Local Development Plan – Draft Topic Paper

Flooding, Water Management and Blue and Green Infrastructure

May 2025

Introduction

Thanks for taking an interest in this Topic Paper, which is part of the evidence we're drawing together for our new Local Development Plan. The following notes explain what the Topic Papers cover and how these fit into the process to prepare the new Plan. At the bottom of the notes, you will find a list of guidance and information should you wish further details.

What is a Topic Paper?

The first stage in preparing a new Local Development Plan is the evidence gathering stage, which is the stage we are currently in. This involves collating information on key relevant policies, strategies and data for an Evidence Report which the National Park Authority has to submit to the Scottish Government for a review that is called a 'gate check'. This to ensure that sufficient information is available to start preparing a new Local Development Plan. The next step, after the gate check, is preparing a Proposed Plan which will set out policies, proposals and priorities which will be formally issued for a period of consultation.

To break the gathered evidence up into manageable blocks, we have created 10 Topic Papers by grouping the most closely related national planning policies of NPF4 (see Table below). Each of these 10 Topic Papers aim to summarise relevant national, regional and local evidence and information for the given topic area. Whilst we have grouped these national planning policies into 10 Topic Papers we fully acknowledge that there are overlaps and linkages between these policies; for example, matters such as climate, nature, and flooding are of relevance to all of the topic areas. We have aimed to highlight these links, where explicit, in the Topic Papers.

How are the Topic Papers structured?

The Topic Papers cover all National Planning Framework 4's policies, as summarised in the table below.

Topic paper 1: Climate and Land Use	**Topic paper 2: Biodiversity, Natural Places, and Forestry, Woodland and Trees**	**Topic paper 3: Infrastructure First**	**Topic paper 4: Flooding, Water Management and Blue and Green infrastructure**	**Topic paper 5: Energy, and Heat and Cooling**
1. Tackling the Climate and Nature Crisis 2. Climate Mitigation and Adaptation 5. Soils 10. Coastal Development Land Use	3. Biodiversity 4. Natural Places 6. Forestry, Woodland and Trees	18. Infrastructure First 24. Digital Infrastructure	22. Flood Risk and Water Management 20. Blue and Green Infrastructure	11. Energy 19. Heat and Cooling
Topic paper 6: Sustainable Transport	**Topic paper 7: Housing**	**Topic paper 8: Living Well Locally**	**Topic paper 9: Cultural Heritage and Place**	**Topic paper 10: Rural Economy**
13. Sustainable Transport	16. Quality Homes 17. Rural Homes	15. Local Living and 20 Minute Neighbourhoods 23. Health and Safety 9. Brownfield, vacant and derelict land and empty buildings 21. Play, recreation and sport 12. Zero Waste	14. Design, Quality and Place 7. Historic Assets and Places 31. Culture and Creativity	29. Rural Development 30. Tourism 28. Retail 27. City, town, local and commercial centres 26. Business and Industry 32. Aquaculture 33. Minerals 25. Community Wealth Building

Each of the Topic Papers has the same format, as follows:

- List of the relevant sections of the Planning Act (and any other relevant legislation and statutory requirements);
- Links to the Evidence that informs that Topic Paper;
- Context of National Planning Framework 4 (NPF4) and the National Park Partnership Plan (NPPP)
- Summary of the selected Evidence for that Topic Paper;
- Implications that the Evidence presents for the preparation of the new Local Development Plan.

Additional sections in the Papers (i.e. Summary of Stakeholder Engagement & Statement of Agreement/Dispute) will be added upon the completion of this engagement phase and prior to the completion of the Evidence Report and its submission to Scottish Government.

It is important to note that the Topic Papers do not present any proposals– such as proposed sites for development. As these Papers are technical and follow a structure and template required by the Scottish Government, an additional 6 Area Summaries have also been prepared. These are separate map-based reports which have been designed to provide a summary of how this technical content relates to different areas of the National Park, for the series of in-person workshops during May and June. These also include a summary of the Local Place Plans prepared by communities, which the majority of communities have either prepared or are under preparation. While these reports will be primarily be used at in-person workshops, they will also included on the website if you would prefer to feedback on those.

The Topic Papers are engagement drafts; these are not the final ones that we will include within our Evidence Report. The Topic Papers have been prepared by National Park staff with advice and comments incorporated where possible from public bodies such as SEPA, Historic Environment Scotland, NatureScot, Transport Scotland and the Councils that cover the National Park. Where data or information has not been available, incomplete or is currently in the process of being finalised, this has been highlighted in the Topic Paper and where relevant this will be actioned for the final versions for the Evidence Report.

We are now sharing the Topic Papers with wider stakeholders who would like to review and provide us with feedback, helping us to identify any gaps or pieces of evidence we should also consider for the Evidence Report. This feedback can be given by filling in the survey available on our website.

The Topic Papers are technical and present a lot of information. This is due to their nature as baseline information to be reviewed by Scottish Government, as the foundation for the new Local Development Plan. We have also created shorter map-based summaries for different areas of the Park to be more accessible, as introduced above.

Feedback will help finalise the Topic Papers. Once we have completed the 8-week engagement period, we will review all the responses we have received. We will make changes to the Topic Papers where required and collate these into the full Evidence Report, which will also summarise the outcomes of our engagement. It is this full – finalised - Evidence Report that the Park Authority Board will need to approve before it can be submitted to the Scottish Government for review at the 'gate check'.

Next stage. Once we have received Scottish Government's feedback on whether we can either proceed or need to amend the Report the next stage is preparing the Proposed Plan (draft Local Development Plan). As noted already, there will be formal public consultation on the Proposed Plan.

Further information

Scottish Government's Guidance on preparing a Local Development Plan

National Planning Framework 4

Loch Lomond and the Trossachs National Park Development Plan Scheme

Contact

If you need help with any of the above or have queries on the Topic Papers, please contact localdevplan2@lochlomond-trossachs.org or call us on 01389 722600.

Issue: Topic/Place	**Flooding, Water Management and Blue and Green Infrastructure**
Information required by the Act regarding the issue addressed in this section	**Town and Country Planning (Scotland) (Act) 1997**, as amended, • Section 15(5) (a) - 'the principal physical and environmental characteristics of the district'. **Town and Country Planning (Development Planning) (Scotland) Regulations 2023** Under Regulation 9, must have regard to: • River Basin Management Plans • Flood Risk Management Plans • Local Flood Risk Management Plans **Other Relevant Legislation:** The Aims of National Parks in Scotland (as set out in the National Parks (Scotland) Act 2000) The Flood Risk Management (Scotland) Act 2009 **Other Statutory Requirements:** Strategic Environmental Assessment (SEA) Environmental Report is a requirement on the preparation of a Local Development Plan Habitats Regulations Appraisal is a requirement on the preparation of a Local Development Plan

Links to Evidence	**Overarching Policies, Strategies and Reports** National: • The Flood Risk Management (Scotland) Act 2009 • The River Basin Management Plan for Scotland 2021 -2027 • National Flood Resilience Strategy (2024) Local/National Park: • National Park Partnership Plan 2024 - 2029 • Loch Lomond and the Trossachs National Park – Strategic Flood Risk Assessment Report **Other relevant Policies, Strategies and Reports** Regional: • Clyde and Loch Lomond Flood Risk Management Plan 2022 - 2028 • Forth Local Flood Risk Management Plan 2022 – 2028 • Tay Local Flood Risk Management Plan 2022 - 2028 • Highland and Argyll Local Flood Risk Management Plan 2022 – 2028 **Existing Data** • Potentially Vulnerable Areas (PVAs) 2022 - 2028 • Potentially Vulnerable Areas (PVAs) 2028-2034 • SEPA Flood Hazard Maps • SEPA Flood Risk Management Maps • Dynamic Coast Webmap • Water Classification Hub Local/National Park: • Loch Lomond and the Trossachs National Park - Strategic Flood Risk Assessment Interactive Map

National Planning Framework 4 (NPF4) Context

Policy 22 - Flood Risk and Water Management outlines the policies intent to enhance community resilience to flood risk by prioritising avoidance and decreasing the susceptibility of both current and future developments to flood risk. It is stated that Local Development Plans (LDPs) should enhance community resilience to climate change by avoiding development in flood risk areas as a first principle. They should support adaptation through the reuse of previously developed sites, incorporation of blue-green infrastructure, and natural flood risk management. Plans must consider flood risk from all sources using the best available data, applying a precautionary approach. Where future flood risk becomes unmanageable due to climate change, alternative sustainable land uses should be explored.

Policy 20 - Blue and Green Infrastructure emphasises the importance of protecting, enhancing and expanding blue and green networks, recognising their vital role in flood prevention and water management. Local Development Plans (LDPs) should be guided by current audits and strategies that reflect the multiple benefits of blue and green infrastructure. They should identify, protect, and enhance existing assets and networks, and support expansion, including through retrofitting. Plans should prioritise connectivity within and beyond their boundaries and promote the use of under-used land, permanently or temporarily, as green infrastructure. Access rights, core paths, and active travel routes must be safeguarded, with new and improved access opportunities encouraged.

NPF 4 Spatial Planning Priorities for the Central Region notes that Loch Lomond and The Trossachs National Park has landscape-scale opportunities to restore and enhance nature and respond to climate change, including through woodland creation and peatland restoration, as well as natural flood risk management.

National Park Partnership Plan (NPPP) 2024 – 2029 Context

Residents, workers and visitors in the National Park are facing substantial challenges due to climate change, including more frequent floods and landslides that damage buildings, infrastructure and isolate entire communities. The National Park and its partners, through the National Park Partnership Plan (NPPP), will support communities in identifying and implementing locally tailored measures to increase resilience to the impacts of climate change, with a focus on flooding and its effects on vulnerable areas, buildings, and infrastructure. They will continue to promote and apply natural flood management techniques, such as woody debris dams, to slow water flow and reduce flood risk. In parallel, land managers will be supported through public and private funding to adopt regenerative land management practices that improve soil stability, enhance water retention, and contribute to broader landscape-scale climate adaptation.

Summary of Evidence

This paper covers National Planning Framework 4 (NPF4) Policy 22(Flood Risk and Water Management) and Policy 20(Blue and Green Infrastructure). The following summary of evidence section is structured in the following order:

- Flooding
- Water Management
- Blue and Green Infrastructure

Also included is a high-level summary of the findings of the National Park Authority's *Strategic Flood Risk Assessment Report* and its associated interactive map. Additionally, this paper outlines the methodology that will be followed in the preparation of the Park Authority's blue and green infrastructure audit.

It is recognised that these policy areas are also closely connected to Policy 1 & 2 – Tackling the Climate and Nature Crises and Climate Mitigation and Adaptation, Policy 3: Biodiversity, and Policy 18 – Infrastructure First, and often act as constraints or key considerations in development activities more broadly. This paper consolidates information across these areas while acknowledging their interdependencies and the relationships between them. However, these topic areas are explored in more detail in the following papers:

Policy 1 & 2 – Topic Paper 1

Policy 3 – Topic Paper 2

Policy 18 – Topic Paper 3

FLOODING

River Basin Management Plan for Scotland

On behalf of the Scottish Government, SEPA produces River Basin Management Plans for Scotland. While these plans indicate that much of Scotland's water environment is in generally good condition, pressures remain in some areas, particularly in relation to water quality, physical condition, water availability, and barriers to wild fish migration. The plans set out a range of actions to

address these challenges and support the ongoing protection and enhancement of the water environment, recognising its vital role in supporting biodiversity, ecosystem health, and climate resilience.

Strategic Flood Risk Assessment (SFRA) Report

The Scottish Government's Local Development Planning Guidance identifies that a Strategic Flood Risk Assessment (SFRA) should be a relevant source of information for the Evidence Report. This topic paper provides a short summary of the full report, which is included in the appendix. It is accompanied by the National Park Authority's web-based interactive SFRA map, which presents the information spatially to support easier navigation.

The inclusion of evidence relating to flood risk is needed to successfully address the policy intent and outcomes of NPF4 Policy 22 Flood Risk and Water Management, to strengthen resilience to flood risk by promoting avoidance as a first principle and reducing the vulnerability of existing and future development to flooding. The SFRA will also provide evidence for the implementation of other NPF4 policies where they address the climate and nature crises and the delivery of infrastructure, including blue and green infrastructure.

This SFRA has been prepared in accordance with Scottish Environment Protection Agency (SEPA) SFRA Guidance V1 October 2023 as updated by Version 2 (draft December 2024) and the Advice Note for Planning Authorities on LDP Evidence Gathering: Achieving sufficiency of evidence relating to flood risk and the water environment published in December 2024. It has been developed in consultation with SEPA and the flood management officers from the four Local Authorities that cover the National Park, who are the designated local flood risk authorities with statutory responsibility for managing flood risk within their respective areas.

National Flood Resilience Strategy for Scotland

The National Flood Resilience Strategy is the Scottish Government's comprehensive approach to addressing the escalating risks of flooding, particularly as a result of climate change. By 2080, the number of properties at risk of flooding in Scotland is projected to rise from 284,000 to nearly 400,000. This strategy, part of the Scottish National Adaptation Plan 2024–2029 (SNAP3), aims to build a flood-resilient Scotland through a collaborative, community-focused approach.

- The strategy calls for a proactive approach to flooding—designing places to be resilient from the start, rather than just responding to issues after they arise.

- It takes a community-focused view, recognising that flood resilience is key to overall community wellbeing and climate adaptation.
- A commitment to fairness ensures that all communities benefit from resilience efforts, with an emphasis on inclusion and equity.
- Finally, the strategy highlights shared responsibility, stressing that everyone has a role in creating flood-resilient places.

Strategic Flood Risk Assessment (SFRA) Interactive Map

The SFRA Map is an ESRI web-based mapping resource that sits alongside the full SFRA report. It is an interactive high-level overview, where layers can be switched on and off and areas can be explored in more detail. The SFRA map has been prepared in line with SEPA Guidance for planning authorities on Strategic Flood Risk Assessment as noted above.

Datasets include:

- SEPA Catchments
- Dynamic Coast
- Historic Flood events (West Dunbartonshire, Perth and Kinross)
- SEPA Potentially Vulnerable Areas (PVAs)
- SEPA flood hazard (River, Coastal and Surface Water)

SEPA Flood Hazard maps display the land affected by river, coastal and surface water flooding for three annual exceedance probabilities plus a climate change scenario (the Future Flood Map).

It is intended to add the following datasets to the map prior to completion of the Evidence Report and its submission to Scottish Government for gate check.

- Historic flood events - Argyll and Bute, Stirling
- Local Authority Flood Study outputs
- Information on flood protection schemes (existing and proposed)

The following data will be used within the Planning Authority; however, they are not included on the public map:

- Reservoir inundation Reservoirs Map

- Information on past flooding events, SEPA's OFE and Historic River Flood Extents Data
- SEPA Natural Flood Management
- LLTNPA Climate Adaptation Study – High Risk Areas

The reservoir inundation data, information on past flooding events, SEPA's Observed Flood Events (OFE), and historic river flood extents cannot be published by the Park Authority, as they remain the property of SEPA and can only be released by them. Due to licensing restrictions, the Park Authority is also unable to access SEPA's Natural Flood Management data. Additionally, the High-Risk areas identified in the Park Authority's Climate Adaptation Study should be interpreted within the full context of that report.

Flood Risk Management Plans

Flooding in Scotland is being managed through 14 Local Plan Districts which are based on river catchments and cross various administrative and institutional boundaries. Flood Risk Management Plans (FRMPs), published by SEPA, cover the areas listed below and illustrated in Figure 1 (SFRA), which intersect with the Park Authority's administrative boundary. The most recent plans were adopted in 2022 and will remain in effect until 2028.

- LPD1 Highland & Argyll
- LPD8 Tay
- LDP9 Forth
- LDP11 Clyde and Loch Lomond

Loch Lomond & The Trossachs National Park Authority is not responsible for coordinating or publishing Flood Risk Management Plans. This responsibility lies with the four Local Authorities listed below, whose jurisdictions include the National Park. These Plans complement the overarching Flood Risk Management Plan developed and published by SEPA, which outlines the objectives and actions to reduce flood risk from rivers, the sea, and surface water. The four responsible authorities are:

- Argyll and Bute
- Stirling
- Perth and Kinross
- West Dunbartonshire

The following section will identify the potentially vulnerable areas outlined in the Flood Risk Management Plans for each relevant Local Plan District, highlighting the target areas located within the National Park boundary. Although, in doing so recognising that the PVAs data has been updated in December 2024 for the next Flood Risk Management Planning Cycle.

Potentially Vulnerable Areas (PVAs)

PVAs are specifically defined areas identified in FRMPs where the risks to property from flooding, and the estimated average annual damages occurring as a result of flooding, are greatest.

Potentially Vulnerable Areas (2022-2028)

In the current cycle of flood risk management planning (2022-2028) there are catchment based PVAs and community-based areas at risk known as target areas.

Potentially Vulnerable Areas (2022-2028) are set out in the SFRA and comprise Aberfoyle, Comrie, Callander, Helensburgh to Loch Lomond and Loch Lomond and Vale of Leven. As outlined in the Flood Risk Management Plans, the section below details the target areas that are of relevance to the National Park. Target areas are smaller, more specific locations that have been identified for focused flood risk management actions.

Aberfoyle - This area is designated as potentially vulnerable due to flood risks to Aberfoyle and the A821, primarily from the River Forth and Duchray Water, with additional surface water flooding risk. Aberfoyle has a long history of flooding, including recent river and surface water floods. Aberfoyle is the only target area in this PVA.

Comrie - This area is designated as potentially vulnerable due to flood risks from the River Earn, River Lednock, Water of Ruchill, and surface water. Comrie is the only target area within this PVA.

Callander - This area is designated as potentially vulnerable due to flood risks to Callander, Strathyre, and the A84, primarily from the River Teith and its tributaries, with an additional risk of surface water flooding. The area has a long history of frequent flooding and includes two target areas: Strathyre and Callander.

Helensburgh to Loch Long - This area is designated as potentially vulnerable due to flood risks to Garelochhead, Helensburgh, and Kilcreggan, with flooding from coastal, river, and surface water sources. There are three target areas in this potentially vulnerable area, with Garelochead being the relevant target area within the national park.

Loch Lomond and Vale of Leven - This area is designated as potentially vulnerable due to flood risks to several communities, including Balloch, Bowling, Cardross, Dumbarton, Old Kilpatrick, and areas within the Vale of Leven. Flooding occurs from river, coastal, and surface water sources. The area has a long history of flooding, with recent events caused by coastal, river, and surface water. There are five target areas in this potentially vulnerable area, with the Vale of Leven covering the parts of Balloch within the National Park.

Potentially Vulnerable Areas 2028-2034

The next flood risk management planning cycle (2028-2034) will use community based PVAs. This change from catchment to community based PVAs has been the result of a consultation process involving the public, local authorities, and Scottish Government.

Potentially Vulnerable Areas (PVAs) 2028-2034 are areas identified by Scottish Environment Protection Agency (SEPA) using information from the National Flood Risk Assessment and in consultation with others. The development of the new Local Development Plan will be undertaken using this new dataset.

Potentially Vulnerable Areas (PVAs) 2028-2034 are shown in the SFRA and comprise:

- Aberfoyle
- Callander
- Strathyre
- Vale of Leven (Balloch)

The descriptions associated with the updated PVAs will be published in the next Flood Risk Management Planning Cycle.

Coastal Erosion and Artificial Coastal Defences

Drawing on the analysis carried out for the SFRA, it is important to highlight the areas at risk of coastal erosion and subsequent flooding along the coastal regions of the National Park, particularly the Cowal Peninsula. As shown in the SFRA, based on the Dynamic Coast Future Erosion data, the settlements most at risk of coastal erosion by 2050 under a high emissions scenario are Ardentinny, Lochgoilhead, Carrick Castle, Kilmun, Strone, and Blairmore.

Further to the areas at risk of coastal erosion within the National Park, there are areas along the Cowal Peninsula where artificial coastal defences are already in place. These defences are located at the head of Loch Long and Loch Goil, Gairletter Point, as well as in the settlements of Ardentinny, Kilmun, Blairmore, and Strone.

Coastal Change Adaptation Plans play a crucial role in improving the understanding of the risks of coastal erosion and flooding in Scotland, both today and in the future. Currently, the status of Argyll and Bute Council's Coastal Change Adaptation Plan is to be confirmed, but CCAP's are currently being developed for locations identified in Cycle 2 of the Local flood Risk Management Plan. Through ongoing engagement, the National Park Authority aim to gather further information to better inform the Park Authority's approach to coastal risk management.

Flood Protection Schemes and Studies in the National Park

Four Flood Authorities cover the National Park, this section sets out the evidence base for flood studies and flood defences for the areas of Stirling, West Dunbartonshire and Argyll and Bute. There are no studies or defences applicable to the National Park area in Perth and Kinross.

Stirling Council

Stirling Council have undertaken extensive exploratory work in the National Park Authority's most at risk communities including Aberfoyle and Callander. Much of this work involves flood modelling which aims to measure flood risk and identify possible solutions for flood risk reduction. Hydraulic model updates are currently underway for Callander and Aberfoyle, including the 'flood zone' event relevant to the National Planning Framework 4 (1 in 200-year event + 56% climate change allowance). These updates are expected to be completed by mid-2025 and will be incorporated into the Strategic Flood Risk Assessment (SFRA) thereafter.

Callander

There is a long history of flooding in Callander ranging from travel access routes being cut off, to flooding of homes and businesses. Stirling Council have invested in several reports to gain a better understanding of the causes and potential solutions to flooding in Callander.

Stirling Council are working on identifying a preferred option for Callander flood protection scheme. This seeks to reduce flood risk from river flooding. Updates on this project are on the Stirling Council dedicated Callander Flood Protection | Stirling Council Flood Protection Schemes and the Callander flood protection scheme webpage is platform to share information about the ongoing projects to mitigate impacts of river flooding to Callander and any engagement events with the community of Callander.

Callander is also subject to a surface water flooding and a surface water management plan is currently entering stage 2 and will likely be complete early in 2026.

Aberfoyle

Aberfoyle, particularly the areas of Main Street and Lochard Road, often experiences flooding from the River Forth. Notable floods include two major events in December 2015 caused by Storm Desmond and Storm Frank. Storm Frank, on December 30, 2015, was the largest recorded flood in Aberfoyle's history. More recently, Aberfoyle experienced extensive flooding in October 2023 resulting in widespread flooding to properties on the Main Street, impacting both local businesses and residences. Aberfoyle and the wider Strathard area are particularly sensitive to flooding due to the solitary access route beyond the A821, the B829, being regularly cut off due to flood water.

The Aberfoyle scheme was submitted for cycle 2 funding but was deemed a low priority by SEPA due to its low cost/benefit ratio, resulting in its removal from cycle 2 funding.

West Dunbartonshire Council

Within West Dunbartonshire a flood study in relation to Balloch within the National Park has been developed. This is the Loch Lomond and Vale of Leven Flood Risk Management Study Feasibility Report December 2019, that West Dunbartonshire Council

commissioned to identify the flood risk associated with Loch Lomond and the River Leven including its main tributaries, then assess options (including economic viability) for the alleviation of future flooding.

Within the study Flood Cell 4 – River Leven, Flood Cell 7 - Carrochan Burn and Flood Cell 8 - Ballagan Burn relate to the National Park affecting the areas of Balloch and west of Balloch towards Gartocharn. This study notes receptors and risk and sets out both grey and green potential control measures for flooding with preferred options and recommendations.

Within Balloch, just outside the National Park boundary there is an existing barrage, the Lomond Barrage, which forms part of the Loch Lomond Water Scheme. The barrage controls the outflow from Loch Lomond when the loch level is between approximately 7.0m AOD and 7.9m AOD. If loch levels are above or below this range the gates of the barrage stay in their lowered position and river flows are unrestricted.

Argyll and Bute Council

We are not aware of any flood studies relating to Cowal (planned, in progress or completed). Coastal Change Adaptation Plans are currently being developed for locations identified in Cycle 2 of the Local Flood Risk Management Plan.

Natural Flood Management Maps

Natural flood management sits alongside hard infrastructure, better flood warning and policies to avoid building in the flood plain in an integrated approach to flood risk management. It seeks to store or slow down floodwaters through measures such as the planting of woodlands, wetland creation, river restoration, or the creation of intertidal habitats. In addition to reducing flood risk, NFM measures can also provide many additional benefits, including enhanced biodiversity, improved water quality, and opportunities for recreation.

The Natural Flood Management Maps as referenced in the SFRA identify areas where nature-based solutions could be most effective for sustainable flood risk management. These are to be further investigated in conjunction with the broad-scale habitat recovery priority areas in the Park Authority's NPPP to support Flood Risk Management planning and sustainable land use at the new Local Development Plan stage.

WATER MANAGEMENT

Water Quality – Condition of Water Bodies – SEPA Water Environment Hub 2020

The Water Classification Hub provides an overview of the status of water bodies across Scotland, categorising them into five classifications: bad, poor, moderate, good, and high. The goal is for all water bodies to reach good or high status.

Within Loch Lomond and the Trossachs National Park, there are 97 identified water bodies. The most recent 2023 assessments indicate that the majority of these surface waters are classified as moderate (39) or good (46). However, 47 water bodies remain in moderate, poor, or bad condition, highlighting ongoing environmental challenges.

The primary factors affecting water quality in the National Park include:

- Hydroelectricity generation, which alters water flows and levels due to abstraction and storage, while also creating barriers to fish migration.
- Physical modifications to beds, banks, and shores, impacting natural habitats and hydrological processes.
- Ecological pressures on aquatic species, including unknown environmental stresses and the presence of invasive species in some areas.

Water bodies in the northern areas of Loch Lomond, particularly around Cairndow, Inveruglas, and Inverarnan, are more likely to be classified as poor or bad. This is largely due to the hydroelectric schemes in these regions, which disrupt water flows and levels through extensive water abstraction and storage operations.

Efforts to improve and restore these water bodies will require targeted actions, focusing on mitigating hydroelectric impacts, enhancing ecological conditions, and addressing physical modifications to surface waters.

BLUE AND GREEN INFRASTRUCTURE

Blue-Green Infrastructure refers to water-related and vegetated features within both natural and built environments that collectively provide a wide range of ecosystem services. Blue features include rivers, lochs, wetlands, canals, ponds, coastal and marine areas (such as beaches), as well as sustainable drainage solutions like porous paving, raingardens, and sustainable urban drainage systems (SuDS). Green features typically encompass parks, green roofs, street trees, and vegetated landscapes. Together, these elements support biodiversity, improve water quality, manage flood risk, and enhance the overall resilience and liveability of urban and rural spaces.

Loch Lomond and the Trossachs National Park Authority – Blue and Green Infrastructure Audit

The NPPP fully incorporates the National Planning Framework 4 (NPF4) National Developments relevant to BGi, specifically National Development 5 on Urban Sustainable, Blue and Green Surface Water Management Solutions, and National Development 8 on the National Walking, Cycling, and Wheeling Network. The NPF4 Regional Spatial Strategy for Central Scotland highlights the National Park's potential for large-scale restoration and enhancement of nature in response to climate change, through initiatives like woodland creation, peatland restoration, and natural flood risk management. It also identifies the potential of long-distance active travel and rail routes to promote sustainable tourism.

The 2024 NPPP includes goals that align with the National Park Authority's "Future Nature" programme, launched in 2022, which aims to halt nature's decline and restore biodiversity on a grand scale. This programme focuses on transforming the green and blue networks of the park. Its vision is to establish the LLTNP as a resilient, nature-rich area, where abundant wildlife and a healthy environment offer numerous benefits through an expansive, well-connected living network. Projects like Wild Strathfillan and the Loch Lomond Rainforest are already making significant strides at a landscape scale, showing the positive impacts of this initiative.

Together, the NPPP and Future Nature programme outline a broad set of principles and goals to greatly enhance and expand BGi over the next 15 years. To support the preparation of the second Local Development Plan (LDP2) and ensure the greatest benefits across various areas, the NPA is also working on a BGi study. The first stage of the study, which involved a detailed audit of the Blue Green Infrastructure (BGi) networks across the National Park, has been completed, though it is currently being used for internal purposes only.

Summary of Stakeholder Engagement

This section will be completed following the end of the engagement period and prior to inclusion in the final Evidence Report.

Summary of Implication for the Proposed Plan

The implications of the evidence for the Proposed Plan may be summarised as follows:

- The Strategic Flood Risk Assessment (SFRA), including flood risk constraints, will inform the spatial strategy, site allocation process for the new Local Development Plan (LDP).
- The area is exposed to a combination of coastal, fluvial, and surface water flood risks. The new LDP must prioritise avoiding flood risk on site allocations and, in addition, ensure a comprehensive understanding of flood risks in vulnerable areas such as Aberfoyle, Balloch and Callander, in accordance with NPF4 Policy 22.
- In line with the implication above and evidence presented in the SFRA, the new LDP needs to consider how to approach development in areas where access roads are vulnerable to flooding. This is particularly relevant where there is no other alternative route for safe access or egress.
- In line with SEPA's update and the increased focus on coastal flooding in the SFRA, the Local Development Plan should consider identifying areas at risk of coastal erosion and subsequent flooding, particularly along the Cowal Peninsula, to inform effective planning and mitigation strategies.
- Additionally, the new LDP should ensure land is protected for any flood management projects outlined in the relevant Flood Risk Management Plans.
- The LDP should explore the identification of areas suitable for natural flood management in collaboration with the habitat recovery priority areas identified in the NPPP, to support Flood Risk Management planning and promote sustainable land use.
- Based on RBMP3 and evidence from SEPA's Water Classification Hub regarding the condition of the water environment, the LDP should aim to support the protection and enhancement of water bodies across the National Park, supporting their achievement of good ecological status and preventing any further deterioration.
- The new LDP will consider whether blue and green infrastructure and natural flood management measures can be delivered through site allocation and requirements.
- The spatial strategy should identify, protect and enhance blue and green infrastructure assets and networks, while expanding existing provisions to ensure the National Park has a well-designed, high quality, accessible and inclusive green network.
- The new LDP should explore opportunities to integrate green infrastructure for managing surface water, reducing flood risk, improving natural water retention, and ensuring alignment with flood risk management guidelines.

• The Blue Green Infrastructure (BGi) audit outcomes will be used to inform the preparation of the LDP, including the spatial strategy and site allocation.
Statements of Agreement / Dispute
This section will be completed following the end of the engagement period and prior to inclusion in the final Evidence Report.