

**BOWEN ISLAND MUNICIPALITY**

**BYLAW NO. 301, 2011**

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A Bylaw to amend Land Use Bylaw No. 57, 2002

*A bylaw to establish development permit guidelines, and the conditions under which a Development Permit would not be required, for development within a Watershed, Aquifer, and Stream Protection Development Permit Area*

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WHEREAS, “Bowen Island Municipality Official Community Plan Bylaw No. 282, 2010”, has designated a Development Permit Area for development within Watershed, Aquifer, and Stream Protection Area;

AND WHEREAS Sections 919.1 and 920 of the *Local Government Act* allows Guidelines and Exemptions for Development Permit Areas to be specified in the Land-Use Bylaw;

AND WHEREAS the *Fish Protection Act* requires that a local government include in its land use bylaws riparian area protection provisions in accordance with the *Riparian Area Regulation*;

AND WHEREAS, Council wishes to amend “Bowen Island Municipality Land Use Bylaw No. 57, 2002” in order to establish development permit guidelines, and the conditions under which a Development Permit would not be required, for development within a Watershed, Aquifer, and Stream Protection Development Permit Area;

NOW THEREFORE the Council of the Bowen Island Municipality in open meeting assembled enacts as follows:

1. This Bylaw may be cited as the “Bowen Island Municipality Land Use Bylaw No. 57, 2002, Amendment Bylaw No. 301, 2011.”
2. Part 1, Section 1.1 of Schedule A of Bylaw No. 57, 2002 is hereby amended by inserting the following definitions alphabetically:  
“**AQUIFER**” means a geological formation, a group of geological formations, or a part of one or more geological formations, that is water bearing and capable of storing, transmitting and yielding water.  
“**COMMUNITY WATERSHED**” means the area upstream of the most downstream water intake, licensed under the Water Act for domestic purposes, of a *water works system*.

**“ENVIRONMENTAL MANAGEMENT PLAN”** means a stand-alone document or a part of a report prepared by a qualified professional, describing environmental protection measures to be implemented for the purpose of controlling erosion and sedimentation; managing storm water runoff; managing vegetation, wildlife, fish and habitat; and a plan for monitoring the proper implementation of said measures, as appropriate.

**“LEAVE STRIP”** and **“LEAVE AREA”** means the area along a water body that is to be left in an undisturbed state, throughout and after development, for the purpose of protecting aquatic and riparian habitat, water resources or slope stability.

**“QUALIFIED PROFESSIONAL”** means an applied scientist or technologist, acting alone or together with another *qualified professional* on behalf of the applicant or the Bowen Island Municipality. He or she must be registered and in good standing in British Columbia with an appropriate professional organization constituted under an Act, practicing under that association’s code of ethics and subject to disciplinary action by that association. The applicable professional may be a professional Biologist, Agrologist, Forester, Geoscientist, Engineer, Arborist or Technologist, as appropriate. The individual’s area of expertise must be recognized by Bowen Island Municipality as one that is acceptable for the purpose of providing all or part of an evaluation report in respect of the particular development proposal that is under consideration.

**“SUSTAINABLE USE OF NATURAL RESOURCES”** means the use of renewable natural resources at a rate that does not exceed the resource’s capacity for regeneration, does not impair the resource’s ecological functions and services, and does not jeopardize the ability of future generations at the same location to enjoy the resource in equal abundance. Sustainable use includes, for example, planting to replace the trees or other vegetation that is harvested or otherwise removed.

**“WATER RESOURCE PROTECTION AREA”** means an area adjacent to a watercourse, lake, pond, wetland, spring or well that links to drinking or irrigation or other approved water supplies and includes both existing and potential sources, aquifers, riparian vegetation and existing and potential upland vegetation that exert an influence on the water supply, the width of which includes the water source and the area measured:

- a. perpendicularly and horizontally:
  - i. from the high water mark of a watercourse that is not in a *ravine* to a distance of 30 metres from the top of bank of a watercourse;
  - ii. from the high water mark of a watercourse in a *ravine* less than 60 metres wide, to a distance of 30 metres beyond the *top of the ravine bank*; or
  - iii. from the high water mark of a watercourse in a *ravine* that is 60 metres wide or greater to a distance of 10 metres beyond the top of the ravine bank;
- b. from the normal high water mark of a lake, pond, wetland or spring to a distance of 30 metres;

- c. from a surface water intake to a distance of 30 metres measured up-gradient from the intake and no closer than 5 m down-gradient or the top of bank of a watercourse; and
  - d. for all other surface water bodies used for water supply, an area encompassing the water body and a strip 30 metres around the water body measured from the natural boundary of the water body.
3. Part 7, Section 7.2 of Schedule A of Bylaw No. 57, 2002 is hereby amended by replacing Section 7.2 Watershed and Stream Development Permit Area with the following:

**“Part 7.2 – WATERSHED, AQUIFER AND STREAM PROTECTION  
DEVELOPMENT PERMIT AREA**

Guidelines

A Development Permit may be required for development activities proposed within Watershed, Aquifer and Stream Protection Areas as identified on Schedules B-3, B-3A, B-4 and B-4A of *Bowen Island Municipality Official Community Plan Bylaw No. 282, 2010* or as identified in an evaluation report prepared by a *qualified professional*. Development permits issued for properties containing Watershed, Aquifer and Stream Protection Areas as identified on Schedules B-3, B-3A, B-4 and B-4A of *Bowen Island Municipality Official Community Plan Bylaw No. 282, 2010* shall be in accordance with the guidelines set out in sections A and B below.

If the property is located in more than one Development Permit Area, only one Development Permit, containing conditions based on guidelines in all applicable Development Permit Areas, is required.

**A. Fish and Riparian Protection Area**

- 1) The terminology used in Section A of Part 7.2 follows the definitions contained within the Province of British Columbia’s *Riparian Areas Regulation of the Fish Protection Act*.
- 2) This designation follows the *Riparian Areas Regulation of the Fish Protection Act*. The *fish and riparian protection area* designation applies to any *riparian assessment areas* and, without limitation, includes areas within and adjacent to those mapped *streams* shown on Schedules B-3 and B-3A of the *Bowen Island Municipality Official Community Plan Bylaw No. 282, 2010* and to all mapped and unmapped *streams* that either provide *fish habitat* or flow to a freshwater body that provides *fish habitat*, including the following *stream riparian assessment areas*:

- a. For a *stream* that is not in a *ravine*, the 30 metre wide strip on both sides of the *stream*, measured from the high water mark;
  - b. For a *ravine* less than 60 metres wide, a strip on both sides of the *stream* measured from the high water mark to a point that is 30 metres beyond the *top of the ravine bank*;
  - c. For a *ravine* 60 metres wide or greater, a strip on both sides of the *stream* measured from the high water mark to a point that is 10 metres beyond the *top of the ravine bank*;
  - d. For all other water bodies, an area encompassing the water body and a strip 30 metres around the water body measured from the natural boundary of the water body; and
  - e. Where there is uncertainty or a discrepancy regarding the width of *ravine* or the presence of an unmapped *stream*, this shall be determined by a *qualified environmental professional (QEP)* and a licensed British Columbia Land Surveyor at the expense of the applicant.
- 3) The *Riparian Areas Regulation* establishes the *riparian assessment areas* as described above for the following *streams* and lakes known to have fish present: Davies Creek, Terminal Creek, Grafton Lake, Bowen Brook, Harding Creek, Killarney Creek, Killarney Lake, Guild Creek, Grafton Creek, Malkin Creek, Explosives Creek, Josephine Creek, Lee Creek, and their tributaries.
- 4) An *assessment report* prepared by a *qualified environmental professional* in accordance with the *Riparian Areas Regulation* is required in support of a development permit application and for issuance of a Development Permit where development, as defined in the *Riparian Areas Regulation*, is proposed for land that includes a *riparian assessment area*. The *assessment report* must identify the width of the *streamside protection and enhancement area (SPEA)* to be protected, and describe measures necessary to protect the integrity of the *streamside protection and enhancement area*. The *qualified environmental professional* must:
- a. Certify he or she is qualified to conduct the assessment;
  - b. Certify he or she has followed the assessment methods set out in the Schedule to the *Riparian Areas Regulation*;
  - c. Provide:
    - i. an opinion that, if the development is implemented as proposed, no natural features, functions or conditions that support fish life processes in the riparian assessment area will be harmfully altered, disrupted or destroyed; and
    - ii. a copy of the assessment report to Fisheries and Oceans Canada and the British Columbia Ministry of Environment;

- d. If the *qualified environmental professional* is of the opinion that a development, if implemented as proposed, is likely to result in a Harmful Alteration, Disruption or Destruction (HADD) of natural features, functions, and conditions that support fish life processes in the *riparian assessment area*, authorization from Fisheries and Oceans Canada must be obtained in accordance with the *Fisheries Act* in order for the development to proceed;
- 5) The proposed developments and timing of construction should:
    - a. avoid and minimize any damaging impact on the natural features, functions and conditions of the *streamside protection and enhancement areas*; and
    - b. avoid and minimize the area of encroachment into the *streamside protection and enhancement areas*;
  - 6) Where the proposed development activity is limited to the limbing, pruning, cutting, falling or removal of one or more trees within a *streamside protection and enhancement area*, the only development permit guideline applicable is the presentation of a supporting report by a *qualified environmental professional* acceptable to the Municipality.
  - 7) Development permits issued may require that:
    - a. areas of land, specified in the permit, must remain free of development, except in accordance with any conditions contained in the permit;
    - b. specified natural features or areas be preserved, protected, restored or enhanced in accordance with the permit;
    - c. works be constructed to preserve, protect, restore or enhance streams or other specified natural features of the environment;
    - d. protection measures be implemented, including that vegetation or trees be planted or retained in order to preserve, protect, restore or enhance fish habitat or riparian areas, control drainage, control erosion or protect banks; and
    - e. a reference plan prepared by a BC Land Surveyor that delineates the identified *streamside protection and enhancement area*; and
  - 8) In the event that the assessment report outlined above confirms that the water body does not provide fish habitat, it is not necessary for the *qualified environmental professional* to file his or her report with the Ministry of Environment to the extent set out under the *Riparian Areas Regulation*.

## **B. Water Resource Protection Areas**

- 1) For the purpose of Section B of Part 7.2, the terms *riparian* and *stream*, in addition to their definitions under the *Riparian Areas Regulation* of the *Fish Protection Act*, also apply to water bodies that do not contain fish habitat.

- 2) This designation includes all *water resource protection areas* shown on Schedules B-4 and B-4A of the *Bowen Island Municipality Official Community Plan Bylaw No. 282, 2010* and to all mapped and unmapped *water resource protection areas*. Where there is uncertainty or a discrepancy regarding the presence of an unmapped *water resource protection area*, this shall be determined by a *qualified professional* retained by the applicant.
- 3) Disturbance to wetlands, lakes, ponds, springs and watercourses and their watersheds and riparian zones, and groundwater recharge areas, must be avoided or mitigated wherever possible. Where riparian areas are disturbed, subject to approval of other agencies having jurisdiction, compensation equal to at least 100% of the disturbed area or functional equivalent may be required, in accordance with the requirements of applicable Provincial and Federal legislation.
- 4) Areas within this Development Permit Area designation shall remain free of development except in accordance with conditions of the Development Permit which are subject to the following guidelines:
  - a. Bowen Island Municipality recognizes that trees and other forest vegetation are a renewable natural resource that can be managed sustainably. Land owners are encouraged to manage the trees and other native vegetation - including harvesting for firewood or other uses, or limbing, pruning, cutting, falling or removal of trees to create or maintain views, protect utility cables, and other such purposes - in a manner that is consistent with the *sustainable use of natural resources*.
  - b. In order to assist the Municipality in determining conditions or requirements to be included in a Development Permit, the applicant may be required to provide, at the owner's expense, a report prepared by a *qualified professional* to indicate that any proposed buildings, structures, land alteration, roads, driveways, parking areas, excavation or other proposed development which may cause an impermeable surface or alteration to an existing drainage pattern shall not:
    - i. increase the rate of water drainage beyond that existing prior to any new development of the land;
    - ii. introduce a volume of material whether solids, suspended material, or dissolved material into existing surface water in levels above that existing prior to any new development of the land;
    - iii. introduce new or different material into existing surface water or groundwater;
    - iv. cause any potential erosion of soil or contribute to any land slip, rock fall, mud flow or debris torrents which may adversely affect the quality or quantity of water resources or supplies.

- c. The *qualified professional's* report, if required, should include an inventory of site characteristics and assessment of the proposed development including:
  - i. location of all surface water, water intakes and wells;
  - ii. terrain characteristics, including groundwater recharge areas;
  - iii. an impact statement describing the effects of the proposed development on natural conditions in relation to the maintenance of water resources and supplies;
  - iv. an *environmental management plan* including guidelines for mitigating impacts on water quality and quantity, including limits of recommended *leave strips*; and
  - v. recommendations for restoring, providing compensation or enhancing *water resource protection areas* where such needs or opportunities are identified.
- d. Clearing, unless requested by the BC ministry responsible for environment, and grubbing or altering of grades in the proposed *leave strip* are not permitted unless exempted under this bylaw or any prevailing Provincial and Federal legislation.
- e. The application shall include design details of the proposed mitigating measures in an *environmental management plan*.
- f. Current Provincial and Federal guidelines regarding erosion and sedimentation control, storm water management, work in or about a watercourse, construction practices, construction timing and re-vegetation shall apply, where appropriate.
- g. If recommended as part of a report by a *qualified professional*, restriction of access to sensitive *water resource protection areas*, or the provision of fencing around them, may be required.
- h. The *environmental management plan* provided as part of the application shall, where appropriate, describe:
  - i. erosion and sedimentation controls to be employed. Measures might include retention of existing vegetation, re-vegetation, use of diversion swales, silt fencing, settlement ponds, temporary tarping or other ground covers, careful scheduling of any construction, and other measures;

- ii. storm water management measures to be employed. Storm water detention for the site and outfalls to the receiving environment shall meet the minimum requirements of any current Provincial and Federal guidelines, as appropriate. Storm water management should use infiltration systems that provide retention of runoff through groundwater recharge, where possible, in addition to runoff peak flow control; and
  - iii. a vegetation management plan indicating the extent of proposed *leave strip* around the *water resource protection area*, and any proposed management of the vegetation in the *leave strip*. Re-vegetation within and adjacent to *leave areas* should be carried out with native or non-invasive species appropriate to the site.
- i. Existing ditches constructed for storm water management purposes that flow into watercourses may be reviewed for compliance with any Provincial and Federal guidelines and remediated where necessary, based on the recommendations of a *qualified professional* acceptable to the Municipality.
  - j. Instream work and watercourse crossings shall meet or exceed the requirements of any prevailing Federal and Provincial regulations and guidelines.
  - k. Bonding or other acceptable security may be required for up to 150 percent of the value of the erosion control and environmental management work.
  - l. Environmental monitoring during construction followed by presentation of a report by a *qualified professional*, confirming that the necessary mitigation measures have been implemented substantially as designed, may be required.
- 5) Development shall be phased in accordance with the terms of a Development Permit to alleviate impacts upon the special conditions of this site, including but not limited to:
- a. minimizing land disturbance in areas subject to possible erosion during periods of high rainfall or surface runoff;
  - b. minimizing diversion of existing surface watercourses and flows; and
  - c. maximizing groundwater recharge where appropriate.
- 6) Variances to the siting of development in relation to the distance from a *water resource protection area* boundary may be included in a Development Permit subject to the recommendations of a *qualified professional*, compliance with any Provincial and Federal laws and regulations, and the approval of the Municipality.



## Exemptions

Where an owner/applicant asserts that his or her property does not contain a fish-bearing stream or tributary as shown on Schedule B-3 and B3-A, or a *water resource protection area* as shown on Schedule B-4 and B4-A, a Development Permit will not be required if this assertion is confirmed through an inspection by Municipal staff or by a *qualified environmental professional* or *qualified professional* retained by the Municipality.

The following activities in a Watershed, Aquifer and Stream Protection Development Permit Area are exempted from the requirements to obtain a Development Permit:

- 1) Subdivision of land that:
  - a. consolidates lots;
  - b. is subject to a covenant to which the Municipality is a grantee that establishes that there shall be no alteration of the land from that which existed prior to the subdivision; and/or
  - c. is subject to a conservation covenant satisfactory to and in favour of Bowen Island Municipality, Government of British Columbia, Government of Canada, the Islands Trust Fund, or another conservation agency which is registered for the protection of aquatic and riparian habitat or water resources.
- 2) Alterations to an existing building or structure if construction involves interior renovations or exterior renovations that do not change the structural footprint or disturb the existing grade and natural soil conditions, and provided that the construction does not intrude upon the required *leave strip*.
- 3) Clearing of trees and other vegetation within a *water resource protection area*, for fire protection within 30 metres from a dwelling, creating or expanding a residential vegetable garden or orchard regardless of size, and farming in agriculturally designated lands, provided that water resources are not adversely affected. (See also Exemption 10 below.)
- 4) Planting of native trees, shrubs, or groundcovers for the purpose of enhancing the habitat values and/or soil stability within the development permit area.
- 5) Ecological restoration and enhancement projects undertaken or authorized by Bowen Island Municipality or another public body.
- 6) Any maintenance activities carried out by, or on behalf of, Bowen Island Municipality that are designed to protect and enhance existing road networks and public trails.

- 7) The repair and maintenance of existing private roads, driveways, paths and trails, provided there is no expansion of the width or length of the road, driveway, path or trail, and no creation of additional impervious surfacing, including paving, asphaltting or similar surfacing, and the stability of the watercourse bank is maintained or enhanced.
- 8) Emergency actions to prevent, control, or reduce immediate threat to life or property, including, without limitation: the removal of any hazardous trees; fire suppression; flood protection; erosion protection; land slip events; and the clearing of any obstruction in a watercourse if the action is reported to the Municipality within two business days. Post-emergency rehabilitative planting may be required in accordance with other provisions of this Bylaw.
- 9) Development of land where a conservation covenant satisfactory to and in favour of Bowen Island Municipality, Government of British Columbia, Government of Canada, the Islands Trust Fund or another conservation agency is registered for the protection of aquatic and riparian habitat or water resources and the proposed development is outside of and does not adversely affect the covenant area or another *fish and riparian protection area* or *water resource protection area*.
- 10) Agricultural use conducted in a manner consistent with “normal farm practice” as defined in the *Farm Practices Protection (Right to Farm) Act*.
- 11) Quarrying activities regulated by the *Mines Act*.
- 12) The Provincial public health authority directs that a sewage disposal system shall be upgraded, altered or repaired to remedy a health hazard as defined by the Sewage Disposal Regulation or Health Act.
- 13) The Provincial public health authority or *qualified professional* supervises the digging of soil percolation test pits to determine in-ground sewage disposal system capacity.”

**READ A FIRST TIME** this 24<sup>th</sup> day of May, 2011

**READ A SECOND TIME AS AMENDED** this 13<sup>th</sup> day of June, 2011

**PUBLIC HEARING HELD** this 9<sup>th</sup> day of July, 2011

**READ A THIRD TIME** this 19<sup>th</sup> day of September, 2011

**RECONSIDERED and FINALLY ADOPTED** this 26<sup>th</sup> day of September, 2011

(ORIGINAL SIGNED)

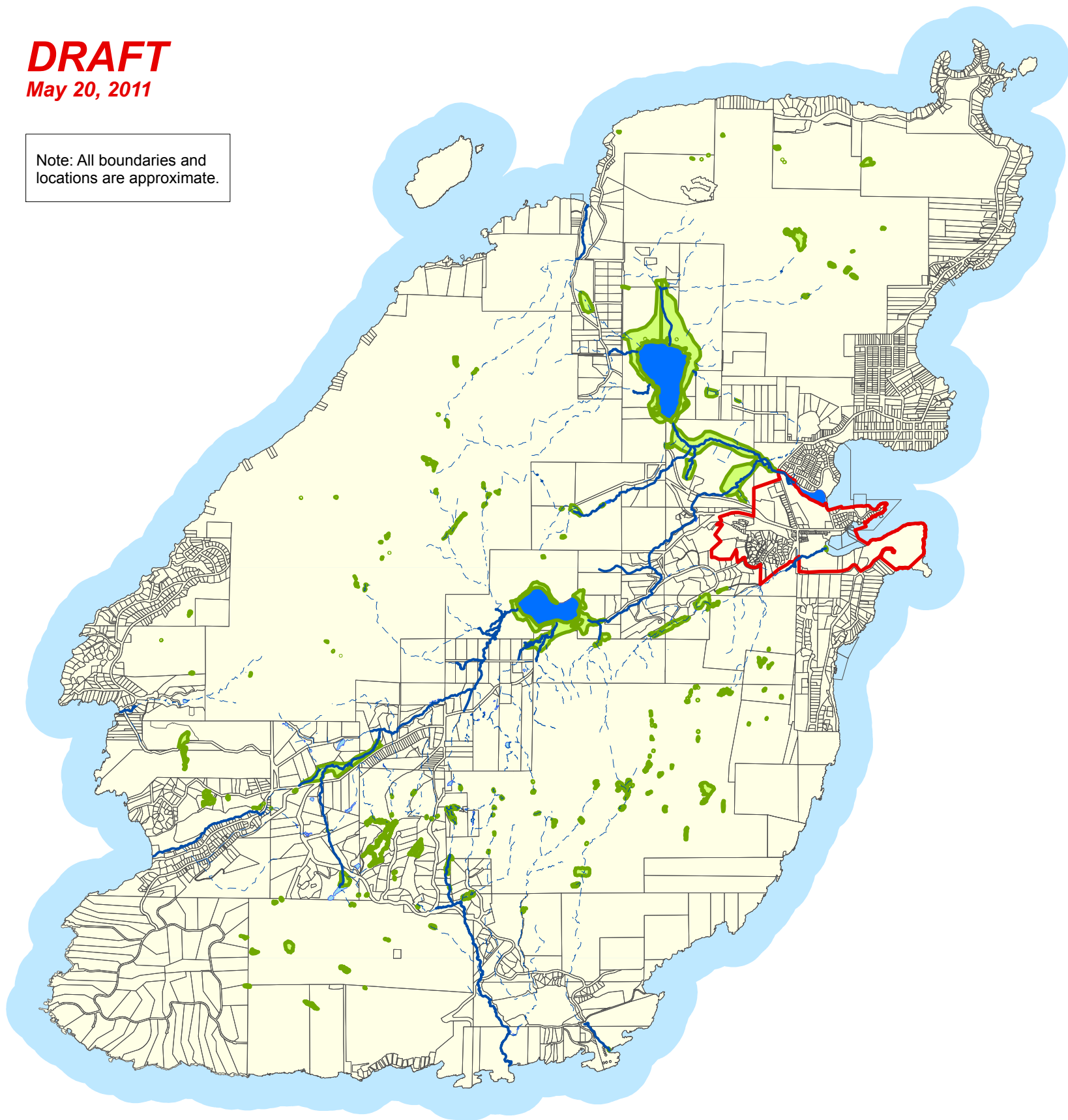
Bob Turner  
Mayor

(ORIGINAL SIGNED)

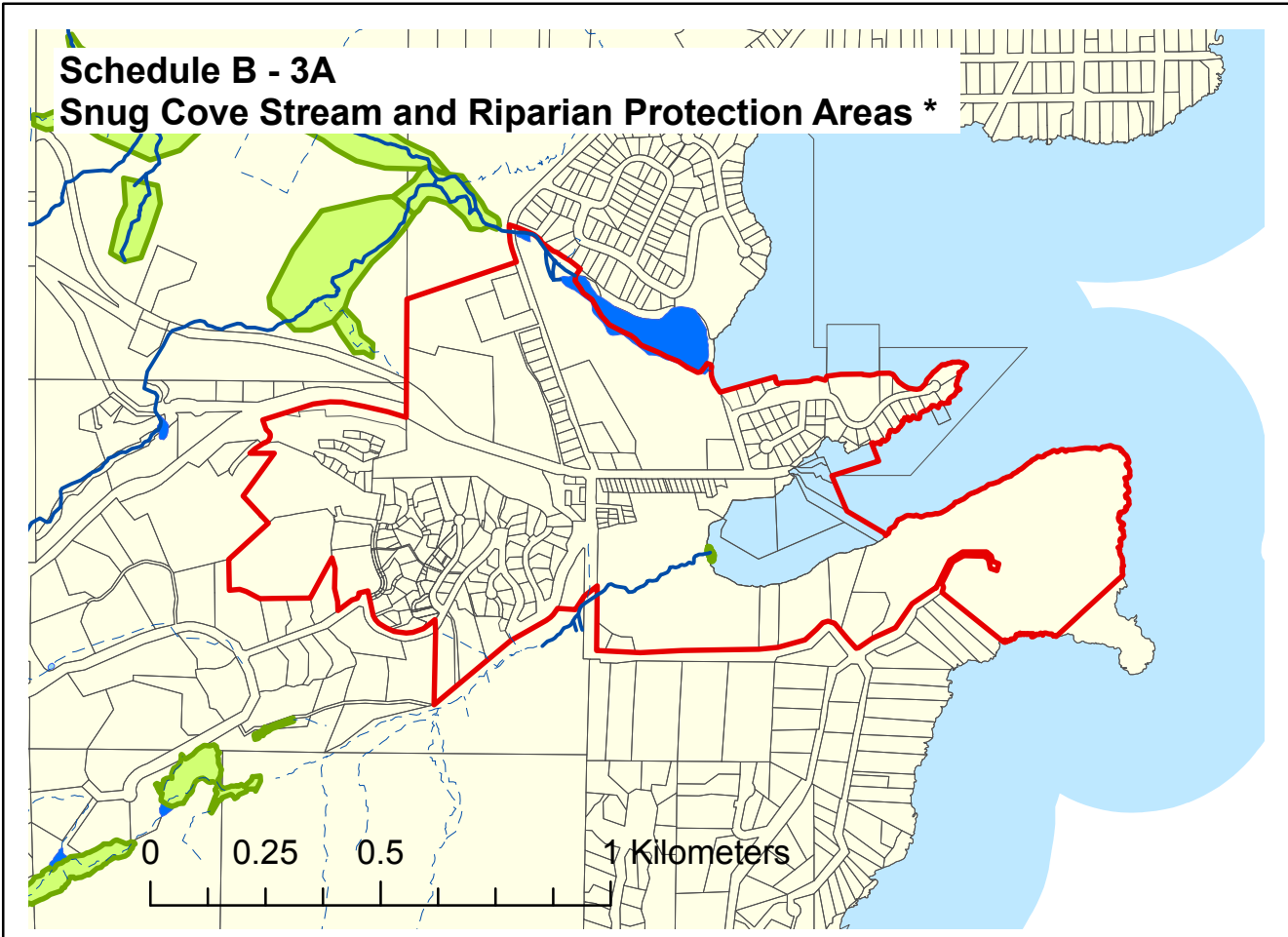
Kathy Lalonde  
Corporate Officer

**DRAFT**  
 May 20, 2011

Note: All boundaries and locations are approximate.



Data Source: Bowen Island Municipality  
 Data Date: May 2011



- Stream**
- Fish Bearing
- - - Tributary to Fish Bearing
- Freshwater**
- Fish Bearing Lake, Pond
- Tributary to Fish Bearing
- Wetland
- Snug Cove Village Boundary

**Bowen Island Municipality  
 Official Community Plan  
 Bylaw No. 282, 2010**

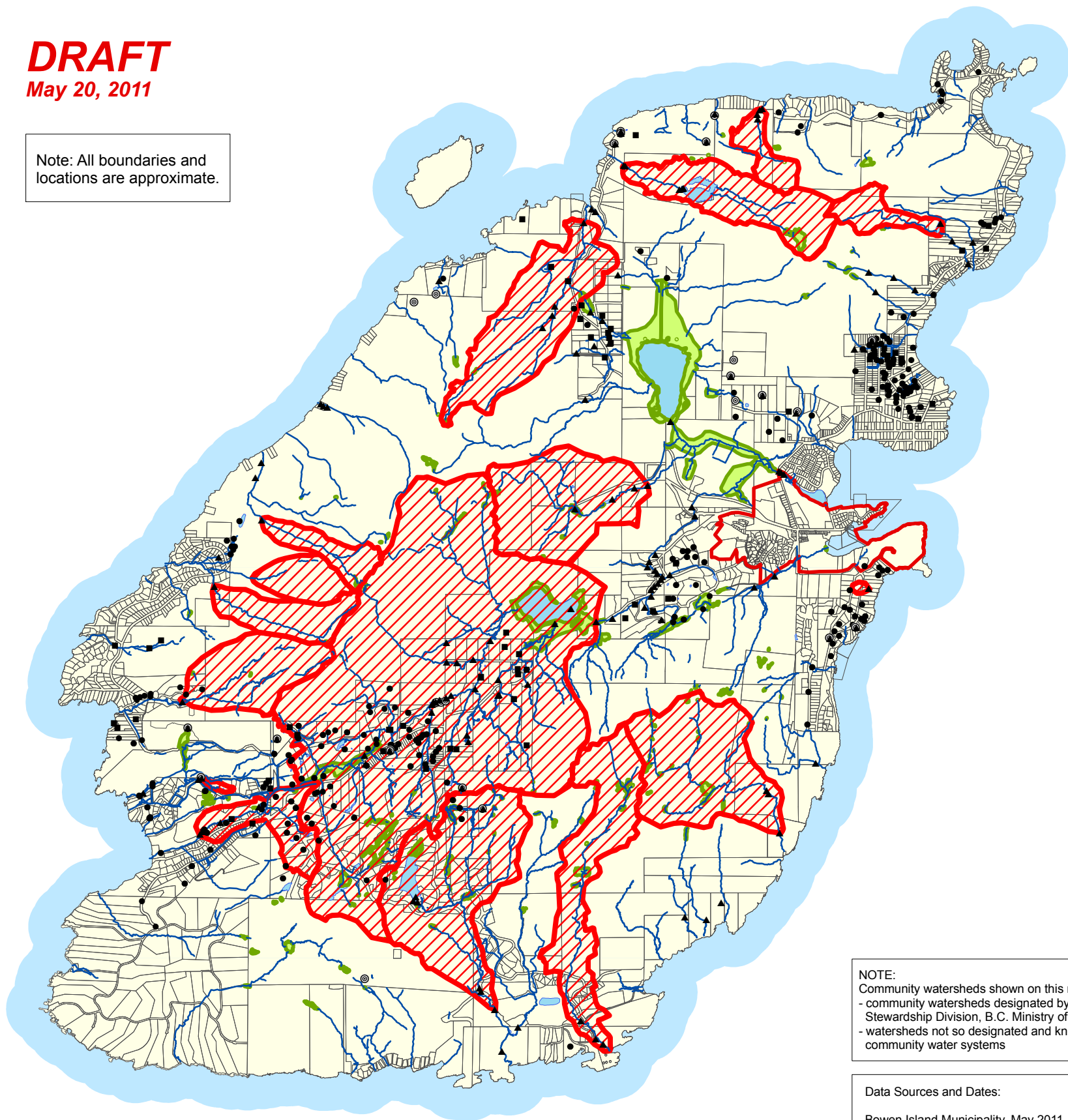
**Watershed, Aquifer and  
 Stream Protection  
 Development Permit Area**

**Schedule B - 3  
 Fish and Riparian  
 Protection Areas \***

\* The widths of Riparian Areas are not shown, and are determined by site assessment under Riparian Area Regulation (RAR) methods. See "Streamside Protection and Enhancement Areas" as defined in the Glossary of Terms of the OCP text.

**DRAFT**  
 May 20, 2011








Note: All boundaries and locations are approximate.



NOTE:  
 Community watersheds shown on this map include:  
 - community watersheds designated by the Water Stewardship Division, B.C. Ministry of Environment  
 - watersheds not so designated and known to supply community water systems

Data Sources and Dates:  
 Bowen Island Municipality, May 2011  
 B.C. Ministry of Environment, April 2011



-  Community Watershed
-  Freshwater
-  Wetland
-  Stream
-  Water intake, licenced
-  Well, drilled
-  Well, dug
-  Spring
-  Snug Cove Village Boundary

**Bowen Island Municipality  
 Official Community Plan  
 Bylaw No. 282, 2010**

**Watershed, Aquifer and  
 Stream Protection  
 Development Permit Area**

**Schedule B - 4  
 Water Resource  
 Protection Areas**

