Flood Risk Management on the Sunshine Coast

REM 642

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Introduction

Communities in coastal and riverine regions of British Columbia face growing flood risks as environmental and development pressures increase. Climate change contributes to sea level rise, more intense rainfall, and shifting watershed patterns, all of which can increase the frequency and severity of flooding. At the same time, aging infrastructure and population growth place additional stress on drainage systems, shorelines, and low-lying lands. These challenges are especially pronounced in coastal areas where storm surge, coastal erosion, and high-intensity rainfall can occur together. Within Sḵwx̱wú7mesh Úxwumixw (Squamish Nation) territory, recent flooding events highlight the need for stronger and more coordinated approaches to managing flood risk and supporting long-term community resilience.

This report was prepared to support the Squamish Emergency Planning and Response Team in understanding how neighbouring jurisdictions address flood risk through planning and policy. Because flood hazards cross jurisdictional boundaries, the land-use decisions and regulatory frameworks of surrounding municipalities, regional districts, and electoral areas can influence the effectiveness of the Nation's own flood management efforts. The group reviewed coastal jurisdictions surrounding Sḵwx̱wú7mesh Nation territory, where the analysis focused on the Sunshine Coast Regional District, specifically Electoral Area F (West Howe Sound), Hillside-Port Mellon Industrial Area, the District of Sechelt, the Town of Gibsons, and Islands Trust areas such as Keats Island and Gambier Island. The report examines spatial characteristics, planning regulations, community and strategic land use plans, and hazard-related policies to better understand how flood risk is managed across these coastal communities.

Methodology

To assess flood management on the Sunshine Coast, our team reviewed a range of municipal and regional regulations and strategies. To gauge how strong flood management is on the Sunshine Coast, we conducted a spatial analysis and reviewed strategic land use plans, planning regulations, and plans or networks of plans related to flood risk and management.

ArcGIS Pro 3.4.0 was used to generate spatial information on flood risk and zoning surrounding Sḵwx̱wú7mesh Nation territory using data from SCRD Open Data, SCRD Coastal Flood Mapping Project, Town of Gibsons Open Data, Islands Trust Mapping Data, municipal zoning and DPAs, and land-use plans. To assess which areas will be most affected by sea level rise, we overlaid shoreline inundation from high tides and storm surges onto the existing maps. Furthermore, to assess all the relevant documents related to flood risk management, our team gathered information from Official Community Plans (OCPs), zoning bylaws, and the Sunshine Coast Regional District (SCRD) website. We conducted an initial search for "flood," "water," and "storm" to identify regulations that directly govern flood risk and management. We then scanned all the documents to identify regulations that do not specifically mention flooding but relate to flood risk management.

Spatial Analysis

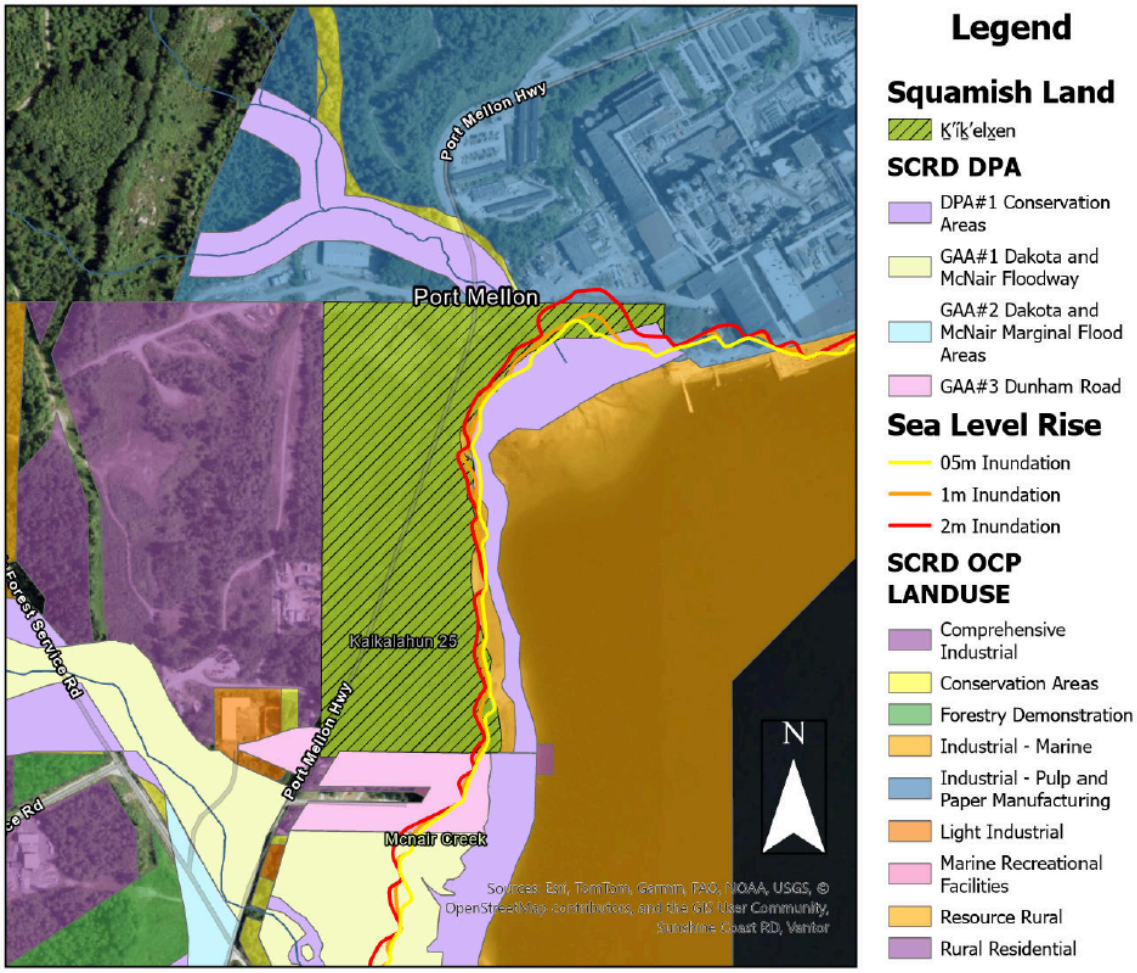
Using map data available through SCRD Open Data, SCRD Coastal Flood Mapping Project, Town of Gibsons Open Data, and Islands Trust Mapping Data, municipal zoning and DPAs, land-use plans, and flood planning was visualized in ArcGIS Pro 3.4.0. To manage information from various sources, a geodatabase was created with feature datasets acting as folders to store mapping data from each district. Unique value symbology was applied to each feature layer, characterized by 'description', to visualize different types of DPA, land-use, and zoning from each source.

To understand risks relating directly to flooding, the SCRD's DPA maps were coded with the keyword 'flood' to show DPAs relating specifically to flood hazards. Additional hazards were later visualized using SCRD DPA classifications 1, 2, and 3 to examine anything relating to coastal flooding, waterways, and slopes, respectively. This was done to consider any downstream and flood-related effects that may impact Sḵwx̱wú7mesh Nation lands as a result of runoff, debris flows, or slope instability. SLR projections of 0.5m, 1m, and 2m have been calculated and mapped through the SCRD's efforts to understand coastal flood risks. Shoreline inundation from high tides and storm surges has been overlaid onto existing maps of the SCRD to illustrate which areas will be most affected under varying SLR scenarios.

Sḵwx̱wú7mesh Nation has three separate locations of interest to this study on the Sunshine Coast, with each area being adjacent to differing terrain and municipal plans. Each location was assessed using the mapping data listed above.

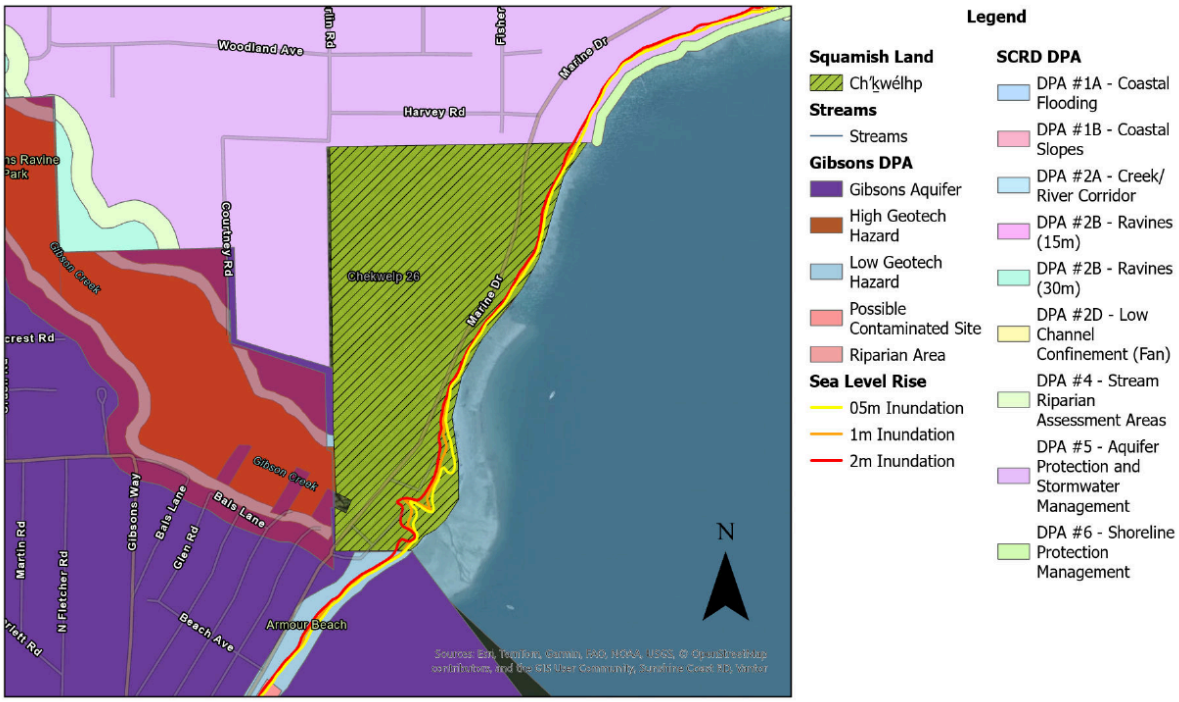
K̲’íḵ’elx̲en (Kaikalahun) - Adjacent land-use is designated for marine, pulp & paper, and general industrial areas, with some nearby rural residential areas south of K̲’íḵ’elx̲en. There are nearby streams, however flood risk is not listed among DPAs in this area; however, it may be worth considering water quality or other factors due to the industrial nature of this area. Coastal flooding in this area is not listed under the SCRD’s DPAs, but SLR is expected to impact some locations.

Mapping of SCRD Land-Use OCPs and DPAs - K̲'íḵ'elx̲en



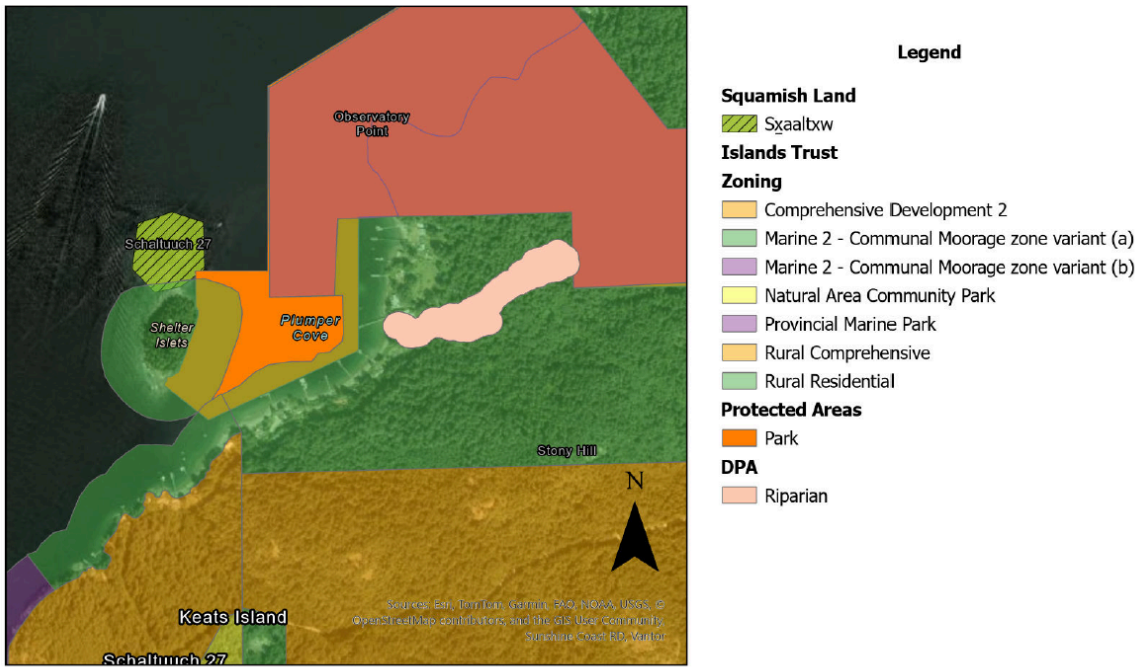
Ch’k̲wélhp (Chekwelp) - Surrounded by both the SCRD and Gibsons, Ch’k̲wélhp has a myriad of Land-Use OCPs and DPAs that may be valuable to consider during planning. In terms of flood risk, Gibsons has identified geotechnical hazards in the riparian area of Gibson Creek, which flows through Ch’k̲wélhp. This creek is also associated with riparian areas and steep slopes. Additionally, SLR and coastal flooding are present, both of which have been identified by the SCRD. Overall, there appears to be minimal mapping or consideration to flood risk in Gibsons’ plans. Gibsons has zoning and land-use plans near Ch’k̲wélhp for low density and multi-unit residential areas that are targeting single- and two-family occupants. On the North end, the West Howe Sound DPA and Land-Use OCP outlines rural and non-rural residential areas adjacent to Ch’k̲wélhp.

Mapping of SCRD & Gibsons DPAs and SLR - Ch'k̲wélhp



S̲xaaltxw (Schaltuuch) - There is minimal zoning or planning near S̲xaaltxw; however, nearby areas are designated as rural residential zones, protected areas, and riparian DPAs. Since S̲xaaltxw is a small island off of Keats Island and across the channel from Ch'k̲wélhp, it is likely to experience similar exposure to coastal flooding, SLR, and other coastal hazards given its exposure.

Mapping of Island Trust Data - S̲xaaltxw



Plans Overview	Mentions Flooding Beyond DPAs/DPA Rationale/ GAAs	Considers Climate Change Impacts on Flooding	Goals to Address Flooding Through Other Reports	Contains Stormwater-Related Flood Policy	Contains non-DPA Oceanic Flood Policy	Contains non-DPA Creek Flood Policy
Sunshine Coast Emergency Response and Recovery Plan	**Y**	**N**	**N/A**	**N/A**	**N/A**	**N/A**
Sunshine Coast Regional District (SCRD) Coastal Flood Mapping Plan Network	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**
SCRD Hazard Risk Assessment	**Y**	**Y**	**Y**	**N**	**N**	**N**
Integrated Stormwater Management Plan	**Y**	**N**	**Y**	**Y**	**N**	**Y**
SCRD Community Climate Action Plan	**Y**	**Y**	**N**	**Y**	**N**	**Y**
SCRD Climate Change Vulnerability & Risk Assessment Report	**Y**	**Y**	**Y**	**Y**	**N**	**N**
SCRD 2023-2027 Strategic Plan	**N**	**N**	**N**	**N**	**N**	**N**
Hillside/Port Mellon OCP (HPMOCP)	**Y**	**N**	**N**	**N**	**N**	**Y**
West Howe Sound OCP (WHSOCP)	**N**	**Y (in DPA)**	**N**	**Y**	**N**	**N**
Island Trust Current Policy Statement	**Y**	**N**	**Y**	**N**	**Y**	**N**
Islands Trust Draft Policy Statement	**Y**	**Y**	**Y**	**N**	**Y**	**Y**
Island Trust Strategic Plan	**N**	**N**	**N**	**N**	**N**	**N**
Islands Trust Fund Regional Conservation Plan	**N**	**N**	**N**	**N**	**N**	**N**
Keats Island Shoreline Protection Project	**Y**	**Y**	**Y**	**N**	**Y**	**N**
Keats Island OCP (KIOCP)	**Y**	**N**	**N**	**N**	**N**	**N**
Gambier Island Associated Islands OCP (GIAIOCP)	**Y**	**N**	**N**	**N**	**N**	**N**
District of Sechelt (DoS) Integrated Community Sustainability Plan	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**
DoS OCP (DoSOCP)	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**
DoS Urban Forest Plan	**Y**	**Y**	**Y**	**N/A**	**N/A**	**N/A**
Town of Gibsons (ToG) OCP (ToGOCP)	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**
ToG Integrated Stormwater Management Plan	**N**	**Y**	**Y**	**Y**	**N**	**Y**
ToG Managing Natural Assets to Increase Coastal Resilience Report	**Y**	**Y**	**N**	**N**	**N**	**N**
ToG Urban Forest Plan	**Y**	**Y**	**Y**	**N/A**	**N/A**	**N/A**
ToG Strategic Plan	**N**	**Y**	**N**	**N**	**N**	**N**
Shishalh Nation Strategic Land Use Plan	**Y**	**Y**	**N**	**N**	**N**	**N**

Sunshine Coast Regional District

Sunshine Coast Emergency Response and Recovery Plan (2017; reviewed 2018)

The Emergency Response and Recovery Plan includes the Sunshine Coast Regional District (SCRD), the District of Sechelt, the Town of Gibsons, and shíshálh Nation Government District. The plan provides guidance on the response and recovery from emergencies and disasters, the roles of the Emergency Operations Centre and other associated agencies, and best practices guidelines and recommendations. The plan lists various hazards, including flooding hazards.

Under flood hazard policies, local and provincial emergencies must be declared to cause a flooding-related evacuation notice. Main agencies responsible are the EMBC, Ministry of Environmental Water Stewardship Division, and Ministry of Transportation (p. 21). Flood warning information should be communicated through local media sources. Private property owners are responsible for protecting their property. The plan was updated in 2017, and further reviewed in 2018 as additional review of emergency fire services (p.22). The review broadly covers the need for updated risk assessments and asset management planning. The review states that existing bylaw structures for declaring emergencies need to be reviewed and updated (p.12), including regulations on the assessment of relative risks of occurrences of different disasters and emergencies, and a process to review and update emergency plans (p. 21). The plan identifies bylaws and regulations for the different local governments (p.13-19). Although the plan does not go into depth on flooding, it does note the importance of volunteers amid an emergency response (p. 6).

SCRD Comprehensive Coastal Flood Plan Network (2025)

The SCRD's comprehensive flooding project includes Coastal Flood Mapping, the Coastal Flood Adaptation Policy, and the Green Shores Program. The 2025 flooding project includes the SCRD, District of Sechelt, Town of Gibsons, and the Islands Trust. The goal of the comprehensive project is to provide a consistent, regional-assessment of coastal flood risk. The Map Project's objective is to evaluate current and potential flood hazards to provide support for land use planning for climate adaptation and infrastructure resilience, and gives specific recommendations for planning maps, flood construction levels, and adaptation recommendations. The policy project's objective is to provide a summary of land-use approaches for coastal risk reductions and provides recommendations and considerations for updating OCPS, current and potential flood hazards for DPAs, and updates to applicable zoning bylaws. The Green Shores Program is a regional project of the Stewardship Centre of British Columbia, and incentives nature-based solutions for presevering and restoring freshwater habitat and marine shorelines for homeowners and for shoreline development. The SCRD hosted workshops to promote this program to community members.

Integrated Stormwater Management Planning, Phase 2 (ISMP; 2009)

The ISMP includes three electoral districts: Elphinstone East Roberts Creek, and West Howe Sound. The first phase of planning (2006) assessed mitigation strategies and the ISMP report (2009) was designed to guide future developments within the electoral areas. The report investigates site investigations and feasibility assessments with recommendations, the expansion and continuation of stormwater planning, identification of infrastructure requirements, and design performance targets (p. 19). The plan discusses stormwater as a resource, should be planned for at all site levels, and addresses that stormwater management needs link//be implemented in land-use planning documents (p. 3-4).

The report recommends guidelines moving forward addressing drainage systems: site-specific design for infiltration (p. 75) and detention systems (p.76), and ensuring that downstream drainage facilities can handle peak runoff (p. 21). The report mainly focuses on grey infrastructure, and briefly points to green infrastructure through the importance of maintaining base flows for watercourses.

SCRD Community Climate Action Plan (2024)

The climate action plan is based on adaptation, mitigation, good governance and enabling conditions, and includes actions on coastal floodplain mapping and Greenshores programming. The objective of the plan is to provide the SCDR with opportunities to advance low-carbon resilience (LCR) through adaptation (p. 10-20) and mitigation strategies (p.21-27). The plan is categorized through goals, which includes actions, sub-actions, mitigation co-benefits, and the SCDR's role. Within the buildings and infrastructure section, there are identified actions that relate to stormwater management, focused on both NbS and increasing efficiency of grey infrastructure systems (p.12).

SCRD 2023-2027 Strategic Plan

The mission statement of this plan is to deliver reliable service in communities through water together. The identified two critical challenges are being urgently prioritized for health and safety of the district, including water stewardship, and solid waste solutions (p.7). Though the plan includes action items, it does not include coastal or pluvial flooding considerations.

Sunshine Coast Hazard, Risk, and Vulnerability Analysis (HRVA; 2025)

The HVRA's purpose is to inform risk-based decisions to address vulnerabilities, mitigate hazards, and prepare for emergencies. The report identifies hazards, climate change and resiliency, potential impacts to natural and built environments, and risk mitigation strategies (p.6) The report considers interlinkages between hazards, which can increase the frequency of emergency responses (p.10).

The report notes that ToG's low-laying elevation creates concerns for evacuation feasibility. Coastal flooding is identified as the ninth most prominent hazard for ToG (p.17). For Keats Island and Gambier Island, the response time for emergency services is noted as the primary concern for the islands. Local and coastal flooding are within the top ten hazard concerns (p.25). Local flooding the eleventh identified hazard for the DoS (p. 20).

The report recommends implementing a local disaster risk reduction strategy (p.28) as a way to increase resilience. Coastlines were identified as vulnerable to storm surges and flooding events, as well as areas that suffered a natural disaster may not have recovered enough to withstand another disaster (p.33). Degraded, altered, or lost natural assets and could largely influence coastal resilience for the Sunshine Coast (p.33).

Storm surges, (p.90), local flooding, (p. 92), coastal flooding (p.95), river, creek, and freshet (p. 101), and flash flood (p. 103) have been identified as having high likelihood and medium consequence. Low-laying coastal areas are most at risk of consequences of storm surges (p.90), with Gibson's creek identified as an area of concern for local flooding (p. 92). The report does not provide recommendations or next steps.

Sunshine Coast Regional District Zoning Bylaw No. 722 (2019)

Enacted in 2019, *Sunshine Coast Regional District Zoning Bylaw 722* regulates land use, buildings, and subdivision across Electoral Areas B, D, E, and F, including Electoral Area F (West Howe Sound). Its purpose is to ensure that lands and structures are used and developed only as permitted within designated zoning districts, with enforcement authority granted to regional officials. In relation to flooding, the bylaw includes a dedicated section on flood construction levels (p. 23) that sets minimum elevation requirements for habitable spaces and manufactured homes in areas subject to flood risk. It also clarifies how building height is measured when fill is used to meet flood protection standards (p. 20), ensuring that flood mitigation measures are integrated into building regulations. Additionally, the bylaw establishes setback requirements from waterbodies and watercourses and restricts vegetation removal and land disturbance within riparian areas unless authorized (p. 22).

Hillside / Port Mellon

Hillside / Port Mellon Official Community Plan (HPMOCP)

The HPMOCP was adopted March 30, 1995 to guide industrial development in the area. The plan intends to enable a comprehensive development plan that allows the Regional District to exercise greater control over approvals and align with adjacent industrial land uses (p. 3).

The HPMOCP has two objectives in the plan related to flooding: The first encourages agencies to undertake flood prevention works within and upstream of the plan area (1.3, p. 13) and the second aims to protect development from hazardous conditions, inclusive of flooding (2.1, p. 19). The OCP outlines that there are several vulnerabilities to flooding from the Dakota and McNair Creeks, and flood hazard due to upstream bank instability. To manage these issues, the plan outlines that area in Schedule A1 may require geotechnical review to ensure proposed flood control structures are sufficient for safe development (1.8, p. 15), that government agencies and companies are encouraged to pull back canyon fill in an area that could contribute to debris flooding (1.11, p. 17), and that the Regional District should work with government agencies and companies to undertake specific flood measures related to damming (1.9, p. 16).

Hillside / Port Melon Geotechnical Assessment Areas (1995)

The Geotechnical Assessment Areas (GAA) referenced in the *Sunshine Coast Regional District Hillside-Port Mellon Industrial Area Official Community Plan Bylaw No. 370* are established to ensure orderly and hazard-responsive development within the Plan Area. While the plan includes DPA 1 (Conservation Areas), it is not discussed here because it does not directly address flooding hazards. Instead, this section only focuses on the Geotechnical Assessment Areas that relate to flood risk, creek systems, coastal exposure, and associated instability.

GAA1 - Dakota and McNair Floodway (p. 19)
This GAA identifies the active floodway areas of Dakota and McNair Creeks. The area is characterized by potential high-intensity flooding, significant debris transport (including boulders and logs), and the possibility of concurrent peak discharges from both basins, with tidal conditions further increasing damage potential. Industrial structures are discouraged unless supported by a comprehensive hydrology investigation addressing combined creek flows, culvert and bridge capacity, erosion, debris composition, and tidal influence, while residential uses are not permitted. Development in these areas may require geotechnical advice, including field-defined horizontal and vertical setbacks from the natural boundary. Flood risk assessment and professional recommendations are central requirements where hazards are identified.

GAA 2 - Dakota and McNair Marginal Flood Areas (p. 21)
This GAA applies to lands forming part of the broader alluvial fan but with a lower estimated annual hazard probability, partly due to protection from highway fill. Although flood intensity is reduced compared to the primary floodway, risks from debris, erosion, and overland flow remain. Development may require geotechnical assessment, particularly for residential uses, hazardous material storage, or complex structures requiring professional certification. Supporting information may include defined setbacks from creek and shoreline boundaries and professional recommendations regarding flood levels, erosion protection, debris-impact mitigation, and channel maintenance.

GAA 3 - Dunham Road (p. 23)
This GAA encompasses land exposed to moderate-to-low flood hazard from McNair Creek. Flooding is considered possible under a combination of relatively improbable but possible upstream events. The Building Inspector may require geotechnical advice for new dwellings, additions to habitable space, hazardous material storage, or larger structures requiring professional design certification. Where triggered, assessments must include evaluation of flood risk and recommendations for protective works, such as debris-retention basins or dikes.

GAA 4 - South Creek and Ravines System (p. 25)
This last GAA covers a network of erosion-prone ravines and creeks with documented high flood hazard, debris deposition risk at creek mouths, and annual erosion probabilities. The designation includes lands extending from ravine slope crests and addresses risks associated with concentrated flows, culvert discharge, landslides, and shoreline interaction. Industrial development is limited to specific areas between slope bases and defined horizontal distances from ravine crests and the shoreline, while residential structures are not permitted. Where required, geotechnical advice must establish setbacks, address erosion and sediment control, and outline conditions for safe alteration or subdivision, including engineered fill and low dikes.

West Howe Sound

West Howe Sound Official Community Plan (WHSOCP)

The WHSOCP was adopted October 27, 2011. The OCP sets out a long-term vision for the West Howe Sound area. The plan intends to balance the needs of the area (social, environmental, and economic). The plan follows the original OCP, which was implemented in 1988.

The plan outlines objectives and policies that impact flooding without directly mentioning flooding. The OCP's objectives and policies are separated by neighbourhoods but largely overlap. Some objectives related to stormwater include improving stormwater management (3.2-a Environment Obj. 1, p. 16; 3.3-Environment Obj 1, p. 30). Notably, the Grantham's Landing neighbourhood section outlines ongoing issues with stormwater blowout, though the SCRD does not have mandate or authority to fix the issue (p. 16, 17). All neighbourhoods include a policy outlining that permeable surfaces should be used for driveways to reduce stormwater runoff (3.2-a Environment Pol. 6, p. 17; 3.2-b Environment Pol. 4, p. 23; 3.3-Environment Pol. 5, p. 31; 3.4-Environment Pol. 4, p. 37; 3.5-Environment Pol. 4, p. P. 52; 3.6-Environment Pol. 3, p. 59). The language in the permeable surface policy reflects the nature of most flood-related policies in the OCP, in that they are not mandated but rather encouraged (i.e., "should"). Encouraging flood-related policies include encouraging development to focus on stormwater retention and detention (3.2-a Environment Pol. 1, p. 16), encouraging re-vegetation of slopes near Highway 101 Bypass (3.4-Environment Pol. 1, p. 37), and encouraging Agricultural use to be sensitive to creek systems through adequate vegetation borders (3.5-Environment Pol. 3, p. 52).

West Howe Sound Development Permit Areas (2011)

The DPAs taken from the *West Howe Sound Official Community Plan Bylaw No. 640* are established to protect development from hazardous conditions, safeguard the natural environment, and guide appropriate land use based on environmental capacity. While the OCP includes several DPAs addressing environmental protection and other planning objectives, only those directly related to flooding and associated hazards are discussed here.

DPA 1A - Coastal Flooding (p. 104)
This DPA applies to low-lying coastal lands that may be vulnerable to inundation. Properties below 8m CGD must complete a coastal flood hazard assessment before development can proceed. This assessment requires calculation of a Flood Construction Level that incorporates tides, projected sea level rise, storm surge, wave effects, and freeboard. The goal is to ensure that buildings are elevated or otherwise designed to remain safe over their expected lifespan.

DPA 1B - Coastal Slopes (p. 106)
This DPA addresses slope instability along oceanfront bluffs where erosion, sea level rise, seismic activity, or drainage issues may create hazards. Development within this area requires a geotechnical assessment prepared by a qualified professional. The report must evaluate slope stability, groundwater conditions, and potential erosion over time. Recommended setbacks and construction conditions are established to reduce risk.

DPA 2A - Creek Corridor (p. 107)
The Creek Corridor DPA applies to lands adjacent to creeks and focuses on flood and debris flow hazards. Development proposals must include hydrologic modeling and estimation of the 200-year return period peak flow and flood elevation. Assessments also consider channel confinement, upstream culverts, debris dams, and potential blockages that may increase overbank flooding.

DPA 2B - Ravines (p. 108)
This DPA applies to steep ravine areas where slope instability may be triggered by heavy rainfall or altered drainage patterns. It requires professional evaluation of safe setbacks from ravine crests and toes. Reports must address stormwater management and the suitability of the site for development. Although primarily geotechnical, the DPA recognizes that intense rainfall and runoff contribute to erosion and instability, which helps manage flood-related slope hazards.

DPA 2C - Floodplain (p. 108)
This DPA covers broader low-lying flood-prone lands not captured within confined creek corridors. Development within this area requires flood and erosion hazard assessments supported by hydrologic investigation. Applicants must evaluate peak flows, flood elevations, and risks associated with blockages or debris accumulation. The DPA ensures that construction in floodplain areas is informed by professional risk analysis.

DPA 2D - Low Channel Confinement (p. 109)
This DPA applies to alluvial fans and areas where channels may shift or avulse during extreme events. These areas are characterized by sediment deposition and dynamic flow patterns. Development requires assessment of flood, erosion, and channel movement hazards. Professional review ensures that proposals account for the possibility of sudden channel realignment.

DPA 4 - Riparian Protection (p. 113)
This DPA protects streamside areas that support fish habitat and stabilize creek banks. It requires an environmental assessment to establish streamside protection and enhancement areas prior to subdivision, construction, or land alteration. Development must demonstrate that it will not harmfully alter fish habitat or riparian function.

DPA 5 - Aquifer Protection and Stormwater Management (p. 117)
This DPA applies across the plan area and focuses on groundwater recharge and stormwater control. Subdivision, multifamily, commercial, industrial development, and significant tree removal trigger hydrological review. Reports must address infiltration, detention systems, erosion control, and minimizing impervious surfaces. The DPA aims to reduce excess runoff and protect water quality.

DPA 6 - Shoreline Protection and Management (p. 120)
This last DPA applies to development within 15m of the natural boundary of the ocean. It requires assessment by qualified coastal professionals to evaluate erosion, sea level rise, flooding, and shoreline processes. Development must demonstrate that it will not increase hazard exposure or damage the marine environment. This DPA also encourages consideration of softer shoreline protection approaches rather than hard armouring.

Summary

The SCRD has comprehensively addressed coastal flooding through mapping, incentivizing the Green Shores program, and identifying opportunities for land use regulations and broader policy change. Though stormwater management has not been comprehensively assessed, the Climate Action Plan (2024) and recent progress on consolidating the electoral districts' HRVAs may indicate that stormwater management is the next step for flood risk management. The SCRD's electoral districts' land use regulations vary. Hillside/Port Mellon and West Howe Sound's development permit areas (DPAs) sufficiently address coastal and pluvial flooding.

Flood risk in the Hillside / Port Mellon and West Howe Sound areas is addressed through a combination of Official Community Plan policies, DPAs, and GAA requirements that guide how and where development can occur. These tools identify flood-prone areas, require professional studies before development occurs, and establish setbacks from creeks, ravines, and coastal boundaries. Together, these planning mechanisms help ensure that development considers local flood hazards and site conditions. Overall, these measures appear to sufficiently address flood risk at the development level because they require hazard assessments and direct development away from areas that may be vulnerable to flooding or instability. The DPAs and supporting policies therefore provide a framework that generally addresses coastal and pluvial flood risks by managing development in hazard-prone areas and requiring appropriate technical review before approval.

Islands Trust

Island Trust Current Policy Statement and Island Trust Draft Policy Statement

The Island Trust Policy Statement, adopted in 2003, is a guiding document for the 13 major islands and 450 smaller islands in the Trust Area. The Island Trust's work and Policy Statement is in response to pressure from the area's growing population and the need to guide development. The Policy Statement aims to protect the Trust Area and fulfill the legislated requirements of the *Island Trust Act*. The Draft Policy Statement was published July 29, 2025 for consultation as an update to the current Statement. The Draft Statement outlines three types of policies: Guiding Principles, Directive Policies, and Advisory Policies.

The Island Trust Policy Statement minimally considers flooding, but outlines that municipalities and local trust committees shall address development hazards in their own plans and bylaws, inclusive of flooding (5.2.6, p. 18).

The Draft Policy Statement incorporates more flood-related policy. The Draft includes the same statement as the current Statement but expands on it by adding that areas at risk of climate change-related hazards must also be addressed (3.4.6, p. 16). The Draft Statement also outlines that climate mitigation and adaptation strategies shall be undertaken by municipalities and local trust committees (3.4.5, p. 16). The Draft Statement identifies Riparian areas as sensitive ecosystems to flooding and that municipalities and local trust committees shall identify and prioritize the protection, preservation, and restoration of sensitive ecosystems (3.3.2, p. 14). Lastly, the Draft states that municipalities and local trust committees shall incorporate sea level and storm surge anticipated impacts to determine appropriate setbacks from the sea (3.5.20, p. 24).

Island Trust Strategic Plan

The Island Trust Strategic Plan sets out the council's key goals, desired outcomes, and timelines for 2025. The Strategic Plan does not mention stormwater management, coastal flooding, or hazards.

Islands Trust Regional Conservation Plan (2018-2027)

The plan explores the current landscape, and conservation goals and objectives. The plan acknowledges that climate change will stress local ecosystems and species (p.33). Flooding is scarcely discussed. Pluvial flooding has been identified as a natural process shaping riparian habitat (p. 13), and sea level rise is identified as a threat to ecosystems (p. 65). Stormwater management is not considered. The plan identifies goals and objectives for priority items.

Keats Island

Keats Island Shoreline Protection Project (2026)

The goal of the project is to amend the Keats Island OCP and land use bylaws to better protect the foreshore, near shore, and marine areas. Project is phase three, which is focused on the establishment of land use bylaws for protection from hazardous conditions, and the protection of the natural environment and biological diversity. Land use bylaws include, a reduction in the size of docks, removal of structures, minimum distance between docks and ramps, and setbacks. Bylaw proposals include Bylaw No. 153, which applies to land measured 15 metres inland of high-tide marks, beaches, and 100 metres into the sea (p. 2). Bylaw No. 154 creates comprehensive setbacks of buildings and structures (p. 2-5).

Keats Island Official Community Plan (KIOCP)

The KIOCP was implemented in 2002 to help guide land use and development decisions. The KIOCP identifies that the Gambier Island Local Trust Committee supports measures implemented by the Ministry of Transportation or the SCRD to protect land use from hazardous conditions, including flooding (3.8, p. 15).

Development Permit Area 1: Riparian Areas (p. 39)

The riparian areas DPA applies to areas that provide fish habitat, such as a watercourse, a pond, a lake, a river, creek, brook, ditch, spring, or wetland connected by surface flow. This DPA does not mention flooding at all, does not consider flood management, and prioritizes protecting riparian ecosystems.

Development Permit Area 2: Streamside Protection (p. 40)

The streamside protection DPA applies to areas of 30 metres from the natural boundary of a stream. The objective of this DPA is to protect the biological diversity of streamside and aquatic ecosystems. This DPA does not specifically mention managing flooding as one of its objectives.

Gambier Island

Gambier Island Associated Islands Official Community Plan (GIAIOCP)

The GIAIOCP was implemented in 2009 to provide management direction of the Gambier Associated Islands Area, which includes over 30 islands. The plan intends to protect ecosystems and natural resources, ensure that development aligns with the character of the area, and to help work cooperatively with other governments and First Nations (2.1-2.3, p. 5).

The GIAIOCP does not deeply consider flooding, The Plan identifies that the Gambier Island Local Trust Committee should “undertake initiatives” to identify hazardous areas for development, including areas subject to flooding (3.15.1, p. 15) and use appropriate tools to manage development in known hazardous areas (3.15.2, p. 16).

Development Permit Area No. 1: Watershed Areas (p. 57)

The watershed areas DPA applies to streams, lakes, wetlands, groundwater catchment areas and watershed areas that are important to aquatic habitats. This DPA does not specifically mention flood management, however, it does mention the importance of watershed management to avoid large volumes of water flowing into streams, lakes, and wetlands.

Development Permit Area No. 2: Shoreline Protection Area (Brigade Bay Area) (p. 59)

The shoreline protection area DPA applies to 15 metres upland of the natural boundary of the sea and 30 metres seaward of the natural boundary of the sea. This DPA does not mention flood management as one of its objectives and mostly focuses on conserving fish habitats.

Summary

The islands under the Islands Trust government body (Keats & Gambier) address flood risks only minimally in their hazard planning. The Islands manage flood risk mainly through DPAs. The DPAs do not specifically mention flood mitigation as one of their objectives; however, managing development in riparian areas and streamside areas does add to the Islands Trust's flood risk management.

District of Sechelt

Integrated Community Sustainability Plan (2019)

The objective of this plan is to identify community and environmental values, guide future updates to the OCP, and set up community-based and on-the-ground projects. The plan is broken into various sustainability goals (p. 7), with sub-goals, actions, and measures of success. Sea level rise is the rationale behind the planning for climate change goal (p. 22), with a sub-goal of ensuring that communities are resilient to climate change impacts (p. 23). For the environmental sustainability goal, flooding is addressed through sub-goals of development in harmony (p. 18).

District of Sechelt Official Community Plan (DoSOCP)

The DoSOCP was adopted July 20, 2011. The 2011 update intends to help guide development in the midst of higher rates of population growth. The plan also outlines a community vision and 13 guiding principles, which notably encourage building up the downtown, preventing sprawl, protecting the environment, and creating a walkable, accessible community (p. 6).

As the district has more residential land available than needed given population projections, the district is able to minimize development in flood zones. The OCP outlines that commercial and residential development will occur where long-term impacts of flooding (coastal or freshwater) are not present or can be safely managed without significant cost (2.8, p. 24). Instead, flood prone lands are to be used for low intensity activities including agriculture, recreation, and parks (3.18, p. 29). The District has completed a Community Flood Hazard Mitigation Strategy for lower Chapman Creek and future developments may be subject to a Community Flood Mitigation Strategy (3.21, p. 29), though the plan does outline specific flood risks for several creeks already (3.13, p. 28). Lastly, the OCP outlines that floodplain mapping is to be updated as required (3.20, p. 29).

District of Sechelt Urban Forest Plan (DoSUFP)

Released in 2010, the DoSUFP sets out recommendations for the District's urban forest. The plan highlights the importance of trees in preventing flooding and reducing storm water runoff. Further, the plan recognizes the importance of retaining forested lands and riparian zones in minimizing flood-related climate impacts (p. 45). The plan outlines several recommendations for the District to undertake to uphold trees but the one recommendation for the next OCP is to update the report on environmentally sensitive areas (p. 9).

DPA 2 - Watercourses (Habitat protection and creek hazard)

The watercourses DPA applies to all watercourses and their tributaries, and specific creeks that have potentially hazardous conditions. This DPA mentions flooding several times and emphasizes that creeks and riparian areas are susceptible to flood hazards.

DPA 3 - Marine, Foreshore and Shoreline Areas

The marine, foreshore and shoreline areas DPA applies to all land and water areas extending 15 metres upland of the higher high water mark. This DPA does mention coastal flooding and storm-wave erosion hazards as one of its justifications. One of the objectives is to protect properties from storm waves and coastal flooding.

Zoning Bylaw No. 580 (p. 83)

Zoning bylaw 2.15 natural boundary setbacks and flood control requirements regulate development in areas of potential flood hazards related to streams, creeks, and marine shorelines. The bylaws include setbacks and flood construction-level requirements.

Summary

The District of Sechelt is aware of flood risks and plans to mitigate flooding as its population grows. Sechelt addresses flooding in its Integrated Community Sustainability Plan, the Official Community Plan, and its Urban Forest Plan. Sechelt manages flood risk mainly through setbacks and DPAs in environmentally sensitive areas that are prone to flooding. While the District of Sechelt adequately addresses current flooding risks, it makes no mention of future scenarios, such as the 200-year flood level.

Town of Gibsons

Town of Gibsons Integrated Stormwater Management Plan (ISMP; 2018)

The ISMP's objective is to assess and manage precipitation, with consideration to land use and environmental needs. This report discusses unsuccessful strategies outlined in the 2010 ISMP, such as trade-offs for strategies, lack of enforcement, and low staff capacity (p. 1). The report includes a hydrotechnical analysis of existing conditions (p.4), future land use and criteria, strategy to manage future development (p. 16), stream assessments (p. 33), and regulation and criteria (p. 51). Zoning bylaws, subdivision and development bylaws, building and plumbing bylaws (p. 51), and DPAs 1 and 9 were identified as avenues to expand stormwater management (p. 54). Gibson's Creek is identified as a specific area of concern, with slope creep, restricted debris flow, and runoff erosion (p. 33, 35).

The plan includes regulatory, infrastructural, and study recommendations and categorizes relative priorities. High priorities include updating subdivision and development bylaws, creating tree protection and soil removal bylaws, installing ponds, implementing green infrastructure in public spaces, upgrading storm sewers, and advancing asset management (p. 63- 64).

Town of Gibsons Strategic Plan: 2023-2027 (ToGSP)

The ToGSP outlines the Town's goals and objectives between 2023 and 2027. The Plan does not directly mention flooding but does outline that a climate resiliency lens shapes everything the town does (p. 3). The plan discusses continued monitoring of Aquifer 560, including monitoring precipitation and streamflow (p. 20). However, water is framed through conservation language, rather than hazard mitigation.

Town of Gibsons Urban Forest Plan (ToGUFP)

The ToGUFP was released in 2025 to provide goals, strategies, and actions to advance the Town's urban forestry goals. The plan recognizes the regulating services of forests, including flood management, and that the town benefits from natural assets from forested areas including stormwater detention and flood mitigation (p. 4, 5, 10). The plan also recognizes that climate change will have an impact on flooding and sea level rise (p. 46). The plan outlines many goals and strategies to protect and grow the urban forest, including policy amendments, working with the Skwxwú7mesh Nation, and monitoring and reporting urban forest change (p. 47).

Managing Natural Assets to Increase Coastal Resilience, Gibsons Pilot Study, British Columbia (2021)

The ToG is one of two pilot governments for the Coastal Resilience project. The project's objective is to quantitatively assess the benefits of coastal natural assets for erosion and flood protection against coastal flooding, and to develop and pilot a coastal modelling toolkit that can refine and compare different management approaches for coastal erosion and storm surge (p. 3). The coastal toolkit determines how the enhancement of natural assets alongside grey infrastructure. Asset enhancement includes shoreline planting, beach nourishment, eelgrass planting, and submerged structures (p. 4).

The modelling toolkit was applied to southern ToG, with sandy beach coastlines, and to the northern Marina side of ToG, from Avalon Drive to Armours (North). The findings generally showed low vulnerability for the beach coastal lines of southern ToG (p. 22-25). With the potential of wave attenuation from a large-scale eelgrass enhancement program to increase from seven to ten percent (p. 24).

Flood protection benefits identified the south side as not at risk due to higher elevation, whereas the northern marina side was assessed at high risk. 14-52 buildings have been identified as at-risk, with potential damages estimated at $3.4 million for a single storm, and $16.2 million within a 100 year time frame (p. 28). Tide levels have been identified as the main hazard, rather than wave run-up. The modelling of natural asset enhancement showed limited protection, at 1% avoidance of costs (p. 28). The report recommended that the ToG should consider the feasibility of implementing grey infrastructure alongside natural asset improvements, such as a dyke or raising backshore dune height, along with managed retreat (p. 29). The recommended next steps are to further refine the coastal toolbox model and conduct more sensitivity analysis to include different beach and shoreline habitat types (p. 35).

Town of Gibsons Official Community Plan (ToGOCP)

The ToGOCP was adopted January 6, 2025. The OCP outlines that the Town is situated on the traditional territory of the Skwxwú7mesh (Squamish) and provides an overview of the Indigenous history and European settlement of the area. The guiding statement outlines that the Town is guided by resiliency, livability, and fostering sensitive growth, which is reflected in the 15 guiding principles (p. 9, 10).

The ToGOCP deeply considers the impacts of flooding and climate change. Two guiding principles of the plan relevant to flooding include guiding principle 1: access to and protection of nature (including the aquifer) and 13: emergency preparedness (p. 9, 10). As the Plan contains a much greater quantity of flooding insight and the Town of Gibsons is in close proximity to Ch'k̲w'elhp and Scheṅk̲, the most relevant inclusions are organized in the table below.

Summary of Most Relevant Flood Policies and Objectives in the ToGOCP
3. General
P9: Encourage resilient building and landscape design through methods such as…rainwater catchment systems, and storm-resistant landscaping (p. 13)
7.4: Drainage
P2: Plan and operate municipal infrastructure to be resilient during future climate risks, such as…sea level rise (p. 30)
P3: Continue to implement flood mitigation measures designed for projected climate conditions to prevent and manage flooding and runoff in vulnerable areas (p. 30)
P5: Explore opportunities to collaborate with the SCRD and Skwxwú7mesh Úxwumixw (Squamish Nation) on drainage planning in fringe areas (p. 30)
8.2: Roads and Parking
Obj D: Green infrastructure [is]...integrated in the planning, development, and maintenance of roads and sidewalks (p. 34)
P8: Design newly developed public parking lots…to include landscaping medians, trees, [and] permeable materials (p. 35)
10.1: Climate Adaptation and Resilience
P4: Support citizen-led programs and collaboration with Sḵwx̱wú7mesh Úxwumixw (Squamish Nation) on the restoration and monitoring of streams, wetlands, and shorelines (p. 40)
10.2: Emergency Management
Obj B: Minimize risks to life and property from natural hazards and disasters such as floods (p. 40)
P4: Strengthen existing strategies for emergency response planning and management in the case of…flooding, or other natural disaster (p. 40)
11.1: Environmental Protection
P3: Protect environmentally sensitive areas, riparian areas, and marine habitats, including creeks, wetlands, and forested and critical habitat areas from development and land alterations other than as part of normal farm practices (p. 42)
P7: Lands that are generally unsuitable for development due to their…risk of flooding…are to be used for low-impact uses such as trail access or public utility corridors (p. 42)
11.3: Marine Environment and Coastline Protection
P6: Design new parks located along the coastline that effectively withstand…sea level rise and storm surges (p. 45)
12. Parks, Recreation, and Open Space
P10: Design new parks located along the coastline to effectively withstand… sea level rise and storm surges (p. 48)

Geohazard Development Permit Area

The geohazard DPA aims to reduce risks to geohazards, including coastal flood hazards. Within coastal flood hazards, this DPA also considers sea level rise, tides, storm surges, and wave effects. Development or alteration in these areas must be accompanied by professional geohazard assessments.

Zoning Bylaw No. 1342 (p. 3-4)

Zoning bylaw 3.3 development in areas subject to flooding limits development that is too close to bodies of water. In addition to setbacks, the zoning bylaw states that buildings or structures must be located at least 0.6 m above the 200-year flood level. The zoning bylaw also includes requirements for floor elevation and maximum floor underside height.

Summary

The Town of Gibsons has extensively covered flooding through its OCP, ISMP, Urban Forest Plan, Geohazard DPA, and Zoning Bylaw. Gibsons outshines the other OCPs in quantity and quality of flood-related objectives and policies, which is not surprising given that the plan was adopted last year. Further, Gibsons' participation in a Coastal Resilience Project enables the municipality to better understand flood-related threats. Though, as outlined in the Strategic Plan, the municipality appears to prioritize the threat of water absence over the threat of water presence.

Shishalh Nation Strategic Land Use Plan

The Shíshálh Nation Strategic Land Use Plan was adopted June 27, 2007 and serves as a guide for the Nation to articulate visions for the territory, including priority protection areas (p. 2). The Plan stands out from other plans in that it references development impacts on flood dynamics, rather than flooding impacts on development. The plan identifies that hydro dams have flooded lands and that flood prevention measures have altered streamflows, affecting fish (p. 23, 57, 76). More broadly, the Shíshálh people strive to maintain connection and stewardship of water. The plan also mentions that the Nation will take action to maintain or increase resilience to long-term issues like climate change (p. 17).

Conclusion

This report serves as a guiding document on resources available to planners when examining flood risk to Sḵwx̱wú7mesh Nation territory on the Sunshine Coast. Various regional districts and municipalities (SCRD, Gibsons, Islands Trust) have flood plans and DPAs relating to flooding on the coast. This documentation and mapping should be referenced when developing flood planning in the three locations of interest specified by Sḵwx̱wú7mesh Nation: K̲’íḵ̲’elx̱en, Ch’ḵwélhp, and Sx̱aaltxw. In addition to inundation from projected storm surges and SLR, each location is subject to separate environments, adjacent land-use, and hazards; and as a result, each should be assessed individually based on need. Moving forward, we recommend establishing flood risk planning in Sḵwx̱wú7mesh Nation territory to assist decision-making and align with pre-existing plans in neighbouring communities.