



POLICY NUMBER: 8-5280-1

REFERENCE:
Tsunami Risk Tolerance - Interim Policy

ADOPTED BY:
Council

CROSS-REFERENCE:
OCP Policies 2.34, 2.50

SUPERSEDES:
None

AMENDED DATE:
N/A

DEPARTMENT:
Planning / Engineering / Emergency Services

EFFECTIVE DATE:
March 29, 2022

Policy Statement

The purpose of this interim policy is to clarify the District's tolerance for risk when making decisions that may affect persons, property, environments and cultural features, considering the remote but potentially catastrophic consequences of flooding caused by Tsunami – at a time when our understanding of risks is expanding, climate change is altering oceans and Provincial policy and guidelines are evolving.

Scope

This policy applies to decisions on locating critical municipal assets, investments in infrastructure, rezonings, and the subdivision of land.

Justification

A. Current policy adopted in the municipal Official Community Plan (OCP) bylaw:

"It is District policy that it is in the public interest for new subdivisions and developments to be planned to avoid areas of potential flood risk."

Policy 2.34 establish and undertake the work, as necessary, to refine Flood Construction Levels (FCLs) to ensure new development and infrastructure avoids the impacts of rising sea levels.

Policy 2.50 conduct flood risk mapping for sea level rise and use the results to communicate and manage risks.

Policy 3.9 Improve tsunami evacuation route signage for prone areas, directing people to the closest high ground area.



B. Current Provincial guidance:

The west coast of Vancouver Island, identified as Zone C by the provincial Ministry of Public Safety and Solicitor General, is a high-risk seismic zone, known to be vulnerable to flooding in the event of a tsunami.

The amended *Flood Hazard Area Land Use Management Guidelines* state that a subdivision application in a tsunami prone area must include a report by a suitably qualified Professional Engineer, experienced in coastal engineering who must formulate safe building conditions for each proposed lot. The guidelines go on to state that flood construction level (FCL) requirements should be established on a site-specific basis and take into account tsunami hazards, and that reductions to these requirements should only be considered where the building can be built to the Tsunami FCL on bedrock.

The Province's brief on modernizing BC's emergency management legislation notes that risk reduction starts with making sound decisions about where and how to build. The Province proposes to require local authorities to give greater consideration of current and future risk for new development approvals in hazardous areas.

C. Justification for new policy:

This area of local policy for flood risk management hinges on the District's tolerance for risk, weighed against the balance of community interests. The destructive nature of tsunamis as well as their relative infrequency means that they do not naturally fit within the definition of FCL provided in the Provincial Guidelines. Following the "as low as reasonably practicable" (ALARP) approach to managing risks requires that decisions be made based on Ucluelet's tolerance for risk and consideration of what is reasonable and practicable in the community context.

Policy:

This policy is to guide decisions on:

- amendments to the Zoning bylaw or Official Community Plan bylaw;
- applications for subdivision of land; and
- location of critical community infrastructure and facilities.

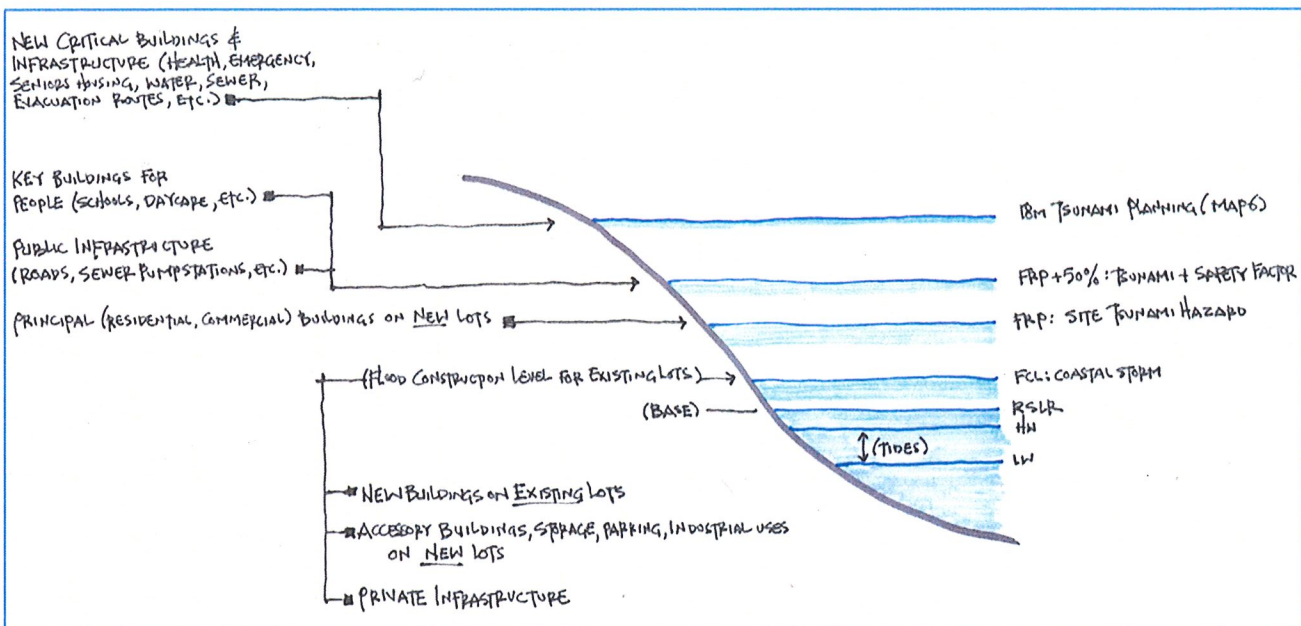
The following table and diagram indicate acceptable minimum vertical elevations for specified uses, structures and/or infrastructure relative to identified flood hazards.



Table 1: minimum acceptable elevations for different uses relative to modelled flood levels.

Proposed facility or use	Minimum elevation	Reference
New critical infrastructure (e.g. health care, emergency, seniors' housing, core water infrastructure, core sewage treatment infrastructure, evacuation routes, etc.)	18m tsunami planning elevation	OCP Map 6
Key buildings for assemblies of people (schools, daycare facilities, etc.)	Tsunami Flood Reference Plane + 50%	Site-specific analysis by suitably qualified Professional Engineer experienced in coastal engineering
Public Infrastructure (e.g., roads, sewer pump stations, etc.)	Tsunami Flood Reference Plane +50%	Site-specific analysis by suitably qualified Professional Engineer experienced in coastal engineering
New residential and commercial buildings on <u>new</u> lots	Tsunami Flood Reference Plane	Site-specific analysis by suitably qualified Professional Engineer experienced in coastal engineering
New buildings on <u>existing</u> lots	Coastal Storm FCL	OCP Map 4
Accessory buildings, storage, parking, industrial uses on <u>new</u> lots	Coastal Storm FCL	OCP Map 4
Private infrastructure	Coastal Storm FCL	OCP Map 4

Figure 1: minimum elevations for different uses relative to modelled flood levels.





Approval of Building Sites or Structures within areas identified as being subject to Tsunami hazard

Any subdivision approval of new lots where building sites would overlap areas identified as being subject to potential tsunami hazard will be subject to the following:

- a report by a qualified professional engineer experienced in coastal engineering who must determine the tsunami flood reference plane for the site and formulate safe building conditions for each lot, per the current *BC Flood Hazard Area Land Use Management Guidelines*;
- certification by a qualified professional engineer that the building site can be safely constructed for the intended use with habitable spaces and electrical / mechanical systems located above the applicable minimum elevations set out in Table 1;
- the report by the qualified professional engineer must reference current structural standards for tsunami loads and effects including, as a minimum, ASCE/SEI 7-16, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures* or subsequent best practices and standards;
- the report by the qualified professional engineer must address the anchoring of foundations to bedrock; and,
- a restrictive covenant registered on title of the property:
 - restricting the use of the land to meet the conditions specified in the professional's report enabling the land to be used safely for its intended use;
 - containing conditions respecting reimbursement by the owner for any expenses that may be incurred by the municipality as a result of a breach of a covenant; and,
 - indemnifying the District of Ucluelet and the Province of British Columbia from any liability or claim for property damages, injury or loss of life resulting from flooding.

Limit of authority

Nothing in this policy supersedes Provincial or Federal enactments or regulations, or professional standards and the duty of care performed by Professional Engineers in exercising their professional judgement.

Review and update

This policy shall be reviewed and considered for update or repeal when any of the following occur:

- new flood hazard mapping for Ucluelet is completed and adopted; or,
- the Province of British Columbia adopts new acts, regulations or guidelines for mitigating community risks from tsunami flood hazards.



Mayco Noël
Mayor

Duane Lawrence
Chief Administrative Officer