COWICHAN VALLEY REGIONAL DISTRICT

BYLAW NO. 4427

A Bylaw to Amend an Official Community Plan

WHEREAS the Board of the Cowichan Valley Regional District has adopted an official community plan for the Regional District's electoral areas;

AND WHEREAS the Board wishes to amend the official community plan to update the designation of certain development permit areas for the protection of development from natural hazards;

AND WHEREAS the Board has considered the matters outlined in s. 477(3) of the *Local Government Act* and has consulted with the school districts outlined in s. 476(1) of the *Act*;

NOW THEREFORE the Board of the Cowichan Valley Regional District, in open meeting assembled, enacts as follows:

1. CITATION

This bylaw shall be cited for all purposes as the **"CVRD Bylaw No. 4427 – Electoral Areas Official Community Plan Amendment Bylaw, 2022"**.

2. AMENDMENT

CVRD Bylaw No. 4270 – Cowichan Valley Regional District Official Community Plan for the Electoral Areas Bylaw, 2021 is amended as follows:

(a) by substituting the text attached to this bylaw as Schedule A for the text headed "Development Permit Area 7: Landslide Hazard" in Schedule C to the official community plan entitled Development Permit Areas; and

(b) by substituting the map attached to this bylaw as Schedule B for the map entitled "UDPA7.2 Landslide Hazard – Area G (excluding the Gulf Islands)" in Schedule U to the official community plan entitled Development Permit Areas Maps.

3. FORCE AND EFFECT

This bylaw shall take effect upon its adoption by the Regional Board.

READ A FIRST TIME this _____ day of _____, 2022.

READ A SECOND TIME this _____ day of _____, 2022.

READ A THIRD TIME this _____ day of _____, 2022.

ADOPTED this _____ day of _____, 2022.

Chairperson

Corporate Officer

SCHEDULE A

Development Permit Area 7: Landslide Hazard

Image 1: Development at the toe-of-slope faces increased risk.

Development Permit Area

The following areas are designated as a landslide hazard development permit area, shaded dark red on Schedule U, UDPA7.1 through UDPA7.6 Landslide Hazard:

- those parts of electoral area E of the Cowichan Valley Regional District, as identified in the report *Allenby Road Slope Hazard Overview Assessment* (McQuarrie Geotechnical Consultants Ltd, 2019) and "Slope Stability Hazard Assessment 3064-3070 Allenby Road" (Thurber Consultants Ltd, 1982);
- those parts of electoral area G of the Cowichan Valley Regional District indicated on Schedule UDPA7.2 (Saltair Bluffs) "Coastal Slope Stability Assessment" **(**Stantec Consulting Ltd. 2022);
- those parts of electoral area H of the Cowichan Valley Regional District as indicated in the reports completed by Ministry of Highways and Public Works (1979) and Hardy BBT Ltd (1991), including parcels containing land above the 300-foot (91.44 m) contour level of Woodley Range; and
- those parts of electoral area F and I of the Cowichan Valley Regional District as identified in the report *Debris Flow Runout Model: North Shore Cowichan Lake: LABS Model Results 2021 Rev2* (Stantec and Palmer, 2021), (Youbou Lands).

A technical report for Cowichan Bay in area D will be undertaken in the modernization.

Basis for Designation

These areas are designated development permit areas to establish guidelines for the protection of development from landslide, pursuant to section 488(1)(b) of the *Local Government Act*.

Justification for Designation

The primary objectives of designation of the development permit area for protection from landslides are to

- manage development in steep slope areas in a manner that reduces the risk to life and property, prevents erosion and potential risks to down-slope property, prevents destabilization of slopes and protects the aesthetic quality of the slopes;
- ensure public safety and prevent damage to property from lands considered to contain or that exhibit hazardous conditions; and
- prevent erosion, if possible, in areas of steep slopes by leaving slopes uncleared, retaining areas of mature tree cover and preserving other natural features.

Land slippage and sloughing between Miller Road and Allenby Road resulted in the destruction of a building in December 1975. Incidence of soil creep has been evident since then, including small slides in 1979 and in December 1984, the latter case resulting in some structural damage to a building. Since 1975, several engineering studies, including those by Thurber Consultants (1979) and B.H. Levelton and Associates (1979 through 1984), have identified the potentially hazardous condition that exists in the area should the slope be developed without regard to drainage, slope stability or potential sloughing. Some vegetation removal has occurred on the slope face, which has further reduced stability.

A 1979 Ministry of Transportation report on the Woodley Range concluded that major portions of the area appear unsuitable for development due to the extreme shallow nature of the soils, moderate to steep complex topography and potential surface drainage problems. Since 1979, site-specific geotechnical reports, completed as part of development applications, have identified evidence of geotechnical instability and rockfall hazards. Multiple other reports have been undertaken since and are outlined in the figure below.

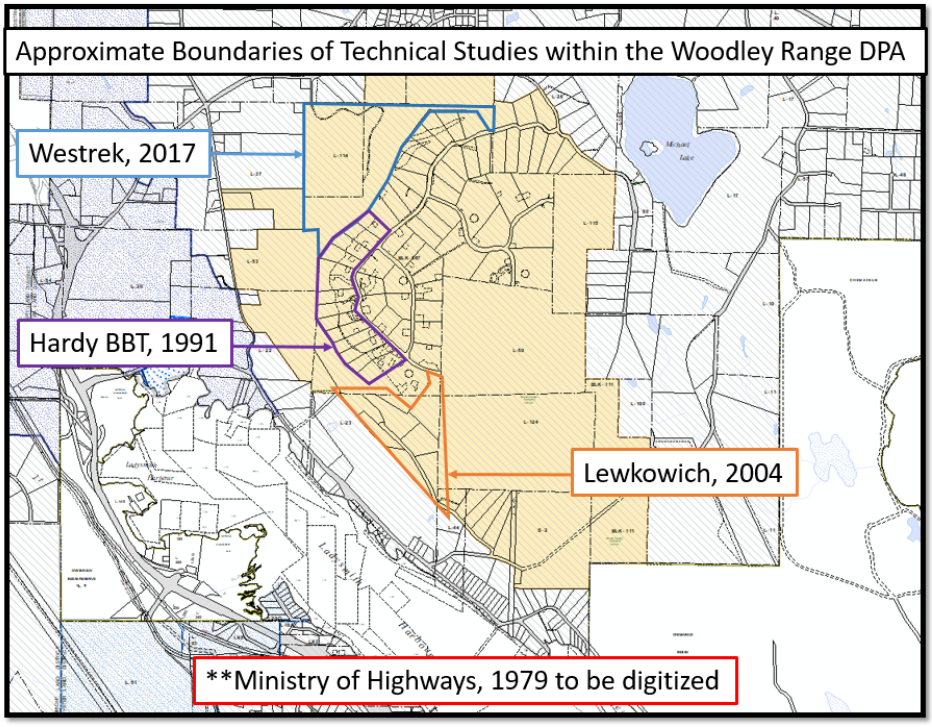


Figure 2-1 Approximate boundaries of technical studies within the Woodley Range DPA.

In 2020, Stantec Consulting Ltd. in association with Palmer Environmental Consulting Group

carried out an assessment of the risks associated with various types of landslides (debris flows, debris floods) on the steep slopes above Youbou and Lake Cowichan. Stantec, in association with Palmer, conducted debris flow and debris avalanche runout modelling to better discretize the encounter probability map and refine the hazard component of risk to the residents of the North Shore of Cowichan Lake.

In the community of Saltair, the marine foreshore bluffs consist of steep slopes and complex topography including the incised lower reaches of Stocking and Porter Creeks and their associated estuarine environments, all generally unsuitable for urban development. The approximately 7-kilometre long Saltair coastline is characterized by sand and gravel intertidal beach platforms of variable width backed by coastal bluffs. The bluffs have been created by wave action eroding the glacial material of the backshore. There is limited beach material protecting the bluffs. The bluff and foreshore are low in gravel and high in silt and clay. Particularly, when vegetation is removed at the edge of bank, it is susceptible to further wave action, which may result in land slippage, sloughing or soil creep. The placement of buildings and structures and the clearing of vegetation near the edge of the Saltair Bluffs could increase the rate of erosion and add to the risk of land slides. The nature and extent of the hazard are documented in a Coastal Slope Stability Assessment conducted by Stantec in 2021.

https://cvrd.ca/DocumentCenter/View/103122/Saltair-Coastal-Slope-Stability-Assessment

Permit Exemptions

A development permit is not required for the following activities:

a. non-structural repairs or renovations (including roof repairs or replacement) to a permanent structure provided that such repairs or renovations do not increase the gross floor area of the permanent structure;
b. replacement or repair of an existing deck, provided that the location and dimensions do not change;
c. construction of an accessory building of less than 25 m^2 located outside any potential slope hazard area and at least 10 m away from the crest of any steep slope, and provided that no removal of trees or placement of fill will be required;
d. removal of hazardous trees; and,
e. routine maintenance of existing landscaping and lawn areas, or planting of vegetation, except for the planting of trees within 10 m of the top of a steep slope.

Application Requirements

LH-AR1 Submit a report prepared by an engineer or geoscientist that indicates whether, if recommendations are followed, the site may be used safely for the intended development over the projected life of the development. The applicant must submit a development permit application, which at a minimum includes:

a. a written description of the proposed project;
b. detailed engineering design for any proposed shoreline works;
c. reports or information as listed in the relevant development permit guidelines; and
d. information in the form of one or more maps, as follows:
    i. location/extent of proposed work;
    ii. location of ocean high tide mark;
    iii. location of other watercourses;
    iv. topographical contours;
    v. location of slopes exceeding 25 percent grade;
    vi. location of lands subject to periodic flooding;
    vii. percentage of existing and proposed impervious surfaces;
    viii. existing tree cover and proposed areas to be cleared;
    ix. areas of known sensitive or rare native plant communities;

x. existing and proposed buildings;
xi. existing and proposed property parcel lines;
xii. existing and proposed roads, vehicular access points, driveways and parking areas;
xiii. existing and proposed trails;
xiv. existing and proposed stormwater management works, including retention areas and drainage pipes or ditches;
xv. existing and proposed erosion mitigation and bank alterations;
xvi. existing and proposed septic tanks, treatment systems and fields; and
xvii. existing and proposed water lines and well sites.

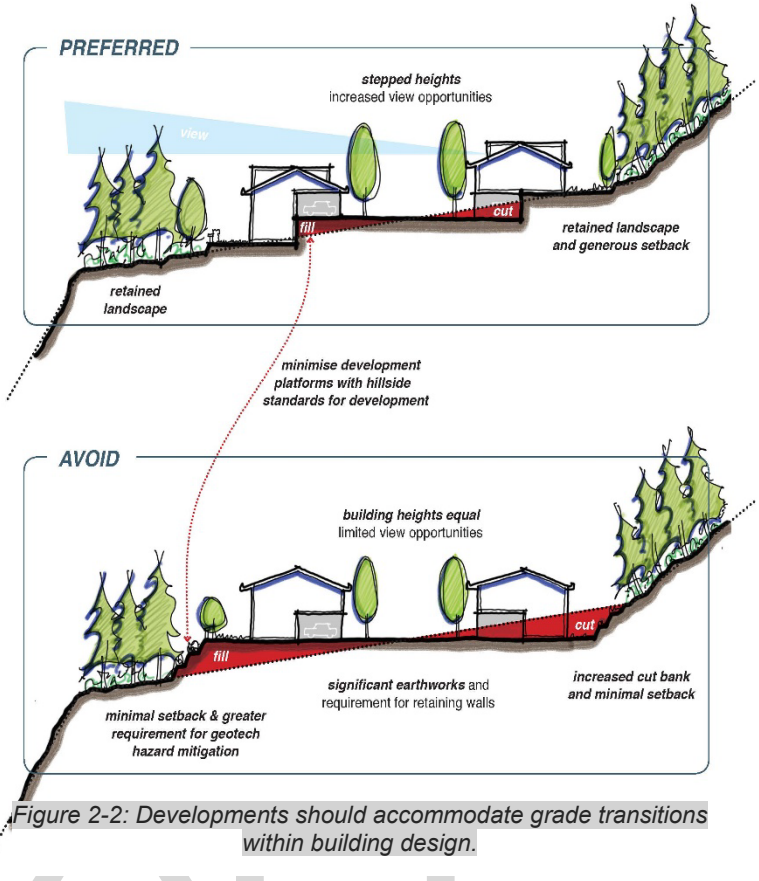


Figure 2-2: Developments should accommodate grade transitions within building design.

LH-AR2 Identify any lands that are subject to rock fall, sloughing or soil creep, or to damage from rock fall, sloughing or soil creep originating on or off the property. No permanent structures will be located on these lands unless the hazard can be adequately mitigated. Where applicable, the applicant must provide a report certified by a professional engineer with experience in geotechnical engineering which includes

a. a hydrogeological report containing an assessment of the suitability and stability of the soil for the proposed project, including information on soil depths, textures and composition;
b. a report on the safety of the proposed use and structures on-site and off-site, indicating that the land may be used safely for the use intended; and/or
c. a stormwater management plan, which includes an assessment of the potential impact of the development on the groundwater resource.

LH-AR3 Where applicable, the applicant must provide an environmental impact assessment, certified by a QEP, assessing any impacts of the project on watercourses and lands in the area.

Permit Guidelines

LH1. Construct works to protect development from the hazards as recommended in the assessment report.

LH2. Roads and driveways should be located as far as possible from the edge of a bluff or from the ocean shoreline.

Adapting Design to Natural Contours

LH3. Design all development to minimize alteration to steep slopes and to reflect the site rather than altering the site to reflect the development.

LH4. On sloping sites: design sites and buildings to step down with the natural grade of the site to minimize cuts and fills, retaining walls, artificial embankment of grade or extensive regrading; avoid large unbroken building masses that are unsuitable for sloped conditions.

LH5. Avoid or minimize terracing and design landscaping to follow the natural contours of the land.

Development Near Steep Slopes

LH6. Keep potential slope hazard areas free of development, or, if that is not possible, then
a. undertake mitigation measures to reduce risk to an acceptable level (risk for both the subject property and any adjacent or nearby lands should be addressed); and
b. adhere to conditions (for example, conditions relating to the permitted uses, density or scale of building) imposed as necessary to reduce potential hazard to acceptable levels, as determined by a QP in a preliminary or detailed assessment report.

LH7. Avoid construction of structures, pathways/trails, driveways, utilities, drainage facilities, septic fields, swimming pools, hot tubs, ponds, landscaping or other uses at or near the top or base of steep slopes. A minimum 10 m buffer area from the top or base of any steep slope should be maintained free of development except as otherwise recommended by a qualified professional. On very steep slopes, this buffer area should be increased.

Base of Slope Development

LH8. Do not undercut the base of slopes for building, landscaping or other purposes except in accordance with the recommendations of a qualified professional and a permit issued under this section.

LH9. For homes at the base of slopes, construct bedrooms on the downslope side of the home.

LH10. Design development to avoid the need for retaining walls, particularly to minimize cutting of the uphill slope. Large single plane retaining walls should be avoided. Where retaining walls are necessary, smaller sections of retaining wall should be used. Any retaining structures in steeply sloped areas must be designed by a qualified professional.

Vegetation, Fill, Landscaping

LH11. Site preparation should minimize the need for vegetation clearing. In order to control erosion and to protect the environment, the development permit may specify the amount and location of tree and vegetative cover to be planted or retained.

LH12. Maintain and/or reinstate vegetation on the slopes and within any buffer zone above the slopes in order to filter and absorb water and minimize erosion.

LH13. Do not place fill, including yard clippings, excavated material, sand or soil, within 10 m of the top of slopes or along pre-existing drainage channels.

LH14. Reinforce and revegetate disturbed slopes, especially where gullied or where bare soil is exposed. Planting should be done in accordance with the recommendations of a

landscape architect or registered professional forester.

LH15. Select native species, including trees, shrubs and other plants, for any new planting, and plant and/or retain tree cover in the amount/location specified by the development permit. *Gardening with Native Plants*, a publication of Habitat Acquisition Trust, includes a comprehensive list of native plant species.

Additional Guidelines for Saltair Bluffs (UDPA7.2)

LH 16. Driveway and surface runoff or other concentrated surface runoff should not be directed towards the crest of the bluff. Reduce potential slope instability by directing water through drains or pipes to the bottom of the bluff or a professionally-identified destination such as a stormwater storage area.

LH 17. Avoid installation of ponds, swimming pools and lawn irrigation systems in the area.

LH 18. Development should not involve dumping of soil or other material over the bluff edge.

LH 19. Consideration should be given prior to the removal of any vegetation, of interdependency effects where a group of plants living together protect each other from disturbance by wind, erosion and other natural processes.

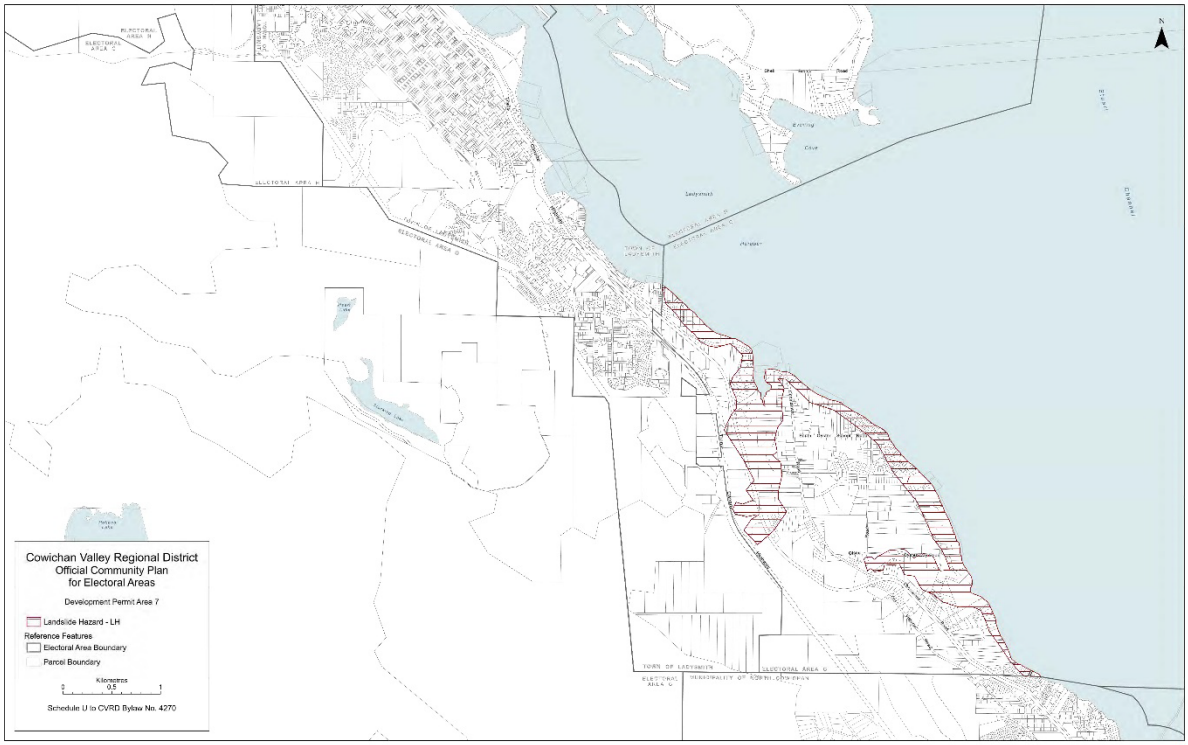
LH 20. Revegetation undertaken to promote slope stability should be designed and supervised by a landscape architect or other qualified person.

LH21. Native species identified for the coast by the Stewardship Centre for British Columbia Stewardship Centre for British Columbia. (2016). *Your Marine Waterfront – Canadian edition*, Stewardship Centre for British Columbia should be used for revegetation.

SCHEDULE B - MAP

Schedule B

UDPA7.2 Landslide Hazard - Area G (excluding the Gulf Islands)



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