

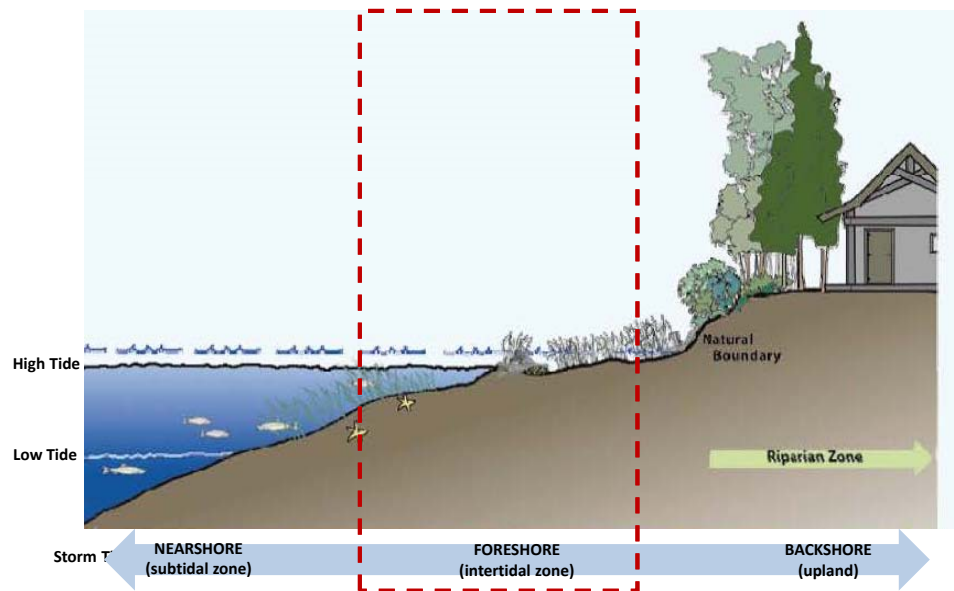


OVERVIEW

Gibsons Foreshore and Seawalk Improvements Project

Defining the Foreshore

What is the Foreshore? Foreshore generally refers to the area between the natural boundary of the ocean and the lowest tides



The seawalk, access points to the water, and sewer main are within the foreshore area

The Study Area

The Project Study Area includes the Foreshore and Seawalk between Gibsons Wharf and Armours Beach



Key locations along the foreshore and seawalk:

1. Location of eelgrass beds
2. Armours Beach
3. Armours Beach protected swimming area
4. Vacant property
5. Cole's Marina
6. Cole's Access
7. Proposed Seaglass Phase 1 site
8. Gramma's Pub
9. Wharf

The Project

The objectives of this meeting are to:

- Introduce the Gibsons Foreshore Improvements
- Present background information
- Collect preliminary feedback from the public about site improvements

The project involves four tasks:

TASK 1: Project Initiation & Base Plan Development

TASK 2: Project Goals & Site Constraints

TASK 3: Initial Public Engagement & Consultation

Public Information Meeting,
Social Media, and Response Form

TASK 4: Development of Conceptual Design

Stakeholder Design Charrette
Public Meeting



FORESHORE HISTORY

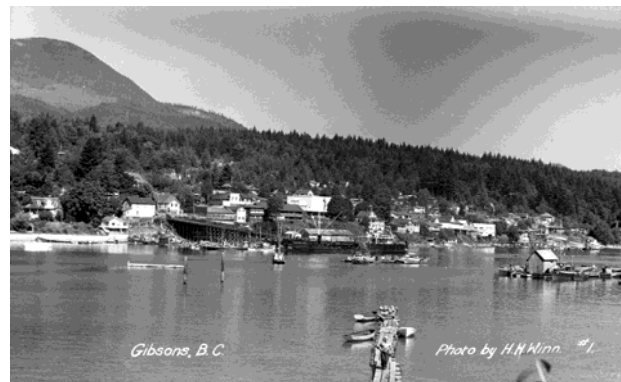
Gibsons Foreshore and Seawalk Improvements Project

Historic Uses

All Photos Courtesy of the Sunshine Coast Museum & Archives



Gibsons Landing and Armours Beach c1912 (#1799)



Lower Gibsons with Tanker at Wharf c1950 (#2211)



Gibsons Landing with Union Steamboat c1949 (#36)



Wharf at Gibsons Landing c1952 (#0423)



Armours Beach & Hopkins Landing from Government's Wharf c1996 (#2422)

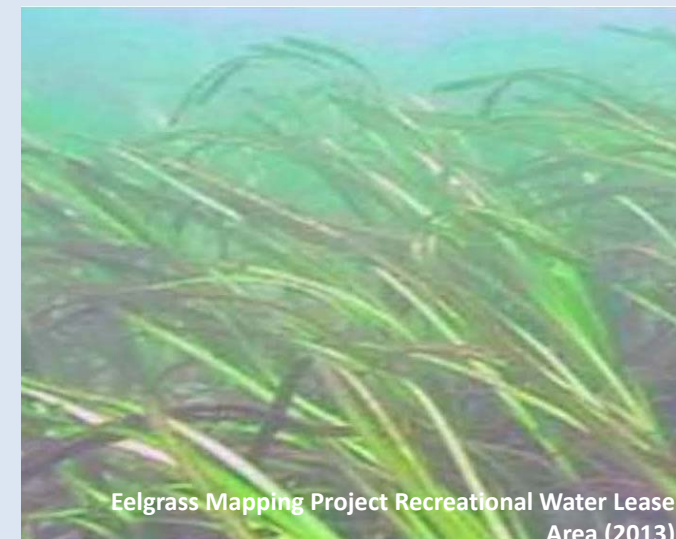


Waterfront and Shoreline Buildings c1950 (#2215)

Past Studies & Decisions

Recreational Water Lease Enforcement and Review (July, 2012)

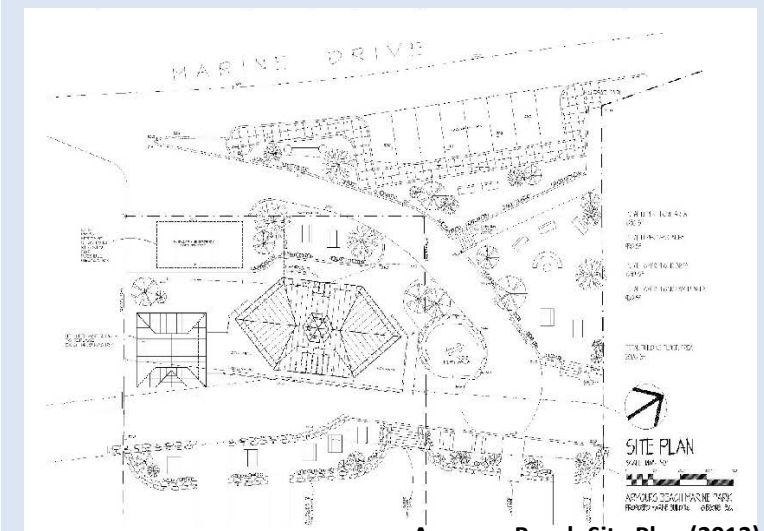
- Considered options for preserving eelgrass areas (i.e. through onshore and buoy signage)
- Amendments to Recreational Water Lease Control & Regulation Bylaw
- Draft maps prepared in 2013 for mooring buoys that consider eelgrass locations (awaiting finalization and adoption)



Eelgrass Mapping Project Recreational Water Lease Area (2013)

Armours Beach Enhancements

- Site plan (below) presented to Council (December, 2013)
- Preference for only a small building in the park (primarily for public washrooms), as opposed to originally proposed site plan, leaving the rest of the park open and natural (February, 2014)
- Motion for improvements (March, 2015):
 - address items of concern based on findings from Risk Control Survey
 - phase in extended swimming area
 - interpretive panels along seawalk



Armours Beach Site Plan (2013)



FORESHORE PROTECTION

Gibsons Foreshore and Seawalk Improvements Project

Foreshore Condition Assessment (2014)

1. Beach Environment

Three **valued ecosystem components** identified:

1. Marine riparian vegetation in backshore area
2. Intertidal flora/fauna in foreshore
3. Eelgrass within nearshore area

Relevant considerations for protection works/redevelopment:

- Ensure existing marine riparian area is left untouched
- Additional riparian vegetation would be aesthetic rather than ecological due to the proximity of existing development
- Avoid further hardening of existing shoreline to minimize wave erosion that could disturb intertidal and subtidal ecosystems



2. Engineering Assessment

Objective: assess the condition of Town infrastructure within the marine shoreline area and provide shoreline design concepts.

Outcomes:

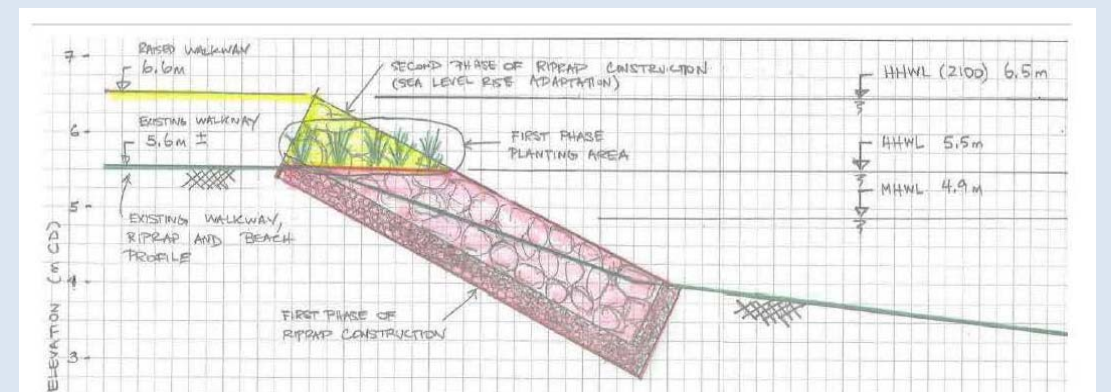
- Exposed sewer pipe repair (2014)
- Walkway almost inundated at large high tide
- Allowance for sea level rise of 0.5m by 2050 and 1.0m by 2100
- Infrastructure repair work prioritized
- Beach environment conditions identified for protection works
- Shoreline design concepts presented

3. Shoreline High-level Concept

- Possible riprap erosion protection in three phases (immediate; 2020; beyond – based on observed sea level rise)
- Intended to prevent shoreline hardening and changes in erosion expected from sea level rise

Table 3-1: Foreshore condition inventory and associated priority for repair work.

Priority	Area	Repair Work
1	East of the Breakwater	Protect the exposed sewer pipe from ongoing wave erosion
2	Gibsons Marina	Repair and protect the rockwall along walkway beneath main dock from wave related erosion.
3	Gibsons Marina	Repair the concrete pad to ensure supporting post of main dock is properly secured.
4	Gibsons Marina	Repair drain pipe #9 to prevent further erosion of sediment beneath walkway.
5	Walkway (Coals Marina)	Close the gap in riprap protection in front of Coals Marina.
6	Walkway (drain pipe #12)	Determine the cause of standing water along the walkway, repair drain pipe #12 as needed.
7	Armours Beach	Remove the chained log from the concrete block and move the block into the original position. Provide additional protection measures at the base of concrete blocks to prevent undermining.
8	Pebbles Beach	Replace the stairway to improve safe public access. Bank erosion protection along east side of access should be considered. Bank slope stability and possible movement should be assessed by a geotechnical engineer.
9	Georgia Park	Consider erosion protection along mature trees and banks.
10	Atlees Beach	Relocate the drain pipe away from the stairway access to reduce erosion activity behind stairway.



Design Concept for Adaptable Riprap Protection (2014)



FORESHORE TODAY

Gibsons Foreshore and Seawalk Improvements Project

Official Community Plan

Environmental Sustainability Goals

- Preserve the natural assets, natural beauty and the environmentally sensitive areas of the Town
- Preserve and protect the environmental integrity and natural beauty of the foreshore and harbour and the pristine quality of our waters

Servicing and Infrastructure Objectives

- Recognize and value the contribution of natural assets to provide valuable services to the community
- Operate and maintain effective and reliable municipal infrastructure supported by healthy natural assets based on a long term approach aimed at minimizing operational costs now and in the future

Policies

- Minimize risks to life and property from natural hazards and disasters such as floods, erosion and slides
- Maintain public access to natural areas, the shoreline, and the characteristic views of the Town
- Lands that have unstable slopes, poor soil permeability, subject to flooding... shall generally be designated as greenbelt
- Ensure that deleterious substances (including sewage and other toxic materials) are not deposited into freshwater or marine aquatic environments

EcoAsset Strategy

The EcoAsset Strategy was added to the OCP in 2015

The foreshore is an important eco-asset: it provides a vital seawall to protect the waterfront from storm surges, sea level rise and erosion

Objectives include:

- managing risk
- saving costs
- maintaining a healthy ecosystem
- managing the asset

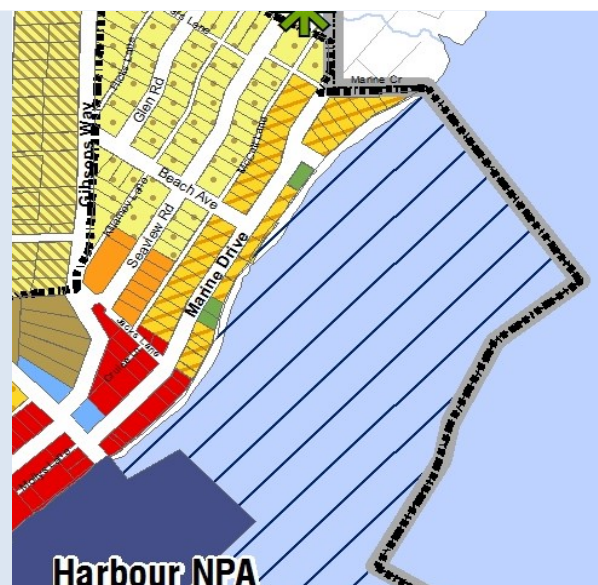


Land Use Plan

There are a mix of uses adjacent to the foreshore, including:

- Multi-Unit Residential Special Character
- Parks and Recreation
- Mixed-Use Commercial
- Commercial Harbour
- Marine Recreation

The study area is also within the Harbour Neighbourhood Plan Area



Development Permit Areas

The Study Area is designated as primarily Low Geotechnical Hazard (DPA No. 1) as shown in light purple



The Study Area is designated as Marine Shore (shown in blue hatching) with an Eelgrass Bed (shown in green) under the Environmentally Sensitive Development Permit Area (DPA No. 2)



The Study Area is within Gibsons Landing Form and Character Development Permit Area (DPA No. 5)



The Study Area is within the Gibsons Aquifer Development Permit Area (DPA No. 9), the Lower Gibsons Subarea and just outside the Gibsons Well Head Protection Area





FORESHORE TODAY

Gibsons Foreshore and Seawalk Improvements Project

The foreshore services a range of uses:

- Part of the marine ecosystem (fish & eelgrass)
- Infrastructure servicing corridor (sanitary sewer)
- Public recreation trail (oceanfront walkway)



Council Objectives/Directions

- Protection of Eelgrass, introduce moorage buoys outside Eelgrass areas (water lease review 2012)
- Armours Beach Park Improvements (2013-2015) include a small washroom, natural area, extended beach swimming, and interpretive signage.

Cole's Access Improvements (2015)

Partnership:

- Houston Landscapes offered in-kind services
- Parks Department
- Sunshine Coast Wildlife Project

Removed invasive species

Constructed seating area and plantings

Cole's Trail connection being considered for 2016



- A tool for developing the shore while protecting natural shorelines and habitats
- **Guiding Principles:**
 - Preserving the integrity or connectivity of shoreline processes
 - Maintaining or enhancing habitat diversity and function
 - Minimizing or reducing pollutants to the environment
 - Reducing cumulative impacts to the shoreline environment

Council Strategic Plan 2016 – 2019 “Nature is Our Most Valuable Asset”

Asset Management

- Advancing Our Eco-Assets Strategy
- Targeting Zero Waste and Climate Change
- Ensuring Resilience of Our “Bricks & Mortar” Infrastructure
- Completing Town Land Inventory & Parks Master Plan
- Expanding Safe Pedestrian and Cycling Networks

Harbour Enhancement

- Developing a Gibsons Harbour Economic Strategic Plan
- ★ Enhancing the Harbour Seawalk
- Helping to Secure a Reliable Passenger Ferry Service
- ★ Making Armours Beach a Family-Friendly Recreation Site
- Restoring Fish Habitat in our Creeks and Harbour

Community Development

- Building the Gibsons Public Market as a Community Hub
- Promoting Regional and Local Economic Development
- Collaborating on Affordable Housing Initiatives
- Supporting Education, Culture and Intergenerational Engagement
- Advocating for Improved Ferry and Transit Service

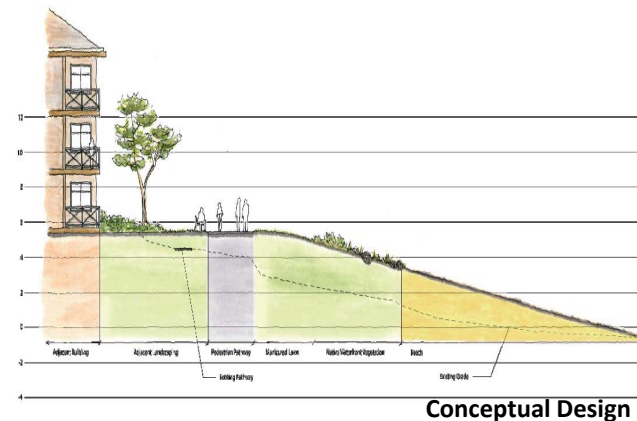


Reference Projects

Gibsons Foreshore and Seawalk Improvements Project

Trail Bay, Sechelt

Minor bank erosion during high tide and storm events addressed using a Green Shores approach to develop an engineered beach. Beach nourishment involved creating a berm to establish a natural slope.



Parksville Beach, Parksville

Severe bank erosion and destabilization addressed using a Green Shores approach to develop an engineered beach. Beach nourishment involved creating a berm to establish a natural slope.



Campbell River

Bank erosion along the beach addressed by removing timber wall and replenishing beach and planting.



Photo Source: John Reidshaw



Davis Bay, Sechelt

Davis Bay uses a benched foreshore design using large rocks terraces and vegetation planted to stabilize the bank. The design held up well during the 2012 storm.





Reference Projects

Gibsons Foreshore and Seawalk Improvements Project

Spanish Banks, Vancouver

Beach erosion threatened public walkway. Riprap treatment used to stabilize bank and provide pedestrian beach access.



Jericho Beach, Vancouver

Foreshore erosion threatened public walkway. Naturalization completed with backshore dune berm and dune grass.



Kitsilano Beach, Vancouver

Foreshore erosion threatened public walkway. Boulder placement with bioengineered vegetation used in areas susceptible to wave attack.



New Brighton Park, Vancouver

Foreshore erosion at New Brighton Park near Second Narrows bridge. Treatment involved stepped boulder protection with intertidal planting.





CONSTRAINTS

Gibsons Foreshore and Seawalk Improvements Project

Design

Sanitary Sewer Infrastructure

- Fixed alignment of sanitary sewer in access road
- May require eventual replacement or relocating

Access (Maintenance and Seawalk)

- Riprap protecting the walkway and sewer pipe below is largely intact but needs upgrade for access
- Small section in front of Cole's Marina to be upgraded

Armours Beach

- Lock-block retaining wall to be replaced with green shores approach
- Beach area access to be integrated to new foreshore approach



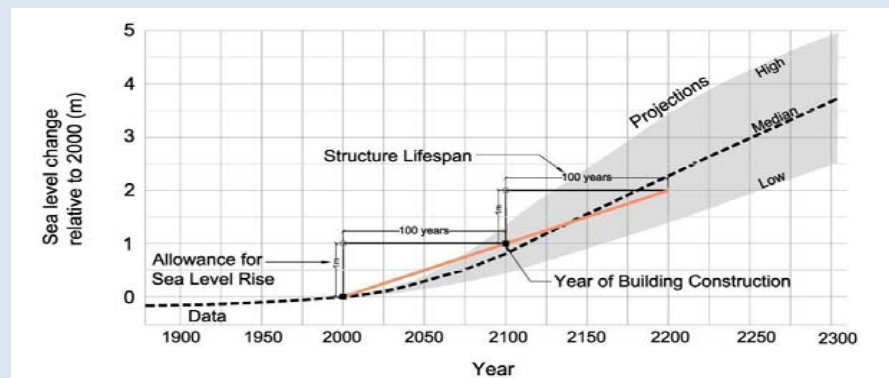
Environmental

Physical Characteristics

- Beach slope and size of material (sand, gravel, cobble) are critical design constraints

Climate Change

- Possible storm surge increases
- Estimated sea level rise of 0.5m by 2050 and 1.0m by 2100
- Likely to bring larger waves and more energy landward



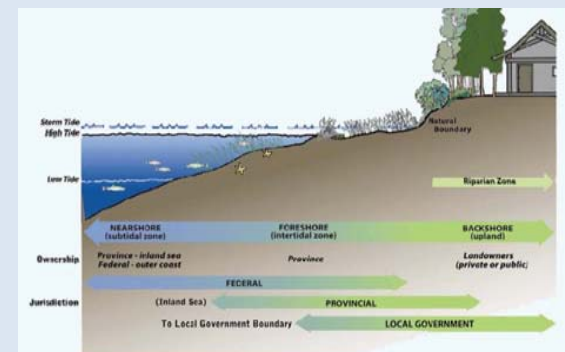
Eelgrass "Meadows of the ocean"

- Stabilize shoreline substrates and moderate shoreline wave action
- Serve as a refuge area for marine life, nurseries and feeding areas, and marine corridors
- Harbour received an eelgrass transplant in mid 1980s
- Mapping began in 2005 (to determine size and location) and was updated in 2013
- The eelgrass bed has expanded since 2005, especially along the NW shoreline

Regulatory

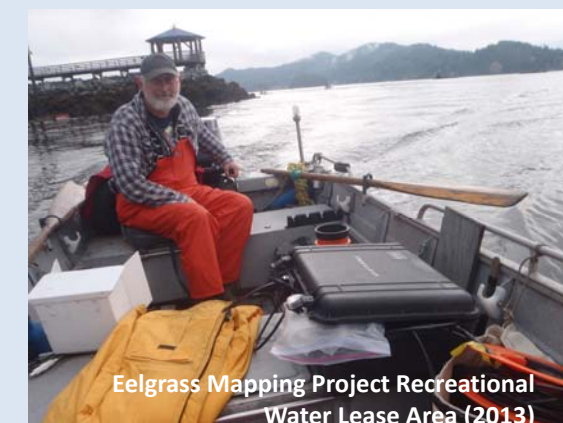
Coastal Shore Jurisdiction in BC

All levels of government play a part in managing BC's coastal shores



	Local Government - municipal, regional	Provincial Government	Federal Government	First Nations
Backshore	Plan and regulate land use through OCPs, zoning, development permits, etc.	Issue tenures (permit, licence of occupation, lease or grant) and sale of provincial Crown lands	Fish habitat ⁴ protection, including shoreline/riparian vegetation and timing windows ⁵	Planning and regulation in Reserve lands; may be negotiating Treaty rights elsewhere
Foreshore	Land use planning & regulation extends into foreshore that lies within LG boundary	Issue tenures over all foreshores	Fish and fish habitat protection Protect public navigation	Same as above
Nearshore	Land use planning and regulation extends into nearshore areas that lie within LG boundary	Issue tenures over all nearshore areas in inland seas	Fish and fish habitat protection Protect public navigation	Same as above

Source: Green Shores, 2009





FORESHORE FUTURE

Gibsons Foreshore and Seawalk Improvements Project

Foreshore in the Future

- Will build on the Foreshore Condition Assessment
- In alignment with the EcoAsset Strategy
- Conceptual Design to be developed:
 - based on community input
 - to improve environmental quality of foreshore
 - to ensure reliable, long-term sanitary sewer service
 - to accommodate recreational use over the service road

Next Steps

Following this Public Information Meeting, the next steps in the project include:

- Mini-charrette with agencies and local community groups (October)
- Conceptual design options with high-level cost estimates
- Sketches, plan and cross-sections for preferred alternative
- Public meeting to present final results
- Design and construction (planned for 2017 and beyond)

**Don't forget to
complete the
questionnaire
before you
leave today!**





FORESHORE BASE PLAN

Gibsons Foreshore and Seawalk Improvements Project



Foreshore – Northern End of Study Area



Armours Beach Park & Seawalk



Eelgrass



Armours Beach



Cole's Access



Cole's Old Marine Railway



Access/Seawalk – Looking South



Access Along Properties



Wharf – Southern End of Study Area



Typical Foreshore

