Topic Paper 13: Coastal Development, Flood Risk and Water Management

Information required by the Act regarding the issue addressed in this section:

Town and Country Planning (Scotland) Act 1997 (as amended):

Section 15(5):

- The principal physical and environmental characteristics of the district
- Regulation 9 having regard to any river basin management plan, flood risk management plan and any local flood risk management plan
- The infrastructure of the district (including communications, transport and drainage systems, systems for the supply of water and energy, and health care and education facilities)

Town and Country Planning (Development Planning) (Scotland) Regulations 2023:
Regulation 9 requires the LDP to have regard to:

- any river basin management plan;
- any flood risk management plan; and
- any local flood risk management plan

NPF4 requirements for LDP:

NPF4 Policy 10:

LDP spatial strategies should consider how to adapt coastlines to the impacts of climate change. This should recognise that rising sea levels and more extreme weather events resulting from climate change will potentially have a significant impact on

coastal and islands areas and take a precautionary approach to flood risk including by inundation. Spatial strategies should reflect the diversity of coastal areas and opportunities to use nature-based solutions to improve the resilience of coastal communities and assets. LDP spatial strategies should identify areas of developed and undeveloped coast and should align with national, sectoral and regional marine plans

NPF4 Policy 22:

LDPs should strengthen community resilience to the current and future impacts of climate change, by avoiding development in areas at flood risk as a first principle. Resilience should also be supported by managing the need to bring previously used sites in built up areas into positive use; planning for adaptation measures; and identifying opportunities to implement improvements to the water environment through natural flood risk management and blue green infrastructure.

Plans should take into account the probability of flooding from all sources and make use of relevant flood risk and river basin management plans for the area. A precautionary approach should be taken, regarding the calculated probability of flooding as a best estimate, not a precise forecast. For areas where climate change is likely to result in increased flood exposure that becomes unmanageable, consideration should be given to alternative sustainable land use.

Links to Evidence:

National

- The Flood Risk Management (Scotland) Act 2009
- National Planning Framework 4 (2023)
- Scotland's National Marine Plan (2015)
- Scotland's National Marine Plan 2 - Stakeholder Engagement Strategy and Statement of Public Participation (2022)

- Flood Risk Management (Scotland) Act (2009)
- SEPA National Flood Risk Assessment
- National Flood Resilience Strategy for Scotland (2024)
- National Flood Resilience Strategy: implementation plan (2026)
- SEPA Natural Flood Management Handbook
- The River Basin Management Plan for Scotland 2021 – 2027 (2021)
- Water-Resilient Places – A Policy Framework for Surface Water Management and Blue-Green Infrastructure (2021)

Local

- Argyll and Bute draft Strategic Flood Risk Assessment
- Argyll and Bute Council Local Development Plan 2 (2024)
- LDP2's Draft Technical Note (TN) LDP2 TN20 Marine and Freshwater Aquaculture
- Argyll and Bute Council Strategic Flood Risk Assessment (2026)

Datasets

- Dynamic Coast
- Dynamic Coast Report Card – Built Environment
- SEPA Flood Maps (including Natural Flood Maps)
- SEPA Geomorphic Risk Buffer
- SEPA Water Classification Hub
- SEPA Water Environment Hub

Summary of Evidence

Introduction

This topic paper contains evidence on coastal development, flood risk, and water management in Argyll and Bute. The summary of evidence section is structured as follows:

- Coastal Development
- Flood Risk in Argyll and Bute
- Water Management including water conservation

The Coastal Development, Flood Risk and Water Management paper is a cross-cutting topic within the Argyll and Bute planning authority area. Topic Papers which have a particular level of interlinkage with this paper are:

- 01: Climate Change
- 11: Green and Blue Infrastructure
- 16 Aquaculture

Argyll and Bute Characteristics

Argyll and Bute has the second most extensive coastline of all the local authorities across Scotland. Its location on the west coast of Scotland makes it one of the most unique coastlines in the country, with jagged shorelines and 28 inhabited islands – the most of any local authority in the country. Beyond the coast, Argyll and Bute is home to freshwater lochs, rivers and canals, with water playing a vital role in the economy, transportation and energy sector. With this comes implications in terms of flood risk and maintaining an adequate level of water resource. 80% of the population live within 1 kilometre of the coast, and this figure rises to 97% of the population when the offset is increased to within 10 kilometres of the coast. Of these figures 17.5% of the total population live on our island communities, which puts much of the population and homes at risk of immediate flooding, and an increased level of flooding with the ever-

developing effects of climate change. In addition, many of Argyll and Bute's main roads are at risk of flooding, with around 215km of roads within 25m of the coastline.

Coastal Development

Argyll and Bute has the second longest coastline of any local authority in Scotland, with figures ranging from 3723km, to approximately 4200km at Mean Water High Spring, which plays a role in the region's strong blue economy, including the marine and aquaculture sectors. Effects from climate change means that communities and infrastructure in proximity to our coastline is susceptible to flooding and adverse weather events. As such, it is important to safeguard our coastlines, make them adaptable and resilient to climate change, and maintain and enhance their ecology and biodiversity.

Scotland's National Marine Plan

Scotland's National Marine Plan was adopted in 2015 and is a statutory, overarching framework that sets out how all activities in Scotland's seas, both inshore (12 nautical miles) and offshore (up to 200 nautical miles) should be managed. The plan brings together policies for marine planning under the Marine (Scotland) Act 2010 and Marine and Coastal Access Act 2009, providing a single, integrated system for decision making. The plan's vision is for Scotland to have clean, healthy, safe, productive and diverse seas, and requires public authorities to make decisions in accordance with the policies set out in the plan.
Overall, it provides a long-term framework to ensure that the nation's marine resources are used responsibly, protecting the marine environment for Scotland's future while enabling sustainable economic development.

Scotland's National Marine Plan 2 has undergone an engagement strategy to support the preparation and implementation of Scotland's next national marine plan (NMP2). Argyll and Bute Council engaged in the process and will consider NMP2 and its implications if published prior to the adoption of LDP3.

National Planning Framework 4

NPF4 Policy 10 seeks to protect coastal communities and assets and support resilience to the impacts of climate change, seeking to develop coastal areas sustainably and to adapt to climate change. It states that LDP spatial strategies should consider how to adapt coastlines to the impact of climate change, from rising sea levels to extreme weather events. LDP's should also consider opportunities for nature-based solutions to improve the resilience of coastal communities and assets.

Local Context

Developed and undeveloped coast

Argyll and Bute's LDP2 recognises the area's coastline as an exceptional asset, which is of both national and, in some parts, international significance, containing areas of special landscape and ecological importance. Therefore, it is imperative that the character and environmental qualities of the coast are protected from inappropriate development and that any coastal development be directed to the least environmentally sensitive areas.

LDP2's Draft Technical Note (TN) LDP2 TN20 Marine and Freshwater Aquaculture states that for all coastal development proposals, the preferred location for developments is the Developed Coast, which consists of coastal areas within the Settlement Development Management Zone. This technical note is still in draft form, and has yet to be published externally, though it is not anticipated that the content above will change before publication.

Any development requiring a coastal location will be directed to areas with existing development. New coastal development should not have direct or significant adverse impacts on existing development or coastal development.

The technical note sets out that there is a presumption against development in the undeveloped coast and natural foreshore, though there are limited exceptions which are detailed below:

- There is a specific operational purpose for the proposals Natural Foreshore location.
- There is no effective alternative location for the development landward of the natural foreshore.
- The development does not damage or undermine the key features of the natural foreshore area including;

a) The dynamics and balance of the ecology of the foreshore.

b) The sustainable productive capacity of the foreshore for shell-fish farming.

c) The effective functioning of the foreshore in providing access between land and water activity.

All development proposals need to consider the effects on landscape, seascape, defined as; the coastal landscape and adjoining areas of open water, including views from land to sea, from sea to land and along the coastline.

It is important that the character of the Argyll and Bute coastline is protected from inappropriate development and that development which requires a coastal location is directed in the first instance to areas where development has taken place. Through engagement with Highlands and Islands Enterprise and the Council's Economic Development team, initially through the Economy, Culture, Creativity and Community Wealth Building topic paper, the evidence suggests that there has been increased demand for business and industry land on the coast, particularly with direct access to the water. Argyll and Bute planning authority will look to support economic development along the coast; however, this should not undermine areas of high landscape or ecological importance. Argyll and Bute planning authority consider the current definitions relating to developed and undeveloped coast as satisfactory, and they are unlikely to change in the preparation of LDP3.

Dynamic Coast

The Dynamic Coast project aims to provide the strategic evidence base on the extent of coastal erosion in Scotland. The mapping supports the Scottish Government and Scottish Public Sector decision-making and indicates areas of highest coastal erosion risk, where a more detailed evidence base may be required.

Initial research was published in 2017, providing communities and businesses with readily interpretable evidence and modelling, based on historic erosion, of anticipated erosion extents and rates. Further work was completed and published in 2021, superseding the 2017 work, by including increased extents of eroding shorelines and latest climate change projections on sea level rise. The 2021 research states that coastal erosion affects 46% of soft shorelines in Scotland. Under current modelling of a High Emissions Scenario, this percentage of soft coasts that are expected to be eroding is at 75%. Furthermore, research undertaken shows that Argyll and Bute Council has the second highest number of buildings at risk from coastal erosion by 2050, with 100 buildings identified. Highland Council is the only local authority with a higher figure at 109.

Areas within Argyll and Bute that are of the highest risk of costal erosion include the southern coast of the Rosneath peninsula in Helensburgh and Lomond, southern coastal areas of the Cowal peninsula, the eastern coast of the Kintyre peninsula and coastlines around North Connel and Dunbeg in Oban, Lorn and the Isles. In terms of islands at risk, Islay and Jura are showing as the islands most at risk from coastal erosion within Argyll and Bute.

Dynamic Coast also publish the Erosion Reporter map. This identifies areas of recent or new impacts of coastal erosion which help inform the Scottish Government and local authorities work on climate adaptation. Eight reports relate to Argyll and Bute, with the majority (five) located on the east coast of Jura. Other areas affected include two separate incidents on the Isle of Tiree, and a single report on the mainland of Argyll and Bute at Tayinloan on the Kintyre peninsula.

The Dynamic Coast mapping identifies areas where artificial coastal protection exists. Artificial defence schemes that are most prominent on the mapping include those situated along the coast of each of Argyll and Bute's main towns. Other areas with a high level of artificial defences include the southernmost points of the Cowal peninsula, in areas near Toward and Colintraive. Full mapping of artificial defence works can be found on the Dynamic Coast website here.

Coastal Change Adaptation Plans

Coastal Change Adaptation Plans (CCAP) allow for targeting areas identified in addressing the challenges posed by coastal erosion and flooding due to climate change. CCAPs identify areas at the greatest risk of erosion, sea level rise and coastal flooding, and identifying opportunities for adaptation. The Local Flood Risk Management Plans 2022-2028 place a responsibility on the Council to develop a Coastal Change Adaptation Plan, by 2028, for certain at-risk locations. A steering group comprising the Scottish Government, SEPA, local authorities, Dynamic Coast Project Team, NatureScot and Venture have created CCAP guidance to assist local authorities in taking long-term adaptation planning that can be embedded in the preparation of LDP3, for example, through the identification and adoption of Coastal Change Management Areas.

The guidance emphases the need for a proactive approach and collaboration between various stakeholders, including communities, public sector officials and environmental organisations. Argyll and Bute Council have commissioned JBA Consulting to support them through the process to enable CCAPs across the local authority area. Work is beginning on Coastal Change Adaptation Plans, with an anticipated completion date of 2028 for six key areas. Identified areas are highlighted in the Strategic Flood Risk Assessment and are listed below:

- Campbeltown
- Cardross
- Garelochhead
- Helensburgh

- Kilchattan Bay
- Rothesay

Campbeltown was identified as the first location for a CCAP and work is currently underway to develop this. Each CCAP will feed into LDP3, steering future development away from identified areas of risk and potentially safeguard locations that can provide opportunities for coastal adaptation.

Coastal Flood Risk

Coastal flooding is a prominent factor in flooding across Argyll and Bute and poses the greatest risk to life and property. With 80% of the population living within 1km of the coast, and over 96% living within 10km of the coast, flooding can have a significant impact on buildings, infrastructure and entire communities. Argyll and Bute's Strategic Flood Risk Assessment provides information on communities that are at a greater risk, with further information on key target areas provided through the Local Flood Risk Management Plans relevant to Argyll and Bute.

LDP3 will take the above reports into account in the preparation of the LDP3 spatial strategy.

Ports and Harbours

Argyll and Bute's ports and harbours play a pivotal role in supporting key economic industries across the area, including marine and aquaculture sectors, tourism, recreation and public transport, through connecting the mainland to our island communities. Their coastal position also supports economic growth through onshore storage, working areas, berthing, maintenance and staff operations. They are also an important marine asset to the transportation sector, supporting the bulk movement of goods for industries such as forestry or construction.

There are around 154 identified ports and harbours in Argyll and Bute, with 32 identified as under management or ownership of Argyll and Bute Council. These range from

commercial and industrial ports, providing ferry services to, and from, island communities, to piers and slipways that primarily function for leisure, tourism and recreation purposes. A large percentage of the identified marine infrastructure relate to natural harbours and marinas, principally supporting recreational use of Argyll and Bute's waters. The busiest port in Argyll and Bute is located within one of the area's main town Oban. This facilitates a number of commercial and private vessels, acting as the gateway to the isles and supporting the local marine economy.

Policy 42 of the current adopted LDP2 recognises piers, ports and harbours as key economic generators, and seeks to safeguard these facilities from development and uses that may compromise their operational and commercial viability, whilst supporting development proposals that enhance, upgrade or support existing facilities. The plan also sets that a sequential approach should be taken on new infrastructure where existing infrastructure does not exist, to ascertain if the development requires a coastal location.
LDP3 will continue to safeguard piers, ports and harbours as they play an important role across a number of key economic sectors.

Flood Risk in Argyll and Bute

National Context

SEPA National Flood Risk Assessment (NFRA)

SEPA published the NFRA in 2025 which provides a strategic, national overview of flood risk in Scotland. The NFRA works alongside Local Flood Risk Management Plans to identify vulnerable areas, evaluate flood hazards, and to assist with informing policy decisions that reduce the impact of flooding to communities, the economy and environment. The NFRA acts as a high-level approach combining historical flood data, climate projections and property and infrastructure information to determine areas of vulnerability. In the report, Argyll and Bute is considered to have 12,200 properties at risk, with approximately two thirds of this figure accounting for residential properties.

18% of the total number of properties in the region are considered at risk to flooding. In SEPA's 2100 medium projections, this figure rises to 17,700 properties that are at risk of flooding.

National Flood Resilience Strategy for Scotland (2024)

The National Flood Resilience Strategy sets out a vision for a flood resilient Scotland through to 2045 and beyond. It feeds into the wider Scottish National Adaptation Plan 2024-2029, supporting the changes that are required over the long term to make our communities more flood resilient.

The strategy is structured around the themes of People, Places and Processes, setting out the guiding principles to work to and the priority actions. The outcomes of each theme are detailed below:

- People – Creating flood resilient places involves our people and communities
- Places – Land management and placemaking decisions follow good practice for flood resilience
- Processes – Flood resilience is blended into our places at all scales; a broader range of actions are being delivered by a broader range of delivery partners.

Six priority areas for action are identified in the strategy that will be taken forward by the Scottish Government and associated partners. These are:

- Establish a flood advisory service – to support and provide advice on building flood resilience to delivery partners and communities. Provide the governance framework and gateway process for progressing high value flood actions, for example, flood protection schemes.

- Involve and support communities – creating a framework for supporting communities in their flood resilience journey and encouraging and supporting actions to improve their own, and communities, flood resilience

- Improve land-use for flood mitigation – develop understanding of how urban and rural landscapes can be adapted to increase flood resilience, such as seeking urban and rural land-use opportunities to improve our flood resilience.

- Support a broader range of flood actions – National flooding budgets to be reviewed to assess if funding can be directed to support a broader range of flood actions, including smaller scale protection schemes.

- Improve flood resilience through data – work with partners to review how presentation and use of data can be improved to drive flood resilient activity, including the development of new datasets to improve decision making.

- Support long-term transition planning for our most exposed communities – support communities where it may not be possible to maintain a level of flood resilience indefinitely with long-term transition planning. Explore how coastal storm damage could be better forecast and determine the most efficient way to establish a national coastal monitoring programme.

The National Flood Resilience Strategy implementation plan sets out practical actions to be taken by the national government, local authorities, SEPA and other key stakeholders to deliver the strategy for long-term flood resilience. The plan covers a four year period between 2026-2030. Actions within the plan that may relate to Argyll and Bute include national government support for island communities, funding through the Community Food Resilience Fund to support local community groups and councils working with locals to reduce flood risk, and funding for innovative coastal resilience projects.

Natural Flood Management

Natural Flood Management looks to use natural processes to reduce flood risk by storing and slowing down floodwaters through catchments, rivers and floodplains, and

avoiding traditional flood defence engineering that can disrupt natural processes. Techniques, for example, planting of woodlands, creation of riparian corridors and river restoration, are achievable given the geography and climate of Argyll and Bute. Additionally, natural flood management techniques have additional benefits, including biodiversity enhancements, improved water quality and opportunities to create green and blue networks.

SEPA has provided a Natural Flood Management handbook on the use and effect of using natural flood measurement techniques. SEPA have also mapped areas in Argyll and Bute where nature-based solutions could be applied to alleviate flood risk. This includes maps showing potential Runoff Reduction, Floodplain storage, Sediment management, Estuarine surge attenuation and Wave energy dissipation. The mapping shows that much of Argyll and Bute has high potential for runoff reduction, though the majority of coastal areas and settlement areas only benefit from medium potential in this regard. Floodplain storage has the highest potential within the larger watercourses and lochs in Argyll and Bute, most notably Loch Awe.

Full details on the natural flood management opportunities in the planning authority area, and across Scotland can be found on the SEPA flood map website. These opportunities, however, have not been mapped on the SFRA due to licensing restrictions, though will be considered as part of the preparation towards LDP3 and within decision-making, where natural flood protection schemes could be implemented to reduce flooding impact.

The Flood Risk Management (Scotland) Act (2009)

The Act was introduced to reduce flood risk and managing flood risks effectively, taking a modern approach that is suited to current needs and can accommodate the impacts of climate change. The Act was developed through working with partners, including Scottish Environment Protection Agency (SEPA), Scottish Water, and local authorities.

It sets out that responsible authorities act to reduce overall flood risk and promote sustainable flood risk management. The Act requires the preparation of Local Flood Risk Management Plans (LFRMP) covering Local Plan Districts, which are to be updated in six-year cycles. 14 Local Plan Districts have been designated across Scotland based on river catchments.

LFRMP's have been developed to set out actions to reduce the impact of flooding from all sources including rivers, the sea and surface water. The Local Plan Districts facilitate the coordination of efforts across organisations responsible for flood risk management in order to reduce flood risk. They identify Potential Vulnerable Area's (PVA's) which are those communities at the greatest risk of flooding and set out objectives and actions that will be applied across the district to reduce flood risk. Argyll and Bute is covered within two Local Plan Districts, the Highland and Argyll LFRMP and the Clyde and Loch Lomond LFRMP. Both of these cross the planning authority boundary and cover neighbouring authorities. Figure one shows a map of the Local Plan Districts in relation to the administrative boundary. Each of the plans are in the second of the six-year cycles, currently effective between 2022-2028.

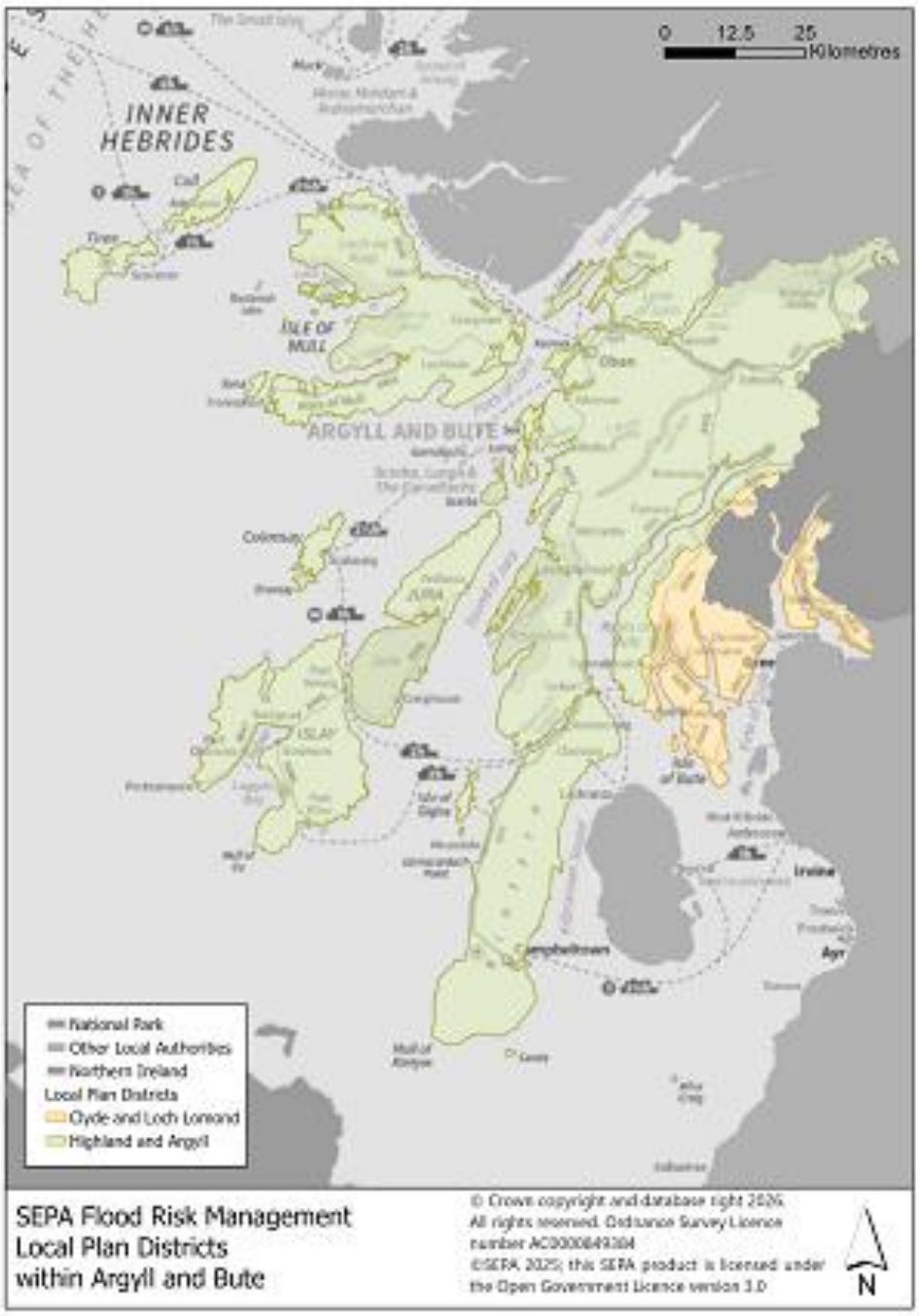


Figure 1: SEPA Flood Risk Management Local Plan Districts within Argyll and Bute

Regional Context

Highland and Argyll Local Flood Risk Management Plan

Highland Council and Argyll and Bute Council worked in partnership to develop the Highland and Argyll Local FRMP. The flood Local Plan District (LPD) covers most of the Argyll and Bute administrative area. The plan is set out in two parts; section 1 contains background information on the approach taken to manage and reduce flooding across Scotland, including listing the duties of all relevant public bodies and authorities. Section 2 provides analysis of the communities and settlements at the greatest risk of flooding within the local plan area and sets out the actions and objectives that will be applied across the LPD to alleviate and manage flood risk. The plan identifies 30 PVA's, 7 of which fall under Argyll and Bute's jurisdiction. A summary of the PVA name and agreed actions are summarised below:

- Oban (02/01/22) – risk of river, coastal and surface water flooding. Recent flooding has been caused by surface water and river flooding. The main source of flooding in Oban is river flooding from Black Lynn Burn. Approximately 1200 people and 940 homes are at risk. This is forecasted to rise to 1500 people and 1200 homes and businesses by 2080 due to climate change. One target area sits within the PVA. Objectives for the area include avoiding flood risk, prepare for flooding and reduce the overall level of flood risk. To do this, actions including flood design schemes, community engagement and surface water management plan have been proposed.

- Inveraray (02/01/23) – risk of coastal flooding which is anticipated to increase due to climate change. One target area is identified in the PVA. 130 people and 110 homes and businesses at risk. This is expected to rise to 140 people and 120 homes and businesses by 2080. Three objectives have been set out; avoid flood risk, improve data and understanding of flood risk and prepare for flooding. Actions include a flood risk management review and the production of a shoreline management plan (2028 – 2034).

- Lochgilphead (02/01/24) – risk of surface water, river (Badden Burn and Crinan Canal) and coastal flooding from Loch Fyne. Flooding has occurred on the road network in the area. The flood risk in Lochgilphead is complex due to the interaction of different sources which are not currently represented accurately in the baseline modelling. There are 240 people and 220 homes and businesses currently at risk from flooding, expected to rise to 400 people and 330 homes by the 2080's.
  A flood study undertaken in 2019 identified flood resilience as the preferred option for managing the risk of flooding. Other key actions to alleviate the risk of flooding in the town include SEPA maintaining the existing flood warning scheme, a shoreline management plan for the area and a further flood study to be undertaken between 2028-2034.

- Tarbert (02/01/25) – Risk of coastal flooding from Loch Fyne which is likely to increase due to sea level rise as a result of climate change. Recent flooding in the area has been caused by coastal flooding. At this moment, 30 people and 50 homes and businesses are at risk, which is estimated to rise to 70 and 80 by the 2080's respectively. Earmarked actions include a surface water management plan, flood scheme works and implementation, and community engagement to mitigate flood risk.

- Clachan (02/01/26) – The main source of flooding is from Clachan Burn, however, there is also a risk of surface water flooding. Currently, 50 people and 30 homes/businesses are at risk of flooding, which accounts for a significant proportion of the community. This is likely to increase to 60 people and 40 homes by the 2080's. Clachan was initially identified as a potentially vulnerable area in the 2021 plan, with targeted objectives of avoiding inappropriate development, prepare for flooding through flood risk schemes and involving the community through engagement and local flood alerts to reduce flood risk.

- Campbeltown (02/01/27) – Designated as a PVA due to risk from surface water, small watercourses in combination with sewage and coastal flooding. The town has also flooded in the past from high sea levels and high-water levels on small watercourses. However, flood risk from rivers is identified as the main risk. 840 people and 650 homes and businesses are currently at risk from flooding, with this likely to rise to 970 people and 760 homes in the 2080's due to climate change. Actions identified in the FRMP include sewer flood risk assessment; a shoreline management plan, a surface water management plan, and flood protection works. In 2026, Campbeltown's flood protection works were completed, and the town's Climate Change Adaptation Plan is currently out for tender.

- Taynuilt and Brochroy (02/01/28) – River flooding from the River Nant and coastal flooding from Loch Etive are the biggest flood risk factors for Taynuilt. This risk is expected to significantly rise as a result of climate change. 150 people and 90 homes and businesses are currently identified as being at risk, with the expectation that these figures will rise to 180 and 110 respectively by the 2080's due to climate change. Actions required to reduce flood risk include a flood risk management review, shoreline management plan, and a flood study to further understand the issues in the area.

Clyde and Loch Lomond Local Flood Risk Management Plan

Published by Glasgow City Council and covering ten local authorities, the Clyde and Loch Lomond Local Plan District covers the administrative areas of Helensburgh and Lomond and Bute and Cowal within Argyll and Bute. The plan is on its second cycle, running from 2022-2028 and aims to reduce the damage and distress caused by flooding over this planning cycle. The plan identifies 23 PVA's, with four of these identified as being within the Argyll and Bute planning authority area. As before, a summary of the PVA name, location and agreed actions are summarised below:

- Helensburgh to Loch Long (02/11/01) – identified as a PVA due to flood risk from Garelochhead, Helensburgh and Kilcreggan from coastal, river and surface water flooding. The most recent flooding event occurred in 2019 due to both coastal and surface water flooding. Three target areas have been mapped which are each of the three settlements above. Key objectives for the three target areas include avoiding flood risk to new developments, prepare for current and future flood risk and reduce flood risk through a number a number of actions, which include flood resilience schemes and shoreline and surface water management plans.

- Loch Lomond and Vale of Leven (02/11/02) – Designated as a PVA due to flood risk to a number of communities. Cardross is the only settlement mentioned that sits within the jurisdiction of the planning authority, with the rest of the PVA covering neighbouring authorities including West Dunbartonshire and Loch Lomond and The Trossachs National Park. Flood risk comes from river, coastal and surface water sources. Cardross is a target area, with approximately 330 people and 180 homes and businesses at risk of flooding. This is due to increase to 420 people and 230 homes and businesses by the 2080's from climate change. Actions to reduce flood risk includes a proposed flood study to better understand the impact of flooding in Cardross, a sewer risk assessment, and flood modelling to understand coastal flooding effects in the settlement.

- Dunoon (02/11/22) – The PVA covers risk areas in Dunoon and Sandbank, which are prone to coastal, river and surface water flooding. Coastal flooding has been a recent issue, and this risk is likely to increase due to climate change. Actions to alleviate flood risk in Sandbank and Dunoon include the implementation of flood scheme works, sewer flood risk assessments, and surface water management plans.

- Isle of Bute (02/11/23) – Kilchattan Bay, Rothesay and Port Bannatyne are identified at being vulnerable areas at risk of flooding. These areas have had

recent, historic flood events from surface water and river sources, though are also at risk from coastal flooding. Objectives include avoid flood risk, improve data and understanding of flood risk and prepare for flooding. Actions to meet these objectives include strategic mapping improvements, flood warning maintenance and the production of a flood study.

All of the PVA's identified in both the Highland Flood Risk Management Plan and the Clyde and Loch Lomond Local Flood Risk Management Plan are mapped in their respective FRMP's, and in the **Council's Strategic Flood Risk Assessment interactive map**. However, a static map of each of the PVA's in the planning authority area have been included for further context within this paper, as shown in Figure 2.



Figure 2: Map of Potentially Vulnerable Areas in Argyll and Bute

Local Context

Argyll and Bute Strategic Flood Risk Assessment

A Strategic Flood Risk Assessment (SFRA) was prepared in 2026 by Argyll and Bute Council providing a strategic assessment of flood risk across Argyll and Bute.
An interactive map and accompanying report, developed using SEPA's Guidance for planning authorities on Strategic Flood Risk Assessment, in line with Policy 10 and Policy 22 of NPF4, spatially identifies the areas of flood risk within the planning authority area, understanding the effects of climate change and unmanageable flood exposure, and can ensure that development is directed away from areas at greatest risk of flooding. Both the Strategic Flood Risk Assessment report and map viewer are both in draft form, awaiting final approval from SEPA.

SEPA provided a detailed list of information and sources required to prepare the SFRA and presented within it is all information available to the Council with regards to flooding. The datasets included in the SFRA mapping are:

- SEPA Flood Hazard Maps
- Information on past flooding events in Argyll and Bute
- Local Authority Flood Study outputs
- Information on flood protection schemes (existing and proposed)
- SEPA guidance on climate change allowances for flood risk assessment in land use planning
- Local Flood Risk Management Plans and Flood Risk Management Plans
- Surface Water Management Plans
- Adaptation Plans and Coastal Change Adaptation Plans (Shoreline Management) Plans (CCAP)
- Dynamic Coast
- SEPA Natural Flood Management Maps
- Section 16 Sewer Maps

The Argyll and Bute Strategic Flood Risk Assessment is still in draft and is awaiting final approval from SEPA. However, as the report and mapping project do not contain sensitive information and relate to publicly available information and data sources, the SFRA has been published in draft form for comment.

Climate Change Allowances

SEPA's climate change allowances specify the required allowances for climate change, specifically peak river flow, peak rainfall intensity and sea level rise that must be used for flood risk assessment under NPF4. SEPA's most recent guidance is Version 6 issued February 2025, sets out the allowances based on geographical regions across Scotland. Argyll and Bute is located within two separate regions; the Clyde River Basin Region and the Argyll River Basin Region. Figure 3 and Figure 4 provide the allowances for Argyll and Bute across both regions.

Clyde River Basin Region

Type of Allowance	Value of allowance
Peak River Flow Allowance **Total change to 2100**	49%
Sea Level Rise Allowance **Cumulative rise from 2017 to 2100 in metres**	0.85m
Peak Rainfall Intensity Allowance **Total change to 2100**	41%

Figure 3: Climate Change Allowance for the Clyde River Basin Region

Argyll River Basin Region

Type of Allowance	Value of allowance
Peak River Flow Allowance **Total change to 2100**	59%
Sea Level Rise Allowance **Cumulative rise from 2017 to 2100 in metres**	0.86m

Peak Rainfall Intensity Allowance **Total change to 2100**	46%

Figure 4: Climate Change Allowance for the Argyll River Basin Region

River Flooding and Erosion

The Scottish Government published a map detailing areas with a Geomorphic Risk Buffer. These are areas which are at an increased risk of river erosion due to faster river flow or silt deposition from slower water flow. In these instances, it is recommended that a wider riparian corridor would be beneficial due to the increased risk of future bank erosion or geomorphic adjustment. Proposed development in these areas is not advisable as they may be at an increased risk of being washed away or silted up. Areas at risk can be found in the mapping here.

Water-Resilient Places – A Policy Framework for Surface Water Management and Blue-Green Infrastructure (2021)

Published in 2021, the Water-Resilient Places paper considers what improvements can be done to surface water management in communities across Scotland, focusing on placemaking to increase the efficiency and effectiveness of funding and widen support for statutory stakeholders. The paper looks at how surface water is currently managed across Scotland, identifies a vision to improve surface water management in the future and sets out recommendations to do this, specifically focused on climate adaptation and using an infrastructure first approach.

The approach delivers a framework for action to deliver water resilient places which ensures that a co-ordinated approach is taken forward, across sectors to managing surface water in Scotland. Figure 5 shows an extract from the paper on the key elements of this framework to deliver water-resilient places.



Figure 5: Elements of a water-resilient framework (Scottish Government)

Overall, to achieve the vision that the Scottish Government has set out, twenty-one recommendations are set out to improve surface water management in Scotland, which are structured around the six elements shown above. One of the recommendations allows land-use planning to include a requirement for all sites/development proposals to be assessed and report on how they will contribute positively to the climate emergency and water resilience. This was further supported through Policy 1, 2 and 22 of NPF4.

Further information relating to blue and green infrastructure noted within the document can be found in Topic Paper 11: Green and Blue Infrastructure.

Water Management

National Context

River Basin Management Plan

SEPA, on behalf of the Scottish Government publish a River Basin Management Plan (RBMP) to ensure that water bodies do not decline in quality, and that over time they reach good or excellent environmental status. Scotland's third RBMP was adopted in 2021 and runs to 2027. Previous iterations of the plan were adopted in 2009 and 2015.

The plan's objectives focus on protecting and enhancing Scotland's water environment by improving water quality, restoring natural habitats and river processes, ensuring sustainable water use, and upgrading water supply and wastewater systems while reducing pollution. It also aims to remove barriers to fish migration, promote sustainable rural land management, strengthen community resilience to climate change and flooding, and coordinate targeted action across public bodies, industry, and land managers to support biodiversity recovery and climate adaptation.

Water Classification Hub

To assist with the river basin management plan, the Water Environment Hub provides comprehensive information on a number of categories relating to the condition of water bodies. This includes information on environmental objectives, pressures, risks, and improvement actions for each individual body of water within the hub, covering lochs, rivers, estuaries, coastal waters and groundwater bodies. The Water Classification Hub, also published by SEPA, complements the Water Environment Hub, providing detailed information of water quality condition across Scotland in line with SEPA's annual Water Framework Directive. The hub also provides detail on the biological, chemical, hydrological and morphological factors that contribute to the water classification.

The Water Classification Hub identifies the most up to date condition for 283 identified bodies of water within Argyll and Bute (**Note:** this includes some bodies of water within

Loch Lomond and the Trossachs National Park boundary that sit within the administrative boundary for Argyll and Bute). Of the 283 bodies of water, 186 (65.72%) are classed as High or Good quality. Figure 6 shows the condition classification for all bodies of water in Argyll and Bute.

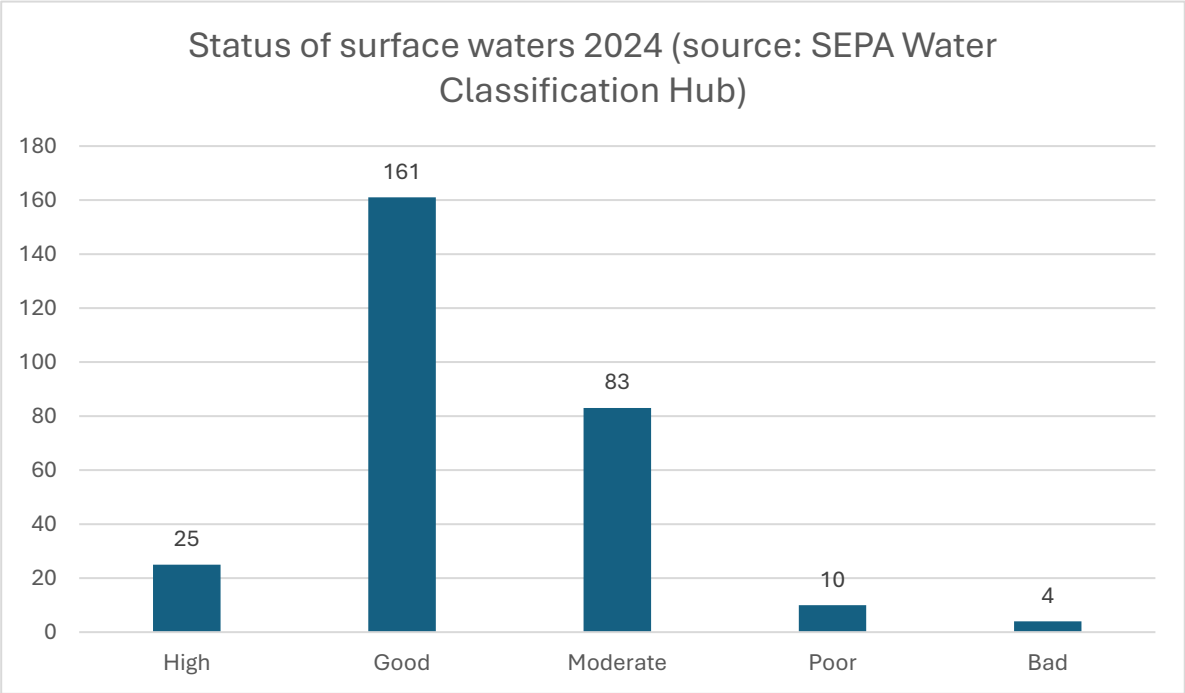


Figure 6: Status of surface waters 2024 (SEPA Water Classification Hub)

Water Environment Hub

SEPA's Water Environment Hub is an online tool providing information on the condition, pressures, objectives and protected areas for Scotland's rivers, lochs, coastal waters and groundwaters, with the tool supporting Scotland's River Basin Management Plan. It is closely aligned with the Water Classification Hub, with overlapping information between the two tools. The tool identifies 94 surface water bodies affected by pressures (2020). These pressures have been categorised into themes from the RMBP3 for Scotland. Figure 7 below provides context on the themes causing pressure to Argyll and Bute's water bodies.

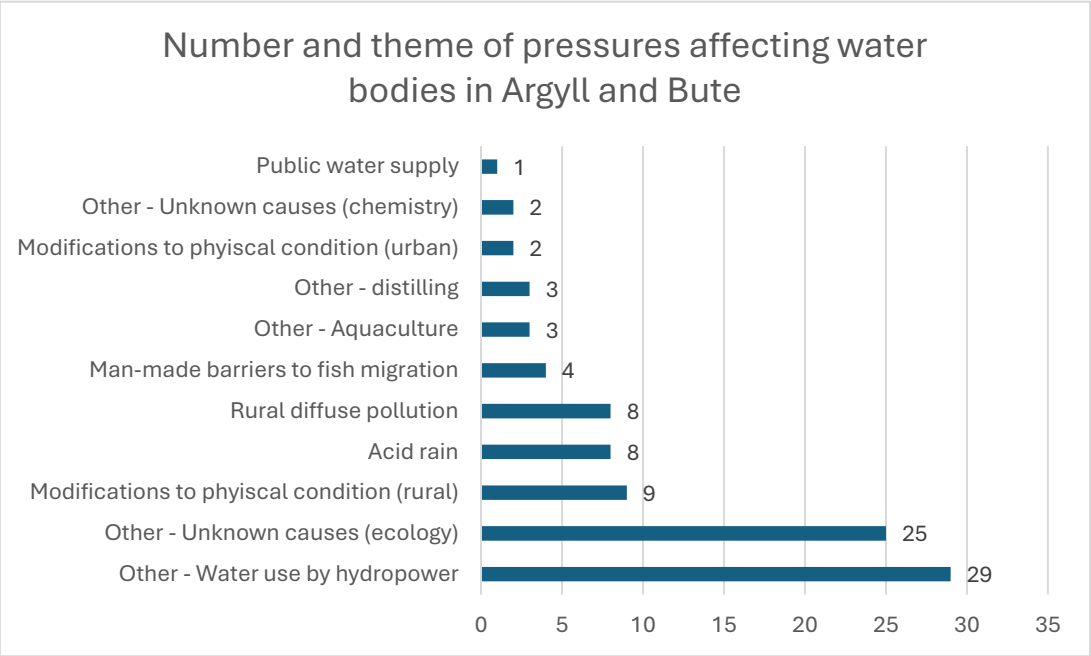


Figure 7: Pressures affecting water bodies in Argyll and Bute (2020) Source: Water Classification Hub

Water Conservation Areas

The previous LDP and current LDP2 recognises that many properties in Argyll and Bute are served by a private water supply where there is a lack of a public system. LDP2 Policy 58 – Private Water Supplies and Water Conservation states that new water supplies will not generally be supported where a public water supply is available. Where there is no other option other than a new private water supply, the planning authority will ensure that there is sufficient capacity and quality to meet the anticipated demand of the new development. This is particularly important in the context of climate change, which is continuing to increase the frequency and severity of water scarcity across Scotland affecting the reliability of private water supplies. Proposals should therefore take an infrastructure-first approach to water provision, ensuring that water supply arrangements are resilient and sustainable over the lifetime of the development.

The Council is committed to working with Scottish Water and SEPA to increase the availability of public water supplies to meet needs, however, there are areas identified where supply is at a limited capacity. A water conservation area designation was

developed which highlights areas with a limited capacity. LDP2 Policy 58 requires all developments that require water supplies for either human or animal consumption, or for other processes or activities relating to industrial and commercial activities, to demonstrate the incorporation of water conservation measures, for example rainwater harvesting.

Argyll and Bute planning authority will continue to liaise with Scottish Water to receive updates on areas where water supply is scarce. Figure 8 provides a current map of areas known to have limited capacity. The areas highlighted cover most of the inhabited Inner Hebrides in Argyll and Bute, and the areas within and around Oban. Upon engagement with Scottish Water, the conservation areas may change to reflect current capacity issues. Any changes will be taken into consideration during the preparation of LDP3.

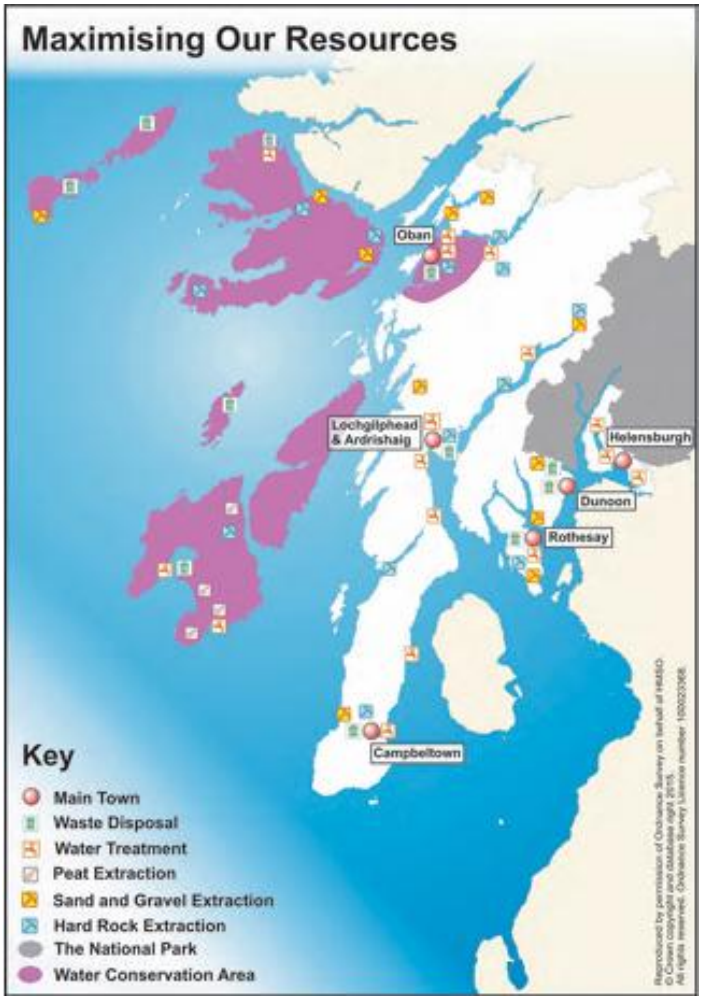


Figure 8: Existing water conservation areas in Argyll and Bute

Local Place Plans

Luing

Each of the proposals identified in the LPP have undergone a desktop review by Luing Community Trust for key site information including flood risk. The community vision identifies addressing climate change and coastal defence as a way to promote sustainable island living. This includes improving resilience to coastal erosion and coastal flooding, adding that the strategy for coastal defence throughout the plan is intrinsically linked to other projects in terms of materials(?) supply.

Potential project 3.3 – Sustainable Living – Addressing Climate Change and Coastal Defence includes a coastal defence project in Cullipool and Toberonochy.

Coastal erosion in Cullipool is seen as an urgent issue, with erosion progressing at an "alarming rate" due to washing out of the spoil material traditionally used to protect the coastal wall. The LPP references a study conducted by Glasgow University detailing a strategy for the repair of the rip-rap wall and the implementation of a regular programme of feeding the beach with slate spoil material.

The LPP references coastal flooding in Toberonochy, which is posed by rising sea levels rather than erosion. The proposal sets out options for reducing coastal flood risk, potentially retrofitting properties with flood accepting finishes/materials, installing physical barriers or installing a tidal barrier to offer protection.

The site appraisals for other projects consider the location in relation to flood risk, aiming to reduce the flood risk impact of the development proposals.

Cove and Kilcreggan

Cove and Kilcreggan's Local Place Plan identifies a key action to reduce the threat of flooding and surge tide events in Kilcreggan Bay. Increasing extreme weather events, rising sea levels and surge tides are considered to pose an immediate threat to the low-lying land in Kilcreggan village, rendering areas undevelopable without adequate

protection schemes. The plan asks the council to identify the extension of a sea wall around the Bay as a key planning requirement for developing the old boat yard site in the village. Furthermore, the LPP notes that the access corridor should be protected by the sea wall, be reserved for the development of an attractive promenade around the bay, forming a peninsula coastal path and active travel route.

Gigha

No specific reference is made to flood risk or water management in the LPP. However, the plan does provide some information regarding water treatment on the island at Mill Loch. It notes that the nominal gross re-supply rate for the Mill Loch at over 350 cubic metres per day which is substantially over current consumption levels. Despite this, the island's population and businesses are constrained by water resource capacity, with net supply volume capped by the size of the island waterworks. The LPP states a reasonable projection is that current capacity could accommodate an island population 105-15% higher than current levels, plus additional commercial demand from farms and tourist amenities.

The current LDP does not currently identify the Isle of Gigha as a water conservation area, thought this may change as a result of discussions with Scottish Water regarding areas that face a scarce water supply.

Helensburgh

Helensburgh's LPP recognises, through community engagement, that the community want to prioritise solutions for drainage and sea defence infrastructure to mitigate the effects of increased rainfall, high winds and flooding from both storm surge and surface run off. In order to achieve this, two proposals relating to the climate and flooding are mentioned, which are:

- Climate Proposal 1 – Protect infrastructure and buildings from the effects of heavy rain and strong winds due to Climate Change
- Climate Proposal 2 - Protect infrastructure, buildings and water quality from the effects of flooding due to Climate Change

Ford (not yet validated)

No specific reference is made to flood risk in the Ford LPP. However, the priorities listed below are seen as contributing towards the climate emergency, including resilience to flood risk.

- A community with the infrastructure to face the future and to provide for the needs of the community.
- A green community that protects and sensitively develops natural assets

Coll (not yet validated)

Coll's LPP makes no direct reference flood risk within the text. In terms of coastal development, Coll's residents would like to see the removal of an Open Space Protected Area to be used by the Coll Coast Guard and similar projects of "greater benefit and in a location that is convenient for its users".

Coll's LPP sets out community-raised issues relating to water supply and water management on the island, noting that the only public water supply on the island is located within the designated settlement of Arinagour. Priority 11 of the LPP states that residents would like to see infrastructure improvements to the water supply on the island and improve overall water provision on the island. To achieve this priority, Proposal 11 of the LPP suggests for supportive changes to regulations in relation to private water supplies and extending the existing public water supply. Additionally, the LPP proposes that Coll specific, user friendly guidelines, be developed that recognise the island does not have public water supply outwith Arinagour. There is an existing exception that this is an existing barrier to development in terms of cost and water related planning policies.

Dunoon (not yet validated)

The Dunoon LPP provides a short summary on the climate of the area, noting that the effects of climate change is causing increased adverse weather events including storm

frequency and heavy rainfall, increasing the overall risk of flooding. It states that a proactive approach should be taken to building and infrastructure maintenance to protect coastal assets and keep people safe in the community. The LPP raises the example of the flooding from Milton Burn in 2024/25 that indicates the need for a proactive approach as the car park at Morrison's and properties in Valrose Terrace and Cowal Place were affected as a result of the flood event.

Dunoon's LPP identifies a number of challenges with regards to flooding within their 32 identified projects. These include:

- Project 14: West Bay Promenade, Beach and Play Park – manage the beach to support natural flood risk solutions and biodiversity enhancements, contributing to the Council's 30X30 commitment.
- Project 15: The Rose Garden – Ensure flood risk is managed by removing debris from the stream on a regular basis.
- Project 22: Dunoon Cemetery – Poor drainage at the end of Valrose Terrace causes regular flooding. Addressing these issues would allow people of all ages and ability to walk through the cemetery safely.
- Project 29: Bishops Glen/John Street – Proposed housing development by ACHA should protect environmental assets, have good water management and mitigate against flood risk.

Jura (not yet validated)

The Jura Community Action Plan tackles flooding and water management through improving resilience on the island. Proposal 1.5 Increasing Resilience seeks to establish a resilience group to develop emergency preparedness plans for recovering for water, electricity and communication to vulnerable residents. The plan also references the United Nations Sustainable Development Goals which identifies clean water and sanitation (6.) and conserve and sustainably use oceans, seas and marine resources (14.) as two water-focused, global goals for sustainable development.

Kilfinan (not yet validated)

Kilfinan's LPP identifies flood risk and water management as a key policy area within NPF4 pertinent to Kilfinan Parish proposals. Proposal number 5 in the plan specifically relates to these issues which seeks to *"Reduce water and flooding locally by implementing robust water management systems along road and path networks. This measure should be combined with increased road and path maintenance."* The LPP states that there has been a dramatic increase in heavy rainfall due to climate change and that current water management systems are struggling to cope with the levels of rainfall, affecting infrastructure including roads and pathways.

Lismore (not yet validated)

Lismore's LPP notes that there are difficulties for new builds meeting water and drainage regulation requirements and outline that a solution is for the government and key agencies to assist in securing water supplies. Flood risk is also identified as an issue, specifically at Port Ramsay which has seen instances of flooding historically. The plan identifies the need for flood defence in some locations such as Port Ramsay. As with other LPP's in Argyll and Bute, the area is becoming increasingly affected by heavy rainfall and storms as a result of climate change. To alleviate flood risk, the LPP proposes assisting affected household with flood plans, as well as developing island wide community resilience plans.

Summary of Engagement

A working draft version of this template was shared with SEPA and Scottish Water. Representations submitted at this stage are summarised below.

SEPA

SEPA have been engaging with the planning authority on both the topic paper and SFRA. The planning authority are awaiting a statement of support from SEPA on the SFRA; however, positive communication has been received from SEPA should small issues relating to amendments be addressed. The SFRA report has been published in draft form in the interim for this period of engagement.

In terms of the topic paper, SEPA had no comments to make on the coastal development section of the paper, though suggested amendments and additions to the flood risk and water management sections of the topic paper. For the flood risk section, SEPA suggested the addition of the National Flood Resilience Strategy: implementation plan as a key evidence source. Comments also suggested adding further detail on the Natural Flood Management plans. Further details and links to the Natural Flood Management Maps have been incorporated into the topic paper.

Comment: The planning authority welcomes continued engagement with SEPA on flood risk and water management matters. All comments from SEPA have been acknowledged, though not all have been incorporated into the updated Topic Paper as they relate to comments for the site selection stage which is further down the LDP3 preparation stage. The planning authority will refer to these comments at the relevant stages during the plan preparation period.

One further piece of evidence SEPA suggested being worthy of inclusion in the topic paper was detailing historic flood data at a “disaggregated level”. The planning authority may have this additional evidence base to present to the public for the formal submission of the evidence report, however, this has not been included at this stage of engagement. The planning history does retain a record of historical flood event data

from SEPA which cannot be published externally that will be used during the plan preparation.

Key agencies and stakeholders that were consulted but the Council received no response from are:

- Scottish Water

The Council remains committed to working collaboratively with key agencies and welcome any comments they may have during the public engagement stage.

Summary of Implications for the Proposed Plan

Using guidance and resources such as Dynamic Coast and the upcoming Coastal Change Adaptation Plans, areas at greatest vulnerability of coastal erosion and coastal flood risk should be identified. Proposals should be steered away from areas at the greatest risk of coastal erosion.

As technical guidance is yet to be published to establish a position, the planning authority should consider the definition of "developed" and "undeveloped" coast and whether there are areas within the existing developed coast zone that should be safeguarded or have potential to promote nature-based solutions.

The LDP3 spatial strategy will seek to avoid allocating sites in areas at flood risk as a first principle, in accordance with Policy 22 of National Planning Framework 4. Argyll and Bute's SFRA and SEPA's Flood Risk Hazard Maps can help inform the spatial strategy, as well as in the consideration of development proposals on unallocated sites.

Many of LDP2's Allocations, potential development areas and areas for action are located in proximity to the coast. With reference to the above evidence, the planning authority will review these allocations and designations in relation to the identified risk of flooding and coastal erosion. In some instances, areas for action include opportunities for flood protection schemes. For example, AFA A2001 in Kilcreggan recognises the opportunity for local, environmental enhancements, which is supported in the community's LPP. Further coastal sites that present opportunities for environmental protection may be safeguarded through allocations and designations.

Argyll and Bute Council, primarily the Council's flooding team, is committed to undertaking proportionate Coastal Change Adaptation Plans and any further plans or strategies, including Surface Water Management Plans, in line with the relevant LFRMP.

Throughout the LDP3 Proposed Plan preparation, Argyll and Bute planning authority will continue to consider water quality and water management issues, including a review our existing water conservation areas on the basis of any further evidence provided by Scottish Water. These may be expanded should it be identified that there are issues with water management in areas outwith the existing conservation areas. In addition to this, water environment evidence sources used throughout the topic paper will be used in site assessment and site selection stages of the preparation of LDP3. This is to ensure sites have no adverse impact on the water environment and where necessary, any relevant site requirement mitigation measures can be incorporated into the plan.