Attachment A

COASTAL FLOOD MAPPING PROJECT

LOWER SUNSHINE COAST

Coastal Flood Adaptation Policy and Regulation Considerations

July 2025

Sunshine Coast Regional District

District of Sechelt

Town of Gibsons

Islands Trust

Photo by Clayton McCallum Dubois

Contents

1. Purpose and Overview

Photo by Greg Thompson

Working together, the Sunshine Coast Regional District (SCRD), Town of Gibsons, District of Sechelt, and Islands Trust[1], launched the Coastal Flood Mapping project to better understand current and future flood hazards, produce updated coastal flood hazard mapping for future sea level rise scenarios, and develop a range of policy recommendations for project partners to consider for updating land use policies and guidelines for the lower Sunshine Coast.

Led by project consultant Northwest Hydraulic Consultants, Ltd. (NHC), the project produced coastal flood mapping for the lower Sunshine Coast area, identified high-risk areas, and generated specific flood construction levels for different project areas. Project sub-consultant, EcoPlan International, Inc. (EcoPlan), supported project outreach, engagement, and land use planning policy support. Project outreach sought to better understand community concerns and help build awareness and understanding of coastal flood hazards and risks which is a key component of growing community resilience.

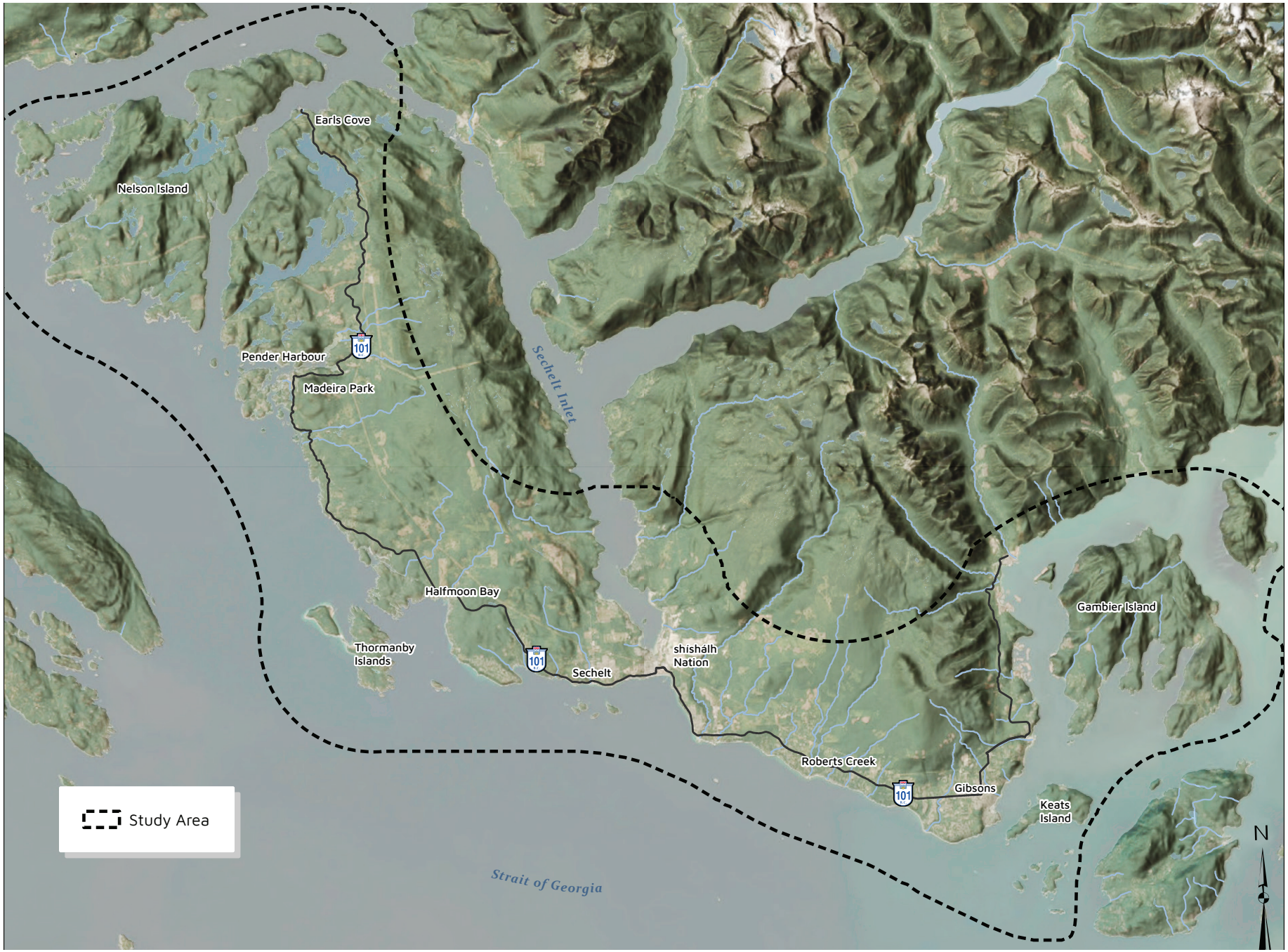
This report outlines and summarizes land use-based approaches to coastal flood risk reduction for the project team to consider in updating and revising existing coastal hazard management policies and guidance, including:

- Recommendations and considerations for updates to project partner Official Community Plans (OCPs) – goals, objectives, policies.
- Recommendations and considerations for updates to existing and potential coastal flood hazard Development Permit Areas (DPAs).
- Considerations for updates to Zoning bylaws where applicable and relevant to coastal flood hazard areas.
- Additional policy and program considerations to help improve coastal adaptation and resilience.

The lower Sunshine Coast is defined by its proximity to the ocean. With over 509 kilometres of coastline, flooding from sea level rise (SLR) and increased storm wave action is a growing hazard facing the region. Along the coastline, land use is a key driver of coastal flood risk. While new coastal hazard mapping does not reduce risk by itself, its incorporation in land use planning and policy can, over time, and in combination with other flood mitigation activities, help manage risk and improve the resiliency of the lower Sunshine Coast. Land use planning-based and regulatory approaches can also be better at managing future uncertainty given their general robustness across multiple flood scenarios and futures[2].

1 In the project planning area, the Gambier Local Trust Area includes 35 associated islands including Gambier, Keats, North Thormanby and South Thormanby islands.
2 Ebbwater Consulting Inc. 2023. Adaptive Flood Management: From Fragility to Flexibility. Prepared for Environment and Climate Change Canada. July 2023.

***MAP:** Coastal Flood Mapping Project Area*



WHAT ARE COASTAL FLOOD MAPS?

Coastal flooding results from a combination of multiple interacting coastal processes that include sea levels, tides, storm surges, and wave effects. Producing practical and suitably accurate coastal flood hazard maps representing present and future conditions in an efficient manner for a shoreline length and complexity of the lower Sunshine Coast required the application of expert judgement and skill, especially with respect to the approach to wave effects modelling. Wave effects (run-up and setup) may contribute a significant proportion (e.g., more than 50%) to the water levels that result in coastal flooding and erosion on shorelines in the Strait of Georgia, including the lower Sunshine Coast.

Flood mapping products produced for the Coastal Flood Mapping Project included the following:

- **Floodplain maps** showing flood inundation extents with Flood Construction Level (FCL) values for future sea level rise scenarios.
- **Inundation maps** showing flood extents for other modelled flood scenarios.

Flood Construction Levels (FCLs) mark the lowest elevation that livable floor space can be constructed. Anything constructed below an FCL has the potential of being impacted by coastal flooding. The Coastal Flood Mapping project has developed specific FCLs for different areas along the lower Sunshine Coast that will be incorporated into updated coastal hazard management approaches (e.g., Coastal Flood Hazard Development Permit Areas – DPAs).

For this project, FCL maps were prepared under conditions representing 1 m of sea level rise (SLR) and design storm scenarios. FCLs were calculated at selected locations along the shoreline, spaced to provide representative coverage across the region. FCL represents the minimum elevation at which vulnerable components of new buildings (e.g., lowest floor, mechanical systems, habitable space) should be constructed to reduce flood risk. FCLs were derived from three key components:

- Design water level (tide, storm surge, and relative sea level rise)
- Wave effects
- Freeboard[3]

Wave effects are influenced by local foreshore characteristics, particularly slope. Changes in foreshore slope can significantly affect wave run-up, even when offshore wave conditions remain constant. As a result, FCL values can vary considerably along the same shoreline. To capture this variability, a relatively high number of transects were used in the analysis. While this allows for a more accurate understanding of flood risk, it also introduces complexity and variability in the FCL, as small, localized changes in shoreline conditions can cause sharp differences in FCL values over short distances, which may appear inconsistent when viewed at a broader policy scale or when used as a guide for decision-making at the parcel level.

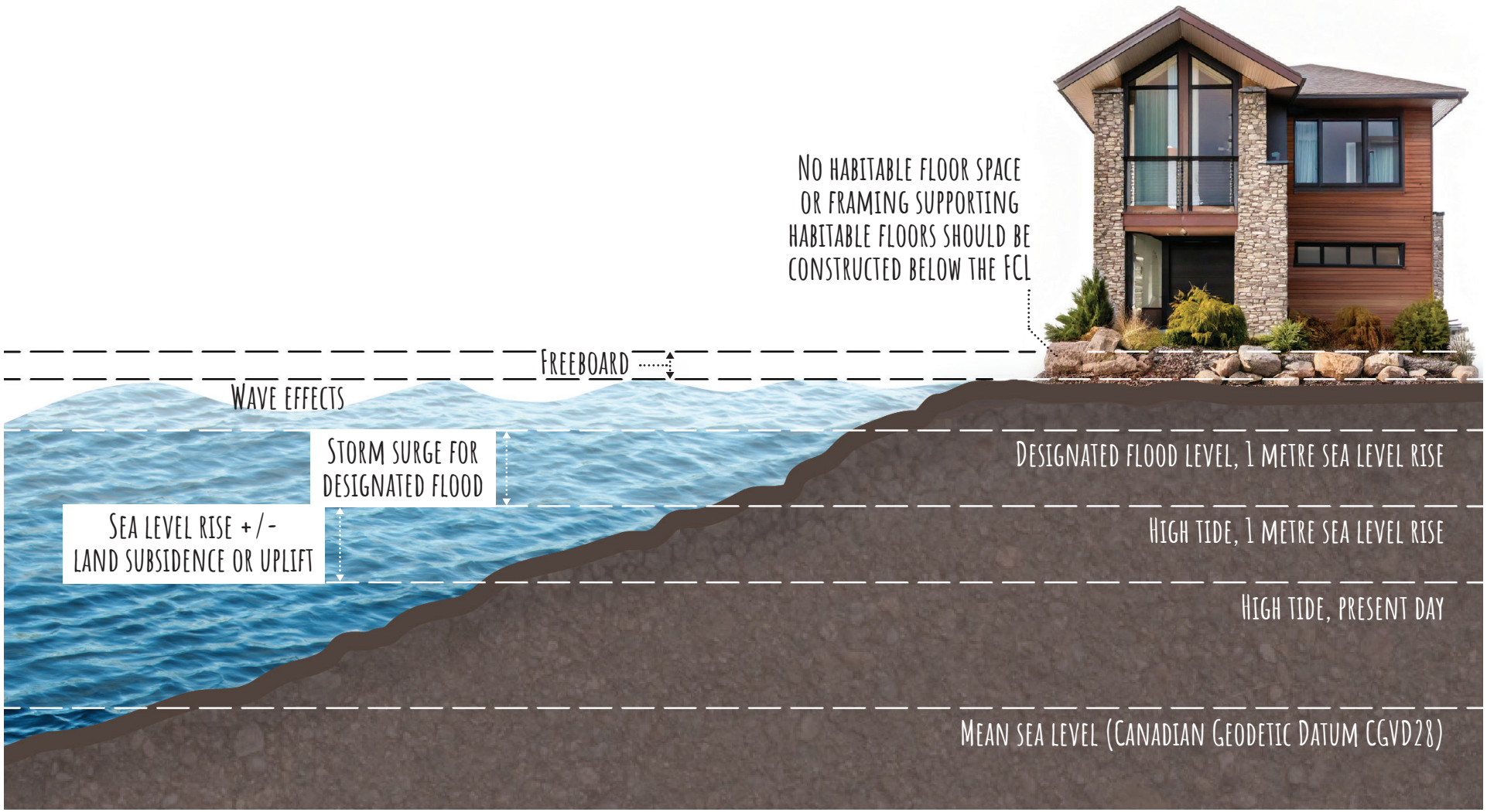
Mapping results are intended to support land use planning and policy development by highlighting areas of relative flood risk along the shoreline. They are not meant for parcel-level application but help identify those areas where flood hazard policies apply through the development guidelines (i.e., Development Approval Areas), or where more detailed studies may be needed.

3 Freeboard: a vertical allowance applied to the design flood level to account for uncertainty in the data and methods as well as local water level fluctuations, such as surges, standing waves, and superelevation.

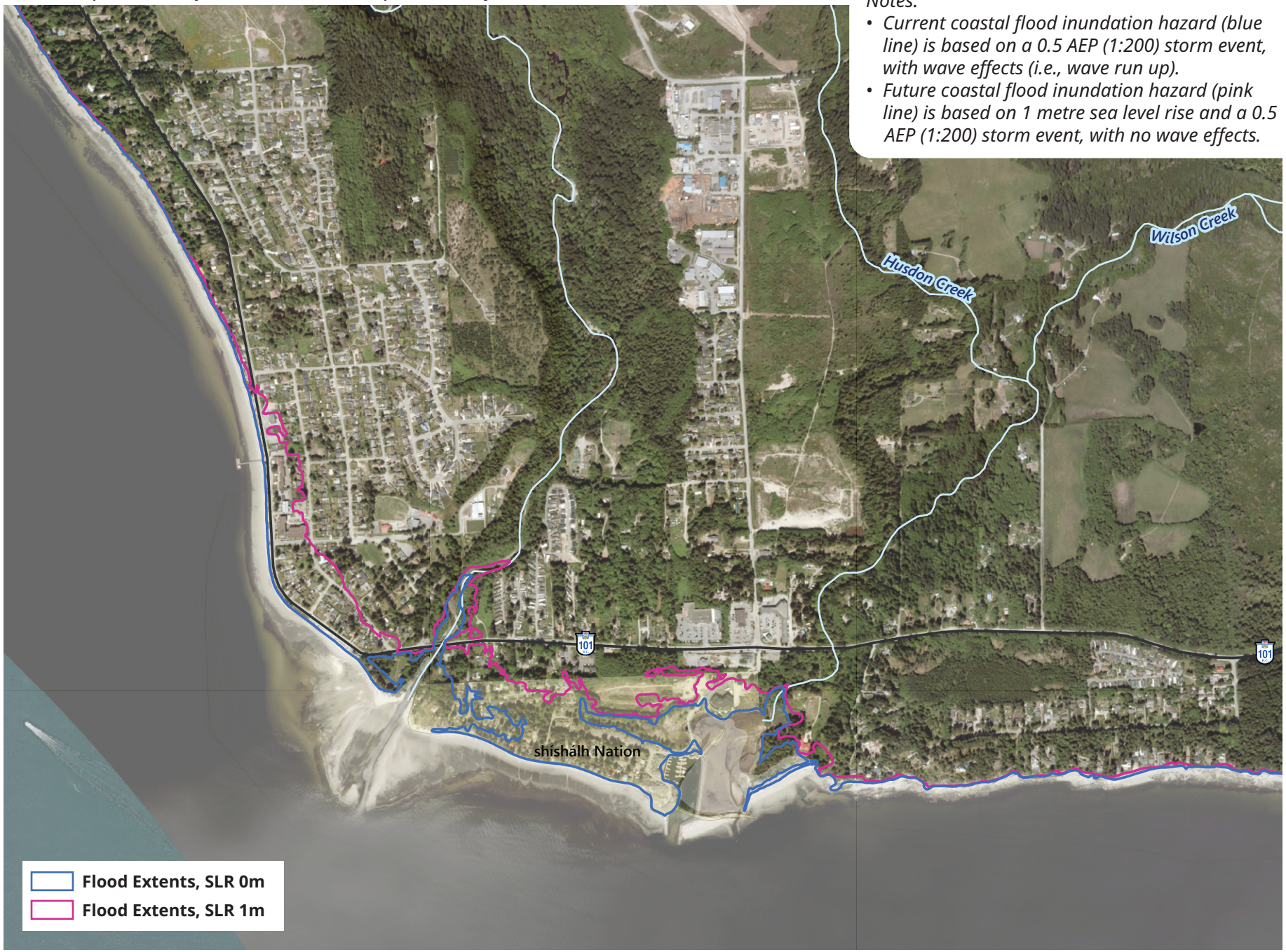
Flood Construction Levels (FCL)

based on high tide, sea level rise, storm surge, and wave effects

(illustrative sketch - not to scale)



MAP: *Sample coastal flood inundation map, Davis Bay SCRD*



Notes:

- *Current coastal flood inundation hazard (blue line) is based on a 0.5 AEP (1:200) storm event, with wave effects (i.e., wave run up).*
- *Future coastal flood inundation hazard (pink line) is based on 1 metre sea level rise and a 0.5 AEP (1:200) storm event, with no wave effects.*

2. Coastal Flood Management and the Salish Sea Region

Many local governments in B.C. and across Canada face increasing pressure to mitigate the various risks presented by coastal flood hazards driven by sea level rise. The lower Sunshine Coast region has a long and complex coastline (approx. 509 km), with several low-lying areas exposed to coastal flood hazards that will only grow into the future with sea level rise and more frequent and intense storms.

In 2004, the provincial government passed responsibility for flood management to local governments. The Flood Hazard Area Land Use Management Guidelines were amended in 2018 to incorporate sea level rise into the determination of building setbacks and flood construction levels in coastal areas. Under the Local Government Act, local governments are responsible for managing natural hazards through land use planning and regulations, including OCPs, development permits, zoning bylaws, floodplain bylaws, restrictive covenants, and public education programs. No single approach or tool can do it all, and local governments use them in combination, as they are being used by the local government project partners along the lower Sunshine Coast.

Across the broader Salish Sea region, many coastal communities and regional districts have undertaken similar initiatives, employing flood mapping and other flood mitigation strategies to improve coastal resilience. Collectively, these efforts from around the broader region provide valuable opportunities to learn from other local governments and provide opportunities to collaborate and share information.

The table highlights recent projects and coastal resilience work, including coastal flood development permit areas (DPA) and flood adaptation.

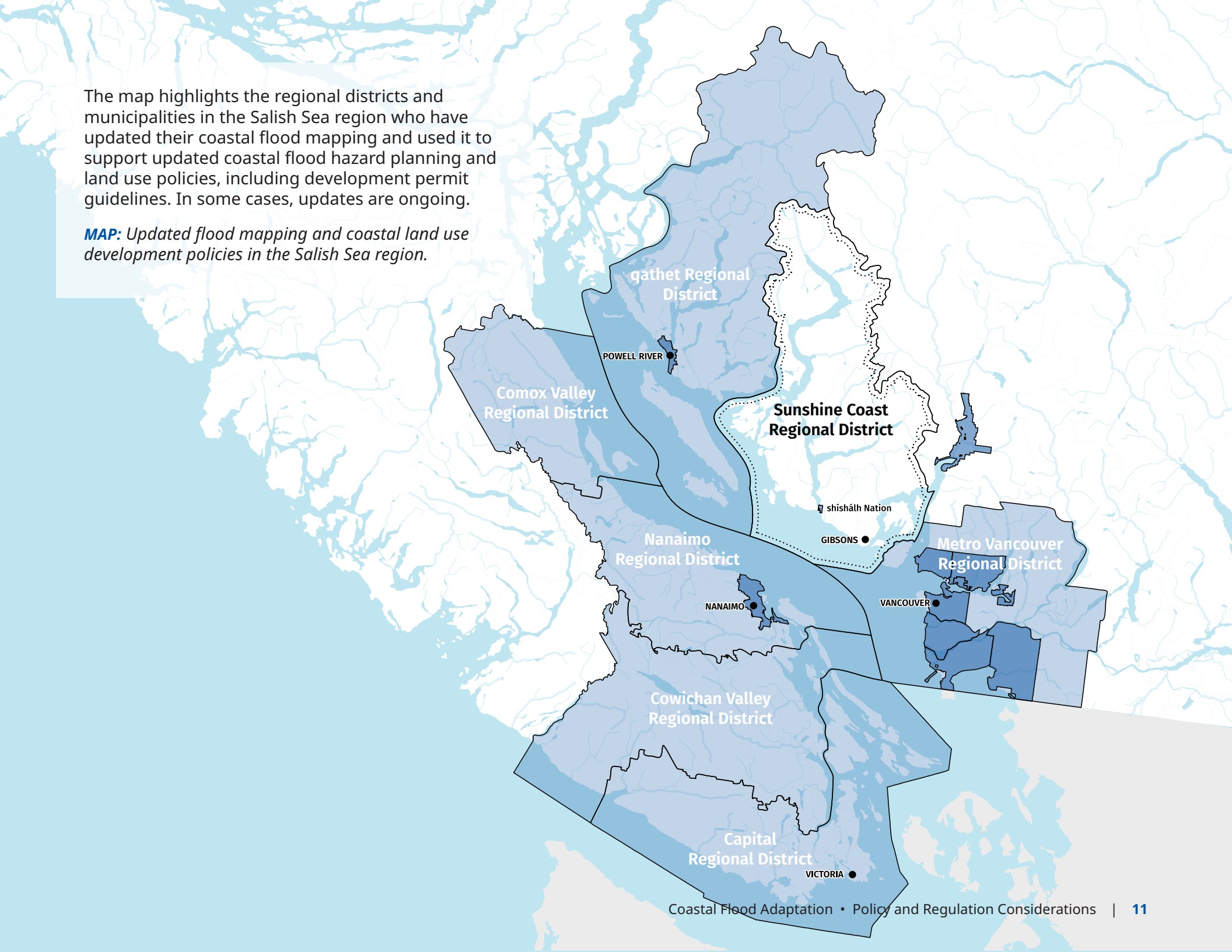
Photo by Sue Stevenson Gillard

TABLE: *Coastal flood management highlights in the Salish Sea region*

LOCAL GOVERNMENT	PLANNING ACTIVITIES	SUMMARY
Regional District of Nanaimo (RDN)	Coastal Flood Hazard Development Permit Area, 2024	The RDN adopted a new Flood Hazard Mitigation Bylaw to establish a Coastal Flood Hazard DPA for Electoral Areas A, E, G and H OCPs. This work followed an earlier flood hazard mapping project and study that incorporated climate change projections. Detailed guidelines for FCL calculations are provided in the DPA.
District of West Vancouver	Foreshore Development Permit Area, 2022	West Vancouver's foreshore DPA seeks to help protect people and properties and to provide information to homeowners about how to redevelop their properties safely, while sensitively managing the foreshore environment. The DPA includes 24 separate Flood Construction Level (FCL) transects for the area and includes a specific definition section for the DPA.
qathet Regional District (qRD), City of Powell River, Tla'amin Nation	Regional Coastal Flood Adaptation Strategy, 2022	This feasibility study explored options to strengthen the land use regulations and address gaps in zoning, building, and subdivision bylaws while highlighting the associated risks of implementing this approach across the upper Sunshine Coast region. The collaborative project involved three partner governments (qRD, City of Powell River, Tla'amin Nation) and made a series of recommendations. Land use planning implementation activities will focus on developing consistent approaches for land use along the shore (e.g., setbacks) and other policies, including FCL guidelines.
City of Nanaimo	City Plan Nanaimo Reimagined, 2022 Sea Level Rise Adaptation Program Coastal Flood Mapping, 2021	Nanaimo's award-winning OCP integrated climate adaptation and coastal flooding concerns throughout the document. Supporting regulatory tools include a sea level rise DPA that is incorporated with Nanaimo's zoning bylaw. Recent flood mapping work completed in 2021 supports the broader coastal adaptation program.
Comox Valley Regional District (CVRD)	Flood Hazard Land Use Management Project, in process Coastal Flood Mapping Project and Preliminary Options Assessment, 2021	The existing floodplain bylaw is currently being updated to incorporate 2021 coastal floodplain mapping and clarify language and definitions to reflect current best practices. With a tentative timeline of completion in Summer 2025, the project will provide the CVRD with related policies and tools to manage floodplain development applications. The project goal is to have pre-established flood construction levels and setbacks for all coastal properties, eliminating the need for site-specific geotechnical reports. An existing floodplain bylaw and coastal hazard DPA are in place to manage current coastal land use.
City of Surrey	Coastal Flood Adaptation Strategy, 2022	Following the completion of Surrey's Coastal Flood Adaptation Strategy, the City implemented targeted zoning changes by rescinding a policy allowing for lower Flood Construction Level variances, while concurrently introducing new provisions to ensure future coastal homes adhere to new FCLs.

The map highlights the regional districts and municipalities in the Salish Sea region who have updated their coastal flood mapping and used it to support updated coastal flood hazard planning and land use policies, including development permit guidelines. In some cases, updates are ongoing.

MAP: *Updated flood mapping and coastal land use development policies in the Salish Sea region.*



COASTAL FLOOD MANAGEMENT IN THE LOWER SUNSHINE COAST

A comprehensive review of existing coastal flood management policies in the project area (SCRD, District of Sechelt, Town of Gibsons, Islands Trust) was conducted. The analysis focused on OCPs, DPAs), and zoning bylaws. Other related plans, strategies and initiatives were also identified and noted.

In general, coastal flood management is addressed across all project partner land use planning tools (i.e., OCPs, DPAs, Zoning), but there are opportunities to improve, expand, and consolidate coastal hazard policies to improve coastal resilience. There are also opportunities to improve public communication of flood hazards, risks, and mitigation across land use planning tools. Key opportunities are presented in Section 3, Policy and Regulation Considerations.

The table highlights current flood management policies and approaches in the project area. A fuller overview is provided in Section 4, Resources.

TABLE: *Coastal Flood Hazard Management Summary Overview*

AREA	OFFICIAL COMMUNITY PLAN	DEVELOPMENT PERMIT AREAS	ZONING	OTHER (Plans, Strategies, Initiatives)
SCRD	• Limited references to coastal flooding in electoral area OCPs • Area D OCP contains coastal setback/FCL policy in GHG Reduction and Green Infrastructure 5.6 to increase vertical setback (i.e., FCL) to 2 m "in light of anticipated ocean level rises" • No Development Approval Area flood policy	• Area A, B, D, E, and West Howe Sound OCPs have consistent coastal zone hazard sections and setbacks with DPA 1A • Proposed Coastal DPA for Area F Twin Creeks • Area D DPA-5 includes requirements for QP assessment to address "existing and anticipated shoreline processes...given projected environmental trends including" sea-level rise	• 15-metre setback from the natural boundary of ocean for the purpose of flood protection in all Areas • Area A – 1.5 m FCL • Areas B, D, E, F Zoning Bylaw 722 – 2 m FCL • Qualified Professional (QP) not defined	• Community Climate Action Plan includes actions on coastal floodplain mapping and Greenshores programming • Joint Sunshine Coast Emergency Program (Hazard Risk & Vulnerability Analysis) • Climate Change Vulnerability & Risk Assessment Report
District of Sechelt	• Some references to adaptation and sea level rise in OCP sections • Policies for locating new development outside of flood risk areas, adherence to provincial guidance, and development of a Community Flood Mitigation Strategy	• DPA 3 & 4 - 15-metre setback from highest water mark • Setbacks for buildings and structures must consider storm and flooding potential • Part 9 Definitions includes information on floodproofing	• 15-metre setback from the natural boundary of ocean • 2m FCL (vertical setback) • QP definition included in Environmentally Sensitive Areas and Natural Hazard Development Permit Areas (DPAs 1-5), including requirements for flood expertise	• Joint Sunshine Coast Emergency Program (Hazard Risk & Vulnerability Analysis) • Integrated Community Sustainability Plan (2019)

AREA	OFFICIAL COMMUNITY PLAN	DEVELOPMENT PERMIT AREAS	ZONING	OTHER (Plans, Strategies, Initiatives)
Town of Gibsons	• Policy sections include coastal flooding, including a dedicated Sea Level Rise section (6.8) • No specific coastal flood-related actions are outlined in the Implementation section. However, the following policies are included in the OCP: • 6.1.2 Consider updating the identification of geotechnical hazard areas while taking into consideration climate change and sea level rise. • 6.4.9 Work towards a Foreshore Strategy that includes consideration of SLR • Gibsons OCP to be updated in 2025	• DPA 1 Geotechnical Hazard Development- guidelines place development 2.5m above the current natural boundary of the sea • DPA 2 Environmentally Sensitive Areas – identifies wave action as a hazard to consider in the QP assessment report • DPA 1 and DPA 2 both provide guidance on QP qualifications • DPA 1 requires a restrictive covenant with Land Title Office where the owner agrees not to claim damages from Gibsons or hold the Town responsible for damages caused by flooding or erosion to the land or buildings • DPAs 1 and 2 to be updated with 2025 OCP update	• Zoning bylaw includes a 15-metre setback from the natural boundary of the ocean and a minimum 1.5 m FCL • Zoning Bylaw update to be completed early in 2025/2026 to include new flood hazard regulations and new coastal climate resilience policies	• Managing Natural Assets to Increase Coastal Resilience Report (2022) examined how enhancing coastal natural assets like subtidal eelgrass, coastal vegetation, or beach sediments could reduce flood and erosion impacts • OCP update will include a new checklist and updated DPA guidelines • Joint Sunshine Coast Emergency Program (Hazard Risk & Vulnerability Analysis) • Low Carbon Resilience Climate Action Plan in development that will include adaptation and resilience actions - target completion 2025
Islands Trust (Gambier)	• Climate policies focus on mitigation, not adaptation • S.2.7 General Land Use Conditions – 7.5 metre ocean setback	• DPA 2 Brigade Bay Comprehensive Development includes a 15-metre setback	• 3.3 Siting and Setback Regulations (1) – 15-metres from the natural boundary of the sea	• Islands Trust Policy Statement - Draft Bylaw No. 183, Policy 3.5.17 • Setbacks from the Sea: Consider the current and anticipated impacts of sea level rise and storm surge and determine appropriate shoreline buffers and setbacks from the sea, taking into account best practices recommended by the federal and provincial governments.

3. Policy and Regulation Considerations

Under the Local Government Act*, local governments are responsible for managing natural hazards through land use planning and regulations, including OCPs, development permits, and zoning bylaws. The following sub-sections provide an overview of opportunities and considerations for project partners to better address coastal flooding in the lower Sunshine Coast. It focuses more on regulatory considerations (e.g., DPAs, Development Approval Information Areas) but also addresses more general OCP policies and objectives.*

At the highest level, the following considerations are recommended:

- **Prioritize coastal hazard development permit area updates.** The designation of DPAs in an OCP is a valuable tool for coastal hazard management and should be prioritized. Specific coastal flood hazard DPAs present the best opportunity to support adaptation actions while improving community resilience. However, coastal flood resilience can be incorporated into other DPAs, including other hazard areas (i.e., steep slopes, coastal slopes, environmentally sensitive areas). Where appropriate and relevant, form and character DPAs can also include guidance around more flood-resilient building features and landscaping for coastal developments.

  A review of recent planning guides and research, including a guide produced through B.C. Hydro's Sustainable Communities program, *Updating Official Community Plans and Zoning Bylaws for Climate Action – A guide for local governments* (2024), recommends placing a greater focus on more "regulatory" components of OCPs, specifically DPAs, to support climate action and adaptation.

- **"Mainstream" coastal flood adaptation.** For the lower Sunshine Coast, sea level rise and coastal flooding is an acute challenge whose impacts will be felt across multiple sectors. Coastal flood adaptation (adaptation, mitigation, resilience) should be linked and integrated, or "mainstreamed," across updated OCP sections, policies, DPAs, and land use designations. While some OCPs, notably the District of Sechelt's and the Town of Gibsons, address coastal flooding and sea-level rise within some general policy chapters,[4] there are opportunities to highlight and integrate coastal flood policies across OCP chapters.

- **Elevate coastal adaptation and resilience.** While a focus on other climate emergency considerations, including GHG mitigation and decarbonization, is important, coastal

4 See: District of Sechelt OCP Chapter 2. Sustainable Land Use, Chapter 3. Natural Environment – Coastal Flooding, Chapter 4. Ocean and Shoreline Areas, and Town of Gibsons OCP Chapter 6. The Natural Environment, Chapter 6.8 Sea Level Rise.

adaptation and resilience could be highlighted in updated OCPs. Given the uncertainty surrounding sea level rise and associated coastal flood hazards (i.e., it could happen faster, be more severe[5]), updated OCPs should be grounded in an adaptive management approach that recognizes planning in a dynamic climate context, which needs to be flexible and responsive to new drivers as they emerge (even over new 5-year update period of OCPs mandated by new provincial legislation).

- **Enhance awareness and education within OCPs.** Community education and awareness are critical components of building community climate resilience that an OCP can address. This could be achieved by clarifying connections, in a general sense, about how coastal flooding will impact the daily lives and quality of life of residents. Consider including short, succinct callouts or text boxes in relevant policy chapters to help improve awareness of the cross-cutting implications of coastal flooding. Here, graphics and illustrations could also be used to help explain concepts like flood construction levels or storm surge and sea-level rise. Some current OCPs (e.g., Area E – Elphinstone, District of Sechelt) use pictures of coastal flooding which can be helpful to illustrate current hazards and risks.

  Finally, improving and expanding definitions of core concepts can be helpful. Coastal flood management involves a range of activities and concepts (FCL, storm surge, nature-based solutions/Greenshores) that could be illustrated and explained in an updated OCP or public information materials.

- **Consistent and clear policy.** In revising, updating, or expanding flood management planning and regulation, the opportunity to take a consistent and coordinated approach as a region should not be overlooked. There

5 The UN IPCC Sixth Assessment Report (2021) and emerging research indicate that with current warming trends, we are certain to move beyond 1.5 ^{0}C warming above pre-industrial levels (which they have in 2024).

Photo by Karen Graves

is some degree of consistency between jurisdictions, particularly with SCRD electoral areas. However, the lower Sunshine Coast flood mapping project and future planning updates provide an opportunity to align policies and create a consistent and transparent regulatory approach across the region. This will support collaboration between residents, local government staff and contractors working on coastal development projects. A common and standardized organization of updated coastal hazard DPAs would improve navigation and clarity (Note: a sample coastal DPA is provided in Section 4, Resources).

For updated coastal hazard DPAs, there is also an opportunity for regionally consistent DPA guidance and definitions. Several existing issues and opportunities have already been identified by some project partners through internal DPA review projects, including:

- Specific policy guidance on the types of structures exempted from coastal hazard DPs.
- Clarification for trees permitted to be removed without the issuance of a DP or under local government tree-cutting bylaws.
- Additional guidance and definitions around Qualified Professionals (QPs) to clarify potential requirements for a Professional Engineer (i.e. Coastal Engineer) to determine FCLs where they have not been identified through the coastal flood mapping project.
- Clarification on permitted additions to existing buildings and FCL requirements (i.e., should additions to the existing structure <=25% of the existing floor area to meet FCL where feasible?).

The opportunity for project partners to maintain a list of qualified professional and coastal engineers who could support DPA applications was also identified, recognizing that local governments would not recommend one company over another.

Photo by Carol Ann Bamford

DEVELOPMENT PERMIT AREAS

Local governments have the authority to designate development permit areas (DPAs) in their community for a variety of reasons. From a coastal flooding perspective, DPAs support community resilience through a variety of avenues. This includes protecting natural features and functions from development that can help buffer and mitigate coastal flooding or minimizing and managing development situated in identified coastal hazard areas.

Most project partners have existing coastal flood-related DPAs in place along with associated steep slope and geotechnical hazard DPAs that recognize the landslides, erosion, debris flows, and extreme weather-related events that individually and collectively can increase coastal development risks. A large component of the coastal flood mapping project was to support project partners in updating and improving coastal flood hazard DPAs.

With updated flood mapping, project partners can update existing DPAs with more detailed mapping and specific FCL information and develop regionally consistent coastal flood DPA.

Considerations for updating DPAs include the following.

TABLE: *Coastal/Foreshore DPA considerations*

CONSIDERATION	RATIONALE	CURRENT STATE
Separate coastal flood hazard DPA with a regionally consistent naming convention	• Scale and scope of coastal flood hazard warrants separate DPA • Shared, cross-boundary hazards should have consistent names across DPAs in the region – useful for establishing a regionally consistent approach to support collaboration between residents, local government staff, and contractors	• Most SCRD electoral area OCPs have separate Coastal Zone Hazard DPA • The Town of Gibsons is currently in the process of updating their Geotechnical Hazard Development DPA
Standardize DPA objectives	• Regionally consistent DPA objectives that include reference to maintaining foreshore habitat values • Example: – *The ____ DPA has been established to:* • *Minimize risk to people and property from coastal hazards, including sea level rise, storms, wave effects, and flooding.* • *Support coastal management in reducing flooding risks.* • *Preserve and enhance the integrity of the intertidal habitat of the foreshore and minimize shoreline erosion.*	• Objectives differ across current DPAs • Some DPAs lack explicit objectives

CONSIDERATION	RATIONALE	CURRENT STATE
Standardize and clarify requirements	• DPA requirements should be consistent across the region • Additional requirements for the following work could be added to a new coastal flood DPA, including: – Construction of, or alteration or addition to all other non-dwelling buildings and structures, including pools, hot tubs, sheds, retaining walls, and other structures within 15 m of the natural boundary (high tide mark) of the ocean – Alteration of land within 15 m of the natural boundary (high tide mark) of the ocean (i.e., the riparian area of the foreshore), including, and without limitation: • Site clearing or grading • Placement of fill or disturbance of soils, rocks or other native materials for purposes other than routine maintenance of existing landscaping • Creation of impervious and semi-impervious surfaces (such as patios and driveways) • Installation, construction, or alteration of flood protection or erosion protection works • Installation, construction, or maintenance of drainage, hydro, water, sewer, or other utilities	• Some variation and lack of clarity across existing DPAs
Maintain existing localized guidance	• Where appropriate for coastal flood hazard areas, current site-specific guidance should be maintained and clarified in updated DPAs	• Current DPAs include specific local guidance for known local hazard areas

CONSIDERATION	RATIONALE	CURRENT STATE
Standardize exemptions (as appropriate)	• Regionally consistent exemptions can help support broader understanding and awareness with important groups (e.g., development community, builders/contractors) • Common exemptions include: – Interior renovations to existing buildings – Exterior renovations, repairs, or alterations to existing buildings or structures except when the following is within the 15 m setback: • An increase in the size of existing structures • Removal and reconstruction of structures • Common exemptions from FCL requirements include: – Recreation shelters, stands, washrooms and other outdoor facilities designed to withstand periodic flooding – Accessory buildings such as storage buildings, porches, and domestic greenhouses that is not habitable space[6] • Clarification on permitted additions to existing buildings and FCL requirements (i.e., should additions to the existing structure of <=25% of existing floor area to meet FCL where feasible?) • Better definition of trees permitted to be cut without issuance of a DP or under local government tree cutting bylaws	• No standard exemptions • Exemptions appear in different sections and/or apply to other DPAs
Standardize supporting information (e.g., FAQ) and Qualified Professional (QP) information	• Under B.C. Flood Hazard Area Land Use Management Guidelines (2018), a QP is defined as "A person who is registered or licensed under the provisions of the Engineers and Geoscientists Act, RSBC 1996, chapter 116" • If the new DPA permits the applicant to pursue a property-specific FCL instead of the FCL provided through DPA guidelines, a coastal engineering report should be prepared by a Professional Engineer with coastal flood experience, or a potential requirement for a Professional Engineer (i.e. Coastal Engineer) • A separate FAQ could be considered for planning department websites and/or as printed resource material • Printed resource material could include information on how applicants can find necessary QP or Professional Engineer for DP application (Note: local governments could maintain a list, but it is not expected that they would recommend one company over another)	• Some existing guidance for Qualified Professional

6 Note: District of West Vancouver Foreshore DPA includes addition exemption: "An addition, below the minimum FCL elevation that would increase the size of the building or structure less than 25% of the existing floor area."

CONSIDERATION	RATIONALE	CURRENT STATE
Encourage nature-based solutions	• Nature-based solutions can play a key role in managing coastal flood and erosion risk while providing additional benefits such as enhancing biodiversity, carbon sequestration (capturing and storing carbon dioxide from the atmosphere), and opportunities for recreational activities • Nature-based solutions or Greenshores approaches could be heightened in DPA guidelines, or in the general OCP policies	• Some references to nature-based approaches, but an opportunity to highlight and strengthen
Consider incorporating restrictive covenants	• B.C. Flood Hazard Area Land Use Management Guidelines support registering restrictive covenants on title under section 219 of the Land Title Act for new subdivisions and development on existing lots in flood hazard areas to: – Regulate redevelopment at the end of the building lifespan to stipulate reconstruction requirements to meet the FCL and setbacks in force at the time of redevelopment – Outline building requirements and limit liability (for provincial or local government) on existing lots where meeting DPA guidelines would sterilize the lot (i.e., not allow the land use and/or structures permitted under current regulations)	• Town of Gibsons DPA 1 includes the following guidelines: • "The owner agrees that the Land shall not be used, developed, or buildings or structures erected thereon, except in compliance with the conditions herein. The owner acknowledges that the Town of Gibsons does not represent to the owner or any other person that any building constructed or mobile home located in accordance with the conditions herein will not be damaged by flooding or erosion and the owner covenants and agrees not to claim damages from the Town or hold the Town responsible for damages caused by flooding or erosion to the land or to said lands and to any contents thereof."

DEVELOPMENT APPROVAL INFORMATION AREAS

Development approval information areas (DAIA) are used by local governments to ensure that applicable studies and relevant information are provided to evaluate the impact of a proposed development. Development approval information is typically required when the development proposal requires an amendment to the zoning bylaw, the issuance of a development permit, or the issuance of a temporary use permit.

DAIA requirements vary across the lower Sunshine Coast. For the District of Sechelt, all natural hazards and environmental protection DPAs (DPAs No. 1 to 5) are designated DAIAs, while the Town of Gibsons only designates the Gibsons Aquifer DPA (No. 3) a DAIA. In the SCRD, Areas A and B do not have DAIAs, while Area D designates the entire plan area as a DAIA and Area E designates all DPAs DAIAs. Area E also permits DAIAs for rezonings. Area F does not currently include DAIAs. For Islands Trust, all DPAs are also designated DAIAs.

Existing development approval information area policies and procedure bylaws could be updated and harmonized (at least for the SCRD) to include additional requirements for climate change related plans and studies to be submitted as part of the review process. This could include an option to require a summary vulnerability assessment for development in coastal hazard areas.

The assessment requirement could include a requirement to incorporate longer-term hazard projections (e.g., 80 years) to better assess and understand future climate-driven risks to development. This assessment could utilize a municipality's existing hazard, risk, and vulnerability assessment for climate risk methodology if one exists as it does for the Town of Gibsons.

Opportunities for reporting on the inclusion of nature-based solutions could also be included.

In other hazard areas (steep slopes, river flooding) where pluvial or overland flooding has been linked to increased coastal hazards (e.g., flooding, erosion) DAIAs could include requirements for the installation, retention or maintenance of existing natural features on a property that help mitigate downstream flood risks (e.g. bioswales and rain gardens, constructed wetlands, stormwater retention and detention ponds) and/or engineered assets (e.g., permeable pavement, rainwater storage tanks).

Photo by Rhian Piprell

OCP POLICIES AND OBJECTIVES

OCPs set the broad direction of land use in a community and include a wide range of statements and policies on community goals and development priorities. For the lower Sunshine Coast, coastal flood adaptation could be linked and integrated, or "mainstreamed," across updated OCP policy chapters. While some OCPs, notably the District of Sechelt's and Town of Gibsons, address coastal flooding and sea-level rise in general policy chapters, there are opportunities to highlight and integrate coastal flood policies across other OCP chapters to help mainstream coastal adaptation and risk mitigation and to highlight the cross-cutting nature of the challenge.

While coastal policy direction could be provided throughout OCP policy sections, a separate coastal section can be maintained as well to help reinforce and reiterate policies embedded in other sections, expanding on their importance as both the Town of Gibsons and District of Sechelt have done with their sea level rise and coastal flooding sub-sections. A coastal policy chapter can also be used to give a home to specific coastal hazard policies that may not "fit" as well in other sections.

As lower Sunshine Coast OCPs are reviewed and updated, there are policy additions that can be made to better support coastal flood mitigation, adaptation, and resilience. Recognizing that OCP policy chapters across the lower Sunshine Coast vary widely, this section presents potential additions and considerations for generalized policy chapters and thematic areas.

Some redundancy between OCP chapters (i.e., the same or a similar policy appearing in more than one section) may be useful to highlight and emphasize the importance of climate action across policy areas.

Buildings and Neighbourhoods

Potential policy additions to consider include the following:

- Update hazard data and mapping as new climate projections and models become available and update associated development restrictions accordingly (e.g., Flood Construction Levels).
- Raise community awareness of climate-resilient actions that can be implemented by homeowners, including flood proofing.
- Support the development of a resilient design checklist for new development and renovations in the coastal hazard area.

For waterfront neighbourhoods in Gibsons and Sechelt, an additional policy could include:

- Support shoreline enhancements, including seawalls, that feature a naturalized edge and shoreline protection to benefit the upland area, protect against sea level rise and be ecologically productive.

Parks, Open Space, and Environment

Potential policy additions to consider include the following:

- Identify opportunities to acquire, enhance and protect important natural areas and ecological assets with identified flood mitigation benefits through redevelopment, rezoning, and development application requirements.
- Acquire parkland in connection with hazard mitigation objectives and opportunities.
- Integrate policies for ecological values into other planning processes and policies, including stormwater management planning and flood protection.

- Integrate green infrastructure in developed areas (e.g., bioswales, rain gardens, street trees) to support climate resilience and improve local biodiversity.
- Develop educational programs that help coastal property owners, businesses, and residents plant and maintain more resilient landscapes that provide climate adaptation and mitigation benefits.

Servicing and Infrastructure

Potential policy additions to consider include the following:

- Adopt a long-term life cycle asset management approach that addresses the challenges of climate change and related coastal hazards in the design, maintenance and renewal of infrastructure and facilities.
- Strengthen municipal assets in the context of a changing climate and more extreme weather events by developing a comprehensive strategy to improve and increase the resiliency of:
  - Built assets (buildings, roads, water/sewer systems, stormwater systems, lighting).
  - Natural assets (coastline, wetlands, waterways, soil).
  - Green infrastructure (bioswales, rain gardens, urban parks).
- Consider nature-based and green infrastructure options (i.e., stormwater management, flood protection) wherever practical and appropriate.
- Ensure major infrastructure planning and development considers climate change hazards and risks that minimize impacts on the natural environment and increase carbon sequestration.

Health, Wellbeing and Safety

Potential policy additions to consider include the following:

- Locate community safety facilities (e.g., fire halls, police stations) out of coastal hazard areas.
- Ensure emergency management plans are in place for climate emergencies, including flooding.
- Develop educational materials for developers and homebuilders to encourage greener and more resilient building and development.

Regional Collaboration

Potential policy additions to consider include the following:

- Work with local government partners (SCRD, District of Sechelt, Town of Gibsons, Islands Trust) to prepare regional risk assessments for all potential hazards as required by the B.C. Emergency and Disaster Management Act.
- Work with local government partners (SCRD, District of Sechelt, Town of Gibsons, Islands Trust) to coordinate coastal flood mitigation, including emergency response and management policies where practical and appropriate.
- Work with shíshálh Nation to coordinate coastal flood mitigation, including emergency response and management policies where practical and appropriate.

In addition to these policy sections, an equity section could be developed in updated OCPs. Vulnerable populations, such as elderly, low-income, and marginalized people, face disproportionate risks under current and projected climate risks, including coastal hazards. Prioritizing action in a community's most vulnerable areas will increase overall community resilience. Potential policy additions to consider including in any equity section includes:

- Engaging communities, especially equity-seeking groups, in the development and implementation of climate change related policies and programs, including coastal flood hazard management and mitigation.

ZONING

Project partner zoning bylaws establish setbacks from shorelines (15 m) and, in most cases except the Gambier Local Trust Area, provide general guidelines around establishing a vertical setback or flood construction level in areas abutting the ocean. The coastal flood mapping project will provide greater detail around vertical setbacks, or FCLs.

The following additions to zoning bylaws can be considered by project partners:

- **Shoreline setback landscaping.** Consider including landscaping guidelines for the upland portion of coastal setback area (e.g., buffer zone requirements, restrictions on removing existing vegetation, encouraging the use of marine environment native species). Specific policies can be included to:
  - Minimize erosion, retain wildlife habitat and maintain water quality, slope stability and natural vegetation along shorelines.
  - Avoid areas with poor slope stability and locate foreshore accesses/structures including trails and pathways sensitively.
  - Maintain existing marine habitats (e.g. eelgrass beds, shellfish beds) in their natural state to protect the resource and help reduce shoreline erosion.

- **Protect valuable and sensitive shoreline ecosystems.** Where a development application includes native plant species or plant communities that are identified as sensitive, rare, threatened or endangered or have been identified by a Qualified Environmental Professional (QEP) as worthy of protection, their habitat areas should be left undisturbed. If disturbance cannot be entirely avoided, development and mitigation/compensation measures could be undertaken under the supervision of a QEP and may require additional advice from applicable senior governmental agencies. Other considerations include:
  - Locate development in the least environmentally sensitive areas (e.g., areas that have been previously disturbed) to minimize impact on the ecology of the intertidal habitat.
  - Encourage the preservation of native trees and shrubs, or where necessary, replacement with suitable/native species for the coastal environment.
  - Where possible, natural or soft landscaping materials shall be used to protect the property and foreshore area and create resiliency to coastal flooding.
  - Where native plant species or plant communities dependent on a marine shoreline habitat are identified as sensitive, rare, threatened, or endangered and have been identified by a QEP for protection, their habitat areas shall be left undisturbed.

- **Regulate installation of hard structural shore protection measures (e.g.,** riprap structures, lock block walls, concrete walls). Discourage the use of retaining walls and other "hard" surfaces such as seawalls and riprap armouring shall only be supported where a Professional Engineer has determined that "soft" approaches to shoreline stabilization are not appropriate given site-specific conditions and shall not increase scour and erosion of the foreshore area. Zoning can also stipulate that:
  - All shore protection measures be designed by an appropriate qualified coastal professional.
  - The size of any shore protection device must be limited to the minimum size necessary.

- **Building elevation considerations.** Seek regionally consistent guidance around establishing vertical setbacks where FCL information is not available. Provincial guidance documents are available here (see Section 4, Resources).

- **Special zoning provisions for critical infrastructure.** Regulate and permit uses in high-risk coastal hazard areas. Recognizing that some lifeline infrastructure[7] is currently located within the coastal hazard area and difficult to relocate, zoning stipulations could outline the incorporation of more flood-resistant designs and materials for updates and new infrastructure developments.

It should be noted that some local governments in BC (e.g., Municipality of North Cowichan) provide coastal hazards DPA guidelines within their Zoning Bylaw. The Municipality of North Cowichan's OCP includes a DPA section that provides general exemptions for all DPAs along with specific purpose, designation, and objectives information.

7 Lifeline infrastructure systems are critical to the recovery of social functions after a disaster or emergency event, including coastal flooding. Lifeline infrastructure includes water, wastewater, drainage, electric power, communications, gas and liquid fuels, solid waste, and transportations systems.

Photo by Rhian Piprell

4. Resources

COASTAL FLOOD POLICY – LOCAL GOVERNMENT EXAMPLES

West Vancouver Foreshore Development Permit Area imposes strict requirements for property owners to provide certified reports (Environmental Assessment & Coastal Engineering Reports by QPs) identifying hazardous conditions and risk, and FCL compliance, ensuring informed decision-making and proactive risk mitigation strategies in coastal development projects. The District of West Vancouver approved a Foreshore Development Permit Area (DPA) in 2022 to address increasing risks of coastal flooding and sea level rise in the community. This new DPA was installed to minimize coastal flood risks, support coastal management, and protect intertidal habitats from erosion. New developments in the DPA must now be built above projected FCLs while incorporating environmental protection measures and site-specific flood mitigation strategies.

Regional District of Nanaimo Coastal Flood Hazard Development Permit Area designates flood-prone areas, sets minimum distances from hazards, specifies floor elevation levels, and requires property owners to provide a geotechnical report for new structures. The RDN regulates new construction in coastal floodplains through Flood Hazard Mitigation Bylaw No. 1872, which designates floodplain areas, establishes setbacks, and sets minimum FCLs. Adopted in 2024, the bylaw provides clear guidance to electoral areas A, E, G, and H earlier in the development process to mitigate coastal flood risks and streamline approvals. It also requires site-specific geotechnical reports at an earlier stage, helping property owners avoid unexpected costs and delays during building permitting.

District of Ucluelet: DPA VII – Marine Shoreline applies to lands within 30 m of the ocean boundary. While not specifically focused on coastal flooding, it requires a professional assessment and certification of construction under the Community Charter's authority, considering detailed flood risk mapping and the anticipated impacts of climate change, such as rising sea levels. This includes design considerations for sea levels in 2100.

Municipality of North Cowichan DPA 4 – Hazard Lands includes coastal lands vulnerable to flooding and sea level rise and establishes a process for hazard assessment over those areas of the Municipality susceptible to land slippage, erosion, wildfires and flood. The OCP was updated in 2022, and the Zoning Bylaw was last amended in March 2025.

City of Campbell River Foreshore Development Permit Area, 2012. It is an older DPA, but it still provides good information on soft and hard-engineered approaches to mitigating coastal flood hazards.

SAMPLE COASTAL FLOOD DEVELOPMENT APPROVAL AREA

District of West Vancouver - Foreshore Development Permit Area Guidelines

Policy NE2: Sites with the Coastal Floodplain Area

Conditions

The Development Permit Area (DPA) has been designated pursuant to the following sections of the *Local Government Act*:

1. 488(1)(a) protection of the natural environment, its ecosystems and biological diversity
2. 488(1)(b) protection of development from hazardous conditions

Objectives

The Foreshore DPA is established to:

3. Minimize risk to people and property from coastal hazards including sea level rise, storms, wave effects, and flooding
4. Support coastal management in reducing flooding risks
5. Preserve and enhance the integrity of the intertidal habitat of the foreshore and minimize shoreline erosion

A Development Permit is required for:

Subdivision of land

1. Construction of, or alteration, or addition to a dwelling
2. Construction of, or alteration or addition to all other non-dwelling buildings and structures, including pools, hot tubs, sheds, retaining walls, and other structures within 15 metres of the natural boundary of the ocean
3. Alteration of land within 15 metres of the natural boundary of the ocean (i.e., the riparian area of the foreshore), including, and without limitation:
   - site clearing or grading
   - cutting of trees
   - placement of fill, or disturbance of soils, rocks or other native materials for purposes other than routine maintenance of existing landscaping
   - creation of impervious and semi-impervious surfaces (such as patios and driveways)
   - installation, construction, or alteration of flood protection or erosion protection works
   - installation, construction, or maintenance of drainage, hydro, water, sewer, or other utilities

Exemptions

- Interior renovations to existing buildings
- Exterior renovations, repairs, or alterations to existing buildings or structures except when the following is within 15 m of the natural boundary of the ocean:
  - an increase in the size of the existing structures; or
  - removal and reconstruction of structures
- Installation of fences that allow for passage of water and does not require removal of trees
- Emergency works, including tree cutting, necessary to remove an immediate danger or hazard, as certified by an Arborist

Exemptions from the requirement to meet the Flood Construction Level (FCL)

- Recreation shelters, stands, washrooms and other outdoor facilities designed to withstand periodic flooding
- Renovation of an existing building or structure.

- Construction of a portion of a building or structure that is used as a carport or garage
- Accessory buildings such as storage buildings, porches, and domestic greenhouses that is not habitable space
- An addition, below the minimum FCL elevation that would increase the size of the building or structure by less than 25 percent of the existing floor area
- Commercial space

GUIDELINES

I. For the purpose of reducing the risk from coastal flood hazards on upland property and development, the following guidelines for buildings and construction shall apply:

a) All development should be located in the least hazardous portion of a property.

b) The setback for a dwelling should be the greater of 15 metres from the future estimated natural boundary of the ocean at Year 2100, or landward of the location where the natural ground elevation contour is equivalent to the Year 2100 Flood Construction Level (FCL), calculated by a Professional Engineer, using the Provincial guidelines (Sections 3.5 & 3.6 of the Flood Hazard Area Land Use Management Guidelines) as amended from time to time.

c) For subdivisions, either through the layout of the subdivision or through conditions in the Development Permit that supplement the District's Zoning Bylaw, the permitted building envelope for every lot should be the greater of 15 metres from the estimated natural boundary of the ocean at Year 2100, or landward of the location where the natural ground elevation contour is equivalent to the Year 2100 FCL, calculated by a Professional Engineer, using the Provincial guidelines (Flood Hazard Area Land Use Management Guidelines) as amended from time to time.

d) The assessment by the Professional Engineer must be in accordance with the Provincial guidelines (Flood Hazard Area Land Use Management Guidelines), including without limitation, the requirement to account for any secondary sources of flooding when calculating an FCL.

e) In addition to the calculation of the FCL, the Professional Engineer must also provide other recommendations for safe use of the dwelling, to ensure that the proposed development is protected from the natural hazard.

f) For commercial space where the FCL is not applied, a Professional Engineer must provide recommendations to minimize damage to property and safety hazards during a flooding event.

g) All major mechanical and electrical infrastructure susceptible to damage should be located above the FCL or within floodproofing measures as recommended by the Professional Engineer.

h) Egress/ingress to buildings should be located above the FCL.

i) A Flood Hazard and Risk Assurance Statement must be submitted by the Professional Engineer.

j) The onsite stormwater management plan must account for the FCL if the outlet is to the marine environment. The plan must include mitigation measures against sea level rise and future submerged outlet conditions.

k) Construction of septic tanks and deposit fields must be located outside of 15 metres of the natural boundary of the ocean.

l) Construction and construction materials shall adhere to Provincial Environmental Best Management Practices for Land Development as amended or replaced from time to time, to ensure no deleterious substances entering the sensitive environment of the foreshore area and water.

m) Should imported fill be required for site grading, the fill should be clean and free of debris and deleterious

substances and adhere to fill specifications outlined by a Geotechnical Engineer.

n) If any landfill is proposed, it should be adequately compacted, and the face of the landfill slope should be adequately protected against erosion from flood flows, wave action, ice or other debris. The fill must not adversely impact neighbouring properties by increasing the surface water elevation or directing flows toward those properties.

o) Consider zoning bylaw variances in order to construct a home at the elevation of the calculated FCL or 15 metres from the future estimated natural boundary of the ocean at Year 2100, whichever is greater (see Guideline I(b)). Variances may include, but are not limited to, height and setback variances. Requested variances shall consider proximity to adjacent dwellings, as well as privacy and view impacts for neighbours.

p) Where changes in site grading are proposed to mitigate coastal flooding, landscaping shall address grade differences to adjacent properties to consider privacy including light, view, and overlook and proximity issues between properties. In addition, site grading should consider the topography of a site, reducing the need for major site preparation or earthwork, maintenance or enhancement of desirable site features (natural vegetation, trees, natural shoreline, or rock outcrops/ bluffs). The use of exposed retaining walls shall be minimized with specific consideration for exposed retaining walls facing adjacent properties.

II. For the purpose of these guidelines, unless a Year 2100 FCL is established by a Professional Engineer in accordance with Guidelines I(b) and (c), the FCL for a property is set out in the following table with the Area Transects (delineated in the Foreshore Development Permit Area Designation Map NE 2).

Area Transect	Area Description	FCL (metre, Canadian Geodatic Datum)
A	Ambleside Beach	4.63
B	Ferry Building to 16th Street	4.79
C	16th Street to 19th Street	4.66
D	19th Street to 22nd Avenue	6.82
E	22nd Avenue to Dundarave Beach	7.53
F	Dundarave Beach to 29th Street	6.63
G	29th Street to West Bay Beach	6.79
H	West Bay Beach to Sharon Drive	7.32
I	Sharon Drive to Ferndale Avenue	6.87
J	Ferndale Avenue to Cypress Creek	5.71
K	Cypress Creek to Pitcairn Place	5.61
L	Pitcairn Place to Eagle Creek	8.67
M	Eagle Creek to Eagle Harbour Yacht Club	6.03
N	North side of Eagle Island, Abode Island, Seaview Place to 5800 block Marine Drive	4.70
O	East side of Eagle Island, Eagle Harbour Road across from Eagle Island, 5800 block Marine Drive	4.75
Q	Southwest area of Eagle Island	6.47
P	South side of Eagle Island	4.96
R	5900 block Marine Drive to Larson Bay Park	7.15
S	Larson Bay Park to St. Georges Crescent	7.56
T	St. Georges Crescent to Batchelor Bay Park	7.54
U	Batchelor Bay Park to Arbutus Road	5.94
V	Arbutus Road to Copper Cove Road	7.36
W	Copper Cove Road to Horseshoe Bay	6.42
X	Horseshoe Bay to Pasco Road	7.08
Y	Pasco Road to Lawrence Way	6.74
Z	Lawrence Way to DWV Boundary	6.70

III. If the proposed dwelling is above the elevation of the area specific FCL (in Guideline Section II), without any landfill or structural support to achieve that elevation, the proposed building is exempt from Guideline Sections I(a) to (i).

IV. For the purposes of protecting or enhancing the intertidal habitat of the foreshore, the following guidelines apply to proposed work within 15 metres of the natural boundary of the ocean:

a) Locate development in the least environmentally sensitive areas (e.g., areas that have been previously disturbed) to minimize impact to the ecology of the intertidal habitat.

b) Encourage the preservation of healthy trees, shrubs, and hedges, or where necessary, their replacement with suitable species to the coastal environment.

c) Where possible, natural or soft landscaping materials shall be used to protect the property and foreshore area and create resiliency to coastal flooding.

d) The use of retaining walls and other "hard" surfaces such as seawalls and riprap armouring shall only be supported where a Professional Engineer has determined that "soft" approaches to shoreline stabilization are not appropriate given site-specific conditions and shall not increase scour and erosion of the foreshore area.

e) Consideration should be given to removing hard structures when not required and replacing with natural features to enhance the foreshore habitat.

f) For any reduction in the 15 metres setback from the natural boundary of the ocean, to allow for placement of a structure, an Environmental Assessment by a QEP shall be completed and include recommendations for protection and/or restoration required to minimize disruption to the physical and biological processes of the foreshore habitat.

g) Where native plant species or plant communities dependent on a marine shoreline habitat are identified as sensitive, rare, threatened, or endangered, and have been identified by a QEP for protection, their habitat areas shall be left undisturbed.

V. For work within 15 metres of the natural boundary of the ocean or on the public foreshore for access to the upland property, a Construction Environmental Management Plan will be required to define mitigation and protection measures during construction activities.

VI. All proposed structures and works should be located upland of the natural boundary of the ocean on private property, and not on the public foreshore, where possible. For any work proposed on the public foreshore, including work on existing encroachment structures, the District's Zoning Bylaw 4662, 2010, applicable to the public foreshore, and conditions of the Head Lease with the Province shall apply. Additional information may be required to meet the requirements of the Head Lease.

VII. Any works must account for and protect any municipal infrastructure and necessary mitigation measures applied to the project, as determined by the District.

COASTAL FLOOD MANAGEMENT POLICY SUMMARY OVERVIEW – LOWER SUNSHINE COAST

ITEM	LEADING PRACTICES	SUNSHINE COAST REGIONAL DISTRICT	DISTRICT OF SECHELT	TOWN OF GIBSONS	ISLANDS TRUST (Gambier Local Trust Area)
OCP					
Coastal Flood Policies	Coastal Flood / SLUR policy included in multiple policy chapters (i.e., acknowledging cross-cutting nature of challenge) General and specific policies Climate change adaptation / coastal flood management awareness building / educational text in introductory OCP sections/background	Limited references in Area A, B, D, E, F (West Howe Sound Area) Cop's Area A OCP includes 30m setback requirements in Agriculture section (2.3.1.i, ii, iii) to avoid agricultural impacts and contaminants damaging foreshore or entering ocean Area D Physical Environment, GHG Reduction and Green Infrastructure 5.6 - "In light of anticipated ocean level rises, the setback requirements for locating structures from the marine high water (natural boundary) should be increased from 7.5 metres horizontal and 1.5 metres vertical to 15 metres horizontal or 2 metres vertical, whichever is the greater horizontal distance, except where determined under development permit area designations in Section 16." Area D 5.28 "Development near the natural boundary of the ocean should be reviewed regarding potential impact on the marine environment." No reference in Area F Cop's (Twin Creeks Area / Hillside Port Mellon Industrial Area Cop's	S.2 (Sustainable Land Use - Preparing for Climate Change) outlines various climate actions/objectives to mitigate SLUR impacts. S.3 (Natural Environment - Coastal Flooding) recognizes adherence to provincial guidance. S.2.8 mandates new development be located outside of flood risk areas (incl. coastal risk) S.3.19: undertaking floodplain mapping for at risk areas S.3.20: implementation of a Community Flood Mitigation Strategy (also S.3.21)	6.8 Sea Level Rise - contains considerable policies on coastal flooding (S. 6.8.1 – 6.8.8) 6.1 Geotechnical Hazards (S.6.1.2) 6.4 The Marine Environment (S.6.4.9) 6.8 Accommodation for sea level rise may be incorporated into planning by, for example, designing parks whose landscape is designed to accommodate higher water levels.	OCP - Marine and Foreshore Areas Policy 4.3.9 Provisions should be made in the zoning regulations for existing buildings and sites. The LTC should consider variance applications for siting new development on lots in the Vaucroft Improvement District [North Thormanby] impacted by historic erosion events where the applicant can demonstrate that no hazard exists, that there would be no impact on sensitive terrestrial or marine ecosystems or habitat, and that the proposed construction would not create an undue visual impact. Policy 4.3.17 The lands immediately upland from the foreshore may be designated as a development permit area in order to protect development from hazardous conditions and to provide for protection of shoreline ecosystems from development. Policy 7.41 Natural coastal processes should be left undisturbed to the maximum extent possible. Policy 7.42 All property owners are encouraged to retain natural vegetation on any land sloping towards the shoreline.

Note: Islands Trust Gambier Local Trust Area includes Gambier, Keats, North Thormanby, and South Thormanby islands.

ITEM	LEADING PRACTICES	SUNSHINE COAST REGIONAL DISTRICT	DISTRICT OF SECHELT	TOWN OF GIBSONS	ISLANDS TRUST (Gambier Local Trust Area)
OCP *(continued)*					
Development Approval Information Areas (DAIAs)	Coastal flood/SLUR included in DAIA policy Separate DAIA section with established DAIA area (i.e., entire OCP area/coastal area)	No separate DAIA section in Area A, B, D, F Cop's Area D OCP included single policy reference: "16e - The Regional District may require development approval information to support permit, OCP amendment and rezoning applications." Area E includes DAIA section, but no reference to coastal flooding or SLUR	All DPAs are also designated as DAIAs	Gibsons Aquifer DPA (No. 3) designated as a DAIA	All DPAs are also designated as DAIAs
OCP Implementation	Future/additional studies/strategies identified Future work summarized in OCP implementation chapter	Electoral Areas A, B, D, E, and West Howe Sound Cop's DPA 1A (Coastal Flooding) note that "consideration shall be given to a regional study to define future coastal flood construction levels incorporating sea level rise."	Implementation Action 19. Update Environmental and Geotechnical Hazard Assessment....Review of the DPA guidelines in relation to projected changes due to climate change should also form part of this review. Implementation Action 20. Marine Shoreline Strategy - Update the Sechelt Inlets Coastal Strategy in conjunction with the SCRD, Sechelt Nation and other agencies to develop a water and shoreline strategy, including assessment of development opportunities and sensitive areas. Implementation Action 21. Seawall Assessment - Review options for more permanent solutions to ocean erosion at Davis Bay and Trail Bay.	No specific actions outlined in Implementation section, but following actions could be added to updated OCP: 6.1.2 Consider updating the identification of geotechnical hazard areas while taking into consideration climate change and sea level rise. 6.4.9 Work towards a Foreshore Strategy that includes consideration of SLUR	The LTC is doing a targeted OCP review that includes review of shorelines and docks.

ITEM	LEADING PRACTICES	SUNSHINE COAST REGIONAL DISTRICT	DISTRICT OF SECHELT	TOWN OF GIBSONS	ISLANDS TRUST (Gambier Local Trust Area)
Development Permit Areas					
Coastal / Foreshore DPA	Coastal / foreshore area subject to DPA identified development conditions established (e.g., FCL, setbacks)	Electoral Areas A, B, D, E, and West Howe Sound OCPs have consistent Coastal Zone Hazard section with two DPAs - DPA 1A (low lying areas), DPA 1B (oceanfront slopes) Proposed Coastal DPA for Area F Twin Creeks Area D includes DPA-5 Roberts Creek Shoreline which includes requirements for an assessment prepared by a qualified coastal professional to address "Existing and anticipated shoreline processes, including erosion and deposition of land and beach materials, given projected environmental trends including climate change and sea-level rise" DPA 6 in West Howe Sound is generally consistent with DPA5 in Roberts Creek and SCRD would like to harmonize these two in consideration of expanding to other electoral areas through OCP renewal	DPA 3 – Marine, Foreshore and Shoreline Area DPA 4 - Rocky Beach Front/ Escarpment, Rockfall and Upland Slope Hazards	DPA 1 Geotechnical Hazard Development DPA 2 Environmentally Sensitive Areas	LTC considering draft Shoreline DPA guidelines as part of major OCP review.

ITEM	LEADING PRACTICES	SUNSHINE COAST REGIONAL DISTRICT	DISTRICT OF SECHELT	TOWN OF GIBSONS	ISLANDS TRUST (Gambier Local Trust Area)
Development Permit Areas *(continued)*					
Coastal Setback	Clear coastal setback requirements	Area A, B, D, E, F (West Howe Sound Area) DPA 1B (coastal slopes) - "Land is located within DPA 1B if the future estimated natural boundary is located 15 metres or less seaward of the toe of the bluff. If this is the case then the assessment area shall extend from the future estimated natural boundary will be located at a horizontal distance of at least 3 times the height of the bluff. Area A OCP requires that agricultural buildings and storage areas be setback a minimum of 30 metres from the natural boundary of the ocean or top of bank (2.3.j)	15m setback from highest water mark - DPA 3 & 4 Setbacks for buildings and structures must consider storm and flooding potential Low intensity uses such as parks and open space are more appropriate for flood prone areas. DPA 3 (Guidelines 5-7) restricts alteration of natural riparian areas, shoreline alteration, and removal of sand within the 15m setback zone.	DPA 1 (Geotech Hazards) - 15 meters DPA 2 (Env Sensitive Areas) - 15m setback	Gambier Island OCP - DPA 2 Brigade Bay Comprehensive Development includes 15m setback for Brigade Bay Area only. Otherwise 7.5m per S.2.7 of OCP General Land Use Conditions
FCL - coastal floodplain	Established coastal FCL based on coastal flood mapping	No established FCL Electoral Areas A, B, D, E, and West Howe Sound DPA 1A requires a coastal flood hazard assessment to estimate an FCL for construction on a subject property in DPA. The guidelines define the FCL as the sum of a number of components, such as tide, sea level rise, storm surge, wave effects and freeboard.	No established FCLs Methodology for FCL addressed in Zoning Defined in Part 9 Definitions - Floodproofing: Elevating a building structurally or on fill to reach the prescribed Flood Construction Level or Minimum Building Elevation.	DPA 1 Guidelines - 2.5 m (8.2 ft) above the current natural boundary of the sea in anticipation of the expected sea level rise of 1 metre by 2100....as determined by a professional engineer or geo-scientist experienced in geotechnical engineering, or a person in a class prescribed by the Minister by regulations under Section 910(7) of the *Local Government Act*.2.5 m above the current natural boundary of the sea in anticipation of anticipated sea level rise of 1 m by 2100	None

ITEM	LEADING PRACTICES	SUNSHINE COAST REGIONAL DISTRICT	DISTRICT OF SECHELT	TOWN OF GIBSONS	ISLANDS TRUST (Gambier Local Trust Area)
Development Permit Areas *(continued)*					
Variances	Temporary use permits for structures in high-risk areas, allowing flexibility in hazard-prone zones Considerations for temporary buildings in coastal floodplain	Zoning Bylaw 337 (Area A), Section 515(1) applies setbacks to buildings (e.g. houses), not structures (e.g. staircases) from the ocean Zoning Bylaw 722 (Area B, D, E & F), Section 5.16.1 applies setbacks to both buildings and structures from the ocean Coastal steep slope setbacks may be modified provided the modification is supported by a report, giving consideration to the coastal erosion that may occur over the life of the project, prepared by a suitably qualified professional engineer.	None	DPA 2: Variances for temporary structures below the 2.5m FCL can be provided, given certain conditions are met DPA 2: allows for flexible FCL given certain criteria are met (requires QP investigation)	None
Landscaping	Landscaping guidelines for the upland portion of coastal setback area (i.e. buffer zone requirements, restrictions on removing existing vegetation)	None	Natural riparian vegetation, including woody debris, should be retained within the area 15m upland of the high water mark An environmental assessment report is required prior to any proposed development or alteration of the land, marine or foreshore areas within DPA 3	None, but OCP policies to maintain the foreshore in a natural state wherever possible to provide important habitat and also absorbs storm impacts better	None

ITEM	LEADING PRACTICES	SUNSHINE COAST REGIONAL DISTRICT	DISTRICT OF SECHELT	TOWN OF GIBSONS	ISLANDS TRUST (Gambier Local Trust Area)
Development Permit Areas *(continued)*					
Restricted Covenants	Restrictive covenant - use and liability - for development within coastal hazard zone	SCRD directs applicants to register a covenant as a condition of DP issuance Covenant includes an indemnity clause and records key conditions outlined in the permit conditions including supporting QP reports Note that SCRD is reviewing its use of covenants - when/why to use, costs/benefits	DPAs allow for the use of restrictive covenants	DPA 1 Guidelines covenant restrictions No Development Permit for development within the "Floodplain" shall be issued without Restrictive Covenant in perpetuity under Section 219 of the Land Title Act "The owner agrees that the Land shall not be used, developed, or buildings or structures erected thereon, except in compliance with the conditions herein. The owner acknowledges that the Town of Gibsons does not represent to the owner or any other person that any building constructed or mobile home located in accordance with the conditions herein will not be damaged by flooding or erosion and the owner covenants and agrees not to claim damages from the Town or hold the Town responsible for damages caused by flooding or erosion to the land or to said lands and to any contents thereof."	None

ITEM	LEADING PRACTICES	SUNSHINE COAST REGIONAL DISTRICT	DISTRICT OF SECHELT	TOWN OF GIBSONS	ISLANDS TRUST (Gambier Local Trust Area)
Zoning					
Coastal setbacks	Setbacks from coastal floodplain (or boundary of ocean)	Area A Zoning Bylaw 337 updated in 2024 to include 15m setback from natural boundary of ocean for the purpose of flood protection Areas, B, D, E, F Zoning Bylaw 722 includes 15m setback from natural boundary of ocean for the purpose of flood protection	2.15 Natural Boundary Setbacks and Flood Control Requirements 2.15.2 (a) - 15 m of the natural boundary of the sea	S. 4.11 (2) Development in Areas Subject to Flooding - 15.0 m (49.2 ft) of the natural boundary of the sea	Gambier Land Use Bylaw 3.3 Siting and Setback Regulations (1) - 15 metres of the natural boundary of the sea North and South Thormanby Islands Land Use Bylaw 3.3.3 Siting and Setback Regulations: 7.5 metres of the natural boundary of the sea
FCLs	Established coastal FCL based on coastal flood mapping	Area A Zoning Bylaw 337 - 515 (3) (a) "...0.6 metres above the two hundred year flood level according to the records of the Province or lower than 1.5 metres above the natural boundary of the ocean" Areas, B, D, E, F Zoning Bylaw 722 - 5.18 Flood Construction Levels 5.18.1 a) "At least 0.6 m above the 200-year flood level according to provincial records or 2 m above the natural boundary of the ocean or any waterbody or watercourse, whichever is higher"	2.15 Natural Boundary Setbacks and Flood Control Requirements 2.15.3 (d) - 2m above the natural boundary of the sea, as determined on case-by-case basis	S. 4.11 (3) Development in Areas Subject to Flooding - elevation not less than 1.5 m (4.9 ft) above the natural boundary of the sea	None

ITEM	LEADING PRACTICES	SUNSHINE COAST REGIONAL DISTRICT	DISTRICT OF SECHELT	TOWN OF GIBSONS	ISLANDS TRUST (Gambier Local Trust Area)
Other Policy, Plans, Strategies					
Other Policy / Strategy	Climate Action Plan with adaptation component, including coastal flood management considerations	Community Climate Action Plan (2024) Action 4.1 - Conduct coastal floodplain mapping Action 5.3 - Implement green shores programming Action 8.1 - Use coastal floodplain mapping to inform coastal revitalization and sea level rise resilience	Integrated Community Sustainability Plan (2019) 5. Planning for Climate Change...Minimizing development in areas prone to flooding, erosion, and other hazards Sustainability Checklist Appendix	Managing Natural Assets to Increase Coastal Resilience Report (2022) examined how enhancing coastal natural assets like subtidal eelgrass, coastal vegetation or beach sediments could reduce flood and erosion impacts	Islands Trust Policy Statement, Draft Bylaw No. 183 Directive Policies - Marine Shorelands Policy 3.5.17 Setbacks from the Sea Consider the current and anticipated impacts of sea level rise and storm surge, and determine appropriate shoreline buffers and setbacks from the sea, taking into account best practices recommended by the federal and provincial governments.
Resilient Design Checklists / support	Checklist for developments in coastal flood hazard areas (i.e., summary of compliance with design guidelines, such as the Standards Council of Canada CSA W204:19.)	SCRD uses a Statement of Conformance, but opportunities for bringing up-to-date		OCP update will include a new checklist and updated DPA guidelines	
Nature-based Solutions (NbS) Considerations	Incentives or for shoreline projects/ shoreline stabilization (e.g., living shorelines)			- OCP S.6.4.9 - BC Stewardship Greenshores Guidelines - Managing Natural Assets to Increase Coastal Resilience - Natural Asset Management - Source to Sea Project	Gambier Island OCP, DPA 2 Shoreline Protection Area notes the importance of maintaining naturalized vegetation along the shoreline area and managing to protect fish stocks. DPA 2 area is very small, however.
Risk Assessment Methodology	Hazard, risk, and vulnerability assessment for climate risk methodology	Joint Sunshine Coast Emergency Program (incl. Hazard Risk & Vulnerability Analysis) with Sechelt & Gibsons Climate Change Vulnerability & Risk Assessment Report (2022) provides a simple framework for evaluating risk, but no plan for continual monitoring / metric evaluation is in place.	Joint Sunshine Coast Emergency Program (incl. Hazard Risk & Vulnerability Analysis) with SCRD & Gibsons	Joint Sunshine Coast Emergency Program (incl. Hazard Risk & Vulnerability Analysis) with Sechelt & Gibsons	None

ADDITIONAL RESOURCES

CSA W224:24 - Coastal Flood Risk Assessment for Buildings and Infrastructure, CSA 2024

This standard provides guidance on assessing coastal flood risks along Canada's marine coasts and the Great Lakes to inform the planning, design, and retrofitting of buildings and infrastructure. It establishes guidelines for assessing vulnerability, setting design requirements, and implementing adaptation measures to enhance resilience in high-risk coastal areas and promote risk-informed decision-making.

Adaptive Flood Management – From Fragility to Flexibility, Environment and Climate Change Canada, 2023

This report advocates for a shift from entrenched pathways that focus on rigid and structural flood protection, to flexible and adaptive flood management. It highlights the increasing uncertainty of flood risks due to climate change through a multi-pronged risk model impacted by land-use changes and unexpected disruptions (among others) to emphasize the need for new and innovative resilience-based approaches to mitigating coastal flood risk. From this, six key ideas are presented to assist local governments in responding dynamically to evolving flood hazards:

- Acceptance of Future Uncertainty
- Acknowledgement of Future Shocks
- Expand the Toolbox (e.g., nature-based approaches)
- Reversible and Flexible Options
- No Regrets Options
- Make Mistakes and Be Brave

Federal Government Resources

- Practice Guide for Advancing Climate Equity in Coastal Climate Change Adaptation, NRCAN, 2024
- Good Practices for Integrated Climate Change Adaptation in Canadian Coastal Communities, Canada, 2023
- Integrated Climate Change Adaptation to Increase Resilience Canadian Coastal Communities, NRCAN, 2023
- Planned Retreat Approaches to Support Resilience to Climate Change in Canada, NRCAN, 2021
- Canada's Climate Change Adaptation Platform / Coastal Management Working Group

Provincial resources

- BC Adapts - Coastal Flood Management, 2023
- Sea Level Rise Adaptation Primer

Other

- Green Shores Policy and Regulatory Tools for Local Governments: Survey of Shoreline Management in Bylaws, Plans and Policies
- Managing Natural Assets to Increase Coastal Resilience: Guidance Document for Municipalities
- INTACT Centre on Climate Change
  - Flood Protection Resources
  - Homeowner Flood Risk Reduction Resource List
  - Emergency Preparedness Resource List
- Institute for Catastrophic Loss Reduction (Flood Risk Resources)


SUNSHINE COAST
REGIONAL DISTRICT

District of
SECHELT

TOWN OF
GIBSONS

Islands Trust