SQUAMISH

HARDWIRED *for* ADVENTURE

Marine Action Strategy

Prepared in collaboration with community
and the District of Squamish

pacificablue consulting

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- Informant interviewees, Focus Group attendees, and Inaugural Squamish 'Salt Life' Panelists - for being involved, sharing marine perspectives and helping to affirm key focus areas and the development of MASt objectives, strategies and priority actions. See Appendix 1 for a list of participants.
- District of Squamish internal staff Working Group for providing advice on the process and reviewing and providing feedback on drafts. See Appendix 1 for staff list.
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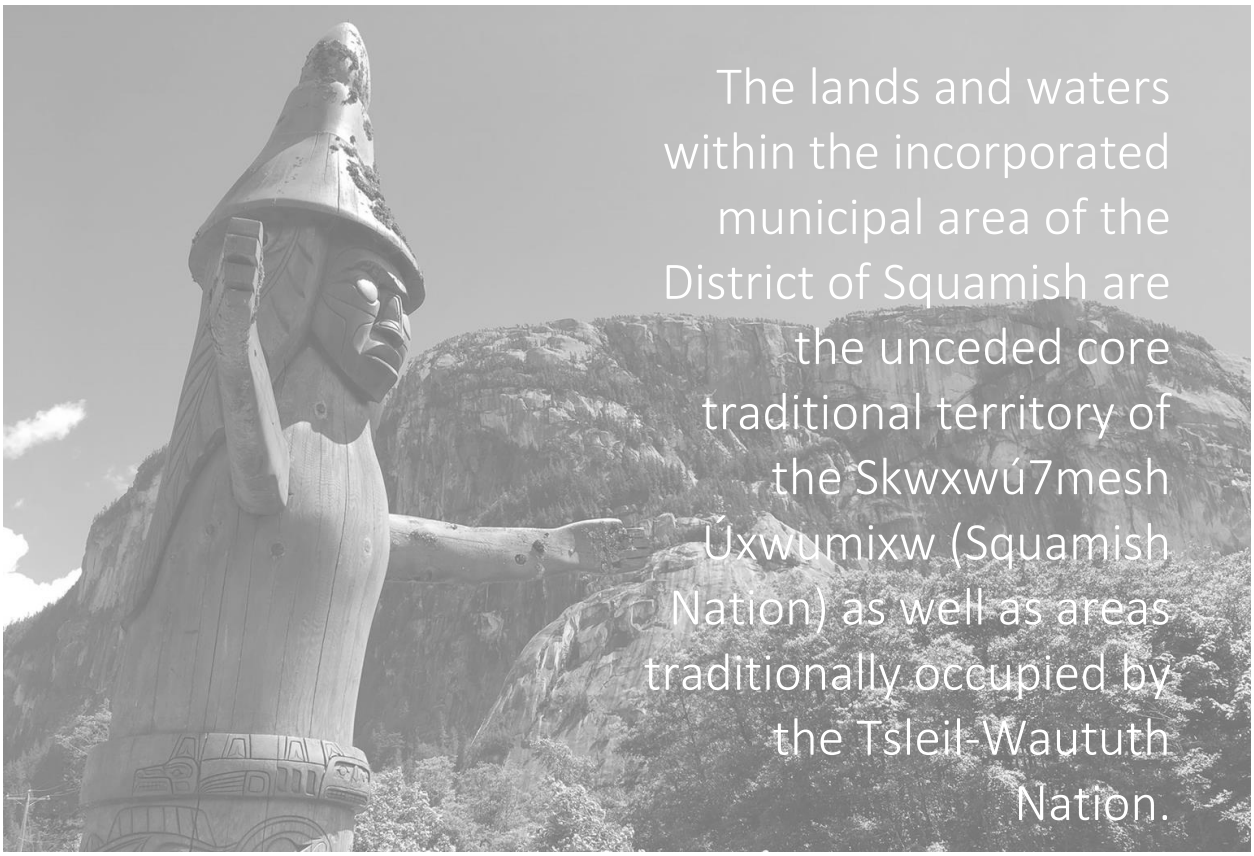
Shared Lands and Waters



Local lands and waters are subject to governing laws, policies, customs and land and water use plans of these First Nations. For Squamish Nation, this includes the Xay Temíxw (Sacred Land) Land Use Plan that presents the Nation's vision for forests and wilderness areas, land use and management zones, Kwékwayex Kwelhàynexw ta Skwxwú7mesh Temixw (Squamish Nation Wild Spirit Places), and economic development priorities. A companion Marine Use Plan (MUP) is now under development by the Nation.

Also recognized are plans and legal agreements between the Province and First Nations guiding resource planning and management decisions, such as the Sea to Sky Land and Resource Management Plan (2008), which provides direction respecting Crown lands, waters and resources within the sub-region. The Squamish Estuary Management Plan (SEMP 1999), is another important plan governing management of the estuary and marine areas within Squamish. The SEMP, along with a land exchange between the Province, BC Rail and the Squamish Nation, led to the designation of the Skwelwil'em Squamish Estuary Wildlife Management Area (WMA). A separate management agreement between the Ministry of Environment and Squamish Nation sets outs goals, objectives and strategies for maintaining and restoring fish, wildlife and their supporting habitats, and managing human uses in the WMA. The creation of the WMA is a result of 25 years of planning by the Squamish Estuary Management Committee (SEMC), of which Squamish Nation is a member.

It is the intent of this action strategy to harmonize and align with planning and management directives and agreements established through these documents. The District of Squamish seeks to work closely with First Nations in joint planning, projects and marine initiatives wherever possible and of mutual interest, as communities work to meet their respective goals, priorities and needs. Engagement and participation in stewardship and marine planning efforts for Howe Sound must occur in respect and recognition of Aboriginal rights and title, culture, and heritage.

Summary + Immediate Marine Actions 2018-2020

The District of Squamish Marine Action Strategy (MASt) informs and supports planning and development decisions in the waterfront and marine environment of the District of Squamish over the next 10 years. The strategy is a District priority and aims to catalyze shared leadership to advance environmental stewardship, economic development opportunities, outdoor recreation, and downtown revitalization.

MASt Objectives - MASt coordinates and presents marine related priorities and actions to guide local decision making and resourcing. MASt objectives are as follows:

- Mobilize shared leadership within the local marine environment
- Align municipal policies and decisions within marine issue areas
- Identify marine focus areas and priority short to long term outcomes needed to
    - Protect and maximize the waterfront and marine resource as an important community asset providing ecological services and social, cultural and economic benefits.

Framework - MASt is framed by a Vision, Guiding Principles, Goals, Objectives, Strategic Directions and Marine Actions.

MASt Vision - The MASt Vision articulates and affirms a desired future for Squamish to inspire and guide collective community efforts in the local marine realm: Squamish supports and celebrates its connection to the ocean, as a source of life, vitality, culture and identity - sustaining our coastal community across generations. Shared marine resources are responsibly stewarded and enhanced so natural systems in Howe Sound thrive, in tandem with industry, economy, tourism + recreational opportunities that depend on a healthy marine ecosystem, and access for all.

Guiding Principles – Five MASt guiding principles reflect shared community values that will serve as overarching touchstones to influence development and implementation of actions that respect the Squamish marine realm: Shared leadership, Waterfront for all, Integrated systems thinking, Future-focus + adaptive, and Healthy, restorative + sustainable.

Marine Actions – Actions are organized within four core Focus Areas with associated goal statements as follows:

1. Governance and Shared Leadership - Mobilize shared leadership to enhance coordination and good governance of the marine environment.

2. Coastal Ecosystems - Support stewardship and the protection of the marine environment and our local coastal ecosystems.

3. Marine Economy - Support a thriving marine economy and working waterfront in harmony with community social, cultural, environmental and economic aspirations.

4. Marine Gateway - Enhance the community's connection to the water through an improved, safe and accessible gateway / interface to our local marine environment for the social, cultural and recreational benefit of residents and visitors alike.

Each Focus Area presents a progression of goal statements, objectives, and strategic directions targeting focused marine efforts and associated actions.

Implementation - MASt planning and management actions will be implemented by identified leads and supporters and guided by a framework for shared leadership involving marine Working Group(s). This involves collaboration with existing tables (such as the Squamish Estuary Management Committee, SEMC) or new working groups formed for specific initiatives. The implementation framework sets out priority actions to inform council resource decision making, annual staff work planning, and implementation of the agreed upon actions, monitoring and reporting.

Over 70 distinct actions are identified and prioritized. The actions are categorized and range from collaborative / partnership building actions (C); activation projects (A); regulatory (R); plan / policy (P); and educational activities (E).

ACTIONS	Governance	Coastal Ecosystems	Marine Economy	Marine Gateway	Total
Collaboration	5	4	6	3	19
Activation	2	6	0	0	4
Regulatory	3	5	1	1	8
Plan or Policy	7	11	5	11	33
Educational	1	6	1	1	8
Totals	**18**	**32**	**13**	**16**	**72**

The District is identified as lead/champion for 61 actions, while playing a support role for the other 11 actions that are either already underway, or identified as needed through the engagement process.

Immediate Actions - Twelve immediate actions are identified for immediate scoping, budget consideration and work planning for 2018 – 2020:

FOCUS AREA 1 Governance and Shared Leadership

1. Bridge with and convene a sub-working group of the Squamish Estuary Management Committee (SEMC) to explore shared leadership model and mandate for working together on marine projects and initiatives, coordinating project referrals as well as action planning for MASt implementation. (1.2.1, A1) DISTRICT LEAD, IN COLLABORATION WITH SEMC

2. Investigate potential for expanded harbour authority role and responsibility within the "Inner Harbour" (Mamquam Blind Channel) - Explore community models and terms of reference for planning + management of day to day marine activities. Explore the opportunity for expanded education and enforcement capacity and services supported by policy, bylaws and resources. Explore management funding and revenue models covered in B2. (1.2.1 B1-3). DISTRICT LEAD; PARTERSHIP OPPORTUNITY WITH SQUAMISH HARBOUR AUTHORITY

FOCUS AREA 2 Coastal Ecosystems

3. Establish specific marine habitat protection goals and objectives for Squamish including SEMP areas and beyond (foreshore/ marine environment, while taking into account connectivity with upland areas). (2.2.1 A1). Develop/refine regulatory / zoning tools for marine use / conservation areas and protected areas. (2.2.1 A3). DISTRICT LEAD, IN COLLABORATION WITH SEMC

4. Identify and undertake specific coastal / foreshore compensation projects (per avoid, mitigate, compensate hierarchy) (e.g., forage fish habitat). (2.3.1 A2). DISTRICT LEAD, IN COLLABORATION WITH SEMC

5. Advance Squamish River training berm estuary restoration project to achieve primary goal of supporting return of fish. Phase 1 Training Dyke Culvert Reconfiguration; Phase 2 Explore Training Dyke/Windsurfer Spit Realignment; Phase 3 Improve connectivity to Cattermole Slough with a controlled flow structure across the CN Spur Line. (2.3.1 A3). DISTRICT SUPPORT

6. A1. Affirm and address Marine Spill Response roles and resources with lead agencies and coordinate with Provincial Spill Response and management plans. Explore development of a regional, integrated response plan for managing and supporting operations and unified response in the Howe Sound marine environment in the event of a major pollution incident (similar to *Greater Vancouver Integrated Response Plan*). (2.4.2 A1, A2) DISTREAD LEAD IN COLLABORATION WITH SQUAMISH NATION, COAST GUARD, PROVINCE OF BC

Develop an Annex to the District of Squamish All Hazards Plan addressing spill response, in line with the integrated area response plan above (similar to the *North Shore Environmental Spill Response Guideline*). Identify and plan for spill / response and support sites along the waterfront at key locations. Develop joint operational exercises for training/ testing response mechanisms. Work with existing Sea to Sky Regional Emergency Management Working Group and neighboring Howe Sound marine communities to share resources, learning, and capacity. (2.4.2 B1- B4) DISTRICT LEAD

7. Develop water quality monitoring framework for human and environmental health, and identify key sites and implement pilot in Mamquam Blind Channel and Upper Mamquam Blind Channel. (2.5.1 A1). DISTRICT SUPPORT

8. Promote and achieve 'Green Marine BC' designation/ environmental program compliance for marine facilities within Squamish (2.5.1 A2). DISTRICT SUPPORT

FOCUS AREA 3 Marine Economy

9. Initiate scoping, collaboration and engagement on an ecosystem based dredge program, priority navigation maintenance activities, and funding strategy. (3.1.3 A1). DISTRICT LEAD

10. Inventory, assess and formalize marine industry-related and commercial transportation routes through a local marine transportation and access plan. (3.2.1 A1). DISTRICT LEAD

11. Explore potential for short-term visitor moorage and other facilities, accommodations and transit to/from marinas to destinations. (3.3.1 A1). DISTRICT LEAD

FOCUS AREA 4 Marine Gateway

12. Identify and secure locations and investment for current and future marine infrastructure, facilities and amenities opportunities through (re) development plans and zoning. Expand on the marine strategy Appendix 2 inventory to develop a checklist to protect marine public realm requirements and opportunities. (4.1.1 A1, A1.1). DISTRICT LEAD

An initial list of marine infrastructure gaps, facilities and amenity opportunities have been identified by all those who took part in the MASt engagement process (see Appendix 2).

Part 1: Introduction

The District of Squamish Marine Action Strategy (MASt) will inform and support planning and development decisions respecting the marine environment within the District of Squamish over the next 10 years. The strategy is a District priority and aims to catalyze shared leadership to advance environmental stewardship, economic development opportunities, outdoor recreation, and downtown / waterfront revitalization.

The strategy has been developed with input from a robust engagement process involving stakeholders, the community and government staff, with an aim to consider and balance marine interests to address marine issues and opportunities. Key themes arising from the process have inspired focus areas forming the strategy's backbone, from which distinct strategies are set out to lead the community of Squamish to maximize the sustainable use and stewardship of marine assets and resources.

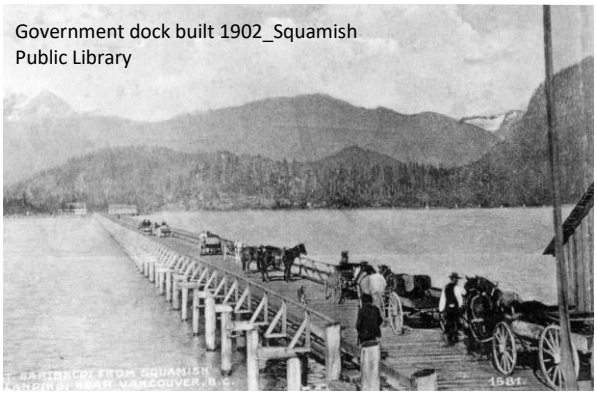
Marine Context

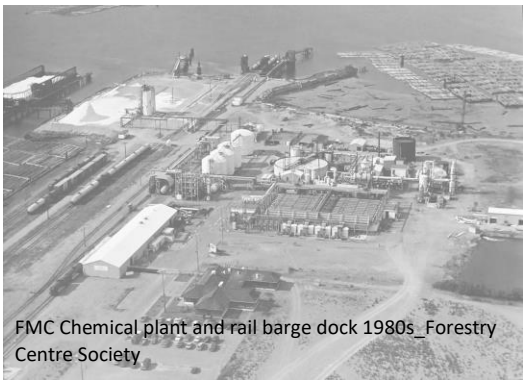
At the head of a magnificent scenic fjord and within a productive river estuary, Squamish is blessed with natural marine assets that have and continue to support aquatic and terrestrial life, human settlements and an energetic, diversifying coastal economy. Indigenous Coast Salish peoples have occupied this area at the head of Atl'kitsem / Howe Sound, as part of the Salish Sea, since time immemorial. As an ancient trade and travel corridor between Interior and Coast Salish peoples, for thousands of years the marine realm has provided abundant food, transportation and a vital spiritual and cultural landscape. These lands and waters are the unceded core traditional territories of the Skwxwú7mesh Úxwumixw (Squamish Nation), and have also been traditionally occupied by the Tsleil-Waututh Nation who have and continue to govern, manage and depend on the lands and waters of the Sound according to Indigenous laws, customs and traditions.

Mt. Ch'kai Canoe Club training 2013_Forestry Centre Society

With settlement in Atl'kitsem / Howe Sound and the Squamish area, the marine environment experienced significant change and industrialization. The 1970s saw the development of port facilities in Squamish (Interfor saw mill, log-dumps, Squamish Terminals) as

well as an attempt to infill the central estuary for a coal port, which was never realized, notwithstanding the construction of the 5km training dike constraining the Squamish River that remains today. Industrial activities at local pulp and paper mills (Port Mellon, Woodfibre), the Britannia Mine, and the FMC Nexan Chlor-alkali plant in Squamish, resulted in extensive, cumulative contamination of the Sound—such that by the 1980s, the area was considered a biological 'dead zone'. More recently, the marine environment within Atl'kitsem / Howe Sound has slowly shown signs of recovery, through ongoing remediation of past-industrial activities and community restoration and enhancement efforts.


Government dock built 1902_Squamish Public Library


FMC Chemical plant and rail barge dock 1980s_Forestry Centre Society

For years, Squamish has been an active hub for forestry and shipping with its tidewater facilities and intermodal connectivity to rail and road. This strategic connectivity to the Pacific coast links Squamish with the Interior Plateau of the province—an attribute shared with Vancouver, Kitimat and Prince Rupert—and which supported the original development of the town of Squamish or 'Newport' as a railway terminus at the turn of the century. Today the break-bulk facility situated on the Squamish Oceanfront, operated by Squamish Terminals, is an integral part of the transportation supply chain in the Pacific Gateway and provides important economic linkages to the Asia-Pacific trade region. The Terminal handles up to 1 million tonnes of cargo annually from forest and value added products to steel, with over 20 export destinations and import origins in Asia and Europe. The operation is a major local employer and currently the District's largest tax provider, and contributes almost $60M in economic output. Beyond the Terminals, industrial facility expansion will continue to take place at Site B (Mamquam Blind Channel East), owned by the Squamish Nation, as well as Watt's Point and Woodfibre in the future.

Squamish continues to experience rapid growth and change. The community is one of the fastest-growing in Canada, and by 2036 the population is expected to nearly double from 20,000 to 36,000. Once solely a primary industry-based economy, Squamish is evolving and diversifying, building on continued tourism, outdoor recreation, knowledge and education, light manufacturing and new emerging high-tech and alternative and renewable energy technologies. With this growth, continued alteration of the marine environment is occurring. Redevelopment of previous industrial brownfield sites, such as the Oceanfront development, along with coastal flood protection measures to protect the Downtown peninsula, are transforming the water's edge. Revitalization is focused on improving access to and enjoyment of the waterfront to build strong connections and improve the health of the community. As considerable efforts and resources are devoted to reclaiming, remediating and redeveloping the waterfront, the community must proactively plan for environmental shifts due to climate change and the valuation and protection of ecosystem services provided by the marine environment. Marine and estuary areas in Howe Sound, as well as connected riparian, wetlands and upland forests, offer *provisioning* services (food, water), *regulating* services (carbon sequestration and storage, nutrient cycling, air purification, waste processing and protection from storms and flooding), *habitat* services, as well as *cultural* services (aesthetic, recreation and tourism, scientific/educational, spiritual). Marine services alone are estimated to provide upwards of $2.8 billion per year in value (*Sound Investment: Measuring the Return on Howe Sound's Ecosystem Assets*, David Suzuki Foundation, February 2015).

Related Marine Planning Initiatives

A variety of local, regional, provincial and national marine initiatives concurrently underway influence and link with the collective efforts and actions presented in this strategy. Many community initiatives, programs, partnerships and projects also inform and implement strategic directions affirmed in the strategy. Below are just some of these initiatives:

- MASt draws on other plans and strategies, including District of Squamish Integrated Flood Hazard Management Plan and Coastal Flood Protection Strategy; 1999 Squamish Estuary Management Plan; Squamish 2040 Official Community Plan and many more (Figure 1).

- Squamish Nation has initiated development of a Marine Use Plan (MUP) and a spill response process and plan within their traditional territory.

- The District has been an integral participant in the Howe Sound Community Forum since its inception. The Forum brings political representatives at all levels from around Howe Sound together to talk about matters important to the communities surrounding Howe Sound.

- The District began working with the Ocean Watch Report Task Force (Coastal Ocean Research Institute (CORI) Vancouver Aquarium) to implement actions in the Ocean Watch Action Plan, as well as CORI/David Suzuki Foundation's Atl'kitsem / Howe Sound Marine Conservation Assessment. The project goals are to map Howe Sound's marine ecology, identify areas of high conservation needs based on available data.

- The Future of Howe Sound Society is working on a proposal for a Howe Sound UNESCO Biosphere Reserve.

- Transport Canada, Fisheries and Oceans Canada and Environment & Climate Change Canada are unrolling a National Oceans Protection Plan with interest in Howe Sound. Scope includes navigation, regional response planning, environmental monitoring, habitat restoration funding, abandoned vessels, and partnerships.

- Ministries of Environment and Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD) is working on a BC Cumulative Effects Framework for Howe Sound. Intended to guide cumulative effects considerations through existing natural resource sector legislation, policies, programs and initiatives. Value assessment protocols are being developed for aquatic ecosystems, forest biodiversity, grizzly bear, moose and old growth forest.

- The Squamish River Watershed Society has received multi-year funding to activate the Squamish Estuary Salmon Habitat Recovery Project which aims to benefit salmon throughout Howe Sound and the Salish Sea.

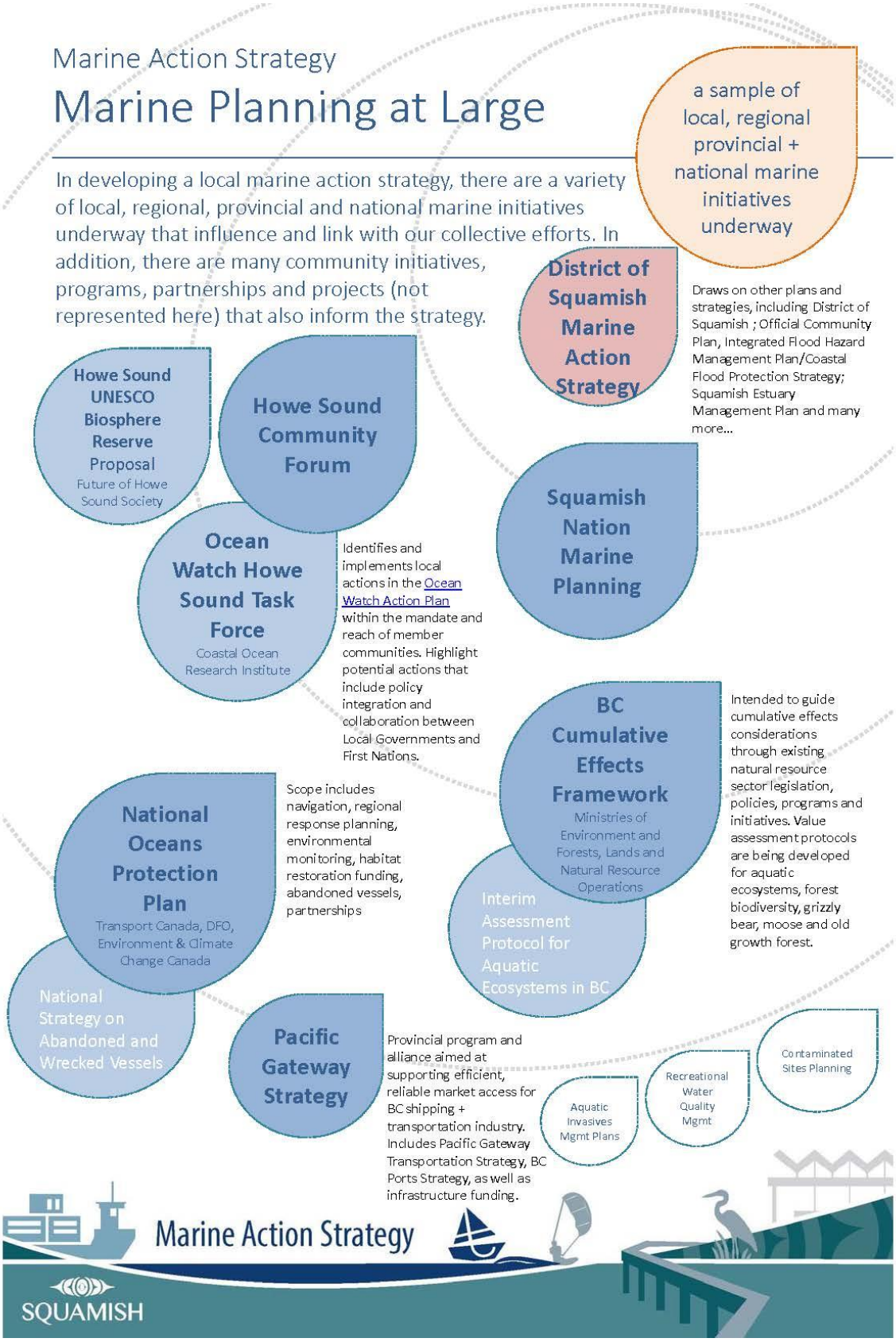


Figure 1. Marine Planning Initiatives

Project Background

Through an initial exploratory period (2011-2015), the District undertook marine jurisdiction and regulation review, examined strategies, approaches and precedents in other coastal BC communities, and engaged with local, provincial and federal agencies. The aim was to determine how best to approach a unique Marine Strategy for Squamish. The initial focus for this first phase of marine action planning was proactively addressing acute marine issues and threats to coastal ecosystems and human health, such as unauthorized mooring, derelict vessels and ship source pollution. Leveraging broader opportunities for waterfront activation and downtown revitalization were identified as other important priorities – arising from key drivers such as growth and development, increased tourism and recreation uses, a long-standing need for improved public and recreation-based water access, alongside continued employment and industrial uses in the working harbour, while supporting integrity and sustainability of natural systems.

Recent Achievements

Over the last four years, the District has undertaken substantive strategic planning work with respect to marine and marine interface areas such as:

- Integrated Flood Hazard Management Plan, including Coastal Flood Protection Strategy (2014-2017)
- Environmentally Sensitive Areas Mapping (2015-2017), including marine foreshore mapping
- Official Community Plan amendments (2016-2018), including integration of the Squamish Estuary Management Plan (1999), Skwelwil'em Squamish Estuary Wildlife Management Area Plan objectives and policies; and updated the Environmental Development Permit Area Guidelines
- Ongoing remediation of contaminated areas, foreshore development, upland and water lot use (supported by updated Sub Area Plans and approvals) such as the Oceanfront (Newport Beach Development) and Waterfront Landing (updated 2016/17)
- Employment Lands Strategy (2014)
- Economic Development Review and Action Plan (2016)
- Downtown Truck Route Study (2016-17)
- Navigable Channel Delineation and piling removal project (2017). This is an ongoing action/community-based initiative.

The MASt strategy uniquely assembles, coordinates and monitors progress on marine related plans and initiatives in a single comprehensive document to close the gap on remaining marine policy and actions identified by the technical studies, plans and strategies noted above. MASt is ultimately informed by the overarching Official Community Plan (OCP) updated in 2016-2018. The plan is focused on the following core community issues:

- Managing growth pressures for local lands in the face of hazards and changing climate
- Protecting environmentally valuable resources
- Balancing local jobs and affordable housing
- Maintaining adequate employment lands
- Enhancing community health, equity, and social sustainability
- Prioritizing active transportation and mobility, and
- Increasing emergency management and preparedness.

Squamish Marine SWOT

STRENGTHS	WEAKNESSES
• Coastal community surrounded by beautiful, iconic natural lands and seascapes • Productive estuary habitats; ecological services and climate moderation (flood control, air and water filtration; carbon sink) • Howe Sound rebounding biodiversity ("pulse of life returning") • Recognized International Bird Area • Deep water port; vibrant logging/shipping waterfront industry, intermodal transportation connections to regional and inter/national markets; harbour facilities • Marine recreation connections + tourism potential (Howe Sound Marine Trail; growth in water/wind sports, walking/ hiking trails, channels safe shelter for boats) • Historic intra-governmental and cross-sector estuary management planning and project review (SEMP) • Vibrant and growing community made of diverse individuals who value healthy, outdoor lifestyle options and choose to live here and raise their families. • Growth in regional marine planning forums and initiatives in Howe Sound (e.g., Howe Sound Forum; Ocean Watch Task Force, CORI, Natural Capital Account for Howe Sound – David Suzuki Foundation) • Highly engaged community, environmental NGOs, citizen scientists and advocates S	• Shifting regulations and reduced participation of senior governments in local development review + management activities (Squamish Estuary Management Committee) • Insufficient moorage space / unmet demand for locals and visitors • Uncertain long-term land tenures for key facilities (e.g. Squamish Yacht Club) • Inadequate facilities/infrastructure (e.g., boat launching, marine fuel station, public water access and amenities; short sea shipping) • Limited waterway/area (Mamquam Blind Channel pinch points) and sedimentation • Limited local presence + coordination of marine enforcement activities (RCMP, Transport Canada, Coast Guard) • Legacy contaminated sites W
OPPORTUNITIES	**THREATS**
• Waterfront redevelopment + contaminated sites remediation (Oceanfront build out; new marine industry, recreational and residential uses) • Creation of protected areas, marine restoration initiatives and funding • New partnerships (e.g. piling removal project with Squamish Streamkeepers, DOS and waterfront land owners; water quality monitoring with Vancouver Coastal Health); funding improvements • Marine planning collaborations with Squamish Nation • Proximity of waterfront to downtown core • Increasing demand for access to waterfront by industrial, commercial and tourism businesses, and recreational users • Federal focus on Oceans Protection – Forthcoming legislation may provide additional local level resources + support (vessels of concern: abandoned, derelict + occupied vessels) O	T • Vessels of Concern (Abandoned, Derelict or Occupied vessels) within marine environment + associated marine contaminants • Cumulative impacts to Estuary functions + marine life (development, industry + recreation activities; flood control structures, sea diking) • Loss of marine navigability (river/channel sedimentation; development encroachment) • Congestion in inner harbour, waterways and channels; safety issues with shipping, logging, and recreational water traffic • Sea Level Rise/Climate Change (increased flood risk; coastal inundation) • Marine oil spills and inadequate and inadequate response capability • Scarcity and loss of waterfront industrial lands • Gaps for water-dependent uses/ facilities

Table 1: SWOT

Community research and feedback illuminated a variety of strengths and weaknesses for consideration in developing the strategy, along with the opportunities that can be capitalized upon and leveraged, as well as threats to address for the future of the Squamish coastal environment, its economy and social, cultural, and recreational uses (Table 1).

MASt Purpose + Objectives

MASt coordinates and presents *marine related priorities and actions* to guide local decision making and resourcing. MASt objectives are as follows:

- Mobilize shared leadership within the local marine environment
- Align municipal policies and decisions respecting key marine issue areas
- Identify marine focus areas, desired outcomes and priority short to long term actions needed to protect and maximize the waterfront and marine resource as an important community asset providing ecological services and social, cultural and economic benefits.

Scope

The geographic scope of MASt includes marine areas within the District of Squamish, broadly including the Squamish River Estuary; Skwelwil'em Squamish Estuary Wildlife Management Area; the Mamquam Blind Channel (MBC); the Upper MBC (UMBC) Cattermole Slough; and Howe Sound Basin within the District of Squamish boundary (Figure 1).

Marine areas addressed in MASt include the following. These terms are meant to be defined broadly and are not meant to be exclusive:

Estuary: All those areas of coastal lands and foreshore that are covered by ocean water through the tide cycles and includes, and is not limited to, the SEMP area, which includes Site A, the Wildlife Management Area, Site B and their associated uplands.

Foreshore: The area of land from the high to low tide – the intertidal zone, and includes the uplands/upper beach areas.

Inner Harbour: The waters of the Mamquam Blind Channel.

Squamish Harbour: The Squamish bay area beyond the channel and extending south to Watt's Point.

Marine: Ocean water up to the high water line and includes estuary, foreshore and connectivity with the adjacent uplands areas.

Natural Capital: Goods and services (or ecosystem services) provided by the natural environment, such as water, land, air, and renewable and non-renewable resources and natural processes (such as plant and animal species, forests, and minerals).

Uplands: The area of land above and adjacent to the high tide zone, foreshore, beach areas and estuaries.

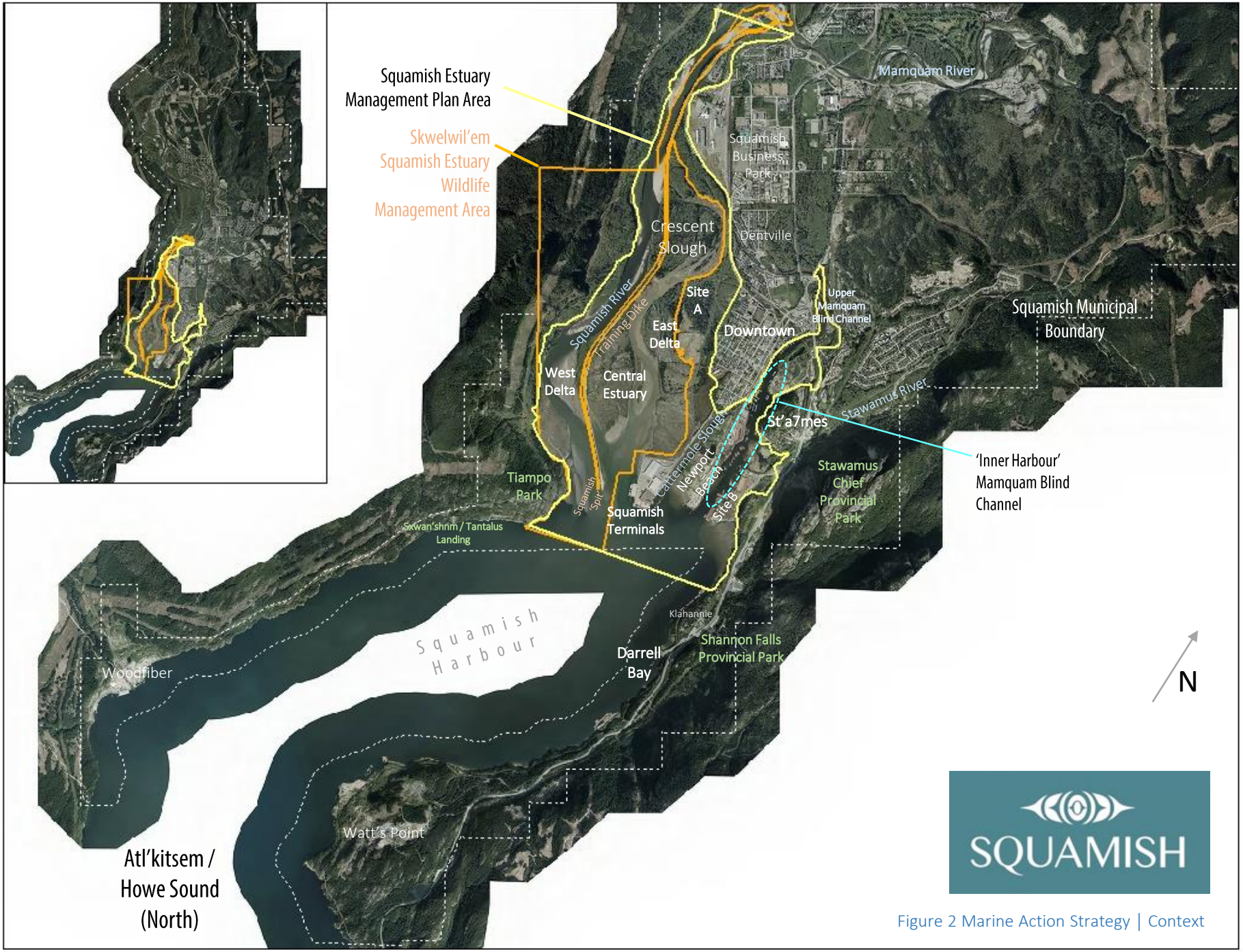


Figure 2 Marine Action Strategy | Context

MASt Development + Engagement

Process Stages

An extensive engagement process has provided input into the development of MASt through five stages: **Stage 1:** Planning & Identification, **Stage 2:** Review/Develop Directions, **Stage 3:** Prioritize and Action Plan, **Stage 4:** Resource and **Stage 5:** Implementation. See diagram below which sets out stages and milestones.

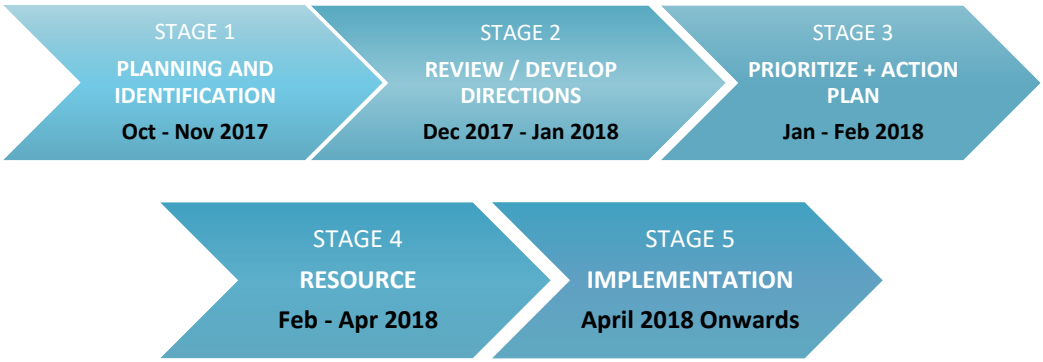


Figure 3. MASt process stages and milestones.

Stage 1 Planning and Identification: Background research was conducted on plans and initiatives to highlight accomplishments. Informant Interviews were conducted with community knowledge holders to inform focus areas, goals, and priority actions. An internal, cross departmental Working Group was formed and met to review and provide input on a MASt framework, process goals and objectives and focus areas.

Stage 2 Review and Develop Directions: A Stakeholder Focus Session was held on Dec 6 2017 to begin dialogue on marine focus areas and big goals, as well as barriers, opportunities and collaborations. A Public Forum was held on January 24 2018, along with an Online Survey to reach a broader audience to further help inform the development of MASt focus areas, goals, objectives and priority actions. The internal Working Group reviewed MASt drafts. Council was updated on a draft MASt during this stage. Summary reports for each engagement event are found on the MASt webpage: https://squamish.ca/yourgovernment/projects-and-initiatives/marinestrategy/.

Stage 3 Prioritize and Action Plan: The Internal Working Group and a second Stakeholder Focus Session reviewed and further refined the draft MASt, with a deeper dive into priorities, action planning, and partnerships. Continued liaison with governments and agencies will take place to assist in affirming MASt action planning, priorities, and opportunities. Outreach will take place to inform and seek input on a refined draft MASt with the broader community, leveraging existing key events.

Stage 4 Resource: The internal project team will finalize MASt and undertake final review and identification of resourcing opportunities with the Internal Working Group, and government and agency representatives. A refined draft strategy will be presented to Council in this Stage.

Stage 5 Implementation: At this stage, the District and collaborative partners will begin to take action to move forward on MASt action planning priorities.

A summary of the MASt audiences and engagement approaches are shown in the diagram below:

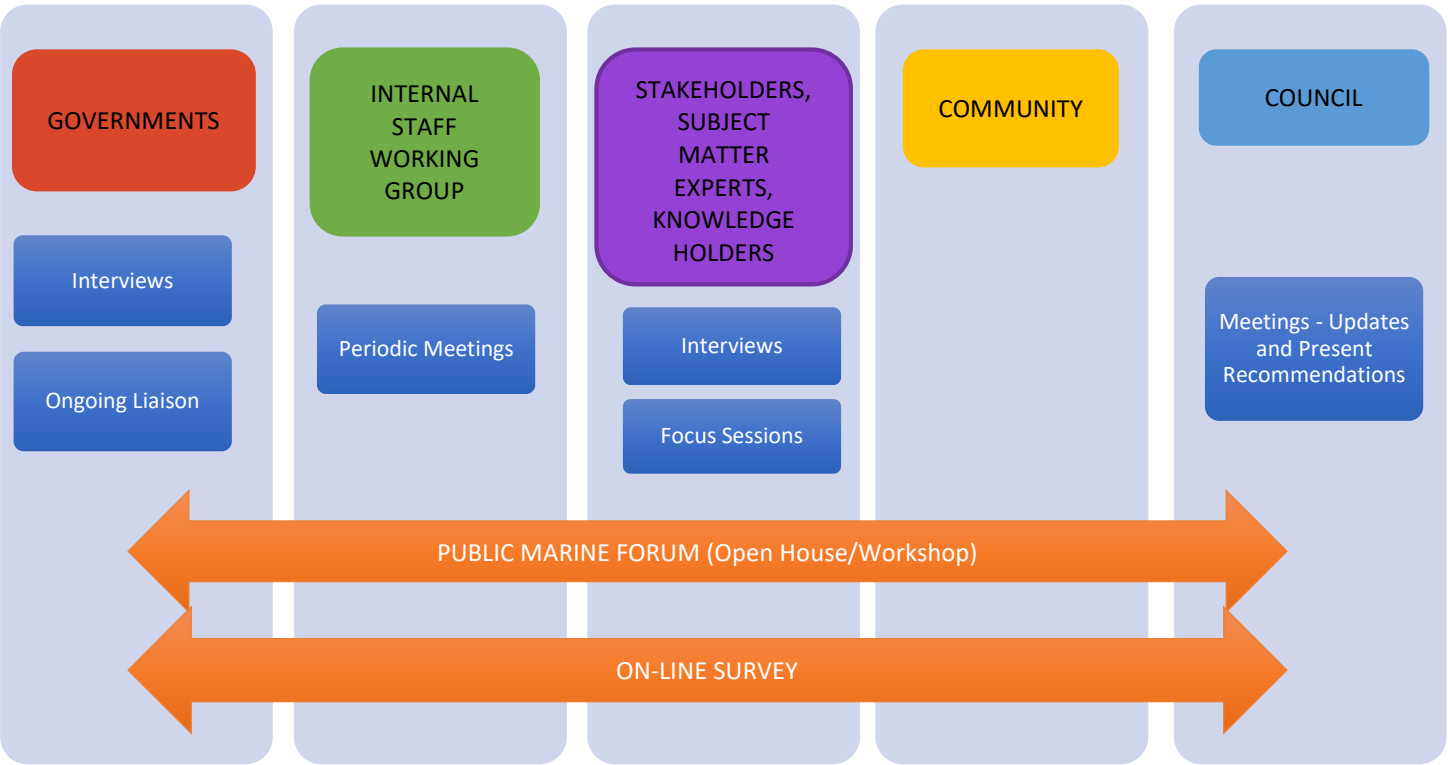


Figure 4. MASt Process Summary Chart

MASt Framework

MASt is framed by the following key elements:

Vision: A vision is the overall impact sought, the desired future state.

Guiding Principles: Statements which guide strategic decisions and actions.

Focus Areas: Broad areas of interest that are important to manage in the marine realm.

Goals: Broad aims toward which efforts are directed in the particular marine area of interest. These desired outcomes tell us "what" is important to achieve, not "how" to get there.

Objectives: High level, desired outcomes that seek to address the Focus Area Goals. These desired outcomes focus on "what is important to achieve," not "how to get there."

Strategic Directions: More specific directions identified to achieve the higher level objectives.

Marine Actions: Specific, measurable and time-bound milestones that describe what approaches, tools, or patterns of activities, events or initiatives will be taken to achieve the strategic directions. Prioritized in the Short (1-2 yr.), Medium (3-4 yr.) and Long (5+ yr.) term.

Action Planning: For each Focus Area, an Action Plan will determine:

- What needs to be done to achieve the objective/strategic direction?
- Who is the responsible lead or champion? Who is helping activate in a supporting role?
- When does the action start and end?
- What resources are needed to implement this action?
- What are the deliverables/outputs?

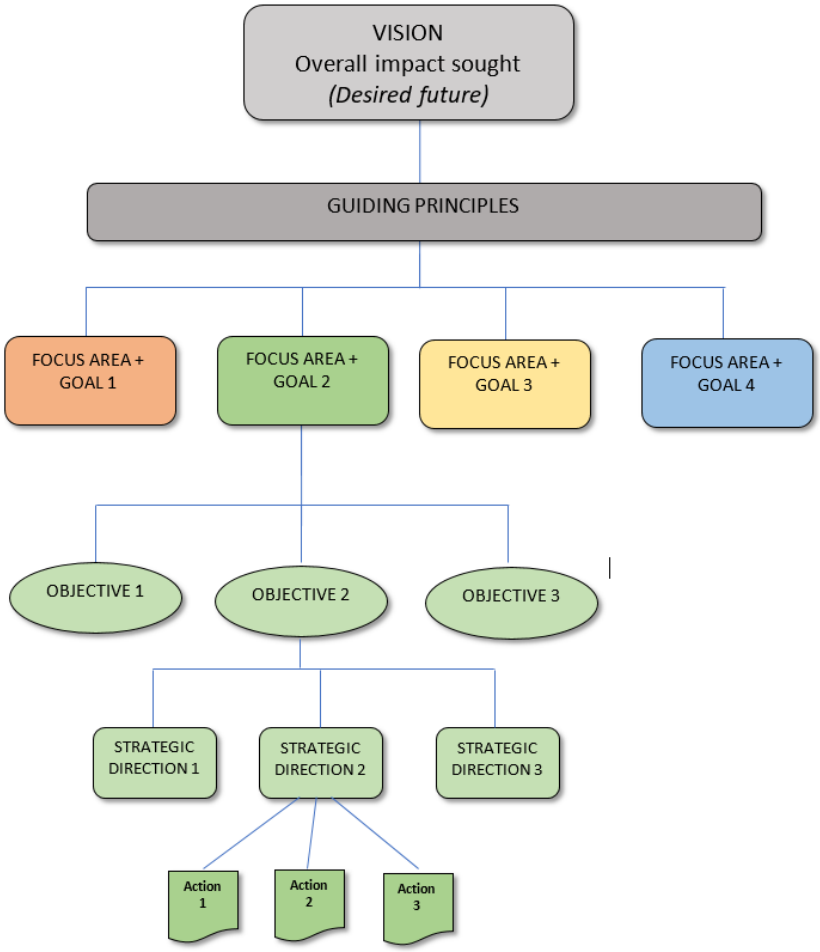
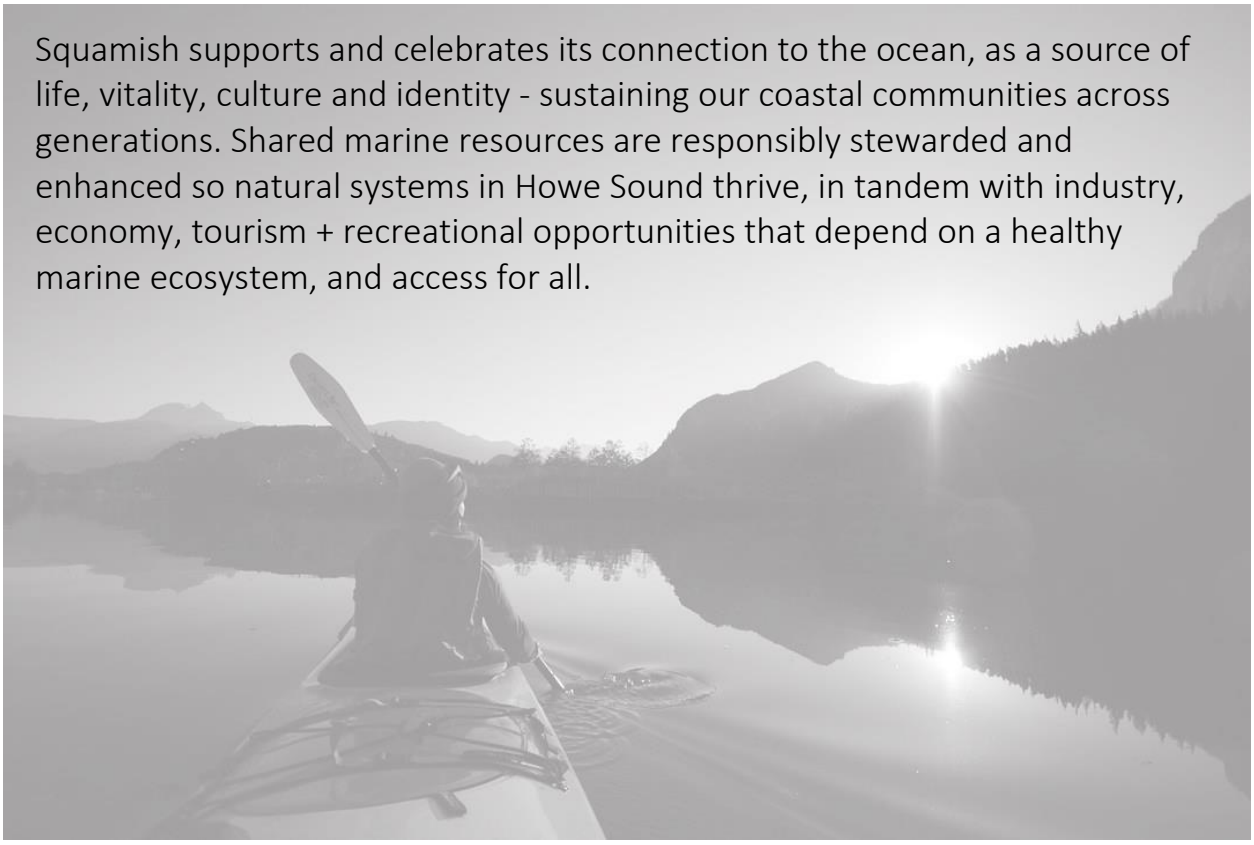


Figure 5. MASt Framework.

Part 2: Vision and Guiding Principles

MASt Vision



The MASt Vision articulates and affirms a desired future for Squamish to inspire and guide collective community efforts in the local marine realm.

This vision for MASt builds on the community's overarching vision to be… "*a vibrant, inclusive, connected coastal mountain community with a big heart and small-town spirit. At nature's doorstep, Squamish is a leader and steward, sustaining ecological and human health while supporting resilient neighbourhoods and a thriving, diverse economy for all*." [District of Squamish Official Community Plan Bylaw 2500, 2017). To achieve the community's vision, the OCP identifies fiv,e major Goals, which also guide the MASt work: *Resilient, Healthy, Connected, Liveable, and Engaged*.

Guiding Principles

MASt guiding principles reflect shared community values that will serve as overarching touchstones to influence development and implementation of marine actions. Values and principles surfaced through inputs collected during MASt engagement activities and are summarized by the following statements.

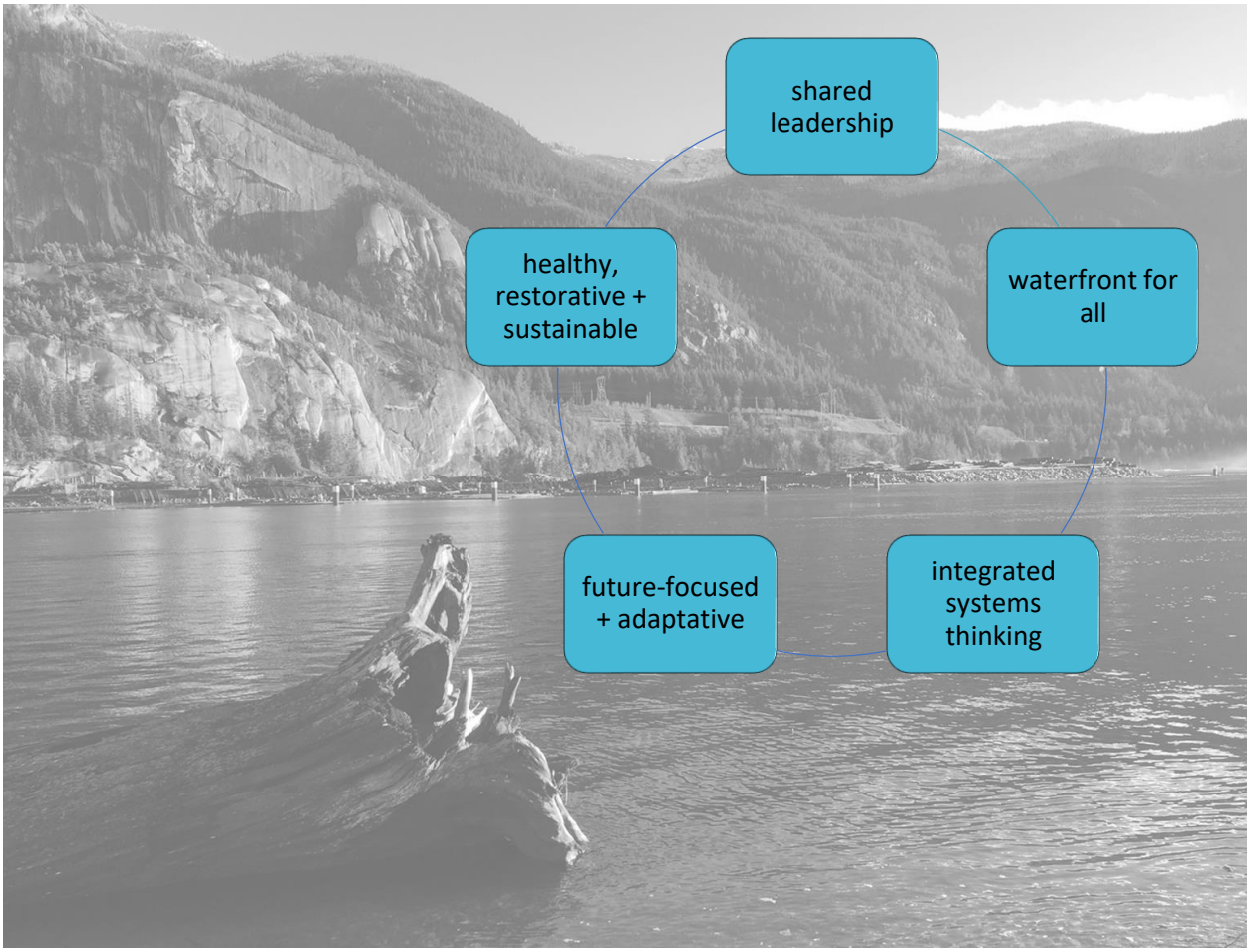


Figure 6. Guiding Principles

Shared Leadership | As a vital resource and community asset, there is a shared responsibility for actively and sustainably stewarding the local marine realm. Mobilizing shared leadership by working better together across all levels of government, and across sectors and with stakeholders with interests in marine areas, allows for greater engagement, coordination, and effective conservation and management of local marine resources.

Waterfront For All | Marine areas host a wide range of uses and activities and should be safe and accessible for all. Respectful co-existence and compatibility with the environment are needed to successfully balance public and private uses. Ongoing revitalization and ecological, social, cultural, recreational, employment and industrial activities are part of a vibrant waterfront that can be enjoyed by everyone.

Integrated Systems Thinking | Systems thinking and approaches that bring focus to the form and function and natural capital services provided by marine ecosystems are needed. Local marine areas, including the estuarine environment surrounding the Squamish foreshore and associated upland watersheds, and the species and systems they support, are connected to Howe Sound and the Salish Sea beyond. As such, these marine environment and the species and systems they support are influenced by many forces and subject to cumulative impacts. Local and regional marine actions will consider the larger systems in which they play a part.

Future-Focus + Adaptive |The complexity of marine environments, diversity and reach of human activities and impacts over time, increasing pace of growth and development, as well as global climate shifts, require increasingly adaptive planning and management. Given limits to our knowledge and ability to predict, future-focused and adaptive actions will contribute to greater local resilience, continuous learning and building capacity to deal with both immediate challenges and emergencies as well as long-term change.

Healthy, Restorative + Sustainable | Connections with the water and natural marine areas are vital to both ecological and community health and wellness. These connections reinforce place, identity and culture. Building appreciation for natural capital and the benefits of marine areas through education and outreach supports protection, stewardship, restoration, and management efforts. The notion of 'leaving things better than we found them' should guide collective efforts.

Part 3: Marine Actions

Focus Areas

Identified Marine Actions are organized according to four core Focus Areas with associated goal statements developed for MASt:

Focus Area 1

Governance + Shared Leadership

Mobilize shared leadership to enhance coordination and good governance of the marine environment.

Focus Area 2

Coastal Ecosystems

Support stewardship and the protection of the marine environment and our local coastal ecosystems.

Focus Area 3

Marine Economy

Support a thriving marine economy and working waterfront in harmony with community social, cultural, environmental and economic aspirations.

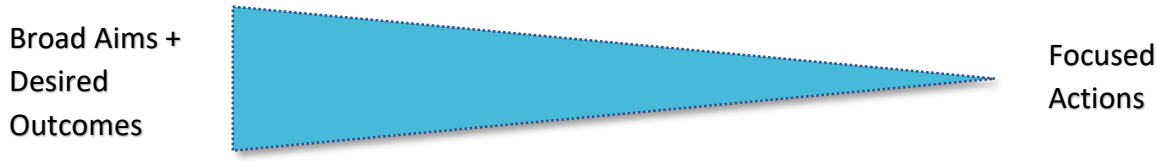
Focus Area 4

Marine Gateway

Enhance the community's connection to the water through an improved, safe and accessible gateway to our local marine environment for the social, cultural and recreational enjoyment of residents and visitors alike.

Focus Area Structure

Each Focus Area is structured as a progression from goal statement to objectives, and strategic directions targeting focused marine efforts and actions. The actions are categorized as regulatory, plan/policy, educational/informational, collaborative / partnership building, or activating project.



Goals	Broad aim or desired outcome for the Focus Area.
Description	Focus Area background and context.
Key considerations	Features or issues relevant to the Focus Area.
Objectives	Desired means to achieve the Goal.
Strategic Directions	Strategies and tactics to achieve the Objectives.
Marine Actions	Specific activities to achieve the Strategic Directions across one or more Focus Areas (many actions have co-benefits).
Action Categories (Cat.)	Actions in MASt are categorized as: **C -** Collaboration/ partnership-building opportunities **A -** Activating projects / operational activities (on the ground/in the water including research/inventory actions) **R -** Regulatory/ bylaw development actions **P -** Plan/policy/strategy – based initiatives **E -** Educational/informational based initiatives that build awareness, understanding, and further knowledge.
Leads / Champions **Supports**	Project manager or initiator of a project/ initiative. Partners, collaborators, supporters of a project/ initiative.
Time (T)	Specifies when actions aim to be accomplished. Some actions are ongoing beyond a specified timeline. **S** – Short Term (2018 – 2020) **M** – Medium Term (2021 – 2023) **L** – Long Term (2024- 2026) **O** – Ongoing actions that do not have specific timeframes

Focus Area 1: Governance and Shared Leadership

Goal | Mobilize shared leadership to enhance coordination and good governance of the marine environment.

The marine environment is a dynamic and complex realm representing many interconnected values and interests — ecological, social, cultural and economic. The strategy is built upon a shared leadership approach, recognizing these intersecting interests, and the variety of roles the community and all marine users and regulators play in the marine environment. The Marine Action Strategy highlights responsibilities and potential partnerships by governments, stakeholders, and the community in caring for and managing different aspects of the marine environment.

Key Considerations

The Governance and Shared Leadership Focus Area includes considerations about:

1. Sharing responsibility and being accountable for our actions in the marine realm
2. Working within multiple jurisdictions and across sectors – many roles, responsibilities and authorities
3. Collaboration with Squamish and Tseil-Waututh First Nations; future joint planning and marine management opportunities
4. Collaboration with all marine stakeholders.
5. Evolution and continued estuary management
6. Enforcement and compliance efforts for navigation, and environmental protection of waterways, fisheries etc., including derelict vessels

Table 2: Focus Area 1 - Governance + Shared Leadership

FOCUS AREA 1 : Governance and Shared Leadership					
Strategic Directions	**Marine Actions**	**Cat**	**Lead**	**Support**	**T**
1.1. Shared Governance					
Objective 1.1.1 Facilitate effective ecosystem-based marine planning, management and coordination					
A. Explore effective shared governance models.	A1. Liaise with government agencies to affirm interests, leadership, resourcing, functions/scope and emerging opportunities and protocols for collaborating within agencies' mandates.	C	District (Planning) Squamish Nation	Other governments Cross-sector participation	S
1.1.2 Increase collaboration with Squamish Nation on local level management of estuary and local waters					
A. Explore joint marine planning opportunities and initiatives.	A1. Confirm Squamish Nation interests, functional role(s),spokesperson(s) and protocol for collaborating on marine planning activities.	C	Squamish Nation District (Planning)		S
1.2 Shared Leadership					
Objective 1.2.1 Establish and maintain local marine-related coordinating bodies with clear terms of reference.					
A. Revisit local coordinating body (SEMC) and process to advise on marine planning / development.	A1. Bridge with and convene a sub-working group of the Squamish Estuary Management Committee (SEMC) to explore shared leadership model and mandate for working together on marine projects and initiatives, coordinating project referrals as well as action planning for MASt implementation.	C	District (Planning)	Multiple levels of government / cross-sector participation including existing SEMC representatives	S
	A2. Define and resource the District responsibility for MASt liaison / implementation (District Marine Lead/Manager).	A	District (Planning)	Cross departmental	S
B. Investigate potential for expanded harbour authority role and responsibility within the "Inner Harbour" (Mamquam Blind Channel).	B1. Explore community models and terms of reference for planning + management of day to day marine activities.	P	District (Planning) Squamish Harbour Authority.	Cross-sector marine stakeholders	S
	B2. Explore the opportunity for expanded education and enforcement capacity and services supported by policy, bylaws and resources.	E	District (Planning) Squamish Harbour Authority	Cross-sector marine stakeholders	S
	B3. Explore management funding and revenue models covered in B2.	P	District (Planning)	District (Corp Services)	S

FOCUS AREA 1 : Governance and Shared Leadership					
Strategic Directions	**Marine Actions**	**Cat**	**Lead**	**Support**	**T**
Objective 1.2.2 Continue to support and contribute to regional marine planning initiatives.					
A. Jointly advance actions identified in Howe Sound OceanWatch Action Plan.	A1. Participate on the OceanWatch Task Force and advance specific identified actions (e.g. support development of the Marine Reference Guide decision support tool).	C, P	Howe Sound Community Forum members OceanWatch Task Force sub-committee, Coastal Ocean Research Institute (CORI), David Suzuki Foundation, Squamish Nation	District (Planning)	S
	A2. Provide input to the Howe Sound Marine Conservation Analysis mapping project that will identify priority areas for marine conservation in Howe Sound	P	District (Environment)	District (Planning)	S
B. Leverage and provide local inputs to Federal Ocean Protection Plan (OPP) initiatives and opportunities	B1. Track and provide local data to "Vessels of Concern" Inventory compiled by Coast Guard (new program under OPP under Bill C-645).	P	District (Planning/ Real Estate)	Canada Coast Guard	M
C. Strengthen connections with Federal and Provincial Pacific Gateway initiatives relevant for Squamish	C1. Undertake transportation and transportation infrastructure planning that incorporates the Pacific Gateway Strategy.	P	District (Engineering)	Marine shipping + transportation stakeholders (e.g., Squamish Terminals, Squamish District Forestry Association, marine logistics and transportation, Transport Canada)	M
1.3. Management of Marine Uses and Activities					
Objective 1.3.1 Monitor and actively manage day to day marine activities.					
A. Support marine enforcement and compliance efforts including navigation and marine protected areas.	A1. Communicate and maintain Mamquam Blind Channel navigable channel markings. Update/ develop new informational signage, website resources/content and publish local point of contact for marine matters.	P	District (Real Estate, Planning + Communications)	Transport Canada, Coast Guard, the Province	S

FOCUS AREA 1 : Governance and Shared Leadership					
Strategic Directions	**Marine Actions**	**Cat**	**Lead**	**Support**	**T**
	A2. Establish long-term program and partnership for monitoring and maintaining navigable channel markers.	C	District (Real Estate)	Transport Canada, Coast Guard, the Province	M
	A3. Identify resources and local staging areas for impounded boat storage/recycling etc.	A	District (Planning, Real Estate)	Transport Canada, District (Environment)	S
	A4. Address jurisdiction and enforcement issues related to illegal camping and other contraventions in the WMA.	R	Squamish Nation, MOE and District of Squamish (Environment)	SEMC	M
B. Update, align and strengthen water use and waterfront land use regulations.	B1. Initiate marine zoning review to organize and align zoning regulations with future intended water uses. Differentiate marine conservation, mixed use, port and industrial uses.	R	District (Planning + Environment)	SEMC	S
	B2. Establish and maintain District public right of ways for public access and develop consistent regulations for road end wharves, boat moorage and related uses. (Ongoing through redevelopment process).	R	District (Planning, Real Estate)	Water lot holders, upland owners for each related right of way	O

Focus Area 2: Coastal Ecosystems

Goal | Support stewardship and protection of coastal ecosystems.

Squamish is rich with natural marine assets that include the estuary, rivers, sloughs, uplands, foreshore, and ocean. These areas are intricately connected, providing wildlife habitat connectivity, and valuable ecological services, as well as traditional foods and places for outdoor recreation and enjoyment that contribute to community wellbeing.
Coastal ecosystems are an integral part of the municipality's infrastructure system. Ecological services provided by the marine environment offer quantifiable value to the community ranging from climate regulation, carbon storage, air and storm water and flood management, purification, and nutrient cycling. Including and beyond the designated Skwelwil'em Wildlife Management Area, a variety of sensitive marine ecosystems are at risk of degradation and fragmentation. Foreshore and ocean areas comprise nearly half of the identified sensitive ecosystems in Squamish (total sensitive ecosystems are 42% of the municipal area). These important ecosystems continue to be modified by human uses. Their protection, amidst coastal development and revitalization, marine employment, transportation and recreation uses, requires careful planning with an aim to protect both ecological and human health.

Stewardship, protection, conservation, and restoration of the natural coastal environment, its ecological functions and biodiversity are a foundation for MASt. This Focus Area seeks to avoid and minimize cumulative impacts and to protect the health of the marine environment and ecosystem connectivity based on an integrated watershed management approach. MASt acknowledges the dedication and contributions of coastal stewards in Squamish and Howe Sound communities who, through formalized organizations, individual action, collaborations, and partnerships, continue to advance ecosystem conservation and restoration initiatives.

Key Considerations

The Coastal Ecosystems Focus Area includes considerations about:

1. Protecting and conserving coastal ecosystems
2. Supporting engagement and partnerships with community groups
3. Preventing ecosystem damage
4. Remediation of contaminated sites
5. Coastal flood protection
6. Green (natural) infrastructure + ecosystem services
7. Monitoring and enhancing aquatic and recreational water quality

Table 3: Focus Area 2 - Coastal Ecosystems

FOCUS AREA 2 : Coastal Ecosystems					
Strategic Directions	**Marine Actions**	**Cat**	**Lead**	**Support**	**T**
2.1 Education, Awareness and Stewardship					
2.1.1 Promote awareness, education, and stewardship practices for healthy marine ecosystems.					
A. Support community actions relating to Squamish marine conservation and stewardship activities.	evelop local marine education guide and strategy for key stakeholders: e.g., tourists, marinas, boaters and other recreational users on all key aspects of the Squamish marine environment (e.g, ecosystem good and services for people and marine life; information on the Squamish estuary, Wildlife Management Area, Mamquam Blind Channel, Stawamus River, sloughs).	E	Community groups	District (Environment), other governments, stewardship and other interested individuals/ stakeholders.	M
	A2. Support creation of marine database that incorporates local, historical environmental, and traditional ecological knowledge on habitat protection and restoration.	E	CORI/ Oceanwise, local, historical knowledge holders, traditional ecological knowledge holders	District (Environment), SEMC, Squamish Public Library	M
	A3. Work with community groups to co-develop interpretive, educational waterfront trail system signage program for installation in key areas.	C	Community groups	District (Environment, Planning, Engineering)	M
B. Strengthen standards for any activities in designated environmental sensitive areas (ESAs).	B1. Support promotion of existing Best Management Practices and develop new ones where they do not exist for all key marine users/sectors (e.g., trail users, water users).	C	District (Planning, Environment)	Development community, stewardship groups.	M
2.2 Conservation and Protection					
2.2.1 Support conservation and protection of the natural marine environment.					
A. Expand the marine protected area network in Squamish.	A1. Establish specific marine habitat protection goals and objectives for Squamish including SEMP areas and beyond (foreshore/ marine environment, while taking into account connectivity with upland areas).	P	District (Environment), SEMC	District (Planning), Stewardship groups, CORI	S
	A2. Designate a variety of representative protected areas and key areas that maintain connectivity for marine habitat and species.	R	District (Environment)	Stewardship groups, others TBD	M

FOCUS AREA 2 : Coastal Ecosystems					
Strategic Directions	**Marine Actions**	**Cat**	**Lead**	**Support**	**T**
	A3. Develop / refine regulatory / zoning tools for marine use / conservation areas and protected areas.	R	District (Environment, Planning)	Stewardship groups, others TBD	S
B. Continue to improve and add to Environmentally Sensitive Area (ESA) mapping.	B1. Expand on foreshore ecosystem inventory for continued progress on ESA mapping.	E	District (Environment)	Stewardship groups, others TBD	M
C. Recognize, maintain and support marine ecosystem services and ecological assets and connectivity with uplands (OCP Objective 10.7a).	C 1: Integrate marine environment natural capital in the municipality's *Asset Management Plan* to recognize the role of marine ecosystem services (eco-assets) and provide for their maintenance and regular support alongside traditional capital assets.(per OCP Policy 10.8 a)	A	District (Environment, Engineering)	District (Planning, Corporate Services), Natural capital experts	
D. Manage upstream impacts and upland development to avoid/ reduce marine impacts and prevent damage to underwater ecosystems.	D1. Apply and implement avoid/ mitigate/ compensate hierarchy for development (as per OCP Policy 10.6 e).	P	District (Environment)	Environmental professionals (QEPs), SEMC	M
	D2. Develop foreshore/ marine erosion protection and sedimentation strategy.	P	District (Environment, Engineering)	Stewardship groups, Environmental professionals (QEPs), SEMC	M
2.3 Habitat Remediation / Restoration					
2.3.1 Support habitat enhancement projects and remediation of land /waters.					
A. Support marine / foreshore restoration and enhancement projects in the estuary and beyond.	A1. Establish a community habitat conservation fund (per OCP) and consider land banking to enable larger environmental conservation and restoration projects to be completed (e.g., Herring Spawn enhancement works).	P	District (Environment, Planning)	District (Corporate Services); conservation organizations; First Nations; and industry, NGO, recreation stakeholders	M
	A2. Identify and undertake specific coastal / foreshore compensation projects (per avoid, mitigate, compensate hierarchy) (e.g., forage fish habitat).	P	District (Environment)	Conservation organizations, Development community	S

FOCUS AREA 2 : Coastal Ecosystems					
Strategic Directions	**Marine Actions**	**Cat**	**Lead**	**Support**	**T**
	A3. Advance Squamish River training berm estuary restoration project to achieve primary goal of supporting return of fish. Phase 1 Training Dyke Culvert Reconfiguration; Phase 2 Explore Training Dyke/Windsurfer Spit Realignment; Phase 3 Improve connectivity to Cattermole Slough with a controlled flow structure across the CN Spur Line.	A	Squamish River Watershed Society, Squamish Nation, Fisheries and Oceans Canada	District (Environment, Planning + Engineering), Province (senior agencies), SEMC	S
B. Incorporate and monitor habitat enhancement measures over time.	B1. Integrate and monitor habitat enhancement measures within coastal flood protection structures and sea dike designs as identified in the IFHMP, and actively monitor habitat impacts over time.	P	District (Environment, Engineering)	District Inspector of Dikes; Landowners/QEPs and Environment Groups	M
	B2. Research, identify and pursue GreenShores shoreline treatment options and certification for coastal sites and reaches (largely unconnected).	A	District (Engineering, Environment)	Provincial Inspector of Dikes	M
2.4 Resiliency					
2.4.1 Proactively mitigate climate impacts + manage sea level rise and coastal flood hazards.					
A. Protect areas that act as natural storm / flood protection buffers.	A1. Identify important buffers and codify green infrastructure requirements and best management practices, such as stormwater infiltration, absorbent landscaping and pervious paving, for incorporation in subdivision and development control bylaw updates.	R	District (Planning, Engineering, Environment)	Squamish River Watershed Society, Squamish Environmental Society, Save Howe Sound, Squamish Terminals	M
B. Establish adequate setbacks along foreshore, creeks rivers to enable absorption of high energy impacts of storm/ flood events.	B1. Periodically review and update development permit area guidelines for coastal development.	R	District (Engineering, Environment, Planning)	Environment and Development stakeholders	M
C. Explore future marine carbon and energy opportunities	C1. Support future marine carbon assessments and energy technology opportunities.	P	District (Engineering)	District (Environment), Community groups, science and research	

FOCUS AREA 2 : Coastal Ecosystems					
Strategic Directions	**Marine Actions**	**Cat**	**Lead**	**Support**	**T**
2.4.2 Increase marine spill /accident response capacity along the waterfront.					
A. Promote inclusive and integrated multi-agency response to marine pollution events.	A1. Affirm and address Marine Spill Response roles and resources with lead agencies and coordinate with Provincial Spill Response and management plans. A.2 Explore development of a regional, integrated response plan for managing and supporting operations and unified response in the Howe Sound marine environment in the event of a major pollution incident (similar to *Greater Vancouver Integrated Response Plan*).	C, P	District (Emergency Management, Planning), Squamish Nation, SLRD, Coast Guard, MOE, Emergency Management BC (EMBC)	Squamish Terminals and Marine operators, Upland owners, Howe Sound Community Forum members	S
B. Coordinate preparedness, training, and resources for marine accidents and spills.	B1. Develop an Annex to the District of Squamish All Hazards Plan addressing spill response, in line with the integrated area response plan above (similar to the *North Shore Environmental Spill Response Guideline*).	P	District (Emergency Management, Planning)		S
	B2. Identify and plan for spill / response and support sites along the waterfront at key locations.	P	District Emergency Management, Squamish Fire Rescue, Operations, Engineering, Planning), Squamish Nation	Landowners, Squamish Nation, RCMSAR, Coast Guard, local knowledge holders, conservation groups	S
	B3.-Develop joint operational exercises for training/ testing response mechanisms.	A	District Emergency Management, Squamish Nation	EMBC, RCMSAR/ Coast Guard, Ministry of Environment, marine community	S
	B4. Work with existing Sea to Sky Regional Emergency Management Working Group and neighboring Howe Sound marine communities to share resources, learning, and capacity.	A	District Emergency Management	SLRD, Sea to Sky Regional Emergency Management Working Group, Howe Sound Community Forum members	S

FOCUS AREA 2 : Coastal Ecosystems					
Strategic Directions	**Marine Actions**	**Cat**	**Lead**	**Support**	**T**
2.5 Monitoring and Assessment					
2.5.1 Enhance aquatic and recreational water quality and safety.					
A. Develop and implement a water quality monitoring program for human and environmental health.	A1. Develop monitoring framework and identify key sites and implement pilot in Mamquam Blind Channel and Upper Mamquam Blind Channel.	P	Recreational water quality: Squamish Yacht Club Environmental water quality: Stewardship groups	District (Environment), Vancouver Health Authority and waterfront partners	S
	A2. Promote and achieve 'Green Marine' designation / environmental program compliance.	E	Squamish Harbour Authority, marinas, boating community	District (Environment) participating marine businesses, waterfront users/ partners, recreational water users, industry, tourism	S
	A3 Support aquatic monitoring efforts by community stewardship groups.	A	Community stewardship groups	District (Environment)	S-M
2.5.2 Develop baseline data on key marine issues that will inform planning and policy.					
A. Collect baseline data to enable measurement of change to the ecosystem over time.	A1. Identify indicators for community data collection program/portal on water quality, noise levels, herring, boat traffic and gains/losses of habitat, bathymetry, waves, wind.	E	Health Authority, government partners, NGOs and local citizen scientists, Marine Watch (Ocean Watch Task Force), Quest U, academics	District (Environment)	S
	A2. Advocate and explore development and funding partnerships for a Squamish marine / science research and education station.	E	DFO, Province, BCEA, First Nations, Local governments, regional districts, citizen scientists, Quest, academics,	District (Environment)	L

FOCUS AREA 2 : Coastal Ecosystems					
Strategic Directions	**Marine Actions**	**Cat**	**Lead**	**Support**	**T**
			CORI, Vancouver Aquarium		
2.6. Enforcement					
2.6.1 Support compliance and enforcement efforts to address and eliminate illegal marine activities that harm coastal ecosystems.					
A. Address sewage compliance from liveaboards, dumping from boats, and fuel leaks.	A1. Collaborate with upland owners and water lot users to establish appropriate facilities and infrastructure (e.g., marine utilities such as municipal water, sewer connections, fueling, pump out facilities).	C	District (Planning, Environment), Health Authority, Harbour Authority, Marina operators, boating community	Harbour Authority, Marina operators, boating community	M
B. Clarify and communicate responsibility for monitoring and enforcement of activities in estuary and coastal environment.	B1. Work with authorities to broadcast compliance requirements regarding marine utilities (water, sewage, fuel, etc.).	R	District (Environment)	All levels of government including Squamish First Nation	S

Focus Area 3: Marine Economy

Goal | Support a thriving marine economy and working waterfront.

Local jobs and business opportunities are an important part of a diverse and sustainable economy and improve the quality of life for all. For the marine economy of Squamish, these opportunities require careful planning and preservation of critical marine-based employment lands/access, promoting business retention, growth and innovation as well as a focus on skill development and labour needs. Squamish waterfront, industrial and terminal lands are strategically important to industries, stakeholders and jobs well beyond Squamish. A thriving marine economy and working waterfront requires developing safe and efficient marine access for water-dependent uses and their uplands, as well as meeting marine user needs by providing and maintaining key transportation infrastructure, amenities and facilities—all while minimizing impact to supporting natural areas. For employment activities to co-exist optimally within their marine/waterfront context alongside recreation, tourism, and mixed-use and commercial activities, and to achieve their potential in local, regional, provincial and national contributions, a variety of infrastructure investments are required. A list has been created and noted in the Appendix.

Protection and management of marine transportation and formalization of a marine transportation corridor that involves the MBC, Cattermole Slough and outer harbour will support a variety of marine users whether in business, industry or recreation. Protecting marine assets and infrastructure from climate impacts such as damage from storm surges, floods and future sea level rise is also an important feature of this Focus Area.

Key considerations

The Marine Economy Focus Area includes considerations about:

1. Continued mixed-use waterfront redevelopment.
2. Exploration of innovative economic development opportunities.
3. Marine industry and employment lands and necessary access to the water, intermodal connections.
4. Regional stakeholders. Squamish is not only a local working harbour, but also has regional stakeholders.
5. Marine transportation corridors – access/ logistics/ maintenance (e.g., channel marking; dredging).
6. Marine infrastructure (e.g., short sea shipping, vessel moorage, boat launches and lifts, pump outs, fuel docks, repair).
7. Resiliency (built and natural) to address coastal and river flooding.

Table 4: Focus Area 3 - Marine Economy

FOCUS AREA 3: Marine Economy					
Strategic Directions	**Marine Actions**	**Cat**	**Lead**	**Support**	**T**
3.1 Marine Access and User Needs					
3.1.1 Enable safe and effective access to coastal waters, while avoiding user conflicts.					
A. Identify land and water access needs for all marine users.	A1. Secure and coordinate public access / rights of ways with current and future land owners/ interests.		District (Planning, Economic Development)	Waterfront landowners, interested stakeholders	M
B. Secure public access on the waterfront while ensuring marine environment protection and conservation goals are maintained.	B1. Identify, map and enhance access points and key linkages to uplands and water uses. Incorporate into Downtown public spaces planning, and development and review.	P	District (Planning, Economic Development)	Waterfront landowners, interested stakeholders	S / O
3.1.2 Expand commercial recreation and marine based business opportunities on the waterfront.					
A. Address businesses and recreation infrastructure needs / barriers in key areas on/near the waterfront.	A1. Identify and reach out to stakeholders and operators to clarify recreational, commercial recreational, and commercial marine uses and needs in the Squamish marine realm.	C	District (Planning, Economic Development)	Business, tourism and recreation stakeholders, FLNRORD	S
3.1.3 Improve navigability of the Mamquam Blind Channel and other ocean areas.					
A. Develop a long term ecosystem-based channel maintenance program.	A1. Initiate scoping, collaboration and engagement on an ecosystem based dredge program, priority navigation maintenance activities, and funding strategy.	C, P	District (Engineering, Real Estate); Squamish First Nations	FLNRORD, Transport Canada, Navigable Waters, Landowners, operators, user groups in Channel and waterway.	S
3.2 Squamish Marine Industry Access + Land Use Compatibility					
3.2.1 Support water dependent + marine industry access					
A. Protect marine transportation corridors as a valued shared asset for ongoing marine industrial and transportation activities.	A1. Inventory, assess and formalize marine industry-related and commercial transportation routes through a local marine transportation and access plan.	P	District (Engineering)	Transportation industry, recreational stakeholders MOT, BC Parks (re Site B), Transport Canada, Navigable Waters (re: overpass)	S

FOCUS AREA 3: Marine Economy					
Strategic Directions	**Marine Actions**	**Cat**	**Lead**	**Support**	**T**
	A2. Inventory, confirm and plan for critical industrial upland access between highway, water lots and navigation channel.	P	District (Planning, Engineering)	Industry, commercial, recreational stakeholders, BC Parks	S
B. Increase the safety and functionality of key navigation channels for industrial and water dependent uses.	B1. Work with industry and other marine users to develop best practices for channel activities.	C	Industry, commercial, recreational stakeholders	District (Planning), FLNRORD, Squamish Nations (land owners) Squamish Harbour Authority	
3.2.2 Mitigate impacts / conflict of water dependent industrial uses and recreational, commercial and residential activities.					
A. Minimize potential conflict between industrial and other water dependent users.	A1. Identify mechanisms to address any potential areas of conflict. (E.g., requirement for noise/ dust covenants for residential and commercial developments; land use, site and building design; review of setbacks).	P	District (Planning)	BC Parks (re Site B), Industry, commercial, recreational stakeholders	M, O
B. Reduce potential for environmental damage arising from industrial and water dependent uses.	A2. Work with industry QEPs to affirm and promote environmental goals and new aquatic development guidelines (per OCP DPA 1).	E	District (Environment)	Industry, commercial stakeholders	M
3.3 New Economies + Marine-based Employment					
3.3.1 Support Squamish as a marine destination, growth in local jobs and diverse employment opportunities, including marine recreation, tourism, shipping jobs, and marine-related trades.					
A. Support marine economic uses that fit Squamish vision and objectives.	A1. Explore potential for short-term visitor moorage and other facilities, accommodations and transit to/from marinas to destinations.	C	District (Planning, Economic Development)	Province (FLNRORD), Marina owners/ operators, business community, recreational operators, BC Transit, Tourism Squamish	S
	A2. Explore with Squamish Nation marine employment and development opportunities.	C	District (Economic Development), Squamish Nation		S
	A3. Explore potential for public-private partnerships that create innovative new marine uses.	C	District (Economic Development)	Business community	M

Focus Area 4: Marine Gateway

Goal | Enhance the community's connection to the water through an improved, safe and accessible gateway to our local marine environment

The Marine Gateway complements the concepts of land-based gateways to/within Squamish. The Marine Gateway focusses on public access and interaction in the marine realm, water-based recreation and tourism destination development, as well as the marine export industry. The Marine Gateway is inter-linked with all focus areas and their goals and objectives. For instance, identifying environmental goals and areas of connectivity as well as protecting environmentally sensitive areas in the marine environment directs sustainable use areas such as the location and identification of industrial and commercial infrastructure and transportation routes.

Important Marine Gateway features include natural estuary/buffers, green way/ blue way trail networks, waterfront walkways, and coastal infrastructure (wharves, docks, marinas, dikes). Existing and new social, historical, cultural and recreational features, amenities, facilities and public art play a distinct role in creating a sense of welcome and arrival to the entire Squamish waterfront. The waterfront with its interplay between industrial 'working harbour' areas and sensitive foreshore /surrounding estuary and ocean are clearly distinguished from other neighbourhoods in Squamish and other communities in BC.

Key considerations

The Marine Gateway Focus Area includes considerations about:

- Enlivening the waterfront for enhanced public experience
- Social, cultural and recreational uses of marine areas
- Honoring and celebrating maritime history / culture
- Coordinated use of the surrounding waters and uplands (for commerce/industry/recreation/interpretive/ conservation, and/or restoration)
- Continuing marine industry exports through logging and shipping
- Marine / waterfront / marina amenities and infrastructure
- Improving resident / visitor access to marine environment for recreation and enjoyment
- Building public spaces / linkages to continuous greenway and blueway systems
- Implementing coastal flood protection measures for protection of people, property and livelihoods
- Improving water quality for health and recreation

Table 5: Focus Area 4 - Marine Gateway

FOCUS AREA 4: Marine Gateway					
Strategic Directions	**Marine Actions**	**Cat**	**Lead**	**Support**	**T**
4.1 Infrastructure, Facilities and Amenities					
4.1.1 Plan for and develop appropriate marine and marine-related infrastructure, amenities and facilities in consideration of current and future needs.					
A. Address water-dependent user infrastructure, amenity, services, and facility needs. **See identified list of infrastructure amenities, facilities opportunities in Appendix 2.*	A1. Identify and secure locations and investment for current and future marine infrastructure, facilities and amenities opportunities through (re) development plans and zoning. A1.1 Expand on the marine strategy Appendix 2 inventory to develop a checklist to protect and/or advance marine public realm needs and opportunities.	P	District (Planning, Engineering, Real Estate)	Province, Oil and Gas Commission, Commercial operators, marina operators, yacht club, recreational users/stakeholders, Deep Sea operators	S
	A2. Secure land/ROWs for sea dike and identify key infrastructure needs across / through dike for continued access.	P, R	District (Planning, Engineering, Real Estate)	Adjacent land owner/ interests	S
	A3. Identify needed water-based tourism/ transportation, and local public transit connections/ improvements.	P	District (Engineering)	Interested stakeholders	S
	A4. Develop safety protocol for emergency landings at key locations – e.g., boats, float planes/helicopters. Identify locations and beneficial cooperative use.	P	Emergency Response, RCMSAR	District (Public Safety, Planning) Other related interests	S
B. Facilitate sensitive (re)development and plan for long-term marina /boating facility and servicing needs.	B1. Assess long-term marina facility and servicing needs for coordinated development planning. B1.1 Consider the segments within the market Squamish wants to attract and use this to inform needed facilities (*e.g., destination harbour facilities: fuel dock, laundromat, shopping – marine stores; showers, garbage and recycling; small to medium regional cruise ships; net sheds, oil disposal).	P	District (Planning, Engineering, Real Estate)	Landowners, Existing marine operators /marina facilities, Recreational boating, Squamish Yacht Club, Harbour Authority, Squamish Terminals, BC Rail, Province (FLNRORD)	M
	B2. Strategize and implement interim public boat launch solution and/or improvements until a future permanent facility/site is secured and developed.	P	District (Planning, Engineering, Real Estate)	Landowners, boating and other stakeholders	S

FOCUS AREA 4: Marine Gateway					
Strategic Directions	**Marine Actions**	**Cat**	**Lead**	**Support**	**T**
C. Consider shared facility space/co-location of marine-oriented uses.	C1. Explore shared space concepts such as a "Marine sailing centre."	C	District (Planning, Engineering)	Identify all interested marine community groups	M
4.1.2 Ensure public waterfront realm is safe and accessible for all ages and abilities.					
A. Advance a unified waterfront concept and public amenities plan that will coordinate uses and spaces	A1. Coordinate the design and implementation of the waterfront concept plan through development review. Incorporate locations for public marine realm features such as visual public art amenities, areas suitable for public washrooms, all-weather covered areas, integrating with waterfront trail networks, parks, cultural- history components, open public spaces.	P	District (Engineering, Planning)	Waterfront landowners, stakeholders, Public	M
	A2. Develop a long term plan for Xwu'nekw Park, Mamquam Blind Channel (e.g., public water uses, land-based uses, water access, amenities, and integrate with sea dike design and future pedestrian bridge alignment).	P	District (Planning, Engineering, Real Estate)	Squamish Nation	S
B. Develop a public park/ boardwalks, trails, signage and related infrastructure while protecting the natural environment.	B1. Design and develop linear, connected public parks, boardwalks, trails and signage, with linkages to uplands and waterfront trails as outlined in the Sub Area Plans.	P	District (Planning, Engineering)	Landowners, Squamish Trail Society, environmental groups, recreation stakeholders	M
	B2. Design and integrate maritime focused interpretive signage program along marine areas incorporating local history, culture, First Nations traditions.	E	District (Planning, Engineering, Corporate Services), First Nations	Community groups, landowners	M
4.2 Marine Ecotourism					
4.2.1 Support sustainable growth of marine ecotourism.					
A. Enhance marine based tourism opportunities and implement best practices in sustainable ecotourism.	A1. Identify sector-specific opportunities, strategies and infrastructure needs/gaps with tourism sector; investigate potential impacts of increased land / water based tourism and identify ways to reduce those impacts.	C	District (Economic Development)	Tourism Squamish, Chamber, Province, fishing community, tourism stakeholders, District (Environment)	S

FOCUS AREA 4: Marine Gateway					
Strategic Directions	**Marine Actions**	**Cat**	**Lead**	**Support**	**T**
	A2. Support Trans Canada Trail, northern marine trail terminus and liaise with FLRNORD in education, signage coordination and to promote best practices in marine trail access and use.	C	District (Environment, Operations)	FLRNRORD, Paddling Club, Chamber, Tourism Squamish, Squamish Yacht Club, Windsport Society	M
	A3. Develop sub-strategy for marine based tourism, including transient moorage; public marina.	P	District (Planning, Economic Development)	Chamber, Tourism Squamish, Paddling Club, Yacht Club, Activity operators, Harbour Authority, Entrepreneurs	M
4.3 Marine History, Culture + Traditions					
4.3.1 Celebrate Squamish marine tradition, history and culture as a coastal community including Squamish First Nation history and traditional knowledge.					
A. Increase profile, public appreciation and awareness of Squamish as a coastal community with marine history, traditions, and assets.	A1. Identify historic infrastructure and related policies and actions to maintain and/or repurpose, such as docks, logging, shipping, old ship for viewing/ appreciation.	P	District (Planning, Arts, Recreation and Culture staff)	Squamish Nation and Sea to Sky Forestry Centre Society (with very extensive maritime history collections and resources pertaining to Squamish and Howe Sound)	M

Part 4: MASt Implementation

Marine Planning + Management Framework

MASt implementation involves a framework for planning to action.

MASt planning and management actions will be implemented according to identified leads and supporters.

District as lead: The District is committed to lead key actions that have been identified within its jurisdiction and mandate and endorsed by Council through the MAST review process. Collaborative implementation of MASt will take place as the District, supporting partners and collaborators are identified and agreements are established, in accordance with jurisdiction, mandates, protocols, priorities and capacities for marine management and planning.

District as support: The District will work in collaboration with partners and collaborators who agree to lead specific MASt actions that have been identified within their jurisdiction and mandate.

Collaborative Marine Working Group(s): Aligning collective priorities and actions is fundamental to MASt's successful implementation. A key action in the Governance Focus Area (s. 1.2.1) is to collaborate with an intragovernmental and cross-sector working group (WG) to guide the implementation of marine projects, initiatives and action planning for MASt. The District will work with the existing Squamish Estuary Management Committee comprised of the District, Squamish Nation, participating government agencies and marine-focused cross sectoral representatives. This group will be revisiting its mandate and terms of reference based on a governance structure to enable it to effectively move forward. The District, as MASt lead and champion, will bring actions forward for review with this SEMC table/ sub-

working group, positioned as an arms-length referral and advisory body for the District. MASt actions will be then be brought to Council for approval for resourcing and activation, where the District is the decision making authority. Similarly, additional working group or leadership tables may be struck to support collaborative action (with other governments for example, Squamish Nation, or Federal Transport Canada).

Through this working group and lead /support structure there is shared accountability for planning and implementation. Each party plays an important role in continuous engagement through collaborative work planning and ongoing monitoring and evaluation.

The implementation framework is set out as follows:

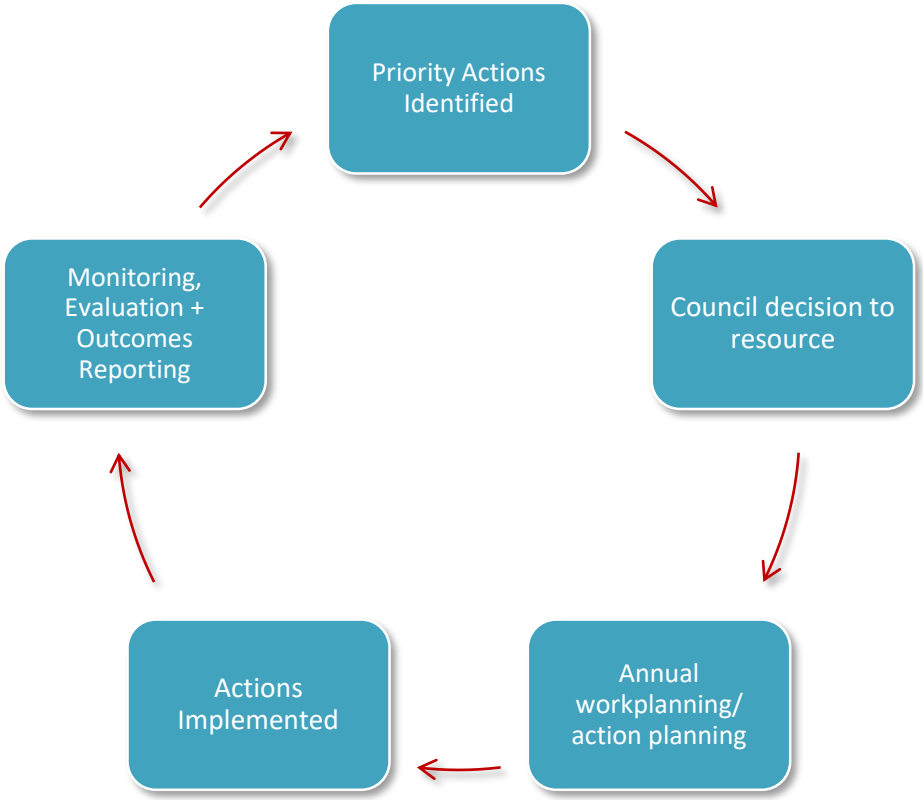


Figure 7. Implementation Framework

Resourcing + Action Planning

As Priority Actions are identified, Council makes decisions to affirm and resource actions for staff work planning (whether leading or supporting). Annual work planning is conducted by District staff and will include relevant details on partner/ collaborator priority actions, budgets, and timelines.

Details of action planning include: What needs to be done to achieve the actions; who is to lead and who is to support; what resources are needed to execute the action; start and end timelines; and, measures /indicators to help monitor progress. Measures will relate to the outcomes sought based on the identified objectives and actions. Dependencies will be considered for action planning which set out

details on associated requirements, potential barriers, resource needs, opportunities to leverage and time sensitivities.

Funding

The District and where agreed, partners/collaborators, will sustainably fund MASt to ensure development and ongoing implementation of MASt actions and initiatives.

Funding requirements will be a combination of:

- a base budget set aside for administering the strategy through a Working Group; and
- specific projects and actions brought to Council for resourcing.

The District, with appropriate interested parties, will identify a local development and maintenance strategy to ensure MASt can be implemented into the future as a key municipal program on a long-term basis.

Monitoring + Evaluation

MASt actions will be monitored as a continuous process involving tracking measures over time and tied to specific MASt objectives. Measures will focus on the high priority – short term actions that will be assessed as: initiated, in progress or completed each year.

Some monitoring may be initially lead by the District and then it is envisioned that a MASt working group or appropriately named body will lead on review, monitoring and reporting back to the District and community. Through this process both the District, partners and collaborators can work to reinforce positive trends or make adjustments as necessary to address shifting needs and situations. Monitoring will also support important cross-sector collaborations in building shared awareness and aligning efforts to have greater impact on community trends and issues.

Progress Reports will be prepared annually to feed into the District's annual budget review and annual reporting. While annual performance monitoring may show positive, neutral or negative changes on a year by year basis, it will take several years of data collection to discern longer-term trends and evaluate success of the strategy. Progressive monitoring and reporting will provide insights leading up to a MASt Review in 5-years.

Immediate Actions 2018-2020

The twelve actions highlighted in the Executive Summary are recommended for immediate scoping, budget consideration and work planning. Some actions have medium to longer term timelines but are identified as Immediate Actions based on the following key criteria:

- Strength of engagement feedback (identified by marine user)
- Addresses SWOT (addresses a significant challenge or threat; or an opportunity to leverage)
- Enables co-benefits: aligns with multiple objectives
- Is able to be championed by another government or community group or body
- Strong potential for funding and partnership
- Leverages/efficient use of staff time.

Appendix 1: MASt Participants

We are grateful for the time, input and assistance by all the people mentioned here, and those not named, who helped in the background and development of this document – thank you!

Informant Interviewees

- Art McGillvary
- Brian Shier
- Carl MacNaughton
- Carlos Zavarace
- Caroline Lamont
- Catherine Lee-Smith
- Doug Day
- Edith Tobe
- Eric Andersen
- Jack Cooley
- John Buchanan
- Kim Stegeman
- Mike Nelson
- Scott Shaw MacLaren
- Scott Woolley
- Tom Brusgaard
- Tracey Saxby
- Wayne Moffat

Focus Group Attendees

- Allan Barr, West-Barr
- Art McGillvary, Squamish Marine
- Bill McNeney, Squamish Yacht Club
- Bryan Shier, Squomish Forestry
- Carl Halvorson, Squamish Environment Society
- Carlos Zavarce, Newport Beach Development
- Catherine Lea-Smith, Squamish Harbour Authority
- Chris Rollett, Squamish Windsports Society
- Cindy Watson, Vancouver Coastal Health
- Danna Wall, Tourism Squamish
- Dave Richardson, Harbour Authority
- Dave Richardson, Harbour Authority
- David Crewson, Canadian Coastal
- Douglas Day, Citizen/land owner
- Emma Jarrett, Squamish Terminals
- Eric Andersen, Squamish District Forestry Association and Streamkeepers BC
- Geoff Waterson, Squamish Windsports Society
- George Hawsthorne, Squamish Yacht Club
- Ian Forbes, Vanpile
- Jaime Martin, Squamish Windsports Society
- Jeff Fisher, Squamish Forestry
- Jeff Levine, Bosa
- John Lowe, Squamish Mills Ltd
- Kim Stegeman, Squamish Terminals
- Louise Walker, Squamish Chamber of Commerce
- Mike Nelson, Cascade Environmental
- Morgan Campbell, Squamish Yacht Club
- Peter Gordon, Cascadia Consulting
- Pierre Friele, Cordilleran Geoscience
- Rachel Shephard, Squamish Environment Society
- Randal Lewis, Squamish First Nation
- Tom Bruusgaard, Citizen
- Tracey Saxby, My Sea To Sky
- Wayne Moffatt, Squamish Yacht Club

2018 Salt Life Panel

- Randall Lewis, Squamish Nation
- Fancesca Knight, Squamish River Watershed Society
- Geoffrey Watterson, Squamish Windsports Society
- Ian Lowe, Squamish Paddling Club
- Norm Hann, Norm Hann Expeditions
- Catherine Lea Smith + Douglas Lea Smith, Squamish Harbour Authority
- Commodore Wayne Moffat, Squamish Yacht Club
- Scott Shaw-MacLaren, Royal Canadian Marine Search & Rescue, Station 4
- Jeff Levine, Marine Consultants
- Steve Fofonoff, GeoPacific Consultants Ltd
- Kim Stegman-Lowe, Squamish Terminals
- Mike Sheehan, BC Marine Logistics
- Bryan Shier, Garibaldi Forest Products; Squamish District Forestry Association

Internal staff Working Group

- Alicia Woodside, Economic Development Specialist
- Caroline Ashekian, Environmental Coordinator
- Chris Wyckham, Director of Engineering
- Dave Morrow, Director of Major Projects
- David Roulston, Engineer
- Gary Buxton, General Manager, Community Planning & Infrastructure
- Jonas Velaniskis, Director Community Planning
- Kate Mulligan, Economic Development Officer
- Navdeep Gill, Real Estate Coordinator
- Neil Plumb, Manager Real Estate Services
- Sarah McJannet, Planner, Marine Action Strategy Project Manager

Appendix 2: Identified Infrastructure, Facilities, Amenities Opportunities and Needs

Social, Recreational

- Small boat launch and related parking
- Washrooms
- Space, infrastructure for community groups; storage, rentals, shopping, marine store, laundromat
- Day use/visiting boat moorage; multi day moorage/anchorage
- Boardwalk, linked to trail network
- SYC long-term tenure/ parking
- Designated anchorage sites
- Street end/waterfront plazas/ lookouts
- Waterfront walkabout guidelines
- Public use fuel dock
- Sewage pump out dock; waste management facilities; oil disposal

Industry /Business

- Marine vessel repair and maintenance facilities
- Marine vessel manufacturing
- Transportation options along waterways
- Float plane base/dock in outer harbour
- Fast ferry / small water taxi dock
- Fishing boats dock
- Short sea shipping
- Small cruise ships dock
- Large cruise ship dock
- Dry dock; boat yard with boat lift capacity
- Heavy lift barge facilities
- Rail barge facility
- Barges tie-up
- Stawamus River gravel control system
- Safe highway truck access to/ from harbour (multi-modal linkages)
- Access over future dikes for small boat harbours, fuel trucks, other transport (multi modal linkages)
- Dredging of all navigable waterbodies
- Channel marking
- Net sheds/ fishing equipment storage
- New log bundle de-watering facilities
- Barge load-out for logs
- Barge load-out for chips and/ or hog fuel
- Waterfront primary processing of timber or wood residuals

Emergency

- Emergency response supplies depots
- Search and Rescue station, training and storage facilities

Residential Development

- Float home community
- Continuous boardwalk
- Connectivity between downtown and waterfront

SQUAMISH

HARDWIRED *for* ADVENTURE

District of Squamish

37955 Second Avenue | Squamish, BC

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