

MEMORANDUM

Date: March 9, 2022 Our File: 0332-04
 To: Mayor and Council
 From: Heather Keith, Manager, Environmental Protection
 Re: **Foreshore Development Permit Area – Proposed Official
 Community Plan Bylaw No. 4985, 2018 Amendment Bylaw No.
 5128, 2022**

On February 14, 2022, Council gave first reading to bylaws (Official Community Plan, Development Procedures, Tree, and Fees and Charges amendment bylaws) that would enable the establishment of a Foreshore Development Permit Area (DPA). This memo is to outline a change to the proposed Foreshore DPA following first reading.

BACKGROUND

Following the public engagement sessions held in October 2021, staff received comments from residents in the Eagle Harbour area regarding the inclusion of their properties in the proposed Foreshore DPA. In discussion with the coastal engineer that completed the District's Coastal Mapping Study in 2020, staff noted that Eagle Island and other small islands in that area are permanent features and will not change over the planning timeframe to the year 2100. This is a unique area along the West Vancouver coastline as it is the only area where islands are located to serve as protection from wave effects. Therefore, a re-analysis was completed on the calculated flood construction levels (FCLs) for this area accounting for the protection of these islands from storm surge and wave effects on inland properties. Consistent to the first Coastal Mapping Study that was completed for the District and used to define the proposed Foreshore DPA, the Provincial methodology was used to calculate the elevation of the flood construction level (i.e., the elevation below which there is a risk of coastal flooding). However, the input data was updated to account for the reduction of wave effects on inland areas due to the presence of the islands.

The proposed Foreshore DPA that was brought to first reading, accounted for the removal of fifteen properties from the DPA that were located inland of Eagle Island and completely protected from wave effects, which is a significant component in the calculation of the FCL. In addition, the FCL elevation was lowered for other properties that receive some protection from the islands.

PROPOSED MODIFICATION

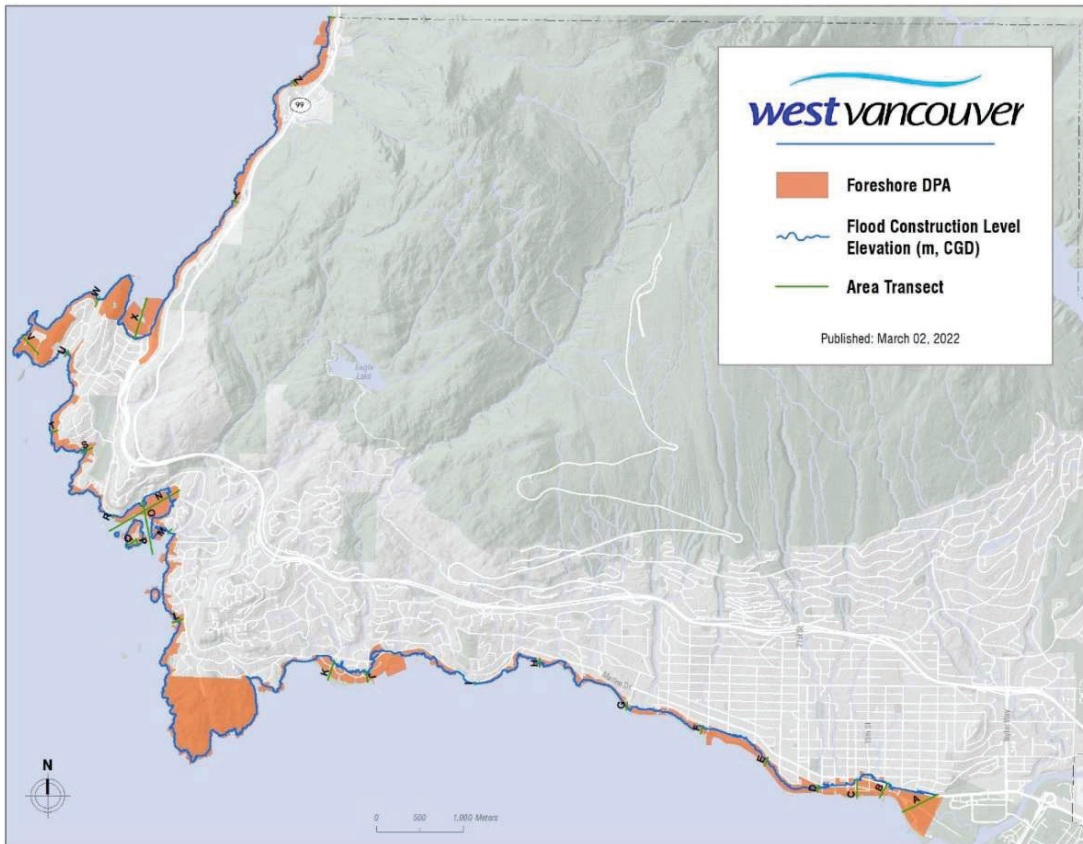
More recently, residents within the Eagle Creek area, which is just east of the area where the analyses as described above was completed, have indicated that this area is also relatively protected for similar reasons. This is a small low-lying area along the creek, located behind the cove of Eagle Harbour Beach Park and the steeper topography of the waterfront area to the east of Eagle Creek, which also receives some protection from Eagle Island.

Following first reading, staff initiated discussions with the coastal engineer and completed further analysis of the Eagle Creek area. The coastal engineer determined that the detailed analyses that was conducted for other properties protected by Eagle Island could be also applied and extended to this area, using the same rationale. This modification resulted in the removal of an additional eighteen properties from within the Foreshore DPA.

All properties that were removed from the proposed Foreshore DPA were located inland from the waterfront and not located within 15 m from the natural boundary of the ocean setback. Therefore, these properties would have been exempt from the proposed DPA guidelines for the protection of the natural environment of the foreshore. This proposed modification simply removes the requirements for building homes to the flood construction level as these properties are at a higher elevation and; therefore, safe from coastal flood hazards given the factors of topography and island protection as explained above.

Staff are proposing the following modifications to the proposed Official Community Plan Amendment Bylaw for Council's consideration:

1. An updated map of the Foreshore DPA, excluding the properties that are now at a higher elevation than the calculated flood construction level as shown in the following map:



**Natural Environment and Hazard Development Permit Area Designation
Map NE 2**

2. An update to the transect descriptions for Areas L and M in Guideline Section II of the proposed Official Community Plan NE2 Foreshore Development Permit Area Guidelines as follows:

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

For reference, a copy of proposed Official Community Plan Bylaw No. 4985, 2018, Amendment Bylaw No. 5128, 2022 that contains these proposed modifications is attached as Appendix A.

The following is staff's recommendations to modify the proposed Official Community Plan Amendment Bylaw as outlined in this memo.

RECOMMENDATION

THAT "Official Community Plan Bylaw No. 4985, 2018, Amendment Bylaw No. 5076, 2020" be modified by replacing the map and revising the text as outlined above in Schedule A.

THAT "Official Community Plan Bylaw No. 4985, 2018 Amendment Bylaw No. 5128, 2022" be read a second time as modified.

THAT "Official Community Plan Bylaw No. 4985, 2018 Amendment Bylaw No. 5128, 2022" be read a third time.

Author: 

Heather Keith, Manager, Environmental Protection

Appendices:

Appendix A – Modified proposed "Official Community Plan Bylaw No. 4985, 2018, Amendment Bylaw No. 5128, 2022"

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District of West Vancouver

**Official Community Plan
Bylaw No. 4985, 2018,
Amendment Bylaw No. 5128, 2022**

Effective Date:

District of West Vancouver

**Official Community Plan Bylaw No. 4985,
2018
Amendment Bylaw No. 5128, 2022**

Table of Contents

Part 1	Citation.....	1
Part 2	Severability	1
Part 3	Amends Schedule ii Area-Specific Policies & Guidelines of Schedule A – District of West Vancouver Official Community Plan.....	1
	Schedule A – NE2 Foreshore Development Permit Area Guidelines	4

District of West Vancouver

Official Community Plan Bylaw No. 4985, 2018 Amendment Bylaw No. 5128, 2022

A bylaw to amend the Official Community Plan Bylaw No. 4985, 2018 to include a Foreshore Development Permit Area Designation

WHEREAS the Council of The Corporation of the District of West Vancouver deems it expedient to provide for the designation of a Foreshore Development Permit Area;

NOW THEREFORE, the Council of The Corporation of the District of West Vancouver enacts as follows:

Part 1 Citation

- 1.1 This bylaw may be cited as Official Community Plan Bylaw No. 4985, 2018, Amendment Bylaw No. 5128, 2022.

Part 2 Severability

- 2.1 If a portion of this bylaw is held invalid by a Court of competent jurisdiction, then the invalid portion must be severed and the remainder of this bylaw is deemed to have been adopted without the severed section, subsection, paragraph, subparagraph, clause or phrase.

Part 3 Amends Schedule ii Area-Specific Policies & Guidelines of Schedule A – District of West Vancouver Official Community Plan

Schedule A of Official Community Plan Bylaw No. 4985, 2018, is amended by:

- 3.1 Replacing title and map reference “Natural Environment Guidelines for Development Permit Area Designations” in Guidelines section with “Natural Environment and Hazards Guidelines for Development Permit Area Designations”.

- 3.2 Inserting new guideline section in Schedule A of this document under the new title “Guidelines NE2 Foreshore Development Permit Area Guidelines” in new section “Natural Environment and Hazard Guidelines for Development Permit Area Designations” after the section “Guidelines NE1 Wildfire Hazard Development Permit Area Guidelines”.

Schedules

Schedule A – Foreshore Development Permit Area Guidelines

READ A FIRST TIME (MAJORITY VOTE OF ALL COUNCIL MEMBERS) on February 14, 2022

PUBLICATION OF NOTICE OF PUBLIC HEARING on [Date]

PUBLIC HEARING HELD on [Date]

READ A SECOND TIME (MAJORITY VOTE OF ALL COUNCIL MEMBERS) on [Date]

READ A THIRD TIME (MAJORITY VOTE OF ALL COUNCIL MEMBERS) on [Date]

ADOPTED (MAJORITY VOTE OF ALL COUNCIL MEMBERS) by the Council on [Date].

Mayor

Corporate Officer

Schedule A – NE2 Foreshore Development Permit Area Guidelines

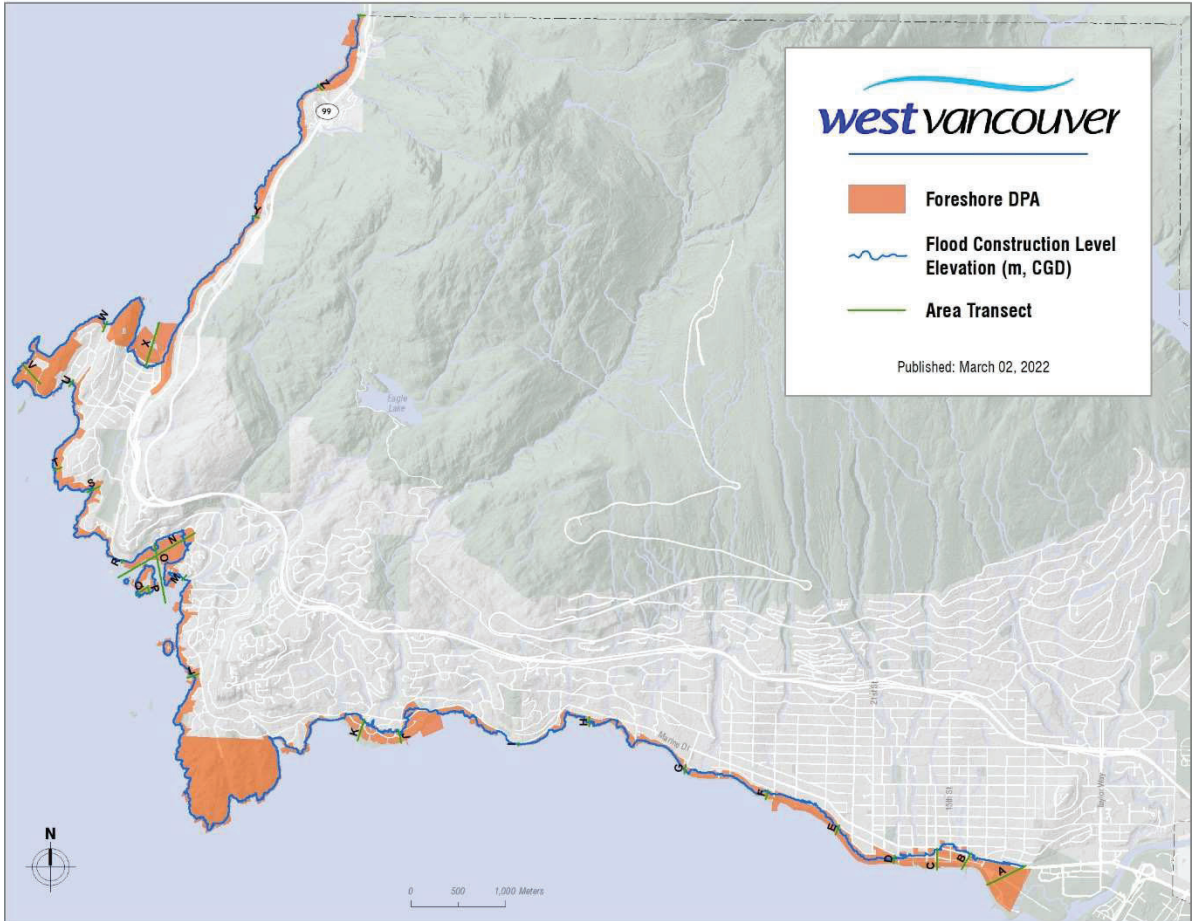
Policy NE2: Sites within the Coastal Floodplain Area

Development Permit Area Designation NE2

Sites at an elevation that may be at risk to coastal flooding, as defined in the Foreshore Development Permit Area Designation Map NE 2, are designated as a Development Permit Area.

Category	<i>Local Government Act</i> Section 488(1) (a) and (b)
Conditions	<p>The Development Permit Area (DPA) has been designated pursuant to the following sections of the <i>Local Government Act</i>:</p> <ol style="list-style-type: none"> 1. 488(1)(a) protection of the natural environment, its ecosystems and biological diversity 2. 488(1)(b) protection of development from hazardous conditions
Objective	<p>The Foreshore DPA is established to:</p> <ol style="list-style-type: none"> 1. Minimize risk to people and property from coastal hazards including sea level rise, storms, wave effects, and flooding 2. Support coastal management in reducing flooding risks 3. Preserve and enhance the integrity of the intertidal habitat of the foreshore and minimize shoreline erosion
Guidelines Schedule	NE 2
A Development Permit is required for:	<ol style="list-style-type: none"> 1. Subdivision of land 2. Construction of, or alteration, or addition to a dwelling 3. Construction of, or alteration or addition to all other non-dwelling buildings and structures, including pools, hot tubs, sheds, retaining walls, and other structures within 15 metres of the natural boundary of the ocean 4. Alteration of land within 15 metres of the natural boundary of the ocean (i.e., the riparian area of the foreshore), including, and without limitation: <ul style="list-style-type: none"> • site clearing or grading • cutting of trees • placement of fill, or disturbance of soils, rocks or other native materials for purposes other than routine maintenance of existing landscaping

	<ul style="list-style-type: none"> • creation of impervious and semi-impervious surfaces (such as patios and driveways) • installation, construction, or alteration of flood protection or erosion protection works • installation, construction, or maintenance of drainage, hydro, water, sewer, or other utilities
<p>Exemptions from the requirement of a Development Permit:</p>	<ul style="list-style-type: none"> • Interior renovations to existing buildings • Exterior renovations, repairs, or alterations to existing buildings or structures except when the following is within 15 m of the natural boundary of the ocean: <ul style="list-style-type: none"> ○ an increase in the size of the existing structures; or ○ Removal and reconstruction of structures • Installation of fences that allow for passage of water and does not require removal of trees • Emergency works, including tree cutting, necessary to remove an immediate danger or hazard, as certified by an Arborist
<p>Exemptions from the requirement to meet the Flood Construction Level (FCL):</p>	<ul style="list-style-type: none"> • Recreation shelters, stands, washrooms and other outdoor facilities designed to withstand periodic flooding • Renovation of an existing building or structure. • Construction of a portion of a building or structure that is used as a carport or garage • Accessory buildings such as storage buildings, porches, and domestic greenhouses that is not habitable space • An addition, below the minimum FCL elevation that would increase the size of the building or structure by less than 25 percent of the existing floor area • Commercial space



**Natural Environment and Hazard Development Permit Area Designation
Map NE 2**

Guidelines

- I. For the purpose of reducing the risk from coastal flood hazards on upland property and development, the following guidelines for buildings and construction shall apply:
 - a) All development should be located in the least hazardous portion of a property.
 - b) The setback for a dwelling should be the greater of 15 metres from the future estimated natural boundary of the ocean at Year 2100, or landward of the location where the natural ground elevation contour is equivalent to the Year 2100 Flood Construction Level (FCL), calculated by a Professional Engineer, using the Provincial guidelines ([Sections 3.5 & 3.6 of the Flood Hazard Area Land Use Management Guidelines](#)) as amended from time to time.
 - c) For subdivisions, either through the layout of the subdivision or through conditions in the Development Permit that supplement the District’s Zoning Bylaw, the permitted building envelope for every lot should be the

- greater of 15 metres from the estimated natural boundary of the ocean at Year 2100, or landward of the location where the natural ground elevation contour is equivalent to the Year 2100 FCL, calculated by a Professional Engineer, using the Provincial guidelines ([Flood Hazard Area Land Use Management Guidelines](#)) as amended from time to time.
- d) The assessment by the Professional Engineer must be in accordance with the Provincial guidelines ([Flood Hazard Area Land Use Management Guidelines](#)), including without limitation, the requirement to account for any secondary sources of flooding when calculating an FCL.
 - e) In addition to the calculation of the FCL, the Professional Engineer must also provide other recommendations for safe use of the dwelling, to ensure that the proposed development is protected from the natural hazard.
 - f) For commercial space where the FCL is not applied, a Professional Engineer must provide recommendations to minimize damage to property and safety hazards during a flooding event.
 - g) All major mechanical and electrical infrastructure susceptible to damage should be located above the FCL or within flood-proofing measures as recommended by the Professional Engineer.
 - h) Egress/ingress to buildings should be located above the FCL.
 - i) A Flood Hazard and Risk Assurance Statement must be submitted by the Professional Engineer.
 - j) The onsite stormwater management plan must account for the FCL if the outlet is to the marine environment. The plan must include mitigation measures against sea level rise and future submerged outlet conditions.
 - k) Construction of septic tanks and deposit fields must be located outside of 15 metres of the natural boundary of the ocean.
 - l) Construction and construction materials shall adhere to Provincial [Environmental Best Management Practices for Land Development](#) as amended or replaced from time to time, to ensure no deleterious substances entering the sensitive environment of the foreshore area and water.
 - m) Should imported fill be required for site grading, the fill should be clean and free of debris and deleterious substances and adhere to fill specifications outlined by a Geotechnical Engineer.
 - n) If any landfill is proposed, it should be adequately compacted, and the face of the landfill slope should be adequately protected against erosion from flood flows, wave action, ice or other debris. The fill must not adversely impact neighbouring properties by increasing the surface water elevation or directing flows toward those properties.

- o) Consider zoning bylaw variances in order to construct a home at the elevation of the calculated FCL or 15 metres from the future estimated natural boundary of the ocean at Year 2100, whichever is greater (see Guideline I(b)). Variances may include, but are not limited to, height and setback variances. Requested variances shall consider proximity to adjacent dwellings, as well as privacy and view impacts for neighbours.
 - p) Where changes in site grading are proposed to mitigate coastal flooding, landscaping shall address grade differences to adjacent properties to consider privacy including light, view, and overlook and proximity issues between properties. In addition, site grading should consider the topography of a site, reducing the need for major site preparation or earthwork, maintenance or enhancement of desirable site features (natural vegetation, trees, natural shoreline, or rock outcrops/bluffs). The use of exposed retaining walls shall be minimized with specific consideration for exposed retaining walls facing adjacent properties.
- II. For the purpose of these guidelines, unless a Year 2100 FCL is established by a Professional Engineer in accordance with Guidelines I(b) and (c), the FCL for a property is set out in the following table with the Area Transects (delineated in the Foreshore Development Permit Area Designation Map NE 2).

Area Transect	Area Description	FCL (metre, Canadian Geodatic Datum)
A	Ambleside Beach	4.63
B	Ferry Building to 16th Street	4.79
C	16th Street to 19th Street	4.66
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- III. If the proposed dwelling is above the elevation of the area-specific FCL (in Guideline Section II), without any landfill or structural support to achieve that elevation, the proposed building is exempt from Guideline Sections I(a) to (i).
- IV. For the purposes of protecting or enhancing the intertidal habitat of the foreshore, the following guidelines apply to proposed work within 15 metres of the natural boundary of the ocean:
 - a) Locate development in the least environmentally sensitive areas (e.g., areas that have been previously disturbed) to minimize impact to the ecology of the intertidal habitat.
 - b) Encourage the preservation of healthy trees, shrubs, and hedges, or where necessary, their replacement with suitable species to the coastal environment.
 - c) Where possible, natural or soft landscaping materials shall be used to protect the property and foreshore area, and create resiliency to coastal flooding.
 - d) The use of retaining walls and other “hard” surfaces such as seawalls and riprap armouring shall only be supported where a Qualified Environmental Professional (QEP) has determined that “soft” approaches to shoreline stabilization are not appropriate given site-specific conditions and shall not increase scour and erosion of the foreshore area.
 - e) Consideration should be given to removing hard structures when not required and replacing with natural features to enhance the foreshore habitat.
 - f) For any reduction in the 15 metres setback from the natural boundary of the ocean, to allow for placement of a structure, an Environmental Assessment by a QEP shall be completed and include recommendations for protection and/or restoration required to minimize disruption to the physical and biological processes of the foreshore habitat.
 - g) Where native plant species or plant communities dependent on a marine shoreline habitat are identified as sensitive, rare, threatened, or endangered, and have been identified by a QEP for protection, their habitat areas shall be left undisturbed.

- V.** For work within 15 metres of the natural boundary of the ocean or on the public foreshore for access to the upland property, a Construction Environmental Management Plan will be required to define mitigation and protection measures during construction activities.
- VI.** All proposed structures and works should be located upland of the natural boundary of the ocean on private property, and not on the public foreshore, where possible. For any work proposed on the public foreshore, including work on existing encroachment structures, the District's Zoning Bylaw 4662, 2010, applicable to the public foreshore, and conditions of the Head Lease with the Province shall apply. Additional information may be required to meet the requirements of the Head Lease.
- VII.** Any works must account for and protect any municipal infrastructure and necessary mitigation measures applied to the project, as determined by the District.

Definitions

“commercial space” means buildings that are used for commercial purposes, including office buildings, retail buildings, and restaurants.

“construction environmental management plan” means a guidance document s a guidance document to measure and achieve compliance with the environmental protection and mitigation requirements of a project as required by all levels of government, and includes specific mitigation measures for contractors to follow during construction phases of a project in order to protect the natural environment.

“designated flood” means a flood, which may occur in any given year, of such magnitude as to equal a flood having a 200-year recurrence interval, based on a frequency analysis of unregulated historic flood records or by regional analysis where there is inadequate streamflow data available.

“designated flood level” means the observed or calculated elevation for the designated flood and is used in the calculation of the flood construction level.

“dwelling” means a building or portion of a building having two or more rooms used or intended to be used together for the domestic purposes of one or more persons and including at least one living room, one cooking facility and one bathroom and not rented or available for rent or occupation for periods of less than 30 days.

“fence” means a vertical structure used as an enclosure or a screen of all or part of a site, not exceeding 0.08 metre in thickness, excluding posts and rails, but shall not include a garden wall.

“flood construction level” means the designated flood level plus the allowance for freeboard and is used to establish the elevation of the underside of a wooden floor system or top of concrete slab for habitable buildings.

“freeboard” means a vertical distance added to the designated flood level, used to establish the flood construction level.

“floodplain” means a lowland area that is susceptible to flooding from an adjoining watercourse, ocean, lake or other body of water and for administration purposes is taken to be that area submerged by the designated flood plus freeboard.

“flood-proofing” means the alteration of land or structures either physically or in use to reduce flood damage and includes the use of building setbacks from water bodies.

“foreshore” means the part of a shore between high and low water marks.

“geotechnical engineer” means a Professional with appropriate education, training and experience, fully insured and in good standing with the relevant Professional association, for the purpose of soil and rock assessments, with experience or training in geotechnical and geohazard assessments;

“habitable space” means any room or space within a building or structure, which room or space is or can be used for human occupancy, or storage of goods, personal property or mechanical or electrical equipment (including furnaces), and which room or space would be subject to damage if flooded.

“intertidal” means the zone above water level at low tide and underwater at high tide (i.e., the area within the tidal range).

“natural boundary” means the visible high water mark of any lake, river, stream or other body of water where the presence and action of the water are so common and usual, and so long continued in all ordinary years, as to mark on the soil of the bed of the body of water a character distinct from that of its banks, in vegetation, as well as in the nature of the soil itself.

“professional engineer” means a professional with appropriate education, training and experience, fully insured and in good standing with the relevant professional association and for the purpose of the coastal flood hazard assessments and shoreline protection projects, an engineer who, as required by the Engineers and Geoscientists British Columbia (EGBC) Guidelines, has appropriate training and

experience to prepare the report in view of the terrain characteristics, the type of potential flood hazard, and the type of mitigative works potentially needed.

“qualified environmental professional” means a professional with appropriate education, training and experience, fully insured and in good standing with the relevant professional association, for the purpose of evaluating biological impacts on the foreshore, a registered professional biologist, with experience in the assessment of intertidal marine habitat, the impact pathways associated with development, and mitigative measures to minimize impact to the environment.

“riparian” means the zone upland the intertidal area, which consists of vegetation and features that influence the aquatic ecosystem of the intertidal area.