

REGIONAL DISTRICT OF NANAIMO

BYLAW NO. 1469

Consolidated for convenience only up to and including December 2018

A BYLAW TO ESTABLISH FLOODPLAINS, CONSTRUCTION LEVELS IN FLOODPLAINS, AND SETBACKS FOR LANDFILL AND STRUCTURES IN FLOODPLAINS

WHEREAS Section 524¹ of the *Local Government Act* allows a local government to designate land as a floodplain; specify the flood level for that floodplain; and specify setbacks for landfill or structural supports within the floodplain;

AND WHEREAS the Regional District of Nanaimo has considered the Provincial Flood Hazard Area Land Use Management Guidelines, 2004, as amended from time to time.

NOW THEREFORE, the Board of the Regional District of Nanaimo, in open meeting assembled, enacts the following:

Short Title

1. This bylaw may be cited for all purposes as the “Regional District of Nanaimo Floodplain Management Bylaw No. 1469, 2006”.

Application

2. This Bylaw applies within the boundaries of the Regional District of Nanaimo Electoral Areas A, C, E, F, G and H.²

Repeal

- 3 "Regional District of Nanaimo Floodplain Management Bylaw No. 843, 1991" is hereby repealed.

Interpretation

4. For the purpose of this bylaw:

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. In marine coastal areas, the designated flood level includes the appropriate allowance for future sea level rise, tide and the total storm surge expected during the designated storm.³

¹ Bylaw 1469.02, adopted December 4, 2018

² Bylaw 1469.02, adopted December 4, 2018

³ Bylaw 1469.02, adopted December 4, 2018

Designated Storm means a storm that occurs in any given year, of such a magnitude as to equal a storm having the designated annual exceedance probability, where the probability of a particular event being equal or exceeded in any one year.⁴

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 a concrete slab for any Habitable Area. In the case of a Manufactured Home the Designated Flood Level is the Flood Construction Level for the top of the Pad.

Freeboard means a vertical distance added to the Designated Flood Level and is used to establish the Flood Construction Level.

Habitable Area means any room or space within a building or structure, which can be used for human occupancy, commercial sales, or storage of goods, possessions, or equipment (including furnaces) that would be subject to damage if flooded.

Landfill means the placement of soil, gravel or other material on the surface of land.

Manager means either the Manager of Inspection/Enforcement or the Manager of Community Planning of the Regional District of Nanaimo, the deputies of such persons appointed by the Regional District of Nanaimo, or another person appointed by the Regional District of Nanaimo to act in place of the Manager of Inspection/Enforcement or the Manager of Community Planning.

Manufactured Home means a structure manufactured as a unit, intended to be occupied in a place other than at its manufacture, and designed as a dwelling unit, and includes modular homes and mobile homes and specifically excludes recreation vehicles.

Natural Boundary means the visible high water mark of any lake, river, stream, the sea 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 upon the soil of the bed of the lake, river, stream, the sea or other body of water a character distinct from that of the banks thereof, in respect of vegetation, as well as in respect to the nature of the soil itself. In addition, the Natural Boundary includes the best estimate of the edge of dormant or old side channels and marsh areas.

Pad means a surface on which blocks, posts, runners or strip footings are placed for the purpose of supporting a Manufactured Home, or other Habitable Area.

Professional Engineer means a person who is registered or licensed under the provisions of the Engineers and Geoscientists Act.

Regional District means the Regional District of Nanaimo.

Sea means The Strait of Georgia.⁵

⁴ Bylaw 1469.02, adopted December 4, 2018

⁵ Bylaw 1469.02, adopted December 4, 2018

Setback means the required minimum distance, measured horizontally, that a structural support or landfill, required to elevate a floor system or Pad above the Designated Flood Level, must be separated from the Natural Boundary to maintain a floodway and to allow for potential erosion.

Watercourse means any natural or man-made depression with well-defined banks and a bed 0.6 metres or more below the surrounding land serving to give direction to, or acting as a retention area for, a current of water that flows at least six months of the year or drains an area of 2 square kilometers or more upstream of the point of consideration.

Severability

5. If any Section, subsection, sentence, clause or phrase of this Bylaw is for any reason held to be invalid by the decision of any court of competent jurisdiction, the invalid portion shall be severed and the decision that it is invalid, shall not affect the validity of the remaining portions of the Bylaw.

Enforcement

6. Every person who violates any provision of this Bylaw; causes or permits an act or thing to be done in violation to any provision of this Bylaw; neglects or omits to do anything required by this Bylaw; or fails to comply with an order, direction or notice made or delivered under this Bylaw commits an offence and is liable, upon conviction, to the penalties prescribed under this Bylaw and the *Offence Act*.
7. The Manager may enter, at all reasonable times, upon any premises to inspect and determine whether all regulations, prohibitions and requirements are being met, in accordance with Section 268 and 314.1 of the *Local Government Act* and Section 16(1) to (5) of the **Community Charter**.
8. Any person who violates any provision of this bylaw shall, upon summary conviction, be liable to a penalty of up to \$5,000.00 per offence.
9. Each day that an offence occurs constitutes a separate offence.

No Representations

10. By the enactment, administration or enforcement of this Bylaw, or the granting of a site specific exemption, the Regional District does not represent to any person that any building or structure, including a Manufactured Home, located, constructed, or used in accordance with the regulations of this Bylaw or in accordance with any advice, information, direction or guidance provided by the Regional district in the course of administration of this Bylaw will not be damaged by flooding.

General Prohibitions

11. No person shall construct, build, erect, or place, or allow to be built, erected, or placed any building or structure contrary to the provisions of this bylaw.

Floodplain Designations

12. The following lands are designated as flood plain.

- a. Land identified as floodplain on the Nanaimo River Floodplain maps (drawings No. 84-29-1, 84-29-2, and 84-29-3, dated May 1984) attached to and forming part of this Bylaw as Schedule A.
- b. Land identified as floodplain on the Little Qualicum River Floodplain map (Map No. 92F, dated September 30, 1997) attached to and forming part of this Bylaw as Schedule B.
- c. Land identified as floodplain on the Englishman River Floodplain maps (drawings No. 85-23-1, 85-23-2, 85-23-3, 85-23-4, 85-23-4, 85-23-5, 85-23-6, 85-23-7, dated April 1980) attached to and forming part of this Bylaw as Schedule C.
- d. Land within the floodplain Setbacks specified in Section 13 of this Bylaw.
- e. Land lower than the Flood Construction Levels specified in Section 14 of this bylaw.

Setback Requirements

13. Unless specified elsewhere in this Bylaw, and subject to Section 524(6)⁶ of the *Local Government Act*, no landfill or portion of a landfill slope, or structural support required to support a floor system or Pad above the Designated Flood Level, shall be constructed, reconstructed, moved, extended or located:

- a. within thirty (30) metres from the Natural Boundary of the Englishman River, Little Qualicum River, Millstone River, Nanaimo River or French Creek;
- b. within fifteen (15) metres from the Natural Boundary of any other Watercourse including a lake, marsh, or pond;
- c. within fifteen (15) metres from the Natural Boundary of the sea;⁷
- d. where a building site is at the top of a bank that is 30 degrees or more from horizontal and where the toe of the bank is subject to erosion and is closer than 15 metres from a Natural Boundary, the Setback shall be a horizontal distance from the top of bank equal to 3 times the height of the bank as measured from the toe of the bank;⁸
- e. on existing lots where the sea frontage is protected from erosion by a natural bedrock formation, the property owner may apply to modify the setback requirements as recommended by a professional engineer that demonstrates that future coastal influences have been considered, and includes a liability disclaimer. If approved, a restrictive covenant would be registered under Section 219 of the *Land Titles Act*, which include indemnity in favour of the Regional District⁹.

⁶ Bylaw 1469.02, adopted December 4, 2018

⁷ Bylaw 1469.02, adopted December 4, 2018

⁸ Bylaw 1469.02, adopted December 4, 2018

⁹ Bylaw 1469.02, adopted December 4, 2018

Flood Construction Level

14. Subject to Section 524(6) of the *Local Government Act*, no building, structure (including a Manufactured Home), or any part thereof, shall be constructed, reconstructed, moved, extended, or located, where the underside of any wooden floor system or top of a slab or Pad of any Habitable Area is located below:

- a. the Flood Construction Level for a specific parcel, as determined by interpolation from those flood construction levels shown for land identified as floodplain on:
 - i. The Nanaimo River Floodplain maps (drawings No. 84-29-1, 84-29-2, and 84-29-3, dated May 1984) attached to and forming part of this Bylaw as Schedule A;
 - ii. The Little Qualicum River Floodplain map (drawing No. 93-11-1, dated September 30, 1997) attached to and forming part of this Bylaw as Schedule B; and,
 - iii. The Englishman River Floodplain maps (drawings No. 85-23-1, 85-23-2, 85-23-3, 85-23-4, 85-23-4, 85-23-5, 85-23-6, 85-23-7, dated April 1985) attached to and forming part of this Bylaw as Schedule C;

or where such mapping is not available;

- b. three (3) metres above the Natural Boundary of the Englishman River, Little Qualicum River, Milestone River, Nanaimo River, and French Creek, where that land is within a distance of 200 metres of that Watercourse; and,
- c. one and one half (1.5) metres above the Natural Boundary of any other Watercourse, as well as a lake, a marsh or a swamp where that land is within a distance of 100 metres of that Watercourse, a lake, a marsh or a swamp.
- d. ¹⁰for all applications for new building and construction within marine coastal areas, within a distance of 100 meters of the sea that are subject to, or likely to be subject to, flooding resulting from high tides, storm surges and wave effects, the property owner is to provide a report from a professional engineer:
 - i. to confirm that the land may be used safely for the intended purpose, where the Flood Construction Level is based on a minimum allowance for future sea level rise to the year 2100, and
 - ii. be prepared in accordance with the Provincial Flood Hazard Area Land Use Management Guidelines and the Engineers and Geoscientists of BC's Professional Practice Guidelines - Legislated Flood Assessments in a Changing Climate, as amended from time to time.

15. Subject to Section 13 of this Bylaw the required elevation may be achieved by structural elevation of the said Habitable Area, and/or by the placement of compacted landfill on which any building or structure is to be located. Any structural support or compacted landfill shall be protected from scour and erosion, and an engineer must certify the suitability of the landfill or structure for the intended use.

¹⁰ Bylaw 1469.02, adopted December 4, 2018

16. Subject to Section 14, except as permitted in Section 18 of this Bylaw, prior to a Building Permit being issued, a Section 219 covenant may be registered on the title of the property with the professional engineer's report attached. The covenant shall notify future owners of the property of the susceptibility to flooding, and hold the RDN harmless from future claims and damages.¹¹

Construction Design and Wetproofing¹²

17. Subject to Section 14 of this Bylaw, general requirements for design considerations in wetproofing are as follows:

- a. For buildings constructed on a designated floodplain, construction of the buildings to flood construction level requirements shall be achieved under the supervision of a professional engineer, and to the satisfaction of the Manager, by:
 - i. the structural elevation of the floor system of the Habitable Area of the building,
 - i. the use of adequately compacted fill, or
 - ii. a combination of structural elevation of the Habitable Area and compacted fill protected from scour and erosion, and an engineer must certify the suitability of the landfill or structure for the intended use.
- b. No person shall install furnaces, electrical switchgear, electrical panels, fire protection systems or other fixed building services susceptible to flood damage, below the flood construction level, unless such services are protected from flood damage and accessible for servicing during a flood, to the satisfaction of the Manager.

General Flood Construction Level Exemptions¹³

18. Section 524(6)(a) of the Local Government Act and Section 14 of this Bylaw do not apply to:

- a. a renovation of an existing building or structure that does not involve an addition thereto;
- b. minor addition to existing buildings or structures, at the original non-conforming floor elevation, to a maximum of 25 percent of the existing ground¹⁴ floor area that was existing on February 11, 1992, if:
 - ii. the number of dwelling units is not increased,
 - iii. there is no further encroachment into the setback area required by this Bylaw, and
 - iv. there is no further reduction in the Flood Construction Level.
- c. a building or that portion of a building to be used for non-habitable uses, including a garage or carport;

¹¹ Bylaw 1469.02, adopted December 4, 2018

¹² Bylaw 1469.02, adopted December 4, 2018

¹³ Bylaw 1469.02, adopted December 4, 2018

¹⁴ Bylaw 1469.01, adopted July 28, 2009

- d. a non-residential accessory building or structure, such as wood shed, recreational shelter, and other outdoor recreational facilities not susceptible to flood damage;
- e. on-loading and off-loading facilities associated with water oriented industry and portable sawmills provided the main electrical switchgear is placed above the Flood Construction Level;
- f. that portion of a building used as crawl space (not exceeding 1.5 metres in height);
- g. farm buildings other than dwelling units and closed sided livestock housing;
- h. closed sided livestock housing provided that the underside of the floor system or the top of a slab or Pad of any area to be occupied by livestock is located no lower than 1.0 metre above the natural ground elevation taken at any point on the perimeter of the building, or no lower than the Flood Construction Levels specified in this Bylaw, whichever is the lesser.

Site Specific Exemption Applications

- 19. Pursuant to Section 524(7)¹⁵ of the Local Government Act a person may make application to the Board to exempt a specific parcel of land or a use, building or other structure on that parcel of land, from Section 524(6)¹⁶ of the Local Government Act and this bylaw provided that a complete application is made to the Manager on the application form prescribed by the Manager.
- 20. The Board of the Regional District of Nanaimo may exempt a person from the application of Section 524(6)¹⁷ of the *Local Government Act* or this Bylaw, in relation to a specific parcel of land or a use, building or other structure on the parcel of land where:
 - a. the Board considers the proposed exemption advisable;
 - b. a professional engineer or geoscientist with experience in geotechnical engineering certifies that the property can be safely used for the intended use and, certifies protection from a 1 in 200 year flood for riverine systems can be achieved, and where applicable, protection from sea level rise to year 2100;¹⁸
 - c. the professional engineer or geoscientist providing the certification required under Section 20.b. of this Bylaw, provides a completed Flood Hazard and Risk Assurance Statement and information identified in Schedule D; and¹⁹
 - d. the owner grants a restrictive covenant under Section 219 of the Land Title Act respecting the use and development of the land which includes an indemnity in favour of the Regional District to indemnify and save harmless the Regional District against any loss or damage with respect to the flooding to the property, or flood damage to the land, structures and contents thereof, or any injury (including death) to any person or animal arising from the flooding of the property or flood damage to the land.

¹⁵ Bylaw 1469.02, adopted December 4, 2018

¹⁶ Bylaw 1469.02, adopted December 4, 2018

¹⁷ Bylaw 1469.02, adopted December 4, 2018

¹⁸ Bylaw 1469.02, adopted December 4, 2018

¹⁹ Bylaw 1469.02, adopted December 4, 2018

Schedule 'D' to accompany "Regional District of Nanaimo Floodplain Management Bylaw No. 1469, 2006"

Chairperson

Deputy Administrator

Schedule "D"

Information Required with a Site Specific Exemption Application

1. Quality Assurance Statement²⁰

The Professional Engineer should carry out quality assurance/quality control for all phases the investigation in the preparation of a flood hazard assessment report.

- (1) An assessment report is required to confirm that the land may be used safely for the intended use without undue risk of hazards. The professional engineer shall inspect the property, supervise the site investigation and the assessment report shall clearly state all relevant restrictions, conditions and/or limitations to the proposed development of the land.
- (2) The report is to be prepared in accordance with the BC Provincial Flood Hazard Area Land Use Management Guidelines and the Engineers and Geoscientists of BC Professional Practice Guidelines - Legislated Flood Assessments in a Changing Climate in BC, August 2018, as amended from time to time.
- (3) The report is to be accompanied with a completed Flood Assurance Statement. The Statement is to be read and completed in conjunction with the Engineers and Geoscientists BC Professional Practice Guidelines – Legislated Flood Assessment in a Changing Climate BC, as amended from time to time.

2. General Requirements

- (1) *Legal Description of the property.*
- (2) *General Location map of the property.*
- (3) *Detailed map of the property showing property boundaries, safe areas for development, watercourses, topography and physical features.*

²⁰ Bylaw 1469.02, adopted December 4, 2018

- (4) *Evaluate the development plans for the property using the relevant Regional District land use and subdivision bylaws and Development Permit guidelines to determine the suitability of the land to accommodate the use intended.*²¹
- (5) *Statement of conformance to the "Floodplain Management Bylaw No. 1496", and Provincial Guidelines.*
- (6) *Review of all relevant restrictive covenants registered on title (copies of covenants, if relevant, should be attached to the report.)*
- (7) *Review of all relevant previous reports and flood hazard maps affecting the site and surrounding area.*
- (8) *Review of current and historical air photos.*
- (9) *Description of site visits and observations.*
- (10) *Review of historical flood information including stream flow data, climate data and local observations.*
- (11) *Assessment of the nature extent, magnitude, frequency and potential effect of all flood or debris flow hazards that may affect the property.*
- (12) *Description of the scientific methodology(s) and assumptions used to undertake the assessment in sufficient detail to facilitate a professional review.*
- (13) *The location of all proposed building sites and specified setback distances. (Maps must be delineated with sufficient accuracy and detail to allow the preparation of a legal reference plan for attachment to a restrictive covenant).*²²
- (14) *Recommendations to ensure safe use of a site. (These should be clearly stated with sufficient detail and clarity to be included in a Land Title Act, Section 219 Covenant).*
- (15) *Description of proposed mitigation works and/or actions designed to mitigate the hazard with confirmation that the Provincial²³ Guidelines have been considered.*
- (16) *Where mitigation works and or actions area proposed, an assessment of the effects that the proposed works and or actions may have on other properties including public infrastructure.*
- (17) *Where mitigative works and or actions designed to reduce hazards are contemplated, prior to completing the report and expending time and money on the detailed design the proponent should confirm that the works and or actions proposed will be accepted by local government and that they would meet regulatory Provincial requirements and will be approved by the Inspector of Dikes.*

²¹ Bylaw 1469.02, adopted December 4, 2018

²² Bylaw 1469.02, adopted December 4, 2018

²³ Bylaw 1469.02, adopted December 4, 2018

- (18) *Where floodplain maps are used to recommend FCLs, document which map was used.*
- (19) *Where an existing FCL shown on a floodplain map is deemed inappropriate, or where a new FCL is recommended, provide details of the calculation and confirmation that the Provincial²⁴ Guidelines were considered in the process.*
- (20) *For property adjacent to or within a meandering and/or braided river floodplain, use air photos, maps and other information to describe and assess relevant ongoing river processes that may pose a hazard to the property.*
- (20) *When recommending the use of minimum setback and elevation guidelines for smaller streams, provide a map of the stream watershed area used to determine.*

²⁴ Bylaw 1469.02, adopted December 4, 2018