Water helps to protect homes from flooding caused by sewers either overflowing or becoming blocked. Scottish Water is not responsible for private pipework or guttering within the property boundary.

Forestry Commission Scotland

Forestry Commission Scotland was designated in 2013 as a responsible authority for flood risk management planning purposes and has engaged in the development of the Local Flood Risk Management Plan. This reflects the widely held view that forestry can play a significant role in managing flooding.

Other organisations

- The Scottish Government oversees the implementation of the Flood Risk Management (Scotland) Act 2009 which requires the production of Flood Risk Management Strategies and Local Flood Risk Management Plans. Scottish Ministers are responsible for setting the policy framework for how organisations collectively manage flooding in Scotland.
- Scottish Natural Heritage has provided general and local advice in the development of this Flood Risk Management Strategies. Flooding is seen as a natural process that can maintain the features of interest at many designated sites, so Scottish Natural Heritage helps to ensure that any changes to patterns of flooding do not adversely affect the environment. Scottish Natural Heritage also provides advice on the impact of Flood Protection Schemes and other land use development on designated sites and species.

- During the preparation of the first flood risk management plans Network Rail and Transport Scotland
 have identified works to address flooding at a number of frequently flooded sites. Further engagement is
 planned with SEPA and local authorities to identify areas of future work. There is the opportunity for further
 works to be undertaken during the first flood risk management planning cycle although locations for these
 works are yet to be confirmed.
- **Utility companies** have undertaken site specific flood risk studies for their primary assets and have management plans in place to mitigate the effects of flooding to their assets and also minimise the impacts on customers.
- The Met Office provides a wide range of forecasts and weather warnings. SEPA and the Met Office work together through the Scottish Flood Forecasting Service.
- The **emergency services** provide emergency relief when flooding occurs and can coordinate evacuations. You should call the emergency services on 999 if you are concerned about your safety or the safety of others and act immediately on any advice provided.
- The Scottish Flood Forum is a Scottish charitable organisation that provides support for those who are affected by, or are at risk of, flooding. It provides flood advice, information, awareness, education and training to individuals and communities to help reduce the risk of flooding; in partnership with the local authority, provides support during the recovery process following a flood incident and aims to support the development of resilient communities.

Appendix2: Consultation and engagement

From 22 December 2014 a national consultation on the current state of knowledge of flood risk across Scotland and what the potential solutions might be, was undertaken with the public on the work carried out to develop draft Flood Risk Management Strategies and Local Flood Risk Management Plans.

The consultation was run jointly between SEPA and local authorities and involved the publication of draft information that is contained in the strategies and local plans. The consultation was carried out in 2 phases:

- Phase 1 commenced on 22 December 2014 and initially provided a summary of the main sources and impacts of flooding.
- Phase 2 commenced on 2 March 2015 when the proposed initial objectives to manage the identified flood risk were made available alongside a short list of potential measures, as well as information on the draft local flood risk management plans.

There was an opportunity to comment on the all the information provided between 2 March and 2 June 2015. The responses helped to form the final Strategies and Plans.

The final Flood Risk Management Strategies for 14 Local Plan Districts were approved by the Scottish Government and published by SEPA in December 2015. Further information is available on the SEPA website here - http://apps.sepa.org.uk/FRMStrategies/

Following publication of the Flood Risk Management Strategies by SEPA, the Ayrshire local authorities undertook a range of engagement activities through February and early March 2016 to raise awareness of the Ayrshire Flood Risk Management Strategy, flood risk within the local authority area, as identified in the SEPA Flood Maps available here - http://map.sepa.org.uk/floodmap/map.htm - and inform the development of the Ayrshire Local Flood Risk Management Plan. The objective of this activity was to ensure a greater awareness of these key documents, particularly for those communities identified as at risk of flooding. Further details of the activities being undertaken are available from each Ayrshire Local Authority. There will be ongoing engagement both with raising public awareness of the Plan and its approaches to managing or reducing flood risk, and as part of the process of delivering Actions.

Appendix3: Supporting Information

Sources of flooding described in this Plan

The Local Flood Risk Management Plan addresses the risk of flooding from rivers, the coast and surface water. The risk of flooding from rivers is usually due to rainfall causing a river to rise above bank level spreading out and inundating adjacent areas. Coastal flooding is where the risk is from the sea. Sea levels can change in response to tidal cycles or atmospheric conditions. Over the longer term sea levels and coastal flood risk may change due to climate change. Surface water flooding happens when rainwater does not drain away through the normal drainage systems or soak into the ground, but lies on or flows over the ground instead.

There can be interactions between these sources of flooding, and the Actions set out in this Plan take this into account.

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

- Groundwater is generally a contributing factor to flooding rather than the primary source. It is caused by water rising up from underlying rocks or flowing from springs.
- Reservoir breaches have been assessed under separate legislation (Reservoirs (Scotland) Act 2011).
 Further information and maps can be found on SEPA's website.
- The Flood Risk Management Act (Scotland) 2009 does not require SEPA or responsible authorities to assess or manage coastal erosion. However, SEPA has included consideration of erosion in the Flood Risk Management Strategies by identifying areas that are likely to be susceptible to erosion and where erosion can exacerbate flood risk. As part of considering where actions might deliver multiple benefits, SEPA has looked to see where the focus of coastal flood risk management studies coincides with areas of high susceptibility to coastal erosion. Subsequent detailed studies and scheme design will need to consider how coastal erosion in these areas.
- Coastal flood modelling. The information on coastal flooding used to set objectives and identify actionsis based on SEPA modelling using simplified coastal processes and flooding mechanisms at work during a storm. Wave overtopping cannot be accurately modelled at a national scale due to the importance of local factors such as prevailing wind conditions, the depth and profile of the near-shore sea bed or the influence of any existing defences or management structures. As a result, coastal flood risk may be underestimated in some areas. Conversely, in locations with wide and flat floodplains, the modelling may overestimate flood risk. To address this, in a number of locations where more detailed local models were available they have been incorporated into the development of the Flood Risk Management Strategies. Where wave overtopping has been specifically identified as a concern but where no further detailed modelling is available particular compensation has been made in the selection of appropriate actions to address coastal flood risk.

Commonly used terms

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

• Reference to flood risk. During the development of the Strategy and Plan, flood risk has been assessed over a range of likelihoods. For consistency in reporting information, unless otherwise stated, all references to properties or other receptors being 'at risk of flooding' refer to a medium likelihood flood (up to a 1 in 200 chance of flooding in any given year). By exception, references will be made to high or low risk flooding, which should be taken to mean a 1 in 10 chance/likelihood or 1 in 1000 chance/likelihood of flooding in any given year respectively.

Likelihood of Flooding	Return Period	Annual Exceedance Probability (chance of event occurring in any one year)
High	10 year	10%
Medium	200 year	0.5%
Low	1000 year	0.1%

• Annual Average Damages have been used to assess the potential economic impact of flooding within an area. Depending on its size or severity each flood will cause a different amount of damage to a given area. Annual Average Damages are the theoretical average economic damages caused by flooding when considered over a very long period of time. It does not mean that damage will occur every year: in many years there will be no damages, in some years minor damages and in a few years major damages may occur.

High likelihood events, which occur more regularly, contribute proportionally more to Annual Average Damages than rarer events. Annual Average Damages incorporate economic damages to the following receptors: residential properties, non-residential properties, vehicles, emergency services, agriculture and roads. They have been calculated based on the principles set out in the Flood Hazard Research Centre Multi-Coloured Handbook (2010).

Flood risk management planning process

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

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

Identifying priority areas at significant flood risk

The first step to delivering a risk based, sustainable and plan-led approach to flood risk management was SEPA's **National Flood Risk Assessment**, which was published in 2011. The assessment considered the likelihood of flooding from rivers, groundwater and the sea, as well as flooding caused when heavy

rainfall is unable to enter drainage systems or the river network. The likelihood of flooding was examined alongside the estimated impact on people, the economy, cultural heritage and the environment. It significantly improved our understanding of the causes and consequences of flooding and identified areas most vulnerable to floods.

Potentially Vulnerable Areas and Local Plan Districts

Based on the National Flood Risk Assessment, SEPA identified areas where flooding was considered to be nationally significant. These areas are based on catchment units as it is within the context of the wider catchment that flooding can be best understood and managed. These nationally significant catchments are referred to as **Potentially Vulnerable Areas**.

In Scotland, 243 Potentially Vulnerable Areas were identified. They are estimated to contain 92% of the total number of properties at risk.

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

For flood risk management purposes, Scotland was divided into 14 Local Plan Districts. Each Local Plan District will have a Flood Risk Management Strategy and a Local Flood Risk Management Plan.

Improving the understanding of flooding

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

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

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

Identifying objectives and selecting actions

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

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

An assessment of the potential for natural flood management was used to help identify opportunities for using the land and coast to slow down and store water. Natural flood management actions were

recommended in areas where they could contribute to the management of flood risk. In such instances these actions were put forward as part of flood protection or natural flood management studies.

Lead local authority

The FRM Act requires a lead local authority to be identified for each Local Plan District. The lead local authority is crucial to the successful implementation of the FRM Act and, as such, must perform several important functions over and above the general duties and powers given to local authorities elsewhere in the FRM Act.

The lead local authority, having contributed with other local authorities to the production of the Flood Risk Management Strategy, must prepare a Local Flood Risk Management Plan of co-ordinated actions to reduce flood risk within the Local Plan District. Although the lead local authority is responsible for the production of the plan, its content will be drawn from and agreed by all local authorities, other responsible authorities and SEPA within the Local Plan District.

Surface Water Management Plans

A Surface Water Management Plan (SWMP) is a best practice plan which outlines the preferred surface water management strategy in a given location. In this context surface water flooding describes flooding from sewers, drains, groundwater, and runoff from land, small water courses and ditches that occurs as a result of heavy rainfall.

A SWMP study is undertaken in consultation with key local partners who are responsible for surface water management and drainage in their area. Partners work together to understand the causes and effects of surface water flooding and agree the most cost effective way of managing surface water flood risk for the long term. The process of working together as a partnership is designed to encourage the development of innovative solutions and practices.

A SWMP should establish a long-term action plan to manage surface water in an area and should influence future capital investment, drainage maintenance, public engagement and understanding, land-use planning, emergency planning and future developments.

The UK Government SWMP guidance seeks to provide a simplified overarching framework, which allows different organisations to work together and develop a shared understanding of the most suitable solutions to surface water flooding problems. The SWMP guidance has been written for local authorities to assist them as they co-ordinate and lead local flood risk management activities.

Integrated Catchment Studies

Integrated Catchment Studies (ICS) are led by Scottish Water in partnership with local authorities and SEPA. These studies 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 (where appropriate) the sea. This will improve the understanding of contributions these drainage networks play in local surface water flood risk.

Five ICS's were undertaken in Scotland during SR10 (2010-2015), to Modelling and Flood Risk Assessment stage, which have provided a fuller understanding of the sources and mechanisms of flooding across these catchments. These studies are expected to undertake an Optioneering phase between 2015-2021. This will identify the actions to reduce flood risk across the catchments, with the outputs feeding into the Local Authority led Surface Water Management Planning process.

Fifteen ICS's will begin in Scotland during SR15 (2015-2021). These studies will go through the Scoping and Modelling phases, which culminates in defining the sources and mechanisms of flooding in the catchment, and an understanding of the impacts of that flooding. It is expected that the ICS partnerships will remain and it is anticipated that the Optioneering phase for these studies will be initiated directly after the preceding phases.

Within this Local Plan District, ICS's are being carried out in the following areas; Meadowhead (including Irvine, Kilmarnock, Prestwick and Ayr), Stevenston Point (including Ardrossan, Stevenston, Saltcoats and Kilwinning).

Natural flood management assessment and mapping of artificial and natural features

The new approach to Flood Risk Management requires SEPA to consider whether techniques that restore, enhance or alter natural features and characteristics can contribute to managing flood risk. This means looking at the potential to work with natural hydrological and morphological processes.

Because the National Flood Risk Assessment provides only a strategic assessment of flood risk, further refined assessments may be required in Potentially Vulnerable Areas, including the mapping of artificial and natural features whose removal could increase flood risk.

The development of catchment characteristics and methodologies, to assess the potential for natural flood management, commenced in 2012 alongside work to identify natural flood management actions, that could contribute to the management of flood risk. The information was published in 2013. The assessment of natural flood management was a consideration in the setting of objectives and actions in the Flood Risk Management Strategies. In January 2016 SEPA published the Natural Flood Management Handbook to provide practitioners with information on how best to implement natural flood management measures.

Flood hazard and flood risk maps

The production of flood hazard and flood risk maps has improved our understanding of flooding and helped inform the selection of actions required to manage flood risk in Potentially Vulnerable Areas. Work on production of these maps began in January 2012. These maps show details of flood events for a range of probabilities and cover flooding from rivers, the sea, sewers, surface water run-off and groundwater.

A flood hazard map shows information that describes the nature of a flood, such as the extent of flooding, water level, depth and velocity where appropriate.

A flood risk map provides detail on the impacts on people, the economy, cultural heritage and the environment.

Further information regarding the development of the flood maps and providing a link to the maps, is available online on the SEPA website here – http://www.sepa.org.uk/environment/water/flooding/flood-maps/

Appendix4: 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

Data provided by The Met Office has been used under licence in some areas of flood risk information production. ©Crown Copyright (2015), the Met Office

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.

Appendix5: Glossary

Actions - Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation. Selection of actions to deliver the agreed objectives has been based on a detailed assessment and comparison of economic, social and environmental criteria. The FRM Act uses the term 'measures' rather than 'actions'.

Annual Average Damages (AAD) - Depending on its size or severity, each flood will cause a different amount of damage to a flood prone area and we can calculate the cost of this damage. Annual Average Damages for an area are the average costs per year that would occur from flooding over a very long period of time. Scottish figures have been calculated based on the method set out in the Flood Hazard Research Centre's Multi-Coloured Handbook (2010).

Appraisal - Appraisal is the process of defining objectives, examining options and weighing up the costs, benefits, risks and uncertainties before a decision is made. The FRM Strategy appraisal method is designed to set objectives and identify the most sustainable combination of actions to tackle flooding from rivers, sea and surface water.

Awareness Raising - Public awareness, participation and community support are essential components of sustainable flood risk management. SEPA and the responsible authorities have a duty to raise public awareness of flood risk. This is undertaken both individually and collaboratively by a range of organisations. Improved awareness of flood risk and actions that prepare individuals, homes and businesses for flooding can reduce the overall impact.

Benefit Cost Ratio (BCR) - A benefit cost ratio summarises the overall value for money of an action or project. It is expressed as the ratio of benefits to costs (both expressed as present value monetary values). A ratio of greater than 1:1 indicates that the economic benefits associated with an action are greater than the economic costs of implementation; therefore this is taken as the threshold of economic viability. It should be acknowledged that it is not always possible to accurately estimate economic values for all elements of benefit, and BCR is just one of a number of techniques used in appraisal.

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

Catchment – The area of land drained by a drainage system – either natural or piped.

Category (CAT) 1 and 2 Responders – As defined by the Civil Contingencies Act 2004. Category 1 responders are 'core' responders: local authorities, police, fire and rescue services, ambulance service, NHS health boards, SEPA and the Maritime and Coastguard Agency. Category 2 responders are key co-operating responders in support of Category 1 responders. These include gas and electricity companies, rail and air transport operators, harbour authorities, telecommunications providers, Scottish Water, the Health and Safety Executive and NHS National Services Scotland.

Coastal Flooding – Flooding that results from sea level rise from a combination of high tides and stormy conditions. The term coastal flooding is used under the Flood Risk Management (Scotland) Act 2009, but in some areas it is also referred to as tidal flooding and covers areas such as estuaries and river channels that are influenced by tidal flows.

Combined Sewer - Combined sewers transport foul sewage from homes and industry as well as carrying surface water runoff from gutters, drains and some highways. Heavy or prolonged rainfall can rapidly increase the flow in a combined sewer until the amount of water exceeds sewer capacity.

Combined Sewer Overflow - Combined sewer overflows are purposely designed structures to ensure any excess water from sewerage systems is discharged in a controlled way and at a specific managed location.

Confluence - Where two or more rivers meet.

Conveyance - Conveyance is a measure of the carrying capacity of a watercourse. Increasing conveyance enables flow to pass more rapidly and reducing conveyance slows flow down. Both actions can be effective in managing flood risk depending on local conditions.

Culvert - A pipe, channel or tunnel used for the conveyance of a watercourse or surface drainage water under a road, railway, canal or other obstacle.

Damages - Flood damages are categorised as direct or indirect i.e. as a result of the flood water itself, or subsequent knock on effects. Damage to buildings and contents caused by flood water are an example of direct damages, whilst loss of industrial production, travel disruption or stress and anxiety are indirect. Some damages can be quantified in monetary terms, and others can only be described. The potential damages avoided by implementation of a flood risk management action are commonly referred to as the benefits of that action. When comparing the effectiveness of different actions, it is useful to consider estimated damages and damages avoided across the lifespan of the action. Within the FRM Strategies, a 100 year appraisal period has been used as standard. This allows costs, damages and benefits across this time frame to be compared in present value terms. See also 'Annual Average Damages'.

Economic Impact - An assessment of the economic value of the positive and negative effects of flooding and / or the actions taken to manage floods.

Embankment – A flood embankment is an engineered earthfill structure designed to contain high river levels or protect against coastal flooding. They are commonly grass-covered, but may need additional protection against erosion by swiftly flowing water, waves or overtopping.

Emergency Plans / Response - Emergency response plans are applicable for all types of flooding. They set out the steps to be taken during flooding in order to maximise safety and minimise impacts where possible. Under the Civil Contingencies Act, Category 1 Responders have a duty to maintain emergency plans. Emergency plans may also be prepared by individuals, businesses, organisations or communities.

Environmental Impact - A change in the environment as a result of an action or activity. Impacts can be positive or negative and may vary in significance, scale and duration.

Environmental Impact Assessment (EIA) - A process which identifies the potential environmental impacts, both negative and positive, of a proposal.

Estuary - A coastal body of water usually found where a river meets the sea; the part of the river that is affected by tides.

FEH99/13 The Flood Estimation Handbook (FEH) provides industry-standard methods for assessing flood risk in the UK as well as guidance on rainfall and river flood frequency estimation. The latest update launched in 2013 has incorporated a larger dataset with an increased number of Scottish catchments included. This has improved the confidence in the usage of this methodology across Scotland.

Flood - In the terms of the FRM Act, 'flood' means a temporary covering by water, from any source, of land not normally covered by water. This does not include a flood solely from a sewerage system, as a result of

normal weather or infrastructure drainage. A flood can cause significant adverse impacts on people, property and the environment.

Flood Bund - A constructed retaining wall, embankment or dyke designed to protect against flooding to a specified standard of protection.

Flood defence - Infrastructure, such as flood walls, embankments or flood storage intended to protect an area against flooding to a specified standard of protection.

Flood Extent - The area that has been affected by flooding, or is at risk of flooding from one or more sources for a particular likelihood.

Flood Frequency - The probability that a particular size/severity of flood will occur in a given year (see likelihood).

Flood Hazard - In terms of the FRM Act, hazard refers to the characteristics (extent, depth, velocity) of a flood.

Flood Hazard Map - Flood hazard maps are required by the FRM Act to show information that describes the nature of a flood in terms of the source, extent, water level or depth and, where appropriate, velocity of water.

Flood hazard and risk maps are referred to collectively as flood maps and are available on the SEPA website.

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

Flood Protection Study - Flood protection studies aim to refine understanding of the hazard and risk associated with flooding in a particular area, catchment or coastline. They will involve detailed assessment of flood hazard and / or risk and may develop options for managing flood risk.

Flood Protection Works - Flood protection works can include the same flood defence measures that would make up a formal Flood Protection Scheme but without the legal process, protections and requirements that would come by delivering the works as a scheme.

Flood Risk - A measure of the combination of the likelihood of flooding occurring and the associated impacts on people, the economy and the environment.

Flood Risk Assessment - Flood Risk Assessments are detailed studies of an area where flood risk may be present. These are often used to inform planning decisions, may help to develop flood schemes and have also contributed to the National Flood Risk Assessment.

Flood Risk Management Strategy - Sets out a long-term vision for the overall reduction of flood risk. Contains a summary of flood risk in each Local Plan District, together with information on catchment characteristics and a summary of objectives and actions for Potentially Vulnerable Areas.

Flood Risk Management (Scotland) Act 2009 (FRM Act) - The flood risk management legislation for Scotland. It transposes the EC Floods Directive into Scots Law and aims to reduce the adverse consequences of flooding on communities, the environment, cultural heritage and economic activity.

Flood Risk Management Cycle - Under the FRM Act flood risk management planning is undertaken in six year cycles. The first planning cycle is 2015 – 2021. The first delivery cycle is lagged by approximately 6 months and is from 2016 - 2022.

Flood Warning Scheme - A flood warning scheme is the network of monitoring on a coastal stretch or river, which provides SEPA with the ability to issue Flood Warnings.

Floodplain - Area of land that borders a watercourse, an estuary or the sea, over which water flows in time of flood, or would naturally flow but for the presence of flood defences and other structures where they exist.

Floodplain Storage - Floodplains naturally store water during high flows. Storage can be increased through natural or man-made features to increase flood depth or slow flows in order to reduce flooding elsewhere.

Green (Blue-Green) Infrastructure - The European Commission defines green infrastructure as "the use of ecosystems, green spaces and water in strategic land use planning to deliver environmental and quality of life benefits. It includes parks, open spaces, playing fields, woodlands, wetlands, road verges, allotments and private gardens. Green infrastructure can contribute to climate change mitigation and adaptation, natural disaster risk mitigation, protection against flooding and erosion as well as biodiversity conservation."

Historic Environment Scotland - The new lead public body for the country's historic environment. It brings together Historic Scotland and the Royal Commission on the Ancient and Historic Monuments of Scotland.

Habitats Regulations Appraisal - The Habitats Regulations require competent authorities to assess certain plans or projects which affect Natura sites. Any development proposal, which requires planning permission or other consent, is a 'project' which may require consideration under the Habitats Regulations.

Land Use Planning – The process undertaken by public authorities to identify, evaluate and decide on different options for the use of land, including consideration of long term economic, social and environmental objectives and the implications for different communities and interest groups.

Lead Local Authority - A local authority responsible for leading the production, consultation, publication and review of a Local Flood Risk Management Plan.

Local Development Plan – A Local Development Plan (LDP) provides the vision for how communities will grow and develop in the future. The intention is that they provide certainty for communities and investors alike about where development should take place and where it should not and the supporting infrastructure required for growth. A LDP is required for each council area across Scotland.

Local Flood Risk Management Plan - Produced by lead local authorities, these will take forward the objectives and actions set out in Flood Risk Management Strategies. They will provide detail on the funding, timeline of delivery, arrangements and co-ordination of actions at the local level during each six year FRM planning cycle.

Local Plan District - Geographical areas for the purposes of flood risk management planning. There are 14 Local Plan Districts in Scotland.

Local Plan District Partnerships - Each Local Plan District has established a local partnership comprised of local authorities, SEPA, Scottish Water and others as appropriate. These partnerships are distinct from the FRM Local Advisory Groups and they retain clear responsibility for delivery of the FRM actions set out in the Local Flood Risk Management Plans. It is the local partnership that makes decisions and supports the delivery of these plans.

Maintenance - Sections 18 and 59 of the Flood Risk Management (Scotland) Act 2009 put duties of watercourse inspection, clearance and repair on local authorities. In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or defences.

National Flood Risk Assessment (NFRA) - A national analysis of flood risk from all sources of flooding which also considers climate change impacts. Completed in December 2011 this provides the information required to undertake a strategic approach to flood management that identifies areas at flood risk that require further appraisal. The NFRA will be reviewed and updated for the second cycle of FRM Planning by December 2018.

Natural Flood Management - A set of flood management techniques that aim to work with natural processes (or nature) to manage flood risk.

Non-Residential Properties - Properties that are not used for people to live in, such as shops or other public, commercial or industrial buildings.

Potentially Vulnerable Area - Catchments identified as being at risk of flooding and where the impact of flooding is sufficient to justify further assessment and appraisal. There were 243 Potentially Vulnerable Areas identified by SEPA in the National Flood Risk Assessment and these will be the focus of the first FRM planning cycle.

Property Level Protection - Property level protection includes flood gates, sandbags and other temporary barriers that can be used to prevent water from entering individual properties during a flood.

Q&S - Quality and Standards (Q&S) is the process, governing costs and outputs, through which the planning and delivery of improvements by Scottish Water to the public drinking water and sewerage services in Scotland is carried out.

Receptor - Refers to the entity that may be impacted by flooding (a person, property, infrastructure or habitat). The vulnerability of a receptor can be reduced by increasing its resilience to flooding.

Residual Risk - The risk that remains after risk management and mitigation. This may include risk due to very severe (above design standard) storms or risks from unforeseen hazards.

Resilience - The ability of an individual, community or system to recover from flooding.

Responsible Authority - Designated under the FRM (Scotland) Act 2009 and associated legislation as local authorities, Scottish Water and, from 21 December 2013, the National Park Authorities and Forestry Commission Scotland. Responsible authorities, along with SEPA and Scottish Ministers, have specific duties in relation to their flood risk related functions.

Return Period - A measure of the rarity of a flood event. It is the statistical average length of time separating flood events of a similar size.

River Basin Management Planning (RBMP) - The Water Environment and Water Services (Scotland) Act 2003 transposed the European Water Framework Directive into Scots law. The Act created the River Basin Management Planning process to achieve environmental improvements to protect and improve our water environment. It also provided the framework for regulations to control the negative impacts of all activities likely to have an impact on the water environment.

Runoff Reduction - Actions within a catchment or sub-catchment to reduce the amount of runoff during rainfall events. This can include intercepting rainfall, storing water, diverting flows or encouraging infiltration.

Scottish Advisory and Implementation Forum for Flooding (SAIFF) - The stakeholder forum on flooding set up by the Scottish Government to ensure legislative and policy aims are met and to provide a platform for sharing expertise and developing common aspirations and approaches to reducing the impact of flooding on Scotland's communities, environment, cultural heritage and economy.

Scottish Flood Forecasting Service - SEPA operates a network of over 250 rainfall, river and coastal monitoring stations throughout Scotland that generate data 24 hours a day. 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 flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. 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.

Self Help - Self help actions can be undertaken by any individuals, businesses, organisations or communities at risk of flooding. They are applicable to all sources, frequency and scales of flooding. They focus on awareness raising and understanding of flood risk.

Site Protection Plans - Site protection plans are developed to identify whether normal operation of a facility can be maintained during a flood. This may be due to existing protection or resilience of the facility or the network.

Site of Special Scientific Interest - Sites protected by law under the Nature Conservation (Scotland) Act 2004 to conserve their plants, animals and habitats, rocks and landforms.

Special Area of Conservation (SAC) - Strictly protected site designated under the European Habitats Directive. The Directive requires the establishment of a European network of protected areas which are internationally important for threatened habitats and species.

Strategic Environmental Assessment - A process for the early identification and assessment of the likely significant environmental effects, positive and negative, of activities. Often considered before actions are approved or adopted.

Strategic Flood Risk Assessment (SFRA) - A Strategic Flood Risk Assessment is designed for the purposes of specifically informing the Development Plan Process. A SFRA involves the collection, analysis and presentation of all existing and readily available flood risk information (from any source) for the area of interest. It constitutes a strategic overview of flood risk.

Standard of protection (SoP) - All flood protection structures are designed to be effective up to a specified flood likelihood (Standard of Protection). For events beyond this standard, flooding will occur. The chosen Standard of Protection will determine the required defence height and / or capacity.

Surface Water Management Plan (SWMP) - A plan that takes an integrated approach to drainage accounting for all aspects of urban drainage systems and produces long term and sustainable actions. The aim is to ensure that during a flood the flows created can be managed in a way that will cause minimum harm to people, buildings, the environment and business.

Surface Water Plan / Study - The management of flooding from surface water sewers, drains, small watercourses and ditches that occurs, primarily in urban areas, during heavy rainfall. FRM Strategy actions in this category include: Surface Water Management Plans, Integrated Catchment Studies and assessment of flood risk from sewerage systems (FRM Act Section 16) by Scottish Water. These have been selected as appropriate for each Potentially Vulnerable Area.

Sustainable Drainage Systems (SuDS) - A set of techniques designed to slow the flow of water. They can contribute to reducing flood risk by absorbing some of the initial rainfall and then releasing it gradually, thereby reducing the flood peak and helping to mitigate downstream problems. SuDS encourage us to take account of quality, quantity and amenity / biodiversity.

Sustainable Flood Risk Management - The sustainable flood risk management approach aims to meet human needs, whilst preserving the environment so that these needs can be met not only in the present, but also for future generations. The delivery of sustainable development is generally recognised to reconcile three pillars of sustainability – environmental, social and economic.

Surface Water Flooding - Flooding that occurs when rainwater does not drain away through the normal drainage systems or soak into the ground, but lies on or flows over the ground instead.

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Vulnerability - A measure of how likely someone or something is to suffer long-term damage as a result of flooding. It is a combination of the likelihood of suffering harm or damage during a flood and the ability to recover following a flood (resilience).