

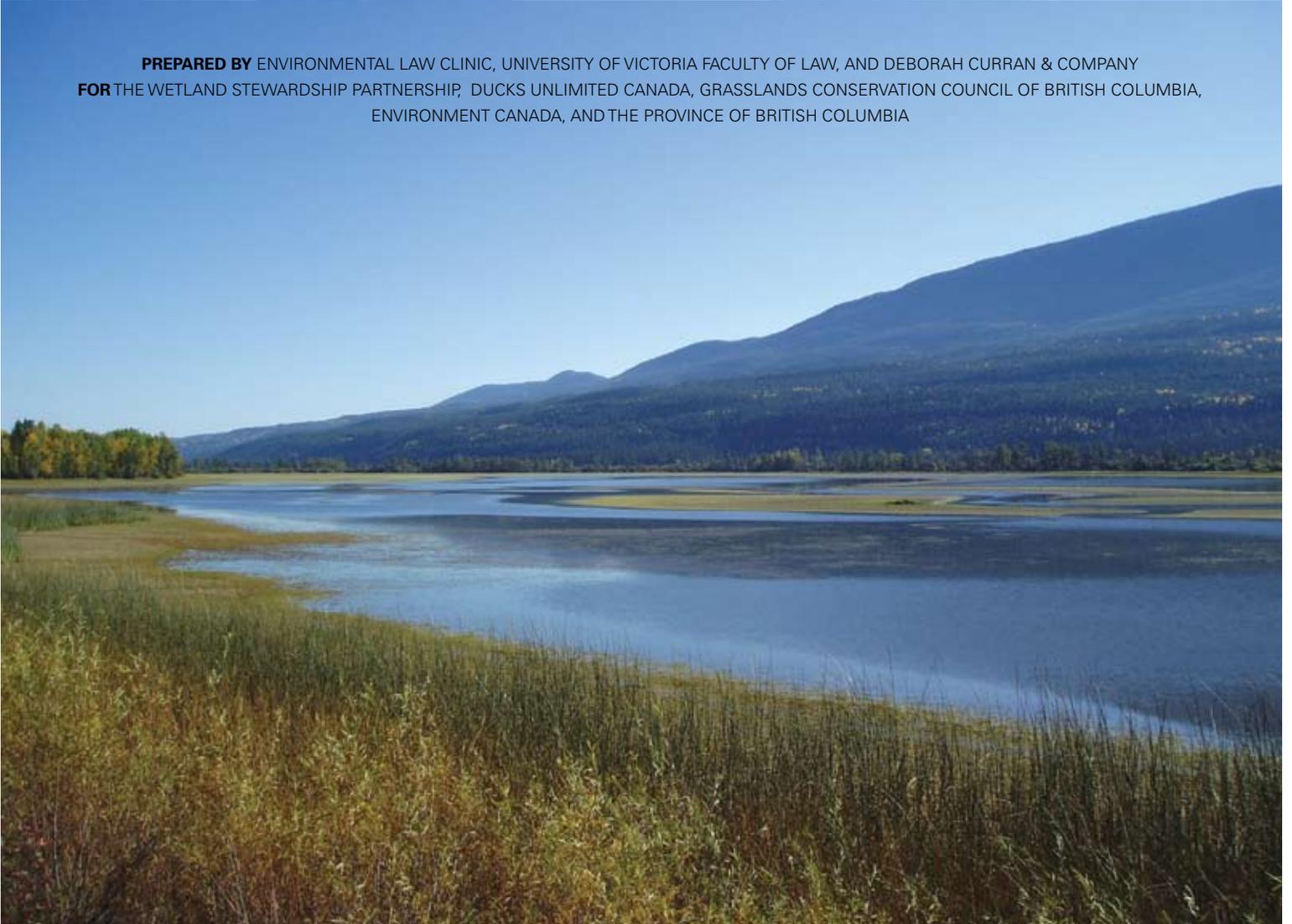
THE STEWARDSHIP SERIES

# Green Bylaws Toolkit

for Conserving Sensitive  
Ecosystems and  
Green Infrastructure



**PREPARED BY** ENVIRONMENTAL LAW CLINIC, UNIVERSITY OF VICTORIA FACULTY OF LAW, AND DEBORAH CURRAN & COMPANY  
**FOR** THE WETLAND STEWARDSHIP PARTNERSHIP, DUCKS UNLIMITED CANADA, GRASSLANDS CONSERVATION COUNCIL OF BRITISH COLUMBIA,  
ENVIRONMENT CANADA, AND THE PROVINCE OF BRITISH COLUMBIA



# Green Bylaws Toolkit

## for Conserving Sensitive Ecosystems and Green Infrastructure

NOVEMBER 2007

It is abundantly clear that sustainable land development is not a cost to business; it brings value to developers, life and community and is absolutely necessary to tackle the significant environmental issues we are facing. The *Green Bylaws Toolkit for Conserving Sensitive Ecosystems and Green Infrastructure* is an important resource for understanding how local governments and developers can safeguard the environment, from a regional to a site level. It clearly explains each tool, and provides case studies and examples of bylaws that are in use across the province.

**JOE VAN BELLEGHEM, DEVELOPER OF AWARD WINNING DOCKSIDE GREEN, VICTORIA**

I am delighted to refer my staff and other local governments to the *Green Bylaws Toolkit* so they can learn how other communities are protecting sensitive ecosystems. It is a comprehensive resource that allows us to gain insight into how different communities—large and small, coastal and interior—are addressing the need for healthy ecosystems. It is great not having to reinvent the wheel, and the Toolkit will serve as an important resource in this era of sustainability.

**MAYOR SHARON SHEPHERD, CITY OF KELOWNA**



**The Wetland Stewardship Partnership**



**Ducks Unlimited Canada**  
Conserving Canada's Wetlands



**Grasslands Conservation Council of British Columbia**



**Environment Canada**  
Canadian Wildlife Service

**Environnement Canada**  
Service Canadien de la faune



**BRITISH COLUMBIA**  
The Best Place on Earth

THE WETLAND STEWARDSHIP PARTNERSHIP (WSP) IS A MULTI-AGENCY GROUP DEDICATED TO THE CONSERVATION OF WETLANDS AND OTHER SENSITIVE ECOSYSTEMS. WSP PARTNERS INCLUDE BC HYDRO, DUCKS UNLIMITED CANADA, ENVIRONMENT CANADA, BC NATURE (FEDERATION OF BC NATURALISTS), FISHERIES AND OCEANS CANADA, GRASSLANDS CONSERVATION COUNCIL OF BC, MINISTRY OF ENVIRONMENT, NATURE CONSERVANCY OF CANADA, UNION OF BC MUNICIPALITIES, BC WILDLIFE FEDERATION, PACIFIC SALMON FOUNDATION, AND MINISTRY OF FORESTS AND RANGE.

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Environment  
Canada

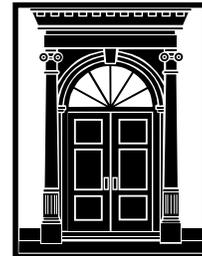
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Service

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Service Canadien  
de la faune



**Ducks Unlimited Canada**  
Conserving Canada's Wetlands



THE REAL ESTATE  
**FOUNDATION**  
OF BRITISH COLUMBIA

Special thanks to the following individuals who made significant investments of time and expertise to make this Toolkit more accurate and render it more useful for local governments and community organizations.

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To include new case studies and initiatives in upcoming editions of the *Green Bylaws Toolkit* please contact Deborah Curran at [dcurran@dcurranandco.ca](mailto:dcurran@dcurranandco.ca) or (250) 882-0642.

This document is available online through the Stewardship Centre for BC  
at <http://www.greenbylaws.ca>

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Communities across British Columbia are always asking how can we develop and use our land while protecting environmental resources such as streams, forests, birds, fish, and animals. Environmental bylaws, from tree bylaws to integrated watershed management plans, are critical tools for creating sustainable communities. Regulations need to be clear, have precise performance standards, be flexible to many different situations, and be adaptable to local sites. The comprehensive *Green Bylaws Toolkit* brings together these approaches to regulation and provides models for future action. I am looking forward to using the Toolkit to reference how other local governments are integrating environmental protection into community development.

**ROBYN WARK, FORMER ECOSYSTEM PLANNER, CITY OF BURNABY**

In Whistler we clearly recognize that we are the stewards of the natural systems that surround us. They are a critical factor to our resort's success and contribute to the quality of life we enjoy. As British Columbians we share in the appreciation of this natural heritage. While a decade ago we were pioneering conservation planning with few examples to follow, the *Green Bylaws Toolkit* now provides us with comprehensive approaches and examples for stewardship planning and bylaws in one document. Increasingly in my ten years in local government, I have witnessed the benefit of tools for protection of the environment. I am pleased to encourage all local governments to use the Toolkit as the lens through which they evaluate community development.

**MAYOR KEN MELAMED, RESORT MUNICIPALITY OF WHISTLER**

Healthy ecosystems are the foundation for vibrant, urban and rural communities. The development community now recognizes that these communities have enhanced value because of their clean air, clean water, opportunities for active living, and sense of well-being. The *Green Bylaws Toolkit for Conserving Sensitive Ecosystems and Green Infrastructure* fills a unique niche by comprehensively presenting environmental protection precedents from across B.C.

**MICHAEL GELLER, ADJUNCT FACULTY, CENTRE FOR SUSTAINABLE COMMUNITY DEVELOPMENT, SFU, AND FORMER PRESIDENT UDI**



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The bylaw provisions in this Toolkit are provided for information purposes only. They do not constitute legal advice. Please consult qualified legal counsel to draft and approve bylaws. Changes in legislation, the common law and site- or local-government-specific conditions require special consideration to ensure that bylaws are legal.

## Glossary of Abbreviations

ALR	Agricultural Land Reserve
BMP	Best Management Practices
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
DFO	Department of Fisheries and Oceans, Government of Canada
DP	Development Permit
EDPA	Environmental Development Permit Area
ESA	Environmentally Sensitive Area
GIS	Geographic Information System
MOE	Ministry of Environment, Province of British Columbia
OCP	Official Community Plan
RAR	Riparian Areas Regulation
RCS	Regional Conservation Strategy
RGS	Regional Growth Strategy
SARA	Species at Risk Act
RGS	Regional Growth Strategy
SEI	Sensitive Ecosystems Inventory
SPEA	Streamside Protection and Enhancement Area
SHIM	Sensitive Habitat Inventory and Mapping

# 1 Green Infrastructure and Community Health

**In an ideal world, stewardship approaches could be customized for every environmentally sensitive area, every landowner, and every parcel. In reality, only very large parcels of land or major developments can warrant the time that this customization would demand. In the meantime, stewardship needs to be accomplished on small parcels throughout the local governments and regional districts where stewardship opportunities are being needlessly and incrementally lost for want of effective protection of sensitive ecosystems.<sup>1</sup>**

A decade ago, when land development practices were significantly diminishing the ecological integrity of urban and rural landscapes, senior governments responded to the need to protect sensitive ecosystems by publishing the groundbreaking *Stewardship Bylaws: A Guide for Local Government*. Habitat mapping showed the loss of approximately 70 percent of the original wetlands in the Fraser River Delta and Greater Victoria, including over 50 percent of the wetlands in the Nanaimo and Cowichan estuaries and more than 30 percent in the Squamish estuary.<sup>2</sup> Stream channelization, agricultural drainage, and housing have destroyed 85 percent of the natural wetlands in the ecologically sensitive South Okanagan.<sup>3</sup> In addition, the antelope-brush grasslands in B.C. now represent less than one percent of the provincial land base and are one of the top four most endangered ecosystems in Canada.<sup>4</sup>

In the ten years since the publication of *Stewardship Bylaws*, local governments and the public have made great strides in understanding the relationship between green infrastructure and community health and the legal mechanisms available for protecting environmentally sensitive areas (ESAs). Many local governments now work towards allowing the landscape to shape the design of new development. Mapping, studies of ecosystem services, senior government regulation, best practices guides, local leadership, and public awareness have all contributed to a change in land development practices. This Toolkit brings together examples of local government best practices and points to specific bylaws that can help communities contribute to this rapid evolution towards sustainable land development in B.C.

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1 Ministry of Environment, Lands and Parks and Department of Fisheries and Oceans, *Stewardship Bylaws: A Guide for Local Government (Forward)* 1997. <http://www.stewardshipcentre.bc.ca/publications/default.asp#bylaws>

2 State of Environment Reporting, *State of the Environment for the Lower Fraser River Basin*, (1992). Environment Canada, p. 66; *Wetlands in Canada: A Valuable Resource*, Lands Directorate, Environment Canada Fact Sheet 86-4, pp. 1 and 7.

3 Mike Sarell, *Survey of Relatively Natural Wetlands in the South Okanagan* (1990). B.C. Ministry of Environment, Lands and Parks.

4 B.C. Ministry of Environment, "Ecosystems in B.C. at Risk: Antelope-Brush Ecosystems" undated

**SPECIES DIVERSITY  
IN BRITISH COLUMBIA**  
**B.C. has the highest diversity  
of native wildlife in Canada,  
including about 5,250  
species of plants, 1,138  
species of vertebrates, an  
estimated 60,000 species  
of invertebrates, and 10,000  
species of fungi.**

[http://wlapwww.gov.bc.ca/wld/  
documents/ranking.pdf](http://wlapwww.gov.bc.ca/wld/documents/ranking.pdf)

## 1.1 Green Infrastructure and Sensitive Ecosystems Defined

The term “green infrastructure” refers to the ecological components, both natural and engineered, that serve and protect ecosystems.

Green infrastructure includes:

- undeveloped areas, both natural and altered (greenfield), including sensitive ecosystems;
- parks and greenways that link habitat and provide recreation opportunities;
- ditches, rivers, creeks, streams, and wetlands that retain and carry rain or stormwater, improve water quality, and provide habitat;
- working lands such as agricultural, forested, and grassland grazing areas, including seasonally flooded agricultural lands;
- aquifers and watersheds that provide drinking water;
- engineered wetlands and detention ponds that retain rain or stormwater and improve infiltration; and
- trees, rooftop gardens, and community gardens that clean air and cool urbanized areas in the summer.

The term “sensitive ecosystem” refers to any fragile and/or rare portion of a landscape with relatively uniform dominant vegetation. Sensitive ecosystems include wetlands, riparian areas, grasslands, woodlands, older forests, cliffs and bluffs, and sparsely vegetated land. See Appendix A for a summary of types of sensitive ecosystems in B.C.

Green infrastructure and sensitive ecosystems provide a range of benefits to local governments:

- economic (clean air, rainwater management, temperature moderation, property values, and health),
- social (aesthetic, cultural, and recreational), and
- environmental (habitat, fisheries, and biodiversity).

Local governments are also recognizing that maintaining existing green infrastructure is often less costly than maintaining hard infrastructure and that the public expects high biodiversity and healthy ecosystems.

## 1.2 Value of Green Infrastructure

During the past decade, scientific and economic studies have shown that preserving natural ecosystems creates more benefits for local governments and communities than replacing them with engineered infrastructure. Two companion documents to the *Green Bylaws Toolkit* are *Wetlands Protection:*

*A Primer for Local Governments and Grasslands Protection: A Primer for Local Governments.* These documents describe the economic, social, and environmental reasons why it makes sense for local governments to preserve ESAs in their natural state (see [www.stewardshipcentre.bc.ca](http://www.stewardshipcentre.bc.ca)).

## Economic Value of Green Infrastructure

Green infrastructure components, particularly wetlands and riparian areas, are essential for managing rainwater, protecting water quality, preventing floods, and conserving soil. By absorbing rain and snow, green infrastructure recharges aquifers and slowly releases stored water into watercourses. Green infrastructure filters pollutants and sediments out of surface water, buffers developed areas from flooding, and prevents soil erosion.

The economic benefits of green infrastructure include:

- water quality—natural wetlands in the lower Fraser Valley provide at least \$230 million worth of waste-cleansing services each year, without taking into account the cost of replacing the wetlands with engineered infrastructure if they were lost;<sup>5</sup>
- air quality—over the past 25 years, the Puget Sound region has lost 37 percent of its tree canopy and high vegetation. This lost tree cover would have removed approximately 35 million pounds of pollutants annually at a value of \$95 million;<sup>6</sup>
- rainwater management—the lost tree cover in Puget Sound has resulted in a 29 percent increase in the rainwater runoff during peak events. Using reservoirs and engineered solutions to replace this lost rainwater would cost \$2.4 billion (\$2 per cubic foot);<sup>7</sup> and
- flood control—Canada’s wetlands provide flood control worth \$2.7 billion annually.<sup>8</sup> A Washington State study estimated the value of wetlands for flood control at \$89,000 to \$126,000 per hectare per year.<sup>9</sup> Local governments in Massachusetts saved \$90 million by protecting 3,400 hectares of wetland as a natural storage area for flood control. The cost was \$10 million, compared with the \$100 million it would have cost to construct dams and levees.<sup>10</sup>

## Working Landscapes

Working landscapes include a community’s non-urbanized environment. They are a central element of a community’s green infrastructure. Working

5 Nancy Oleweiler, *The Value of Natural Capital in Settled Areas of Canada* (2004). Ducks Unlimited Canada and the Nature Conservancy, p.25. <http://www.ducks.ca/aboutduc/news/archives/pdf/ncapital.pdf>

6 American Forests, *Regional Ecosystem Analysis: Puget Sound Metropolitan Area* (1998), p.2. [http://www.americanforests.org/downloads/rea/AF\\_PugetSound.pdf](http://www.americanforests.org/downloads/rea/AF_PugetSound.pdf)

7 *Ibid*, at p.2

8 National Wetlands Working Group, *Wetlands of Canada* (1988). Canada Committee on Ecological Land Classification, Environment Canada

9 Washington State Department of Ecology, Pub. #97-100, October 1997.

10 *Natural Values*, Ducks Unlimited Canada, and Patrick Dugan (editor), *Wetlands in Danger*, International Union for the Conservation of Nature (London, 1993), p. 23.

### **FISHTRAP CREEK – ABBOTSFORD**

**Urban development in the Abbotsford area led to increased rainwater runoff and flooding on both residential and agricultural properties.**

**The City of Abbotsford chose to construct a series of wetlands as storage basins on the upper urban tributaries to Fishtrap Creek. The well-vegetated 20-hectare Fishtrap Creek Nature Park stores rainwater runoff from the 3,047-hectare drainage catchment area of urban uplands and agricultural lowlands and releases the water slowly into the creek. It also removes 60 percent of the suspended solids in the water. The \$5 million construction cost was considerably less than the cost of alternative flood-prevention options. Deborah Curran, *A Case for Smart Growth* [www.wcel.org/issues/urban/sbg/case.pdf](http://www.wcel.org/issues/urban/sbg/case.pdf) at page 24**

**Between 1981 and 1996, more than 80 percent of Canadians 15 years of age and older engaged in nature-related activities.**

lands and their ecosystems support ranching, agriculture, fishing, tourism, eco- and adventure tourism, film production, education, and research. They are outdoor classrooms and are of increasing value to emerging niche businesses in the tourism and resource sectors.

## Recreation

The green infrastructure in B.C. supports a wealth of recreational activities, including hunting, fishing, hiking, horseback riding, bird watching, wildlife viewing, camping, mountain biking, picnicking, interpretive walks, and photography. Between 1981 and 1996, more than 80 percent of Canadians 15 years of age and older engaged in nature-related activities. British Columbians spend \$1.5 billion per year on outdoor activities in natural areas, including \$302 million for wildlife viewing, \$329 million for recreational fishing, and \$112 million for hunting.<sup>11</sup>

## Health

Green infrastructure contributes significantly to population health. It helps to maintain clean air and water and provides many indirect health benefits such as stress reduction through physical activity and recreation and the enjoyment of aesthetic values. Green infrastructure is the antidote to “nature deficit disorder.”<sup>12</sup>

In many communities, green infrastructure can double as bike and walking trails. In this way, green infrastructure promotes active living, particularly for children, and combats health problems related to a sedentary lifestyle.<sup>13</sup>

Other health benefits of green infrastructure include reducing pollution and moderating temperatures. The tree canopy in Portland, Oregon absorbs approximately two million pounds of pollutants from the atmosphere each year. This service is worth an estimated \$4.8 million (US).<sup>14</sup>

## Property Values

Studies across North America and in B.C. have shown that proximity to natural green space increases the value of residential property by 15 to 30 percent.<sup>15</sup>

<sup>11</sup> Environment Canada, *The Importance of Nature to Canadians: The Economic Significance of Nature-Related Activities* (2000). For the 1996 report, see <http://www.ec.gc.ca/nature/TofC.htm>

<sup>12</sup> See Richard Louv, *Last Child in the Woods: Saving Our Children From Nature-Deficit Disorder* (2006).

<sup>13</sup> Lawrence Frank, Sarah Kavage, and Todd Litman, *Promoting Public Health Through Smart Growth: Building Healthier Communities Through Transportation and Land Use Policies and Practices* (2005). [http://smartgrowth.bc.ca/Portals/0/Downloads/SGBC\\_Health\\_Report\\_FINAL.pdf](http://smartgrowth.bc.ca/Portals/0/Downloads/SGBC_Health_Report_FINAL.pdf)

<sup>14</sup> American Forests, <http://www.americanforests.org/resources/rea/>

<sup>15</sup> Deborah Curran, *Economic Benefits of Natural Green Space Protection* (2001) <http://smartgrowth.bc.ca/Portals/0/Downloads/Economic%20Benefits%20of%20Natural%20Green%20Space%20Protection.pdf>

Moura Quayle and Stanley Hamilton, *Corridors of Green and Gold: Impact of Riparian Suburban Greenways on Property Values* (1999) [http://www.mtwatercourse.org/Realtors/Greenway\\_economic\\_study.pdf](http://www.mtwatercourse.org/Realtors/Greenway_economic_study.pdf)

## Economic Development

Many businesses are deciding where to locate new firms or offices based on the quality of life in a community.<sup>16</sup> Natural, recreational, and lifestyle amenities are crucial in attracting knowledge workers and industries. Owners and workers prefer access to livable communities and a healthy natural environment.

## Biodiversity and Habitat

In B.C. important biodiversity and habitat are located in the green infrastructure and sensitive ecosystems. Protecting sensitive ecosystem habitats is a primary strategy for supporting species at risk. For example, grasslands comprise only 0.8 percent of the B.C. landscape, but they are home to 30 percent of the listed endangered species in the province.

In B.C., the wetlands of the Fraser River Delta help support the highest winter-time densities of water birds, shorebirds, and raptors in all of Canada. This delta is the most important migratory bird habitat on the Pacific coast between Alaska and California. It supports the entire world's population of Western Sandpipers, 10 percent of the world's population of Trumpeter Swans, and Russia's last remaining Snow Goose population, as well as internationally significant populations of twelve other birds.<sup>17</sup>

## Compliance with Senior Government Regulation

The provincial government's Streamside Protection Regulation, Riparian Areas Regulation, and Integrated Community Sustainability Planning and the federal government's *Species at Risk Act* point to increasing stress by senior governments on policies for integrating sensitive ecosystems into community development. By taking an ecosystem-based approach to planning, local governments can stay ahead of this trend and avoid costly and disruptive changes to land development processes as new senior government requirements take effect at the local level.

## Public Demand

Finally, recent polling of citizens in communities across the province and Canada shows that British Columbians are concerned about global warming and its effect on healthy ecosystems and biodiversity.<sup>18</sup> Eighty-five percent favour the protection of forests and stricter laws to protect the environment. They also support creating denser, more walkable communities to protect the working landscape and reduce the environmental impacts of urban sprawl.

<sup>16</sup> Federation of Canadian Municipalities, *Bridging the Innovation Gap: Count Cities In* (2002). <http://www.fcm.ca/newfcm/Java/gap.pdf>; Paul Sommer and Daniel Carlson et al, *Ten Steps to a High Tech Future: The New Economy in Metropolitan Seattle* (2000). [http://www.ceosforcities.org/research/2000/high\\_tech\\_future/high\\_tech\\_future.pdf](http://www.ceosforcities.org/research/2000/high_tech_future/high_tech_future.pdf)

<sup>17</sup> Sean Boyd, "The Value of Fraser Basin Wetlands to Birds", paper presented to the Wetlands Valuation Workshop, SFU, Vancouver, April 10-11, 1995.

<sup>18</sup> McAllister Opinion Research, *The Sustainability Poll 2006: Quantitative Analysis of Interviews with 560 Canadian Thought Leaders and 1500 Members of the Public.*

## GRASSLANDS AND TOURISM

**Tourism British Columbia highlights the South Okanagan Grasslands Protected Area as Canada's "premier star-gazing location," with the added value of breathtaking views in the daytime. Tourism Canada highlights the Grasslands National Park of Canada as a "magical land of diversity, beauty, and history."**

<http://www.hellobc.com/en-CA/SightsActivitiesEvents/Attractions/ViewPoints/ThompsonOkanagan.htm>, and [http://www.pc.gc.ca/voyage-travel/pv-vp/itm9-/page9\\_e.asp](http://www.pc.gc.ca/voyage-travel/pv-vp/itm9-/page9_e.asp)

## WETLANDS ACTION PLAN

**The B.C. Ministry of Environment is currently (2007/08) developing a long-term water plan for the province, which will include a wetland conservation component. The Wetland Stewardship Partnership has developed a draft Wetland Action Plan and has proposed including it in the larger provincial water strategy.**

## 1.3 Purpose of the Toolkit

The purpose of this *Green Bylaws Toolkit* is to provide local governments (municipal and regional) and the public with practical tools for protecting the green infrastructure. It includes bylaw language that local governments in B.C. are using to protect sensitive ecosystems and explains the various legal approaches to protection, their benefits and drawbacks. It builds on and complements *Stewardship Bylaws: A Guide for Local Government* (see section 2.2 for further discussion of how these documents complement each other).<sup>19</sup>

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<sup>19</sup> <http://www.stewardshipcentre.bc.ca/publications/default.asp#bylaws>.

## 2 Scope of the Toolkit

### 2.1 Introduction

**This Toolkit is a practical document. Local governments in B.C. are actually using the bylaws and other examples referred to here. The Toolkit presents these examples to show the variety of ways local governments are protecting their green infrastructure. (See Appendix B for a list of the bylaws and other resources the authors consulted for this document.)**

The Toolkit addresses the stewardship and protection of natural green infrastructure: in other words, aquatic and terrestrial sensitive ecosystems, working landscapes, parks, greenways, and undeveloped areas. For best practices in developing coastal environments, watch for The Stewardship Centre's Green Shores program currently in development (see sidebar). West Coast Environmental Law's *Green Infrastructure Guide* and *Green Buildings Guide* deal comprehensively with local government approaches to engineered green infrastructure, such as rainwater management, green roofs, and adaptive management.

#### Tools in the Toolkit

The following types of information are included as the tools in this document:

- **rationale** (economic, social and environmental) for protecting sensitive ecosystems;
- **how to** use the Toolkit and recommendations for setting priorities for implementation;
- **jurisdiction** of local governments for environmental planning and regulation with reference to enabling legislation;
- **discussion** of current issues and approaches;
- **case studies** documenting local government experience across the province;
- **examples** of comprehensive environmental regulation for rural, town, suburban and urban communities;
- **resources** for further reading; and
- **sample bylaw wording.**

Chapter 2 of the Toolkit outlines local government's jurisdiction over ecosystem protection and discusses recommended approaches, priorities for implementing these approaches, and the importance of ecological mapping and of hiring staff with ecological expertise. Two tables deal with

#### RESOURCES ON GREEN SHORES AND THE ENGINEERED GREEN INFRASTRUCTURE

This Toolkit focuses on protecting the natural green infrastructure of sensitive ecosystems, both aquatic and terrestrial. For ecological planning and design related to sustainable uses of coastal ecosystems, The Stewardship Centre is developing a Green Shores initiative. See <http://www.greenshores.ca/>

**West Coast Environmental Law's *Green Infrastructure Guide* and *Green Buildings Guide* deal with approaches to enhancing engineered green infrastructure.**

***Green Infrastructure Guide***  
<http://www.wcel.org/wcelpub/2007/14255.pdf>

***Green Buildings Guide***  
<http://www.wcel.org/wcelpub/2006/14252.pdf>

**See also the B.C. Ministry of Environment's *Develop with Care: Environmental Guidelines for Urban and Rural Land Development in British Columbia*, which includes region-specific information packages.**

[http://www.env.gov.bc.ca/wld/documents/bmp/devwithcare2006/develop\\_with\\_care\\_intro.html](http://www.env.gov.bc.ca/wld/documents/bmp/devwithcare2006/develop_with_care_intro.html)

**Bylaws that can help to protect green infrastructure and sensitive ecosystems:**

**Regional growth strategies (Appendix C)**

**Regional conservation strategies**

**Official community plans (Appendix D)**

**Zoning bylaws (Appendix E)**

**Environmental development permit areas (Appendix F)**

**Tax exemptions (Appendix G)**

**Impact assessment (Appendix H)**

**Rainwater management (Appendix I)**

**Security and covenants (Appendix J)**

**Regulatory Bylaws (Landscaping and screening, tree protection, soil removal and deposit, watercourse protection, pesticide use, invasive species) (Appendix K)**

**Riparian areas (Appendix L)**

local government's legal jurisdiction. One lists the relevant sections of the *Community Charter* and *Local Government Act*, and one discusses how to use the relevant bylaws to meet the goals of ecosystem protection. Section 7 of this chapter, *Recommended Approaches*, contains four examples of how rural, town, suburban, and urban local governments may craft a package of ecosystem protection tools that respond to local conditions.

## Other Legislation that Addresses Ecosystem Protection

This Toolkit focuses on local government tools that are authorized by the *British Columbia Community Charter and Local Government Act*. For more information on other provincial and federal laws that support ecosystem protection, see the joint federal/provincial *Sensitive Ecosystems Inventories* (SEI). The SEI reports contain several chapters that explain the relevant legislation, including the following:

*Agricultural Land Commission Act* (B.C.)

*Environmental Assessment Act* (B.C. and Canada)

*Farm Practices Protection (Right to Farm) Act* (B.C.)

*Fish Protection Act* (B.C.)

*Fisheries Act* (Canada)

*Forest and Range Practices Act* (B.C.)

*Land Act* (B.C.)

*Private Managed Forest Land Act* (B.C.)

*Species at Risk Act* (Canada)

*Water Act* (B.C.)

*Weed Control Act* (B.C.)

*Wildlife Act* (B.C. and Canada)

For a discussion of this legislation, see Technical Report Volume 1/Report 01 of the Central Okanagan or Vancouver Island Sensitive Ecosystems Inventories <http://www.env.gov.bc.ca/sei/index.html>

Chapters 3 to 13 of the Toolkit each address a specific legal tool or approach (see the sidebar for a complete list of these tools and their companion appendices). Each chapter contains an overview, a table that lists the relevant legal jurisdictions and the strengths and weaknesses of the regulatory approach, and a discussion of some of the current issues related to the tool in question. These chapters also contain case studies, notes about local governments that are using the tool, and references to other resources. Chapter 14 provides an overview of approaches to enforcing the bylaws.

Appendices C to M contain sample bylaw provisions related to the environmental protection tools in each chapter (see sidebar). By showing the

range of regulatory options available, the Toolkit can help local governments choose the appropriate approach for each administrative and site-specific context.

The information in this Toolkit applies to both regional districts and municipalities. Each chapter begins with a note about the differences in jurisdiction between these two levels of government. Municipalities have some unique powers, such as the ability to regulate invasive species and the use of pesticides for cosmetic purposes. See Table 1 below for a summary of regional district and municipal jurisdictions; the beginning of each chapter explains the scope of municipal and regional authority in more detail.

## 2.2 Use with *Stewardship Bylaws: A Guide for Local Government*

This *Green Bylaws Toolkit* builds on *Stewardship Bylaws: A Guide for Local Government*, published in 1997 and revised in June 1999. *Stewardship Bylaws* describes the process of developing policy and drafting bylaws and discusses different regulatory approaches to protecting sensitive ecosystems (for example, blanket bylaws and development permits). It provides sample wording for a variety of bylaws and explains the rationale for various clauses. The final chapter deals with drafting enforceable bylaws.

The Toolkit complements the model bylaw approach in *Stewardship Bylaws* by reporting on what tools have been used successfully and difficulties that have arisen over the past ten years. The Toolkit explains local government's legislative authority today and analyzes the strengths and weaknesses of different approaches. It uses case studies to illustrate how local governments are using their bylaw powers.

*Stewardship Bylaws* and the Toolkit are complementary. *Stewardship Bylaws* helps with the process of developing policies and bylaws and clearly sets out a range of considerations for municipal councils and staff. The Toolkit provides up-to-date information on municipal jurisdiction and bylaws as well as actual bylaw provisions and reports on how local governments are using them as stewardship packages.

### **Stewardship Bylaws can be found at**

<http://www.stewardshipcentre.bc.ca/publications/default.asp#bylaws>.

#### **CONCURRENT JURISDICTION UNDER THE *COMMUNITY CHARTER***

**In 2002, the *Community Charter* created some areas of concurrent or co-jurisdiction between the provincial government and municipalities. Two areas of concurrent jurisdiction under section 9 are bylaws enacted for the protection of the natural environment [section 8(3)(j)] and bylaws that prohibit the removal of soil or the deposit of soil or other material with regard to the quality of the soil or material or to contamination [8(3)(m)]. Concurrent jurisdiction does not apply to bylaws authorized under other sections of the *Community Charter* or another Act, such as Part 26 of the *Local Government Act*. Therefore, the restrictions imposed under the concurrent jurisdiction provisions (e.g., provisions that require the Minister's approval of municipal bylaws or that require municipalities to enact bylaws in accordance with a provincial regulation or agreement) are not applicable to the many specific environmental protection powers municipalities already possess. For example, municipalities can enact tree protection bylaws or create development permit areas for the protection of the natural environment, both enabled under other legislation or other sections of the *Community Charter*, without invoking the concurrent jurisdiction provisions in section 9 of the *Community Charter*. Concurrent jurisdiction is applicable when a municipality seeks to regulate outside of specific environmental protection powers, for example, to improve air quality. To date, provincial regulations under section 9 of the *Community Charter* enable municipalities to make regulations in the areas of pesticide control, alien invasive species, and watercourse protection. See Chapter 11 for more details.**

## 2.3 Table 1—Municipal and Regional District Jurisdiction

BYLAW APPROACHES	MUNICIPAL	REGIONAL DISTRICT
Regional Growth Strategies	<i>Local Government Act</i> Part 25	<i>Local Government Act</i> Part 25
Official Community Plans (including Local Area & Watershed Plans)	<i>Local Government Act</i> ss.875-879, 882, 884, 941 (OCP) <i>Community Charter</i> s.69 (drainage)	<i>Local Government Act</i> ss.875-879, 882, 884, 941 (OCP) <i>Local Government Act</i> ss.540-542 (drainage)
Zoning	<i>Local Government Act</i> s.903	<i>Local Government Act</i> s.903
Density Bonus/Amenity Zoning	<i>Local Government Act</i> s.904	<i>Local Government Act</i> s.904
Parking	<i>Local Government Act</i> s.906	<i>Local Government Act</i> s.906
Runoff Control & Impermeable Surfaces	<i>Local Government Act</i> s.907	<i>Local Government Act</i> s.907
Development Permit Areas	<i>Local Government Act</i> ss.919.1-920	<i>Local Government Act</i> ss.919.1-920
Riparian Tax Exemption	<i>Community Charter</i> s.225	<i>Local Government Act</i> ss.811-811.1
Impact Assessment		
Development Approval	<i>Local Government Act</i> ss.919-920.01	<i>Local Government Act</i> ss.919-920.01
Information Areas	<i>Local Government Act</i> s.895	<i>Local Government Act</i> s.895
Development Process		
Watercourse Protection Bylaw	<i>Community Charter</i> ss.8(3)(j), 9(3)(a) & 15 Spheres of Concurrent Jurisdiction • Environment and Wildlife Regulation s.2(1)(a)	
Rainwater Management Bylaw	<i>Local Government Act</i> s.907 (impermeable surfaces) <i>Community Charter</i> s.69 (drainage)	<i>Local Government Act</i> s.907 (impermeable surfaces) <i>Local Government Act</i> ss.540-542 (drainage)
Landscaping Bylaw	<i>Local Government Act</i> s.909 <i>Community Charter</i> s.15	<i>Local Government Act</i> s.909
Tree Protection Bylaw	<i>Community Charter</i> ss.8(3)(c), 15 & 50	<i>Local Government Act</i> s.923
Soil Removal & Deposit Bylaw	<i>Community Charter</i> ss. 8(3)(m), 9(1)(e) & 15	<i>Local Government Act</i> s.723
Pesticide Use Bylaw	<i>Community Charter</i> ss.8(3)(j), 9(3)(a) & 15 Spheres of Concurrent Jurisdiction • Environment and Wildlife Regulation s.2(1)(b)(ii)	
Invasive Species Bylaw	<i>Community Charter</i> ss.8(3)(j), 8(3)(k), 9(3)(a) & 15 Spheres of Concurrent Jurisdiction • Environment and Wildlife Regulation s.2(1)(b)(iii) (control and eradication)	
Security	<i>Community Charter</i> ss.8(8)(c), 17 & 19 <i>Local Government Act</i> s.925	<i>Local Government Act</i> s.925
Subdivision Servicing Bylaw	<i>Local Government Act</i> s.938	<i>Local Government Act</i> s.938
Development Cost Charges Bylaw	<i>Local Government Act</i> s.933	<i>Local Government Act</i> s.933

## 2.4 Policy Objectives for Protecting Green Infrastructure

The approaches outlined in this Toolkit aim to achieve three broad goals:

1. Protect and maintain the integrity of sensitive ecosystems;
2. Restore ecosystems when opportunities allow; and
3. Ensure that green infrastructure plays a role in promoting fiscally responsible local government services and programs.

Achieving these goals requires pursuing seven objectives :

1. Contain urban development within a compact area;
2. Maintain environmentally sensitive lands outside urban containment boundaries as large lot parcels (20+ hectares), parks, or protected areas that are connected by greenways and, if not as parks or protected areas, wherever development is clustered;
3. Prevent degradation and fragmentation of sensitive ecosystems and encourage connections among ecosystems;
4. Prevent development of subdivisions and individual lots on or near sensitive ecosystems;
5. Maintain the integrity of the ecological systems of which sensitive ecosystems are a part;
6. Restore degraded ecosystems;
7. Ensure adequate assessment of the impacts of development and carry out mitigation measures.

Two criteria will affect the ease with which local governments can implement these objectives:

- simplicity of administrative systems; and
- good definition of the costs and benefits of ecosystem protection.

Some local governments have comprehensive objectives for ecosystem protection, and over time they develop a suite of stewardship bylaws. Others identify limited bylaw requirements for specific objectives (such as restoring a brown field or old industrial site, or maintaining large lots in rural areas). See Table 2 for a summary of how each bylaw tool can address policy objectives. The introductions to the following chapters identify each tool, explain how to use it, and analyze its strengths and weaknesses.

### AGRICULTURAL LAND RESERVE AND LOCAL GOVERNMENT JURISDICTION

**In many local government jurisdictions, a significant portion of the green infrastructure is in the Agricultural Land Reserve (ALR). The ALR is subject to provincial oversight because protecting farmland is in the provincial interest. Provincial legislation curtails local government authority to control activities on farmland. The *Agricultural Land Commission Act* requires all local government bylaws to be consistent with the Act's mandate to protect farmland, and local governments may not allow non-farm uses of land in the ALR. On the other hand, the *Farm Practices Protection (Right to Farm) Act* prohibits local government regulation from interfering with normal farm practices. Although ecosystem protection regulations cannot curtail normal farm practices, local governments can use other powers, such as zoning, to support the ALR and its benefit as green infrastructure.**

**For more information on protecting the ALR as part of the green infrastructure, see *Protecting the Working Landscape of Agriculture: A Smart Growth Direction for Municipalities in British Columbia* at <http://www.wcel.org/wcelpub/2005/14233.pdf> and the Ministry of Agriculture and Lands Strengthening Farming Program <http://www.al.gov.bc.ca/resmgmt/sf/>.**

## 2.5 Table 2 – Summary of Bylaws for Environmental Protection

GOALS									
TOOLS	Establish Urban Containment Boundary	Maintain SEs on Large Lots or Parks	Connectivity	Prevent Development on SEs in Lots	Maintain Ecological Systems	Restore Degraded SEs	Assess & Mitigate Impacts	Administration	Costs
<b>Regional Growth Strategies</b>	Establish regional UCB; regional process for amendment	Define rural land and set policy for lot sizes; Set policy for priority park acquisitions	Set policy	Set policy	Set policy	Set policy	Simple to complex; RD bound by RGS; Municipal implementation at local scale	Regional cost for development & plan implementation; Municipal responsible for regional context statement	
<b>Official Community Plans/Local Area/Watershed Plans</b>	Establish municipal/local area UCB	Define future land uses; Mapping; Set policy	Define future land uses; Mapping; Set policy	Set policy	Set policy	Set policy	Simple to complex; Ongoing part of LG business	Mapping costs; Ongoing part of LG business	
<b>Zoning</b>	Reflect UCB goals (lot size, use & density)	Define use and lot size	Define use and lot size	Establish setbacks	Define use and lot sizes; establish setbacks	Setbacks and mitigation for redevelopment	Well understood; Blanket approach; Simple to administer	Little additional cost	
<b>Environmental Development Permit Areas</b>	Establish urban and/or rural guidelines	Set guidelines for maintaining connectivity; zoning rules	Set guidelines for maintaining connectivity; zoning rules	Guidelines for pre- & post-development; can vary zoning rules	Guidelines; can vary zoning rules	Guidelines	From simple to complex; DP attaches to land & development	Additional staff time to apply guidelines to each DP application	
* Can combine tools listed in shaded area into a comprehensive environmental or green infrastructure bylaw									
<b>Impact Assessment (part of permitting process)</b>	Report on	Report on	Report on & mitigate fragmentation	Report on & mitigate impact of development	Report on	Report on	Report on	Little additional administration if part of existing process; Can be complex; Need staff expertise or rely on professional	Cost of assessment born by applicant; Staff time to coordinate & evaluate
<b>Watercourse Protection Bylaw</b>			Watercourse corridor protection	Regulate & prohibit polluting, obstructing, impeding the flow of a watercourse	Set open streams policy; Regulate & prohibit polluting, obstructing, impeding the flow of a watercourse	Penalties for polluting, obstructing, impeding the flow of a watercourse	DP can require assessment & mitigation	Enforcement needed; Can be part of DP; Municipal-wide, not site-specific	Enforcement costs; staff time for enforcement & permitting

<b>GOALS</b>									
<b>TOOLS</b>	<b>Establish Urban Containment Boundary</b>	<b>Maintain SEs on Large Lots or Parks</b>	<b>Connectivity</b>	<b>Prevent Development on SEs in Lots</b>	<b>Maintain Ecological Systems</b>	<b>Restore Degraded SEs</b>	<b>Assess &amp; Mitigate Impacts</b>	<b>Administration</b>	<b>Costs</b>
<b>Rainwater Management Bylaw</b>					Rainwater infiltration & impermeable surfaces regulation			Staff expertise needed; Part of DP process	Additional costs to adopt standards & train staff
<b>Landscaping Bylaw</b>			Landscape standards		Landscape standards	Landscape standards	Landscape plan	Staff expertise; Part of DP process	Costs to map vegetation types to areas
<b>Tree Protection Bylaw</b>			Maintain significant trees	Prohibit & regulate tree cutting	Regulate tree-cutting	Remedial action requirements	Tree replacement plan	Staff expertise;	Potential mapping & enforcement costs
<b>Soil Removal &amp; Deposit Bylaw</b>				Regulate soil removal & deposit	Sediment control; regulate activity in SE	Remedial action requirements	Erosion control plan	Part of DP process; May require enforcement	Enforcement costs
<b>Pesticide Use Bylaw</b>					Prohibit the use of pesticides on residential properties			Part of DP process	
<b>Invasive Species Bylaw</b>					Regulate, prohibit & impose requirements for control & eradication	Regulate, prohibit & impose requirements for control & eradication	Remediation plan	Blanket approach; May be included in permitting process	Property owner or applicant bears costs
<b>Security</b>			Funds to re-establish connectivity if damaged		Funds to re-establish if damaged	Funds for LG to mitigate damage from development	Funds for LG to mitigate	Part of DP process; on-site monitoring to ensure compliance	Staff assessment of DP; Site visits; Enforcement
<b>Subdivision Servicing Bylaw</b>					Vegetation protection, replanting, erosion control, rainwater management	Vegetation protection & replanting	Vegetation, erosion & rainwater management plans	Part of existing subdivision process	Staff expertise of BMPs
<b>Development Cost Charge Bylaws</b>	Funds to acquire parkland		Funds to acquire corridors		Acquire key SEs			Part of existing charge	Defining calculation of charge
<b>Riparian Tax Exemption</b>		Conservation covenant on title to land	Conservation covenant on title to land		Conservation covenant on title to land			Simple; Third party monitoring and enforcement	Staff time to establish; Some ongoing meetings with third party

Accurate mapping of ESAs provides detailed up-front information to land users and developers. This information facilitates discussions between staff and landowners about appropriate land development and best management practices.

#### **MAPPING RESOURCES**

The B.C. Ministry of Environment and Environment Canada have facilitated the creation and practical application of Sensitive Ecosystems Inventories at a scale of 1:20,000 in many parts of B.C., including much of the Okanagan Basin, East Vancouver Island and the Gulf Islands, and the Sunshine Coast. <http://www.env.gov.bc.ca/sei/>

#### **MAPPING STANDARDS**

The B.C. Ministry of Environment has developed provincial standards for SEI mapping. See [http://ilmbwww.gov.bc.ca/risc/pubs/teecolo/habitat/assets/standards\\_for\\_mapping\\_ear\\_version1.pdf](http://ilmbwww.gov.bc.ca/risc/pubs/teecolo/habitat/assets/standards_for_mapping_ear_version1.pdf) for more information.

The Community Mapping Network integrates and makes available existing mapping data from many sources. The Network developed the Sensitive Habitat Inventory and Mapping (SHIM) methodology for mapping aquatic habitats and riparian areas at a 1:5000 scale. The Network website links users to a variety of maps, atlases, and mapping resources. <http://www.shim.bc.ca/>

## 2.6 Importance of Mapping and Staff Expertise

### 2.6.1 ESA Mapping

In order to make effective use of the stewardship bylaws in this Toolkit, local governments must have some understanding of the location and quality of ESAs within their land base. Mapping provides that information. Mapping of local sensitive ecosystems is all-important. It creates a common understanding of the importance of ecosystem values on specific pieces of property and engages and motivates staff and decision makers to protect ESAs. Accurate mapping of ESAs provides detailed up-front information to land users and developers. This information facilitates discussions between staff and landowners about appropriate land development and best management practices. Including detailed maps of sensitive ecosystems in habitat atlases or ecosystem inventories can make staff's job easier because the maps show the boundaries of environmental development permit areas (EDPAs). The maps give staff authority in front-counter discussions and place the onus on the applicant to conform to the EDPA guidelines.

Maps are the clearest way to designate EDPAs and convey their meaning in official community plans (OCPs). Official community plans that describe EDPAs using general ecosystem terms (e.g., "all wetlands are considered EDPAs") without accompanying maps are not clear enough nor do they give staff adequate direction and scientific defensibility to make site-specific land-use decisions. In the absence of a map product that clearly shows the location of sensitive ecosystems, disputes can arise as to whether or not the site in question contains a viable example of a particular sensitive ecosystem. For example, there may be disagreement about whether a wet area is a true wetland, a seasonally partially inundated wetland, or a "wetted" area. Such disagreements can be costly and time-consuming. A quality map product provides the certainty that can also help to avoid legal issues.

ESA mapping can include sensitive ecosystems, locations of species at risk, special features, and rare landscape elements. If a local government has not made detailed maps of places where species at risk occur and if there is no money to create such maps, a local government may nevertheless be able to demonstrate due diligence for the protection and recovery of species at risk. They can, for example, map sensitive ecosystems and correlate them with species at risk that require those types of ecosystems as habitat. They can then enact regulations (bylaws or EDPAs) that protect the relevant ecosystem values. See section 4.3 for further discussion of species at risk.

ESA mapping can use existing data if they are available. If not, creating new maps and inventories will require research. Several local governments have used students from community colleges and universities to help do the research involved in creating mapping databases. Local governments can gather additional information about the location of landscape features by asking questions on building permit application forms and other municipal documents.

## **ENVIRONMENTALLY SIGNIFICANT AREAS ATLAS—SAANICH**

The District of Saanich obtained funding from the Real Estate Foundation to create an *Environmentally Significant Areas Atlas and Inventory* that is used to identify site-specific sensitive ecosystems in planning and development permit review processes. Saanich Environmental Services (located in the Planning Department) and Engineering Services are in the process of updating the Atlas to include cadastral information and a marine layer. It will also include more accurate rare element data.

<http://www.gov.saanich.bc.ca/resident/environment/esa.html>

Mapping should occur at a scale of at least 1:20,000 and preferably at a more detailed scale (e.g., 1:10,000, or 1:5,000) with supplemental ground-truthing. The provincial and federal governments can supply Sensitive Ecosystems Inventory (SEI) maps at a scale of 1:20,000 for Eastern Vancouver Island and the Gulf Islands, Sunshine Coast, and much of the Okanagan Basin (see <http://www.env.gov.bc.ca/sei/>). Some regional districts (Central Okanagan), several municipalities, and some non-government organizations (Allan Brooks Nature Centre) have also initiated SEI projects. Many rapidly urbanizing municipalities in Metro Vancouver and the Capital Region, as well as some First Nations, have already created their own detailed maps as well as user-friendly internet map servers available to the public.

Mapping efforts should attempt to ground-truth ESAs mapped from air photos to confirm ecosystem types, verify boundaries, and collect biological/ecological information on landscape conditions, threats, vegetation, disturbance history, and other factors. By confirming the data and refining the maps, ground-truthing raises the level of confidence in the accuracy of the ESAs maps.

It is important to revisit the maps at regular intervals to keep them accurate and to incorporate additional landscape information learned from research projects and from the process of approving development permits. Mapping ESAs can promote strategic, proactive, conservation-based land use planning and decision making that avoids further loss of sensitive ecosystems.

Although local governments of all sizes and types (urban and rural) have produced detailed site-level maps, many have not yet dedicated resources to or acquired funding for mapping sensitive ecosystems. In the meantime, regulatory bylaws can make it possible for local government staff to gather information about properties via the development permit process, and that information can be added to existing ecological knowledge about the land within the municipality or regional district's jurisdiction.

### **Developing ESA Mapping from Sensitive Ecosystems Inventory Mapping**

Just as SEI mapping using fairly broad ecosystem classes can be developed from the more detailed Terrestrial Ecosystem Mapping, even broader ESA categories can be determined from SEI mapping to highlight conservation priority areas. In areas where a large percentage of the landscape is

## **SENSITIVE ECOSYSTEM MAPPING – REGIONAL DISTRICT CENTRAL OKANAGAN (RDCO)**

**RDCO staff initiated EDPAs by mapping sensitive ecosystems to understand the extent of the green infrastructure in the Regional District. They completed SHIM at a scale of 1:500 on all the creeks within private land boundaries, encompassing three OCPs and one Rural Land Use Bylaw. Staff also completed SEIs at a scale of 1:20,000 for three OCPs between 2001 and 2005 from detailed Terrestrial Ecosystem Mapping. Regional District staff consider a complex of factors when rating ESAs. At a minimum, habitat and species communities/polygons will be stratified and evaluated in terms of habitat/ecosystem rarity, wildlife habitat suitability, rare and endangered species' occurrence potential, functional condition (i.e., ecological connectivity, level of disturbance, seral stage, structural stage, etc.), and fragility.**

**ENVIRONMENT  
DEPARTMENT AND  
PLANNING FOR  
SUSTAINABILITY –  
NORTH VANCOUVER**

**Over the past decade, the District of North Vancouver has steadily increased its staff resources for environmental protection. The District now has an Environment Section that deals with environmental protection and a planning team in the Sustainability, Planning and Building Department that focuses in part on sustainability. The Environment Section team is a staff of four, consisting of the equivalent of two professional biologists, a Chartered forester, a professional geoscientist, a certified public health inspector, two certified arborists, an erosion control specialist, and a forest pest management specialist. The Department’s mandate is “to protect and preserve the District’s natural assets and environment through regulation and enforcement, policy and planning activities, education programs, public participation programs and liaison with senior levels of government.” An important part of staff activities is public education and supporting volunteer stewardship groups and education or public awareness projects.**

occupied by sensitive ecosystems, local government planners and decision makers can be overwhelmed by a map that appears to be largely covered by sensitive ecosystems. For presentation purposes as well as determining conservation priorities for the area, a map that simplifies the data by depicting ESA 1, 2, and 3 areas can provide a means by which the areas of highest conservation priority are clearly identified.

**Importance of Biological/Ecological Expertise on Staff**

As important as good mapping are staff who have expertise in ecology or biology and who understand best management practices. Staff trained in environmental protection can evaluate potential impacts of proposed activity and the soundness of proposed habitat mitigation measures and assign appropriate conditions for development permits. Environmental planning staff are also often the most appropriate persons to enforce environmental bylaws because they know how to gather samples from the environment that will stand as evidence of offences. Finally, staff with ecological expertise fulfill an important education role, both with the public and with landowners or developers seeking approval for development projects.

Environmental protection staff have formed the Municipal Environmental Managers Association of B.C. to share information and strategies. The membership includes representatives from over twenty local governments in a multiplicity of staff positions (see chart).

LOCAL GOVERNMENT	STAFF POSITION REPRESENTED
Abbotsford (City)	Manager Community Sustainability, Environmental Specialist, Environmental Coordinator
Burnaby (City)	Manager Environmental Services, Ecosystem Planner
Campbell River (City)	Environmental Coordinator
Coquitlam (City)	Environmental Services Project Specialist, Manager Emergency Programs
Chilliwack (City)	Manager Environmental Services, Manager Development Services
Delta (Corporation)	Manager Environmental Services, Manager Environmental and Agricultural Planning
Kelowna (City)	Environmental Manager, Environmental Technician
Langley (City)	Director Engineering and Development
Langley (Township)	Manager Water Resources and Environment, Environmental Coordinator
Maple Ridge (District)	Environmental Technician
Mission (District)	Environmental Technician
New Westminster (City)	Utilities and Special Projects Engineer, Planner
North Vancouver (City)	Manager Environment and Parks, Environmental Coordinator
North Vancouver (District)	Manager Environmental Planning Projects, Environmental Protection Officer

LOCAL GOVERNMENT	STAFF POSITION REPRESENTED
Port Coquitlam (City)	Manager Environmental Services
Port Moody (City)	Manager Parks and Environmental Services, Environmental Technician
Richmond (City)	Environmental Programs
Saanich (District)	Manager Environmental Services
Squamish (District)	Environmental Coordinator
Surrey (City)	Manager Drainage and Environment, Environmental Coordinator
Vancouver (City)	Manager Environmental Protection
West Vancouver (District)	Environmental Protection Officer, Environmental Technician

## 2.7 Recommended Approaches

The array of bylaw tools available to local governments is both empowering and overwhelming. In most cases, there are several different ways to achieve the same objective. Each approach involves different levels of administrative support and expertise. Choosing an approach depends on the objective of the regulation, the condition of the ecosystem, and a local government's capacity for evaluating development proposals and tailoring requirements to fit the specific site and the project.

### WRITING POLICIES AND BYLAWS

(Summarized from *Stewardship Bylaws: A Guide for Local Government*, pp. 8-10)

#### STEP 1 – Develop the policy.

Work with the Council/Board and the public to determine the scope of the issues and the best way to achieve the desired stewardship outcomes (see Policy Objectives above). Hold workshops with staff and politicians, the public, and stakeholder focus groups and have discussions with adjacent local governments and non-governmental organizations.

#### STEP 2 – Assemble relevant enabling legislation and regulations.

Check for the most recent versions of the applicable legislation, including limitations on local government authority.

#### STEP 3 – Identify the bylaw's purpose and context.

Clarify the objectives of the regulation and relationships with other agencies, and determine changes needed to other bylaws.

#### STEP 4 – Determine the structure of the bylaw.

What combination of tools will best meet the stewardship objectives, keeping in mind the outcomes of discussions undertaken in Step 1? Consider a comprehensive green infrastructure bylaw that includes all regulatory provisions, separate bylaws for different stewardship objectives (e.g., watercourse protection, pesticide control, erosion control, tree

### DIFFERENT WAYS TO ACHIEVE THE SAME END

**To maintain the integrity of a stream or watercourse, a municipality may enact a watercourse protection bylaw, or establish regulations about vegetation protection and erosion control in the subdivision bylaw, and/or develop detailed guidelines as part of establishing a development permit area in the OCP.**

protection), and the extent of development permit areas, both geographically and within the scope of their guidelines. Can the stewardship objectives be achieved using existing bylaws and permitting processes?

**STEP 5 – Write a detailed rationale for the bylaw.**

This may form part of the bylaw’s preamble. Such preambles can help courts interpret the intent of the bylaw’s various sections.

**STEP 6 – Write key clauses of the bylaw in draft form (prohibitions, regulations, enforcement).**

Ensure that the clauses conform to the scope of the enabling legislation. Check other bylaws for conflicts, redundancies, or complements.

**STEP 7 – Write enforcement provisions.**

Consult the *Offence Act*, *Local Government Act* and *Community Charter*. Review the provisions with enforcement staff and obtain their support.

**STEP 8 – Write filter and exception clauses.**

What situations should be excluded from the effect of the bylaw and what threshold events should trigger the bylaw?

**STEP 9 – Write definitions.**

Add definitions of terms that the enabling legislation does not define or terms whose meaning is vague. Consult the *Local Government Act*, *Community Charter*, and *Interpretation Act*. Conduct a final review of the bylaw for simplicity and plain language to ensure clarity.

**STEP 10 – Review the draft with staff, committees, stakeholders, and legal counsel.**

Refine the bylaw according to feedback.

**STEP 11 – Review the draft with the Council/Board and refine it further.**

It may be necessary to consult with stakeholders again.

**STEP 12 – Start the process of approving the bylaw.**

## 2.7.1 Approaches to Sensitive Ecosystems Protection

Just as no two local governments or ecosystems are the same, there is no one single way to protect sensitive ecosystems. The combination of approaches that a local government adopts will depend on a variety of factors, including the following:

- geographic location
- local government size (land base, tax base, and population)
- historic pattern of land use
- ecosystem rarity
- presence of Species at Risk
- ecosystem conditions
- rate of development

- administrative capacity
- staff expertise
- funding priorities
- local government culture
- political will

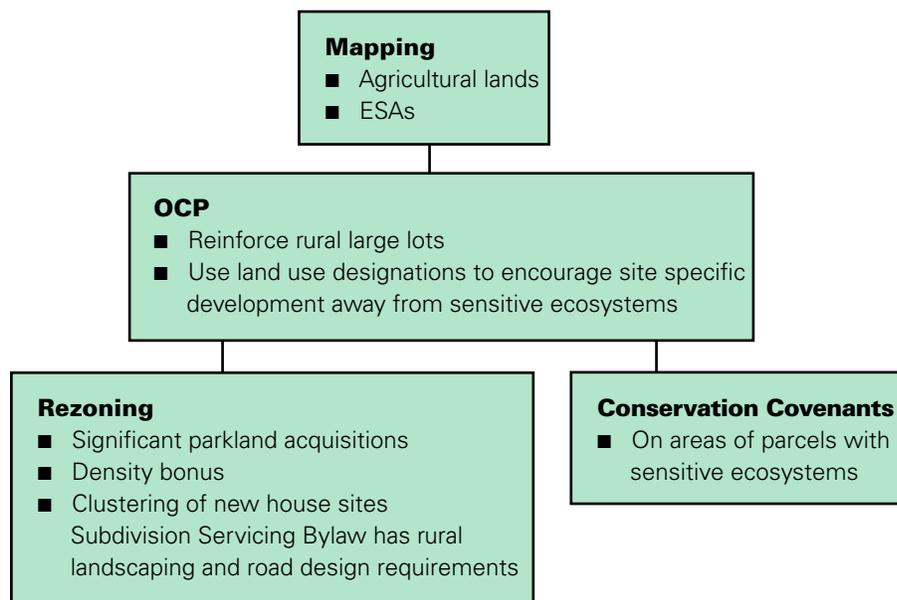
When developing green infrastructure policies, most local governments use a combination of one or more regulatory bylaws (such as protecting watercourses and restricting the removal or deposit of soil) and the creation of development permit areas, guidelines, and policies. Zoning preserves large lots in areas of high green-infrastructure values and establishes setbacks from sensitive ecosystems such as watercourses. Means of enforcement include security deposits, fines, litigation, and/or injunctions (for development permits).

The package of bylaws and policies that a local government chooses can encourage the Approving Officer to require the landowner to dedicate small sensitive ecosystems or protect them with covenants. Likewise, engineering standards can address rainwater management and erosion control during subdivision development.

The consensus from environmental protection staff around the province is that local governments should incorporate new regulations into existing bylaws and permitting processes as much as possible. Adding new values or standards to existing processes will result in greater staff commitment and less confusion on the part of development applicants than creating new processes or steps in the development permit process.

The following examples show that local governments have combined green infrastructure tools in a variety of ways.

**PROTECTING SENSITIVE ECOSYSTEMS  
EXAMPLE 1: RURAL (REGIONAL DISTRICT)**



**ENVIRONMENTAL PROTECTION BYLAW – DISTRICT OF NORTH VANCOUVERT**

**The District of North Vancouver enacted a comprehensive environmental protection bylaw in 1993 that addresses watercourse protection (including setbacks and water quality standards), erosion control, tree protection, security, enforcement, and environmental permits.**

<http://www.district.north-van.bc.ca/article.asp?c=800>

Applications for subdivision of large parcels of undeveloped land into two-hectare (five-acre) lots are increasing exponentially in the Regional District of Hills and Valleys. High land prices and the desire for rural vacation homes within a five-hour driving radius from cities are spurring development. Residents and several Board members are concerned because all development in these rural areas relies on groundwater and there is an incomplete understanding of watershed characteristics. In addition, the patchwork of two-hectare lots compromises the landscape's ability to support resource activities such as harvesting non-timber forest products and small-scale logging. It also fragments wildlife corridors, riparian areas, and other important sensitive ecosystems. Finally, after several applications to exclude land from the agricultural land reserve (ALR), the Board resolves to take steps to maintain the rural character of its jurisdiction.

Regional District staff begin by mapping agricultural lands and environmentally sensitive areas (ESAs), including rare grasslands, to establish a baseline of the extent of the green infrastructure and develop priorities for protecting sensitive ecosystems. They create a greenways and sensitive ecosystems atlas at a scale of 1:20,000 or better using Sensitive Ecosystems Inventory maps for the region.

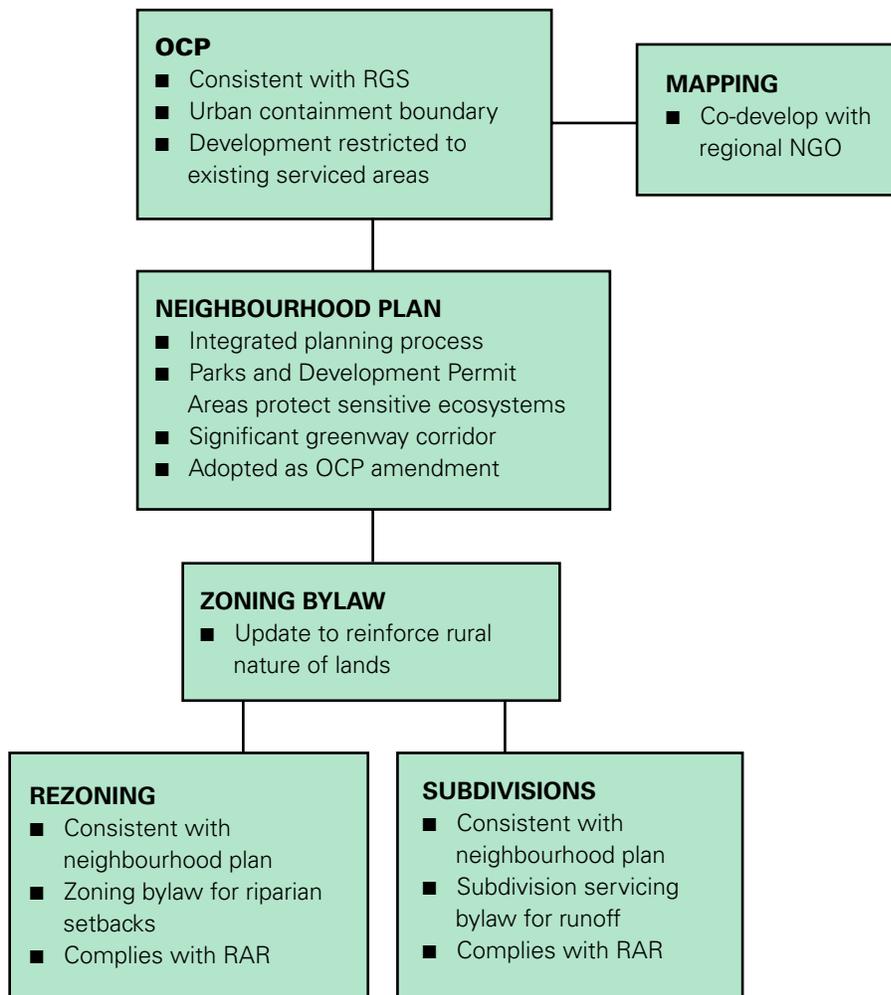
Through an OCP review process for several rural electoral areas, the Regional District adopts policies that reinforce the rural, large-lot nature of the area and encourage site-specific development away from sensitive ecosystems through targeted land use designations. Policies include:

- protect green infrastructure,
- large-holding (20-hectare) and small-holding (10-hectare) minimum lot sizes in rural areas with housing clustered in hamlets,
- maintain existing infrastructure without extending it into agricultural or rural land,
- no support for the transfer of agricultural land to non-agricultural uses,
- require buffers (secured with a covenant) for land adjacent to the ALR and for development on lots containing sensitive ecosystems,
- support clustering subdivision lots away from natural areas, and
- provide limited bonus density opportunities in exchange for acquiring parkland in rural areas.

Upon rezoning, Regional District staff negotiate significant parkland acquisitions (up to 50 percent of the land) through bonus density and clustering new house sites; staff secure conservation covenants on areas of the parcels that are sensitive ecosystems. The parkland acquisitions and covenanted areas are largely contiguous and form part of the core greenways network (both public and private land) in the Regional District.

The Board amends the subdivision servicing bylaw to include landscaping and road design requirements (no curbs, shallow drainage swales, narrow pavement, significant revegetation) to ensure that new roads quickly conform to the area's rural character.

**PROTECTING SENSITIVE ECOSYSTEMS  
EXAMPLE 2: TOWN AND RURAL (TOWN)**



The town council in Sunnyville, a small town surrounded by rural agricultural and forested land within its jurisdiction, shifted its approach to development when it contemplated the rezoning and subdivision of the last four-hectare greenfield site within the serviced area of the town. Development over the past decade had largely consisted of single-family homes that retirees and young families acquired when they moved to the town. Commercial development had included a variety of strip malls and some large-format highway commercial properties, and downtown businesses were beginning to press for revitalization of the town centre. When talk shifted to extending services into the agricultural and farther-flung greenfield sites within its jurisdiction, Council decided to revisit the community vision in light of the recent regional growth strategy and to concentrate development within existing serviced areas and, at the same time, to integrate sensitive ecosystems and green infrastructure into developed areas.

Council adopts an urban containment boundary by creating OCP policies that limit new development to existing serviced areas. The municipality rezones

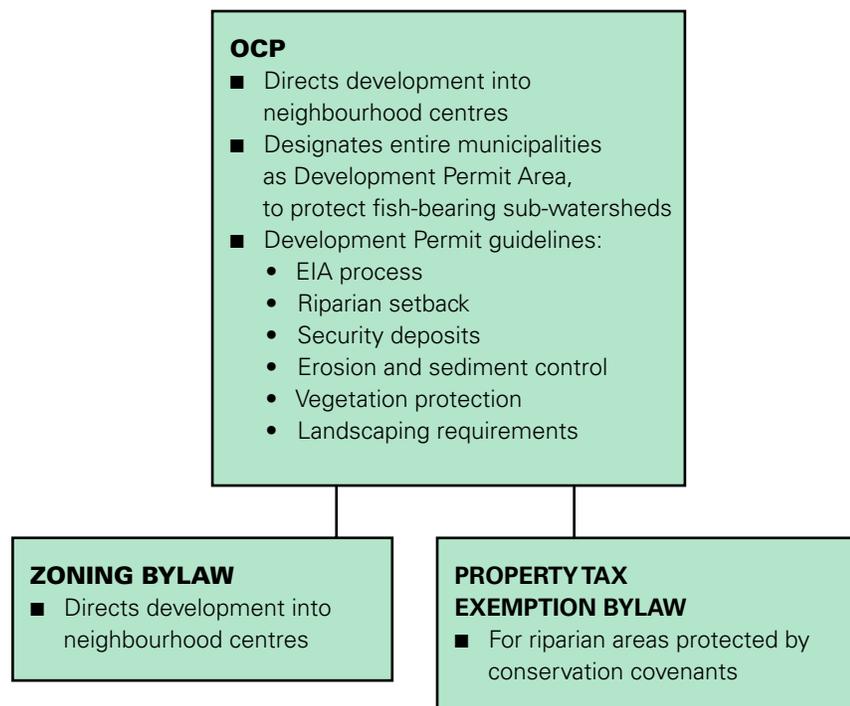
some land to reinforce the rural nature of lands outside the UCB. At the same time, town staff work with a regional non-governmental organization to develop a mapping program. Over a five-year period, the town council commits to securing a significant portion of the cost of mapping at a scale of 1:5000 or 1:10,000 to create a local Sensitive Ecosystems Atlas. Funding sources for the atlas include charitable foundations, the provincial government, and in-kind donations from academic institutions.

Town staff, elected officials, and several developers undertake an integrated planning process for the four-hectare greenfield neighbourhood that will protect sensitive ecosystems in parks and development permit areas. A significant greenway corridor following an existing creek will cross the neighbourhood and help manage the small amount of excess rainwater runoff on each lot. The plan clusters residential and commercial development away from the ecologically sensitive areas, and the town council designates the entire neighbourhood as a Development Permit Information Area. As a result, each development application will be subject to some level of environmental impact assessment to ensure that it is consistent with the neighbourhood plan.

Finally, town staff recommend several bylaw amendments. Council approves changes to the subdivision servicing bylaw to encourage infiltration of rainwater on each site by requiring post-development site runoff to match pre-development levels. Council also adopts the process and standards contained in the Riparian Areas Regulation and incorporates them into the development permit area regulations.

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**PROTECTING SENSITIVE ECOSYSTEMS  
EXAMPLE 3: SUBURBAN (DISTRICT)**



Growwell is a suburban municipality in a fast-growing region that has traditionally served as a bedroom community for the adjacent city. Projections expect its population to double in the next thirty years, and council is looking up the hill to two new greenfield neighbourhoods to house a significant portion of that growth. But Council also wants to do something different because it has been hearing from staff and the public about the benefits of integrating nature into new developments and maintaining significant natural areas. Indeed, Growwell has many small fish-bearing streams and creeks. This discussion is buoyed when staff crunch the numbers on the cost of creating and maintaining a traditional roads and pipes infrastructure system to service these new neighbourhoods. Realizing that a significant property tax increase over the next five years is unpalatable, Council adopts an integrated watershed planning approach for these new neighbourhoods and commits to creating more compact complete communities throughout the entire district along the rapid transit corridor.

Through an OCP review process and zoning bylaw amendments, council establishes policies that direct 70 percent of new development into existing and new neighbourhood centres. With a focus on mixed use, higher densities, and connections to rapid transit, these neighbourhood centres concentrate commercial and residential uses, allowing more land for the integration of green infrastructure. At the same time, staff use Sensitive Ecosystems Inventory mapping and data to understand the extent and condition of its sensitive ecosystems in the two future neighbourhoods.

Council decides to use development permit areas as its primary development tool. Because of the many fish-bearing sub-watersheds, Council designates the entire municipality as a development permit area for the protection of the environment. In the detailed development permit guidelines in the OCP, Council establishes an environmental impact assessment process, designates riparian setbacks for different kinds and reaches of watercourses, requires applicants to pay a security deposit, and sets out erosion and sediment control, vegetation protection, and landscaping requirements. Council also creates guidelines for ensuring that overall rainwater flows and water quality to the various watercourses remain at pre-development levels.

As an incentive, the District Council enacts a property tax exemption bylaw for properties in riparian areas. If a landowner makes a covenant in favour of the district to protect the riparian characteristics in a ten-metre setback and grants a statutory right of way to give District staff access to inspect the area, the District will forgive a portion of the property tax on the parcel.

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## PROTECTING SENSITIVE ECOSYSTEMS EXAMPLE 4: URBAN (CITY)

### RIPARIAN AREAS REGULATION

Local governments in B.C. have responded to the provincial Riparian Areas Regulation (RAR) in a variety of ways that reflect the geographic diversity in the province. Some have adopted the RAR's approach and processes. Others have created their own setback guidelines and processes. Still others are relying on existing or new watercourse protection bylaws. Chapter 13 deals with the scope of the RAR and includes two examples of how local governments have responded to it.

#### OCP (and local area plans)

- Comprehensive environmental restoration and protection policies

#### BYLAWS

- Comprehensive Green Infrastructures
  - Watercourses
  - Soil removal and deposit
  - Trees
  - Pesticide use
  - Invasive species
- Subdivision
  - Comprehensive landscaping requirements
  - Rainwater management policy for development >0.5 ha (on-site infiltration)

The city of Urbanity has been the region's metropolitan centre for over 100 years and has been completely built out for decades. Historic land use practices have destroyed all the green infrastructure except the urban forest and parks. One significant urban park (20 hectares) includes natural grassland and woodland habitat and several above-ground waterways. When City Council members receive a letter from a fifth grade class asking them to help clean up the water quality in the stream adjacent to their school, Council embarks on a path that leads to a commitment to rehabilitating the urban environment.

Staff begin by talking with the members of the fifth grade class to find out what they know about water pollution and the health of their stream. Working with the class throughout the spring on both basic and sophisticated water quality tests, staff discover unhealthy pesticide concentrations in the water. The children also document other effects on the watershed, such as the encroachment of invasive species in the narrow riparian corridor and the cutting of significant trees.

Staff recommend to Council the development of several blanket bylaws for the regulation of pesticides, watercourse protection, and restrictions on soil deposit and removal. Council hesitates to add several more regulatory layers onto its already complex municipal regime. Instead, it directs staff to draft a comprehensive green infrastructure bylaw that includes prohibitions, regulations, and requirements for development permits and impact assessments for watercourses, soil removal and deposit, tree removal, pesticide use, and invasive species.

Council also directs staff to ensure that the following year's OCP review and future local area plan reviews include comprehensive environmental restoration and protection policies.

Finally, Council adopts comprehensive native landscaping requirements in the subdivision bylaw and a rainwater management policy that focuses on infiltrating rainwater on site in all developments larger than 0.5 hectares.

## 2.7.2 Recommendations

The following comprehensive, integrated approaches will enable local governments to protect sensitive ecosystems within the context of urban and rural development pressures.

**1. A regional growth strategy** that establishes an urban containment boundary and secures a commitment from member local governments that a percentage (e.g., 90 percent) of growth over the life of the strategy (25 years) will occur within the urban containment boundary.

**2. Official community plans** (local area/neighbourhood/integrated watershed management plans) that:

- delineate (map) sensitive ecosystems;
- designate land uses and prescribe densities that concentrate development in areas away from sensitive ecosystems;
- describe how the local government will halt the loss of existing natural sensitive ecosystems; and establish amenity/ bonus density policies.

**3. Development Permit Area guidelines** that:

- require a permit from the local government before development occurs in an ESA (as identified in the OCP);
- establish a development review process, including an environmental/green infrastructure impact assessment process;
- create guidelines for development best management practices .

**4. Zoning bylaw standards** that:

- preserve large lots located outside the urban containment boundary;
- encourage mixed-use, nodal development within the urban containment boundary;
- establish setbacks for watercourse management areas and sensitive ecosystems;
- set specific density bonuses for specific zones;
- for each zone, establish the maximum percentage of the land area that impermeable material may cover;
- set standards for, and regulate the provision of, screening or landscaping for preserving, protecting, restoring, and enhancing the natural environment; and

### MINISTRY OF ENVIRONMENT DEVELOP WITH CARE GUIDELINES

The Ministry of Environment has prepared *Develop with Care: Environmental Guidelines for Urban and Rural Land Development in British Columbia* to provide province-wide guidelines for maintaining environmental values during the development of urban and rural lands. This document includes many ideas and suggestions for achieving “cleaner, greener” developments and provides information on ways that environmental protection and stewardship can benefit the community, the property owner, and the developer, as well as the natural environment. *Develop with Care* is one in a series of guidelines documents prepared by the Ministry of Environment. For a list of titles currently available, see the *Guidelines and Best Management Practices* web site <http://www.env.gov.bc.ca/wld/BMP/bmpintro.html>.

## **PRESCRIPTIVE VS. PERFORMANCE-BASED STANDARDS**

Local governments use a combination of two approaches when setting environmental standards. The traditional approach is to establish prescriptive standards that tell applicants for development how they shall construct something. For example, most engineering standards are prescriptive. The other approach is to set performance-based standards that set out the desired end result and allow development applicants to achieve that goal in the best way possible. Performance-based standards require more staff expertise, but arguably result in development that is more suitable to individual sites and projects. As staff expertise increases, local governments often shift more towards environmental regulation based on performance standards. An example of a performance standard is “no net increase in post-development runoff from pre-development levels.”

■ enable development to be clustered away from ESAs in specific zones.

**5. Bylaws** (comprehensive or topic-based) that set out local-government-wide regulatory prohibitions in the areas of tree protection, soil removal and deposit, water quality, pesticide use, and invasive species.

**6. A Rainwater (Stormwater) Policy and Design Manual** that focuses on infiltrating rainwater at its source, as adopted into the Subdivision and Development Services Bylaw.

## **2.8 Implementation Priorities – Where to Start?**

No local government will have the resources, technical know-how, and political support to implement all of the regulatory approaches suggested in this Toolkit. Implementation is an incremental process. The following priorities for implementation assume a long-term view of the possibilities.

### **1. Identify the Green Infrastructure**

The first task is to identify the elements of the green infrastructure—watercourses, wetlands, grasslands, and other sensitive ecosystems, and locations of species at risk and associated habitat. In order to designate them for careful treatment by establishing setbacks, development permit designations, and regulations, local governments must know approximately where these landscape elements are located. Mapping helps communities define the developed (village or urban) and rural aspects of a community. Each community may use different criteria to define the village or urban and rural landscape, and in many cases population projections will determine the boundaries.

### **2. Develop Policy and Zoning to Contain Urban Areas**

Directing new development into existing serviced areas not only saves local governments money, it helps to maintain the green infrastructure, makes the best use of existing infrastructure, and creates more vibrant communities. Containing urban areas does not involve any additional cost. It involves creating OCP policies and zoning amendments to limit the expansion of municipal infrastructure, setting lot sizes, and establishing a process for revising boundaries.

### **3. Create Compact Communities**

The flip side of containing urban areas is to encourage compact, complete communities of varying densities to decrease the footprint of built areas on the landscape. More densely populated towns and villages result in lower servicing costs per capita and a more vibrant commercial sector that takes the pressure for development off the rural green infrastructure. Creating compact communities may mean returning to more traditional town and village clusters. Amendments to zoning standards and official community plan policies that encourage and allow mixed-use projects and greater density in already-developed areas can help to achieve this outcome.

**For more information on strategies for creating compact, mixed-use communities, see Part 3 of the Smart Bylaws Guide**

<http://www.wcel.org/issues/urban/sbg/Part3/>.

#### **4. Protect Sensitive Ecosystems**

Maintaining sensitive ecosystems and green infrastructure in its natural state can be as simple as including policies in official community plans and zoning regulations that preserve high ecological values on large lots. From those first steps, local governments may move on to adding ecological standards to existing processes for approving development and subdivision permits. This could be through regulatory requirements in existing or new bylaws (such as watercourse protection, landscaping, and invasive species), or by designating development permit areas for protection of the natural environment.

#### **5. Create Incentives for Good Development**

Provincial legislation gives local governments legal options for providing landowners and developers with incentives to meet community goals such as protecting green infrastructure. Local governments can offer a property tax exemption for riparian property secured with a conservation covenant on the title. They also have the power to allow density bonuses if a developer agrees to provide specific amenities, such as dedicating environmentally sensitive land in return for higher-density development on less sensitive lands.

#### **6. Manage Stormwater/Rainwater to Protect Aquatic Ecosystems**

Managing rainwater is one of the major costs of development and is a key component in protecting the health of the green infrastructure. Best practices for rainwater management seek to control the volume, rate, and quality of runoff by detaining it so that a significant amount can infiltrate back into the soil while also ensuring that the water does not damage the property. This approach maintains water cycles, recharges groundwater and reduces erosion, sedimentation, and pollution. It can also reduce development costs significantly.

The remainder of the Toolkit expands on each of these principles, explains the related planning and regulatory approaches to protecting ESAs, and provides bylaws and case studies as examples of successful local government programs.

#### **INTEGRATED WATERSHED MANAGEMENT – BURNABY**

**During the past fifteen years, the City of Burnaby has been moving towards an integrated watershed management approach to regulating development. It uses the Official Community Plan, Local Area plans, watershed plans (enhanced rainwater/stormwater management plans), habitat reports, and interactive mapping to set the framework for development. The plans are buttressed with guidelines (for building near watercourses and in forested areas), policies (for total stormwater management), and bylaws (for watercourse and tree protection). As a result, all developments bigger than 0.45 hectares are required to submit a stormwater management plan at the time of subdivision. Developments of less than 0.45 hectares must adhere to best management practices that are negotiated on a site-specific basis. Small single-family developments are subject to limits on impermeable surfaces.**

[http://www.city.burnaby.bc.ca/cityhall/departments/departments\\_planning/plnng\\_envrnm.html](http://www.city.burnaby.bc.ca/cityhall/departments/departments_planning/plnng_envrnm.html)



# 3 Regional Growth Strategies

## 3.1 Overview

**A Regional Growth Strategy (RGS) is an agreement between member municipalities and a regional district on social, economic, and environmental goals and priority actions. A growth strategy guides decisions on growth and development within the regional district. One of the goals of a RGS is to protect environmentally sensitive areas [Local Government Act s.849(1)(d)]. A RGS can include (or adopt by reference) a regional conservation strategy (see Chapter 4) that deals explicitly with maintaining and restoring ecosystem functioning in a region.**

The *Local Government Act* states that the purpose of a RGS is to “promote human settlement that is socially, economically, and environmentally healthy and make efficient use of public facilities and services, land and other resources” (section 849). A RGS must cover a twenty-year period and must include a comprehensive statement on the future of the region, including the economic, social, and environmental objectives of the governing board in relation to projected population requirements for housing, transportation, regional district services, parks and natural areas, and economic development.

JURISDICTION	
Municipality	Regional District
<i>Local Government Act</i> Part 25 Municipal board members involved in developing RGS at regional level Municipal approval of draft RGS Regional context statement in OCP aligns RGS with municipal action	<i>Local Government Act</i> Part 25 Responsible for developing RGS All bylaws and plans must be consistent with RGS

STRENGTHS AND WEAKNESSES	
Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Initiates discussion about regional issues.</li> <li>• Increases profile of regional issues with local government and public.</li> <li>• Creates regional visions and mechanisms for discussing regional change.</li> </ul> May include: <ul style="list-style-type: none"> <li>• mechanisms for coordinating regional action.</li> </ul>	<ul style="list-style-type: none"> <li>• Need for agreement of all member municipalities and regional board leads to compromise in RGS to obtain consensus.</li> <li>• Board members/municipalities unwilling to support a regional plan that significantly influences local action (e.g., municipalities set own urban containment boundaries rather than basing them on regional criteria such as the location of green infrastructure).</li> </ul>

### PROTECT THE ENVIRONMENT – REGIONAL DISTRICT OF NANAIMO

The Introduction to the Regional District of Nanaimo’s RGS best explains the rationale behind the RGS’s strong policy focus on urban containment, intensive urban development, and environmental protection:

**“Rapid growth in the late 1980s and early 1990s raised residents’ concerns about worsening traffic, loss of open space and natural areas, increased costs of services, and changing neighbourhoods. It became clear that population growth projected for the region would undermine the very attributes of the region that residents value if growth was accommodated, as it had been since the 1950s, through further urban expansion into farms, forest and countryside. The RDN and its partners decided that the planning policy that directs development in the region should be shifted, to encourage investment and development in designated urban areas, protect the integrity of rural and resources areas, protect the environment, increase servicing efficiency, and retain mobility within the region.” (at p.1)**

Regional District of Nanaimo RGS <http://www.rdn.bc.ca/cms/wpattachments/wpID432atID355.pdf>

## METRO VANCOUVER'S GREEN ZONE

The Greater Vancouver Regional District's RGS, the Livable Region Strategic Plan, includes a Green Zone composed of regional drinking water watersheds; most lands in the ALR; forested lands; federal, provincial, and regional parks and conservation areas; and regionally significant municipal parks and public golf courses. The Regional Biodiversity Strategy currently under development will influence amendments to the Green Zone in the updated RGS.

GVRD Livable Region Strategic Plan <http://www.gvrd.bc.ca/growth/lrsp.htm>

### STRENGTHS AND WEAKNESSES

#### Strengths

- Mapping or designation of sensitive ecosystems.
- Commitment to protecting green infrastructure and acquiring sensitive ecosystems.
- Priority acquisitions.
- Four of the six adopted RGS designate urban containment boundaries; all others support concept of urban containment.

#### Weaknesses

- Reluctant to deny applications from member municipalities to amend the RGS: e.g., to extend servicing into rural areas.
- No incentive to meet provincial goals for ecosystem protection.
- Enforcement provisions unclear and/or onerous.

Local governments can use a RGS to get agreement on acquiring priority ESAs as parkland and to designate regional greenways and habitat corridors. A RGS can incorporate regional conservation plans and other regional documents that detail the protection of green infrastructure. It may also promote integrated watershed management involving several local governments.

## RGS Recipe for a Healthy Community

Section 849 of the *Local Government Act* states that a RGS should work towards goals that, when taken together, are the main ingredients for creating a healthy community. They include:

- Avoiding urban sprawl and ensuring that development takes place where adequate facilities exist or can be provided in a timely, economic, and efficient manner;
- Settlement patterns that minimize the use of automobiles and encourage walking, bicycling, and the efficient use of public transit;
- The efficient movement of goods and people while making effective use of transportation and utility corridors;
- Protecting environmentally sensitive areas;
- Maintaining the integrity of a secure and productive resource base, including the Agricultural Land Reserve;
- Economic development that supports the unique character of communities;
- Reducing and preventing air, land, and water pollution;
- Adequate, affordable, and appropriate housing;
- Adequate inventories of suitable land and resources for future settlement;
- Protecting the quality and quantity of ground water and surface water;
- Settlement patterns that minimize the risks associated with natural hazards;

- Preserving, creating, and linking urban and rural open space, including parks and recreation areas;
- Planning for energy supply and promoting efficient use, conservation, and alternative forms of energy;
- Good stewardship of land, sites, and structures with cultural heritage value.

All regional district bylaws and plans, and all official community plans of member local governments, must be consistent with the RGS.

To date, six regional districts have adopted RGSs (Nanaimo, Metro Vancouver, Thompson-Nicola, Central Okanagan, Capital Region, and Fraser Valley), and two more are under development (Okanagan-Similkameen and Squamish-Lillooet).

## 3.2 Urban Containment Boundaries

It is well accepted in B.C. that urban containment boundaries (UCBs) are an important tool for managing growth, but they are particularly crucial for protecting the green infrastructure. Four of the six RGSs in the province include urban containment boundaries, and all of the RGS include policies for protecting the environment.

UCBs are designated in the RGS, OCPs, and zoning bylaws. Local governments reinforce containment policies by refusing to extend servicing to areas outside the UCB and by maintaining large-lot zoning in these areas. See pages 37-40 (RGS) and 51-58 (OCP) for UCB policies. See also a case study of the oldest UCB in the province in the District of Saanich (page 57, in the Chapter on OCPs).

Appendix C focuses on RGS policies that aim to:

- establish urban containment boundaries through zoning and limits on infrastructure servicing. The land outside the boundary constitutes a network of green infrastructure. It includes lands in public or private ownership, whether protected or unprotected, with ecological value and regional significance (page 153);
- secure commitments from member local governments to contain a large percentage [e.g., 90 percent] of growth over the 25-year life of the strategy within the urban containment boundary (page 154);
- create large lots outside the urban containment boundary (page 155);
- channel growth into existing serviced areas (page 154);
- coordinate the acquisition and protection of sensitive ecosystems of regional significance (page 156); and
- secure commitments to keep ecosystems functioning by integrating the management of shared watersheds. (page 156).

### URBAN CONTAINMENT POLICIES

**The first goal in the Regional District of Nanaimo's RGS is Strong Urban Containment—to limit sprawl and focus development within well-defined urban containment boundaries. The member municipalities and the Regional District have agreed to review the UCB and consider amending it only every five years.**

**The Capital Regional District's first initiative in the RGS is to Keep Urban Settlement Compact. The policies adopted to accomplish this goal include locating a minimum of 90 percent of the region's cumulative new dwelling units within the Regional Urban Containment and Servicing Area.**

**Regional District of Nanaimo RGS** <http://www.rdn.bc.ca/cms/wpattachments/wplD432atID355.pdf>

**Capital Regional District RGS** <http://www.crd.bc.ca/growth/index.htm>



# 4 Regional Conservation Strategies

## 4.1 Overview

**Regional conservation strategies (RCSs) differ from RGSs (regional growth strategies) in both concept and intent. A RGS guides long-term decision-making about future growth and development in a region. Although a RGS includes environmental goals, its primary focus is managing growth effectively.**

RCSs are often called regional biodiversity strategies because they articulate ecological principles and conservation goals and actions that aim to maintain and enhance the biological diversity of a region and protect and/or restore ecologically significant areas. The development of a RCS involves establishing a geographical framework for the strategy by mapping and analyzing habitat types, rare and significant species and ecosystems, and other biodiversity values. This process provides a sound scientific foundation for conservation goals and objectives. The aim is to provide local and senior governments and other stakeholders with management priorities and planning tools that can help them make sure that local habitats persist as viable elements of healthy regional watersheds and ecosystems.

JURISDICTION	
Municipality	Regional District
<p><i>Local Government Act</i> Parts 25 and 26 (can be part of RGSs or OCPs)</p> <p>Municipal council members and staff are involved at the regional level in developing the RCS.</p> <p>Municipalities could adopt the RCS as part of an OCP.</p> <p>If part of the RGS, a regional context statement in the OCP aligns the RCS with municipal action.</p>	<p><i>Local Government Act</i> Part 25 and 26 (can be part of RGSs or OCPs)</p> <p>Regional District board members and staff are involved in developing a RCS at the regional level.</p> <p>Could adopt a RCS as part of a RGS and OCPs for electoral areas.</p>

STRENGTHS AND WEAKNESSES	
Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Takes a long-term, region-wide approach to biodiversity and ecosystem health.</li> <li>• Increases the profile of biodiversity with local governments and the public.</li> <li>• Creates a regional vision for conservation that can be the basis for, or become part of, planning documents such as an RGS and/or OCP.</li> <li>• Helps municipal governments establish scientifically defensible conservation priorities.</li> </ul>	<ul style="list-style-type: none"> <li>• Need for agreement among member municipalities and the regional board may lead to compromise on ecological goals and actions.</li> <li>• Board members/municipalities are historically unwilling to allow a regional document to influence local action significantly, particularly actions related to land use planning.</li> <li>• Boards usually support applications from member municipalities that contravene regional agreements: e.g., applications to extend servicing into rural areas.</li> </ul>

## STRENGTHS AND WEAKNESSES

### Strengths

- Informs the designation of greenways, DPA guidelines, and infrastructure development
- If the RCS is part of an OCP or RGS, all bylaws must be consistent with it.
- Provides a mechanism through which to monitor and assess change on a regional scale.
- Can respond to current or near-future *Species at Risk Act* listings of extirpated, endangered, or threatened species.

### Weaknesses

- Enforcement mechanisms are unclear and onerous.

A RCS promotes a big-picture, landscape view of the region as a whole and provides a framework for considering conservation options for entire ecosystems and watersheds. This larger, regional view encourages thinking beyond municipal boundaries and presents opportunities for collaboration among municipalities on conservation efforts, often with cost-saving benefits. For example, a RCS can consider the whole extent of a riparian corridor that crosses municipal boundaries. Land use planning that reflects this larger view and considers the wellbeing of whole ecosystems can make effective use of shared resources and significantly reduce the jurisdictional fragmentation that plagues many regional districts.

RCSs can inform RGSs, OCPs, and other local government processes with regard to areas that have priority for conservation. RCSs make ecological information available to staff and elected officials when they are making decisions about what to include in planning and regulatory documents. The habitat mapping that is part of a RCS can help designate green zones or greenways that reflect ecological values rather than land tenure.

The Capital Regional District's RCS, the *Regional Green/Blue Spaces Strategy*, dates back to 1997. The Metro Vancouver Region, the Islands Trust area, the Comox Valley, and Cowichan Valley Regional District are all currently developing RCSs (sometimes called environmental strategies or regional conservation plans). Metro Vancouver is currently part of a multi-agency initiative to develop a biodiversity action plan. Regional or municipal governments can either initiate or lead these strategies. In the case of the Comox Valley strategy, a non-government conservation organization is guiding the process. These initiatives involve a variety of stakeholders and partnerships among all levels of government.

In addition to local and regional conservation strategies, a multi-agency initiative is currently in progress at the provincial level to develop and implement a provincial Biodiversity Action Plan (2007). This project builds on the Canadian Biodiversity Strategy and reflects federal commitments made as part of the international Convention on Biological Diversity. For information, see <http://www.biodiversityBC.org>

## BIODIVERSITY STRATEGY FOR THE METRO VANCOUVER REGION

For more information on the Biodiversity Conservation Strategy for the Metro Vancouver Region, see <http://www.gvrd.bc.ca/growth/biodiversity.htm>

## 4.2 RCS Contents

Regional conservation strategies may include:

- mapping of sensitive ecosystems
- mapping known locations of species at risk
- mapping and analyzing habitat, for example, creating a GIS database and catalogue of protected areas, analyzing land cover, and identifying lands managed for conservation
- maps of relative biodiversity
- strategies for identifying and monitoring indicator species and their habitat requirements
- goals, objectives, and strategic directions for conserving biodiversity in the region
- processes for coordinating regional action
- commitments for protecting and acquiring green infrastructure
- lists of land acquisitions in order of priority
- initiatives to reinforce urban containment boundaries or urban growth areas from a conservation perspective.

RGSs, OCPs, and Parks and Recreation Master Plans may make RCS policies and actions operational at a municipal level.

## 4.3 Protecting Species at Risk through Regional Conservation Strategies

Species at risk also benefit from the attention that RCSs and local governments give to sensitive ecosystems. Sensitive ecosystems correlate closely with the habitats of endangered or at-risk species. Protecting sensitive ecosystems over the long term through zoning or by designating them as parks and using best management practices both at the site level and in municipal operations will contribute to the recovery of species at risk and prevent additional species from becoming at risk.

Both the federal and provincial governments designate species at risk. Under the federal *Species at Risk Act* (SARA), the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) lists species as extirpated, endangered, threatened, or of special concern. The provincial *Wildlife Act* ranks species as red-listed and blue-listed (see definitions in sidebar). Species at risk include amphibians, birds, fish, fungi, invertebrates, mammals, plants, plant communities, and reptiles.

### DEFINITIONS

**Federal definitions of at-risk wildlife species under the *Species at Risk Act*:**

**Extirpated** – no longer exists in the wild in Canada but exists elsewhere in the wild.

**Endangered** – is facing imminent extirpation or extinction.

**Threatened** – is likely to become an endangered species in the absence of actions to reverse the factors leading to its extirpation or extinction.

**Species of Special Concern** – may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.

[http://www.speciesatrisk.gc.ca/Q2\\_e.cfm](http://www.speciesatrisk.gc.ca/Q2_e.cfm)

**Ecological communities and indigenous species and subspecies designated by the B.C. Ministry of Environment:**

**Red-listed** – is extirpated, endangered, or threatened in B.C., and has been officially listed or is a candidate for official listing as Extirpated, Endangered, or Threatened status.

**Blue-listed** – is of special concern in B.C. because of characteristics that make it particularly sensitive to human activities or natural events.

<http://www.env.gov.bc.ca/atrisk/red-blue.htm>

## **SARA PUBLIC REGISTRY**

**The federal government maintains a public registry of listed species, status reports on listed species, recovery plans, and national codes of practice.**

[http://www.sararegistry.gc.ca/default\\_e.cfm](http://www.sararegistry.gc.ca/default_e.cfm)

**It is an offence under the SARA for local governments and private landowners in B.C. to harm or harass, or to damage or destroy the residence of a listed aquatic or migratory bird species in areas that have been designated as critical habitat – including private land or public land owned by a local government.**

### **4.3.1 Federal Species at Risk Act**

The federal *Species at Risk Act* (SARA) aims to save wildlife species from extirpation or extinction and to support the recovery of at-risk wildlife species.

When COSEWIC lists a species as extirpated, endangered, and threatened, SARA requires the preparation of a recovery strategy. When COSEWIC lists a species as of special concern, SARA requires the development of a management plan. If a recovery strategy or action plan identifies critical habitat, SARA supports protection of the habitat through regulation, agreements, or a general prohibition against its destruction. The federal government may make emergency orders to protect a listed species if it faces an imminent threat to its survival or recovery. SARA also contains a number of prohibitions, for example, against killing or destroying the habitat of an at-risk species.

SARA binds the governments of Canada and the provinces, but its scope is limited in B.C. because most land in the province is Crown land under the jurisdiction of the provincial government. SARA applies for the most part to two types of land: federal land, such as national parks, and the critical habitat of listed aquatic species and migratory birds that come under federal jurisdiction (federally regulated coastal and inland waters and species/areas protected by the *Migratory Birds Convention Act 1994*).

For local governments and private landowners in B.C., this means that it is an offence under SARA to harm or harass, or to damage or destroy, the residence of a listed aquatic or migratory bird species in areas that have been designated as critical habitat. This includes critical habitat located on private land or land owned by a local government. The federal government can extend these prohibitions by order to other listed species (e.g., terrestrial species) on private land in a province where the government is of the opinion that the laws of the province or voluntary measures do not effectively protect the critical habitat.

The federal government has committed to consulting the public and using voluntary stewardship as the first tactic for dealing with habitat protection on private lands. Individuals may also apply for a permit for activities that would otherwise be an offence under SARA or enter into an agreement for these activities.

As of November 2007, the federal government has posted recovery strategies in the SARA public registry for 30 percent of B.C. species that are currently listed on SARA Schedule 1. Critical habitat has not yet been formally identified in a posted recovery strategy on any private lands or lands owned by a local government in B.C. The federal and provincial governments are currently reviewing recovery strategies for another 33 percent of SARA-listed species in B.C., and recovery teams are drafting recovery strategies or management plans for an additional 20 percent.

## New Web Tool for Local Governments

### *Species at Risk and Local Government: A Primer for British Columbia*

To comply with SARA, local governments, developers, approval agencies, and others need but often lack ready access to information on which listed species are likely to occur at a particular site and on what management strategies are appropriate for those that do. The Stewardship Centre of BC has sponsored the development of a web-based tool that provides information on the distribution of British Columbia's species at risk in relation to local government jurisdictions (at the regional district level), introduces a guild-based approach to management planning, and provides an overview, with examples, of initiatives local government can use to achieve compliance with SARA. The information is published in a new web-based *Stewardship Series* document. It allows users to search for potential species occurrences by regional district and habitat type. For each species, users can generate a printable summary page with photographs, a life history summary, and general management information. All COSEWIC listed species in British Columbia are currently covered, and provincially red and blue-listed species will be added in the near future. See <http://www.speciesatrisk.bc.ca> for more information.

### 4.3.2 Protecting At-risk Species in B.C.

The provincial red and blue lists help the provincial government establish conservation priorities for at-risk species in B.C. They also give direction for formal designations by COSEWIC or provincially under the *Wildlife Act* of species as endangered or threatened.

The main focus of the *Wildlife Act* is to establish licence regimes and acceptable practices for hunting, trapping, and fishing in B.C. However, it also provides for the designation of extirpated, endangered, and threatened species. The *Wildlife Act* prohibits the disturbance of species and wildlife habitats and the killing, trading, trafficking, and transport of individuals of a designated species. Cabinet may also protect the habitat of a listed species.

The *Wildlife Act* differs from the federal SARA because it does not mandate provincial government action to protect designated species. However, the province has recovery plans for some species. Instead, the *Wildlife Act* relies on prohibiting damage to wildlife habitat in wildlife management areas on Crown land and prohibits killing, wounding, trafficking, and transporting endangered or threatened species. It also prohibits disturbing a muskrat or beaver house or dam and prohibits taking or disturbing a bird, its egg, or a nest when a bird or egg is occupying it (with specific reference to eagles, peregrine falcons, gyrfalcons, ospreys, herons, and burrowing owls). Persons may also apply for a permit for, or enter into an agreement to undertake, activities that would be an offence under the Act.

## FEDERALLY PROTECTED HABITAT IN B.C.

**Under the *Migratory Birds Convention Act 1994*, the following bird sanctuaries are protected habitat in B.C.: Christie Islet, Esquimalt Lagoon, Nechako River, Reifel, Shoal Harbour, Vaseux Lake, and Victoria Harbour. SARA also applies to federal parks: Glacier, Gulf Islands, Gwaii Haanas, Kootenay, Mount Revelstoke, Pacific Rim, and Yoho.**

## WILDLIFE ACT UNDER REVIEW

**The provincial government is in the process of reviewing the existing *Wildlife Act* and regulations. The review process involves exploring how to improve and modernize the legislation to facilitate more effective wildlife management in B.C. It will include discussions with First Nations and consultation with stakeholders and the public. A parallel review process is underway regarding the Regulation that will bring into force protection for species at risk under the 2004 *Wildlife Act Amendment Act*.**

## **DESIGNATED AT-RISK SPECIES IN B.C.**

**The Vancouver Island marmot, the burrowing owl, and the white pelican are endangered species under the provincial *Wildlife Act*. The sea otter is a threatened species in B.C.**

Under the *Wildlife Act*, the provincial government can address the habitat needs of threatened and endangered species only by designating critical habitat in wildlife management areas on Crown land or through special management provisions for Crown land under other legislation.

Provincial activities to protect species at risk have very little affect on private land in B.C. because B.C. is 95 percent Crown land and because the *Wildlife Act* relies on prohibitions on conduct more than habitat preservation. There are a variety of exceptions to the Act's prohibitions.

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## **MANAGEMENT OF CRITICAL HABITAT ON CROWN LAND**

Provincial laws such as the *Forest Land Reserve Act* and regulations, the *Land Act*, the *Water Act*, and the *Parks and Protected Areas Act* authorize the provincial government to order special management provisions for at-risk species on Crown land. The provincial government may also designate land within a wildlife management area as a critical wildlife habitat.

## **B.C. SPECIES AND ECOSYSTEMS EXPLORER**

The Ministry of Environment's B.C. Species Ecosystems Explorer is a searchable database that contains information about all red- and blue-listed species and ecological communities in B.C., organized by species and searchable by species name or group, conservation status, legal designation, forest district, biogeoclimatic zone, and habitat type. The database includes information and reports on the status, legal designation, distribution, life histories, and conservation needs of and recovery plans for, species and ecological communities, as well as links to relevant publications about species and ecological communities.

<http://www.env.gov.bc.ca/atrisk/toolintro.html>

## **SPECIES AND ECOSYSTEMS AT RISK**

See the following resources for more information on species and ecosystems at risk in B.C.:

### **Federal (species only):**

**Species at Risk Act Public Registry** <http://www.sararegistry.gc.ca/>

**Species at Risk** [http://www.speciesatrisk.gc.ca/default\\_e.cfm](http://www.speciesatrisk.gc.ca/default_e.cfm)

**Committee on the Status of Endangered Wildlife in Canada**

[http://www.cosewic.gc.ca/eng/sct5/index\\_e.cfm](http://www.cosewic.gc.ca/eng/sct5/index_e.cfm)

### **Provincial:**

**Endangered Species and Ecosystems in B.C.** <http://www.env.gov.bc.ca/atrisk/>

**Recovery Planning in B.C.** <http://www.env.gov.bc.ca/wld/recoveryplans/rcvry1.htm>

**Sensitive Ecosystems Inventories (currently available for East Vancouver Island and Gulf Islands, Sunshine Coast, Bowen and Gambier Islands, Central Okanagan, and Bella Vista–Goose Lake Range–North Okanagan)** <http://www.env.gov.bc.ca/sei/>

### 4.3.3 Local Government Action

To date species at risk listings have not forced local governments to change their land use planning or land development processes. Through the Union of B.C. Municipalities, COSEWIC invites local governments to comment on proposed species listings. However, SARA can apply to listed aquatic species and migratory birds on designated critical habitat, on land owned by local governments, and on private land. The federal government can also prohibit the disturbance of the habitat of any other species at risk. This could significantly affect a local government's jurisdiction over land use planning and regulation.

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**Regional and local conservation strategies are the most effective and comprehensive way to map and plan for conservation of threatened, endangered, and extirpated species.**

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Given the possibility of federal requirements for protecting species at risk, it is in the best interests of local governments to initiate long-term strategies for protecting sensitive ecosystems, with particular attention to preserving the integrity of wildlife habitat. Key local government concerns also include maintaining regional ecosystem functions and staying ahead of senior government regulations. Protecting sensitive ecosystems will protect habitat for many species at risk.

RCSs are the most effective and comprehensive way to map and plan for threatened, endangered, and extirpated species. Local governments can protect species at risk and achieve a variety of other objectives, including:

- identifying species at risk and their habitats by mapping sensitive ecosystems before development occurs (see Mapping at page 22 and Impact Assessment at page 91).
- directing development away from sensitive ecosystems through regional strategies, zoning, site-specific regulation, and setbacks from sensitive areas (see RGSs, page 37; OCPs, page 51; DPAs, page 73; and Regulatory Bylaws, page 105).
- avoiding development activities that disturb sensitive ecosystems and preventing polluting activities in or near sensitive ecosystems (see Zoning page 69; DPAs, page 73; and Regulatory Bylaws, page 105).
- requiring buffers between sensitive ecosystems and developed areas (see chapters on DPAs, page 73, and Regulatory Bylaws, page 105).
- protecting and, where needed, restoring sensitive ecosystems by designing recreation activities carefully, using covenants to retain sensitive ecosystems, planting native species, and eradicating alien invasive species (see chapters on OCPs, page 51; Security and Covenants, page 99; and Regulatory Bylaws. page 105).

Finally, local governments can have a significant effect on the recovery of species at risk and sensitive ecosystems by changing the way they manage public lands and infrastructure (and restore biodiversity). Local governments

#### **PROTECTING EAGLE NESTS – CAMPBELL RIVER**

**The OCP for the City of Campbell River designates a DPA for eagle nests/trees. The justification for the DPA notes that raptors and herons are extremely sensitive and may abandon their eggs or young if the area immediately surrounding their nests is disturbed. The DPA establishes buffer areas adjacent to nesting trees to protect the nests from direct and indirect development-related disturbance. The red dots on the map in Schedule 8 show eagle trees/nests as part of the Environmentally Sensitive Areas DPA.**

**See p. 9(13) of the OCP at <http://www.campbellriver.ca/Business/DevelopingCampbellRiver/GuidelinestoDevelopment/Documents/Nov06%202005OCPFinal.pdf> and the maps at <http://www.campbellriver.ca/Business/DevelopingCampbellRiver/GuidelinestoDevelopment/Pages/TypesofDevelopment.aspx>**

**DRINKING WATER  
AND BIODIVERSITY  
CONSERVATION  
AREAS**

**Many local governments own watersheds that supply drinking water; they can also manage these watersheds as biodiversity conservation areas.**

can also review operations procedures, particularly drainage, maintenance, and public access, with the intention of protecting species.

## 4.4 Case Study: Capital Regional District (Green/Blue Spaces Strategy)

### ◆ Capital Regional District Regional Green/Blue Spaces Strategy and Land Acquisition Fund

The Capital Regional District Board adopted its Regional Green/Blue Spaces Strategy in 1997 as a means of maintaining, conserving, rehabilitating, and restoring green/blue space on public and private land in the Capital Region. The strategy includes areas with a variety of values, including ecological, aesthetic, renewable resource, outdoor recreation, and greenway. It refers explicitly to safeguarding endangered species and sensitive ecosystems.

The Regional Green/Blue Spaces Strategy has the following objectives:

- Conserve rare, threatened, or endangered ecosystems and species in the CRD.
- Maintain biological diversity by protecting and enhancing a variety of habitats.
- Conserve ecologically valuable areas in large, diverse, contiguous units and connect them with greenways.
- Maintain the character and diversity of green/blue spaces in the CRD.
- Enhance and restore areas that could have green/blue space values.
- Develop a comprehensive set of priorities for the conservation of green/blue spaces in the CRD.
- Educate people about the value of protecting green/blue spaces in the CRD.
- Foster partnerships for the conservation and stewardship of green/blue spaces.

The strategy sets out the regional green/blue spaces system, including: (1) green/blue space core areas; (2) greenways; (3) renewable resource working landscapes; and (4) valuable remnant ecosystems. The strategy also identifies how to protect important areas and who the partners in protection would be, including priorities for participation by citizens, landowners, businesses, community organizations, and all levels of government.

Two significant implementation actions have made the strategy successful to date. First, in 1998 the CRD adopted a large part of the vision from the Regional Green/Blue Spaces Strategy as part of the foundation for the CRD's RGS (see the Vision reproduced below). Many of the region's municipalities also adopted the strategy's designations of important ecosystems and

working landscapes in their own regional context statements and urban containment boundaries. However, the municipalities were not unanimous in adhering to the Strategy; each municipality designated its own urban containment boundary without regional oversight.

Second, in 2000 the region's municipalities and the CRD approved an annual \$10 per parcel property tax levy for ten years to fund the acquisition of priority conservation areas and parklands. This Land Acquisition Fund generates approximately \$1.65 million per year and has given the CRD Parks Department significant leverage to work with conservation organizations, particularly land trusts, to acquire sensitive ecosystems as regional parkland. The Parks Department is working towards building a regional parks and trails system as proposed in its Parks Master Plan, with a focus on connecting important areas, particularly in the Sea to Sea Greenbelt, the Galloping Goose Regional Trail, and the Mount Work/Thetis Lake area. To date (2007), the CRD and its partners have purchased 1,882 hectares.

CRD Green/Blue Spaces Strategy

[www.crd.bc.ca/parks/documents/greenblue\\_spaces\\_strategy.pdf](http://www.crd.bc.ca/parks/documents/greenblue_spaces_strategy.pdf)

CRD Parks Master Plan

<http://www.crd.bc.ca/parks/preservation/masterplan.htm>

## ◆ CRD Regional Green/Blue Spaces Vision— Our Essential Nature

*There are times when we just want to roam the Gowlland Range and listen to the sound of air stirred up by eagles' wings. Or stroll the Swan Lake boardwalk and watch a family of proud ducklings parade past our feet.*

*Then there are days when splashing about with our children in the cool, clean waters of Thetis Lake is the only thing worth doing. Or maybe it's kicking up the warm, soft sand of Willows Beach.*

*Perhaps it's walking along the Colquitz Creek that makes our world come alive. Or taking a second, reflective look at a rare old Douglas-fir on the grounds of Royal Roads.*

*Whether it is the pastoral splendour of the Saanich Peninsula farmlands, or the stark and wild beauty of the Juan de Fuca coastline, our ability to appreciate nature begins with whatever captivates our senses. It then expands to values we feel deeply but rarely capture in words.*

*All of us who live in the Capital Regional District cherish the natural environment that is so essential to our quality of life, and we are determined that it never be compromised.*

*So although we already enjoy a diverse network of protected areas that stretches from the Southern Gulf Islands to Port Renfrew, we cannot be complacent. As the region's population continues to grow, we must ensure that the stewardship of the natural environment remains integral to all forms of urban, suburban and rural development.*

*But we don't protect nature just so we can hike, relax and contemplate. We must also safeguard endangered species and sensitive ecosystems such as Garry oak meadows and stands of old growth Douglas-fir. And we need to give Pacific salmon a fighting chance to return to urban streams.*

*To that end we envision the development of a regional green/blue space system that will protect and maintain the full range and diversity of the natural environment that surrounds us, including significant green spaces, the marine environment, wetlands, fish and wildlife habitat, and unique ecosystems.*

*We are also committed to protecting and maintaining the last remnants of ecosystems that flourished here before the time of Captain Cook, and to restore natural systems we have altered.*

*This is neither a park plan nor a policy document, but a vision of cooperative stewardship that integrates the contributions of citizens, landowners, businesses, communities, and all levels of government. It is a vision of sustaining the essential nature of our region, of continually creating and protecting a livable and healthy community – and passing on that legacy to future generations.*



# 5 Official Community Plans

## 5.1 Overview

An Official Community Plan (OCP) and its component sub-plans such as neighbourhood plans, local area plans, and/or watershed plans set a general direction for development and conservation in a community. OCPs may contain policies for the “preservation, protection, restoration and enhancement of the natural environment, its ecosystems and biological diversity” (s.878 of the *Local Government Act*). They articulate the community’s objectives and policies regarding land use, community development, and operations. OCPs also set EDPA guidelines for protecting ecosystems.

The policies in an OCP can help a variety of persons and agencies, including planning staff and councils or boards, decide whether a proposed development fits with the community’s goals and desired pattern of land use. It provides information that can guide the development sector and landowners toward the most appropriate form of development. OCPs also help councils and boards assess the merits of development proposals and make decisions on applications for variance permits.

JURISDICTION	
Municipality	Regional District
<i>Local Government Act</i> ss.875-879, 882, 884, 941 (OCP)	<i>Local Government Act</i> ss.875-879, 882, 884, 941 (OCP)
<i>Community Charter</i> s.69 (drainage)	<i>Local Government Act</i> ss.540-542 (drainage)
STRENGTHS AND WEAKNESSES	
Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Informs the designation of greenways, DPA guidelines, and infrastructure development.</li> <li>• If the RCS is part of an OCP or RGS, all bylaws must be consistent with it.</li> <li>• Provides a mechanism through which to monitor and assess change on a regional scale.</li> <li>• Can respond to current or near-future <i>Species at Risk Act</i> listings of extirpated, endangered, or threatened species.</li> </ul>	<ul style="list-style-type: none"> <li>• Enforcement mechanisms are unclear and onerous.</li> </ul>

Strong OCP policies also provide direction to approving officers when they are reviewing applications for subdivision. Under section 85 of the *Land Title Act*, an approving officer may refuse to approve a subdivision plan if the officer considers that the plan is against the public interest. OCP policies may also influence the kinds of conditions an approving officer decides to place on subdivision approvals.

OCPs usually include designations of environmental development permit

### RURAL LAND USE BYLAWS

**Under s.873.1 of the *Local Government Act*, the provisions of a rural land use bylaw are deemed to be provisions of an official community plan, zoning bylaw, or subdivision servicing bylaw.**

**Strong OCP policies also provide direction to approving officers when they are reviewing applications for subdivision. Under section 85 of the *Land Title Act*, an approving officer may refuse to approve a subdivision plan if the officer considers that the plan is against the public interest.**

## **ENCOURAGING CORRIDORS**

**The OCP for Ellison in the Regional District of Central Okanagan supports using park dedications, land trusts, covenants, or development agreements to conserve corridors of sensitive ecosystems and to manage these areas in a manner that preserves connections between them and supports the movement of rare and endangered species. These areas should be large and contiguous, with an ideal overall configuration of 100 hectares or more and no specific area less than 100 metres in width.**

See section 7.2.2.3  
[http://www.regionaldistrict.com/docs/planning/Ellyson%20OCP/EL\\_OCP\\_SchA.pdf](http://www.regionaldistrict.com/docs/planning/Ellyson%20OCP/EL_OCP_SchA.pdf)

areas, their justifications, and detailed guidelines (see Chapter 7). OCPs can also direct applicants to terms of reference for evaluating the impacts of development, and they can require development proposals to conform to best management practices that senior levels of government or other organizations recommend.

OCPs do not authorize or require local governments to undertake specific works or projects, but any development proposals, works, or projects must be consistent with the OCP. Because OCPs guide a community's overall development, the more specific and detailed the OCP policies are, the more direction landowners and staff will have about public expectations for conservation and the regulatory changes that are needed to implement the OCP. Several local governments now divide the natural environment chapter of the OCP into ecosystem types, with specific policies for each type.

## **5.2 Mapping and Greenways**

Official community plans contain maps that give a pictorial representation of a community's current assets and desired future changes. Maps identify future uses of land, sensitive ecosystems, riparian areas, raptor nests, and other values. Maps in OCPs often depict the boundaries of EDPAs and show the overall pattern of ecologically connected areas (greenways) on public and private land throughout a municipality or regional district (see section 2.6). Maps are a simple and effective way to convey the extent of the existing green infrastructure and desired future patterns of conservation. They serve an invaluable educational role for the public and the development community.

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### **GREEN INFRASTRUCTURE MAPS**

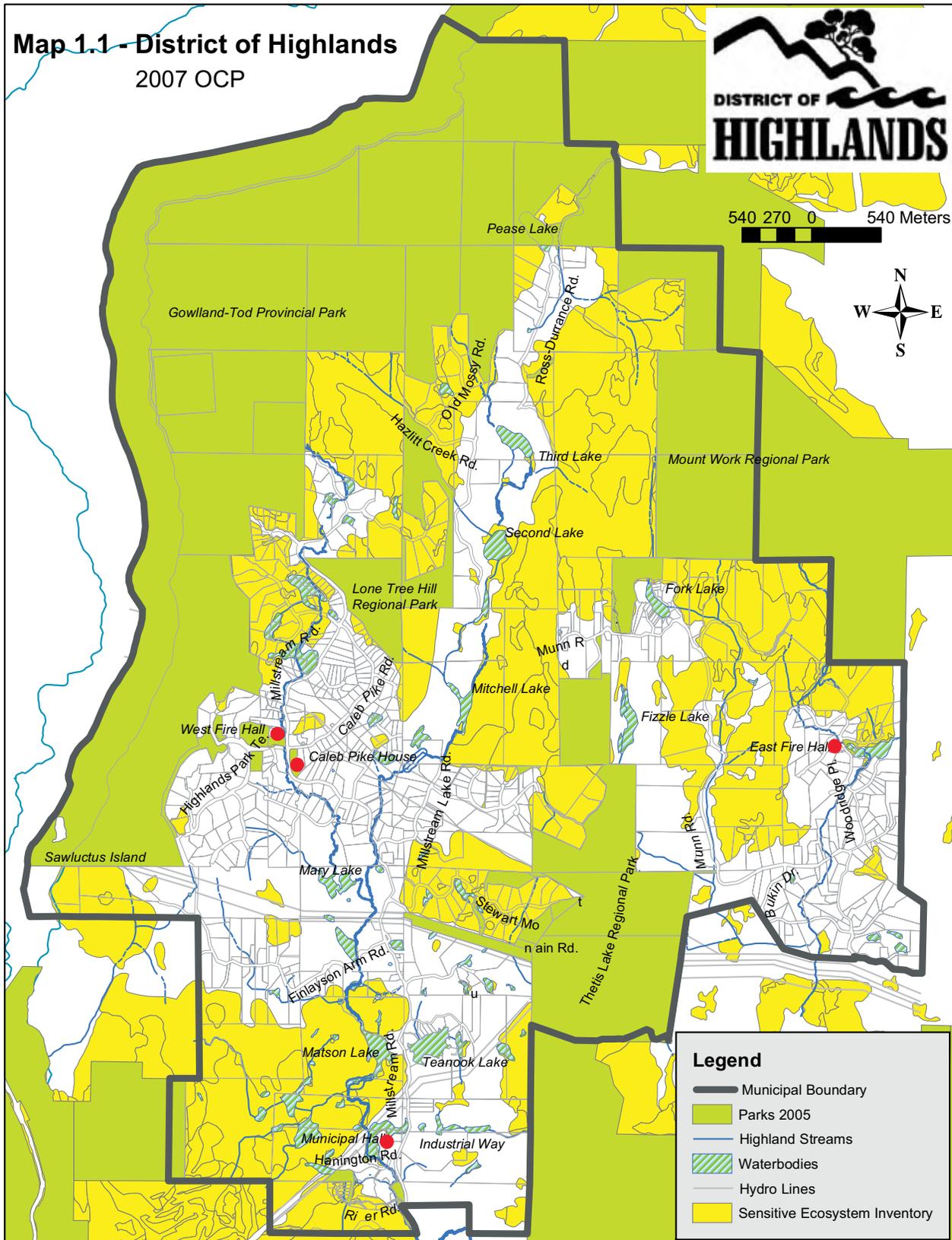
**The District of Highlands OCP contains several maps showing the extent of the area's green infrastructure, both riparian and terrestrial. The maps show the Highlands context and land uses; the location of wells, springs and lineaments; existing parks and trails; roads and roadside trails; DPAs; steep slopes; water and riparian areas, and sensitive vegetation. The maps clearly depict the greenways of ecologically connected lands throughout the municipality.**

<http://www.highlands.ca/ocp>

**Map 1.1 - District of Highlands**  
2007 OCP



540 270 0 540 Meters



**Legend**

- Municipal Boundary
- Parks 2005
- Highland Streams
- Waterbodies
- Hydro Lines
- Sensitive Ecosystem Inventory

## **PARKLAND**

**The City of Burnaby's landscape is 25 percent parkland and the District of Highlands' is 30 percent.**

### 5.3 Parkland Acquisition

Acquiring parkland is an important strategy for protecting environmentally sensitive areas. Many OCPs establish land acquisition policies in relation to parks master plans. During subdivision, municipalities can purchase or dedicate land as parkland. Section 941 of the *Local Government Act* requires an owner to dedicate five percent of the land subject to subdivision as a park or to pay cash in lieu of land. If OCP policies designate the location and type of future parkland, the local government can choose whether to require the landowner to provide parkland or cash in lieu. Development cost charges (section 933 *Local Government Act*) can bolster the parkland acquisition budget. However, purchasing parkland or dedicating it through the subdivision process often will not meet a local government's conservation goals given limited land acquisition budgets and the small amount of land dedicated during subdivision.

OCPs can support other approaches to land development that can result in the acquisition of significant amounts of parkland. These include density bonuses (see page 64), cluster development (see page 61), and comprehensive development zoning (see page 70 and the Colwood case study at page 62). Many local governments also acquire a much higher percentage of parkland during subdivision when the development involves a package of regulatory changes, including rezoning.

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#### **BUYING GREEN INFRASTRUCTURE – CAPITAL REGIONAL DISTRICT**

**In 2000 the region's municipalities and the CRD approved an annual \$10 per parcel property tax levy for ten years to fund the acquisition of priority conservation areas and parklands. This Land Acquisition Fund generates approximately \$1.65 million per year and has given the CRD Parks Department significant leverage to work with conservation organizations, particularly land trusts, to acquire sensitive ecosystems as regional parkland. The Parks Department is working towards building a regional parks and trails system as proposed in its Parks Master Plan, with a focus on connecting important areas, particularly in the Sea to Sea Greenbelt, the Galloping Goose Regional Trail, and the Mount Work/Thetis Lake area. To date (2007), the CRD and its partners have purchased 1882 hectares.**

CRD Land Acquisition Fund  
[http://www.crd.bc.ca/parks/land\\_acquisition.htm](http://www.crd.bc.ca/parks/land_acquisition.htm)

## 5.4 Conservation Zoning vs. Transfer of Development "Rights"

Some local governments are using zoning and OCPs to establish "transfer of development rights" programs that allow developers to transfer the density under existing zoning (considered the "development rights") on one piece of land to another property. The goal is to protect the green infrastructure by decreasing the density of development in greenways and areas with ESAs.

This conservation model comes from the United States and is inappropriate for use in Canada and B.C. In Canada zoning does not create development "rights" because, unlike the U.S., the Canadian constitution does not protect property rights. Local governments are free to change zoning to achieve conservation goals without paying property owners for changes in the value of land; local governments do not have to compensate landowners when zoning affects the value of property. All levels of courts in Canada accept that local governments have wide latitude to change the amount or type of development on land in the public interest, whether or not the landowner agrees with the change.<sup>20</sup> In only very limited circumstances—for example, if a local government prohibits all development on a piece of land or if there is an existing development application in front of a local government—will a landowner be entitled to compensation from the local government.

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**It is important to tell landowners that zoning is a gift from the public and that local governments can change zoning to uphold community goals without attracting any financial liability.**

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By using the language of "transfer of development rights," local governments and conservation groups are unwittingly increasing landowners' expectations about fixed property values. Over the long term this will increase conflicts when local governments enact regulations and policies to preserve the green infrastructure. It is important to tell landowners that zoning is a gift from the public and that local governments can change zoning to uphold community goals without attracting any financial liability. Indeed, the vast majority of rezonings see local governments allowing more density on a parcel of land. This type of rezoning is a gift from the public and increases the value of the land. In most communities the public is not "compensated" for this increase in land value through rezoning.

In B.C. the appropriate mechanism for conserving sensitive ecosystems if the existing zoning allows an inappropriate level of density is to zone designated areas as rural conservation zones and to use amenity density bonus programs. Conservation zoning refers to large lot zoning outside of urban containment boundaries designed to protect ESAs, greenways, and habitat corridors. These zones reduce the intensity of use or density. This approach achieves broad conservation goals at no cost to the local government, except the rezoning process. See section 6.2 for a more detailed discussion of rezoning for conservation.

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<sup>20</sup> See, for example, the Supreme Court of Canada cases *Enterprises Sibeca Inc. v. Frelighsburg (Municipality)* 2004 SCC 61 and *Canadian Pacific Railway v. Vancouver (City)* 2006 SCC 5.

### **NO COMPENSATION DUE FOR PLANS, PLANNING BYLAWS, OR PERMITS**

**Local governments do not have to compensate landowners for any reduction in the value of property that arises from changes to plans and planning bylaws such as zoning, or from the issuing of development permits for projects in development permit areas (section 914 *Local Government Act* and case law). The changes must be in good faith and for a proper purpose and must not restrict the use of land solely to a public use (e.g., park).**

### **CONSERVATION ZONING**

**Several local governments—e.g., Islands Trust (Denman Island) and the District of Highlands—have used rezoning to implement conservation priorities and to correct zoning enacted in the 1970s and 1980s that was not sensitive to ecological values.**

## **AMENITY DENSITY BONUS FOR ENVIRONMENTAL PROTECTION**

**Section 904 of the *Local Government Act* authorizes rezoning for amenity density bonuses. Local governments may create different density regulations for a zone—one that is generally applicable and another, higher density (bonus) that is applicable if the landowner conserves or provides amenities. The amenity density bonus allows local governments to approve increased density and density tailored to site-specific conditions in return for the protection of sensitive ecosystem features. Officials must take care to ensure that amenity density bonuses do not erode the overall vision in the OCP. Several local governments are using amenity density bonus provisions in OCPs and zoning bylaws to encourage the clustering of development away from ESAs and the dedication of ESAs as parkland. See the four case studies at page 66 in Chapter 6 – Zoning.**

The amenity density bonus is another appropriate tool that uses density to achieve conservation goals. Where a local government uses amenity density bonus, a developer who seeks an amenity density bonus will be allowed to build additional density in return for providing the local government and the public an amenity in return. Amenities can include environmental protection, habitat restoration, and the acquisition of parkland. The amenity density bonus has a clear basis in legislation in B.C. (section 904 of the *Local Government Act*), and it achieves the same goals as the transfer of development rights approach. See sections 6.5 and 6.6 for further discussion of the amenity density bonus.

The OCP provisions in Appendix D aim to:

- establish an urban containment boundary (page 159).
- protect sensitive ecosystems (e.g., wetlands) by establishing development permit areas that require buffer zones and special permitting before development can take place (page 159).
- commit the local government to an integrated watershed management approach that will coordinate action on the community water supply, rainwater management, green infrastructure, and government regulations (e.g., Riparian Areas Regulation requirements) (page 162).
- encourage the adoption of alternative design standards and best management practices that maintain ecosystem functions (e.g., to reduce impervious surfaces).
- direct local governments to specify site design that maintains natural hydrological cycles (page 163).
- encourage cluster development that provides greater protection to sensitive ecosystems (page 164).
- direct local governments to consider creative tools that will provide developers with incentives (density bonusing, tax exemptions, etc.) to protect sensitive areas (page 163).
- direct local governments to encourage individuals and non-government organizations to practice stewardship and use legal tools to protect sensitive ecosystems (page 164).
- prohibit a net loss of existing ESAs (page 165).

Note that Chapter 7 and Appendix F contain specific EDPA provisions.

## 5.5 Case Study: Saanich (Urban Containment Boundary)

### ◆ Urban Containment Boundary – Saanich

The District of Saanich enacted a municipal urban containment boundary (UCB) and a sewer enterprise boundary (SEB) in 1968 as its primary growth management tools. For the past 40 years, Saanich has largely maintained the rural and urban parts of the municipality as separate and distinct.

The original intent of the UCB was to provide a 50-year supply of urban land for carefully staged residential development. The SEB was within the UCB and included the gravity-dependent sanitary trunk-sewered area of the municipality and the area intended for sewerage in the next five years. To strengthen the urban containment concept, in 1969 Council increased the minimum parcel size in the rural area from 0.65 hectares to 2.0 and 4.0 hectares.

The current UCB policies in the OCP require that any major changes to the UCB must receive elector assent by referendum or plebiscite. In addition, major changes must be part of the comprehensive five-year review of the Regional Growth Strategy. Local area plans allow minor changes if the land can be serviced by gravity to an existing sewer. Land outside the UCB is not connected to the sanitary sewer. Previously, Council considered minor amendments through a biannual review process, but now considers amendments upon application for rezoning or in response to health concerns that require connection to the sanitary sewer.

The zoning bylaw, local area plans, and Parts 2 and 3 of the Saanich General Plan enshrine UCB policies. Page 7 of the Saanich General Plan states that:

A primary objective of growth policies is to establish a balance between the local and the regional demand for housing and urban services and the desire to protect the physical and natural environment. The perceived impact of past development on the essential elements of the community such as public safety and health, urban services, the environment, agricultural land, and liveability has resulted in the creation of broad support for growth control within the concept of sustainable development. New policies challenge the traditional view of outward growth as inevitable and necessary and emphasize efficient urban management through a local consultation process.

Policies include:

- use local area planning, the urban containment concept, the sewer enterprise process, transportation strategies, environmental assessments, and special studies as the basis for managing growth;
- adopt land use, density, and development policies for local areas, and use neighbourhood centres to encourage diversity of lifestyles and housing, and economic and cultural opportunities; and

**CALGARY WETLANDS CONSERVATION PLAN**  
**In 2004 Calgary City Council approved a Wetlands Conservation Plan to institute a comprehensive regional approach to protecting the thousands of wetlands in its jurisdiction. The plan includes extensive wetlands inventories and initial policies for protecting wetlands and mitigating impacts from development. The Calgary Parks Department is working on a detailed implementation plan for the policy that will include mitigation and evaluation procedures, as well as research and monitoring programs. Principles and goals include avoiding development impacts, no net loss of wetlands, and best practices for mitigation of impacts from development. See [http://www.calgary.ca/portal/server.pt/gateway/PTARGS\\_0\\_2\\_431743\\_0\\_0\\_18/Protecting+our+Wetlands.htm](http://www.calgary.ca/portal/server.pt/gateway/PTARGS_0_2_431743_0_0_18/Protecting+our+Wetlands.htm)**

- consider the capacity of all types of infrastructure, including municipal services, schools, social services, and open space when reviewing growth options.

The Capital Region's Regional Growth Strategy now reflects the Saanich UCB. Action 1.1(5) of the RGS commits the CRD and member municipalities to discouraging growth beyond the limits set out in OCPs by refusing to extend urban sewer and water services or increase servicing capacity. Exceptions to this general prohibition are to deal with pressing public health or environmental issues, to suppress fires, or to service agriculture. If anyone proposes expanding or increasing the capacity of existing sewer and water services, the expansion would have to follow the guidelines for a Master Implementation Agreement that would be included in municipal regional context statements.

The spirit of the Saanich regional context statement policies support the UCB and RGS: for example, "Manage population growth in the urban area of Saanich within the context of the regional strategy but governed by the policies of the local area plans." (policy 2) and "Recognize the importance of rural Saanich as part of the Peninsula farmlands by maintaining rural uses outside the Urban Containment Boundary" (policy 5).

In some rural areas of Saanich, small-lot subdivisions—for example, 0.65 hectare in size—have compromised the ability of the landscape to support rural activities on a working land base. However, the UCB has channeled intensive development into the serviced areas and prevented large-scale conversion of rural land north of Victoria to urban uses. Overall, since 1968 the amount of land within the UCB has declined by 622 hectares, largely as a result of boundary adjustments to take the Agricultural Land Reserve into account. Since 1979, the UCB has included only 108 hectares of rural land.

Saanich General Plan, local area plans, and action plans

<http://www.gov.saanich.bc.ca/business/development/laps/lapmap.html>



# 6 Zoning

## 6.1 Overview

**Zoning allows local governments to regulate the use to which a landowner can put a piece of land and how much of that use (density) is allowed on a specific part of the land. On a neighbourhood or site-specific level, use and density are the primary means local governments have to shape development. On a municipal, regional district, or watershed level, zoning is the primary means of preventing development in locations where it can harm sensitive ecosystems and directing development towards more appropriate locations.**

Specifically, local governments may regulate:

- the use of land, buildings, and other structures;
- the density of the use of land, buildings, and other structures;
- the siting and the size and dimension of uses, buildings, and other structures;
- the location of uses on the land and within buildings and other structures; and
- the shape, dimension, and areas of parcels of land.

The ability to regulate use also includes the ability to prohibit a use within a zone or zones. However, a local government cannot use zoning powers to prohibit or restrict the use of land for a farm business in a farming area without receiving the approval of the Minister responsible for agriculture.

JURISDICTION	
Municipality	Regional District
<i>Local Government Act</i> s.903 (zoning)	<i>Local Government Act</i> s.903 (zoning)
<i>Local Government Act</i> s.904 (amenity density bonus)	<i>Local Government Act</i> s.904 (amenity density bonus)
<i>Local Government Act</i> s.906 (parking)	<i>Local Government Act</i> s.906 (parking)
<i>Local Government Act</i> s.907 (impermeable surfaces)	<i>Local Government Act</i> s.907 (impermeable surfaces)
STRENGTHS AND WEAKNESSES	
Strengths	Weaknesses
<ul style="list-style-type: none"><li>• Provides several ways (lot sizes, density, setbacks, permitted uses) to direct development away from sensitive ecosystems.</li><li>• Can include some ecosystem function regulations (impermeable areas, drainage, and permitted uses e.g., non-polluting).</li><li>• Can encourage the permanent protection of sensitive ecosystems (dedication of sensitive areas upon rezoning, density bonus).</li></ul>	<ul style="list-style-type: none"><li>• Not fine-grained enough to respond to site-specific ecological conditions.</li><li>• Conservation zoning to protect sensitive ecosystems can be politically unpopular when it reduces allowed densities and increases lot sizes in some areas.</li><li>• Amenity density bonus often causes controversy.</li></ul>

## **RIPARIAN SETBACKS – NANAIMO**

**During the past decade, the City of Nanaimo’s Zoning Bylaw has required building and construction setbacks from watercourses (called leave strips). The bylaw prohibits the construction of buildings, roads, driveways, parking lots, patios, or other impermeable surfaces within the setbacks. If the zoning regulations would prohibit development on an existing parcel, the bylaw allows the municipality to grant variances through the development permit process, with front and side yard setbacks varied before encroachment on the leave strip is allowed. On new parcels, if a lot contains or abuts a watercourse listed in a schedule to the bylaw, the required setback from the watercourse cannot be included in the calculation of the minimum lot area. Because most watercourses were mapped using SHIM at a scale of 1:20,000, the maps do not show all of the watercourses/wetlands. Nevertheless, landowners regularly bring wetlands to the attention of City staff.**

Nanaimo Zoning Bylaw Section 5.3 <http://www.nanaimo.ca/uploadedfiles/Bylaws/4000.pdf> and see the zoning provisions in Appendix E.

Zoning helps local governments maintain green infrastructure by designating appropriate lot sizes for the location of the parcel of land and requiring buffers (setbacks) between development and sensitive ecosystems. Zoning can also prevent potentially polluting activities from locating near sensitive ecosystems and set standards for the total area of a lot or parcel of land that buildings or impermeable surfaces can cover. Finally, zoning can allow a developer to seek a density bonus in return for providing amenities such as dedicating land to protect the green infrastructure.

For setbacks and buffers, municipalities may rely on zoning or development permit area designations, or both.

## **6.2 Conservation Zoning**

Zoning for conservation is the most straightforward way to direct development away from green infrastructure. Once mapping has identified the location of sensitive ecosystems and desired greenways, zoning can create larger lot sizes and setbacks to maintain undeveloped landscape-level corridors. If existing zoning allows relatively intensive development, local governments can rezone to decrease the density or intensity of use in areas that warrant more protection for ecological features. Local governments do not have to pay any compensation to landowners for changes in the value of land due to rezoning enacted in the public interest (see Section 5.4 and section 914 of the *Local Government Act*). Conservation zoning can be politically unpopular, but when used with other tools, it is a simple way to prevent development in ESAs.

In Canada, local governments can approve conservation zoning for legitimate community purposes, such as ecosystem protection, as long as the zoning does not restrict the property to a public use (e.g., a park). Rezoning that reduces density is politically unpopular because it can decrease the value of property by limiting its uses. However, it is the most effective way to revise historic zoning errors in order to contain urban development and preserve an undeveloped landscape for greenways and ESAs. It is also a routine and straightforward legal tool.

Rezoning for conservation is standard practice in B.C. It is usually part of an application to rezone and subdivide a large parcel of land on which development will be clustered and a portion of which will be preserved as parkland. Several local governments, e.g., Islands Trust (Denman Island) and the District of Highlands, have used conservation zoning to implement environmental protection priorities and to correct zoning enacted in the 1970s and 1980s that was not sensitive to ecological values.

Conservation zoning becomes less sensitive politically when it flows out of a community-wide planning process that clearly sets long-term goals for land use and sustainability. If the goals have a high degree of public support, individual members of the community will be more likely to accept the tools chosen to meet those goals.

## 6.3 Cluster Development

Cluster development refers to the rezoning and subdivision of larger parcels so that new development can “cluster” on a portion of the new properties (or property if it is a comprehensive development zone) away from sensitive ecosystems and greenways. The landowner can then register a conservation covenant on the remainder of the parcel or on sensitive ecosystems outside a housing or development zone. This approach is attractive for developers because they often combine clustering with an amenity density bonus to obtain more density or more lots in return for placing a conservation covenant on the remaining property, creating parkland, or restoring ecosystems (see section 6.5 below). Clustering also reduces servicing and road construction costs.

The following are tools for accomplishing clustering:

- density averaging, or transferring density from one part of a site in a comprehensive development zone to another;
- amenity density bonuses;
- bare-land strata; and
- comprehensive development zoning.

All development outside of UCBs should cluster away from ESAs and greenways. Clustering is also an important village or urban tool for rehabilitating degraded habitats.

Clustering works in all sizes of community. It can preserve significant tracts of sensitive ecosystem (e.g., oceanfront) and also provide a buffer for the green infrastructure. Some planners believe that limiting the extent of the footprint of the subdivision on the landscape is ecologically more important than the total number of units in a subdivision. The effectiveness of clustering increases when a local government has completed the landscape mapping that will help staff and Council understand the location and extent of sensitive ecosystems.

## 6.4 Case Study: Colwood (Cluster Development)

### ◆ Clustering for Waterfront Protection – City of Colwood

The City of Colwood recently approved the development of 20 hectares (50 acres) of ocean waterfront bordering Esquimalt Lagoon. The federal government designated the Lagoon as a bird sanctuary under the federal *Migratory Birds Convention Act* in 1931. The easterly 100 metres of the site is within the bird sanctuary. The site lies between residential subdivisions to the north and south, Esquimalt Lagoon to the east, and Royal Roads University to the west. It was logged in the early 1900s and then farmed and is now overgrown with invasive species. Selleck Creek runs through the

### **NO COMPENSATION FOR CHANGES IN ZONING OR PLANS**

#### **Section 914 of the**

#### **Local Government Act**

**states clearly that local governments do not have to compensate a landowner for any reduction in the value of her or his land or for any loss or damage that results from adopting an OCP or a zoning bylaw or the issuing a DP for property in a DPA. Canadian courts continue to reinforce this legal landscape in Canada, noting that local governments may change zoning, up or down, to realize legitimate public interests without attracting liability to compensate landowners for changes in property values.**

### **CLUSTER ZONING DIAGRAM – OSOYOOS**

**For an example of a diagram depicting cluster zoning in an OCP, see the Osoyoos OCP (Electoral Area “A”, Okanagan Similkameen Regional District) pp. 14-15**

[http://www.rdosmaps.bc.ca/min\\_bylaws/bylaws/planning/consolidated/2260.pdf](http://www.rdosmaps.bc.ca/min_bylaws/bylaws/planning/consolidated/2260.pdf)

property and is heavily channelized, but there is evidence that it was home to Coho salmon in the past. The property also contains some old growth trees in one corner and many wildlife species.

The Council approved comprehensive development (CD6) zoning that provides for amenity density bonus and clustering the development at the back of the property away from the lagoon and near to existing roads. The site involves amalgamating six lots and subdividing the site into parkland and the development site. The City's OCP designation allowed the overall density for the site to cluster in apartments and attached housing forms rather than requiring it to spread out uniformly across the landscape. The OCP and zoning were changed to allow apartment buildings. No buildings will be permitted within 100 metres of the lagoon and 15 metres of the riparian area of Selleck Creek.

The developer will dedicate approximately 28 percent of the site along the lower waterfront for naturalized parkland that will be maintained as habitat or trails (not for active recreation). This includes 300 metres along the saltwater lagoon. Overall, site coverage is only 14 percent. The developer will create new stream channels for Selleck Creek that run through the development site and park properties and aims to stock the creek with Coho salmon if and when the creek is able once again to support fish stocks. The first creek channel will be in the centre of the site and the second channel will split off downstream from the existing creek to cut through the park to create a winding riparian corridor. The on-site vegetation will filter the mixture of storm and aquifer/spring water that flows to the creek. The project also involves the construction of two kilometers of trails.

The developer will build a 280-square-metre (3,000-square-foot) sales centre building in the park. When finished with the building, the developer has agreed to donate it to a conservation organization such as The Land Conservancy, a provincial land trust, for use as an interpretive centre.

The design concept includes 563 residential units in 26 buildings. This includes 12-storey high-rise towers, two-storey townhouses, terraced apartments (four to six storeys), and low-rise apartments (four to eight storeys). The overall floor space ratio is 0.6 when the park is included and 0.8 on the development site. The city created a new form and character DPA (No. 9 – Lagoon Estates) with detailed design guidelines for the attached housing forms provided by the developer. The owner has also committed to achieving a green building standard and is providing adaptable housing, which makes it easier for people with disabilities to live in or own these units.

The base zoning in CD6 Lagoon Estates allows for 344 units. The amenity density bonus provisions allow a maximum of 585 units if the developer adheres to design guidelines and the owner contributes \$500 per attached dwelling unit to the City's affordable housing reserve fund and \$2,500 per attached dwelling unit/\$1,500 per apartment dwelling unit to the City's community amenity reserve fund. The owner has secured an additional 219 units under the amenity density bonus provisions.

The Lagoon Local Area Plan designates the site as residential and open

space. The plan designates the foreshore and Selleck Creek as open space. The municipality may consider applications for cluster housing and townhouses if they conform to the environmental objectives of the OCP and assist in the implementation of the open space objectives and policies. The environmental and open space policies call for an environmental assessment, a neighbourhood park, and public acquisition of the foreshore, leading to the establishment of an Esquimalt Lagoon Nature Sanctuary.

The property is located in DPA No.2: Esquimalt Lagoon and Marine Shorelands. Conditions attached to the DP for the project include:

- satisfactory landscaping and planting plans for riparian areas in place before site disturbance and before approval of the first residential building permit. The plans must include methods to keep the public from entering the riparian zone and destroying or modifying the riparian vegetation.
- building-site landscaping plans satisfactory to the Planning Department in place before approval of the building permit.
- proof of adequate security to ensure completion of landscaping (\$250,000 in the case of the riparian area planting) before approval of the building permit.
- consultants acceptable to the City of Colwood to produce a manual on how to maintain the various habitats and drainage systems, wells, pumps, etc. on the site. The document is to be registered on the property with a covenant requiring the strata corporation to carry out the maintenance as described and to provide annual reports to the City by suitable professionals who have reviewed the state of the maintenance. The developer will remain responsible for all maintenance until the strata takes over the final phase. The City will also require a copy of the document to inform its own maintenance. The designers must consider what kind of disaster could result from a failure of the pump to augment the creek flows. If that could be a serious problem for the health of the creek, then that system should include some redundancy, which could be as simple as providing a temporary self-powered pump while the system is being repaired.
- an assessment by an environmental consultant of the design of each phase and how well it meets the overall Stormwater/Environmental Management plan before starting construction of that phase, plus periodic letters of assurance.
- completion of an erosion and siltation control plan as part of the site preparation.
- designs for in-stream structures for the new creek (weirs, riffles, etc.) using Watershed Restoration Project (WRP) Technical Circular #8.
- owner/developer to employ an environmental monitor during key phases of the project to ensure that silt fencing and other sediment catches are erected and functioning properly. The monitor has the authority to stop construction until issues are resolved.

- owner/developer to ensure that this development does not increase nutrient inputs to the Lagoon beyond natural levels.
- a natural wildlife corridor linking Esquimalt Lagoon and Hatley Park National Historic Site.
- a plan that identifies Garry oaks and orchard trees for preservation.
- a commitment, before approval of the first building permit, to how long the owner/developer will maintain the off-line wetland pond to ensure proper functioning.
- construction and landscaping to equal or exceed the Ministry of Environment best management practices.
- approvals from the Department of Fisheries, Ministry of Environment, and Archaeological Branch.
- studies identified in the Environmental Impact Assessment completed before construction begins and the study recommendations to be implemented in the construction (with the exception of the sales/interpretive centre). Study subjects include the red-legged frog, heron activity, nesting raptor call play back, and breeding songbirds point-count transect.
- owner/developer to include developer commitments in the project's strata rules.

Colwood anticipates that the Esquimalt Lagoon Stewardship Initiative, a multi-agency committee working to coordinate stewardship activities for the lagoon, will provide a forum for agencies, community groups, and residents to discuss issues regarding park-related planning and construction.

See also the case study of the Highlands in Section 6.6 for an excellent example of clustering development in a rural setting.



## 6.5 Amenity Density Bonus and Amenity Zoning

Amenity density bonus policies in OCPs and zoning bylaws have generated controversy in several communities. The amenity density bonus program assumes that the community should share the value of additional density granted to a landowner. The landowner/developer benefits from the additional floor space or units, and the community benefits from obtaining a priority public amenity. A landowner can opt into an amenity density bonus arrangement without a rezoning if the zoning bylaw provides for increased density in exchange for amenities. Local governments often use amenity density bonuses with other techniques, such as clustering development and conservation covenants, to protect ESAs and the green infrastructure.

Amenity zoning is the general term for often unique zoning that provides an incentive to developers to provide an amenity such as parkland, clustering, waterfront access, daycare facilities, or affordable housing as part of a rezoning package. Amenity zoning and amenity density bonus zoning provisions are often used interchangeably because a development may rely on both an increase in density that would be prohibited unless the owner provided an amenity and rezoning that addresses limitations on the use of the land and setbacks from ESAs.

Local governments cannot require landowners to dedicate more than five percent of the land being subdivided for parks, but many developers are willing to work with local governments to craft unique responses to site-specific ecosystem conditions and development costs. For example, with density bonus and amenity zoning, a subdivision that clusters development away from ESAs could incorporate unique lot lines that minimize road construction costs and protect sensitive ecosystems. Zoning bylaws may include amenity density bonus provisions (see Appendix E, page 145 for examples of zoning bylaw provisions) or they can be part of OCP policies that are negotiable on a case-by-case basis (see Appendix D, page 69).

Since its enactment in 1993, amenity density bonus has generated controversy in all sectors. Many elected officials and community members believe that it allows the development community to purchase additional density that overrides what a community has agreed is appropriate, and thus it incrementally erodes the community plan. In addition, few people, even those in the development community, fully understand the tradeoffs involved in putting a value on the increase in density and translating that value into choosing, constructing, and purchasing amenities. Increased density may also fragment the landscape if it occurs in inappropriate areas such as greenways and significant ESAs. Some developers feel that local governments keep allowed densities in the zoning bylaw inappropriately low as a means of encouraging developers to opt into the amenity density bonus program in order to make the development viable. Given today's real estate and building costs, the amount of additional density needed to generate enough of a bonus to purchase or secure an amenity can be significant.

The density bonus tool is most viable when a community is growing (i.e., there is demand for higher density) and when there is a conflict between land development patterns and growth management goals, such as urban containment and the desire to ensure efficient use of existing infrastructure before opening up new areas for development.

Amenity density bonus works best for high-density urban or large-lot rural settings. A few more floors on a high rise tower or more units in a townhouse development go largely unnoticed in city centres and neighbourhoods undergoing intensification. In rural areas with large lot sizes, amenity density bonus-clustering packages are attractive for both landowners and local governments because they can reduce servicing costs, protect green infrastructure, and limit the footprint of a subdivision. Zoning that creates large-lot minimums in rural areas gives landowners an incentive to explore the amenity density bonus and clustering because of the high cost of servicing.

**Since its enactment in 1993, amenity density bonus has generated controversy in all sectors.**

**Amenity density bonuses tend to be more controversial in medium-sized communities and communities where existing zoning makes servicing the full complement of rural lots economically viable.**

Amenity density bonuses tend to be more controversial in medium-sized and near-urban communities where existing zoning and higher land values make servicing the full complement of lots on rural land economically viable. Residents often oppose a few more floors on a three-storey building in a neighbourhood centre and contest townhouses encroaching into single detached housing areas. Because of demand for housing in these communities, the subdivision of small lots (e.g., 3-7 hectares) is economically viable, and when zoning allows this kind of development, it is more difficult to convince landowners to cluster and better protect sensitive ecosystems.

At minimum, amenity density bonus policies must include:

1. The maximum increase in density over base density that is permissible in any development. The maximum additional density, e.g., 25 percent, will depend on the community and landscape features. The decision on this percentage should be the result of a community discussion so that citizens understand the tradeoffs in and benefits of increased density.
2. A list of amenities (in order of importance) that the community needs, generated in consultation with the public and lodged in the OCP.
3. A transparent amenity density bonus formula that will help all parties understand the extent of the benefit that accrues to the developer and the benefit that returns to the community.

In urban areas, ecological amenities have included the dedication of parkland and restoration of degraded ecosystems. In rural areas, they have included protecting large tracts of green infrastructure by concentrating density in a small area of the property. It is important to note that local governments have used amenity density bonuses more often for non-ecological bonuses such as affordable housing. They have not used it consistently for ecosystem protection.

## 6.6 Density Bonus Case Studies: From Urban to Rural (Burnaby, Victoria, Salt Spring Island, and Highlands)

### ◆ Amenity Density Bonus – From Urban to Rural

The communities that use the amenity density bonus regularly allow it in urbanized areas where intensification is part of the plan (e.g., the Cities of Burnaby and Victoria). To meet goals related to the green infrastructure, medium to small communities have used the density bonus and rezoning for subdividing large parcels to achieve residential clustering.

## ◆ Burnaby

The City of Burnaby has included density bonus policies in its zoning bylaw and has used them extensively. Lots in the RM1-RM5 zoning districts that are located in a town centre area and that have been pre-approved for an amenity density bonus may increase the maximum floor area ratio (FAR) according to the schedule for each zoning district. For example, in the RM2 medium density multiple family zoning district, the maximum FAR of 0.70 may increase to 0.80 if the developer provides amenities and to 0.90 if the developer provides underground parking. The lot must be rezoned to a comprehensive development district, and the development plan for the lot must include amenities equal in value to the increase in the value of the lot that is attributable to the increase in the floor area ratio.

The eligible amenities include affordable housing units, a major public open space or plaza, public facilities such as a library or recreation centre, space for community groups, public art, extraordinary public realm improvements, child care facilities, park improvements, and extraordinary environmental enhancements. The City often requires the developer to deposit the monetary value of the amenity density bonus into a community benefit account for the neighbourhood in which the land is located. The money is for future enhancements.

Amenity density bonus applications come before a committee of City Council, the members of which decide what community benefit staff should seek in the given location. Density bonus amenities that relate to the green infrastructure can include rehabilitation of riparian areas adjacent to the development, rehabilitation of a riparian area in a City park, and the creation or enhancement of a City park with a creek running through it (Chub Creek Park). The City will also accept cash in lieu in certain cases.

The City's appraisers in the Legal and Lands Department calculate the value of the density bonus. The value of the bonus, and thus the cost of the community benefit the City will receive, is based on the cost of purchasing land to build the same amount of density as the bonus allows. The appraisal establishes a land value per buildable square foot.

The City has allowed amenity density bonuses since 1997. The bonus applies only to areas slated for intensification, and that approach has avoided any controversy. Staff report that the program is working well.

Burnaby Zoning Bylaw, Section 6.22 <http://burnaby.ihostez.com>

## ◆ Victoria

The City of Victoria has allowed bonus density in exchange for amenities for over 15 years. The City will consider bonus density if the project provides amenities such as heritage preservation and the creation of public open space or squares. Victoria has also used bonus density for preserving and remediating the foreshore adjacent to the inner harbour and the Gorge waterway as part of redevelopment around the harbour.

Until 2005, the City of Victoria considered applications for amenity density bonus in the downtown commercial district and in neighbourhood commercial centres. After several highly controversial proposals in response to which residents opposed the amount of additional density and the choice of amenities as contrary to neighbourhood plans, City Council abandoned the program for neighbourhoods. It is still available in the downtown core.

See, for example, the Victoria Downtown Plan (1990), Policy B3.2 at pp. 20-22

[http://www.victoria.ca/cityhall/pdfs/departments\\_pln/pub\\_dvpln2.pdf](http://www.victoria.ca/cityhall/pdfs/departments_pln/pub_dvpln2.pdf), and the Victoria Harbour Plan [http://www.victoria.ca/common/pdfs/planning\\_harbourplan.pdf](http://www.victoria.ca/common/pdfs/planning_harbourplan.pdf)

### ◆ Islands Trust – Salt Spring Island

The zoning context on Salt Spring Island and many of the southern Gulf Islands is one of predominantly two-hectare (five-acre) minimum lot sizes across much of the rural landscape, with allowance for some larger holdings (8-hectare/20-acre) and mixed-use densification in village cores or neighbourhood commercial centres and marinas. Salt Spring Island hosts the largest population of any island in the Islands Trust (9,780) and has the largest village core (Ganges).

The Salt Spring Island OCP falls within the land use planning jurisdiction of the Islands Trust. The 1998 OCP contemplates amenity zoning and sets out two lists of priority amenities. They include land for community agriculture, community woodlots, parks, ecologically sensitive areas, and cycle paths. The OCP caps the total number of additional dwelling units allowed in exchange for a community amenity at 100, and no single amenity may use more than 33 of these 100 dwelling units. The dollar value of the amenity and the return to the community should be approximately 75 percent of the increase in the net appraised value of the land that accrues to the property owner due to the increased density. The OCP also contains amenity zoning procedures and policies that limit the impact of the amenity zoning on the land use designation of the parcel in question and on the surrounding neighbourhood.

Even with this level of detail, the current Trustees (the elected officials of the Islands Trust) find that the policies are too general and allow too much discretion. The Trustees have found that the few amenity density bonus proposals they have considered did not meet the overall goals of the OCP. In the decade since Salt Spring Island enacted the OCP, there has never been a successful application under the amenity zoning provisions.

Salt Spring Island OCP, Volume 2 Appendix 3, p.50

<http://www.islandstrust.bc.ca/itc/ss/pdf/ssbylbaseocpvolume20345.pdf>

### ◆ Highlands

The rural District of Highlands has used the amenity density bonus since the District adopted its first OCP in 1997. Residential policies 2.2.1(g-h)

allow an increase in density through rezoning for proposals that cluster the development and provide environmental or public amenities. Appendix A to the OCP identifies priority amenities and provides guidelines for acquiring them. Amenities include parks, trails, greenways, affordable housing, community recreational facilities, protecting environmentally sensitive areas, restoring ecologically damaged land or water, and cash in lieu.

Each proposal involves consulting with the public, usually as part of a rezoning application. The applicant must submit an appraisal showing the expected net increase in value of the land as a result of the increased density. The landowner must provide 50 percent of that value as a community amenity. The new draft Highlands OCP contemplates a similar amenity density bonus system.

Historically, the District of Highlands secured significant dedications of parkland and conservation covenants by negotiating subdivisions that included a density bonus clustered on a fraction of the land base in question. Based on surveys by an engineer and a biologist, district staff designated a residential use zone where all development (house, roads, and outbuildings) could occur. Each lot contained its own residential use zone, and a conservation covenant was registered on the remainder of the lot. The covenant followed a baseline report that detailed all ecosystem traits, through both photos and written descriptions. A third party land trust holds the covenant and takes care of annual monitoring.

The purpose is to maintain large contiguous habitats on both public and private lands and to limit the built footprint on the landscape. The advantage is in making a small area of the land that is not ecologically sensitive take all of the disturbance or density while preserving a significant portion of the land as parkland and/or a natural area with a covenant on the title. This approach provides significant buffers for sensitive ecosystems and works best if there are ecological maps that identify sensitive ecosystem habitats in advance.

For example, a 190-hectare property at Scafe Hill includes a three-kilometre greenway that links four regional parks. The property contains important wetlands, watercourses, a forest, and rare woodlands. The zoning for this property would have allowed 15 lots. Instead, the Highlands council approved a 26-lot neighbourhood clustered on approximately 40 hectares, with an average lot size of 1.5 hectares. Highlands secured 90 percent of the original property in a natural state, and Thetis Lake Regional Park gained 145 hectares. Covenants protect 75 percent of the land base on each private lot.

This approach works best in rural areas where large tracts contain ESAs, where the land forms part of a greenways network, where land parcels are large, and where zoning is reliable. The district council holds firm on 10 or 15-hectare minimum lot sizes even though four-hectare minimums often make long winding roads more economically viable for developers. These characteristics give a local government significant flexibility in negotiating site-specific requirements, particularly if they have a lot of undeveloped land but few internal resources.

## COLWOOD – CD ZONING

See section 6.4 above for an example of a project that a CD zone facilitated.

## VICTORIA – CD ZONING

The City of Victoria has used CD zoning for several large redevelopments, including the award-winning Dockside Green sustainability project [http://www.victoria.ca/common/pdfs/planning\\_zoning\\_12-9.pdf](http://www.victoria.ca/common/pdfs/planning_zoning_12-9.pdf) and the Selkirk Waterfront [http://www.victoria.ca/common/pdfs/planning\\_zoning\\_121.pdf](http://www.victoria.ca/common/pdfs/planning_zoning_121.pdf).

Landowners and developers are more accepting of this approach because it lowers their development costs. They know from the outset that they do not need to study a large portion of the site because it will be protected. Clustering the houses reduces road-building costs significantly because in many cases, the developer needs to build only one road rather than 150-metres of road for each 15-hectare lot. Clustering also takes less staff and council time than a conventional subdivision.

Finally, this approach to subdivision needs strong council support and vision because it is so different from conventional subdivision. In addition, enforcement issues can arise if landowners are not well informed of the effect of the covenant and the limitations on the use of the entire property.

Highlands OCP at pp. 19-20, and 36-37 (Appendix A – Public Amenities) [http://www.highlands.ca/ocp/OCPBylawNo94\\_Consolidatedto04June16.pdf](http://www.highlands.ca/ocp/OCPBylawNo94_Consolidatedto04June16.pdf)



## 6.7 Comprehensive Development Zoning

Several local governments are using comprehensive development (CD) zones for developing larger parcels of land. Each CD zone is unique because it is tailored to the site-specific goals for the property. CD zoning allows a local government to negotiate detailed guidelines and specifications for all aspects of development in an integrated manner. This zoning may allow a range of uses, specify where on the site those uses will occur, mandate the maximum density of each use, and require the maintenance of ecological systems, parkland, and natural areas. The components of CD zones appear in a master development plan on a map attached as a schedule, or as design guidelines.

CD zones help local governments respond to landscape-level details and community goals for new green-field development or the redevelopment of larger sites. They are ideal for sites that should receive innovative treatment, are in strategic locations, have topographical constraints, or are environmentally sensitive. Local government staff find the CD zone approach better than conventional parcel-by-parcel zoning for negotiating amenities such as additions to parkland, waterfront access and rehabilitation, tree retention, and innovative rainwater management.

## 6.8 Runoff Control Requirements

Zoning bylaws can include regulations in for controlling surface and rainwater runoff from paved and roof areas. For example, they are able to establish the maximum percentage of the land that may be covered in impermeable surfaces. This will ensure that rainwater filters into the soil at its source rather than causing concentrated impacts downstream by being piped into watercourses (see Appendix E, page 175).

The zoning provisions in Appendix E focus on environmental protection. For zoning provisions that address growth management and urban containment boundaries (e.g., rural zones and urban zones that promote mixed-use development), see the Smart Bylaws Guide Part 3 – Create Compact Complete Communities <http://www.wcel.org/issues/urban/sbg/Part3/>. Appendix E contains only the relevant parts (not the entirety) of the zoning provisions.

The zoning provisions in Appendix E aim to:

- maintain large lots outside the urban containment boundary (page 177);
- encourage mixed-use, cluster development within the urban containment boundary (pages 178, 180);
- repeat the setbacks from watercourse management areas and sensitive ecosystems (page 175);
- set specific density bonuses for specific zones (pages 175, 177, 180);
- enable cluster development in specific zones to maintain an average density while limiting the footprint of development (pages 178, 180); and
- limit the total amount of impermeable surface or effective imperviousness on a lot (residential and commercial) and encourage infiltration of rainwater (pages 175, 178).

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#### **CITY OF COQUITLAM – TREE RETENTION**

**The City of Coquitlam has incorporated tree retention and replacement policies into the Zoning Bylaw. Developers must either retain trees or replace them with new trees. The numbers of trees to be retained or replanted vary with both the size of the lot and the size of the trees to be replanted or retained. The policies apply to all new residential zones in the Hyde Creek watershed.**

**Coquitlam Zoning Bylaw, section 506 Landscaping Requirements for Development in Northeast Coquitlam (p.32)**

<http://www.coquitlam.ca/NR/rdonlyres/003E50D0-BFB2-43CE-A171-B9CD0C202829/55345/Part05.pdf>

#### **BURNABY – CD ZONING**

**The City of Burnaby uses CD zones extensively. For example, the Lougheed Town Centre Plan emphasizes an ecosystem-based approach to future development. Proposed redevelopments are usually rezoned to CD, and municipal staff can tailor the development to site-specific constraints and opportunities, including best management practices for storm-water management, integrated pest management (IPM), watercourse protection, retention of vegetation, and landscaping.**

**Lougheed Town Centre Plan**  
[http://www.city.burnaby.bc.ca/cityhall/departments/departments\\_planning/plnng\\_plans/plnng\\_plans\\_lghdtw.html](http://www.city.burnaby.bc.ca/cityhall/departments/departments_planning/plnng_plans/plnng_plans_lghdtw.html)



# 7 Environmental Development Permit Areas

## 7.1 Overview

**Local governments may designate environmental development permit areas (EDPAs) to protect the natural environment, its ecosystems, and biological diversity; to regulate the form and character of development; and to influence the siting of development on a parcel. DPAs are a more fine-grained tool than standard zoning for shaping how development occurs on a site.**

EDPAs enable staff and council to make site-specific decisions about protecting sensitive ecosystems. They can specify conditions and standards that a developer must meet. Environmental protection staff agree that EDPAs are the best way to protect sensitive ecosystems. EDPAs are also the best way to prohibit site disturbance before approval of a development project. A landowner must obtain a development permit for land in an EDPA before:

- subdividing it;
- constructing, adding onto, or altering a building or other structure on it; or
- altering the land.

EDPAs often complement other tools such as zoning, impact assessments, and regulatory bylaws.

**EDPAs are often the best (and sometimes the only) way to protect sensitive ecosystems before site disturbance.**

**EDPAs enable staff and council to make site-specific decisions about protecting sensitive ecosystems.**

JURISDICTION	
Municipality	Regional District
<i>Local Government Act</i> ss.919.1-920	<i>Local Government Act</i> ss.919.1-920
STRENGTHS AND WEAKNESSES	
Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Enables site- or sensitive ecosystem-specific control on development.</li> <li>• Able to prohibit site disturbance before development approval.</li> <li>• Can require dedication of watercourses</li> <li>• Guidelines can be sufficiently detailed to shape development .</li> <li>• Development permit applies to the land and development, regardless of ownership.</li> <li>• May include impact assessment process and may require specialized information.</li> <li>• Can vary zoning setbacks.</li> <li>• Can address Riparian Areas Regulation requirements and other site-specific senior government standards.</li> </ul>	<ul style="list-style-type: none"> <li>• Requires additional staff expertise and time to review applications and set permit conditions.</li> <li>• Designating more than riparian areas is politically unpopular.</li> <li>• No influence on the amount of development that is appropriate on a site (has to follow zoning).</li> <li>• Flexibility in applying guidelines may result in inadequate environmental protection.</li> <li>• Cost to landowner for professional impact assessment may prohibit development (take care in defining exceptions).</li> <li>• Enforcement by court injunction is difficult.</li> </ul>

**Development permits for  
EDPAs are flexible and can  
vary or supplement zoning  
and subdivision regulations  
(except land use or the  
density of the use).**

OCPs must designate the extent of EDPAs and describe the special conditions or objectives that justify the designation. The OCP or zoning bylaw must contain guidelines for addressing special conditions or objectives. The OCP or zoning bylaw may also specify conditions or circumstances that do not require a development permit, such as minor landscaping. To save staff time and avoid costs to landowners for minor landscaping, renovations, and remedying hazardous conditions, local governments typically include a list of exemptions from the requirement to obtain a DP. A special EDPA chapter, appendix, or schedule to the OCP usually contains the guidelines.

A development permit for an EDPA can:

- specify areas of land that must remain free of development, except in accordance with any conditions contained in the permit;
- specify natural features or areas to be preserved, protected, restored, or enhanced;
- require dedication of natural watercourses;
- require construction of works to preserve, protect, restore, or enhance natural watercourses or other specified natural features of the environment;
- specify protection measures, including planting or retaining vegetation or trees in order to conserve, protect, restore or enhance fish habitat or riparian areas, control drainage, control erosion, or protect banks; and
- impose conditions on the sequence and timing of construction.

Development permits for EDPAs are flexible and can vary or supplement zoning and subdivision regulations (except land use or the density of the use).

Before issuing a DP, a local government may ask a landowner to pay for a report or an environmental impact assessment certified by a qualified environmental professional (QEP). The assessment helps the local government decide what conditions or requirements to include in the DP.

There are limits to EDPAs. For example, the DP must not vary the use or density of the land or the specifications for flood plains. When a DP grants a variance for a setback, for example, the approving officer must take care that the change does not create other site-specific problems. Development permits must follow the guidelines in the OCP or zoning bylaw. This means that the OCP or zoning bylaw guidelines must state comprehensively which ecosystem conditions the municipality intends to protect or enhance and the process for monitoring compliance, e.g., through an environmental review. Courts have upheld general DPA guidelines when a municipality has applied them in an objective manner that is consistent with the zoning bylaw and OCP policies. Finally, the only way to enforce DPs is through costly injunction proceedings in the Supreme Court.

Local governments have considerable flexibility in applying DPA guidelines. This flexibility is both a benefit and a drawback. If guidelines are comprehensive, they provide staff and council with a fine-grained way to

tailor development to the ecological conditions on specific sites. However, to work effectively they require considerable staff expertise and public knowledge. Development permit outcomes depend on staff members' understanding of how ecological systems function, their ability to translate that knowledge into controls on development, and the ability of DP holders to comply with controls.

Finally, local governments and their officials must consider carefully the type and intensity of development that requires a DP and exemptions from the DP process. The cost of a professional report for minor changes in landscaping is likely to be prohibitive, but it is essential for excavation and construction. Several local governments have allowed exemptions from the development permit process when an applicant provides a covenant protecting an ESA or a bond. Two municipalities have blanketed the entire municipal land base as EDPAs and included extensive exceptions to the DP process (see District of West Vancouver case study in section 13.5 at page 119). At least two local governments prohibit any development within EDPAs when developers are creating new lots through subdivision. This means that the owner or developer does not need to go through the EDPA process.

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#### **IMPORTANCE OF AQUATIC ECOSYSTEMS – REGIONAL DISTRICT OF CENTRAL OKANAGAN**

**In the dry ecology of the Okanagan, aquatic habitats are critical for the survival of wildlife, and they form necessary travel corridors between habitats. Water is an important part of maintaining biodiversity and is essential for many species. Many rare species in the Okanagan are associated with aquatic environments. The Okanagan also has a limited water supply, and the water quality of surface water and aquifers (both below ground and in surface recharge areas) is important. The riparian habitat is a natural water purifier and pollution filtration system. A healthy riparian area also helps slow water flow and prevent erosion. The entire water system is highly interconnected and fragile. A change in one part of a stream or wetland can have downstream consequences on wildlife, people, and property. Finally, the quality of the aquatic environment will affect fish habitat and the size of fish populations.**

**Aquatic Ecosystems Development Permit Design Guidelines, Ellison OCP, Appendix A-5** [http://www.regionaldistrict.com/docs/planning/Ellison%20OCP/EL\\_OCP\\_Appendices.pdf](http://www.regionaldistrict.com/docs/planning/Ellison%20OCP/EL_OCP_Appendices.pdf)

#### **DEVELOPMENT PERMIT AREA HANDBOOK – KELOWNA**

**The City of Kelowna's Handbook for Environmental and Hazardous Conditions Development Permit Areas outlines in technical engineering format the requirements of the guidelines. It is akin to the new stormwater design and policy manuals.**

<http://www.kelowna.ca/CityPage/Docs/PDFs/Environment%20Division/EDP%20Handbook/DP%20Handbook%2006.pdf>

**The joint federal/provincial Sensitive Ecosystems Inventories provide the standard classification for ESAs, and several local governments are fine-tuning EDPA guidelines to SEI ecosystem classes.**

#### **GUIDELINES THAT FOLLOW SEI CLASSIFICATION**

**The Islands Trust Fund is developing EDPA guidelines based on the SEI for East Vancouver Island and the Gulf Islands (see Appendix A for the table of approved ecosystem classes). Islands Trust Fund <http://www.islandstrustfund.bc.ca/>**

**The Regional District of Central Okanagan has guidelines in its Sensitive Terrestrial EDPA for old forest, grassland, coniferous woodland, sparsely vegetated cliff and rock, mature forest, and disturbed grassland ecosystems.**

**RDCO Ellison Official Community Plan Sensitive Terrestrial Ecosystem Development Permit Design Guidelines at A-8 [http://www.regionaldistrict.com/docs/planning/Ellison%20OCP/EL\\_OCP\\_Appendices.pdf](http://www.regionaldistrict.com/docs/planning/Ellison%20OCP/EL_OCP_Appendices.pdf)**

## 7.2 Designation

Municipalities and regional districts designate EDPAs in several ways. Local governments depict them in various ways: on maps in an appendix or schedule to the OCP, as written descriptions of ecosystem types in the OCP, e.g., “all wetlands,” or as a combination of both methods (see discussion in Section 2.6). If local governments use both methods, they often include a disclaimer to the effect that the map may not accurately depict all of the ESAs in an EDPA and will be adapted as new information becomes available. Local governments may also designate parcels that contain sensitive ecosystems in their entirety (with or without maps). These designations often include guidelines requiring the applicant to supply information about the location of the sensitive ecosystem on the parcel and the impact the development will have on the ESA.

## 7.3 Guidelines Based on Ecosystem Types

Local governments create EDPA guidelines for a variety of ecosystem types or geographical features. Categories include:

- sensitive ecosystem types that mirror the categories in the provincial Sensitive Ecosystems Inventories (see Appendix A for a list of subclasses, page 139);
- geographic or ecosystem features, e.g., watercourse, grassland, wildlife trees;
- specific sensitive ecosystem sites, e.g., Bogdan’s Marsh, Kirkby Park, Barnett Lake; and
- aquatic and terrestrial ecosystems.

Each of these categories can contain ecosystem subtypes or qualities that require different management criteria, guidelines, and exemptions. Neighbourhood planning allows for a more detailed application of EDPAs.

The joint federal/provincial Sensitive Ecosystems Inventories provide the standard classification for ESAs, and several local governments are fine-tuning EDPA guidelines to SEI ecosystem classes. This approach allows staff to tailor ecosystem protection and restoration to habitat types. It would standardize DPA guidelines across the province and allow local governments to share policies more easily.

## 7.4 The DPA Difference

Environmental services staff from across the province agree that EDPAs are the best way to protect ESAs on individual properties. They work best when local government can use the enforcement provisions in regulatory bylaws (e.g., tree protection or soil deposit and removal) to penalize property owners who do not obtain a DP or comply with one, e.g., by cutting a tree

or removing soil. The only enforcement tool for EDPAs is the injunction, a costly and onerous process of applying to the Supreme Court. They are more effective when the ticketing provisions of regulatory bylaws can back them up.

EDPAs are most appropriate when a single landowner or developer is controlling the subdivision. They are onerous for small lots and projects on a single-family lot (e.g., building a shed or deck or altering existing landscaping). Property owners with personal or small-lot projects are less able to pay for assessments by professional consultants, or they may not see the need for these assessments. This problem is particularly acute in urbanized areas in which landscaping and lawns extend through riparian areas to the watercourse. Therefore, it is important to spell out clearly in the EDPA guidelines the types of development that do not require a development permit, and to use other regulatory permits to impose requirements for minor projects.

Staff also agree that when a landowner or developer has failed to obtain a DP or is not in compliance with the requirements of a DP, the best approach is to seek voluntary remediation of the site with a significant replanting ratio for lost habitat, e.g., 1:5. Most people plead ignorance: they did not know that their actions amounted to an offence. Staff find that most property owners want to comply with the regulations.

The amount of staff time that any DP requires varies with the size and complexity of the proposed development. Coquitlam has four staff in the environmental services section. One staff member's primary job is to review development applications that have environmental impact and provide comment. The District of North Vancouver has four environmental protection staff, part of whose time involves processing DPs.

Challenges with using development permit areas include:

- Difficult to enforce – there is no simple way to add teeth to DPAs because they are not regulatory and do not authorize penalizing property owners who do not obtain or adhere to a DP. If property owners destroy habitat, they are asked to restore the habitat and, if they do not have a DP, to obtain one.
- Onerous enforcement – enforcing a DP involves an application to Supreme Court for an injunction. Unless there are regulatory bylaws, such as a tree bylaw, under which the municipality can levy a fine, there is no simple way to add teeth to a development permit.
- Failure to follow conditions – better education and monitoring of erosion and sediment control are necessary. Even with an approved sediment control plan as part of the DP process, there is often inadequate understanding or will to install and maintain the works properly;
- Ensuring compliance with the terms of the DP – compliance is particularly important for conditions that address long-term ecosystem protection, such as fencing and replanting. This requires inspections and ensuring that contractors have undertaken their due diligence;

- Creating conservation covenants – drafting conservation covenants and monitoring and enforcing the covenants is expensive.
- Evaluating impacts – staff must have expertise to evaluate the impact (minor or major) of a proposed development. Staff must decide if the project needs a full development permit or if it falls within the exceptions in the guidelines (including no significant adverse impact) and therefore needs only an initial submission. Staff must apply the guidelines to all development applications that fall within the EDPA, but they also need discretion to determine what is a large versus a small impact.
- Costs of DP—applications for DPs include costs for consultant fees, e.g., for environmental and geotechnical studies.
- Volume of work—the number of DP applications can overwhelm staff. Council must consider when it makes sense to give staff the discretion to issue DPs in defined circumstances (e.g., when the variances required to meet the DPA are less than 30 percent).

## Scientific Expertise

Staff agree that it is important to have local government staff with expertise in ecosystem protection, for example, a registered professional biologist or someone with a background in biological sciences or natural resource management. Staff acknowledge that while planners can gain these skills with training, it is important to have staff with specific training in ecology and to ensure that environmental review of projects is a specific task in the development review process (i.e., not part of a staff person's role in issuing general approvals).

Because of the cost of court applications, few local governments try to enforce DPs. A DP can be withdrawn, but this approach involves significant due process concerns and no useable monetary penalties. A violation can be forwarded to DFO for prosecution. See Chapter 14 Enforcement for further discussion (page 129).

## 7.5 Case Studies: Urban and Rural (Nanaimo and Regional District of Central Okanagan DPA)

### ◆ Nanaimo

The City of Nanaimo has both watercourse and upland DPAs. The City created DPA 23-Watercourses in 1996 to regulate development activities in aquatic and riparian areas to protect habitat, prevent erosion and slope instability, and conserve, enhance, and restore watercourses. After mapping known watercourses using SHIM at a scale of 1:20,000, Nanaimo defined specific setbacks from the water (called leave strips) in the DPA Guidelines that are reinforced through the Zoning Bylaw (e.g., 30 metres from the top of the bank for the Millstone and Nanaimo Rivers). The watercourses are

set out in Schedule B to the OCP. A B.C. Land Surveyor-certified site plan submitted with rezoning and subdivision applications usually establishes where a DPA is on a lot and whether a proposed development is within or outside a DPA. In addition to designating the DPAs, the OCP contains a list of projects that are exempt from the DP process.

The City will allow development within a watercourse DPA only if historical subdivision (size or shape of lot) or construction make it impossible to comply with the DPA leave strips. This can occur if the DPA takes up so much of an existing lot that it is undevelopable under the existing zoning, or if natural features make development outside the DPA unacceptable. Before allowing development to encroach on the leave strip, the City requires the use of variances to minimize the impact on the DPA. This includes reducing front and rear yard setbacks, increasing site coverage by up to 50 percent of the maximum, increasing maximum height by up to 2.75 metres, and reducing parking requirements. Leave strips are not included in the minimum size of new lots; this ensures that development can comply with all zoning requirements. The leave strips and the lots are two different parcels, and property owners are encouraged to dedicate the leave strip to the City. Since 1995, very few developments have occurred within riparian leave strips on new lots; new development does not require a watercourse development permit because it occurs outside the DPA. The City requires landowners/developers of new subdivisions to install fences along the DPA and put up signs alerting residents to the environmentally sensitive nature of the watercourse.

In addition to designating the leave strip, the DPA Guidelines set detailed requirements for erosion and sediment control, vegetation management, habitat restoration, and identification of the leave strip and encroachment boundary. For example, a construction plan will establish erosion and sediment controls on land-clearing activities. These should take place in the dry months of the year and follow the best management practices documents, *Land Development Guidelines for the Protection of Aquatic Habitat* and *Stream Stewardship: A Guide for Planners and Developers*. The Environmental Coordinator may inspect the site before development activities start to ensure that the developer has installed adequate sediment control measures. Construction may not disturb existing trees and vegetation in the DPA unless the development permit allows it, and the developer must mark trees to be retained and install temporary fencing at the drip line to protect them during clearing, grading, and other development activities. The Guidelines specify replacement ratios and densities for trees and shrubs. Finally, several regulatory bylaws support the Guidelines, including Nanaimo's Tree Protection Bylaw, Soil Removal and Deposit Regulation Bylaw, and Flood Prevention Bylaw. Subdivision applicants must also submit an erosion and sediment control plan with the other engineering drawings as part of acceptance of the design stage.

The City of Nanaimo intends to exceed the requirements of the provincial Riparian Areas Regulation. Its riparian protection applies to all watercourses, not just those that contain fish, and it is increasing the required leave strips on a number of creeks as the predetermined Streamside Protection and

Enhancement Area under the RAR. Staff will continue to assess whether additional studies are necessary and if professional reports are adequate to ensure compliance with the existing zoning and DPA regulations. The City has set DPA conditions to maintain the high level of watercourse protection.

In 2005 the City expanded its DPA for the protection of the natural environment to terrestrial sensitive ecosystems. Using the *Sensitive Ecosystems Inventory for Eastern Vancouver Island and the Gulf Islands*, the City hired a consultant to inventory the polygons in the SEI that were within the City's jurisdiction, and also to confirm the sensitive ecosystem status of other polygons not in the SEI that were known to contain rare species. Staff used this information, published in the report, *Inventory of Environmentally Sensitive Areas Within the City of Nanaimo*, to designate Area 24 – Environmentally Sensitive Development Permit Area (ESDPA). The objectives of the ESDPA are to identify, protect, and minimize the disturbance of ESAs within the City, and to preserve native, rare, and endangered vegetation or wildlife in their natural state.

Nanaimo also designated the ESDPA as a Development Information Area for which applicants may need to supply additional information (studies). Staff typically ask applicants for an environmental impact assessment, which includes a more detailed site assessment to determine the range and extent of ESA habitat and species on each property and recommendations for their protection. The ESDPA Guidelines require fencing of the environmentally sensitive non-disturbance areas with a continuous barrier at least 1.5 metres high to protect it from construction activities. To support the ESA, a consultant must also design a perimeter buffer zone within which development is limited. The Guidelines also prohibit cutting or removing vegetation, planting non-indigenous vegetation, and depositing or removing soil in the non-disturbance area. Finally, the ESDPA Guidelines set a performance-based standard for water: development must not increase or decrease the amount of surface and/or groundwater or affect water quality in the ESA. Development may not affect hydrology in the buffer area unless the DP sanctions it.

Both the approving officer and staff are firm about the necessity for identifying and fencing sensitive ecosystems. Subdivision lots are created exclusive of these areas, and for land in the steep-slope DPAs, the density for the entire site must be concentrated on the unprotected land. However, protected ESAs within DPA 23 do not count in the calculation of density because they cannot be built upon. A recent example involved a 40-hectare (100-acre) property, 12 hectares (30 acres) of which consisted of a large wetland and surrounding environmentally sensitive area, with an additional eight hectares (20 acres) for the drainage pattern. The conditions for developing the property included fencing the whole 20 hectares (50 acres) to protect it, leaving the rest of the parcel available for housing. For redevelopment within the watercourse, DPA staff request significant restoration of the riparian zone. For larger projects in which revegetation is a condition of the DP, the City requires a maintenance plan that establishes up to a three-year commitment to maintaining the health of the new plants and security for 100 percent of the cost of revegetation. If the project does

not need a DP, the subdivision bylaw requires a one-year maintenance commitment.

Applications for construction and subdivision start the development permit process, also site alteration activities such as cutting or removing trees, grading, removing and depositing soil or other material, and installing services. Nanaimo's Environmental Coordinator, a biologist, is involved at all stages of the development process, which includes discussing proposed applications at the front counter, reviewing all development applications, and enforcing the watercourse and ESDPA conditions and bylaws. An environmental planner writes the City policy.

The City's Environmental Coordinator is responsible for monitoring and enforcement. Enforcement occurs primarily during construction. There has not been any monitoring of the ESDPA to date. Although City staff are aware of watercourses and areas that may contain sensitive ecosystems, the existing mapping has not identified all sensitive species and habitats. Landowners and developers regularly bring to staff's attention wetlands and rare species that the mapping processes did not detect.

Council has delegated to the general manager the authority to sign off on aquatic DPs when the reduction in the setback is less than 20 percent. Council retains the ability to review and comment on DPs that staff have discretion to approve and can request that they come before the Council for decision.

### ◆ Regional District of Central Okanagan (RDCO)

To understand the extent of important green infrastructure in the district, RDCO staff mapped sensitive ecosystems before initiating environmental DPAs. They completed SHIM at a scale of 1:500 on all the creeks on private land within the jurisdiction of three OCPs and one Rural Land Use Bylaw. Between 2001 and 2005, staff also completed sensitive ecosystems inventories at a scale of 1:20,000 for three OCPs. Staff incorporated this mapping into Aquatic Ecosystem and Sensitive Terrestrial Ecosystems Development Permit Areas that work in tandem with the Regional District's Environmental Assessment Policy (#3.33) and *Terms of Reference—Professional Reports for Planning Services*. In addition to designating the DPAs, the OCP contains a list of projects that are exempt from the DP process.

The objectives of the Aquatic Ecosystem DPA in the most recent Ellison OCP are to protect, restore, and enhance aquatic ecosystems (water, wetland, riparian, and broadleaf woodland), water quality and quantity, and vital wildlife functions such as travel corridors, water sources, fish habitat, and breeding habitat to ensure the viability of future generations. The guidelines direct that a qualified environmental professional must evaluate, establish, and monitor a leave strip that is to remain undisturbed for the protection and restoration of the aquatic ecosystem. Leave strips should link together to provide a continuous network of ecosystems, and they may allow public access. The leave strip must be identified throughout construction, for example, by using a coloured snow fence to prevent disturbance. The guidelines suggest a

setback from heron rookeries of 60 metres (in urban areas) to 500 metres (in undeveloped areas).

In addition to the setbacks, the EDPA guidelines use performance-based criteria. They establish what the end-state should be, and it is largely up to the developers or owners, using best management practices, to determine how to meet the criteria on their particular site in accordance with the required site plans. For example, the guidelines require that property owners maintain hydrologic regimes, normal wetland processes, and entire intact ecosystems. Staff have also created specific guidelines for the broadleaf woodland ecosystem in recognition of its extreme rarity (0.3% of the SEI study area) and high biological diversity. Guidelines include protecting dens and nesting sites, conserving soil and leaf litter, and maintaining habitat structures.

The extensive Sensitive Terrestrial Ecosystems DPA guidelines focus on habitat protection, connectivity, and buffering sensitive ecosystems, with an emphasis on EA and directing development away from sensitive habitats. The guidelines contain specific criteria for old forest, grassland, coniferous woodland, sparsely vegetated cliff and rock, mature forest, and disturbed grassland ecosystems.

The Regional District's Environmental Assessment policy requires that the EA must meet the standards in the 13 pages of the Terms of Reference – Planning Reports for Planning Services and the provincial Riparian Areas Regulation. The intent is to exceed the RAR. The EA must also consider a variety of best management practices documents, including the Sensitive Ecosystem Inventory: Central Okanagan 2001, *Environmental Assessment Best Practice Guide for Wildlife at Risk in Canada*, *Raptors Best Management Practices* document, and *Develop with Care: Environmental Guidelines for Urban and Rural Land Development in B.C.*

The *Terms of Reference—Professional Reports for Planning Services* require a registered professional to conduct an environmental assessment to further qualify the site. The professional stratifies the site as ESA1 (significant sensitive habitat) to ESA4 (little ecological value) and determines the necessary leave strip that is to remain free of development or be restored if previously degraded. The qualified professional should be, at minimum, a Registered Professional Biologist with extensive experience in the ecosystems and wildlife species of the Okanagan region, standard development practices, and published best management practices.

The *Terms of Reference* also set detailed standards for geotechnical assessments, EIA, stormwater management and drainage plans, and groundwater management assessment. If the development involves mitigation, maintenance, or monitoring plans, the applicant must post a bond or security for 125 percent of the estimated cost of the prescribed works.

The guidelines are triggered by applications for rezoning, subdivision, building permits, and OCP amendments. Typically, if the application is for subdivision, the developer or landowner will hire a biologist to prepare the assessment. For building permits on large holdings, for example, in the Ellison Area north

of the Kelowna airport, landowners are opting for exemptions from the DP process by protecting ESAs up front. For example, landowners are preserving and registering covenants on grassland areas on steep slopes or poplar copses and designing buildings and roads away from these areas. When the landowner protects sensitive land, staff exempt the applicant from the development permit and environmental assessment process. Staff prefer this preventive approach because there is no need for a DP, only for a bond security and activities to monitor development. Staff have used this approach for two years and are now starting to see contiguous grasslands on steep slopes as development moves up hillsides. They also note that many of the engineering consultants in the region now approach staff with proposals that have already directed development away from environmentally sensitive areas.

Nanaimo Official Community Plan DPA 23 pp.80-20 to 8-23 and DPA 24 pp.8-23 to 8-26

[http://www.nanaimo.ca/uploadedfiles/Site\\_Structure/Development\\_Services/Planning\\_and\\_Development/Community\\_Planning/ocp\\_10.pdf](http://www.nanaimo.ca/uploadedfiles/Site_Structure/Development_Services/Planning_and_Development/Community_Planning/ocp_10.pdf)

Nanaimo Watercourse Development Permit Area Guidelines

<http://www.wcel.org/issues/urban/sbg/Part6/usewisely/DPA/Nanaimo-Guidelines.pdf>

RDCO Ellison Official Community Plan Aquatic Ecosystem Development Permit Design Guidelines at A-5 and Sensitive Terrestrial Ecosystem Development Permit Design Guidelines at A-8 [http://www.regionaldistrict.com/docs/planning/Ellison%20OCP/EL\\_OCP\\_SchA.pdf](http://www.regionaldistrict.com/docs/planning/Ellison%20OCP/EL_OCP_SchA.pdf)

RDCO Terms of Reference—Professional Reports for Planning Services <http://www.regionaldistrict.com/docs/planning/Handout%20TofR.pdf>

The EDPA policies in Appendix F aim to:

- provide a justification for the special treatment of environmentally sensitive terrestrial and aquatic-related areas (page 186);
- create an impact assessment process that is responsive to various levels of development (page 189);
- require the use of best management practices in design and construction (page 189);
- prohibit the destruction of sensitive ecosystems (page 189);
- define SPEAs around wetlands and other watercourses that must remain free of development and that require protection by restrictive covenant (page 192);
- enable other tools (such as density bonus, development variance permits, bare land strata developments) that give local governments the flexibility they need to tailor development to site-specific conditions (page 197).

Additional DPA provisions can be found in the appendices dealing with Impact Assessment (Appendix H) and the Riparian Areas Regulation (Appendix L).





# 8 Tax Exemptions for Conservation

## 8.1 Overview

**Property tax exemptions can encourage landowners to maintain the natural value of environmentally sensitive lands. They can also compensate landowners for the social and ecological benefits they provide the community, consistent with the principles of full-cost accounting. Property tax exemptions are springing up all over North America as a popular way to provide long-term protection for private land.**

Local governments have jurisdiction to provide tax exemptions as an incentive for owners to place conservation covenants on riparian areas of their property. Once a landowner has registered a covenant on the land title in favour of a local government, the local government may pass a bylaw exempting the riparian property from taxation. As part of this process, municipalities may enter into exemption agreements to tie the tax exemption to specific conditions. The agreement (in the case of a municipality) or the bylaw (in the case of a regional district) may require the owner to pay the local government a specified amount of the tax exemption plus interest when the property owner does not meet a condition of the agreement or covenant.

**See Chapter 11 for a discussion of conservation covenants.**

JURISDICTION	
Municipality	Regional District
<i>Community Charter</i> s.225	<i>Local Government Act</i> ss. 811 and 811.1

STRENGTHS AND WEAKNESSES	
Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Secures a covenant on riparian property that ensures the maintenance of the sensitive ecosystem.</li> <li>• Offers an incentive to property owners to consider conservation.</li> <li>• Win-win-win approach – the local government, landowner, and community all benefit.</li> </ul>	<ul style="list-style-type: none"> <li>• Most local governments are unwilling to “give up” tax revenue (do not see the cost benefits of dedicating riparian green infrastructure).</li> <li>• Considerable staff time needed to develop the program and process applications on a parcel-by-parcel basis</li> <li>• Landowners may view with suspicion programs targeting a specific riparian corridor.</li> <li>• Without significant public education, weak rates of participation by landowners.</li> </ul>

## ECOGIFTS

**An ecogift is a federally certified donation of ecologically sensitive land or an interest in land (e.g., conservation easement, covenant, or servitude). Certification is according to national and provincial criteria that determine whether the land or interest in the land makes a significant contribution to the conservation of Canada's biodiversity and environmental heritage. Ecogifts qualify for a charitable donations tax credit (for individuals) or deduction (for corporations) and are not subject to tax on any capital gain realized on the disposition of the property. Any unused portion of the credit or deduction may be carried forward for up to five years. Both corporate and individual landowners can donate ecologically sensitive land to approved environmental charities and all levels of government.**

**For more information see <http://www.cws-scf.ec.gc.ca/egp-pde/>.**

Although incentives for conservation are an important tool, particularly in already developed areas, local governments are finding that administering tax exemption programs requires considerable staff time. Staff must educate landowners about the program, work with landowners to define the covenanted area (with or without a survey), negotiate site-specific covenants, shepherd the bylaws through the council process, and help with yearly monitoring. Most of these administrative tasks could be streamlined, for example, by bringing all of the riparian tax exemption bylaws forward to Council at the same time each year. However, the process also requires knowledgeable staff and dedicated staff resources. In addition, local governments are experiencing challenges in enforcing conservation covenants, particularly if the property changes owners.

## 8.2 Case Studies: Gibsons and Islands Trust Fund

### ◆ Riparian Tax Exemption – Gibsons

In 2003 the Town of Gibsons used a riparian tax exemption to create an incentive for the restoration of Charman Creek. The Town owns 16 hectares (40 acres) of largely intact riparian habitat on the upper reaches of the creek and, with the support of the Department of Fisheries and Oceans, wanted to initiate riparian rehabilitation on the lower reaches that were largely built out. On the lower reaches, there is no redevelopment and thus no potential for restoration.

Town staff approached the owners of the 11 lots closest to the ocean and explained the riparian tax incentive program. The municipality would provide an exemption from property tax for up to a ten-year period for that portion of the lot on which the owner registered a covenant and statutory right of way in favour of the Town. The covenant commits the owner to protecting, maintaining, restoring, and keeping in a natural state a portion of land that is within a specified number of metres from the Creek (a strip of land adjacent to the creek and running across the property). The owner shall not remove or destroy any vegetation, remove or deposit soil, excavate, erect a structure, or deposit any deleterious substance. In the covenant the owner also grants to the Town a right of way for access to inspect the condition of the riparian area and to undertake maintenance and restoration work. If an owner fails to fulfill any terms of the covenant, the Town can require him or her to repay the tax that has been exempted.

Although both staff and council members strongly supported this approach, it yielded disappointing results for the amount of time spent on it. Only two property owners agreed to register covenants on their titles. Most property owners expressed support for rehabilitation of the riparian area but were wary of registering a covenant on their title. They did not understand the details of the covenant and did not want to hire a lawyer to review it for them. Many landowners gave the Town permission to undertake restoration activities, but the Department of Fisheries and Oceans was unwilling to dedicate resources to rehabilitation efforts that were not secured legally by a

covenant, fearing that owners would not maintain the restoration or sell to a landowner who would undo the work. Considerable up-front public education is needed to help landowners in targeted riparian areas understand the program and the long-term benefits of conservation covenants.

In addition, instituting riparian tax exemptions requires considerable administrative resources. Drafting the bylaw and covenant involve costly lawyer's fees. The Town mailed letters to all the landowners, held several open houses, and conducted many one-on-one conversations to inform landowners of the initiative. Instituting the riparian tax exemption is not the same as instituting a regulatory bylaw. Each time a landowner opts into the tax exemption program, the Town must initiate a new property tax exemption bylaw, advertise the properties and bylaw, and go through council approval. If the program continues, the council could address this issue by passing one bylaw each year that covers all new properties in the program.

Finally, additional legal and administrative issues arose with a 40-unit strata townhouse development along the creek. Legal issues included whether to register covenants (at considerable cost) on the titles of all 40 units, only on the units that back onto the Creek, or solely on the common property, and whether to survey the property or describe the depth of the setback in words.

Although a riparian tax exemption program may be the only riparian restoration option in built-up areas, Town staff believe that dedicating riparian areas at subdivision or upon rezoning is a more efficient way to preserve riparian areas.

Riparian Tax Exemption Bylaw

[http://www.wcel.org/issues/urban/sbg/Part7/taxes/Riparian\\_Tax\\_Deduction.pdf](http://www.wcel.org/issues/urban/sbg/Part7/taxes/Riparian_Tax_Deduction.pdf)

## ◆ Islands Trust Natural Areas Protection Tax Exemption Program

The Natural Areas Protection Tax Exemption Program (NAPTEP) in the Islands Trust area of the south coast is designed to create an incentive for landowners to protect ecologically and culturally significant features. Enabled by the *Islands Trust Act* (ss. 49.1-49.8) and the *Islands Trust Act* Natural Areas Protection Tax Exemption Regulation, this unique program currently applies to the Gulf Islands located in the Capital Regional District and Sunshine Coast Regional District, which includes the larger islands of Galiano, Gambier, Mayne, North Pender, South Pender, Saturna, and Salt Spring Islands as well as the myriad smaller islands in those regional districts.

NAPTEP is a joint initiative between the Islands Trust local government responsible for land use and the Islands Trust Fund conservation land trust. Landowners who permanently protect eligible features on their land with a conservation covenant registered on title receive a 65 percent exemption from property taxes on the covenanted portion of the property.

Eligible features that may be the subject of a conservation covenant include:

- areas relatively undisturbed by human activity that are good examples of important ecosystems, such as forests over 80 years old, woodlands, water features, sparsely vegetated natural areas, and coastal bluffs;
- areas relatively undisturbed by human activity that are key habitat for rare native plant species or plant communities;
- areas that are critical habitat for native animal species in relation to breeding, rearing, feeding, or staging;
- special geological features;
- historic features, such as culturally modified trees and heritage orchards; and
- social or recreational features such as trails and viewpoints.

The target audience for the program is landowners who would not consider placing a conservation covenant on their land except in return for a tax incentive and landowners who would have difficulty paying their property taxes without cutting trees or developing their land.

The program uses a standard covenant that prohibits current and future owners from harming the eligible features, for example, by removing native plants, using herbicides and pesticides, altering natural watercourses, and modifying geological features. Violating the covenant can result in penalties, including repayment of all exempted taxes.

Phase 1 of the application process helps landowners determine whether or not they qualify for NAPTEP and carries a fee of \$250 if the covenanted area is less than 10 hectares, or \$350 if it is more. Phase 2 includes registration of the covenant on the title and the issuance of a Natural Areas Exemption Certificate, with an application fee of \$125 if the covenanted area is less than 10 hectares, or \$175 if it is more. Landowners are also responsible for the costs of registering the covenant and for obtaining legal and tax advice, a survey of the proposed covenant area, and a report about the current state of the covenant area and its ecosystems prepared by an approved environmental professional. Ongoing costs include providing a yearly monitoring report on the state of the covenant area. The landowner can hire an approved environmental professional or pay the Islands Trust Fund to undertake the monitoring.

The partners launched NAPTEP in the Capital Regional District in January 2005. During the start-up phase, communication with the public was a key priority, and staff spent considerable time providing information about the program (communications alone amounted to approximately \$23,000, including staff time). A simple application takes approximately 10 hours of staff time and costs \$325.

Landowners and the general public have embraced NAPTEP as a beneficial program for conservation. An initial evaluation revealed the following challenges:

- program costs, including a survey and the registration of a covenant, exceeds \$3,000 for landowners, and it can take up to five years to recover the costs through the program;
- landowners are nervous about registering covenants on the title to land;
- landowners are concerned about loss of privacy with annual monitoring;
- the covenant's restrictions on collecting firewood limit many landowners' primary or secondary source of heating;
- the covenant's inflexibility with regard to rehabilitation and fire prevention measures; and
- the lack of incentive for most landowners with less than 20 hectares (except on Salt Spring Island).

For the 2006 tax year, there are four NAPTEP covenants in the Capital Regional District protecting 25 hectares worth \$2 million in land value. For the 2006 tax year, the program resulted in property tax savings of almost \$6,000 on three properties, even in a market that saw some property values increase by 60 percent. The Islands Trust Fund is currently processing two more applications for the 2007 tax year.

NAPTEP is currently limited to the Islands Trust Area and it took ten years of discussion between the Islands Trust, Islands Trust Fund and the provincial government before the province amended the *Islands Trust Act* and Regulation, to create the program. Expanding NAPTEP will require amendment of the *Local Government Act* and careful crafting of a program in each jurisdiction as the program is not easily transferable.

Islands Trust Fund <http://www.islandstrustfund.bc.ca/>

Islands Trust Natural Areas Protection Tax Exemption Regulation  
[http://www.qp.gov.bc.ca/statreg/reg/l/41\\_2002.htm](http://www.qp.gov.bc.ca/statreg/reg/l/41_2002.htm)

See also the annotated covenant provided by the Islands Trust Fund at  
<http://www.islandstrustfund.bc.ca/pdf/itfnaptepannotatedcovenant2007.pdf>

Appendix G contains the Town of Gibsons Riparian Tax Exemption Bylaw and Covenant (page 203).



## CONSERVATION COVENANTS

**A detailed discussion of covenants and an annotated conservation covenant is contained in *Greening Your Title: A Guide to Best Practices for Conservation Covenants (2<sup>nd</sup> Ed.)***

<http://www.wcel.org/wcelpub/2000/13247.pdf>

**See also the NAPTEP covenant online at <http://www.islandstrustfund.bc.ca/pdf/itfnaptepannotatedcovenant2007.pdf>**



# 9 Impact assessment

## 9.1 Overview

**Local governments are adopting a variety of ways to assess the effects of new development on community values and sensitive ecosystems. Information gathered during assessments gives decision-makers an objective basis for decisions about proposed activities. Assessments also contribute to the body of knowledge about ESAs.**

Environmental assessments help local governments prevent damage to sensitive ecosystems and avoid the cost of correcting environmental problems after the fact. Preventing harm before it occurs is more cost effective than dealing with environmental damage.

JURISDICTION	
Municipality	Regional District
<i>Local Government Act</i> s.920.01 (development approval information areas)	<i>Local Government Act</i> s.920.01 (development approval information areas)
<i>Local Government Act</i> s.895 (development process)	<i>Local Government Act</i> s.895 (development process)
STRENGTHS AND WEAKNESSE	
Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Proactive – helps all parties understand the landscape before development occurs.</li> <li>• Contributes to public knowledge about site-specific conditions.</li> <li>• Helps local government staff to better understand watershed needs and management tools.</li> <li>• Can require, or point to the need for, various mitigation or management plans (erosion control, vegetation/landscape).</li> <li>• Can help define amount of security deposit.</li> </ul>	<ul style="list-style-type: none"> <li>• Viewed as red tape that prolongs approvals processes.</li> <li>• Can be expensive and thus may prevent development of smaller projects.</li> <li>• Requires staff expertise to establish terms of reference, interpret reports, and incorporate mitigation measures.</li> <li>• Cannot be required for subdivision applications (although OCPs can encourage the approving officer to require information before approving development). However, several local governments include an environmental assessment as part of the subdivision process.</li> </ul>

In an OCP local governments may specify the areas or situations for which landowners must supply information on the anticipated impact on the community of proposed activities or development. Usually this takes the form of professional reports or studies on the environmental significance of a property and the consequences of the proposed development. If an OCP includes a provision that requests information in advance of approval for a development, the local government must enact a bylaw that establishes the substance of the information required and the policies and procedures for

### DEVELOPMENT CHECKLISTS

Many local governments are adopting an integrated (economic, social, and environmental) scorecard or development checklist that reviews a development for the entire set of community goals. See, for example, the City of Port Coquitlam’s Sustainability Checklist (for rezoning and development permit applications) [http://www.portcoquitlam.ca/\\_shared/assets/Sustainability\\_Checklist2040.pdf](http://www.portcoquitlam.ca/_shared/assets/Sustainability_Checklist2040.pdf), New Westminster’s Smart Growth Development Checklist [http://www.newwestcity.ca/cityhall/dev\\_services/publications/10Housing/pdf/Smart%20Growth%20Development%20-%20Checklist%202004.pdf](http://www.newwestcity.ca/cityhall/dev_services/publications/10Housing/pdf/Smart%20Growth%20Development%20-%20Checklist%202004.pdf) and Vernon’s Smart Growth [http://www.vernon.ca/services/pde/documents/smart\\_growth\\_development\\_checklist.pdf](http://www.vernon.ca/services/pde/documents/smart_growth_development_checklist.pdf).

See also the Smart Bylaws Guide <http://www.wcel.org/issues/urban/sbg/>

## **DEVELOPMENT INFORMATION AREAS**

**Local governments may designate in OCPs areas or situations for which they require information (studies and reports) before approving new development. This information reports on the condition of the property and the anticipated impact of the proposed activity on the environment and the community.**

requiring it. The applicant must pay the cost of providing the information.

Applications for rezoning, development permits, and temporary commercial and industrial use permits may trigger the assessment process. Although subdivision cannot automatically trigger an assessment, OCPs can encourage the Approving Officer to require assessments or information under certain circumstances. To avoid uncertainty, local governments can designate development permit information areas in all locations where subdivision may warrant an assessment.

An overarching issue is what type or size of development should activate the process for an impact assessment. Because impact assessments are an additional cost it may be unreasonable to require them for small projects. Some local governments require developers to submit impact assessments and proposed mitigation plans (such as landscaping, tree protection, and erosion and sediment control) based on the size of the development, for example, for developments over 0.5 hectares. Others base it on the geographic location of the development; for example, they require a more involved process if riparian land is involved.

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## **ENVIRONMENTAL AND SOCIAL REVIEW – DISTRICT OF SAANICH**

**Saanich uses an Environmental and Social Review (ESR) Process set out in its Land Use and Development Procedures Bylaw to identify the environmental and social consequences, both positive and negative, of rezoning and subdivision. The Planning Department screens applications to determine whether or not an ESR is required based on criteria set out in the Environmental and Social Review Process Policy 92/CW.**

**If the Planning Department recommends an application to Council for an ESR, the department prepares a report for the Committee of the Whole that outlines the environmental and/or social issues that warrant investigation, plus the proposed Terms of Reference for the ESR. If the department does not recommend an ESR, it sends a brief memorandum to the Mayor and councilors and the relevant community association citing the reason(s) for not recommending an ESR. Within 10 working days of delivery of the memorandum, the Mayor or any councilor may ask to have the matter placed on a council agenda for discussion.**

### **Land Use and Development Procedures Bylaw**

<http://www.gov.saanich.bc.ca/municipal/clerks/bylaws/landusedevproc8857.pdf>

### **ESR Review Process Policy**

<http://www.saanich.ca/municipal/clerks/bylaws/esrprocess.pdf>

## MINISTRY OF ENVIRONMENT – DEVELOP WITH CARE

***Develop with Care* is one in a series of best practices land development guidelines prepared by the Ministry of Environment. It includes terms of reference for site inventories and conservation evaluations. For a list of titles currently available, see the Guidelines and Best Management Practices web site <http://www.env.gov.bc.ca/wld/BMP/bmpintro.html>.**

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Development permit areas, regulatory bylaws (for such activities as removing and depositing soil and protecting trees and watercourses), and the rules for servicing subdivisions all spell out the processes for impact assessments. Many local governments dislike creating extensive development permit areas and instead prefer to designate specific areas or landscape conditions for which they require information before approving a development permit. For example, any application involving a type of sensitive ecosystem such as a riparian area, grassland, or mature forest could automatically initiate a call for more information.

Many local governments in B.C. now require an initial screening of development proposals to determine the appropriate level of impact assessment. Some governments use a tiered approach. The lowest level of assessment involves a staff review and conditions on development permits. The highest level is a full impact assessment that requires mitigation of environmental damage, such as erosion control, vegetation protection and rehabilitation, and watercourse protection. Prompts for the different levels of assessment depend on the size of the project and the ecosystem types on which it will have an impact. For example, Saanich now screens all developments to consider whether the developer has met the prescribed criteria that initiated an environmental assessment. Several local governments, such as the District of North Vancouver, make the landowner or developer submit key information about the project on a one-page form. The form gives all departments enough information to decide on the appropriate method for evaluating the development application.

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### TERMS OF REFERENCE

**For thorough and clear terms of reference for all kinds of professional reports, see the Regional District of Central Okanagan *Terms of Reference for Professional Reports—Planning Services Department* at <http://www.regionaldistrict.com/docs/planning/Handout%20TofR%202005.pdf>**

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Finally, several local governments incorporate standards for impact assessments into guidelines and policies that are referred to in bylaws, OCPs, and other regulations. This allows staff and council to amend standards more easily and keep them up to date with new best management practices.

## REGIONAL DISTRICT OF CENTRAL OKANAGAN – IMPACT ASSESSMENT PROCESS

The RDCO developed *Terms of Reference for Professional Reports for the Planning Services Department* to describe the standards for technical and professional reports submitted to meet requirements of land development bylaws. Applicants are encouraged to discuss with Planning Services staff the standards set out in the terms of reference and to coordinate what Planning Services requires with what other departments require. Strong OCP statements direct applicants to the *Terms of Reference*, for example, by requiring the preparation of environmental impact assessment reports to conform to the *Terms of Reference* and to be endorsed by a registered professional biologist and other registered professionals (i.e., geotechnical engineer, professional forester, or hydrogeologist).

***Terms of Reference***  
<http://www.regionaldistrict.com/docs/planning/Handout%20TofR%202005.pdf>

## **B.C. SPECIES AND ECOSYSTEMS EXPLORER**

**The Ministry of Environment maintains a searchable database that contains information about approximately 6,000 plants and animals and almost 600 ecological communities (ecosystems). It provides information on:**

- **red- and blue-listed species and ecological communities (by forest district, biogeoclimatic unit, and more).**
- **the status, legal designation, distribution, life histories, conservation needs, and recovery plans for species and ecological communities.**
- **all ecological communities by ecoregion and ecosection.**
- **links to relevant publications about species and ecological communities.**

<http://www.env.gov.bc.ca/atrisk/toolintro.html>

The impact assessment provisions in Appendix H aim to:

- prompt an impact assessment when a rezoning, development permit, or temporary commercial or industrial use permit related to an environmentally sensitive area arises (page 207);
- create a flexible process that requires varying levels of assessment depending on a project's level of impact (page 208);
- allow local government to set the terms of reference (page 208);
- require a biophysical inventory and analysis, an assessment, and mitigation measures (page 209); and
- give the applicant and local government a process (page 209).

# 10 Rainwater Management

## 10.1 Overview

The biological productivity of sensitive landscapes like wetlands and riparian areas depends on maintaining a natural regime of water flows throughout the watershed. Urban/village (i.e., non-rural) development changes this natural regime by introducing impervious surfaces that inhibit soil's natural ability to absorb water (infiltration). This can cause a dramatic increase in the volume and velocity of the rainwater that flows off a property. The increased rainwater creates erosion and sedimentation that can destroy natural features, kill fish, and fill in wetlands. Water that flows across pavement can also transport oils, heavy metals, and other car-related pollutants into down-slope ecosystems. Lack of infiltration also means that water is not recharging aquifers and saturating the soil to the extent necessary to ensure water flows from the ground into streams throughout the summer.

There are ways to minimize changes to natural flow regimes that occur during development. Alternative design approaches can replace hard infrastructure with a system that is cheaper for local governments, mimics and retains natural hydrologic systems, and retains vegetation.

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**See Chapter 12 for a discussion of water quality measures, such as erosion and sediment controls, and pollution prevention.**

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JURISDICTION	
Municipality	Regional District
<i>Local Government Act</i> s.938 (subdivision servicing)	<i>Local Government Act</i> s.938 (subdivision servicing)
<i>Community Charter</i> s.69 (drainage)	<i>Local Government Act</i> ss.540-542 (drainage)

STRENGTHS AND WEAKNESSES	
Strengths	Weaknesses
<ul style="list-style-type: none"><li>• Comprehensive watershed approach.</li><li>• Over the long term, less expensive than hard infrastructure.</li><li>• Mimics natural hydrologic regime</li><li>• Maintains and restores green infrastructure.</li></ul>	<ul style="list-style-type: none"><li>• Dramatic change in professional standards and development methods.</li><li>• Uncertainty with some techniques.</li><li>• Some sites not large enough to infiltrate large percentage of rainwater on site.</li></ul>

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A local government may, by bylaw, require certain works and services when land is being subdivided. These include providing systems to collect or dispose of drainage that are located and constructed in accordance with the standards established in the bylaw. Drainage standards may be different

### GREEN INFRASTRUCTURE GUIDE – ENGINEERED INFRASTRUCTURE

For a more detailed discussion of engineered green infrastructure, with a particular emphasis on rainwater management, see the **Green Infrastructure Guide** at <http://www.wcel.org/wcelpub/2007/14255.pdf>

depending on the circumstance, area, land use, zone, or class of highway. As a condition of issuing a building permit, a local government may also require a landowner to provide works and services that meet a standard established by bylaw.

Local governments may, by bylaw, regulate the design and installation of drainage systems and may require property owners to connect their buildings and structures to the drainage works in the manner specified in the bylaw. They may also require those who are constructing drainage works to maintain the proper flow of water in a stream or ditch, or to reclaim land or protect it from erosion. Finally, a municipality may impose requirements for the operation or construction of dikes and may make a watercourse part of the municipal drainage system.

Local governments are using a variety of complementary and cross-referenced tools to manage rainwater. These include:

- integrated watershed or rainwater management plans;
- neighbourhood plans;
- design and policy manuals (on rainwater or low-impact development) that are incorporated by reference into the Subdivision and Development Servicing Bylaw.

Ideally, a local government prepares a design and policy manual setting out the goals and approaches to rainwater management, as well as the process the local government will use to assess development applications. The local government also prepares integrated watershed management plans, which then inform neighbourhood plans that may contain more specific requirements than the policy manuals.

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## **POLICY MANUALS – CHILLIWACK AND COQUITLAM**

**The City of Chilliwack Policy and Design Criteria Manual for Surface Water Management** ([http://www.chilliwack.com/main/attachments/files/658/Surface\\_Water\\_Management.pdf](http://www.chilliwack.com/main/attachments/files/658/Surface_Water_Management.pdf)) and **City of Coquitlam Low Impact Development Policies and Procedures Manual** (<http://www.coquitlam.ca/NR/rdonlyres/2FA2CEB7-F2B2-42A8-ADFA-1B8FC790C27D/26487/LowImpactDevelopmentPolicyandProcedureManualHydeCr.pdf>) are two examples of rainwater policy manuals. Coquitlam's manual is a supplement to the City's Stormwater Policy and Design Manual and the Hyde Creek Integrated Watershed Management Plan. The Policy and Design Manual and its accompanying Cover Report set out procedures and recommendations for the City and development proponents to follow to manage storm runoff to protect life and property, prevent erosion, and enhance water quality, as well as conserve social and financial resources. The City is committed to conducting area-specific watershed studies in conjunction with accompanying neighborhood plans in advance of development. The area-specific watershed studies may develop additional and/or alternative requirements for stormwater

management to those in the Policy and Design Manual. Recent amendments to the City Wide Official Community Plan ensure that after applicable watershed studies, new neighbourhood plans will reflect watershed conditions and needs.

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Source controls and infiltration strategies include:

- **Trees, shrubs and groundcover** — enhancing the urban forest is an important strategy in managing the urban and suburban environment. Trees intercept rainfall and particulates, absorb and transpire stormwater, reduce urban heat islands, and enhance the habitat and the livability of the city.
- **Vegetated swales (bioswales)** — grassy or vegetated areas that retain and infiltrate stormwater and improve water quality beside roads and parking areas.
- **Splash pads** — localized areas of gravel or other hard material in a yard or lawn used to drain away rainwater from disconnected roof leads and runoff from other impervious areas and the piped drainage system.
- **Bioretention areas** — a layer of absorbent soil and ground surface that by retaining precipitation, reduces runoff volumes and frequencies and allows water to infiltrate into the surrounding soil and evapotranspire.
- **Infiltration trenches** — excavated trenches filled with gravel or stone (may have absorbent landscaping on top) to form a sub-surface infiltration basin. With proper engineering, the surface can support paving and light vehicle traffic.
- **Infiltration ponds** — unlined ponds designed to promote infiltration.
- **Foundation planters** — planter boxes that can catch rooftop runoff and divert it along building exteriors. Planters are most useful when lack of space is a key constraint.
- **Permeable paving** — paving materials (porous concrete, permeable interlocking paving blocks, concrete grid pavers, perforated brick pavers, and compacted gravel) that allow water to flow through them into the soil. Best used where vehicle traffic is light (e.g., driveways, roadway shoulders, overflow parking areas, sidewalks, patios).
- **Green roofs** — rooftops on which a layer of lightweight, absorbent growing media lays on top of a drainage layer that retains rainfall and allows it to evaporate or transpire from the rooftop vegetation.
- **Captured and reused rainwater**

The discussion of rainwater management and water quality protection provisions in Appendix I provides examples of approaches used to:

- decrease the volume of rainwater entering watercourses (page 211); and
- infiltrate most rainwater back into the soil by detaining it on site or close to the site (page 212).

**This section on source controls and infiltration strategies was adapted from:**

**Stormwater Planning: A Guidebook for British Columbia,**

<http://www.env.gov.bc.ca/epd/epdpa/mpp/stormwater/stormwater.html>

**Smart Bylaws Guide**

<http://www.wcel.org/issues/urban/sbg/Part2/stormwaterand>

**Coquitlam Low Impact Development Policy and Procedure Manual.**

<http://www.coquitlam.ca/NR/rdonlyres/2D5BEB15-F830-49A0-BC6E-C09F03374665/33947/LowImpactDevelopmentPolicyProceduresManualV3WithCo.pdf>  
[LowImpactDevelopmentPolicyandProcedureManualHydeCr.pdf](http://www.coquitlam.ca/NR/rdonlyres/2D5BEB15-F830-49A0-BC6E-C09F03374665/33947/LowImpactDevelopmentPolicyandProcedureManualHydeCr.pdf)

**See also Greater Vancouver Regional District Stormwater Source Control Design**

**Guidelines 2005** [http://www.gvrd.bc.ca/sewage/pdf/Storm\\_Source\\_Control\\_PartV.pdf](http://www.gvrd.bc.ca/sewage/pdf/Storm_Source_Control_PartV.pdf)

For a more complete discussion of rainwater management and protection of the engineered green infrastructure, please see the other best practices documents referenced in this chapter.

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## **WATER QUALITY**

**Water quality (erosion and sediment control, pollution prevention) is addressed in development permit guidelines and conditions and in regulatory bylaws such as those related to soil removal and deposit, drainage, subdivision servicing, and watercourse protection. Local governments are favouring a preventative site-specific approach: i.e., issuing development permits through development permit areas or a rainwater/stormwater design manual rather than by enforcing general guidelines contained in environmental protection bylaws. Metchosis has included both general prohibitions (e.g., no release of deleterious substances into watercourses) and specific development standards in their new Protection and Management of Rainwater Bylaw <http://district.metchosis.bc.ca/467/467.pdf>.**

# 11 Security and Covenants

## 11.1 Overview

Even with the best of intentions, it is not uncommon for development to damage an ESA. To prevent or remedy this, local government can require developers to post a security deposit that the municipality can use for habitat restoration and landscaping if damage occurs. A conservation covenant registered on the title to ecologically sensitive land (either lots or portions of lots) can also help protect ecological integrity by specifying what features of the land the development must preserve.

## 11.2 Security

Local governments currently have the power to require performance security as a condition of a development permit. A municipal bylaw can require the security, or the security may be a condition of a license, permit, or approval. If a landowner or permit holder does not fulfill the required conditions, the municipality may complete the work and recover the costs from the owner. The municipality must use the security to prevent or remedy the specific environmental harm for which it required the security and must return any unused portion plus interest to the permit holder.

JURISDICTION	
Municipality	Regional District
<b>Security</b> <i>Community Charter ss.8(8)(c), 17 &amp; 19</i> <i>Local Government Act s.925</i>	<i>Local Government Act s.925</i>
<b>Covenant</b> <i>Land Title Act s.219</i>	<i>Land Title Act s.219</i>
STRENGTHS AND WEAKNESSES	
Strengths	Weaknesses
<b>Security</b> <ul style="list-style-type: none"> <li>• Carrot and a stick – tangible financial incentive for carrying out the work of protecting natural features.</li> <li>• Enforcement mechanism for breach of development permit conditions.</li> </ul> <b>Covenant</b> <ul style="list-style-type: none"> <li>• Provides long-term protection on private land.</li> <li>• Provides protection without expense of purchasing land.</li> <li>• Can be tailored to an individual ecological feature, leaving the rest of the property unrestricted.</li> <li>• Conservation organization can hold the covenant and assume monitoring function.</li> <li>• Parties can modify the terms.</li> <li>• Can increase property values in neighbourhood.</li> </ul>	<ul style="list-style-type: none"> <li>• Remediation can be more costly than the security posted (tension between delaying development by up-front financial burden and ensuring sensitive ecosystem restoration).</li> <li>• Requires ongoing education because new owners may not be aware of or understand the covenant provisions.</li> <li>• Can be costly to survey land, develop the covenant, and register it.</li> <li>• Ineffective without a monitoring and enforcement regime.</li> <li>• Perception that it may decrease property value of property with covenant attached.</li> </ul>

## **SECURITY REQUIRED IN ENVIRONMENTAL PROTECTION BYLAWS – DISTRICT OF NORTH VANCOUVER**

**The District of North Vancouver’s Environmental Protection Bylaw requires an applicant to provide security in the form of cash, certified cheque, or an unconditional irrevocable letter of credit drawn on a Canadian chartered bank in an amount equal to 30 percent of the estimated cost of the work to be performed under an aquatic or tree permit, to a maximum of \$10,000, to ensure full and proper compliance with the provisions of the bylaw and conditions of the permit.**

[http://www.dnv.org/upload/documents/bylaws/6515.htm#\\_Toc117396932](http://www.dnv.org/upload/documents/bylaws/6515.htm#_Toc117396932)

Regional districts have more limited jurisdiction. They may require security as a condition of a permit to pay for remediation of:

1. inadequate landscaping if landscaping is a condition of a permit;
2. unsafe conditions that have resulted from contravening a condition of a permit; and
3. damage to the natural environment that is a consequence of contravening a permit condition.

If any of these conditions occur, a regional district may complete the landscaping, correct the unsafe condition, or correct the damage to the environment and use the security to pay for the costs of the work, while returning the interest on the amount of the security and any surplus to the permit holder.

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## **PERFORMANCE BONDS – REGIONAL DISTRICT OF CENTRAL OKANAGAN**

**The *Terms of Reference – Professional Reports for Planning Services* requires a performance bond in the amount of 125 percent of the estimated cost of the prescribed work to guarantee that in the event of a developer or contractor default, funds are available to finish the construction of prescribed works for environmental mitigation and compensation.**

<http://www.regionaldistrict.com/docs/planning/Handout%20ToF.R.pdf>

Security requirements are found in bylaws for environmental protection (tree protection, soil removal and deposit, watercourse protection), guidelines for development permit areas, or in design and policy manuals that are incorporated into bylaws for servicing subdivisions and development projects.

Many local governments find it more effective to require a substantial security deposit up front because it acts as an incentive for a landowner or developer to carry out construction activities properly and to complete any restoration commitments. It is also easier to remedy environmental damage with funds in pocket, rather than to undertake enforcement approaches such as ticketing and remedial action.

## 11.3 Covenants

A covenant is a voluntary agreement between the landowner and a covenant holder (a municipality, regional district, or an approved non-governmental organization). The landowner agrees to protect the land according to the wording of the covenant. The covenant holder has the right to monitor and enforce the covenant to ensure that the landowner is using the land in accordance with the covenant. Covenants “run with the land,” meaning they apply to whoever owns the land, thus ensuring that the agreed protection endures over the long term.

Local governments and landowners use covenants to restrict the use of private land to activities and areas of use that respect sensitive ecosystems. Under section 219 of the *Land Title Act*, a local government or approved organization (such as a land trust) may hold a covenant registered on the title to private land that protects specific characteristics of the land, such as wetlands, grasslands, forested areas and other ecologically significant features.

Covenants may contain provisions specifying:

- the use of the land or the use of a building on, or to be erected on, the land.
- that land is to be built on, or not to be built on, in accordance with the covenant.
- that land is not to be subdivided, or is not to be subdivided except in accordance with the covenant.
- that parcels of land designated in the covenant and registered under one or more indefeasible titles are not to be sold or otherwise transferred separately.
- that land or a specified amenity in relation to it be protected, preserved, conserved, maintained, enhanced, restored, or kept in its natural or existing state in accordance with the covenant and to the extent provided in the covenant.

“Amenity” includes any natural, historical, heritage, cultural, scientific, architectural, environmental, wildlife, or plant life value related to the land that is subject to the covenant.

While outright dedication of ecologically sensitive land is preferable, covenants are an important tool for keeping specific ecological features in their natural state or protect areas or uses in perpetuity. The landowner continues to own the land, live on it and use it but agrees to abide by the restrictions in the covenant. Typical covenant provisions include prohibitions on altering ecologically valuable features such as riparian habitat, specifying

### GUIDE FOR DEVELOPERS AND PLANNERS – LAND TRUST ALLIANCE OF BC

The Land Trust Alliance of BC published *An Introduction to Conservation Covenants: A Guide for Developers and Planning Departments* to explain the purpose of covenants and the process for evaluating the land and registering a covenant. The guide quotes a figure of up to \$20,000 to develop covenants for a subdivision that clusters residential areas away from ESAs.

[http://www.landtrustalliance.bc.ca/docs/Developer\\_info\\_kit.pdf](http://www.landtrustalliance.bc.ca/docs/Developer_info_kit.pdf)

Typical covenant provisions include prohibitions on altering ecologically valuable features such as riparian habitat, specifying how to manage and steward different types of ecosystems, and creating greenways or trails that span several adjoining parcels of land.

## **FENCING AND COVENANTS FOR ESA PROTECTION – NANAIMO**

**The City of Nanaimo requires developers of subdivisions to construct fencing around and to protect ESAs with a covenant. See the EDPA case study of Nanaimo at page 78.**

## **BEST PRACTICES FOR CONSERVATION COVENANTS**

***Greening Your Title: A Guide to Best Practices for Conservation Covenants (2<sup>nd</sup> Ed.)* See it online at <http://www.wcel.org/wcelpub/2000/13247.pdf> contains a detailed discussion of covenants and an annotated conservation covenant. See also the **NAPTEP covenant online at <http://www.islandtrustfund.B.C.ca/howtoprotectlands/naptep/documents/itfnaptepannotatedcovenant.pdf>****

how to manage and steward different types of ecosystems, and creating greenways or trails that span several adjoining parcels of land.

Developers may also negotiate a covenant to protect a portion of a site or specific features of an entire site, such as trees or watercourses. As with an individual, the terms and conditions of the covenant must be negotiated with the organization that is responsible for monitoring the conservation covenant.

Local governments often meet conservation goals by securing covenants on land in conjunction with subdivision, rezoning, and applications for development permits. For example, approving officers often require setbacks, covenants along riparian corridors, retention of natural vegetation, or fencing to restrict access to ensure that future activities and development of the land do not interfere with the ecological functioning of the green infrastructure.

Covenants also give notice to potential buyers that the land contains ecologically sensitive features and is subject to additional use restrictions over and above the usual requirements.

A few local governments are using covenants to secure monitoring and maintenance obligations after development occurs. For example, as part of the building permit process, municipal staff may require a proponent to supply a maintenance plan that is incorporated into a covenant registered on the title. Local governments also include rent charges in covenants as a financial disincentive to breaching the covenant. When a landowner disregards a covenant provision, the rent charge may come into effect, and the landowner will be required to pay the municipality a specified amount of money.

Although covenants are the primary legal tool for protecting ESAs on private land, they pose challenges for local governments. They are expensive to develop, both because a site survey is often required to provide a clear description of the ESA, and because drafting the covenant itself takes resources. Enforcement and monitoring is an ongoing responsibility for local governments and their third party land trust partners. One study of 185 riparian covenants in the City of Surrey found that on 75 percent of the lots, the landowner had encroached on the covenanted area. The study concluded that covenants require ongoing landowner education, monitoring, and enforcement.<sup>21</sup>

Some local governments have used covenants extensively. They find that keeping landowners informed of the requirements of covenants and monitoring their compliance is essential to ensure respect for the covenant's conditions.

Because covenants are expensive to develop and monitor, most local governments do not have the resources to deal with large numbers of

21 Inglis, S. D., P. A. Thomas, E. Child, Protection of Aquatic and Riparian Habitat on Private Land — Evaluating the Effectiveness of Covenants in the City of Surrey 1995

<http://www.dfo-mpo.gc.ca/Library/224985.pdf>

covenants on small lots. Many are now reserving the use of covenants for larger ecosystem features such as riparian areas and significant ecological features on greenfields and redevelopment. Third party conservation organizations such as land trusts are also registered on title and assume responsibility for landowner education and monitoring their involvement has been helpful across B.C.

The provisions in Appendix J for providing security aim to:

- establish the amount of the security deposit to require before issuing a permit, expressed either as a percentage of the total cost of the work or the total cost of the revegetation/landscaping/repair to fish habitat required under the permit (page 222);
- explain the process for using or returning the security deposit (page 222); and
- explain the requirement for public liability insurance in some circumstances (pages 221, 223).



# 12 Regulatory Bylaws

## 12.1 Overview

In addition to the planning and regulatory tools described in previous chapters, local governments, both municipal and regional district, have other means to regulate activities such as landscaping, the movement of soil, and tree protection that have an impact on the green infrastructure. It is possible to use these provisions as stand-alone bylaws, or as sections of a comprehensive green infrastructure bylaw. The table and the discussion below show the differences in municipal and regional district jurisdictions.

JURISDICTION	
Municipality	Regional District
<b>Screening and Landscaping</b> <i>Local Government Act</i> s.909	<i>Local Government Act</i> s.909
<b>Tree Protection</b> <i>Community Charter</i> ss.8(3)(c) & 50	<i>Local Government Act</i> s.923
<b>Soil Deposit and Removal</b> <i>Community Charter</i> ss. 8(3)(m) & 9(1)(e)	<i>Local Government Act</i> s.723
<b>Watercourse Protection</b> <i>Community Charter</i> ss.8(3)(j) & 9(3)(a) Spheres of Concurrent Jurisdiction – Environment and Wildlife Regulation s.2(1)(a)	No jurisdiction
<b>Pesticide Control</b> <i>Community Charter</i> ss.8(3)(j) & 9(3)(a) Spheres of Concurrent Jurisdiction – Environment and Wildlife Regulation s.2(1)(b)(ii)	No jurisdiction
<b>Alien Invasive Species</b> <i>Community Charter</i> ss.8(3)(j), 8(3)(k) & 9(3)(a) Spheres of Concurrent Jurisdiction – Environment and Wildlife Regulation s.2(1)(b)(iii) (control and eradication)	No jurisdiction

STRENGTHS AND WEAKNESSES	
Strengths	Weaknesses
<b>Screening and Landscaping</b> <ul style="list-style-type: none"> <li>• Potential for rehabilitating degraded sites on a municipal-wide basis.</li> <li>• Long-term rehabilitation of watershed or landscape plans, including removing invasive species.</li> <li>• Can focus on native species.</li> <li>• Can help separate uses, e.g., sensitive ecosystem from residential or recreational use.</li> </ul>	<ul style="list-style-type: none"> <li>• Not site-specific (but can be applied through permits).</li> </ul>

## STRENGTHS AND WEAKNESSES

### Strengths

#### Tree Protection (municipality)

- Potential to regenerate the urban forest.
- Long-term rehabilitation of watershed or landscape plans.
- Can set more stringent standards for sensitive ecosystems.
- Can focus on native species.
- Opportunity for public education on importance of trees and native vegetation.

#### Soil Deposit and Removal (municipality)

- Can regulate all grading activities on a municipal-wide basis.
- Erosion guidelines and best practices can educate the public and individuals doing the work.
- Erosion control plan and security can obtain assurances.

#### Watercourse Protection (municipality only)

- Ability to regulate activities as well as substances going into the water (riparian habitat and water quality).
- Specific to riparian sensitive ecosystem and habitat.
- Can tie in impervious surface/infiltration requirements.

#### Pesticide Control (municipality only)

- Can control pollution entering an ecosystem.
- Can create more stringent regulations adjacent to sensitive ecosystems.

#### Alien Invasive Species (municipality only)

- Can maintain sensitive ecosystems.
- Can control problem plants.
- Can rehabilitate sites during redevelopment as well as on an ongoing basis.

### Weaknesses

- Can create hazard conditions near buildings.
- Can have effect of prohibiting density or use.
- Defining triggering event and exceptions may be complex.
- Potential for standards to be too stringent and costly to administer.
- Can be difficult to enforce unless there is a witness to trees being cut.

- Inadequate information for contractors as to methods of erosion control.
- Cost to developers.
- Ongoing monitoring and enforcement needed.

- Impacts on watercourse stem from entire watershed; bylaw usually limited to specific setback, (e.g., 30 metres) not watershed.
- Conflict with subdivision servicing bylaw standards.

- Significant public education needed before bylaw will be effective.
- Not applicable to private land where significant amounts of pesticides may be used (forestry, agriculture, industrial, and commercial).

- Difficult to define triggers for bylaw because invasive species are a major issue (where to start?).

Regulatory bylaws are used to regulate activities, impose requirements on the method of carrying out activities, and in some cases prohibit activities that have an impact on the green infrastructure. Depending on their scope, regulatory bylaws can:

- prohibit activities, e.g., cutting certain types or sizes of trees or putting fouling materials into watercourses;

- require a permit for activities like removing or depositing soil, working in and around streams, and tree cutting;
- require the use of appropriate native plants for landscaping and restoring degraded sites or sites altered by construction;
- require posting security as a condition of a DP; and
- establish fines for offences under the bylaw.

See below for specific reference to the powers for each type.

Regulatory bylaws serve several proactive and reactive purposes. Proactively, they can require landowners to obtain permits before carrying out activities that have an impact on the green infrastructure. This provides staff with an opportunity to educate landowners and developers about best management practices. District of North Vancouver staff have found that, after a decade, the public is well aware of the District’s Environmental Protection Bylaw, and residents often contact the municipality to discuss best management practices when contemplating activities on private property.

Regulatory bylaws are reactive because they enable staff to enforce the bylaw, for example, when a landowner cuts a tree without a permit or lets sediment foul a watercourse. Regulatory bylaws also bolster the setbacks in zoning bylaws and EDPA conditions by making enforcement simpler through ticketing. They create offences that can act as the basis for court action. Finally, they are most effective in managing the kind of incremental changes that can degrade habitat and cause pollution, for example, when activity on a parcel does not involve rezoning or subdivision, or when the property is not located in an EDPA.

The effectiveness of regulation relies to a large extent on how well landowners and development applicants understand bylaws or standards, and on whether or not a local government enforces regulatory bylaws strategically and effectively. Adequate staff time, training, and resources for investigating, monitoring, and enforcement is essential (see Chapter 14, Enforcement on page 129).

## 12.2 Landscaping and Screening

A local government may set standards for and regulate screening or landscaping for the purpose of preserving, protecting, restoring, and enhancing the natural environment. Different zones, locations within a zone, and uses within a zone may have different standards. Standards can include specifying the type of vegetation to be planted, such as native species. Landscaping bylaw provisions often require an environmental professional to create a restoration or landscaping plan and may require the owner to post security in the amount of the total cost of landscaping. Landscaping requirements such as watercourse and tree protection are usually included in other bylaws and also in EDPA guidelines.

### **CHANGING THE CULTURE OF DEVELOPMENT – DISTRICT OF NORTH VANCOUVER**

**District of North Vancouver staff have found that, after a decade, the public is well aware of the District’s Environmental Protection Bylaw and often contact the municipality to discuss best management practices when contemplating activities on private property.**

**Regulatory bylaws can regulate and impose requirements on, and in some cases prohibit, activities that have an impact on the green infrastructure.**

## TREE PROTECTION BYLAW – NANAIMO

**The City of Nanaimo enacted its Tree Protection Bylaw in 1993. The bylaw prohibits the cutting of trees and carrying out tree-damaging activities without a permit. If an application for a permit involves subdividing land, the applicant must provide a tree management plan that provides for the protection or replacement of all significant trees on the parcel of land. If the land is greater than 0.5 hectare (1 acre), the tree management plan must provide for the protection of a minimum of 20 percent of the trees on the parcel of land, exclusive of any area set aside for park dedication pursuant to the *Local Government Act*.**

<http://www.nanaimo.ca/uploadedfiles/Bylaws/4695.pdf>

## COMPARISON OF TREE BYLAWS

**See the Smart Bylaws Guide for a table comparing the provisions of tree bylaws from six local governments.**

[http://www.wcel.org/issues/urban/sbg/Part6/usewisely/Trees\\_Protection.pdf](http://www.wcel.org/issues/urban/sbg/Part6/usewisely/Trees_Protection.pdf)

## 12.3 Tree Protection

Tree protection and regulation are important tools for coastal communities and communities where tree cover is a central part of the green infrastructure. Municipalities have broad jurisdiction to regulate, prohibit, and impose requirements by bylaw in relation to trees. However, this authority does not apply to land and trees that are governed by a tree farm license, permit, or tenure under forestry legislation (*Forest Act* and *Private Managed Forest Land Act*), or tree cutting that a utility undertakes on its land for purposes of safety or operating the utility.

A tree protection bylaw does not apply to property when applying it would prohibit the permitted use or density under the zoning bylaw. However, a tree protection bylaw may restrict use and density if council commits to pay the owner of the parcel compensation for any reduction in market value caused by the restriction on use and density, or to provide an alternative means (e.g., through development permit or development variance permit) of allowing the land to be used for a permitted use or density.

Municipal tree bylaws often include:

- applying the bylaw according to species of tree affected, defined areas, activities (e.g., cutting two trees), or diameter of tree;
- prohibitions on cutting trees in riparian corridors, ESAs, on floodplains, or in steep-slope areas;
- prohibitions on cutting down significant trees or wildlife trees, or undertaking tree-damaging activities;
- establishing a maximum cleared or non-treed area during development;
- tree replacement standards;
- requirements for and exemptions to permits; and
- offences and penalties.

Regional districts have more limited authority to protect trees. A regional district board may designate tree-cutting permit areas only on lands that it considers to be subject to flooding, erosion, land slip, or avalanche. Within these areas, the regional district may, by bylaw, regulate or prohibit the cutting down of trees and may require owners to obtain a permit before cutting a tree. The bylaw may require applicants to provide, at their own expense, a report certified by a qualified person to whom both parties agree stating that the proposed cutting will not create a danger from flooding or erosion. Although this authority is limited in scope, it nevertheless gives regional districts considerable latitude to regulate tree cutting in ecologically sensitive areas, particularly in steep-sloped riparian corridors.

After the 2006-2007 winter windstorms in the south of the province, many local governments are revisiting their tree protection policies because of concerns about hazardous trees. The District of North Vancouver has a policy

that clarifies its procedures for assessing and dealing with trees on District property (see sidebar).

## 12.4 Soil Deposit and Removal

The authority to deposit and remove soil is similar for municipalities and regional districts. Local governments may regulate and prohibit (and municipalities may also impose requirements on) activities with regards to soil. However, if they prohibit removing soil or regulate the depositing of soil or other material with reference to the quality of the soil/material, including contaminated soil, the bylaw requires the approval of the provincial government under a regulation or by agreement with the provincial government.

Local governments may, by bylaw, require a permit for removing or depositing soil and may impose fees for permits or for activities carried out under the permits. A regional district bylaw that varies fees according to the quantity of the soil or material removed or deposited, or according to the affected area, must have the approval of the provincial government.

Bylaws that govern soil removal and deposit are important for catching activities that disturb substantial amounts of land outside of EDPAs. If the bylaws apply to a local government's entire land base, they also provide a way to impose a monetary penalty in support of the EDPA requirement that landowners obtain a permit before altering land. Soil removal and deposit provisions often require a sediment and erosion control plan for developments of a certain type or size, or in ESAs such as watercourses.

## 12.5 Watercourse Protection

In 2004, under *Community Charter* regulations, municipalities were granted authority to regulate and prohibit, by bylaw, polluting, obstructing, and impeding the flow of a watercourse, whether or not it is located on private property. This authority allows municipalities to address water quality standards (sediment and pollution), as well as works in and about watercourses.

Bylaw provisions that protect watercourses require a landowner to obtain a permit before carrying out works in and around streams and wetlands. One condition of these provisions is the need to get approval for a plan to control sediment and erosion during construction.

Watercourse protection bylaws can include:

- prohibitions on fouling a watercourse that specify the kinds of substances and amount of suspended solids that will be considered fouling;
- an open-streams policy that prohibits enclosing watercourses;
- requirements for obtaining permits, the conditions of which are based on best management practices;

### TREE POLICY – NORTH VANCOUVER (DISTRICT)

**Since 1997 the District has had a policy that clarifies the District's responsibilities and procedures for working on trees on District property, including dedicated roads and parks. It is the policy of the District "to preserve and enhance its attractive forested character, ecological systems and natural parklands, while recognizing the responsibility to minimize risk." In light of this policy and the tree protection regulations set out in the Environmental Protection and Preservation Bylaw, this policy sets out a process and rating system for the District Arborist or appropriate staff to use in assessing and taking action on potentially hazardous trees. Under the Environmental Protection and Preservation Bylaw, the Environment Department issues an annual permit that authorizes the Parks Department Parks to deal with hazardous trees.**

<http://www.dnv.org/upload/documents/cpolicy/c1352801.pdf>

## **WATERCOURSE PROTECTION BYLAW – WEST VANCOUVER**

**The District of West Vancouver’s Watercourse Protection Bylaw (2005) prohibits the obstruction, impeding, or fouling of a watercourse system. It requires a sediment control plan for any work in the District that requires a permit. If the Municipal Engineer waives the requirement for a sediment control plan, the owner must comply with the guidelines for sediment control contained in the bylaw.**

<http://www.westvancouver.ca/upload/pcdocsdocuments//4RYK01!.pdf>

## **COMPARISON OF WATERCOURSE PROTECTION BYLAWS**

**The Smart Bylaws Guide contains a table comparing the provisions of watercourse protection bylaws of five local governments.**

[http://www.wcel.org/issues/urban/sbg/Part6/usewisely/Stream\\_Protection.pdf](http://www.wcel.org/issues/urban/sbg/Part6/usewisely/Stream_Protection.pdf)

- requirements for developing and implementing sediment and erosion control plans or for undertaking sediment and erosion control measures contained in appended guidelines or best management practices documents;
- terms of reference for the development of plans to be attached to permit applications;
- prohibiting the discharge or washing of concrete into watercourses during construction; and
- offences, penalties, and remedies, such as orders to suspend construction work.

Watercourse protection bylaws can also provide regulatory teeth and enforcement provisions for activities that contravene a local government’s RAR system.

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## **INTEGRATED WATERCOURSE PROTECTION – BURNABY**

**The City of Burnaby uses several tools to protect watercourses and their upland areas and to ensure the restoration and protection of this sensitive ecosystem. A 1972 Open Streams Policy has ensured that most watercourses are still above ground. The Watercourse Bylaw sets water quality and permitting requirements for works around watercourses. Finally, Guidelines for Building Near Watercourses and Sediment Control Measures set out requirements and design guidelines for development applications and construction practices, including limits on impermeable surfaces for single-family development. These bylaws and guidelines come into force at the time of rezoning and subdivision.**

[http://www.city.burnaby.bc.ca/cityhall/departments/departments\\_planning/plnngg\\_envrnm.html](http://www.city.burnaby.bc.ca/cityhall/departments/departments_planning/plnngg_envrnm.html)

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## **12.6 Pesticide Control**

In 2004 municipalities acquired limited power to regulate the use of pesticides. Pesticide control bylaws may regulate, prohibit, and impose requirements on the use of certain pesticides outdoors on trees, shrubs, flowers, and other ornamental plants and turf (grass) on property used for residential purposes or on land owned by the municipality.

Municipalities may not regulate those pesticides that are excluded under the provincial regulation. Also, municipalities may not regulate the use of pesticides:

- on land used for agriculture, forestry, transportation, public utilities, or pipelines unless the utility or pipeline is vested in the municipality;
- for the management of pests that transmit human diseases or have an impact on agriculture or forestry;
- on the residential areas of farms; and

- used for buildings or inside buildings.

Several local governments have enacted pesticide control bylaws, but there is little experience with their enforcement to date.

## 12.7 Alien Invasive Species

Municipalities may regulate the control and eradication of “alien invasive species” as defined in the Schedule of the *Spheres of Concurrent Jurisdiction – Environment and Wildlife Regulation* under the *Community Charter*. They include scotch broom, English ivy, sow thistle, leafy spurge, purple loosestrife, Eurasian water milfoil, gypsy moth, bullfrog, and European rabbit. These species occur throughout the province and fall into the following categories: terrestrial vascular plants, fresh water/riparian vascular plants, invertebrates, and vertebrates. There are also regional, district-wide species such as green foxtail in the Peace River district.

Landscape bylaws can also specify the type of vegetation to be planted, such as native species.

Regulatory bylaws in Appendix K aim to:

- regulate activities that have an impact on the green infrastructure throughout the municipality (not just watercourse management areas and sensitive ecosystems) (page 225);
- establish a regulatory process for protecting trees and cutting them (page 225);
- regulate the removal and deposit of soil, particularly how owners deal with it during construction of development projects (page 227);
- prohibit the filling of wetlands (page 231); and
- regulate activities within watercourses (page 231).

Except where noted, none of the regulatory approaches explained in this chapter require provincial approval. Local governments may enact bylaws described here without referring the bylaw to the provincial government.

Appendix K outlines approaches to developing regulatory standards. For a discussion and presentation of regulatory approaches, see *Stewardship Bylaws: A Guide for Local Government* <http://www.stewardshipcentre.bc.ca/publications/default.asp#bylaws>.

**PESTICIDE CONTROL BYLAWS – CAPITAL REGIONAL DISTRICT**  
**The CRD developed a model pesticide control bylaw for member municipalities to consider. It prohibits the use of pesticides on outdoor plants for cosmetic purposes on properties where a residence is located. To view the model bylaw, go to [http://www.crd.B.C.ca/rte/pest/documents/modelpesticideusebylaw\\_000.pdf](http://www.crd.bc.ca/rte/pest/documents/modelpesticideusebylaw_000.pdf).**

**See also District of West Vancouver’s Pesticide Use Control Bylaw at <http://www.westvancouver.ca/upload/pdocsdocuments//475Q01!.pdf>**

## 12.8 Case Study: District of North Vancouver (Environmental Bylaw)

### ◆ Comprehensive Environmental Bylaw – North Vancouver (District)

The District enacted its award-winning Environmental Protection and Preservation Bylaw in 1993. The purpose of the bylaw is to provide a consistent level of protection for water quality, trees, and soil on all land in the District. The bylaw sets municipality-wide standards for protecting the natural environment on private properties, most of which are not located within development permit areas. It includes setbacks to watercourses (between 15 and 30 meters) and vegetation requirements for riparian areas, sediment control, and qualified professional oversight in certain circumstances (e.g., development on or near slopes greater than 30 degrees).

Applicants complete a one-page Environmental Questionnaire that helps determine what information is required to assess the proposed development. The District has also developed a series of bulletins that describe the various requirements under review in the application process. These are referred to as the Master Requirements List. An environmental impact assessment or an assessment by a qualified environmental professional pursuant to the Riparian Area Regulation may be required for applications in aquatic areas. Landowners must provide a security deposit equal to 30 percent of the value of the work performed, to a maximum of \$10,000.

Environment Section staff are involved in all land development applications (development permits, subdivision, rezoning, and building permits). Planning staff circulate applications to Environment Section staff, who apply the bylaw regulations and provide advice. If land is in a development permit area, a planner may waive a full development permit application with the understanding that the development application is still subject to the bylaw and any conditions generated by Environment Section staff.

Staff acknowledge that the use of development permit areas is a tighter, site-specific approach to protecting riparian habitat. A bylaw is a regulatory approach that does not run with the property and is not site-specific like a development permit.

This comprehensive bylaw approach is best suited to an urban municipality where specific natural features (e.g., riparian areas) are part of the character of the municipality. There is general agreement about the importance of maintaining and protecting the forested character of the District. The bylaw entrenches tree protection, and corporate policy also supports it.

To ensure success, a local government must be prepared to back up bylaw regulations and policies with resources such as staff time, a clear process, monitoring, public education, and enforcement. Enforcement issues do not

arise very often, but when they do, they consume a considerable amount of staff time and municipal resources (e.g., court action is likely to incur substantial legal costs).

The longstanding implementation of the Environmental Protection and Preservation Bylaw and the dedication of District staff has ensured a high level of public education and awareness about environmental protection in the District. Landowners often call Environment Section staff before undertaking work on property. Staff are proactive in giving advice and guidance on sediment control, tree preservation, aquatic area protection, and other site-specific conditions, including monitoring, for large developments.

District of North Vancouver Environmental Protection and Preservation Bylaw  
<http://www.dnv.org/upload/documents/bylaws/6515.htm>

Master Requirements and Development Application Questionnaire  
<http://www.dnv.org/article.asp?c=331&a=914>





# 13 Riparian Areas Regulation (RAR)

## 13.1 Overview

**In recognition of the importance of riparian corridors as fish habitat, the provincial government now requires local governments in certain areas to protect these corridors and to begin to harmonize tri-jurisdictional (federal, provincial, and local) regulations for development within watercourses. Under the *Fish Protection Act*, the provincial government first enacted the Streamside Protection Regulation and now the Riparian Areas Regulation (RAR) that establishes processes for avoiding harmful alteration, disruption, or destruction of fish habitat by determining setbacks from watercourses and mitigating environmental damage.**

These regulations continue to cause controversy, both with local governments that have a duty to implement them and with some members of the public whose riparian activities have not been curtailed in the past. Whatever the reaction to the RAR, it is a good way for many local governments to start protecting watercourses with the assistance of senior government. The RAR is helping local governments gain expertise in riparian protection and improve the health of watershed ecosystems. The ultimate goal from a green infrastructure perspective would be for local governments to apply riparian protection standards to all watercourses (not just those that provide fish habitat) and to hire staff with ecological expertise to help them exceed the basic requirements of the RAR. At minimum, the RAR is an opportunity to map watercourses and better understand the riparian values in each local jurisdiction.

## 13.2 The RAR Process

When exercising their powers with respect to residential, commercial, or industrial development (Part 26 under the *Local Government Act*), certain local governments must now assess whether or not the development may harm riparian areas that provide fish habitat. The purpose of the RAR is to protect habitat and conditions that support fish and to satisfy federal *Fisheries Act* requirements.

Under the RAR, a local government must not approve a development proposal or allow a development to proceed that is wholly or partially related to a riparian assessment area unless:

1. A qualified environmental professional has carried out an assessment that:
  - a) certifies that she or he is qualified to carry out the assessment;

### RAR RESOURCES

**See the Ministry of Environment's RAR web pages and documents for all aspects of the regulation, process, training courses, and guidelines for assessment report.**

[http://www.env.gov.bc.ca/habitat/fish\\_protection\\_act/riparian/riparian\\_areas.html](http://www.env.gov.bc.ca/habitat/fish_protection_act/riparian/riparian_areas.html)

## DEFINITIONS

For definitions of terms such as for “development” and “qualified environmental professional,” see the regulation at [http://www.env.gov.bc.ca/habitat/fish\\_protection\\_act/riparian/riparian\\_areas.html#lo](http://www.env.gov.bc.ca/habitat/fish_protection_act/riparian/riparian_areas.html#lo).

- b) certifies that she or he has followed the assessment methods under the RAR;
- c) provides a professional opinion that
  - (i) if the development is implemented as proposed, there will be no harmful alteration, disruption, or destruction of natural features, functions, and conditions that support fish life processes in the riparian assessment area, or
  - ii) if the streamside protection and enhancement areas (SPEAs) identified in the assessment report are protected from the development and the developer implements the mitigation measures identified in the assessment report, there will be no harmful alteration, disruption, or destruction of natural features, functions, and conditions that support fish life processes in the riparian assessment area.

2. The Ministry (of Environment) has notified the local government that the Department of Fisheries and Oceans has been notified of the proposal and has copies of the assessment report.

OR

The Minister of Fisheries and Oceans or a regulation under the *Fisheries Act* (Canada) has authorized harm to the conditions that support fish life in the riparian assessment area that would result from the implementation of the development proposal.

The “riparian assessment area” is 30 metres on both sides of a stream, measured from the high-water mark. For a ravine less than 60 metres wide, it extends to 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. For a ravine that is less than 60 metres wide, it extends to both sides of the stream, measured from the high-water mark to 10 metres beyond the top of the ravine bank.

The “streamside protection and enhancement area” (SPEA) links aquatic and terrestrial ecosystems. It includes both existing and potential riparian and upland vegetation that exerts an influence on the stream. A qualified environmental professional (QEP) calculates the size of the SPEA and documents it in an assessment report.

An “assessment report” addresses the potential impact of a proposed development in a riparian assessment area and follows the assessment methods set out in the Schedule to the RAR (found at [http://www.env.gov.bc.ca/habitat/fish\\_protection\\_act/riparian/documents/assessment\\_methods.pdf](http://www.env.gov.bc.ca/habitat/fish_protection_act/riparian/documents/assessment_methods.pdf)). It must include the width of the SPEA and the measures necessary to protect its integrity.

The scope of activities that will initiate the RAR is very broad and includes removing or altering vegetation, disturbing soil, creating impervious surfaces, constructing trails, and installing drainage, as well as constructing buildings,

roads, and subdivisions and providing services such as water, sewers, or drainage.

The RAR applies comprehensively to riparian areas that support fish habitat. It includes (a) ponds, lakes, rivers, creeks, brooks, and watercourses (whether they usually contain water or not), and (b) wetlands, ditches, or springs that are connected by surface flow to those riparian areas listed under (a).

Finally, the RAR is applicable only to the following regional districts and the municipalities within them (as per B.C. Reg. No. 376/2004 and OIC 378/2006): Capital, Central Okanagan, Columbia-Shuswap, Comox-Strathcona, Cowichan Valley, Fraser Valley, Greater Vancouver (other than within the boundaries of the City of Vancouver), Nanaimo, North Okanagan, Okanagan-Similkameen, Powell River, Squamish-Lillooet, Sunshine Coast, and Thompson-Nicola.

The RAR does not apply to a development permit or development variance permit issued only for the purpose of enabling reconstruction or repair of a permanent structure described in section 911 (8) of the *Local Government Act* if the structure remains on its existing foundation. Nor does it apply to agricultural or institutional development, mining activities, or First Nations reserve lands.

### 13.3 The RAR Approach

The intent of the RAR is to provide flexibility for development in riparian areas. It provides protection for fisheries values that meet senior government regulatory requirements, for example, those under the federal *Fisheries Act*, while avoiding local government liability for damage to those values. It allows local governments to avoid liability for future damage by relying on QEP certification of development without making any site-specific assessment.

The B.C. Ministry of Environment and the Department of Fisheries and Oceans Canada also have responsibilities and potential liabilities under the RAR regime.

It is not an offence under the *Fisheries Act* to approve development that causes harm to fish or fish habitat. However, there is some uncertainty about the ability of a developer or landowner who is subject to prosecution under the *Fisheries Act* to make claims against a local government for approving development that causes harm. There are also concerns about penalties under the *Fish Protection Act* and *Offences Act*. The B.C. Ministry of Environment and Department of Fisheries and Oceans Canada have committed to entering into a cooperation agreement that will state that when development applicants have fully implemented the recommendations certified by a QEP (who has followed the RAR assessment methods and measures), that applicant has exercised all due diligence in preventing harmful alteration, disruption, and destruction of fish habitat due to the removal of riparian vegetation.

#### LEGAL IMPLICATIONS OF THE RAR

**For more information on and discussion of the legal implications of the RAR, see the legal opinions at [http://www.env.gov.bc.ca/habitat/fish\\_protection\\_act/riparian/documents/SMSlegalopinion.pdf](http://www.env.gov.bc.ca/habitat/fish_protection_act/riparian/documents/SMSlegalopinion.pdf) and [http://www.env.gov.bc.ca/habitat/fish\\_protection\\_act/riparian/documents/RARresponsetoSMSopinion.pdf](http://www.env.gov.bc.ca/habitat/fish_protection_act/riparian/documents/RARresponsetoSMSopinion.pdf).**

## RAR CASE STUDIES

For more case studies of RARs in action, see

**Chilliwack** [http://www.env.gov.bc.ca/habitat/fish\\_protection\\_act/riparian/documents/Chilliwack.pdf](http://www.env.gov.bc.ca/habitat/fish_protection_act/riparian/documents/Chilliwack.pdf)

**District of Campbell River** [http://www.env.gov.bc.ca/habitat/fish\\_protection\\_act/riparian/documents/Chilliwack.pdf](http://www.env.gov.bc.ca/habitat/fish_protection_act/riparian/documents/Chilliwack.pdf)

**Thompson-Nicola Regional District** [http://www.env.gov.bc.ca/habitat/fish\\_protection\\_act/riparian/documents/ThompsonNicola.pdf](http://www.env.gov.bc.ca/habitat/fish_protection_act/riparian/documents/ThompsonNicola.pdf)

For a complete listing of local governments using the RAR see [http://www.env.gov.bc.ca/habitat/fish\\_protection\\_act/riparian/documents/LG\\_RAR.pdf](http://www.env.gov.bc.ca/habitat/fish_protection_act/riparian/documents/LG_RAR.pdf)

This approach has generated many questions from local governments and the development industry. Many of these are detailed in legal opinions about the effect of the RAR and local government responsibilities under it (see side bar). Although it is beyond the scope of this Toolkit to address these questions, one note is important: local governments may meet or exceed the RAR and do not have to rely on a QEP to establish riparian leave strips and permit conditions. Some local governments are retaining QEPs on staff to carry out assessments and make recommendations. Staff with ecological expertise may evaluate conditions placed on development in riparian areas just as they do for other environmental values. However, if staff-imposed conditions result in a harmful alteration, disturbance, or destruction of fish habitat, the error may expose a local government to increased liability.

As with many other kinds of local government regulation of land development, implementation policies that spell out how a local government will review RAR assessment reports and what a QEP must provide as proof of qualifications will help limit exposure to liability.

## 13.4 Local Governments May Meet or Exceed the RAR

The RAR states that when exercising powers with respect to land development, local governments must protect riparian areas by following the RAR. However, the *Fish Protection Act* (from which the RAR stems) states that a local government must provide a level of protection that, in its own opinion, is comparable to or exceeds the RAR [section 12(4)]. The RAR does not restrict a local government's ability to increase the level of protection in riparian areas if it so desires.

This "meet or exceed" provision gives local governments flexibility to tailor riparian protection measures to their administrative and regulatory resources and their existing development approvals processes. It also allows local governments to apply riparian management to all watercourses, not just those that support fisheries values.

Section 8 of the RAR provides that if a local government has established streamside protection and enhancement areas in accordance with the former regulation (Streamside Protection Regulation), the local government is deemed to have met the requirements of the RAR. If the local government amends those SPEAs, it must do so in accordance with the RAR.

## 13.5 Responses to the RAR

Response to the RAR has been varied. Local governments that were already protecting sensitive riparian ecosystems are building on existing policy and bylaw processes, often supplementing them with additional development permit area requirements or requesting additional information before approving development. For administrative ease and better protection of sensitive ecosystems, these local governments apply riparian regulations to all watercourses, not just to those that have fisheries values.

The primary difference between local governments with some environmental expertise on staff and those without is that environment staff can review QEP-written environmental impact reports and may incorporate recommendations from the reports into conditions on development permits. The environmental impact assessment addresses a range of ecosystem protection goals in addition to the appropriate width of the SPEA and the protection of fisheries values. Local governments who do not have environmental expertise on staff are relying primarily on certified reports from QEPs to establish SPEAs and attach conditions to development permits.

Overall, the RAR has resulted in better riparian protection in areas where local governments had not used EDPAs or zoning to limit development adjacent to watercourses. Local governments that are choosing to exceed the RAR, that have staff with biological expertise, and that are using EDPAs, may have changed their development approvals process under the RAR, but they are still achieving their desired level of watercourse protection. Some experienced staff prefer to rely on their established processes, particularly EDPA guidelines, that they feel provide a higher level of riparian protection than would reliance on the RAR alone.

## Examples of Responses that Exceed the RAR

### 1 Rural

A rural district established SPEAs for different types of watercourses that are enshrined in both EDPAs and the zoning bylaw. The objective is to protect the fish and wildlife habitat systems. Streamside protection and enhancement areas include:

- 30 metres from top of the bank for the two primary rivers in the District;
- 15 metres from top of the bank for streams and creeks;
- 15 metres from wetland boundaries at the winter high-water mark of lakes, ponds, and wetlands; and
- 15 metres from the high-tide boundary from the ocean.

No development is allowed in the SPEAs unless a SPEA takes up so much of a pre-existing lot that the lot is unable to be developed for the use permitted under existing zoning, or because topographical, natural hazards or other environmental constraints on the lot mean that there are no acceptable building sites outside the riparian area. The applicant is expected to work with staff to relax zoning requirements such as setbacks, minimum lot size, parking, height, and site coverage before encroaching on the riparian corridor.

Requirements for development permits include:

- no unnecessary disturbance to the natural vegetation of the lands along riparian corridors;
- retain existing vegetation wherever possible;

**The *Fish Protection Act* allows local governments to provide a level of protection that is comparable to or exceeds the RAR. This “meet or exceed” provision gives local governments flexibility to tailor riparian protection measures to their administrative and regulatory resources and their existing development approvals processes. It also allows local governments to apply riparian management to all watercourses, not just those that support fisheries values.**

- no placing or removal of fill or releasing deleterious material into riparian areas, including wetlands;
- design stormwater drainage so as not to adversely affect the wetland areas and natural watercourses;
- set back development appropriately from the natural boundary of riparian areas.

Exemptions from the requirement for a development permit include emergencies such as flood control, cutting hazardous trees, constructing small pervious trails, public works and services, revegetation, and subdivision when lot sizes are exclusive of the streamside protection and enhancement area and activities do not occur within that area.

As part of the development permit application, staff may require a site plan that shows buildings, impermeable surfaces, significant trees, vegetation, location of watercourses, top of the bank, and boundaries of SPEAs. They may also require on-site flagging of the riparian area, an assessment by a registered professional of the potential impacts on aquatic habitat, and measures to minimize or mitigate disturbance (such as an erosion control plan, revegetation in riparian corridors, or habitat restoration). Finally, Council may reduce development permit fees on projects that solely involve in-stream restoration and enhancement activities.

Activities that trigger the setbacks include building construction, cutting or removing trees, grading, removing and depositing soil or other material, and installing services.

## **2 Suburban (District)**

A District with both urban areas and undeveloped natural areas is relying on a combination of development permit areas and regulatory bylaws. The District created development permit areas in its undeveloped natural areas, including riparian zones within developed areas. Guidelines include certified environmental impact assessment studies, restrictions on development in creek ravines, standards for revegetation with native plants, and the ability to waive the development permit requirement for developments with minimal environmental impact.

The regulatory bylaws cover all development activities in the district and include soil removal and deposit, watercourse protection, and tree protection. Provisions for soil removal and deposit focus on erosion and sediment control during construction. The bylaw's watercourse protection regulations incorporate the standards set out in the *Land Development Guidelines for the Protection of Aquatic Habitat* (1993), *Approved and Working Criteria for Water Quality* (1989), and *Urban Runoff Quality Control Guidelines for British Columbia*, (1992). The bylaw also applies the Land Development Guidelines to permits for works in stream corridors, wetlands, and at the waterfront. Regulations that apply to watercourses prohibit fouling or obstructing a stream and releasing specific amounts of suspended solids into a stream at different times of the year. Tree protection provisions name different types of trees (wildlife trees, trees within riparian corridors, trees protected by a conservation covenant, trees of a specific diameter or larger,

and specific tree species) the cutting or removing of which requires a permit. The bylaw also prohibits damaging trees, for example, by placing a toxic substance on the tree or by placing impervious surfaces within three metres of the drip line of the tree. Staff have authority to exempt applicants for tree permits from the need to provide a site plan.

Finally, the bylaw sets out the information that applicants for permits must supply, for example:

- the purpose of the work;
- the name of the contractor who will do the work;
- drawings or plans showing existing and proposed structures and type of construction, including a cross-section of the proposed structure and its placement on the ground;
- drawings or plans describing the removal of rock, gravel, or soil;
- time estimates;
- an environmental impact assessment prepared by a person qualified to give an authoritative opinion on the subject matter, including a description of the existing conditions of the site and an analysis of adverse effects on the stream corridor, including water quality and quantity, fisheries, wildlife, trees, land use, recreation, aesthetics, and human interest;
- description of federal and provincial environmental standards that apply during and after the proposed development;
- mitigation measures;
- revegetation requirements;
- any other information staff require for assessing compliance with the bylaw.

With a population of 75,000, the district employs three staff to deal with development approvals, monitoring, investigation, and bylaw enforcement.

## 13.6 Case Studies: Saanich and West Vancouver (Exceeding the RAR)

Both the districts of Saanich and West Vancouver have chosen to exceed the requirements of the RAR by establishing their own riparian setbacks or SPEAs as EDPAs, but they also offer flexibility to applicants who may choose to rely on a QEP. Both municipalities have staff with ecological expertise who examine all QEP reports to ensure that they comply with the EDPA guidelines.

### ◆ Saanich

The District of Saanich was headed down the path of riparian protection before the provincial government first initiated the Streamside Protection Regulation, the precursor to the RAR. The Prospect Lake Development Permit Area (DPA) was based on the protection of riparian areas, and a goal of DPAs for multi-family, commercial, and institutional development was to keep watercourses free from development. Saanich also had environmental planning staff involved in reviewing developments, an impact assessment process (Environment and Social Review), and an *Environmentally Sensitive Areas Atlas*, all of which gives the municipality over a decade of experience in working with regulations that aim to protect watercourses.

In 2001 Saanich adopted the Prospect Lake EDPA, which focused on water quality and restoring the riparian area within the watershed. Because of the likelihood of provincial legislation in the near future, the EDPA was a pilot project for possible application throughout the District.

Saanich responded to the RAR by designating a Streamside Development Permit Area (DPA No. 27) for streams identified on a map in the DP guidelines and in more detail in a Streamside DPA map book (Schedule 2 to Appendix N of the OCP). The objectives of the Streamside DPA are to protect streams, their riparian areas, and the adjacent upland areas that exert an influence on streams and to direct their restoration and enhancement so that they can provide biologically diverse wildlife habitat, corridors for wildlife movement, and the natural features, functions, and conditions that support fish life processes. Due to Saanich's gentle topography, all streams are assumed to be fish habitat and subject to the RAR.

For a stream that is not in a ravine, the Streamside DPA extends 30 metres from the high-water mark. If a stream is within a ravine, the DPA reaches 30 metres from the high-water mark to a point 30 metres upslope of the top of the ravine bank. Within the DPA, there is a Streamside Protection and Enhancement Area, the width of which can be determined in one of two ways. The first is a predetermined SPEA that staff establish by using the RAR's simple assessment method for all watercourses (listed as Schedule 2 to Appendix N of the OCP). The second method involves having a QEP define a SPEA in accordance with the RAR. Applicants can rely on the predetermined SPEA, or they may hire their own QEP to determine a SPEA.

The guidelines specify that no development may occur within a SPEA except as authorized by the *Water Act* or the DFO. If the development requires a minor intrusion into the SPEA and the SPEA is greater than 10 metres wide, the SPEA boundary may be adjusted to accommodate the intrusion if a number of criteria are met. These include:

- the works must be situated within an existing landscaped area;
- no portion of the SPEA will be less than 10 metres from the high-water mark;
- land that is contiguous to the SPEA is added to the SPEA equal in area to the amount removed so that there is no reduction in the overall SPEA on the property;
- the quality of fish and wildlife habitat provided by the SPEA is not reduced; and
- a B.C. Land Survey plan identifies the high-water mark of the stream, the top of the ravine bank, and the SPEA boundary in relation to the property lines and the existing and proposed development.

For land within the remainder of the DPA but outside the SPEA, the guidelines include measures the developer/landowner should take to ensure that development does not damage the SPEA or the water quality and hydrology of the stream. These include:

- ensuring that post-development hydrology emulates pre-development conditions;
- minimizing impervious surfaces;
- infiltrating rainwater runoff from impervious surfaces and treating, storing, and slowly releasing the remainder of the rainwater runoff as per the Subdivision Bylaw;
- minimizing the alteration of the land (removing and depositing soil) outside the building envelope;
- minimizing the removal of native trees and protecting the root zones of trees located within the SPEA and those identified for retention outside the SPEA;
- incorporating plans for controlling soil erosion and sediment in site design and construction; and
- installing temporary fencing and signage to prevent encroachment into the SPEA during construction.

Applicants may also be required to agree to a habitat restoration plan, environmental monitoring during the construction phase, installation of a permanent fence along the SPEA, and dedicating the stream to Saanich.

Exemptions from the need to obtain a DP include yard maintenance within an existing landscaped area, the construction of a fence or trail without

removing any native trees, limiting the disturbance of vegetation to one metre, and emergency actions.

The building permit process, an application to alter the land, or a violation all trigger the need for a DP. If the applicant is not going to develop within the SPEA, but is still within the 30-metre DPA, the environmental planning staff (the equivalent of two full-time positions) work to ensure that construction practices will not have an adverse impact on the SPEA. If a landowner undertakes works in the DPA without a DP, he or she is required to obtain a DP before continuing work within the riparian area.

Saanich's approach of using a predetermined SPEA or a QEP assessment within DPAs gives applicants flexibility in meeting requirements for development in riparian areas. The Streamside DPA also allows the environmental planners to review erosion and sediment control plans before issuing DPs. To date, no QEP report has decreased the size of a SPEA that Saanich has set, but in certain cases the QEP has increased the size of the SPEA.

Saanich is also exceeding the RAR by applying best management practices to municipal works in riparian areas. The municipality has a longstanding memorandum of understanding with the DFO and MOE based on an in-house environmental protocol. When the Parks, Public Works, or Engineering departments propose a project that is near a creek, park, or ESA, the environmental protocol and MOU apply. These policies spell out how Saanich will use BMPs in or near watercourses to meet senior government expectations. This approach facilitates senior government approvals because they are aware of the BMPs that Saanich is using.

### ◆ West Vancouver

The District of West Vancouver is taking a three-pronged approach to protecting and preserving watercourses and wetlands and to satisfying its obligations under the RAR by (1) adopting a Watercourse Protection Bylaw; (2) establishing and amending existing guidelines and policies for environmental DPAs, with a goal of no net loss of habitat; and (3) amending the Development Procedures Bylaw to delegate certain authority for approvals to staff.

The Watercourse Protection Bylaw (2005) prohibits fouling or polluting watercourses and wetlands and prevents covering or enclosing open watercourses within a culvert. It also requires all building permits within the watercourse DPAs to include a plan for controlling sediment and erosion. If the owner/developer contravenes the bylaw, District staff are able to enter the subject property, remedy the situation, and charge the costs to the property owner. The bylaw also contains ticketing provisions.

Amendments to the District's OCP in 2005 established a blanket DPA in existing neighbourhoods to provide for setbacks from watercourses and appropriate guidelines. The District also amended the existing DPA and guidelines for future neighbourhoods (Upper Lands) to provide for

Streamside Protection and Enhancement Areas. The application of the DPAs is broader than the RAR requires because they apply to all watercourses and wetlands, not just those that are fish bearing.

The objective of the DPA for existing neighbourhoods is to ensure that development does not negatively impact watercourses or, if such impacts are unavoidable due to the existing configuration of parcels of land in relation to watercourses, to ensure that development does not result in a net loss of productive fish habitat. This policy designates properties in existing neighbourhoods that contain or are adjacent to watercourses as DPAs. Any development that occurs on the designated properties will require a DP, unless exempted. Exemptions include interior renovations, maintenance of existing landscaping, and work that occurs outside of 15 metres from the top of the bank of the watercourse or the edge of the wetland.

In the existing neighbourhoods DPA, if development is close to riparian areas, staff strive for a net ecological gain on each site. The guidelines specify no net loss of riparian habitat within 15 metres of the top of the bank of the watercourse or the edge of the wetland. If development is allowed within the 15 metres, it must be located at least as far from the riparian area as existing development and the applicant must show why the practical option is to build within the 15-metre setback. No new development or redevelopment is allowed within five metres of the watercourse or wetland.

Under the DPA for existing neighbourhoods, staff will permit variances under the zoning bylaw to avoid habitat loss. For example, an applicant will be allowed to encroach into front and side-yard setbacks to avoid construction in the riparian area. The area in this DPA is also designated as a development approval information area to ensure that an accurate, site-specific information base is available to help staff apply the relevant DP guidelines. This allows staff to require the applicant to provide additional studies or information about site conditions or recommendations for mitigation measures.

The approach for future neighbourhoods is modeled on the former Streamside Protection Regulation, but it also allows the District to consider applications for riparian management that are developed using the RAR methodology. When it is practical, no development in Future Neighbourhoods is allowed within 30 metres of the top of a permanent watercourse bank or within 15 metres of an ephemeral watercourse bank or the edge of a permanent wetland. The District may consider an alternative Streamside Protection and Enhancement Area that is consistent with the guidelines and the *Fish Protection Act*.

In future neighbourhoods, applications are also subject to an Area Development Planning Process that requires Council approval. This gives Council the discretion to accept or reject proposals for encroachment on the 30-metre setback. In practice, multi-departmental staff teams work on planning for new neighbourhoods using an approach that allows the landscape to inform the shape of development. They are exploring the use of density averaging, bare-land strata, and other means to shift densities to meet the ideal of a 30-metre setback.

If riparian habitat in a DPA is lost, e.g., if development occurs within 15 metres of a riparian area in existing neighbourhoods or 30 metres in future neighbourhoods, the District may require mitigation measures such as restoration of existing degraded habitat or compensation.

To streamline development approvals, the Development Procedures Bylaw delegates to staff the authority to issue DPs in existing neighbourhoods. If variances are proposed to avoid habitat loss, staff may approve the variances once they have notified neighbours and receive no objections. Applicants may appeal staff decisions to Council. The bylaw also establishes, in a checklist format, what applicants must submit with an environmental DPA application in existing neighbourhoods. Staff do not have authority to grant DPs in future neighbourhoods.

In practice, all building permit applications in existing neighbourhoods require the applicant to submit information, often a site survey, that shows whether the proposed construction is within or outside the 15-metre setback. The Building Department refers applications that are adjacent to watercourses to the Planning Department for review. Staff may require the applicant to engage a QEP to assist with planning for mitigation if construction will not be any closer to the watercourse but will encroach on the 15-metre setback.

The District created the new position of Environmental Protection Officer (in the Planning Department) to help process applications under the new watercourse protection bylaw and DP requirements. In addition, one planner, one engineer in the Planning Department, and an Environmental Coordinator in the Parks and Environment Department also work on the environmental DPs.

Once staff became used to the new processes and workload, this approach has been working very well. Internally, the Planning and Building departments have worked together to ensure that the Planning Department sees all applications for work within a DPA. From an environmental perspective, staff have achieved habitat gains in existing neighbourhoods by building farther away from watercourses and requiring mitigation. The most effective guidelines are those that do not allow an applicant to go any closer to the watercourse than existing development and that allow no net loss of habitat. These are performance-based standards that mirror the simple assessment methods under the RAR but allow staff more flexibility to tailor the DP to site-specific conditions.

### ◆ What Staff Say About the RAR

Once the RAR policy framework is in place, additional staff have been hired or job descriptions altered, and staff have adjusted to the workload generated by the RAR, staff concerns regarding the RAR relate to deficiencies with the local government's choice of an implementation tool. All local governments that are exceeding the RAR have used DPAs, despite their inherent shortcomings of weak enforcement and blanket application to all properties. See section 7.4 for a discussion of the strengths and weaknesses of DPAs.

**Saanich Development Permit Guidelines**

[http://www.saanich.ca/business/development/laps/dpguide/dev\\_guidelines\\_text.pdf](http://www.saanich.ca/business/development/laps/dpguide/dev_guidelines_text.pdf) p.89

**West Vancouver Development Permit Area Guidelines**

[http://www.westvancouver.ca/upload/documents/GUIDELINES\\_JUNE\\_2004.pdf](http://www.westvancouver.ca/upload/documents/GUIDELINES_JUNE_2004.pdf) pp.183-185.1

Please also refer to the model bylaw provisions dealing with riparian setbacks and the RAR in Appendix L.



# 14 Enforcement

## 14.1 Overview

Bylaws and permit requirements will be ineffective unless landowners and permit holders know that a local government will act in response to important violations on significant properties. Strategic enforcement not only promotes compliance with specific requirements, but it also reinforces the importance of compliance more generally in the community as a whole. The goal is to set precedents and create a culture of compliance. If a local government does not enforce bylaws strategically, this culture will deteriorate. The least expensive and administratively most efficient way to enforce bylaws is to avoid the need for enforcement by using public education, engaging stakeholders, and developing regulations through public processes.

JURISDICTION	
Municipality	Regional District
<b>Public Education</b> <i>Community Charter</i> ss. 3, 4, 8, 9 and case law	<i>Local Government Act</i> ss. 2, 4 and case law
<b>Voluntary Compliance</b> <i>Community Charter</i> s. 15 and enforcement policy	<i>Local Government Act</i> ss. 909 (trees), 723 (soil removal and deposit) and enforcement policy
<b>Ticketing</b> Municipal Ticketing <i>Community Charter</i> ss. 260, 264-265 <i>Community Charter</i> Bylaw Enforcement Ticket Regulation ss.2-3 <i>Long Form Prosecution Offence Act</i> ss.4-5, <i>Community Charter</i> ss. 260, 263 Bylaw Forum <i>Community Charter</i> s.260, <i>Local Govt. Bylaw Notice Enforcement Act</i>	<i>Local Government Act</i> ss. 266.1  <i>Offence Act</i> ss.4-5, <i>Local Government Act</i> s. 266, 267 <i>Local Government Act</i> s. 266.2
<b>Notice on Title</b> <i>Community Charter</i> s.57	<i>Local Government Act</i> s.695
<b>Withdraw Permit</b> <i>Community Charter</i> ss. 8, 9, 15	<i>Local Government Act</i> s.694(1)(e)
<b>Direct Enforcement</b> <i>Community Charter</i> ss.17, 72-80	<i>Local Government Act</i> ss.269, 698
<b>Ticketing Plus Other Penalties</b> <i>Community Charter</i> s.263.1	<i>Local Government Act</i> s.267.1
<b>Injunction</b> <i>Community Charter</i> ss.260, 274	<i>Local Government Act</i> s.281

## STRENGTHS AND WEAKNESSES

### Strengths

#### Public Education

- Long-term approach to common goals for land stewardship and development.
- Changes culture of local government over time.
- builds trust.
- Positive interaction.
- Complementary to other enforcement tools.
- Can budget cost.

#### Voluntary Compliance

- Provides offender with proactive means to remedy harm.
- Easily brings offender within bounds of regulatory requirements.
- Includes a strong public education component.
- Is reasonable and builds relationships.
- Less costly than other enforcement mechanisms.

#### Ticketing

##### *Municipal Ticketing*

- Straightforward ticketing system for minor offences.
- Easily administered.
- Can establish prescribed offences and fine amounts, e.g., for cutting trees, discharging fouling material, removing soil.
- Can designate environmental protection staff as bylaw enforcement officers.
- Prescribed form of ticket.
- Fine up to \$1,000 with ticketing for a continuing offence on each day that it occurs.
- Ability to establish escalating fine amounts if ticket is not paid by a certain date.

##### *Long-form Prosecution*

- Authority and process of the Provincial Court.
- Fine up to \$10,000.
- Appropriate for major offences, particularly if local government incurs expenses and damages.
- Can seek other remedies if conviction obtained (see Ticketing Plus Other Remedies below) that can directly remedy the environmental harm.

##### *Bylaw Forum*

- Disputed tickets dealt with through local adjudication process.
- Can impose fine up to \$500 or require offender to enter into compliance agreement with the local government.
- For larger local governments, it is intended to be cheaper than relying on the Provincial Court process.

### Weaknesses

- Cannot remedy environmental harm.
- Does not impose penalty for deliberate offences.

- Does not impose penalty for deliberate offences.

- Maximum fine \$1,000.
- Remedies limited to fines.
- Inadequate for major offences.

- Local government must prosecute.
- Time and expense to engage in Provincial Court process.
- Because of cost, used only for egregious bylaw offences
- No minimum fine.

- Maximum fine \$500.
- Limited remedies.
- May not be appropriate for offences involving specific pieces of land.

## REGIONAL DISTRICT AND MUNICIPAL BYLAW ENFORCEMENT

Regional districts and municipalities have largely the same enforcement powers that stem from the *Community Charter*, *Local Government Act*, *Offence Act*, and the *Local Government Act's* application of some provisions of the *Community Charter* to regional districts.

## STRENGTHS AND WEAKNESSES

### Strengths

#### Notice on Title

- Fast, simple, and inexpensive.
- Puts potential purchasers on notice of non-compliance with bylaws, thus discouraging quick sale of the land.
- May affect advancement of funds under a mortgage.

#### Withdraw Permit

- Significant impact on the permit holder (time and money if authorization revoked).
- Often acts like a stop work order for land development.
- Can impose a stop work order if building permit involves requirements for sediment and erosion control.

#### Direct Enforcement (Remedial Action)

- Local government can remedy a harm or ongoing damaging condition when landowner is uncooperative.
- Allows local government to complete landscaping and works properly.
- Can recover the cost of remedial work from the landowner.

#### Ticketing Plus other Penalties

- Court may impose a variety of penalties when a local government obtains a conviction under a long-form prosecution.
- May seek fine, injunctive-type relief, costs of investigation, and prosecution.
- May seek remedies that aim to correct ecological harm, e.g., remediation, payment for stewardship groups, etc.

#### Injunction

- Requires landowner to do or cease doing an activity.
- Can be permanent.
- Uses authority of the B.C. Supreme Court.
- Can prosecute by way of fine and seek an injunction.

### Weaknesses

- Will apply to ecosystem protection only in limited circumstances when permit not obtained or building involved.
- May not be sufficient to compel landowner or developer to remedy harm.

- No penalty for offence.
- Must adhere to administrative fairness and right of appeal processes that involve staff and council time.

- Perception that local government is infringing on private property.
- May be challenging for staff to assess and carry out remediation activities.
- If no security or bond was taken at the time the DP issued, may be difficult and costly to recover expense from landowner.

- Expense of prosecuting in Provincial Court.

- Supreme Court process is costly.
- Because of cost, used only for egregious offences or actions.

The least expensive and most effective enforcement mechanism is voluntary compliance facilitated by an experienced enforcement official who is knowledgeable about remedies and who uses a combination of carrots and sticks. Carrots may include dropping formal charges when the offender remedies the harm. Sticks include incorporating the conditions of a “plea bargain” (an agreement on the penalty if the offender enters a guilty plea, such as agreeing to remedy the harm rather than face a stiff fine) into a court order from a long-form prosecution. Failure to comply with the order can attract substantially higher fines.

All local governments use discretion when enforcing regulations. No local government has the resources to enforce every bylaw infraction, and discretion means they do not always have to enforce. Most local governments initiate enforcement action only when they receive a complaint or when they witness an offence during site inspections. They also give priority to actions that threaten public health and safety or threats to local government property. In this context, tree damage or muddy water may be low priorities for bylaw enforcement. Some local governments have an enforcement policy that sets out when and for which types of offences staff will take enforcement action.

When considering enforcement policy and choosing the most appropriate enforcement tool for the offence, staff consider the seriousness of the offence (both the magnitude of the environmental harm and the willfulness of the conduct), the nature of evidence available, and the public values at stake, such as public health and safety and the visibility of the offence in the community. Local governments also consider the cost of investigation, staff time, and legal costs of different enforcement activities and whether the purpose of enforcement is a penalty or compliance with a regulation.

Staff need adequate training and expertise to carry out enforcement activities and to choose an appropriate enforcement path for each offence. Investigating and collecting the necessary evidence to prove offences under environmental bylaws and permits takes specialized knowledge of environmental methods, as well as an understanding of criminal procedure. All bylaw enforcement staff should complete the basic Justice Institute of B.C. courses on bylaw enforcement.

## Staged or Cumulative Enforcement

In practice, local governments usually rely on communicating with landowners and developers before resorting to formal enforcement measures. If a party refuses to cooperate, local governments can encourage compliance by increasing the severity of the penalty and types of enforcement action. The list below sets out possible cumulative approaches to enforcing bylaws. The first three actions take care of the majority of enforcement issues.

### 1. Talk with the permit holder or landowner

Most offences are addressed through voluntary remediation, obtaining a development permit, and/or changing how works are carried out.

**Most local governments initiate enforcement action when they receive a complaint or when they witness an offence during site inspections.**

**JUSTICE INSTITUTE  
OF B.C. COURSES**  
The Justice Institute of B.C.  
offers Level 1 and Level 2  
Bylaw Enforcement and  
Investigative Skills Certificate  
programs that take five days  
to complete.

<http://www.jibc.bc.ca/>

## 2. Issue warning or order to comply

If a property owner or developer has obtained a development permit or if staff know that a landowner is aware of regulatory requirements, staff or the lawyer for the local government may issue a warning or order to comply that notifies the offender of potential enforcement action and gives a specific time frame within which to comply.

## 3. Issue ticket(s) (minor offences)

Staff may issue tickets for each day the offence continues, and they can require remediation to correct the environmental damage under an existing permit or new permit.

## 4. File notice on land title

Council may authorize staff to file a notice on the title to land if a building inspector witnesses a bylaw infraction that creates an unsafe building, or if building construction has occurred without a proper permit or inspection.

## 5. Withdraw permit

A local government may withdraw a permit if the permit holder is not complying with the conditions of the permit. This action often has the effect of stopping development.

## 6. Enforce directly—local government remedies harm

A local government may remedy the environmental harm if a landowner does not and may recoup the cost of taking action from the landowner. Many local governments obtain security or a bond at the permitting stage and use the security to fulfill landscaping requirements if a permit holder fails to complete the required remediation.

## 7. Lay charges or seek injunction (major offences)

Local governments may lay charges under a long-form prosecution or seek an injunction (court order to do or not to do something) for more significant offences. Injunctions are the only way to enforce development permits. Local governments may seek sentencing conditions in addition to fines if they use a long-form prosecution.

## 8. Another agency lays criminal charges

Senior levels of government have legislated authority to initiate criminal prosecutions for specified offences, such as damaging fish habitat.

It may be difficult to collect evidence of who is responsible for damage to sensitive ecosystems. There may be no witnesses to the cutting of a tree on public land or no indication of the source of a substance that is fouling a stream. Staff must also have the equipment and expertise to test ecosystem conditions such as water quality to establish that an offence has occurred. When construction is involved, it is often obvious that a landowner or contractor caused ecosystem damage on private land.

Observation by local government staff and citizens, photographs, or video clips collected outside of the property can produce evidence of an offence.

Local governments also have the authority to enter land without the consent of the property owner or occupier to inspect the property and determine whether the owner or occupier is meeting all regulations, prohibitions, and requirements legitimately imposed by Council or staff [*Community Charter* ss.16, 275 and *Local Government Act* ss.268, 314.1]. For municipalities, this includes jurisdiction in relation to trees. Staff activities on the property are limited to taking photographs or videos, making sketches, and writing notes. They cannot collect physical evidence or ask for statements from owners or occupiers.

Staff must be reasonable in the exercise of their authority to enter property: except in the case of an emergency, they must enter at a reasonable time and in a reasonable manner. Authorized staff must also take reasonable steps to advise the owner or occupier before entering the property.

In order for a local government to collect evidence and issue tickets, a bylaw must designate bylaw enforcement officers. Bylaw enforcement staff can include environmental coordinators, environmental technicians, environmental planners, environmental protection officers, bylaw enforcement officers, and others responsible for imposing and enforcing conditions on development.

Local governments may use a variety of means to enforce bylaws and permits that aim to protect the green infrastructure. Some approaches are ongoing and proactive, such as public education, while others such as injunctions and ticketing depend on the court infrastructure and are costly and time consuming.

## 14.2 Public Education

Using public education as a proactive approach to preventing environmental harm is a long-term strategy the ultimate goal of which is to shift incrementally the way in which property owners steward land and pursue land development. Public education and consultation are important when developing regulations and implementing them. Over time, education results in a cultural shift in the way local governments and citizens both relate to the land.

Public education is also a two-way path: it allows local governments to communicate common goals for environmental protection, but it also gives property owners the opportunity to solve problems and present their ideas for conservation. Ultimately, education will increase voluntary compliance and reduce enforcement costs.

## 14.3 Voluntary Compliance

Staff find that most people who contravene a bylaw or permit are not aware that they have done so. Talking with landowners and issuing warnings and notices to comply are inexpensive ways to achieve regulatory compliance. This approach builds good relationships and trust between

### **DRAFTING OFFENCES IN BYLAWS**

**Each provision or section of a bylaw should create a distinct violation. The standards in the bylaw must be sufficiently clear so that landowners and developers understand which activities are offences. Bylaws do not need to state a specific penalty or that it is an offence to contravene the bylaw because the *Offence Act* makes it an offence to contravene an “enactment,” which includes a local government bylaw, and deems a fine of up to \$2,000.**

the local government and citizens, and the enforcers are seen to be acting reasonably. This is particularly important with people who are unaware of regulations. Voluntary compliance also fulfills an important public education function because people who know about regulations will comply with the requirement for a DP or seek guidance from staff before altering land.

## 14.4 Ticketing

Ticketing is the easiest method of enforcement. However, it does not necessarily result in continuing compliance. There are three different processes by which local governments may issue tickets: the Municipal Ticket Information (MTI); the long-form prosecution in Provincial Court; and the new Bylaw Dispute Adjudication System.

### 14.4.1 Municipal Ticket Information

Sections 264 and 265 of the *Community Charter* and Regulation set out a simple system for issuing tickets (municipal ticket information or MTI) for bylaw offences. MTI may address all offences except those dealing with speeding and firearms. MTIs consist of two kinds of tickets, one for bylaw offences and one for parking offences. Bylaw enforcement officers give the MTI directly to the accused, who may acknowledge the offence by paying the fine or dispute the alleged offence in Provincial Court. If they do neither, after fourteen days the outstanding ticket is deemed a conviction.

A local government may establish prescribed offences and fine amounts for different activities, such as cutting or damaging a tree, discharging fouling material, and removing or depositing soil. Prescribing offences and fine amounts has the effect of setting minimum fines. The maximum fine under MTIs is \$1,000.

Council must designate by bylaws the classes of staff/people who may act as bylaw enforcement officers for the purpose of MTIs. These can include building inspectors, environmental technicians, environmental coordinators, environmental planners, and others involved in approving developments.

The MTI system is simple and inexpensive for local governments because the majority of tickets are dealt with outside the Provincial Court process. Enforcement officers do not need to swear the MTI in front of a court official, and convictions are automatic if the offender does not dispute the ticket. However, a fine is the only remedy, and in some cases the maximum fine may not be high enough to deter further offences. It is most appropriate for minor offences.

### 14.4.2 Long-form Prosecution

Local governments can commence proceedings under the *Offence Act* in B.C. Provincial Court by swearing an information before a court official that sets out the details of the offence. The information must be served on the accused, and once it is served, the offence comes under the jurisdiction of the Provincial Court. However, local governments must retain their own

lawyer to prosecute bylaw offences because provincial Crown Counsel will no longer prosecute these matters.

The maximum penalty is \$2,000 or six months imprisonment. A municipality can increase the maximum fine to \$10,000 by bylaw and can also establish minimum and maximum fines for each day the offence continues.

Although long-form prosecutions involve a lengthy Provincial Court process, they are appropriate for major offences if a larger fine is warranted and if a variety of remedies is desired, for example, habitat restoration or payment of the costs of investigation to the local government (see Ticketing Plus Other Remedies below)

### 14.4.3 Bylaw Dispute Adjudication System

The new *Local Government Bylaw Notice Enforcement Act* allows designated local governments to deal with offences under prescribed bylaws through an adjudication system rather than in Provincial Court. The accused can either pay the listed fine or dispute the offence through a local adjudication system that uses an adjudicator to hear the cases. The local government is responsible for administering the adjudication system and paying the adjudicator. The available remedies are fines up to \$500 or a requirement that the offender enter into a compliance agreement with the local government.

The intent is to provide a local system for dealing with disputed tickets that is outside the Provincial Court process. Adjudication is most appropriate for usual and frequent minor offences.

## 14.5 Notice on Title

Council or a board may pass a resolution directing staff to file a notice on the title to land if a building inspector has witnessed (1) the contravention of a bylaw or Provincial building regulation that makes a building unsafe or unusable for the purpose for which it was built, or (2) an alteration to a building or structure without a permit or proper inspection. Before filing the notice, a local government must give the registered owner of the land notice and an opportunity to be heard. The notice on title simply states that the council or board made a resolution relating to the land and that the owner may inspect further information at municipal or regional district offices.

Filing a notice on the title to land is simple and inexpensive. The notice provides a warning to potential purchasers, whose lawyer or notary will search the title before the purchase completes, and deters the owner who has caused environmental harm from disposing of the property before remedying the problem. A notice on title may also stop advances under a mortgage if the owner is in contravention of local government bylaws.

Notice on title has limited application in the context of enforcing environmental protection bylaws. It applies only if the development includes a building code infraction or alterations to a building in an EDPA without a permit.

**DESIGNATED ENFORCEMENT STAFF**  
**Bylaw enforcement staff can include environmental coordinators, environmental technicians, environmental planners, environmental protection officers, bylaw enforcement officers, and others responsible for imposing and enforcing conditions on development.**

## 14.6 Withdraw Permit

Withdrawing a development or building permit for non-compliance with permit conditions can have the effect of stopping activity on the land if the permit contains conditions dealing with how development may take place, such as habitat protection and measures to control erosion and sediment. It is an offence to undertake building activities or development in a DPA without a permit. A local government may issue a stop work order if the development involves a building permit with attached site conditions, such as a plan for controlling erosion and sediment.

## 14.7 Direct Enforcement (Remedial Action)

Local governments have the authority to remedy environmental damage on private property and recover the costs of remediation when a person who is required to address the ecological damage fails to do so. Because the landowner on whose land a local government has undertaken remediation works has not been convicted of an offence through a public process, local governments must follow closely the process established in the legislation to avoid damage claims by landowners.

A municipality may also make an order requiring landowners and occupiers to remedy a risk to health or safety if development creates hazardous conditions, nuisances, or harm to drainage or dykes (including obstructing, filling, or damaging a watercourse). Regional districts may impose requirements for remedial action if a structure, excavation, or similar activity creates hazardous conditions that are unsafe or that contravene building bylaws.

Local governments often require an applicant to provide a monetary security as part of a development permit. The security acts as a financial incentive for a developer or landowner to comply with permits and undertake works with care. It also provides the local government with funds to pay for meeting the landscaping and other environmental conditions of the permit should the permit holder fail to do so. Holding a security is not a penalty.

## 14.8 Ticketing Plus Other Penalties

A local government may ask for additional penalties when it obtains a conviction using the long-form prosecution. The court may order a fine of up to \$10,000, and a local government may seek to recover its costs and the damages that resulted from the offence in an amount of up to \$10,000 (although the Provincial Court appears to be less willing than the Supreme Court to award costs to local governments). The court may also prohibit the offender from doing anything that may continue or repeat the offence, or it may require the offender to pay restitution for up to one year. This injunctive-like remedy is important because a provincial court can impose it without the cost of Supreme Court proceedings.

These additional remedies give a local government considerable scope in seeking creative ways to restore ecosystems. Remedies may include remediation, creating replacement habitat, contributing to stewardship organizations, paying for the local government to undertake habitat remediation, and paying for the costs of investigation and prosecution.

## 14.9 Injunction

An injunction is a court order directing a landowner or developer to do or stop doing something. Local governments can apply to the B.C. Supreme Court to enforce a bylaw or resolution or prevent or stop the contravention of a bylaw or resolution. Local governments can obtain injunctions in addition to other remedies or penalties the *Community Charter* or *Local Government Act* provide, and they can be used whether or not a penalty has been imposed. Injunctions are intended to stop permanently a behaviour that harms the environment or to require an action that ensures ecological protection. They are effective against the person who is the subject of the injunction application and also against all persons having notice of the order.

If the party that is the subject to an injunction disregards it, a local government must return to court to seek a contempt of court order, which may include fines and court costs. The local government may also seek an order that permits the local government to remedy the offence and requires the landowner to pay the costs of the court action. Injunctions are the only way to force a landowner to obtain a development permit before altering land or to enforce the conditions of a development permit.

Injunctions are an important remedy for projects or activities that a \$1,000 fine will not deter. They are onerous for local governments because of the cost of taking proceedings to the B.C. Supreme Court. They are also onerous for landowners or developers who are contravening a regulation because they usually need to engage a lawyer to represent them in court. They could be subject to an order to do something, and they may be ordered to pay the costs of the local government in bringing the action to court. Injunctions are commonly used for enforcing zoning, DPAs, OCPs, building bylaws, and conservation covenants.

## 14.10 Other Enforcement

Local governments may work with senior levels of government to prosecute and remedy major offences. For example, the DFO may lay charges under the *Fisheries Act* for harmful alteration, disruption, or destruction of fish habitat. The provincial Ministry of Environment may lay charges under the *Water Act* for making changes in and about streams or obstructing the channel of a stream without authority. Fines under these Acts can be substantial.

### PILOT PROJECT

**From 2004 to 2006, the City of North Vancouver, District of North Vancouver, and District of West Vancouver participated in a Bylaw Dispute Adjudication System pilot project. For more information on the pilot project and system, see**

<http://www.ag.gov.bc.ca/courts/general/Toolkit.pdf>

The bylaw provisions in Appendix M aim to:

- define when a permit is validly maintained (page 243);
- explain how an order to comply will be issued and by whom (page 243);
- specify when the local government will remedy environmental harm directly (page 244);
- provide for the recovery of costs incurred for direct enforcement (page 244);
- designate bylaw and bylaw enforcement officers for the purposes of the Municipal Ticketing Information process (page 245);
- prescribe offences and fine amounts (page 245); and
- establish offences and maximum fines (page 245).

# 15 Appendices

## 15.1 Appendix A – SEI Map Codes, Map Units and Descriptions

Below is a table of approved Sensitive and other Important Ecosystems map codes and descriptions. Units that are no longer mapped (historical use) are shown in italics. Projects named “Central & North Okanagan” refer to the Central Okanagan, Bella Vista – Goose Lake Range, Lake Country, and Vernon Commonage SEIs. New classes, subclasses, and their accompanying codes must be approved by the Conservation Data Centre, B.C. Ministry of Environment ecologist. Reproduced with permission from the B.C. Ministry of Environment, from Appendix D, Standard for Mapping Ecosystems at Risk In British Columbia: An Approach to Mapping Ecosystems at Risk and other Sensitive Ecosystems (Prepared by the Ministry of Environment, Ecosystems Branch for the Resource Information Standards Committee, December 2006) [http://lmbwww.gov.bc.ca/risc/pubs/teecolo/habitat/assets/standards\\_for\\_mapping\\_ear\\_version1.pdf](http://lmbwww.gov.bc.ca/risc/pubs/teecolo/habitat/assets/standards_for_mapping_ear_version1.pdf).

CLASS CODE	SUBCLASS CODE	ECOSYSTEM*	CLASS:SUBCLASS	DESCRIPTION	PROJECT	COASTAL/ INTERIOR/ EITHER
AP	hb	SE	Alpine:herbaceous	Alpine ecosystems dominated by forbs or graminoid vegetation.	South Okanagan	Either
AP	kr	SE	Alpine:krummholz	Alpine ecosystems dominated by krummholz trees.	n/a	Either
AP	pf	SE	Alpine:parkland forest	Ecosystems at the transition between alpine and subalpine where trees occur in distinct clumps.	South Okanagan	Either
AP	sh	SE	Alpine:shrub	Alpine ecosystems dominated by dwarf shrubs.	South Okanagan	Either
AS		SE	Antelope-brush Steppe	Shrub ecosystems dominated by antelope-brush.	South Okanagan	Interior
AS	as	SE	Antelope-brush Steppe	Shrub ecosystems dominated by antelope-brush in fair to good condition.	South Okanagan	Interior
AS	ds	SE	Antelope-brush Steppe:disturbed	Shrub ecosystems dominated by antelope-brush in poor condition.	South Okanagan	Interior
BW		SE	Broadleaf Woodland	Ecosystems dominated by deciduous species at climax.	Central Okanagan	Interior
BW	ac	SE	Broadleaf Woodland: aspen copse	Permanent aspen ecosystems in moist depressions in grasslands.	Central Okanagan	Interior
BW	as	SE	Broadleaf Woodland: aspen seepage	Permanent aspen ecosystems on seepage slopes, usually in forested areas.	Central Okanagan	Interior

\*Sensitive Ecosystem (SE) / Other Important Ecosystem (OIE) / Non-Sensitive (NS)

CLASS CODE	SUBCLASS CODE	ECOSYSTEM*	CLASS:SUBCLASS	DESCRIPTION	PROJECT	COASTAL/ INTERIOR/ EITHER
CB		SE	Coastal Bluff	Vegetated rocky islets and shorelines. Historical use only, now mapped as HB:cs or HB:vs.	Vancouver Island	Coastal
CB	cl	SE	Coastal Bluff:cliff	Vegetated coastal cliffs and bluffs. Historical use only, now mapped as CL:cc.	Vancouver Island	Coastal
CL		SE	Cliff	Steep slopes, often with exposed bedrock.	Sunshine Coast	Coastal
CL	cc	SE	Cliff:coastal	Coastal cliffs.	Sunshine Coast	Coastal
CL	lc	SE	Cliff:inland	Inland cliffs.	Sunshine Coast	Coastal
DG		OIE	Disturbed Grasslands	Grasslands with 20-60% noxious weeds or invasive alien plants. This unit was used only in the Central and North Okanagan. Historical use only, now mapped as GR:dg.	Central Okanagan	Interior
FS		OIE	Seasonally Flooded Agricultural Fields	Annually flooded cultivated fields or hay fields.	Sunshine Coast / Vancouver Island / South Okanagan	Either
FW		SE	Freshwater	Freshwater ecosystems include bodies of water such as lakes and ponds that usually lack floating vegetation.	Islands Trust	Either
FW	la	SE	Freshwater:lake	Naturally occurring, static body of open water greater than 2 m deep and generally greater than 50 ha, with little to no floating vegetation.	Islands Trust	Either
FW	pd	SE	Freshwater:pond	Small body of open water, greater than 2 m deep and generally less than 50 ha, with little to no floating vegetation.	Islands Trust	Either
GR		SE	Grasslands	Ecosystems dominated by bunchgrasses and shrubland ecosystems that occur in a grassland matrix.	Central & North Okanagan / South Okanagan	Interior
GR	dg	SE	Grasslands:disturbed	Greater than 60% of plant cover is comprised of invasive alien species; <b>overrides all other grassland subclasses where it occurs.</b>	South Okanagan	Interior
GR	ge	SE	Grasslands:gentle slope	Mixed grass/forb grassland ecosystems on slopes <25%. Optional subclass for use where it helps meet project objectives.	South Okanagan	Interior
GR	gr	SE	Grasslands:grasslands	Ecosystems dominated by bunchgrasses; less than 10% tree cover.	Central & North Okanagan / South Okanagan	Interior

\*Sensitive Ecosystem (SE) / Other Important Ecosystem (OIE) / Non-Sensitive (NS)

CLASS CODE	SUBCLASS CODE	ECOSYSTEM*	CLASS:SUBCLASS	DESCRIPTION	PROJECT	COASTAL/ INTERIOR/ EITHER
GR	sh	SE	Grasslands:shrublands	Moist ecosystems dominated by shrubs (usually rose and snowberry); occur in a grassland matrix.	Central & North Okanagan	Interior
GR	ss	SE	Grasslands:steep slope, shallow soils	Mixed grass/forb grassland ecosystems on slopes >25%; shallow soils. Optional subclass for use where it helps meet project objectives.	South Okanagan	Interior
GR	st	SE	Grasslands:steep slope, deep soils	Mixed grass/forb grassland ecosystems on slopes >25%; deep soils. Optional subclass for use where it helps meet project objectives.	South Okanagan	Interior
HB		SE	Herbaceous	Non-forested ecosystems with less than 10% tree cover. Most have shallow soils and bedrock outcrops.	Sunshine Coast	Coastal
HB	cs	SE	Herbaceous:coastal	Influenced by proximity to the ocean: >20% vegetation cover of grasses, herbs, mosses and lichens.	Sunshine Coast	Coastal
HB	du	SE	Herbaceous:dune	Ridge, hill or beach area created by windblown sand; variable vegetation cover.	Sunshine Coast	Coastal
HB	hb	SE	Herbaceous:herbaceous	Inland sites dominated by herbaceous vegetation; shrubs account for less than 20% of the vegetation: >10% tree cover, generally shallow soils.	Sunshine Coast	Coastal
HB	sh	SE	Herbaceous:shrub	Shrubs account for more than 20% of the vegetation, with grasses and herbs.	Sunshine Coast	Coastal
HB	sp	SE	Herbaceous:spit	Sand and gravel deposits with low to moderate cover of salt-tolerant grasses and herbs.	Sunshine Coast	Coastal
HB	vs	SE	Herbaceous:vegetated shoreline	Low-lying rocky shorelines with less than 20% vegetation.	Sunshine Coast	Coastal
HT		SE	Terrestrial Herbaceous	<i>Sites with continuous herbaceous dominated vegetation cover. Historical unit, now mapped as HB:hb.</i>	Vancouver Island	Coastal
HT	ro	SE	Terrestrial Herbaceous:rock outcrop	<i>Sites with rock outcrops. Historical unit, now mapped as SV:ro.</i>	Vancouver Island	Coastal
HT	sh	SE	Terrestrial Herbaceous:shrub	<i>Sites with more than 20% shrub cover. Historical unit, now mapped as HB:sh.</i>	Vancouver Island	Coastal

\*Sensitive Ecosystem (SE) / Other Important Ecosystem (OIE) / Non-Sensitive (NS)

CLASS CODE	SUBCLASS CODE	ECOSYSTEM*	CLASS:SUBCLASS	DESCRIPTION	PROJECT	COASTAL/ INTERIOR/ EITHER
IT		SE	Intertidal	Mudflats, beaches and rocky shorelines that link the marine and terrestrial environments.	Islands Trust	Coastal
MF		OIE	Mature Forest	Large patches of conifer-dominated forest where stand structure includes vertical heterogeneity and the average tree age is generally 80 years or more (Sunshine Coast). Forests dominated by mature trees (Okanagan).	Sunshine Coast / Central & North Okanagan / South Okanagan	Either
MF	bd	OIE	Mature Forest: Broadleaf	Dominated by broadleaf trees (>75%).	Central & North Okanagan / South Okanagan	Interior
MF	co	OIE	Mature Forest: Coniferous	Dominated by coniferous trees (>75%).	Central & North Okanagan	Interior
MF	mx	OIE	Mature Forest:mixed	Dominated by a mixture of coniferous and broadleaf trees (<75% coniferous and >25% broadleaf).	Central & North Okanagan	Interior
NS		NS	Non-sensitive	Used when displaying non-sensitive ecosystems themed from TEM/PEM.		
OF		SE	Old Forest	Patches of conifer-dominated forest with complex vertical structure, where the average tree age is generally 250 years or more (Sunshine Coast). <i>Historically defined as forests older than 100 years for Vancouver Island.</i>	Sunshine Coast / Vancouver Island	Coastal
OF	bd	SE	Old Forest:broadleaf	Forests dominated by large old broadleaf trees.	n/a	Either
OF	co	SE	Old Forest:coniferous	Forests dominated by large old coniferous trees (Central Okanagan); coniferous forests that appear to be older than 140 years (South Okanagan). Conifer-dominated (>75%) forests generally >250 years (Sunshine Coast).	Central & North Okanagan / South Okanagan / Sunshine Coast / Vancouver Island	Either
OF	mx	SE	Old Forest:mixed	Forests dominated with a mixture of coniferous and broadleaf trees (<75% coniferous and >25% broadleaf).	Central & North Okanagan / Vancouver Island	Either

\*Sensitive Ecosystem (SE) / Other Important Ecosystem (OIE) / Non-Sensitive (NS)

CLASS CODE	SUBCLASS CODE	ECOSYSTEM*	CLASS:SUBCLASS	DESCRIPTION	PROJECT	COASTAL/ INTERIOR/ EITHER
RI		SE	Riparian	Ecosystems associated with and influenced by water. Includes areas along creeks, streams, gullies, canyons and larger floodplains. Includes fringes along ponds, lakeshores, and some sites with significant seepage.	Sunshine Coast / Central & North Okanagan / South Okanagan / Vancouver Island	Either
RI	ff	SE	Riparian:fringe	Fringe ecosystems associated with streams, pond or lake shorelines or sites with significant seepage but no floodplain.	Sunshine Coast / Central & North Okanagan / South Okanagan	Either
RI	fh	SE	Riparian:high bench	High-bench floodplain terraces (only periodically and briefly inundated by high waters but lengthy subsurface flow in the rooting zone).	Sunshine Coast	Coastal
RI	fl	SE	Riparian:low bench	Low-bench floodplain terraces (flooded at least every other year).	Sunshine Coast	Coastal
RI	fm	SE	Riparian:medium bench	Medium-bench floodplain terraces (flooded every 1-5 years for short periods).	Sunshine Coast	Coastal
RI	fp	SE	Riparian:Bench or Riparian:forested floodplain	Benches along creeks and rivers (high, medium, or low benches in the Central Okanagan); forested floodplain (South Okanagan).	Central & North Okanagan / South Okanagan	Interior
<i>RI</i>	<i>g</i>	<i>SE</i>	<i>Riparian:gully</i>	<i>Gullies. Historical unit, now mapped as RI:gu.</i>	<i>Vancouver Island</i>	<i>Coastal</i>
RI	gu	SE	Riparian:gully	Watercourse is in a steep V-shaped gully (Sunshine Coast); gullies with intermittent or permanent creeks (Central Okanagan/ South Okanagan).	Sunshine Coast / Central & North Okanagan / South Okanagan	Either
RI	ri	SE	Riparian:river	Large river watercourses including gravel bars.	Central & North Okanagan / South Okanagan	Either
RI	sh	SE	Riparian:shrub floodplain	Shrub dominated floodplain or lakeshore.	South Okanagan	Interior
SG	co	OIE	Older Second Growth Forest:coniferous	Conifer forests 60-100 years old with <15% deciduous. Historical unit, now mapped as MF:co.	Vancouver Island	Coastal
SG	mx	OIE	Older Second Growth Forest:mixed	Older forests 60-100 years old with >15% deciduous. Historical unit, now mapped as MF:mx.	Vancouver Island	Coastal
SS			Sagebrush Steppe	Optional class where sagebrush dominated ecosystems are separated from grasslands.	South Okanagan	Interior

\*Sensitive Ecosystem (SE) / Other Important Ecosystem (OIE) / Non-Sensitive (NS)

CLASS CODE	SUBCLASS CODE	ECOSYSTEM*	CLASS:SUBCLASS	DESCRIPTION	PROJECT	COASTAL/ INTERIOR/ EITHER
SS	ds	SE	Sagebrush Steppe: disturbed	Shrub steppe ecosystems where greater than 60% of plant cover is comprised of invasive alien species; <b>overrides all other shrub steppe subclasses where it occurs.</b>	South Okanagan	Interior
SS	ss	SE	Sagebrush Steppe: sagebrush steppe	Typical sagebrush steppe ecosystems. Optional subclass for use where it helps meet project objectives.	South Okanagan	Interior
SS	ss	SE	Sagebrush Steppe	Shrub steppe ecosystems on slopes <25% in fair to good condition. Variable soil depth.	South Okanagan	Interior
SS	st	SE	Grasslands: steep slope, deep soils	Shrub steppe ecosystems on slopes >25%; deep soils. Optional subclass for use where it helps meet project objectives.	South Okanagan	Interior
SV		SE	Sparsely Vegetated	Areas with 5-10% cover of vascular vegetation.	Central & North Okanagan / South Okanagan / Vancouver Island	Interior
SV	cl	SE	Sparsely Vegetated: cliff	Steep rock slopes, often near vertical, with exposed bedrock; may have <5% vegetation cover.	Central & North Okanagan / South Okanagan / Vancouver Island	Interior
SV	gr	SE	Sparsely Vegetated: shallow soil	Sparse grassland vegetation on very shallow soils (<20cm deep).	Naramata	Interior
SV	ro	SE	Sparsely Vegetated: rock outcrop	Rock outcrops not dominated by shrubs (was HB:ro).	Central & North Okanagan	Interior
SV	sd	SE	<i>Sparsely Vegetated: coastal sand dunes</i>	<i>Sand dunes. Historical unit, now mapped as HB:du.</i>	<i>Vancouver Island</i>	<i>Coastal</i>
SV	sh	SE	Sparsely Vegetated: shrub	Shrub dominated rock outcrop areas.	Central & North Okanagan / South Okanagan	Interior
SV	sp	SE	<i>Sparsely Vegetated: sand spits</i>	<i>Coastal gravels and sand spits. Historical unit, now mapped as HB:sp.</i>	<i>Vancouver Island</i>	<i>Coastal</i>
SV	ta	SE	Sparsely Vegetated: talus	Areas dominated by rubbly blocks of rock (talus).	Central & North Okanagan / South Okanagan	Interior

\*Sensitive Ecosystem (SE) / Other Important Ecosystem (OIE) / Non-Sensitive (NS)

CLASS CODE	SUBCLASS CODE	ECOSYSTEM*	CLASS:SUBCLASS	DESCRIPTION	PROJECT	COASTAL/ INTERIOR/ EITHER
WD		SE	Woodland	Dry, open stands generally with between 10 and 25% tree cover (Sunshine Coast). Open stands of Douglas-fir or ponderosa pine, often on shallow soils, 10-20% canopy cover in unaltered state (Central & North Okanagan). <i>Historically defined as less than 50% canopy cover for Vancouver Island.</i>	Sunshine Coast / Central & North Okanagan / South Okanagan / Vancouver Island	Either
WD	bd	SE	Woodland:broadleaf	<i>Broadleaf-dominated (Garry oak and trembling aspen) woodland stands. Historical unit, now mapped as BW.</i>	Vancouver Island	Coastal
WD	co	SE	Woodland:coniferous	Conifer-dominated woodland stands including open stands on shallow soils, steep warm aspects or high elevations where climate restricts tree productivity.	Sunshine Coast / Central & North Okanagan / South Okanagan	Either
WD	mx	SE	Woodland:mixed	Mixed conifer and broadleaf stands. Greater than 25% coniferous and >25% broadleaf trees.	Sunshine Coast	Coastal
WN		SE	Wetland	Areas characterized by daily, seasonal or year-round water at or above the surface.	Sunshine Coast / Central & North Okanagan / South Okanagan / Vancouver Island	Either
WN	bg	SE	Wetland:bog	Bog. Nutrient-poor peat wetlands on organic (sphagnum) soils; water source from precipitation.	Sunshine Coast / Vancouver Island	Either
WN	fn	SE	Wetland:fen	Fen. Groundwater-fed peat (sedge) wetlands; primary water source is groundwater or runoff.	Sunshine Coast / South Okanagan / Vancouver Island	Either
WN	ms	SE	Wetland:marsh	Marsh. Graminoid or forb-dominated freshwater, estuarine or saline nutrient-rich wetlands that are permanently or seasonally inundated.	Sunshine Coast / Central & North Okanagan / South Okanagan / Vancouver Island	Either
WN	sc	SE	Wetland:shrub carr	Shrub carr. Shrub-dominated ecosystems with moist soils on frost-prone depressions.	n/a	Interior
WN	sp	SE	Wetland:swamp	Swamp. Shrub or tree-dominated wetlands with temporary shallow flooding and significant above or below ground water flow.	Sunshine Coast / Central & North Okanagan / South Okanagan / Vancouver Island	Either

\*Sensitive Ecosystem (SE) / Other Important Ecosystem (OIE) / Non-Sensitive (NS)

CLASS CODE	SUBCLASS CODE	ECOSYSTEM*	CLASS:SUBCLASS	DESCRIPTION	PROJECT	COASTAL/ INTERIOR/ EITHER
WN	sw	SE	Wetland: shallow water	Shallow water. Permanently flooded, less than 2 m deep mid-summer and less than 10% cover of emergent vegetation.	Sunshine Coast / Central & North Okanagan / South Okanagan / Vancouver Island	Either
WN	wm	SE	Wetland:wet meadow	Wet meadow. Briefly inundated, graminoid-dominated meadows.	Sunshine Coast / Central & North Okanagan / South Okanagan / Vancouver Island	Either

\*Sensitive Ecosystem (SE) / Other Important Ecosystem (OIE) / Non-Sensitive (NS)

## 15.2 Appendix B – Resources Consulted

### 15.2.1 Legislation and Regulations

The B.C. government periodically updates the legislation and regulations found through these links. They may not be current and should not be relied on. Current legislation can be accessed through QP Legaleze <http://www.qplegaleze.ca/default.htm>, available online at no charge from public libraries, government agent offices, and law libraries.

*Agricultural Land Commission Act*, S.B.C. 2002, c.36  
[http://www.qp.gov.bc.ca/statreg/stat/A/02036\\_01.htm](http://www.qp.gov.bc.ca/statreg/stat/A/02036_01.htm)

*Agricultural Land Reserve Use, Subdivision and Procedure Regulation*, B.C. Reg. 171/2002  
[http://www.qp.gov.bc.ca/statreg/reg/A/171\\_2002.htm](http://www.qp.gov.bc.ca/statreg/reg/A/171_2002.htm)

*Community Charter*, S.B.C. 2003, c.26  
[http://www.qp.gov.bc.ca/statreg/stat/C/03026\\_00.htm](http://www.qp.gov.bc.ca/statreg/stat/C/03026_00.htm)

*Community Charter Bylaw Enforcement Ticket Regulation*, B.C. Reg. 425/2003  
[http://www.qp.gov.bc.ca/statreg/reg/C/CommuCharter/CommuCharter425\\_2003/425\\_2003.htm](http://www.qp.gov.bc.ca/statreg/reg/C/CommuCharter/CommuCharter425_2003/425_2003.htm)

*Farm Practices Protection (Right to Farm) Act*, R.S.B.C. 1996, c.131  
[http://www.qp.gov.bc.ca/statreg/stat/F/96131\\_01.htm](http://www.qp.gov.bc.ca/statreg/stat/F/96131_01.htm)

*Fish Protection Act*, S.B.C. 1997, c.21  
[http://www.qp.gov.bc.ca/statreg/stat/F/97021\\_01.htm](http://www.qp.gov.bc.ca/statreg/stat/F/97021_01.htm)

*Interpretation Act*, R.S.B.C. 1996, c.238  
[http://www.qp.gov.bc.ca/statreg/stat/I/96238\\_01.htm](http://www.qp.gov.bc.ca/statreg/stat/I/96238_01.htm)

*Local Government Act*, R.S.B.C. 1996, c.323  
[http://www.qp.gov.bc.ca/statreg/stat/L/96323\\_00.htm](http://www.qp.gov.bc.ca/statreg/stat/L/96323_00.htm)

*Offence Act*, R.S.B.C. 1996, c.338  
[http://www.qp.gov.bc.ca/statreg/stat/O/96338\\_01.htm](http://www.qp.gov.bc.ca/statreg/stat/O/96338_01.htm)

*Riparian Areas Regulation*, B.C. Reg. 376/2004  
[http://www.qp.gov.bc.ca/statreg/reg/F/FishProtect/376\\_2004.htm](http://www.qp.gov.bc.ca/statreg/reg/F/FishProtect/376_2004.htm)

*Species At Risk Act*, S.C. 2002, C.29  
[http://www.sararegistry.gc.ca/the\\_act/default\\_e.cfm](http://www.sararegistry.gc.ca/the_act/default_e.cfm)

*Wildlife Act*, R.S.B.C. 1996, c.488  
[http://www.qp.gov.bc.ca/statreg/stat/W/96488\\_01.htm](http://www.qp.gov.bc.ca/statreg/stat/W/96488_01.htm)

## 15.2.2 Plans

Capital Regional District, Regional Growth Strategy

[http://www.crd.bc.ca/reports/regionalplanning\\_/generalreports\\_/regionalgrowthstrate\\_/regionalgrowthstrate/Regional\\_Growth\\_Strategy.pdf](http://www.crd.bc.ca/reports/regionalplanning_/generalreports_/regionalgrowthstrate_/regionalgrowthstrate/Regional_Growth_Strategy.pdf)

City of Burnaby, OCP

[http://www.city.burnaby.bc.ca/cityhall/departments/departments\\_planning/plnng\\_plans/plnng\\_plans\\_offcl/plnng\\_plans\\_offcl\\_environment.html](http://www.city.burnaby.bc.ca/cityhall/departments/departments_planning/plnng_plans/plnng_plans_offcl/plnng_plans_offcl_environment.html)

City of Burnaby, Still Creek Integrated Watershed Management Plan (draft)

[http://www.gvrd.bc.ca/sewerage/stormwater\\_reports.htm](http://www.gvrd.bc.ca/sewerage/stormwater_reports.htm)

City of Burnaby, Stoney Creek Integrated Stormwater Management Strategy (report to council)

[http://www.city.burnaby.bc.ca/\\_\\_shared/assets/Stoney\\_Creek\\_Stormwater\\_Strategy3132.pdf](http://www.city.burnaby.bc.ca/__shared/assets/Stoney_Creek_Stormwater_Strategy3132.pdf)

City of Burnaby, UniverCity Watercourse and Stormwater Management Plan

<http://www.univercity.ca/sub01.php?code=CA1119511407542>

City of Campbell River, OCP

<http://www.campbellriver.ca/Business/DevelopingCampbellRiver/GuidelinestoDevelopment/Documents/Nov06%202005OCPFinal.pdf>

City of Kelowna, OCP

<http://www.city.kelowna.bc.ca/CM/Page357.aspx>

City of Nanaimo, OCP

[http://www.nanaimo.ca/uploadedfiles/Site\\_Structure/Development\\_Services/Planning\\_and\\_Development/Community\\_Planning/ocp\\_05.pdf](http://www.nanaimo.ca/uploadedfiles/Site_Structure/Development_Services/Planning_and_Development/Community_Planning/ocp_05.pdf)

City of Nanaimo, Watercourse Development Permit Guidelines

<http://www.wcel.org/issues/urban/sbg/Part6/usewisely/DPA/Nanaimo-Guidelines.pdf>

City of Penticton, Northeast Sector Plan

[http://www.penticton.ca/city/development\\_services/Planning/NE-Sector-Plan-2005-07.zip](http://www.penticton.ca/city/development_services/Planning/NE-Sector-Plan-2005-07.zip)

City of Victoria, Downtown Plan

[http://www.victoria.ca/cityhall/pdfs/departments\\_plnpub\\_dvpln2.pdf](http://www.victoria.ca/cityhall/pdfs/departments_plnpub_dvpln2.pdf)

District of Saanich, General Plan

<http://www.gov.saanich.bc.ca/business/development/laps/generalplan.html>

Comox Strathcona Regional District, Rural Comox Valley OCP (Electoral Area "C")

[http://www.rdcs.bc.ca/uploadedFiles/Community\\_Planning/Bylaws/2042/Schedule\\_C/Bylaw\\_2100\\_Part5.pdf](http://www.rdcs.bc.ca/uploadedFiles/Community_Planning/Bylaws/2042/Schedule_C/Bylaw_2100_Part5.pdf)

District of Highlands, OCP (1997)

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Okanagan Similkameen Regional District, Rural Oliver OCP (Electoral Area “C”)

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Okanagan Similkameen Regional District, Osoyoos OCP (Electoral Area “A”)

[http://www.rdosmaps.bc.ca/min\\_bylaws/bylaws/planning/consolidated/2260.pdf](http://www.rdosmaps.bc.ca/min_bylaws/bylaws/planning/consolidated/2260.pdf)

Regional District Central Okanagan, Ellison Official Community Plan

[http://www.regionaldistrict.com/docs/planning/Ellison%20OCP/EL\\_OCP\\_SchA.pdf](http://www.regionaldistrict.com/docs/planning/Ellison%20OCP/EL_OCP_SchA.pdf)

Regional District Central Okanagan, Ellison Official Community Plan, Appendix A – Development Permit Guidelines (A-1 Landscape, A-5 Aquatic Ecosystems, A-6 Rural Hillside, A-8 Sensitive Terrestrial Ecosystem)

[http://www.regionaldistrict.com/docs/planning/Ellison%20OCP/EL\\_OCP\\_Appendices.pdf](http://www.regionaldistrict.com/docs/planning/Ellison%20OCP/EL_OCP_Appendices.pdf)

Regional District of Central Okanagan, Westside OCP

<http://www.regionaldistrict.com/docs/planning/WestOCP/OCP%20SECTION%201%20TO%2019.pdf>

Regional District of Comox Strathcona, Rural Comox Valley OCP (Electoral Area “C”)

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Regional District of Nanaimo, Regional Growth Strategy

<http://www.rdn.bc.ca/cms/wpattachments/wpID432atID355.pdf>

Township of Spallumcheen, OCP

<http://spallumcheen.ihostez.com/contentengine/launch.asp?ID=6>

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City of Burnaby, Open Watercourse Policy (on file with author)

City of Burnaby, Total Stormwater Management Policy

[http://www.city.burnaby.bc.ca/\\_\\_shared/assets/Total\\_Stormwater\\_Management\\_Policy3134.pdf](http://www.city.burnaby.bc.ca/__shared/assets/Total_Stormwater_Management_Policy3134.pdf)

City of Chilliwack, Policy and Design Criteria Manual for Surface Water Management

[http://www.chilliwack.com/main/attachments/files/658/Surface\\_Water\\_Management.pdf](http://www.chilliwack.com/main/attachments/files/658/Surface_Water_Management.pdf)

City of Coquitlam, Low Impact Development Policies & Procedures Manual

<http://www.coquitlam.ca/NR/rdonlyres/2D5BEB15-F830-49A0-BC6E-C09F03374665/33947LowImpactDevelopmentPolicyProceduresManualV3WithCo.pdf>

City of Kelowna, Environmental Development Permit Handbook

<http://www.kelowna.ca/CM/Page440.aspx>

District of Highlands, Policy Manual Section V – 3505 Amenity Zoning Pro  
FoSPEA (on file with author)

District of Saanich, Environmental and Social Review Policy

<http://www.gov.saanich.bc.ca/municipal/clerks/bylaws/esrprocess.pdf>

Greater Vancouver Regional District, Stormwater Source Control Design  
Guidelines 2005

[http://www.gvrd.bc.ca/sewerage/pdf/Storm\\_Source\\_Control\\_PartI.pdf](http://www.gvrd.bc.ca/sewerage/pdf/Storm_Source_Control_PartI.pdf)

Halton Region Environmental Impact Assessment Guidelines

[http://www.halton.ca/ppw/planning/PDFs/Environment\\_EIAGuidelines\\_Rev\\_13July05.pdf](http://www.halton.ca/ppw/planning/PDFs/Environment_EIAGuidelines_Rev_13July05.pdf)

Regional District of Nanaimo, Urban Containment and Fringe Area  
Management Implementation Agreement

<http://www.rdn.bc.ca/cms/wpattachments/wplD482atID418.pdf>

## 15.2.4 Bylaws

City of Burnaby, Tree Protection Bylaw

[http://www.city.burnaby.bc.ca/\\_\\_shared/assets/Environmental\\_-\\_Tree\\_Bylaw3120.pdf](http://www.city.burnaby.bc.ca/__shared/assets/Environmental_-_Tree_Bylaw3120.pdf)

City of Burnaby, Watercourse Bylaw

[http://www.city.burnaby.bc.ca/\\_\\_shared/assets/Environmental\\_-\\_Watercourse\\_Bylaw3121.pdf](http://www.city.burnaby.bc.ca/__shared/assets/Environmental_-_Watercourse_Bylaw3121.pdf)

City of Coquitlam, Subdivision and Development Servicing Bylaw

<http://e-civic.coquitlam.ca/cybercedms/getdoc.asp?doc=207115>

City of Kelowna, Soil Deposit Bylaw No. 8504

<http://www.kelowna.ca/CityPage/Docs/PDFs/%5CBylaws/Soil%20Deposit%20Bylaw%20No.%208504.pdf>

City of Nanaimo, Tree Protection Bylaw 1993

<http://www.nanaimo.ca/uploadedfiles/Bylaws/4695.pdf>

City of Surrey, Zoning Bylaw

<http://www.surrey.ca/NR/rdonlyres/A31F972A-C365-4A4A-AF8F-FB0384128E77/0/Zoning.pdf>

City of Vancouver, Zoning and Development Bylaw

<http://www.city.vancouver.bc.ca/commsvcs/bylaws/zoning/RS-1.PDF>

District of Highlands, Tree Management Bylaw

[http://www.highlands.bc.ca/bylaws\\_policies/documents/TreeManagementBylawNo101994consolidatedversion.pdf](http://www.highlands.bc.ca/bylaws_policies/documents/TreeManagementBylawNo101994consolidatedversion.pdf)

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District of Mission, Soil Deposit Bylaw

<http://www.mission.ca/AssetFactory.aspx?did=411>

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District of North Vancouver, Environmental Protection Bylaw

<http://www.district.north-van.bc.ca/upload/documents/bylaws/6515.pdf>

District of Saanich, Land Use and Development Procedures Bylaw, 2007, No. 8857

<http://www.gov.saanich.bc.ca/municipal/clerks/bylaws/landusedevproc8857.pdf>

District of Saanich, Engineering Specifications (Schedule H, Subdivision Bylaw)

<http://www.gov.saanich.bc.ca/business/development/eng/specs/essewerdrain.pdf>

District of Saanich, Zoning Bylaw

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District of West Vancouver, Pesticide Use Control Bylaw

<http://www.westvancouver.ca/article.asp?a=3831&c=692>

District of West Vancouver, Soil Removal and Deposit Regulation

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Islands Trust, Salt Spring Island Land Use Bylaw

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Town of Gibsons, Riparian Property Tax Exemption Bylaw

[http://www.wcel.org/issues/urban/sbg/Part7/taxes/Riparian\\_Tax\\_Deduction.pdf](http://www.wcel.org/issues/urban/sbg/Part7/taxes/Riparian_Tax_Deduction.pdf)

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<http://www.ci.austin.tx.us/smartgrowth/matrix.htm>

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[http://dev.stewardshipcanada.ca/sc\\_bc/stew\\_series/pdf/lldg.pdf](http://dev.stewardshipcanada.ca/sc_bc/stew_series/pdf/lldg.pdf)

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Department of Fisheries and Oceans and Ministry of Environment; *Stream Stewardship: A Guide for Planners and Developers*  
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<http://www.dfo-mpo.gc.ca/Library/224985.pdf>

Islands Trust Fund, Annotated Covenant  
<http://www.islandstrustfund.bc.ca/pdf/itfnaptepannotatedcovenant2007.pdf>

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[http://www.cserv.gov.bc.ca/lgd/gov\\_structure/library/regulatory\\_best\\_practices\\_guide.pdf](http://www.cserv.gov.bc.ca/lgd/gov_structure/library/regulatory_best_practices_guide.pdf)

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Smart Bylaws Guide  
<http://www.wcel.org/issues/urban/sbg>

## 15.3 Appendix C – Regional Growth Strategies Bylaw Provisions

### 15.3.1 Urban Growth Boundary

#### a) Establish Urban Containment and Servicing Boundary

1. The [regional district] and member local governments agree to designate in their official community plans the following Policy Areas, as depicted on Map [ ]:
  - a. Protected Green Infrastructure Policy Area: includes Ecological Reserves, [regional district] water supply lands, and Major Parks identified in [Map \_\_\_ or another regional plan such as a parks plan];
  - b. Renewable Resource Green Infrastructure Policy Area: includes lands within the Agricultural Land Reserve (ALR) and Crown Forest Lands identified in [Map \_\_\_ or a regional plan];
  - c. Regional Urban Containment and Servicing Policy Area: includes lands, at the date of the adoption of and designated in the Regional Growth Strategy bylaw in Map [ ] primarily for urban development (including attached housing, detached and duplex housing, commercial, industrial, and large scale institutional and utility designations).
  - d. Unprotected Green Infrastructure Policy Area: includes lands identified in [Map [ ] or a Regional Plan] as unprotected core green space.
  - e. Rural Policy Area: includes lands at the date of adoption of and designated in the Regional Growth Strategy bylaw in Map [ ] for rural and rural residential purposes. The policy area also includes pockets of small lot detached, duplex, and other housing and isolated commercial and industrial land uses in areas of predominantly rural character.
  - f. [Special Policy Area]: [May include federal land, large industrial facilities, lands adjacent to First Nations communities].
2. The [regional district] and member local governments agree to adopt policies regarding the protection, buffering, and long-term maintenance of the RUCS Policy Area boundaries.
3. Except as permitted in this bylaw, the [regional district] and member local governments agree not to further extend urban sewer and water services, or increase servicing capacity to encourage growth outside the RUCS Policy Area generally described on Map [ ].
4. The [regional district] and member local governments agree to extend urban sewer and water services, or increase servicing capacity to encourage growth beyond designated limits in Map [ ], only to address pressing public health and environmental issues, to provide fire suppression, or to service agriculture.

#### **REGIONAL GROWTH STRATEGIES BYLAW PROVISIONS**

**This section on regional growth strategies is based on the Regional District of Nanaimo Regional Growth Strategy and the Capital Regional District Regional Growth Strategy.**

5. If expansion or increased capacity of existing sewer and water services is proposed beyond the RUCS Policy Area boundary, member local governments agree to comply with the requirements of the Implementation Agreement prepared as required under Implementation Measure [ ], and to include guidelines for service expansion and extension in their Regional Context Statements.<sup>1</sup>

#### **b) Direct Development into Serviced Areas**

1. The [regional district] and member local governments agree to approve new urban development only on land designated inside the RUCS Policy Area boundary. Urban development includes residential development at a density greater than one unit per hectare, commercial uses, and institutional uses.
2. The [regional district] and member local governments agree to locate a minimum of [e.g., 90%] of the region's cumulative new dwelling units to [year Regional Growth Strategy expires] within the RUCS Policy Area.
3. The [regional district] and member local governments agree to designate, as appropriate in their official community plans, the major centres shown on Map [ ], recognizing that major center boundaries and performance guidelines are conceptual, and that local governments will undertake detailed centre planning through their official community plan and zoning processes.
4. The [regional district] and member local governments agree to review, modify, and implement policies to best facilitate growth and investment in the major centres in partnership with the [regional district].
5. The [regional district] and member local governments agree to permit the designation and development of additional major centres only as an outcome of a comprehensive five-year review of the Regional Growth Strategy.
6. The [core urban local governments] agree to accommodate a minimum of [e.g., 20%] of the region's cumulative new dwelling units and [e.g., 50%] of the region's cumulative new commercial space to [year Regional Growth Strategy expires], to reinforce the regional core.

#### **c) Protect the Green Infrastructure Lands**

1. The [regional district], member local governments and the Province agree to establish or strengthen policies within official community plans that ensure the long-term protection of Protected Green Infrastructure lands depicted on Map [ ], including policies aimed at buffering Protected Green Infrastructure lands from activities in adjacent urban areas.
2. The [regional district], member local governments and the Province agree to establish or strengthen policies within official community plans that ensure the long-term protection of Renewable Resource Green Infrastructure lands depicted on Map [ ], including policies that

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<sup>1</sup> For examples of implementation agreements, see Appendix C.

buffer Renewable Resource Green Infrastructure lands from activities in adjacent urban areas and support farming within the Agricultural Land Reserve.

3. The [regional district] and member local governments with lands identified as Protected Green Infrastructure lands, Renewable Resource Green Infrastructure lands, or Rural lands on Map [ ], agree to establish or strengthen policies within official community plans and regional context statements that limit rural subdivision and development to the capacity levels as described in Table [ ]. Regional context statements will reference specific mechanisms (for example, density bonusing provisions) that could be used to achieve this overall goal.
4. Member local governments agree to negotiate, where necessary, bilateral agreements regarding buffering and land-use transition where the Regional Urban Containment and Servicing boundary coincides with a municipal jurisdictional boundary.
5. Member local governments and the [regional district] agree to include in Regional Context Statements, where appropriate, policy guidelines for buffering and land-use transition between urban areas and Protected Green Infrastructure lands and Renewable Resource Green Infrastructure lands, and how the guidelines will be applied through regulation.

#### **d) Review of Urban Containment Boundary and Servicing Area**

1. The [regional district] and member local governments agree that amendments to the RUCS Policy Area should be considered only every five years in conjunction with a comprehensive review of the Regional Growth Strategy.
2. The [regional district] and member local governments agree to include policies in their official community plans that consider amendment to the Urban Containment and Servicing Area only as an outcome of a comprehensive five-year review of the Regional Growth Strategy.
3. The [regional district] and member local governments agree that that all RUCS Policy Area changes should be considered according to the process and criteria of the Regional Urban Containment and Servicing Policy Area Implementation Agreement.
4. The [regional district] and member local governments agree to review the Urban Containment and Servicing Policy Area Implementation Agreement every five years to address issues regarding the level and type of development that warrants consideration as an urban development on land inside the RUCS Policy Area and to better coordinate between jurisdictions urban land use and development on land within the RUCS Policy Area.

## 15.3.2 Environmental Protection

### **a) Protect the Green Infrastructure Network**

1. The [regional district] and member local governments agree to work individually and as partners to establish the Regional Green Infrastructure System identified on Map [ ]. Priority will be given to community and regional parkland acquisition, conservation corridors, sensitive ecosystems, public and private land stewardship programs, and regional trail network construction.
2. The [regional district] and member local governments agree to establish, through regional context statements and official community plan policies, programs aimed at protecting lands and sensitive ecosystems within the area identified as Unprotected Green Infrastructure Policy Area on Map [ ], including policies, regulations, development permit area guidelines, incentives, and initiatives delivered at the local level.

### **b) Maintain Ecosystem Functioning**

1. The [regional district], member local governments, the [health authority], and the Province agree to establish through a Master Implementation Agreement, an integrated watershed management approach to managing and protecting surface water, drainage, and groundwater in watersheds throughout the region, consistent with the principles of sustainability included in the Regional Growth Strategy.
2. The [regional district] and member local governments agree to establish, through regional context statements and official community plan policies, programs aimed at protecting sensitive ecosystems within the areas identified as Renewable Resource Green Infrastructure Lands, Rural lands, and RUCS (urban) lands on Map [ ], including policies, regulations, development permit area guidelines, incentives, and initiatives delivered at the local level.
3. The [regional district] and member local governments work with the federal and provincial government to support the development and implementation of measures to protect aquatic habitat and other ecologically sensitive areas at the local government level.

### **c) Manage Natural Resources and the Environment Sustainably**

1. The [regional district] and member local governments agree to give first priority in decision making to options and approaches that maintain ecosystem health and support the ongoing ability of natural systems to sustain life.
2. The [regional district] and member local governments agree to require an environmental assessment for projects with the potential to negatively affect sensitive ecosystems or environmental quality.
3. The [regional district] and member local governments agree to continue to improve coordination in environmental protection and management in the region.

4. The [regional district], member local governments, and the [health authority] agree to establish, through a Master Implementation Agreement, best practices policies, procedures, benchmarks, and targets for the management, delivery, and extension of physical and environmental services, consistent with the principles of sustainability and overall intent of the Regional Growth Strategy.
5. The [regional district] and member local governments recognize the key, and often primary, roles played by the private and voluntary sectors in environmental protection and will undertake to create partnerships and strategic alliances with groups and organizations to implement the goals and policies of the Regional Growth Strategy.
6. The [regional district] will work to establish a Protocol Agreement with the First Nations in the region to coordinate planning processes on land under the [regional district]'s jurisdiction as well as on First Nations lands.
7. The [regional district] and member local governments will consider amendments to the Regional Growth Strategy after the settlement of treaties with First Nations.

**d) Review and Update Plans affecting the Green Infrastructure Network**

The [regional district] agrees to review and update, in concert with the five-year review cycle of the Regional Growth Strategy, the Regional [list plans referenced in Regional Growth Strategy e.g., Parks Plan, Liquid Waste Management plans, Integrated Stormwater Management plans, etc.].

### 15.3.3 Model Implementation Agreements

Excerpt from the Regional District of Nanaimo Urban Containment and Fringe Area Management Agreement 1997:

**4.1 Revision of Urban Containment Boundaries Criteria**

It is agreed that the proposed change meets the following criteria:

- is required to meet documented community needs which cannot be met on other lands inside the Urban Containment Boundary;
- can be serviced in a cost effective manner with reference to plans and capital programs for municipal and regional district provided services;
- is not in the ALR or FLR;
- will not lead to adverse changes to the health and ongoing viability of sensitive ecosystems, and will be subject to conditions to ensure this; and
- will not lead to adverse changes to the resource productivity of adjacent lands and will be subject to conditions to ensure this.

**MODEL IMPLEMENTATION AGREEMENTS**

**See the Regional District of Nanaimo Urban Containment and Fringe Area Management Implementation Agreement at <http://www.rdn.bc.ca/cms/wpattachments/wpID482atID418.pdf>.**

## Process

It is agreed that the proposed change by the regional district or by the local government:

- will only be considered at periodic review intervals specified in the Regional Growth Management Plan and city Official Community Plans and will require amendment of both the RGMP and OCP provisions regarding applicable urban containment policies and urban boundaries;
- will be supported by information, impact assessments and impact management conditions which address the above criteria;
- will be subject to a technical review and recommendations by a subcommittee formed by the Intergovernmental Advisory Committee; and
- if approved, and where advised by the responsible government agencies, will be subject to conditions to protect ongoing resource production and environmental quality.

## 15.4 Appendix D – Official Community Plan Bylaw Provisions

### 15.4.1 Definitions

See Appendix N for definitions.

### 15.4.2 Goals or Objectives

#### a) Growth Management

1. Manage growth by preventing the spread of residential and commercial development into the rural and green infrastructure areas, and accommodating growth in the serviced urban areas of the [local government] by establishing an urban containment boundary (UCB).
2. Provide a clear separation between rural and urban lands to preserve both urban and rural lifestyle choices.
3. Direct growth into already serviced areas to:
  - a. maintain the integrity of the green infrastructure;
  - b. reduce the cost of providing road, sewer, water, and storm drain services by fully utilizing existing service infrastructure; and
  - c. promote compact complete neighbourhoods where a variety of lifestyle, housing, economic and cultural opportunities are available in a vibrant urban area.

#### b) Environmental Protection

1. Protect sensitive ecosystems, including wetlands, grasslands, riparian areas, mature and old growth forests, and rugged terrain and connections between them.
2. Maintain and restore ecosystem function.
3. Prevent land and water pollution.
4. Protect and conserve the quality and quantity of ground water and surface water.

#### **GROWTH MANAGEMENT**

**This section on growth management is adapted from the City of Nanaimo OCP 3-1 to 3-4 and the District of Saanich General Plan pp.8-9.**

## **GROWTH MANAGEMENT AND URBAN CONTAINMENT**

**This section on growth management and urban containment is adapted from the Nanaimo OCP, Saanich OCP and Penticton Northeast Sector Plan.**

## **ENVIRONMENTAL PROTECTION**

**The sections on environmental protection, watercourse conservation, commercial parking, and partnerships are adapted from the Campbell River OCP pp.9(1-2); Central Okanagan Sensitive Ecosystems Inventory Report pp.119-120; Kelowna OCP p.7-3, 7-9, 7-13; Osoyoos OCP (Electoral Area "A", Okanagan Similkameen Regional District) pp. 14-15; Penticton Northeast Sector Plan p.27; Whistler Protected Areas Network (Draft VI) p.33**

### 15.4.3 Policies

#### **a) Growth Management and Urban Containment**

1. The Urban Containment and Servicing Area (UCSA) is established as shown in Schedule or Map [ ].
2. Except as required to improve the health and safety of existing development, no public funds will be expended for the capital cost of extending servicing of roads, water, sewer, and stormwater/rainwater systems to lands outside of the UCSA.
3. Land-use designations outside the UCSA will be rural resource lands, parks, and water supply lands. Development in these areas must avoid destruction of sensitive ecosystems, minimize building footprints, and support retention and use of native plants.
4. Minimum lot sizes outside the UCSA will be [e.g., 20] hectares or larger, in recognition that these areas will remain rural with limited community services and infrastructure.
5. Commercial, institutional, industrial, and residential growth is strictly limited, through zoning, outside the UCSA.
6. Within the UCSA, development will be concentrated in compact, mixed-use, complete communities.
7. A percentage [e.g., 90%] of new development in the [local government] will occur within the UCSB.
8. Council will consider amendments to the UCSA only every five years, in concert with the review of the Official Community Plan.
9. Amendments to the UCSB will be considered if a proposed change meets the criteria and process set by the Urban Containment and Servicing Implementation Agreement between the [regional district] and member local governments and is consistent with the Regional Growth Strategy.
10. Public consultation must occur before any amendments to the UCSB are adopted.
11. Amendments to the UCSB must be approved by the electors.

#### **b) Environmental Protection**

##### **General**

1. Preserve sensitive ecosystem areas, their living resources, and connections between them in a natural condition and maintain these areas free of development and human activity to the maximum extent possible.

2. All development proposals that involve a change in zoning, subdivision, or amendment to a plan must undergo the environmental impact assessment process (development approval information) before development approvals are granted. Development design must reflect the objectives and guidelines of Best Management Practices. More specifically:
  - a. *Develop with Care: Environmental Guidelines for Urban and Rural Land Development in British Columbia*;
  - b. Best Management Practices for Amphibians and Reptiles in Urban and Rural Environments in British Columbia;
  - c. Instream Flow Guidelines for British Columbia;
  - d. Standards and Best Management Practices for Instream Works;
  - e. Riparian Areas Regulation Assessment Methods;
  - f. Best Management Practices for Lakeshore Stabilization;
  - g. Environmental Objectives and Best Management Practices for Aggregate Extraction;
  - h. *Stream Stewardship: A Guide for Planners and Developers*;
  - i. Access Near Aquatic Areas: A Guide to Sensitive Planning, Design and Management; and
  - j. Community Green Ways Linking Communities to Country and People to Nature.

### Mapping Sensitive Ecosystems

3. The [local government] will collaborate with other levels of government, non-governmental organizations, and neighboring local governments in inventorying, mapping, and conserving sensitive ecosystems, including the development of consistent approaches to the protection of shared watersheds.
4. It is the policy of [local government] to develop a sound information base about all sensitive ecosystems to inform land-use plans, regulatory processes, and other priorities for protecting sensitive ecosystems. The [local government] will map ESAs and create a comprehensive [Sensitive Ecosystems Inventory or Resource Atlas] that describes all sensitive ecosystems. In addition, the [local government] will require applicants for development to obtain and present all available information about the site from the Conservation Data Centre, SEIs, natural areas atlases, and other relevant inventories.

## Covenants and Conservation Zoning

5. The [local government] will protect and preserve sensitive ecosystems using one or more of the following measures, where appropriate<sup>2</sup>:
  - a. dedication as a city park or trailway component if the area complements the goals and objectives of the city's park or trailway systems. Sensitive ecosystems acquired as parks or trailways will be managed to protect their sensitive features from public use;
  - b. dedication to a private land trust or non-government organization that is eligible to receive donations of land under the Federal Ecological Gifts Program for conservation purposes;
  - c. use of conservation covenants to preserve the natural values of sensitive ecosystems. The covenants may be held by the [local government], the Province and/or a non-government organization eligible to hold conservation covenants;
  - d. registration of a statutory right-of-way under the *Land Title Act*;
  - e. adoption of bylaws to exempt eligible riparian property from property taxes if a property is subject to a conservation covenant under section 219 of the *Land Title Act*;
  - f. density bonusing, cluster housing, or other development incentives to facilitate the protection of all or a significant portion of sensitive ecosystems; and/or
  - g. amalgamating lots to achieve greenways and ESA goals outside of urban containment boundaries.
6. The [local government] will develop and implement a system for keeping track of covenants related to protecting sensitive ecosystems, and of informing residents of their presence and significance.

## Integrated Watershed Management

7. Encourage the preservation of a high quality and quantity of ground water and surface water resources.
8. Develop integrated watershed plans that:
  - a. coordinate land-use activities;
  - b. ensure the maintenance of ecosystem functioning;
  - c. include integrated stormwater/rainwater management planning;
  - d. identify a network of ecosystems that exist within the watershed;
  - e. identify isolated ecosystems and establish or enhance corridors, connections, and linkages with larger ecosystem networks; and

<sup>2</sup> Measures a. to c. may involve an ecological gift as defined by Environment Canada and may have a tax benefit for the donor. See [http://www.cws-scf.ec.gc.ca/ecogifts/intro\\_e.cfm](http://www.cws-scf.ec.gc.ca/ecogifts/intro_e.cfm). If measures a. and b. involve subdivision, the dedication may qualify for an expedited subdivision if it meets the requirements of s.99 of the *Land Title Act*.

- f. promote connectivity between, and discourages fragmentation of, contiguous ecosystems and ecosystem components to preserve landscape diversity, and allow wildlife use, movement, and dispersal;
  - g. provide detailed maps of sensitive ecosystems.
9. Implement riparian area, streamside, and watercourse protection measures to provide habitat protection for fish and wildlife.
  10. Encourage and codify in [local government] bylaws alternative design standards and best management practices for new developments that maintain ecosystem functioning and decrease impervious surfaces.
  11. Encourage the narrowing of road widths to decrease the land area required for roads and minimize municipal maintenance costs.
  12. Design sites so that the natural hydrological cycles (hydrographs) are maintained during and after development.
  13. Minimize the amount of impervious surface and encourage groundwater recharge using rainwater management based on infiltration, narrower road widths, vegetated swales, and pervious paving material.
  14. Undertake research to determine the limits on impervious surfaces necessary to satisfy the needs of urban growth, to maximize groundwater recharge, and to minimize pollution.
  15. Investigate impervious surface reduction strategies to minimize development-related rainwater runoff impacts on the green infrastructure and on the need for hard infrastructure.
  16. Prohibit the discharge of unmanaged rainwater into watercourses.
  17. Design building, infrastructure, and other development so that established native vegetation, particularly trees, can be retained, with enough distance to protect the root system. The tree's "drip line" (the extent of the branches) can be used as an approximate guide to the area of root systems.

### Incentives for Environmental Protection

18. Encourage voluntary placement of conservation covenants, dedication of land, or voluntary changes in zoning to protect sensitive ecosystems, by considering increased density on the balance of the subject property, an amenity bonus for another property, trading land, purchasing land, offering grants-in aid, or granting tax exemptions.
19. Exempt eligible riparian property from property taxes if a property is subject to a conservation covenant registered under section 219 of the *Land Title Act*.
20. Allow the owner(s) of land affected by dedications for environmental protection to use the original site area in computing density and floor area ratios and minimum areas for development or subdivision purposes.

21. Support conservation organizations to secure important habitat by means of acquisition, conservation covenants, or other stewardship agreements for conservation purposes.

### Cluster Development

22. Encourage cluster forms of development to reduce the amount of land affected by residential growth when the permitted number of units is clustered on part of the site and the remaining area or adjacent important habitat is protected in its natural state, and consider alternatives such as comprehensive development zones, density averaging, or other methods to achieve this purpose. A proposal for cluster development should clearly demonstrate and articulate how it satisfies principles of environmental, economic, and social development sustainability and meets the following conditions:
  - a. the total area of land to be subdivided, excluding undevelopable land such as land in the Agricultural Land Reserve, watercourses and leave areas, sensitive ecosystem slopes in excess of 3:1 (30%) divided by the number of lots to be created, is no greater than the density permitted under the zoning bylaw,
  - b. the parcel configuration and sizes are adequate to accommodate buildings and structures appropriate to the intended use and in compliance with the zoning bylaw,
  - c. a restrictive covenant is registered in the name of the [local government] against the title to the land at the time of registration of the subdivision, prohibiting the further subdivision of the original parcel(s) under covenant,
  - d. the [local government] approves a long-term management plan, including responsibilities and actions, for the future management of the remaining protected area

If the cluster development proposal includes additional conservation measures or provision of amenities, the Director of Planning may recommend that the [local government] consider a comprehensive development zoning bylaw.

23. Density or amenity bonus guidelines and procedures are hereby established in Appendix [ ] to this plan [see final section below].

### Encouraging Stewardship and Private Conservation

24. Encourage voluntary protection of natural features in cases in which it is an objective of the [local government] to protect land (for watercourse conservation, water quality protection, or habitat preservation) in excess of that which is required to be protected by virtue of municipal and senior government regulations,

25. Encourage the protection, preservation, enhancement, and management of sensitive ecosystems, or land contiguous to sensitive ecosystems through the following methods<sup>3</sup>:
  - a. encouraging conservation organizations to secure priority habitat by purchase, conservation covenant, or other options, including the use of amenity density bonusing;
  - b. encouraging the donation of the areas to the [local government] or the Crown;
  - c. encouraging the donation of the areas to a Land Trust organization or conservation organization eligible to receive land under the Federal Ecological Gifts Program;
  - d. encouraging the amalgamation of lots outside the urban containment boundary;
  - e. establishing conservation covenants under the *Land Title Act*;
  - f. acquiring statutory rights-of-way under the *Land Title Act*;
  - g. entering into long-term leases for the area;
  - h. encouraging private land stewardship and participation in stewardship or conservation initiatives; and
  - i. granting tax exemptions.
26. Develop guidelines or a handbook of best practices for mitigating loss of wetland, wildlife habitat, and indigenous vegetation areas such as grasslands.
27. The [local government] will undertake, or assist other government agencies and community organizations in undertaking, to provide information through brochures, seminars, presentations, etc. to landowners of sensitive ecosystem lands and all residents of the [local government] on the importance of aquatic habitat and other sensitive ecosystems and ways in which they can help to preserve these important resources.
28. The City will support efforts of senior agencies and community organizations to restore damaged habitat and sensitive ecosystems.

### Public Use of Sensitive ecosystems

29. Heighten awareness of the ecological and economic importance of sensitive ecosystems by providing opportunities for public enjoyment of them in ways that respect their environmental sensitivity.
30. Limit recreational access into sensitive ecosystems to minimize impacts.

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<sup>3</sup> Methods a. to d. may involve ecological gifts as defined by Environment Canada and have tax benefits to the donor. See [http://www.cws-scf.ec.gc.ca/ecogifts/intro\\_e.cfm](http://www.cws-scf.ec.gc.ca/ecogifts/intro_e.cfm). If methods a. and b. involve subdivision, the dedication may qualify for an expedited subdivision if it meets the requirements of s.99 of the *Land Title Act*.

31. Limit public trails and public access points in watercourse leave strips and other sensitive ecosystems to locations where their presence will not compromise the habitat and ecological function of these areas.
32. Protect sensitive ecosystems within city parks by building public trails and access points so as not to compromise the ecological functions of these areas.
33. Link sensitive ecosystems through a watershed or neighbourhood “greenway” system that provides a viable wildlife and plant community corridor as well as a natural area for public enjoyment

### Zoning

34. Review and amend permitted uses in zones near sensitive ecosystems to prohibit or regulate uses that would have adverse impacts on the ecological function of the sensitive ecosystem.
35. Review and amend density, lot size, and site coverage regulations on a watershed basis to ensure that they maintain or enhance ecosystem functions, specifically hydrologic functioning.
36. Review and amend regulations for the siting, size, and dimensions of uses and buildings in zones adjacent to sensitive ecosystems to ensure that the uses will not compromise the sensitive ecosystem.
37. Ensure that protection and dedication of sensitive ecosystems is the priority amenity for any development that involves a density bonus.
38. Create cluster housing zones for residential areas adjacent to sensitive ecosystems to allow a tighter grouping of houses or multiple-unit buildings on the most buildable portions of a site in exchange for retaining a large portion of the land, such as a sensitive ecosystem, in a natural state.
39. Establish comprehensive development zones for complex sites within the UCSB development areas to enable careful site planning for conservation of sensitive ecosystems.

### **c) Watercourse/Wetlands Conservation**

1. Ensure that any uses, activities, and developments in a watershed that is connected to wetlands by hydrology or habitat do not negatively impact the health of wetlands and their functions.
2. New wetlands created as part of development activities will be included in the aquatic EDPA.
3. Establish integrated rainwater management policies that maintain the natural hydrology and natural environment of watersheds, groundwater, streams, and other waterbodies, including provisions that ensure the maintenance of minimum base watercourse flows.

4. Enact or amend a watercourse protection or environmental bylaw that prohibits or restricts anyone from polluting or obstructing or impeding the flow of a stream, creek, waterway, watercourse, wetland, waterworks, ditch, drain, or sewer and that imposes penalties for contravening the bylaw.
5. Require all streams to be maintained in an open state (not enclosed or covered over in a culvert or other engineered material).
6. Adopt a policy that limits the crossing of watercourses.
7. Establish a program to remove obstacles that impede the movement of fish, such as inappropriately designed culverts and watercourse crossings.
8. Study the feasibility of “day-lighting” watercourses that have been enclosed.

#### **d) Water Quality**

1. Protect water quality through best management practices for land development.
2. Use engineered wetlands to filter pollutants before they can enter streams or creeks.
3. Require the use of vegetated waterways and swales or other measures to prevent the movement of road salts and other contaminants into sensitive habitats.
4. In areas of significant pavement, ensure that pollutants such as oil and other hydrocarbons are removed by oil/water separators before they enter the groundwater or streams.
5. Enact or amend watercourse protection provisions in bylaw format that:
  - a. restrict the polluting or obstructing or impeding of the flow of a stream, creek, waterway, watercourse, water body (including wetlands), waterworks, ditch, drain, or sewer and impose penalties for contravening the prohibition;
  - b. establish a maximum percentage of lot or watershed areas that can be covered by impermeable material, particularly adjacent to sensitive ecosystems;
  - c. establish standards for drainage works for the ongoing disposal of surface runoff and stormwater from paved areas and roof areas during and after construction to maintain natural runoff volumes and water quality
6. Require erosion and sediment control plans before construction begins.
7. Require the construction and stabilization of runoff management systems at the beginning of site disturbance and construction activities.

8. Minimize disturbed areas and the stripping of vegetation and soils, particularly on steep slopes.

#### **e) Commercial Parking Areas**

1. All surface parking area shall be planted with a minimum of one tree every six spaces.
2. Parking stall rows will be separated by vegetated curbless islands set below pavement grade and landscaped to provide bioretention and conveyance of parking lot runoff.
3. Pavement edges must allow free flow of water from grass areas or filtration swales. Soil must be between two and three inches below pavement level in order to prevent water damming by the turf.
4. The islands will drain to widening at the ends of each row, where landscaped islands with tree clusters will be provided.
5. Tree species will be selected from those listed in Table [ ] such that at maturity the tree canopy will cover a minimum of [e.g., 35%] of the parking lot area.
6. Commercial sites will complete percolation tests for every 5,000 square metres of development or a minimum of two percolation tests for each site to determine the soil infiltration capacity.
7. Infiltration devices with the following minimum characteristics will be installed for every 100 square metres of development: e.g., minimum contact areas 6.3 metres, minimum storage volume 2 cubic metres.

#### **f) Partnerships**

1. The [local government] will provide leadership in the development and implementation of a long-term strategy to acquire priority sensitive ecosystems, including:
  - a. acquiring and preserving sensitive ecosystems as part of local parks programs;
  - b. identifying acquisition priorities in co-operation with non-government and government conservation organizations;
  - c. identifying priorities for protection through development permit, rezoning, subdivision, and other regulations; and
  - d. acquiring additional lands that focus and limit the spatial growth of communities and provide a natural landscape setting for a community.
2. Establish intergovernmental partnerships with senior governments to facilitate a “one-window” approach to planning and approvals.
3. Implement stewardship awareness programs, in cooperation with senior governments, local conservation organizations, and schools, to increase public awareness and support for conservation of sensitive

and important ecosystems and existing sensitive ecosystems and to promote active stewardship and restoration activities.

4. Support and encourage individuals and community organizations to be involved in managing sensitive ecosystems, restoring and enhancing native habitats, planting native vegetation and appropriate trees and grasses, preventing erosion, and installing signs to inform and educate the public.
5. Support and encourage community organizations, landowners, and others to acquire and protect sensitive and important ecosystems.

#### **g) Environmental Impact Assessment**

1. Before issuing development approvals, [local government] will require an Environmental Impact Assessment (EIA) to be undertaken for areas in DPAs for protection of the environment and areas subject to an application for rezoning for high-impact uses. The purpose of the assessment is to review impacts on the environment of proposed uses and to identify or recommend any necessary development monitoring and mitigation measures.
2. Appropriate inventories will be conducted prior to the completion of the EIA to substantiate the findings of the EIA.
3. Some of the key considerations to be addressed through the EIA process include:
  - a. protection of watercourses, including ephemeral and permanent watercourses. Note that the principal watercourses are designated in Map [ ]; however, this only represents a landscape level of designation. More detailed on-the-ground assessment of the actual protection area is still required.
  - b. preservation of other sensitive habitats, including grasslands, mature and old growth forests, ecologically sensitive rock outcrops, and connections between them.
  - c. preservation of functioning ecosystems, including conservation areas, buffers, and wildlife movement corridors.
  - d. appropriate mitigation measures to minimize impacts on habitat.
  - e. use of covenants, riparian area park dedications, private amenity area designations, or other appropriate measures to address the preservation of ecologically sensitive areas within the development blocks.
4. The EIA must meet the development permit requirements for mitigation, compensation, protection, or replacement to ensure the maintenance of ecological features and ecosystem functioning.

#### **ENVIRONMENTAL IMPACT ASSESSMENT**

**This section on official community plan policies is adapted from the Maple Ridge OCP p.32; Campbell River OCP pp.9(1-2); Kelowna OCP p.7-8; and Penticton Northeast Sector Plan pp.29, 30.**

#### **SECURITY**

**This section on security was adapted from Regional District of Central Okanagan Westside OCP Section 19 p.1 and the Kelowna OCP p.7-10**

## GUIDELINES FOR AMENITY ZONING APPLICATIONS

**This section on amenity/density bonusing is adapted from the Salt Spring Island OCP, Appendix H, and the Highlands OCP, including Appendix A.**

### h) Security

Require as part of the development permit process funding through bonding to ensure the completion of landscaping and environmental rehabilitation, or to address damage to the environment caused by development activity.

### i) Amenity Density Bonusing

## Appendix [ ] – Guidelines for Amenity Zoning Applications

### General

In this Plan amenity bonus and density bonus mean allowing owners to develop land at an increased density or bonus over existing zoning in exchange for the owner providing a priority amenity to the community.

Applications for amenity zoning should propose a density level that does not exceed the amenity bonus target density levels outlined in this Plan, as depicted in Map [ ]. The amenity bonus target density levels are not more than a [e.g., 25%] increase over base zoning levels depicted in the land use map [ ]. Note that density bonus is not available for some properties or areas where increased density would not be appropriate.

In only very limited circumstances will the [local government] allow density bonuses on land that is outside the UCSA. Land that is outside the UCSA may be acquired and protected as the amenity part of the density bonus, but the development will usually occur inside the UCSA. Density bonuses for land outside the UCSA will only be considered when:

- there are significant ecological benefits to entering into a density bonus scheme;
- the development is clustered, maintains the rural character of the area, and has no significant environmental impact;
- all of the development can be serviced by one new road.

Applications for amenity zoning should show that one of the eligible community amenities listed in Section [ ] will be provided in exchange for the higher density level being requested. Eligible amenities are listed in order of importance. The [local government] will give the highest priority to applications that offer protection of the sensitive ecosystems identified in Map [ ]. However, this priority list should not prevent the [local government] from considering applications that provide amenities below the number one priority if a unique opportunity to do so arises.

The [local government] should ensure that the total number of additional dwelling units allowed in exchange for community amenities in the [local government] does not exceed [ ].

Amenity Zoning applications should be consistent with other policies of this Plan regarding rezoning.

Amenity Zoning applications should be accompanied by a site plan that shows how additional building sites and accesses will be designed to minimize the impact on the surrounding neighbourhood.

### Eligible Community Amenities<sup>4</sup>

The [local government] will consider Amenity Zoning applications that provide the following eligible community amenities:

1. dedication of sensitive ecosystems to a public body or private conservation organization;
2. restoration of degraded habitat and ESAs;
3. registration of conservation covenants on significant ESAs;
4. land for affordable housing provided to a public body or non-profit housing provider,
5. etc.

The [local government] will consider applications that would provide either a maintenance annuity or funds in trust for the purchase or development of all or part of an eligible community amenity.

### Guidelines for Amenity and Density Value Exchanges

The dollar value of the community amenity provided should usually approximate 60% of the net appraised value that accrues to the property owner due to the increased density.

Applications to exchange higher density levels for community amenities are to be made as a rezoning application.

Detailed specifications of the community amenity to be provided are to be included in the rezoning application.

When a third party will be required to operate and maintain a community amenity, the application should be accompanied by a written agreement from that party to accept and maintain the amenity for the intended use. Restrictive covenants will be required to ensure that the amenity is used as intended. Parties chosen to hold an amenity should be public bodies or well-established non-profit groups with a mandate consistent with the amenity provided.

Applications should be accompanied by an appraisal that shows the net increase in value expected to accrue to the property owner as a result of the increased density level being requested.

If the [local government] adopts a rezoning bylaw that permits the exchange of higher density levels for a community amenity, it should review the bylaw annually to find out if the proposed amenity has been provided. If it has not been provided, the [local government] committee should consider whether the bylaw is still consistent with community objectives. The committee could

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<sup>4</sup> The amenities within this list are in order of priority.

consider withdrawing the bylaw if it would no longer provide an amenity needed by the community.

When a community amenity is provided in exchange for extra density, the amenity must be provided or legally guaranteed before or at the time of development of the extra density.

Community amenities provided in exchange for a higher level of density should be identified with a plaque that outlines the nature of the amenity/density exchange. If the amenity is intended for public use, then the hours of operation and the body responsible for operation and maintenance should also be identified.

## 15.5 Appendix E – Zoning Bylaw Provisions

### 15.5.1 General Provisions

#### Density Calculations

1. If a lot contains a watercourse, the watercourse DPA is not to be included in the area of the lot for the purposes of calculating permitted lot coverage or units per hectare.
2. If land is dedicated for environmental conservation or stewardship purposes, the regulations in this bylaw dealing with lot coverage and the minimum lot area required for particular uses are to be applied to the lot as if the land had not been dedicated.

#### Setbacks and Use of Sensitive Ecosystems

3. The setback adjacent to ponds, lakes, and wetlands identified in Schedule [ ] shall include the bed and area between the water's edge and a perpendicular line inland 30 metres (49.2 feet) from the wetland boundary.
4. The setback adjacent to the sea shall include that area between the water's edge and a perpendicular line inland 30 metres (49.2 feet) from the natural boundary.
5. The setback on each side of the main stem of the Green, Blue and Red Rivers shall include that area between the centre of the river and a perpendicular line inland 30 metres from the top of the bank.
6. The setback on each side of all other creeks, rivers, and streams identified in Schedule [ ] shall include that area between the centre of the creek, river, or stream and a perpendicular line inland 15 metres (24.6 feet) from the top of bank.
7. No building, structure, road, parking lot, driveway, patio, games court, or other impermeable surface shall be located within a setback.

#### Parcel Size

8. The depth of each parcel created by subdivision that abuts a watercourse DPA shall be at least 20 metres from the watercourse DPA.

#### Impermeable Surfaces

9. This section applies only to lots in R (Residential) districts for which an application for a building permit has been made after July 1, 2005 for the construction of a new principal building, whether on new or existing building foundations.
10. Impervious materials shall not cover more than 60% of the total area of a lot to which this section applies.

#### **GENERAL PROVISIONS**

**This section on density calculations was adapted from the Salt Spring Island Land Use Bylaw.**

#### **SETBACKS AND USE OF SENSITIVE ECOSYSTEMS**

**This section on setbacks and buffers for sensitive ecosystems was adapted from the Nanaimo Zoning Bylaw, Salt Spring Island Land Use Bylaw, and Stewardship Bylaws: A Guide for Local Government.**

#### **IMPERMEABLE SURFACES**

**This section on impermeable surfaces is adapted from the Burnaby Zoning Bylaw section 6.24 and the Saanich Zoning Bylaw Section 7.7(c) p.7-6.**

## PROTECTION OF SENSITIVE ECOSYSTEMS

**This section on single-family residential gross density zone was adapted from the Surrey Zoning Bylaw, Part 17, RF-G Zone Single Family Residential Gross Density Zone.**

11. In this section “impervious materials” include:
  - a. buildings and structures;
  - b. asphalt;
  - c. concrete;
  - d. grouted pavers;
  - e. subject to subsection (f), ungrouted pavers having a surface area on their largest face of more than 0.21 m<sup>2</sup> (2.25 sq.ft.);but do not include:
  - f. ungrouted pavers having a surface area on their largest face of not more than 0.372m<sup>2</sup> (4 sq. ft.) arranged in a line of single pavers to form a pedestrian walkway with a permeable gap between the pavers;
  - g. water surfaces of structures designed to retain water, including swimming pools, reflecting pools, and ornamental ponds.
12. Permeable paving shall be approved by a professional engineer in the form of a stormwater/rainwater management plan and approved by the [delegate] to adequately address the hydrological functioning of the development, including addressing all surface runoff and subsurface water flows through infiltration into appropriate soils, landscaped areas, conventional storm drain systems, or a combination of the above.
13. If an approved design of a permeable paving surface directs surface runoff onto landscaped areas, the requirement for continuous non-mountable concrete curb and gutter in Sections [ ] of the Zoning Bylaw shall not apply.

### 15.5.2 Protection of Sensitive Ecosystems

Single Family Residential Gross Density Zone (RF-G)

#### A. Intent

This zone is intended for single-family housing on small urban lots, with substantial public open space set aside within the subdivision. This zone shall be considered only if there are special amenities such as grasslands, mature vegetation, watercourses, or other landscape or heritage features worthy of preservation or if the lot can contribute open space to a park designated in the Official Community Plan.

#### B. Permitted Uses

Land and structures shall be used for the following uses only, or for a combination of such uses:

- a. one single-family dwelling.

## C. Lot Area

The minimum site area for subdivision shall be 1 hectare [2.5 acres], except in the case of a remainder lot, when the lots, including the remainder lot, created by the same plan of subdivision are zoned RF-G.

## D. Density

1. For the purpose of subdivision:
  - a. in the Urban Containment and Servicing Area as described and outlined on the maps attached as Schedule [ ] attached to this by-law, the maximum density shall not exceed 5 dwelling units per hectare [1 u.p.a.]. The density may be increased to 20 dwelling units per hectare, calculated on the basis of the entire lot, if amenities are provided in accordance with Schedule [ ] of this by-law.
2. The maximum density of development may be increased from 20 dwelling units per hectare [6 u.p.a.] to 25 dwelling units per hectare [7.5 u.p.a.], both calculated on the basis of the entire lot, provided:
  - a. open space in an amount of not less than [e.g., 15%] of the lot area is preserved in its natural state or retained for park and recreational purposes;
  - b. the said open space shall contain natural features such as grasslands, a watercourse, stands of mature trees, or other land forms worthy of preservation, and/or contain heritage buildings or features, and/or contribute to a park designated in the Official Community Plan; and
  - c. the said open space shall be accessible by the public from a highway.
3. Undevelopable areas may be included in open space set aside in Sub-section 2(b); however, this undevelopable area shall be discounted by [e.g., 50%].
4.
  - a. For the purpose of this section and notwithstanding the definition of floor area ratio (FAR) in Part 1 Definitions of this by-law, all covered areas used for parking shall be included in the calculation of floor area ratio unless the covered parking is located within the basement.
  - b. For building construction within a lot, the floor area ratio shall not exceed 0.55, provided that, if an accessory building is greater than 5 square metres [50 sq. ft.] in size, the area of the resulting allowable floor area in excess of 5 square metres [50 sq. ft.] shall be included as part of the floor area for the purposes of calculating floor area ratio.

## **IMPERVIOUS AREA COVERAGE**

**This section on impervious area coverage is adapted from the impervious materials provisions of s. 4.8 of the RS-1 District Schedule of the City of Vancouver's Zoning and Development By-law as at August 15, 2006.**

<http://www.city.vancouver.bc.ca/commsvcs/bylaws/zoning/RS-1.PDF>

## **CLUSTERING**

**This section on clustering was adapted from the Salt Spring Island Land Use Bylaw.**

### 15.5.3 Impervious Area Coverage

1. The maximum site coverage for buildings shall be [e.g., 40%] of the site area.
2. For the purpose of this section, site coverage for buildings shall be based on the projected area of the outside of the outermost walls of all buildings and shall include carports and balconies, but exclude steps and eaves.
3. Except when the principal use of the site is a parking area, the maximum site coverage for any portion of the site used as parking area shall be [e.g., 10%].
4. The area of impermeable materials, including building coverage, shall not exceed [e.g., 40%] of the total site area, except as provided in s. 5, below. In no case will the area of impermeable materials exceed [e.g., 70%] of the total site area.
5. The area of impermeable materials may exceed [e.g., 40%] of the total site area (up to a maximum of [e.g., 70%]), if infiltration measures are taken to reduce the effective imperviousness of the site to be less than the effect of [e.g., 40%] of the total site area being covered in impermeable materials.
6. For the purposes of sections 4 and 5, the following materials shall be considered impermeable: the projected area of the outside of the outermost walls of all buildings, including carports, garages, accessory buildings, covered porches, and entries; asphalt; concrete; brick; stone; and wood.
7. Notwithstanding section 5, gravel, river rock less than 5 cm in size, wood chips, bark mulch, sand-set pavers, and other materials, which in the opinion of the Director of Planning have fully permeable characteristics when installed on grade with no associated layer of impermeable material (such as plastic sheeting) that would impede the movement of water directly into the soil below, are excluded from the area of impermeable materials.

### 15.5.4 Clustering

#### General Provisions

1. Subdivisions must comply with the minimum and average lot area regulations set out in Part [ ] (regulations for specific zones) of this bylaw, except that a park to be dedicated upon deposit of the subdivision plan need not comply with those regulations.

2. For the purposes of this bylaw, average lot area in a proposed subdivision is:
  - a. the sum of:
    - i. the areas of the proposed lots, plus
    - ii. the area of land dedicated for parkland or [other public uses], plus
    - iii. the area of land dedicated for environmental stewardship purposes
  - b. divided by:
    - i. the number of proposed lots.
3. If a lot is proposed that contains or includes a watercourse, the area of the proposed lot is to be calculated as if it does not include the Streamside Protection and Enhancement Area.
4. If a lot is proposed that contains or includes a sensitive ecosystem, the area of the proposed lot is to be calculated as if it does not include the sensitive ecosystem.
5. If a subdivision is proposed that yields the maximum number of lots permitted by the applicable minimum and average lot areas specified by this bylaw, and if one or more of the lots being created has an area equal to or greater than twice the applicable average lot area, the applicant must grant a covenant complying with Section [ ] of this bylaw for every such lot, prohibiting further subdivision of the lot.
6. If a subdivision is proposed that yields fewer than the maximum number of lots permitted by the applicable minimum and average lot areas specified by this bylaw, and:
  - a. one or more of the lots being created has an area equal to or greater than twice the applicable average lot area, and
  - b. one or more of the lots being created has an area less than the applicable average lot area, the applicant must grant a covenant complying with Section [ ] of this bylaw for every lot referred to in Section (1) above of this bylaw prohibiting the subdivision of the lot so as to create a greater total number of lots by subdivision and re-subdivision of the original lot than would have been created had the first subdivision created the maximum number of lots permitted by the applicable minimum and average lot area specified by this bylaw.
7. If the approval of a bare land strata plan would create common property on which this bylaw would permit the construction of a residential dwelling unit or seasonal cottage if the common property were a lot, the applicant must grant a covenant complying with Section [ ] of this bylaw for the common property prohibiting the further subdivision of the common property, the construction of any residential dwelling unit or seasonal cottage on the common property, and the disposition of the common property separately from the strata lots.

**CLUSTER  
RESIDENTIAL ZONE  
(RC) AND AMENITY  
DENSITY BONUS**

**This section on cluster residential zone and density/amenity bonus was adapted from Surrey Zoning Bylaw, Cluster Residential Zone, Part 15A RC and Stewardship Bylaws: A Guide for Local Government.**

## Cluster Residential Zone (RC) and Amenity Density Bonus

### A. Intent

This zone is intended to accommodate and regulate the development of family-oriented housing on a large site, in the form of single-family dwellings or duplexes on individual lots or in the form of ground-oriented multiple-unit residential buildings with substantial public open space set aside within the development site in accordance with a comprehensive design. This zone shall be considered only if there are special amenities such as grasslands, mature vegetation, watercourses, sensitive ecosystems, or other landscape or heritage features worthy of preservation, or if the site can contribute open space to a park designated in the Official Community Plan or the site is impacted by slopes or incompatible uses.

### B. Permitted Uses

Land and structures shall be used for the following uses only, or for a combination of such uses, provided such combined uses are part of a comprehensive design:

- a. single-family dwellings on individual lots.
- b. duplexes on individual lots.
- c. ground-oriented multiple-unit residential buildings, or a combination of ground-oriented multiple-unit residential buildings, duplexes, and single-family dwellings.
- d. mixed-use Residential/Commercial on up to [e.g., 10%] of the property.

### C. Lot Area

The minimum lot area for subdivision shall be 1 hectare, except in the case of a remainder lot, where the lots, including the remainder lot, created by the same plan of subdivision are zoned RC.

### D. Density

1. For the purpose of subdivision:
  - a. in lands within the Urban Containment and Servicing Area as described and outlined on the maps attached as Schedule [ ] attached to this bylaw, the maximum unit density shall not exceed five units per gross hectare. The maximum unit density may be increased to eight dwelling units per hectare calculated on the basis of the entire lot, if amenities are provided in accordance with Schedule [ ] of this bylaw;

2. The maximum unit density may be increased from five dwelling units per hectare to 12 dwelling units per gross hectare on the basis of the entire lot, provided that:

a. open space is preserved in its natural state or retained for park and recreational purposes as follows:

Type I Single-Family Dwellings 50% of the site area for subdivision;

Type II Single-Family Dwellings and Duplexes 70% of the site area for subdivision;

Type III Ground-Oriented Multiple-Unit Residential Buildings 80% of the site area for subdivision;

Type IV Mixed-Use Residential/Commercial 80% of the site area for subdivision.

A combination of Types I, II, and III above 50% to 80% of the site area for subdivision.<sup>5</sup>

b. the said open space shall contain natural features such as a watercourse, grasslands, stands of mature trees, or other land forms worthy of preservation, and/or contain heritage buildings or features, and/or contribute to a park designated in the Official Community Plan; and

c. the said open space shall be accessible by the public from a highway.

3. Undevelopable areas may be included in the open space set aside in subsection 2(a).

4. a. For the purpose of this section and notwithstanding the definition of floor area ratio (FAR) in Part 1 Definitions of this bylaw, all covered areas used for parking shall be included in the calculation of floor area ratio unless the covered parking is located within the basement; and

b. For building construction within a lot created under this zone, the maximum floor area ratio shall be as follows<sup>6, 7</sup>:

Type I Single-Family Dwellings 0.45

Type II Single-Family Dwellings and Duplexes 0.50

Type III Ground-Oriented Multiple-Unit Residential Buildings 0.50

Type IV Mixed-Use Residential/Commercial 0.50

<sup>5</sup> The amount of open space shall be calculated in proportion to the housing types

<sup>6</sup> For Type I and Type II, the maximum floor area ratio is based on the lot area on which the single-family dwelling is constructed, provided that, of the resulting allowable floor area, 10 square metres [100 sq. ft.] shall be reserved for use only as a garage or carport and further provided that if any accessory building is greater than 10 square metres [105 sq. ft.] in size, the area in excess of 10 square metres [105 sq. ft.] shall be included as part of the floor area for the purpose of calculating floor area ratio.

<sup>7</sup> For Type III, the maximum FAR is based on the development area, excluding all the open space set aside in Subsection 2(a).



## 15.6 Appendix F – Development Permit Areas Bylaw Provisions

Please note that the example of aquatic and terrestrial EDPA designation and guidelines is used here. A more rigorous approach is to tailor guidelines to each sensitive ecosystem class (see Appendix A for a complete list of ecosystem classes and subclasses in B.C.). A few example guidelines based on ecosystem classes from the Ellison OCP of the Regional District of Central Okanagan are set out here as illustrations<sup>8</sup>.

### 15.6.1 Designation and Exemption in OCP

1. Development permit areas (DPAs) for protection of the natural environment are established (see Map [ ] and the guidelines in Appendix [ ]). Except where exempted in this bylaw, no development may occur in that area without first obtaining a development permit that tailors the proposed activities to ecosystem conditions. The DPA also establishes no development zones and buffers around sensitive ecosystems.
2. Unless the proposed development is clearly outside environmentally sensitive land in the DPA, the location of the development shall be determined accurately by survey in relation to the [name] DPA to determine whether a development permit application is required. The applicant shall retain a Qualified Professional and provide the survey to the [local government] at the applicant's cost.

OR

The Environmentally Sensitive Development Permit (ESDP) Area is comprised of:

1. Important habitat areas for wildlife habitat and plant communities, included in the "Habitat Atlas for Wildlife at Risk, South Okanagan & Lower Similkameen," Ministry of Environment, Lands and Parks, 1999, and in the "Electoral Area 'A' Sensitive Ecosystem Inventory," Ministry of Water, Land and Air Protection, 2003, and identified in Schedule D; and
2. Leave areas for fish habitat, which include all watercourses and adjacent land in:
  - a. Rural and Low Density Residential designations, and Administrative and Open Space designations;
    - i. within 15 metres (49.2 feet) from the natural boundary of the watercourse, and,

<sup>8</sup> See also the Regional District of Central Okanagan Terms of Reference – Professional Reports for Planning Services <http://www.regionaldistrict.com/docs/planning/Handout%20ToFR.pdf>; and City of Nanaimo Watercourse Development Permit Guidelines process, application requirements, and criteria for assessing potential impacts in the EDPA <http://www.wcel.org/issues/urban/sbg/Part6/usewisely/DPA/Nanaimo-Guidelines.pdf>.

#### **DESIGNATION AND EXEMPTION IN OCP**

**This section on designation is adapted from the Regional District of Central Okanagan Westside OCP Section 19 p.6; Campbell River OCP pp.9(4-5); Nanaimo OCP; and Oliver Rural OCP p.46.**

**This final designation option is found in the Okanagan Similkameen Regional District Rural Osoyoos OCP and is a detailed development permit area designation.**

- ii. within 15 metres from the top of the bank where a bank is within 15 metres of the natural boundary of the watercourse, or in
- b. Medium Density Residential, Commercial and Industrial designations;
  - i. within 30 metres (98.4 feet) from the natural boundary of the watercourse, and,
  - ii. within 30 metres from the top of the bank where a bank is within 15 metres of the natural boundary of the watercourse, and identified in Schedule [ ].

The following development activities are allowed to occur in this DPA without a development permit.

1. Emergencies: Procedures to prevent, control or reduce flooding, erosion or other immediate threats to life or property do not require a development permit, including:
  - a. emergency flood or erosion protection works;
  - b. clearing of an obstruction from a bridge, culvert or drainage flow; and
  - c. repairs to bridges or safety fences.

Emergency actions for flood protection and clearing of obstructions by anyone other than city staff must be reported to the Public Works Department immediately.

2. Hazardous trees: Cutting down of hazardous trees that present an immediate danger to the safety of persons or are likely to damage public or private property, as determined by the [local government] arborist or indicated in a report by an arborist certified in B.C.
3. Subdivision: A development permit is not required for subdivision of lands containing a leave strip where:
  - a. minimum lot areas are met exclusive of the DPA/setback, as required under the Zoning Bylaw;
  - b. no development activities (such as grading, clearing, trenching, installation of pipes, etc.) relating to the creation of lots or provision of services for those lots will occur in the DPA; and
  - c. all requirements made under the Subdivision Control Bylaw for identifying and marking watercourses, natural boundary, top of bank and other watercourse related features are met.

A development permit is also not required for the construction of a [local government]-approved trail within the leave strip where this is proposed as part of subdivision, provided trail design and construction meets [local government] standards specified in the subdivision approval. Restoration or enhancement of the leave strip, particularly where the leave strip may have already been impacted by previous development activities, may be a condition of subdivision approval.

4. Revegetation: A development permit is not required for the planting of trees, shrubs, or groundcover for the purpose of enhancing the habitat values and/or soil stability within a WDPA/leave strip provided such planting is carried out in accordance with guidelines provided by the City.
5. A development permit of this type has already been issued or a covenant dealing with aquatic ecosystem issues is registered on property title for the area in the past, and the conditions in the development permit or covenant have all been met, and the conditions addressed in the previous development permit or covenant will not be affected.
6. Where the Development Permit Area is fenced in a way acceptable to the Director of Planning in order to prevent any accidental disturbance, and, there is a permanent protection of the DP area by means such as a restrictive covenant, return to Crown Land, provided as public park, or similar method acceptable to the Director of Planning.
7. Where, upon specific inspection of the site and to the satisfaction of the Director of Planning, the actual location of the [aquatic/terrestrial] ecosystem is not located upon the subject property.
8. The land is located within the Agricultural Land Reserve of the Province of B.C. and the activities are responsible, normal agricultural practices in accordance with the Farm Practice in BC Reference Guide (located at; <http://www.agf.gov.bc.ca/resmgmt/fppa/refguide/intro.htm>) in accordance with the *Farm Practices Protection Act*. Interpretation or disagreements will be resolved through the provisions of the Act. Activities not covered by the Act or Guide will require a development permit
9. Where a dock is to be constructed under permit issued by the Province of B.C. and is constructed in accord with provincial requirement.
10. There is change of use or renovation of a building in which the building “footprint” is not altered or increased.
11. The activity involves water management works conducted under the auspices of the Regional Water Manager.
12. The activity involves the environmentally sensitive removal of trees and shrubs designated as hazardous by a professional forester registered in B.C. in accordance with provincial “Firesmart” standards in a wildfire hazard report.
13. The activity involves the environmentally sensitive removal of trees and shrubs designated as host trees by the Sterile Insect Release Program as indicated in a report by an arborist certified in B.C. and experienced in standard agricultural practices.
14. The activity is conducted under direction of the Provincial Emergency Program.

## JUSTIFICATION

**This section on justification is adapted from the Whistler Protected Areas Network Draft VI p.36; Campbell River OCP pp.9(7-8); Regional District of Central Okanagan Westside OCP Section 19 p.6; Oliver Rural OCP (Electoral Area "C") Okanagan Similkameen Regional District p.46**

## 15.6.2 Justification

### a) Aquatic

The primary objective of this development permit area designation is to minimize the impact of development on the natural environment and hydrologic systems. The primary function of the development permit area designation is to ensure that decision makers have the ability to secure the necessary information and are able to establish conditions on development, so that fisheries and wildlife resources are protected and development impacts mitigated.

Riparian areas function as natural water storage and purifying systems for improved water quality and provide safe corridors for wildlife movement. The riparian areas of municipal waterways, drainages, and wetlands need to remain in a largely undisturbed state in order to protect habitat, prevent flooding, control erosion, reduce sedimentation, and recharge groundwater.

Wetlands are areas of land that characteristically have wet or saturated soils and are dominated by water-loving plants. Wetlands provide a specialized habitat for a diverse and unique set of species assemblages and are a vital link between upland and open-water aquatic environments. Wetlands perform a number of essential and varied natural functions that are significant in maintaining local biodiversity. Classes of wetlands that exist in [local government] include swamps, marshes, bogs, fens, estuaries, and similar shallow water areas that are not part of an active floodplain or stream.

Wetland areas of all sizes are a critical component of [local government]'s ecologically sensitive areas and have the highest level of protection. Wetlands are sensitive and important because they exhibit rarity, high biodiversity, fragility, specialized habitat, specialized functions, and connectivity. The ecological functions and rarity of wetlands require preservation of all remaining wetlands in [local government].

Wetlands form part of the "green infrastructure," a term gaining popularity that refers to the ecological processes, both natural and engineered, that provide economic and environmental benefits in urban and near-urban areas. Local governments are recognizing that green infrastructure often provides necessary municipal services at a lower cost than hard infrastructure, with the added advantage of aesthetic and recreational benefits. The green infrastructure includes:

- rivers, creeks, streams, wetlands, and ditches that retain and carry stormwater, improve water quality, and provide habitat;
- parks and greenways that link habitat and provide recreation opportunities;
- working lands such as agricultural, forested, and grassland areas;
- aquifers and watersheds that provide drinking water;
- engineered wetlands and stormwater detention ponds that retain stormwater and improve infiltration; and

- trees, rooftop gardens, and community gardens that clean air and cool urbanized areas in the summer.

## **b) Terrestrial**

The primary objective of this development permit area designation is to minimize the impact of development on the natural environment and ecologically sensitive and rare ecosystems. The primary function of the development permit area designations is to ensure that decision makers have the ability to secure the necessary information and are able to place conditions on development so that environmentally sensitive natural resources are protected and development impacts mitigated.

Terrestrial ecosystems are increasingly fragmented and habitat is lost due to increasing agriculture, urbanization, water use, forestry, and expansion of alien species (i.e., weeds). The ecosystems in jeopardy are grasslands, lower elevation forests, rugged terrain, etc.

Grasslands are open landscapes where grasses, or grass-like plants, are the dominant vegetation. Grasslands are generally found in arid areas where there is more precipitation than in deserts, but not enough to support forests, and where frequent, low-severity fires occur naturally. Although native grasses dominate the landscape, other plants such as forbes, wild flowers, and shrubs thrive in this environment. It is common to find grasslands interspersed with aspen and coniferous stands, wetlands, and small streams with lush riparian areas. The varied habitats found in grasslands support diverse forms of life. Ponds, wetlands, lakes, and streams punctuate the hills, valleys, and plateaus of grassland country to create an ecological mosaic. The riparian and treed areas, cliffs, rocky outcrops, and slopes combine to support a rich variety of both plants and animals.

Grasslands are one of the most endangered ecosystems in B.C. because the vast majority has been transformed into cropland, urban settings, and rangeland. Fragmentation of rural landscapes into ranchettes and residential/vacation homes poses a recent strong threat to the survival of native grasslands. Less than 1% of the British Columbia land base survives as grasslands, but that land is extremely important land to the biodiversity of the province. Grasslands support over 30% of the species at risk in the province.

Grasslands form part of the “green infrastructure,” a term gaining popularity that refers to the ecological processes, both natural and engineered, that provide economic and environmental benefits in urban and near-urban areas. Local governments are recognizing that green infrastructure is often less costly than hard infrastructure and offers aesthetic and recreational benefits. The green infrastructure includes:

- ditches, rivers, creeks, streams, and wetlands that retain and carry stormwater, improve water quality, and provide habitat;
- parks and greenways that link habitat and provide recreation opportunities;
- working lands such as agricultural, forested, and grassland areas;

## GENERAL PROVISIONS

**This section is adapted from the Regional District of Central Okanagan Westside OCP Section 19 pp.6-7 and Ellison OCP Appendix A-5; Kelowna OCP pp.7-13 to 14; Campbell River OCP pp.9(11-13); and the Okanagan Similkameen Regional District Rural Oliver OCP pp.46-48.**

- aquifers and watersheds that provide drinking water;
- engineered wetlands and stormwater detention ponds that retain stormwater and improve infiltration; and
- trees, rooftop gardens, and community gardens that clean air and cool urbanized areas in the summer.

### 15.6.3 General Provisions

1. In [Aquatic/Terrestrial] Development Permit Areas, a development permit must be approved before land is subdivided or development is undertaken.
2. For these guidelines, “development” means any of the following:
  - a. removal, alteration, disruption, or destruction of vegetation;
  - b. disturbance of soils;
  - c. construction, erection, or alteration of buildings and structures;
  - d. creation of non-structural impervious or semi-pervious surfaces;
  - e. flood protection works;
  - f. preparation for or construction of roads, trails, docks, wharves, and bridges;
  - g. provision and maintenance of sewer and water services;
  - h. development of drainage systems;
  - i. development of utility corridors; and
  - j. blasting.

### 15.6.4 Objectives

- a. Ensure an ecosystem approach to protecting and enhancing the environment.
- b. Protect and enhance watercourse ecosystems such as stream corridors, lake or pond edges, wetlands, and other riparian areas.
- c. Protect and enhance sensitive ecosystems such as grasslands, unique species, and mature old-growth forest.
- d. Support the movement of various species by connecting ecosystems through undisturbed open space corridors.
- e. Protect and enhance air quality, fish and wildlife habitat, and surface and ground water quality.
- f. Protect and enhance natural ecosystems, especially those that are rare or unique to the [region].
- g. No further loss of existing riparian, grassland, or [ ] habitat.

## 15.6.5 Guidelines

### a) Application

1. An environmental assessment should be prepared by a qualified professional biologist together with other professionals of different expertise, as the project warrants.

If wetlands, riparian areas, and broadleaf woodlands exist within the development area, hydrologists and hydro-geologists should be consulted to ensure the proper hydrological function is maintained within these ecosystems. A professional geoscientist should be consulted if there is erosion potential or slope instability. The consultant or team of consultants should have an understanding of wildlife biology, especially for species at risk, geomorphology, environmental assessment, and development planning in B.C. Specific expertise in [region] wildlife species, wildlife habitat, and ecosystems is highly preferred. (Note – There are provisions where undertaking some initial steps to protect the ecosystem may mean that a development permit and professional report will not be required. See Section [ ] of the Official Community Plan for the conditions when an EDPA is not required.)

2. As a condition of the development permit and in accordance with the environmental impact assessment for the project, the [delegate] may require monitoring of the development by a qualified professional such as a professional engineer or biologist.
3. Should damage occur to an environmentally sensitive area during development, the [local government] may require a professional assessment of the damage and a report on recommendations for rehabilitation.
4. Development design must reflect the objectives and guidelines of the “Standards and Best Practices for Instream Works,” “Land Development Guidelines for the Protection of Aquatic Habitat,” “Stormwater Management: A Guidebook for British Columbia,” and other best management practices guides produced by the provincial government.
5. An application for a development permit shall be accompanied by the following information:
  - a. detailed drawings or plans clearly describing the proposed structures and the materials and type of construction to be employed, including a cross section of the proposed structure and its layout on the ground;
  - b. a detailed description of existing structures near the proposed structure or area of work;
  - c. a detailed drawing or plan clearly describing any area of the removal of rock, gravel, or soil;
  - d. the reason and purpose of the work;
  - e. the name of the contractor, if any, who will do the work;

### **GUIDELINES**

**This section on guidelines was adapted from the Nanaimo Watercourse DPA Guidelines; and Regional District of Central Okanagan Ellison OCP Appendix A-7 and Westside OCP Appendix A-5 p.1**

**Refer also to the EDPA provisions on environmental impact assessment in Appendix H, page 205.**

- f. time required for completion in calendar days; and
- g. any further information required by the [delegate] to ensure compliance with this bylaw, including construction design or structural details of any part of the proposed works;
- h. an environmental impact assessment prepared by a qualified environmental professional that conforms with the [local government] Terms of Reference, including:
  - i. a description of the existing conditions of the site and an analysis of any adverse impacts of the proposed work on the environment during and after the work, having regard to such matters as the location of and topography of the work site and surrounding area, and the effects on the stream corridor or waterfront, including effects on: water quality and quantity; hydrology; fisheries; wildlife, tree and vegetation inventory; soils; climate; land use; recreation; aesthetics; and, human interest;
  - ii. a description of all federal and provincial environmental standards that apply to the proposed work during and after the work and during operations;
  - iii. evidence that all adverse environmental impacts during and after the work and once in operation will be insignificant or mitigated to insignificant levels by the work methods, design, and mitigation measures that will be used or incorporated into the work;
  - iv. a plan showing the replanting of vegetation in disturbed areas using approved species from those listed in Attachment [ ]; and.
  - v. a copy of any applicable federal or provincial approval.

**b) General**

1. Development within an EDPA will usually be considered only if historical subdivision or construction of structures has occurred before the designation of EDPAs and if:
  - a. an EDPA takes up so much of a pre-existing lot that it makes the lot undevelopable for the use permitted under its existing zoning, or
  - b. due to topographic, natural hazard, or other environmental constraints on the lot, there is no acceptable building site outside the EDPA, and
  - c. all opportunities to relax other development requirements (such as yard setbacks, minimum lot size, parking, etc.) have been exhausted.
2. The onus lies with the applicant to demonstrate that encroaching into an EDPA is necessary due to the above circumstances, in order to allow the use of a site as otherwise permitted under existing zoning.
3. To determine whether a proposed development is inside an EDPA, two things need to be done.

- a. Locate the WDPA boundaries on the ground; on any given site, this means:
  - i. locating the watercourse or sensitive ecosystem relative to the property lines;
  - ii. locating the top-of-bank (for creeks, streams, and rivers) or the natural boundary (for wetlands, ponds, lakes, and terrestrial sensitive ecosystems); and
  - iii. measuring the applicable leave strip or distance from that top-of-bank or natural boundary (see Schedule [ ] of the Official Community Plan to determine if this distance is 15 or 30 meters).

Unless all development activities will be clearly outside the EDPA, these determinations usually need to be made by a B.C. Land Surveyor (BCLS). However, they can be incorporated into the BCLS-certified site plan that is a standard requirement of any development proposal.

- b. Locate the proposed development relative to the EDPA boundaries; this means locating where proposed structures will be built and where soil or vegetation will be disturbed for yards, driveways, patios, walkways, etc. relative to the EDPA boundaries.
4. In considering how much encroachment into a EDPA should be allowed, the [local government] will weigh the applicant's need to encroach upon the watercourse leave strip or sensitive ecosystem against the potential impacts of the encroachment on the habitat.
  5. The applicant and [local government] will seek to vary other land use requirements under the Zoning Bylaw before, or where necessary along with, encroaching into the leave strip in order to minimize the encroachment. One or more of the following variances from existing Zoning Bylaw requirements may be applied:
    - a. front and/or rear-yard setback reductions.
    - b. site coverage increased by up to 50% of maximum.
    - c. maximum height increased by up to 3 metres.
    - d. parking requirement reductions.
  7. If the EDPA occupies more than 50% of a lot, the EDPA area may be reduced to occupy the equivalent of 50% of the lot. Variances of other Zoning Bylaw requirements indicated in the above guideline may also be applied.
  8. Retain mature vegetation wherever possible and incorporate it into the design of the project.

## **AQUATIC REQUIREMENTS**

**This section on aquatic requirements was adapted the Regional District of Central Okanagan Westside OCP Appendix A-5 pp.1-; Kelowna OCP pp.7-14 to 19; Campbell River OCP pp.9(8-11); Nanaimo Watercourse Development Permit Guidelines.**

9. Demonstrate that a diligent effort has been made in site design to:
  - a. preserve both the natural vegetation and tree cover or
  - b. restore historical forest densities and grasslands habitat for conservation and fire hazard purposes.
10. Incorporate park, trail, and wildlife and fish corridors to provide continuity between important habitats and leave areas.
11. Link EDPAs and other sensitive ecosystems to develop a continuous network of ecosystems.
12. Manage rainwater in accordance with the most recent integrated watershed management or rainwater policy and design manual. This includes managing rainwater on site and maintaining pre-development drainage flows.

### **d) Aquatic Requirements**

1. Encroachment into the EDPA by all development activities will not exceed that indicated in the site plan approved in the development permit. All development activities will avoid or minimize disturbance in the EDPA beyond the building footprint. This may mean adjusting conventional practices with respect to locating machinery and stockpiles relative to excavations, use of hand labour as opposed to machinery, etc.
2. Prior to any development activity, the boundaries of the EDPA and the extent of encroachment allowed by the development permit will be clearly marked with a bright orange or other highly visible temporary fence with a minimum height of 1.2 m (3.94 ft) and supported by poles a maximum distance from one another of 2.5 m (8.2 ft). This fence will remain in place throughout clearing, site preparation, construction, or any other form of disturbance.
3. The applicant must provide an erosion and sediment control plan that reflects measures prescribed in the "Land Development Guidelines for the Protection of Aquatic Habitat" (1992: note Section 3), "Stream Stewardship: a Guide for Planners and Developers" (1994: note pages 30-34), or other standards or guidelines adopted or approved by the [local government]. This plan will form part of the development permit.
4. As a general rule, clearing of land, grubbing, grading, and other activities that expose expanses of soil will be completed during the dry months of the year, usually June through September.
5. Sediment containment and erosion control measures will be installed prior to development activity.
6. Development will be avoided on slopes greater than 30% (approximately 7°) due to the high risk of erosion and bank slippage.
7. Existing trees and vegetation within the WDPA will not be disturbed except where allowed under this development permit.

8. To ensure their long-term health, all existing trees that are retained will be clearly marked prior to development, and temporary fencing will be installed at the drip line to protect them during clearing, grading, and other development activities.
9. When existing trees and vegetation are retained, the following are allowed:
  - a. pruning or removing of hazardous trees (as determined by the city arborist), but leaving wildlife trees and snags (dead, upright trees, or stumps) if safe.
  - b. pruning of undergrowth within 1 metre of existing or proposed public trails to avoid injury to users, but no disturbance of vegetation within 3 metres of the natural boundary of the watercourse.
  - c. supplementing existing vegetation with planted stock as needed to landscape bare or thin areas, following specifications of the following Guideline.
10. Replanting of disturbed areas or supplementing existing vegetation with planted stock in thin or bare areas of a leave strip will be required in accordance with the following:
  - a. replanting will use trees, shrubs, and ground cover native to the area and selected to suit soil, light, and groundwater conditions of the site and to promote habitat or erosion control functions as necessary.
  - b. individual trees will be replaced at the following ratios (developed by the Ministry of Environment, Lands and Parks):

TREE DIAMETER BREAST HEIGHT	# REPLACEMENT TREES	MINIMUM HEIGHT
1 – 151 mm (6")	2 or 4 shrubs for up to 50% of total trees being replaced	1.5 metres
152 – 304 mm (12")	3	1.5 metres
305 – 456 mm (18")	4	2 metres
457 – 609 mm (24")	6	> 2 metres
610 – 914 mm (36" or >)	8	> 2 metres

Species native to the area should be used. If needed, trees should be placed to enhance bank stability and provide cover to the watercourse.

- c. for wooded areas, clearing should not exceed 10% of the WDPA, should be confined to the outer portions of the WDPA, and must not be on slopes greater than 50% (27°). The same replacement ratio, average tree density, and site features as in the previous Guideline apply.
- d. a shrub layer will be provided for a minimum of 33% of the restoration area; shrubs will be planted at an average density of 1 metre apart and a minimum #2 pot size at time of planting.

- e. groundcover may be substituted for shrubs; if used, groundcover will consist of brush layers or planted groundcover species at a maximum average spacing of 0.5 metre with plants of minimum 10 cm pot size at time of planting.
  - f. areas not covered by trees, shrubs, or groundcover will be seeded with native herbaceous plants, grasses, or legumes.
  - g. all vegetation will be protected from intrusion by motor vehicles with a curb or other suitable protective barrier if roads, driveways, or parking areas abut the leave strip.
  - h. all planted stock will be maintained for a minimum of two years; within that time, any unsuccessful stock will be replaced at the owner's expense.
11. To replace portions of the leave strip that are permanently removed, remaining portions may be enhanced by supplementing existing vegetation, revegetating bare or thin areas, or by adding to (widening) the leave strip in other portions of the site not affected by the development.
  12. (Primarily for larger developments) EDPA or habitat enhancement in another portion of the same watercourse that is in need of restoration may be considered as compensation for habitat that is permanently displaced on a given site, but only as a last resort when options to avoid, mitigate, restore, or enhance on-site habitats are exhausted.
  13. EDPA boundaries will be indicated on the property and information will be provided to purchasers of the property on the importance of watercourse leave strips and activities that are not permitted within a leave strip without a development permit.
  14. Fencing to restrict access of livestock to watercourses will be installed where needed.
  15. Land development activities must be planned, designed, and implemented in a manner that does not disturb or fragment wetland ecosystems including:
    - a. wetland vegetation and structure;
    - b. rare or uncommon animals, wetland plants, or plant communities;
    - c. wildlife habitats such as breeding and nesting sites; and
    - d. soils and soil conditions.
  16. In order to maintain natural connectivity, avoid locating road and utility corridors along, parallel to, or across riparian ecosystems. If it can be demonstrated that alternatives are not possible, design crossings that are narrow and perpendicular to riparian areas and elevated in order to maintain natural connections may be considered.
  17. Protect the EDPA permanently with a conservation covenant. The [local government] encourages proposals that offer to register a covenant

on the title of the lands. The covenant will be registered before any development, including subdivision, and is intended to protect the watercourse and the nearby vegetation and to ensure that it remains in a natural and vegetated state and/or free of development. The covenant will be registered in favour of the [local government], other public agencies including the Province, or non-governmental organizations, such as a private land trust committed to the management of watercourses or streamside areas.

#### **f) Terrestrial Requirements**

The following general guidelines apply to all development permit applications in all ecosystems within Sensitive Terrestrial Ecosystem Development Permit Areas.

1. Before any alteration of land within the ESDPA, non-disturbance areas must be identified and fenced with a continuous barrier not less than 1.5 metres in height sufficient to protect the non-disturbance area from construction and development activity.
2. Within a non-disturbance area, trees and vegetation must not be cut, pruned, altered, removed, or damaged in any way other than minor damage incidental to the construction of the barrier under paragraph 2 above.
3. Within the ESDPA, development must not either increase or decrease the amount of surface and/or groundwater or affect the quality of water available:
  - a. within the non-disturbance area or
  - b. within the buffer area, other than development expressly permitted by the development permit within the buffer area.
4. Within a non-disturbance area, gravel, sand, soils, and peat must not be removed, and soil or other fill must not be deposited.
5. Within a non-disturbance area, vegetation that is not indigenous to [local government] must not be planted.
6. Within a buffer area, the alteration of land or the construction of structures approved through a development permit will be limited to those that are compatible with the characteristics of the non-aquatic ESA:
  - a. insulate the ecosystem from uses that would cause adverse effects;
  - b. avoid disturbance and removal of native vegetation by people;
  - c. emphasize native vegetation species compatible with the ecosystem;
  - d. deter grazing by livestock in sensitive ecosystem areas.
7. Within a buffer area, upon development approval, hard surfacing such as driveways and parking areas and soil deposits must be limited in order to be compatible with the characteristics of the non-disturbance area.

#### **TERRESTRIAL REQUIREMENTS**

**This section on terrestrial requirements was adapted from Regional District of Central Okanagan Westside OCP Appendix A-5 pp.1-5 (including tables A-5) and Ellison OCP Appendix A-7; Kelowna OCP pp.7-14 to 19 (including Table 7-1); Nanaimo OCP, and Campbell River OCP.**

8. Settlement, construction, land disturbance, and other development within or directly adjacent to sensitive terrestrial ecosystems will be discouraged.
9. Avoid the creation of isolated islands of ecosystems. Delineate corridors between sensitive terrestrial ecosystems to create interconnectedness, especially for critical wildlife travel routes.
10. Conserve snags and standing dead trees where safe to do so. Soft decaying wood is a valuable home and food source for many birds and animals. For some species, it is essential. Standing dead trees are typically topped to within 6 metres of the ground in an area that is safe should it eventually fall. It is recognized that dead wood decays over time and that the eventual removal of standing dead wood and snags is acceptable. Locate settlements, drives, construction, and other development away from existing large, old trees and snags. Artificial snags can be located in safe areas to help improve habitat.
11. Plan, design, and implement land development and subdivision to protect endangered, threatened, or vulnerable species or plant communities. Avoid disturbance to sites where rare plants are growing and where rare natural plant communities occur, and maintain critical habitat structures such as old trees, snags, trees with cavities, and natural grasslands.
12. Conserve trees in communities (groups of trees along with their associated understory) rather than isolating individual specimens. Groups of trees form a larger intact ecosystem and are more likely to maintain the important characteristics of the ecosystem over time than a few scattered trees. However, some ecosystems are characterized by or may contain some isolated trees and their conservation as well is important.
13. The conservation of tree's should extend beyond the drip line of the tree. The roots of established trees are very sensitive. A trees root system on the surface and below ground may be larger than the part of the tree you see above ground. Damage to the roots (especially in mature trees) can impede the tree's ability to obtain water and nutrition and may eventually kill the tree. The drip line is an imaginary line drawn around the tree(s) outside the full extent of the branches.
14. Prevent disturbance of nesting sites and breeding areas. It is important that animals have the habitat that supports their reproduction and so ensures future generations.
15. Restore native vegetation where it has been disturbed. The [local government] encourages applications that restore and enhance disturbed sensitive ecosystems to a natural condition.
16. Maintain connectivity and linkages with adjacent sensitive ecosystems and other habitat areas through the use of corridors and greenways to minimize fragmentation.
17. When development is considered in sensitive ecosystems, the [local

government] may use the following methods to prevent or minimize encroachment into the environmentally sensitive area:

- a. bare land strata to allow flexibility in conserving the feature or area;
- b. bonus density transfer, or density averaging, to the developable portion of the site;
- c. development variance permits to vary conditions other than use or density (such as front and/or rear-yard setbacks, increasing the maximum site coverage of buildings provided that density is not increased, increasing the maximum building height, reducing parking space requirements); and/or
- d. voluntary stewardship such as contracts, leases, or trusts to protect the feature or area.

### **f-1) Wildlife Habitat – Birds Nests/Trees**

Maintain a naturally vegetated “no disturbance” buffer of 60 metres, measured as a radius from the base of the nest tree. The distance may be reduced for shorter trees to a radius of 30 metres, provided that wind firmness of the tree is not compromised through grading or other disturbance, that all vegetation within this zone is retained, and that no structures or other property are located within the “no disturbance” buffer area. Requirements for a development permit may be waived if the landowners have offered and entered into a *Land Title Act* Section 219 covenant to maintain an acceptable no disturbance buffer as part of a subdivision approval application.

### **f-2) Old Forest Ecosystems**

#### **Objectives specific to this ecosystem**

To conserve, intact, as much of the ecosystem as possible.

If changes are intended, maintain the key characteristics of the ecosystem as much as possible: big old trees and their root systems, a single-layered high canopy as well as an understory of grasses, shrubs or wetland.

There is potential that changes may actually help improve and restore this ecosystem by removing the in-growth of young trees, scrub and dead ground debris that natural fires would have normally periodically cleared out.

#### **Specific Guidelines**

1. Protect nesting and denning sites that were identified on site through an initial reconnaissance or in the ecological inventory. It is important for animals and birds to reproduce and ensure future generations. Typically, dens and nests in this ecosystem are found in and around old trees, snags, and the roots of fallen trees.
2. Manage access to minimize vehicular and livestock access. The root systems of old trees are sensitive to disturbance, and the soils in this ecosystem may be dry with sparse vegetation and may be easily disturbed and eroded.

3. Design linear corridors such as roads, driveways, or trails to be as narrow as possible, create as little disturbance as possible, and be configured to allow for wildlife crossings.
4. When choosing trees to thin or remove, maintain the high canopy layer of the forest and its filtered sunlight affect. Choose trees carefully in a way that maintains the key characteristics of the old forest ecosystem.

### **f-3) Grassland Ecosystems**

#### **Objectives specific to this ecosystem**

To conserve, intact, as much of the ecosystem as possible.

Limit disturbance. Because of the lack of moisture and the poor nature of the soils, disturbance in the grassland ecosystem can damage the thin crust of viable soil and recovery is very tenuous and slow.

If changes are intended, maintain the key characteristics of the ecosystem as much as possible, including a predominance of native grasses and perennials (with some scattered shrubs on the moister sites with better soils), and conserve the vital thin active surface soil layer.

Remove invasive weeds and maintain a healthy ecosystem so that invasive weeds cannot re-establish themselves.

There is potential that changes may actually help improve and restore this ecosystem by removing the in-growth of young trees encroaching into the grasslands that under normal circumstances, natural fires would have periodically cleared out.

#### **Specific Guidelines**

1. Protect nesting and denning sites that were identified on site through an initial reconnaissance or in the ecological inventory. It is important for animals and birds to reproduce and ensure future generations. Many grassland birds are ground nesters.
2. Manage access to minimize vehicular and livestock access. The root systems and thin soils of grasslands are sensitive to disturbance and rely on a very thin active layer of the soil. This ecosystem is one of the most sensitive to surface disturbance.
3. Protect large old trees (and their root systems) and snags. Such isolated trees scattered through the grasslands provide shelter, nesting habitat, and a food source for wildlife.
4. Remove encroaching trees. Without the natural cycle of fire in the [region], the forests that neighbour the grasslands eventually encroach on and destroy this very rare ecosystem.
5. Minimize soil disturbance.
6. Manage livestock use. Overgrazing can seriously damage or destroy native grasslands. Also the poor timing of grazing can mean that native plants suffer damage or cannot reproduce. Excessive or improper grazing

can cause enough damage to allow invasive weeds (often detrimental to grazing animals) to colonize an area.

7. Encourage the maintenance of natural sites and the planting of gardens with native, dry land species. This can actually extend habitat for native birds and animals into the backyard.

## 15.6.6 Watershed

### Justification

The designated area is part of the lakes system from which [local government] obtains its drinking water supply. The water quality in the area is subject to possible degradation as a result of development occurring on and around the lake. The geographic limit of the Watershed Protection Development Permit Area includes all lands within 50 metres from the surveyed high-water mark of Loon and Merganser Lakes, all water lots and foreshore areas, as well as all land, roads and water conveyance routes within the [local government] from which runoff enters the watershed. Any developments within 30 metres of the natural boundary of the lake and any connecting streams will also be subject to requirements of the Riparian Area Regulations.

### Guidelines

1. An Environmental Impact Assessment (EIA) is required to define and evaluate the cumulative effects of a proposed development on the lake and watercourses including the impact on:
  - a. water quality and quantity (ground and surface water);
  - b. hydrology;
  - c. air quality;
  - d. aquatic biology;
  - e. fauna (wildlife);
  - f. flora (tree and vegetation inventory);
  - g. soils; and
  - h. micro-climate

Applicants are required to prepare a management plan to mitigate any potentially negative impacts determined by the EIA. Preparation of EIAs should be undertaken by qualified environmental professionals (QEP) and be completed at the developer's/owner's expense and subject to appropriate [local government], provincial and federal agency review and comment.

2. Stormwater shall be managed on-site and management must ensure that annual off-site runoff is below 10% of annual rainfall. To achieve this, impervious surfaces are restricted to a maximum of 10% of the total site area.

3. Sediment and erosion control plans for construction are required for all developments. Water quality is sensitive to turbidity resulting from erosion, sediment, and runoff. This plan can be included as part of the EIA and mitigation measures. If submitted separately, the plan is required prior to development permit issuance and is subject to [local government] review and approval.
4. Proposed development within the Watershed Development Permit Area requires maintenance or enhancement of landscaping (or nature-scaping) in watercourse setbacks. The objective of landscaping and planting should be to protect, enhance, or restore water quality and aquatic and terrestrial habitat and to minimize runoff and erosion impacts. Before planting in the identified setback, a vegetation management plan must be prepared to a professional standard satisfactory to the City. The plan can be included as part of the EIA and mitigation measures. Vegetation should be selected from a city-approved listing of species or from native plants and ground cover (nature-scape). Lake views are an important aesthetic value; vegetation management plans and native plant species lists will permit sufficient flexibility to retain views.
5. The use of chemical fertilizers is prohibited within the watercourse setback.
6. No removal of trees or clearing of vegetation within the watercourse landscaped setback of 50 metres from the high-water elevation is allowed without a development permit.
7. If a net positive improvement for aquatic habitat can be demonstrated, vegetation may be removed for development projects, subject to appropriate [local government], provincial, and federal agency regulations (particularly for fish habitat), review, and comment. Development may also be approved when vegetation removal results in no net loss of aquatic habitat, also subject to appropriate [local government], provincial, and federal agency regulations, review, and comment. This regulation includes boat launches. Boat launches typically denude riparian areas and create conduits for sedimentation and runoff.
8. Permit conditions for private floats, wharfs, and docks include the following:
  - a. dock construction materials must be inert (e.g., natural untreated cedar, precast concrete, or steel). Materials that can leach contaminants (for example, creosote-treated or chromated copper arsenate (CCA) preserved wood) are prohibited.
  - b. no disruption to vegetation, slope, or foreshore habitat from construction or the structure without demonstration of net positive improvement to the riparian areas. This includes the seasonal removal and storage of floating structures.
  - c. structures should be maintained to appropriate safety standards to avoid disruption to vegetation, slope, or foreshore habitat.

- d. construction plans must be submitted before permit approval and construction. Plans should include:
  - i. name of legal owner and lot number/address where the dock will be installed.
  - ii. map indicating lot and proposed location of dock.
  - iii. horizontal distance that dock will extend into lake from the shore, and structure dimensions.
  - iv. type of installation (floating or fixed on pilings).
  - v. construction materials to be used.
9. Gravel extraction is prohibited if there are less than 50 m between the associated disturbance and the closest surface water body (including ephemeral streams). Pit water and runoff should be allowed to infiltrate rather than contributing to surface runoff, provided an adequate width of soils between the worked area and the surface water exists for adequate soil filtration (at least 30 metres).
10. On-site oil/sediment/water separators are required for uses in all zones to remove point-source pollution from stormwater runoff.



## 15.7 Appendix G – Covenants and Riparian Tax Exemptions

### 15.7.1 Bylaw Provisions

A Bylaw to exempt eligible riparian property on [location] from taxation under the [Community Charter or Local Government Act]

1. This Bylaw may be cited as “[local government] Riparian Area Property Tax Exemption Bylaw No. \_\_\_, 20\_\_.”
2. Each parcel shown shaded on the map attached as schedule “A” is exempt from taxation under Sections 197(1)(a) and 225 of the [Community Charter or Local Government Act] for a \_\_\_ year period from 20\_\_ to 20\_\_ inclusive, to the extent provided in s.4 of this Bylaw, if prior to October 31 of the year immediately preceding the first year of exemption a riparian area conservation covenant in the form attached to this Bylaw as Schedule “B” is registered in the Land Title Office against that property.
3. The covenant that is registered in respect of any particular property may contain such additional terms and conditions as are reasonably required to account for the existing state of the riparian area on that property and the existing lawful development of the property.
4. The exemption under Section 2 applies only in respect of that portion of the property that is identified as “Riparian Area” in the covenant registered in respect of the property.
5. If there is a contravention of any of the conditions of the covenant in relation to which an exemption is provided under this Bylaw, the Council may, by bylaw adopted by at least two thirds of votes cast, require the owner to pay to the [local government] the total amount of taxes that would have been payable but for the exemption in Section 2, plus interest calculated from the date the taxes would have been payable compounded annually at the rate prescribed under the \_\_\_\_\_ Act for taxes in arrears<sup>9</sup>.

### 15.7.2 Covenant Provisions

The covenant provisions relating to riparian tax exemption requirements from the Town of Gibsons is reproduced below. Please see the annotated covenant for the Natural Areas Protection Tax Exemption Program of the Islands Trust Fund for a recommended approach to conservation covenants:

<http://www.islandstrustfund.bc.ca/pdf/itfnaptepannotatedcovenant2007.pdf>

<sup>9</sup> The Act referenced in the Gibsons’s bylaw and covenant is the *Taxation (Rural Areas) Act*.

#### **BYLAW PROVISIONS**

**This is the Town of Gibsons Riparian Property Tax Exemption Bylaw. Note that notice must be given of this bylaw in accordance with s.227 of the Community Charter and may be passed only by an affirmative vote of at least two thirds of council members.**

The annotated covenant includes monitoring provisions that require the landowner to pay for annual monitoring. The monitoring must be undertaken according to the guidelines developed by the Islands Trust Fund. The covenant used by the Town of Gibsons (largely reproduced below) relies on a statutory right of way grant that allows the Town, at its expense, to inspect and maintain or restore the riparian area under covenant.

### **Covenant**

TERMS of INSTRUMENT – Part 2

#### SECTION 219 COVENANT and STATUTORY RIGHT OF WAY

WHEREAS the Owner is the registered owner of fee simple land in the [local government] legally described as \_\_\_\_\_ (“the Land”); and

WHEREAS the land is adjacent to [location]; and

WHEREAS the [local government] has, by bylaws adopted under [s.225 of the *Community Charter* or s. 811 of the *Local Government Act*] (the “Exemption Bylaw”) provided for partial exemption of the Land from property taxation on condition that the Owner grants to the [local government] a covenant under s.219 of the *Land Title Act* related to the protection of the land as riparian property; and

WHEREAS the Owner wishes to grant the covenants contained in this Agreement to protect the portion of the Land more specifically described in this Agreement as riparian land and to qualify for the tax exemption provided by the Exemption Bylaw; and

WHEREAS the statutory right of way granted in this Agreement is necessary for the operation and maintenance of the [local government]’s undertaking;

THIS AGREEMENT is evidence that in consideration of the eligibility for the property tax exemption afforded by the Exemption Bylaw, the Owner grants to the [local government] the following covenants and statutory right of way in accordance with sections 218 and 219 of the *Land Title Act*:

1. The Owner shall protect, preserve, conserve, maintain, enhance, restore and keep in its natural state in accordance with this Agreement that portion of the Land that is within \_\_ metres of the natural boundary of [location] (the “Riparian Area”).
2. Without limiting the generality of the foregoing, the Owner shall not, in the Riparian Area, except as expressly provided in this Agreement, remove or destroy any vegetation, remove or deposit any soil, excavate any area, deposit any substance that is deleterious to aquatic or terrestrial flora or fauna, construct or erect any building or structure including any fence, retaining wall, or deck, plant any species or non-indigenous vegetation, or place any obstruction of any kind whatsoever in [location].

3. [Add terms and conditions specific to the property reflecting the existing state of the Riparian Area, the existing development of the property and permitted additional development, and any particular positive obligations on the Owner to enhance or restore the Riparian Area.]
4. By granting the covenants contained in this Agreement, the Owner consents to the adoption of a bylaw under s.225 of the *Community Charter* permitting the Council of the [local government] to require the Owner to pay any taxes from which the Owner has been exempted in return for granting the covenants, plus interest compounded annually at the rate prescribed under \_\_\_\_\_ Act, if the Owner contravenes any of the terms of this Agreement.
5. The Owner grants to the [local government], under s.218 of the *Land Title Act*, a statutory right of way over the Land and the Riparian Area for the purpose of having access to inspect the Riparian Area to determine whether the Owner is in compliance with this Agreement, and to undertake at its expense such maintenance, enhancement and restoration work in the Riparian Area as is necessary in the opinion of the [local government]. The Owner acknowledges that the undertaking of such maintenance, enhancement and restoration work by the [local government] shall not diminish the Owner's obligations under Section 1.
6. Any opinion, decision, act or expression of satisfaction provided for in this Agreement is to be taken or made by the [local government]'s [Municipal Planner/Director of Development] or his or her delegate authorized as such in writing, in each case acting reasonably.
7. The [local government] shall execute and deliver to the Owner for registration in the Land Title Office at the Owner's expense a registrable discharge of the covenants granted in this Agreement in the event that the tax exemption provided in respect of the Land in the Exemption Bylaw is not renewed.
8. The Owner releases, and must indemnify and save harmless, the [local government], its elected and appointed officers and employees, from and against all liability, actions, causes of action, claims, damages, expenses, costs, debts, demands or losses suffered or incurred by the Owner, or anyone else, arising from the granting or existence of this Agreement, from the performance by the Owner of this Agreement, or any default of the Owner under or in respect of this Agreement.
9. The rights given to the [local government] by this Agreement are permissive only and nothing in this Agreement imposes any legal duty of any kind on the [local government] to anyone, or obliges the [local government] to enforce this Agreement, to perform any act or to incur any expense in respect of this Agreement.

10. Where the [local government] is required or permitted by this Agreement to form an opinion, exercise a discretion, express satisfaction, make a determination or give its consent, the Owner agrees that the [local government] is under no public law duty of fairness or natural justice in that regard and agrees that the [local government] may do any of those things in the same manner as if it were a private party and not a public body.
11. This Agreement does not:
  - a. affect or limit the discretion, right or powers of the [local government] under any enactment (as defined in the *Interpretation Act*, on the reference date of this Agreement) or at common law, including in relation to the use of the Land,
  - b. affect or limit any enactment related to the use of the Land, or
  - c. relieve the Owner from complying with any enactment, including in relation to the use of the Land.
12. Every obligation and covenant of the Owner in this Agreement constitutes both a contractual obligation and a covenant granted under s.219 of the *Land Title Act* in respect of the Land and this Agreement burdens the Land and runs with it and binds the successor in title to the Land. This Agreement burdens and charges all of the Land and any parcel into which it is subdivided by any means and any parcel into which the Land is consolidated. The Owner is only liable for breaches of this Agreement that occur while the Owner is the registered owner of the Land.
13. An alleged waiver of any breach of this Agreement is effective only if it is an express waiver in writing of the breach in respect of which the waiver is asserted. A waiver of a breach of this Agreement does not operate as a waiver of any other breach of this Agreement.
14. If any part of this Agreement is held to be invalid, illegal or unenforceable by a court having the jurisdiction to do so, that part is to be considered to have been severed from the rest of this Agreement and the rest of this Agreement remains in force unaffected by that holding or by the severance of that part.
15. This Agreement is the entire agreement between the parties regarding this subject.
16. This Agreement binds the parties to it and their respective successors, heirs, executors and administrators.
17. The Owner must do everything reasonably necessary to give effect to the intent of this Agreement, including execution of further instruments.
18. By executing and delivering this Agreement each of the parties intends to create both a contract and a deed executed and delivered under seal.

## 15.8 Appendix H – Environmental Impact Assessment Bylaws Provisions

For terms of reference for EIAs, see Regional District of Central Okanagan, *Terms of Reference for Professional Reports – Planning Services* <http://www.regionaldistrict.com/docs/planning/Handout%20TofR.pdf> and *Develop With Care* Appendix D – Site Inventory and Conservation Evaluation <http://www.env.gov.bc.ca/wld/documents/bmp/devwithcare2006/DWC%202006%20Sec%207%20App%20D%20Inventory.pdf>

Development Permit Information Area (may be included in DPA for environmental protection) in OCP

### 15.8.1 Designation and Justification

1. The development permit areas for protection of the natural environment shown on Map [ ] are designated development approval information areas under the *Local Government Act*.
2. Environmental development permit areas have high ecological values and are also environmentally sensitive. It is important that development on these properties is tailored to maintain as much ecosystem functioning as possible. Development approval information in the form of an environmental impact assessment is required to assist the [local government] and the applicant to ensure that development maintains ecological values, including fish habitat and hydrologic cycles. It also provides an evaluation of the cumulative impacts that new development will have on the environmentally sensitive features of the area.
3. Development approval information in the form of an environmental impact assessment may be required, at the discretion of the [delegate] and Council, in the case of an application for rezoning, development permit, or temporary commercial or industrial use permit.

#### Guidelines

1. An EIA may be required to define and evaluate the cumulative effects of a proposed development on the ecological features of the environmental development permit area, including the impact on:
  - a. water quality and quantity (ground and surface water);
  - b. hydrology;
  - c. air quality;
  - d. aquatic biology;
  - e. fauna (wildlife);
  - f. flora (tree and vegetation inventory);
  - g. soils;

#### DESIGNATION AND JUSTIFICATION

**This section on designation and justification was adapted in part from the Rural Comox Valley OCP (Regional District of Comox-Strathcona Electoral Area “C”) Schedule C p.29.**



The consultant involved in submitting the rezoning, development permit or temporary commercial or industrial use permit application shall not conduct or participate in the EIA.

10. The [delegate] or Approving Officer will require the applicant to prepare a management plan to mitigate any potentially negative impacts determined by the EIA.
11. The EIA is subject to appropriate city, provincial, and federal agency review and comment.
12. Upon acceptance of the final EIA by the [local government], the relevant community association and/or interested members of the public shall be afforded an opportunity to review the report at the Municipal Hall.
13. The conclusions of an EIA for a plan amendment or rezoning application will be presented to Council by the [delegate] as part of the report on the application.

### 15.8.2 Bylaw Provisions

1. Every application submitted to amend community plans, rezone lands, and subdivide lands shall be subject to the EIA process and subject to an evaluation based on criteria established by Council to determine whether or not an EIA is required and if so, the scope of the EIA.
2. Based on the evaluation in Section 1 of this bylaw, the [delegate] shall present a report, as necessary, to Council for its consideration as to whether a full, partial, or no EIA should be undertaken.
3. If Council requires an EIA, the applicant shall undertake the EIA at his or her expense based on the Terms of Reference prescribed by the Director of Planning.
4. The conclusions of an EIA shall be presented to Council by the [delegate] as part of the report on the application to amend the plan or rezone lands.

### 15.8.3 Policies and Procedures

1. The [local government] has adopted an Environmental Impact Assessment process to identify the environmental impacts, both positive and negative, on specific initiatives undertaken within the local Government.
2. All zoning, development permit, and temporary commercial and industrial use permit applications shall be screened to determine whether or not an EIA is required. The [delegate], in consultation with appropriate City staff, shall consider if an application should be recommended for an EIA when the land in question is:
  - a. within 50 m of a natural park, the Agricultural Land Reserve, a watercourse, or a floodplain;

## **BYLAW PROVISIONS**

**This section on bylaw provisions was adapted from the Saanich Land Use and Development Procedures Bylaw No. 8449**

## **POLICIES AND PROCEDURES**

**This section on policies and procedures is adapted from Saanich Policy 92/CW Environment and Social Review Process.**

- b. within 60 m of a marine shoreline;
  - c. outside the Urban Containment Boundary and involves a rezoning for more intense uses or density; or
  - d. deemed to be environmentally sensitive.
3. In considering whether or not to recommend or require an EIA, the [delegate]/Approving Officer will consider the following questions:
    - a. Complexity - Are there numerous environmental issues raised by the application? Can staff identify the degree of impact and provide and coordinate mitigation measures outside the EIA process?
    - b. Time and Resources - Do staff have the necessary time and resources to adequately assess the project without the benefit of an EIA?
  4. An EIA may not be required if the owner agrees to construct a fence around an ESA and register a covenant under s.219 of the *Land Title Act* in favour of the [local government]. A qualified professional must determine the boundary of the ESA and area to which the covenant applies.
  5. If a rezoning application is recommended to Council for an EIA, a report shall be prepared for the Committee of the Whole outlining the environmental issues that warrant investigation, plus the proposed Terms of Reference for the EIA and a brief project description.
  6. If a rezoning application is not recommended for an EIA, a brief memorandum shall be sent to the Mayor and Council, and the relevant community association citing the reason(s) for not recommending an EIA.
  7. Within 10 working days of delivery of the memorandum, the Mayor or any councillor may request the matter be placed on a Council agenda for discussion.
  8. An applicant may request reconsideration by Council of information requirements, setting out the grounds on which the information request is considered inappropriate and what, if any, alternative the applicant considers should be accepted.
  9. If an EIA is required either by Council or the Approving Officer, the applicant will undertake the review at his or her expense based on the Terms of Reference established by Council or the [delegate], as the case may be.
  10. Preparation of EIAs will be undertaken by qualified environmental professionals (QEPs). The selection of the consultant shall be made by the applicant and approved by the [delegate] before the work begins. The consultant involved in submitting the rezoning, development permit, or temporary commercial and industrial use permit application shall not conduct or participate in the EIA.
  11. The [delegate] will require the applicant to prepare a management plan to mitigate any potentially negative impacts determined by the EIA.

12. The EIA is subject to appropriate city, provincial, and federal agency review and comment.
13. Upon acceptance of the final EIA by the district, the relevant community association, and/or interested members of the public shall be afforded an opportunity to review the report at the Municipal Hall.
14. The conclusions of an EIA for a plan amendment or rezoning application will be presented to Council by the [delegate] as part of the report on the application.



## 15.9 Appendix I – Rainwater Management Bylaws Provisions

### 15.9.1 Rainwater Management

#### a) Goals

1. Preserve the natural hydrologic cycle, including vegetative rainfall interception and evapo transpiration, and groundwater infiltration and percolation to the extent that subsurface conditions permit.
2. Preserve the site characteristics, including natural terrain, drainage patterns, soil structure, and native vegetation to the maximum extent possible.
3. Mimic natural rainfall capture capacity in areas of site disturbance.
4. Manage development to maintain rainwater characteristics that emulate the pre-development natural watershed (no net increase in rainwater flows off each site and into receiving watercourses).
5. Manage the volume of rainwater at its source to restrict flows from subdivision or development to pre-development volumes, accomplished through infiltration, evapo transpiration or reuse of rainwater.
6. Predict the cumulative rainwater impacts of development and integrate this information with other economic, land use, and sustainability objectives and policies when considering land use change.
7. Regulate watershed-specific performance targets for rainfall capture, runoff control, and flood risk management during development, and refine these targets over time through an adaptive management program.
8. Improve the quality of site drainage water.
9. Minimize erosion and retain sediments.
10. Identify, by example and pilot studies, means of meeting the performance targets by application of best management practices and remove barriers to use of these practices.
11. Support innovation that leads to affordable, practical rainwater solutions and to increased awareness and application of these solutions.

#### b) Core Practices

1. Catchment – Preserve natural systems or provide simulation of natural systems in balance with impervious development.
2. Stream flow protection – maintain base flow and preserve natural features in watercourses through practices of infiltration, storage, and diversion.
3. Erosion – control stream flow velocities and provide beneficial stream protection for the complete range of frequent (less than two years) to infrequent storm events (two years to 200 years).

#### GOALS

**Goals may also be OCP, local area plan, or design and policy manual policies. This section on goals was adapted from the City of Chilliwack Policy and Design Criteria Manual for Surface Water Management p.6 [http://www.chilliwack.com/main/attachments/files/658/Surface\\_Water\\_Management.pdf](http://www.chilliwack.com/main/attachments/files/658/Surface_Water_Management.pdf) and the District of Saanich Engineering Specifications (Schedule H, Subdivision Bylaw).**

#### CORE PRACTICES

**This section was adapted from the City of Chilliwack Policy and Design Criteria Manual for Surface Water Management p.47.**

## **POLICIES**

**This section on policies was adapted from Central Okanagan Sensitive Ecosystems Inventory pp.139-140 and City of Coquitlam Low Impact Development Policies and Procedures Manual pp.2, 4.**

4. Rainfall Capture – Capture the first [30] mm of rainfall per day on building lots and roads right-of-ways and restore it to natural hydrologic pathways (infiltration, evapo transpiration and/or rainwater reuse).
5. Runoff Control – Detain the next [30] mm of rainfall per day (either in rainfall capture facilities, separate community detention facilities, or a combination), and release to drainage system or watercourses at natural interflow rate.
6. Storage/Infiltration Volume – The network of rainfall capture and runoff control facilities must be designed to infiltrate and store a total of [600] cubic metres of rainfall per impervious hectare.
7. Release Rate and Base Flow – Mimic a natural forested condition. Support base flow by releasing captured rainfall to the interflow zone at the natural infiltration rate of surrounding soils. Size detention facility outlets controls to release flow at a rate of [1] litre per second per impervious hectare.
8. Water quality – provide bio-filtration for the first [30] mm of rainfall per day as it moves through the interflow zone.
9. Monitoring – for development sites designated by the [local government] as Demonstration Projects, incorporate monitoring equipment into the rainwater system design, in accordance with the [local government]’s comprehensive monitoring plan for the site (the costs of installation and continued operation of monitoring equipment will be funded through [development cost charges, rainwater parcel tax or rainwater utility]). For all development sites, design detention pond outlet structures so that they can be equipped with water level and flow monitoring equipment.

### **c) Policies**

1. Establish integrated rainwater management policies that maintain the natural hydrology and natural environment of watersheds, groundwater, streams, and other water bodies, including provisions that ensure maintenance of minimum base stream flows.
2. Adopt an open streams policy that limits the crossing, confinement, covering, or piping of watercourses.
3. Maximize infiltration of rainfall in areas where soil conditions are suitable.
4. Maximize on-site pervious areas through best management practices, including porous surfaces and landscaping.
5. Minimize the amount of impervious surfaces by installing alternatives to asphalt for laneways, driveways, walkways, patios, etc. and by building narrower roads.
6. Ensure groundwater recharge through the use of vegetated swales, infiltration basins, and absorbent vegetation and by disconnecting rain leaders from buildings.

7. Enact or amend watercourse protection provisions in bylaw format that:
  - a. Restrict the polluting or obstructing or impeding of the flow of a stream, creek, waterway, watercourse, waterworks, ditch, drain, or sewer and impose penalties for contravention of the prohibition;
  - b. establish a maximum percentage of lot or watershed areas that can be covered by impermeable material, particularly adjacent to sensitive ecosystems;
  - c. establish standards for drainage works for the ongoing disposal of surface runoff and stormwater from paved areas and roof areas during and after construction to maintain natural runoff volumes and water quality.
8. Identify and establish a program to remove obstacles impeding movement of fish such as inappropriately designed culverts and stream crossings.
9. Identify “lost streams” that have been covered by culverts or other covers and consider “day-lighting” these lost streams when it is practical and feasible to do so.
10. Enact or amend a parking or zoning bylaw to discourage/prohibit the location of parking areas in sensitive ecosystems and regulate surface treatments to avoid runoff impacts on sensitive and important ecosystems.
11. Promote streets that drain to grass-lined swales, ditches, or infiltration trenches.
12. Provide grassed or other vegetated areas with a minimum of 300 mm of organic absorbent soil cover, including boulevards, developed park areas, and private property to the greatest extent possible.
13. Utilize permeable (porous) paving in lightly traveled areas such as lanes, pathways, and emergency accesses.
14. Minimize the interception of subsurface flow by ditches, road cuts, or the drainage system, except when necessary to address localized drainage problems.
15. Minimize the disruption to, or removal of, the existing permeable soil layers, except when required for foundation or other construction considerations.
16. Prohibit the wholesale stripping of existing permeable soils.

## **BYLAW PROVISIONS**

**This section on bylaw provisions is from the Metchosin Protection and Management of Rainwater Bylaw No. 467 2004.**

### **d) Bylaw Provisions**

1. The quantity of rainwater leaving the site after development shall be equal to or less than the quantity of rainwater leaving the site before development to achieve the following performance targets:
  - a. Impervious surfaces shall be designed to drain at least [e.g., 90%] of the rainwater runoff volumes entering the lot for any storm event to the natural hydrologic pathways at the site within the same lot (i.e., through infiltration and other source controls), such that not more than [e.g., 10%] of the total rainwater runoff volume crosses any lot line at post-development;
  - b. The rate of pre-development rainwater runoff from the lot shall be maintained at all times to ensure that stream flow rates do not exceed those rates corresponding with the natural mean annual flood, and that this maximum rate will occur not more than once per year; and
  - c. The use of channels, swales, drainage ways, or other drainage facilities for conveying, transporting, storing, or infiltrating rainwater overland across lot boundaries is not permitted.
2. Development shall include mitigation of drainage from all project impervious surfaces through on-site rain-water source controls and rainwater management facilities. If on-site retention and infiltration of rainwater is not possible, development shall require detention that:
  - a. prevents an increased rate of flow leaving a site during a range of storm events as specified in this bylaw, and
  - b. ensures that the rainwater runoff from the lot is less than [e.g., 10%] of the rainwater received on the lot; and
  - c. provides enough storage capacity to capture the rainwater runoff from the mean annual rainfall and release the stored runoff at the pre-development rate of infiltration.
3. Any development that contributes overland discharge to a Streamside Protection and Enhancement Area, watercourse, or water body (including wetlands) shall include design facilities such that the rate of flow discharging from any rainwater management facility for up to a two-year storm event does not lengthen the period of time the channel or bed of the receiving riparian area, watercourse, or water body sustains erosion-causing flows, as determined by a qualified professional.
4. Rainwater management facilities used for detention shall be designed to safely convey the less frequent, higher flows through or around the facilities without damage to those facilities or structures.
5. Rainwater quantity discharge which is not practicable to be managed pursuant to Sections [ ] shall be managed in an off-site rainwater management facility.

## **a) Development Permit Area or Policy and Design Manual Policies**

1. Prior to construction, a Sediment and Erosion Control Plan shall be submitted to the [local government]. The plan must incorporate best management practices to ensure that all construction work is undertaken and completed in such a manner as to:
  - a. prevent the release of silt, raw concrete and concrete leachate, and other deleterious substances into any ditch, storm sewer, watercourse, water body (including wetlands), or ravine;
  - c. prevent silt, raw concrete and concrete leachate, and other deleterious substances from entering any infiltration facilities (or areas proposed for infiltration);
  - d. minimize disturbed areas and stripping of vegetation and soils, particularly on steep slopes, and stabilize denuded soils as soon as possible. Revegetate promptly once foundation work is complete;
  - e. retain as much of the natural vegetation cover as possible; and
  - f. ensure that revegetation is prompt once foundation work is complete and that appropriate native plant species are planted of a size that will quickly re-establish riparian cover.
2. The [local government] may require the proponent to contract a qualified environmental professional to:
  - a. provide monitoring to ensure that the sediment and erosion control plan is properly implemented during the course of clearing and construction;
  - b. ensure that construction will proceed smoothly without harmful alteration of habitat; and;
  - c. provide long-term monitoring on disturbed sites until green-up is established and the soils at the site are stable.
3. Proposed sediment control structures must be maintained and remain functional throughout the development process. Changes in the design and the structure will be required if the proposed structure is found to be inadequate.
4. Construction and excavation wastes, overburden, soil, or other substances deleterious to aquatic life shall be disposed of or placed in such a manner as to prevent their entry into any watercourse, water body (including wetlands), ravine, storm sewer system, or restrictive covenant area.
5. The location of all sediment control devices shall be placed as close as possible to the area they are required to protect, at the downstream ends of all development, and before entrance into the existing drainage system.

### **DEVELOPMENT PERMIT AREA OR POLICY AND DESIGN MANUAL POLICIES**

**This section on DPA or Policy and Design Manual policies is adapted from the Whistler Protected Areas Network (Draft VI) pp.33, 35 and the Chilliwack Policy and Design Criteria Manual pp.39-40.**

[http://www.chilliwack.com/main/attachments/files/658/Surface\\_Water\\_Management.pdf](http://www.chilliwack.com/main/attachments/files/658/Surface_Water_Management.pdf)

6. All stockpiles located within 5 metres of a public road and or drainage system shall have the perimeter silt fenced and the pile covered. Erosion control in the form of surface mulches, including leaves and straw, may be required for bare slopes.
7. The proposed location of sediment control ponds shall be situated to provide ready access for cleaning and maintenance and shall be sited and designed to prevent property damage in the event of structural failure.
8. Additional rainwater runoff requirements for projects constructed during the rainy season may be imposed.
9. New storm drainage systems that are located on land that is zoned CD, industrial, multi-family, or commercial according to the zoning bylaw shall not be connected to a storm sewer or infiltration system connection unless equipped with an oil and grit interceptor. The oil and grit interceptor shall:
  - a. meet the technical specifications set out in the [local government]'s Standard Drawing;
  - b. be suitable for the sampling and inspection of the rainwater that is discharged from the storm drainage system into the storm sewer connection; and
  - c. be suitable for the interception, retention, and removal of deleterious substances in that discharge.
10. A property owner who is served with written notice from the [local government] advising that an oil and grit interceptor is required on an existing or new storm drainage system located on that owner's property shall install an oil and grit interceptor on that storm drainage system
  - a. within one year of the notice being served for an existing storm drainage system; or
  - b. prior to connection to the storm sewer connection in the case of a new storm drainage system; or
  - c. as ordered by the [local government].
11. An owner of a parcel of land, or person on behalf of the owner, who installs an oil and grit interceptor shall install the oil and grit interceptor on the storm drainage system at or near the property line within the bounds of the owner's parcel of land. All costs associated with the installation and maintenance thereof shall be the responsibility of the owner.
12. All oil and grit interceptors shall be cleaned by a waste contractor holding a valid [municipal] business licence as frequently as necessary to ensure that deleterious substances in the discharge from the storm drainage system are intercepted and retained for removal.

13. The owner of the property on which an oil and grit interceptor has been installed shall maintain records of the cleaning for inspection by the Director and shall forward, to the Director, by May 1 of each year, a copy of the record of inspections for the previous 12 months.
14. Such records are to be maintained on the premises on which the oil and grit interceptor is located and are to be retained for not less than six years.
15. The [local government] may order the owner of an oil and grit interceptor to undertake more frequent cleaning if there is evidence that inadequate or lack of cleaning of the oil and grit interceptor has impaired its ability to intercept and retain for removal the deleterious substances in the discharge from the storm drainage system.
16. The [local government] may waive the requirements of this section if the property owner has submitted a report from a professional engineer certifying that the intended use of the property, including any construction or remodeling work, will not introduce deleterious substances to the storm sewer system.
17. All construction fueling stations as well as mobile fueling equipment are prohibited from the Riparian Assessment Area.

**b) Bylaw Provisions**

**Prohibitions**

1. Unless exempted by Section [ ] or otherwise provided for by this bylaw, no subdivision, development, building permit, plan, or public works project shall be approved unless the conditions (of the subdivision, development, permit, plan, or project approval) require installation of permanent rainwater quality and quantity control facilities designed according to the standards established by the [local government] as specified in this bylaw.
2. Except as provided for in this bylaw, no person, applicant, or owner shall:
  - a. alter, repair, remove, fill in, reconstruct, divert, obstruct, or impede the flow of water in, remove vegetation, or carry out any other works or development within an approved drainage system, a watercourse, water body (including wetlands), or SPEA;
  - b. enclose any watercourse, channel, drainage way or swale in a piped drain or culvert;
  - c. undertake development within a SPEA;
  - d. remove or deposit any soil or material whatsoever within a wetland, 200-year floodplain, and/or SPEA;
  - e. intentionally break, damage, destroy, deface, or tamper with any rainwater management facility, structure, appurtenance, or equipment that is used to infiltrate, detain or treat rainwater;

**BYLAW PROVISIONS**

**This section on bylaw provisions is adapted from the Metchosin Protection and Management of Rainwater Bylaw No. 467 2004.**

- f. make connection of roof leaders, exterior foundation drains, driveway drains, or other sources of surface runoff from impervious surfaces that, in turn, are connected directly to a watercourse, water body, and/or SPEA;
  - g. undertake any development on a lot, site, or area of land that will result in a loss of ecological functioning of a watercourse, water body (including wetlands), or SPEA; a loss of water quality in any water body; or an increase in runoff rates or volumes of rainwater leaving the lot, site, or area of land based on predevelopment levels.
3. The applicant or owner of a development site must meet all local, provincial, and federal permit requirements related to the implementation of required rainwater management facilities before using any rainwater management facility.

## 15.10 Appendix J – Security Bylaws Provisions

### 15.10.1 Development Permit Guidelines

1. The [local government] may require the applicant to submit to the [local government] a cost estimate, prepared by a qualified professional, of the total cost of revegetating the sensitive ecosystem after the development is completed.
2. The applicant will provide adequate financial security, as determined by the [local government], before beginning the construction of any building or the disturbance of a site located within an EDPA.
3. The value of the financial security should be equal to the amount required to pay for:
  - a. the cost of repairing damage caused by construction or site disturbance;
  - b. the cost of revegetating the sensitive ecosystem that has been disturbed by the development and/or construction, as determined by the [local government], in the event that the sensitive ecosystem is damaged as a consequence of a contravention of a condition contained in the development permit;
  - c. the cost of restoring fish habitat that is damaged during the development process.
4. In extenuating circumstance, the [local government] may require that adequate public liability insurance be provided, with the [local government] as an “additional named insured” in the amount of \$5,000,000.00. A copy of the certificate must be presented to the [local government] upon demand.

### 15.10.2 Regulatory Bylaw Provisions

1. Security deposits shall be collected when construction of low-impact development works are required by this manual, including for:
  - a. bioretention areas (absorbent landscaping);
  - b. trees, shrubs, and groundcover;
  - c. on-lot infiltration trenches;
  - d. vegetated swales; and
  - e. pervious paving.
2. A security deposit must be in the form of cash or a clean, unconditional, irrevocable letter of credit issued by a financial institution acceptable to, and in a form acceptable to, the [municipal staff – development services].

#### **DEVELOPMENT PERMIT GUIDELINES**

**This section on development permit guidelines was adapted from the Campbell River OCP p.9(10), and Regional District of Central Okanagan Terms of Reference, Professional Reports for Planning and Ellison OCP Appendix A-5.**

#### **REGULATORY BYLAW PROVISIONS**

**This section on regulatory bylaw provisions was adapted from the Coquitlam Low Impact Development Policies & Procedures Manual p.A-3 to 4 and the Subdivision and Development Servicing Bylaw, and the District of North Vancouver Environmental Protection Bylaw and Environmental Permit Application.**

3. Security deposits shall be calculated for individual lots, as well as for the total subdivision, to the satisfaction of the [local government].
4. The amount of performance security shall be 110 percent of the cost to supply material for and to complete the works and services, including engineering, inspection, testing, construction, installation, planting, taxes and providing record documents. This amount is to be estimated based on approved servicing design drawings.
5. The amount of maintenance security shall be 10 percent of the cost of the works and services, excluding street trees, plus 20 percent of the cost of landscaping.
6. The amount of security required is to be based on estimated costs provided by the consulting engineer as agreed to by the [municipal staff – development services] with respect to the works and services excluding landscaping and by the Landscape Architect as agreed to by the [municipal staff – parks]with respect to landscaping.
7. No security deposited under the provisions of this bylaw shall be returned unless and until all of the requirements for which the security has been deposited have been completed to the satisfaction and approval of [delegated municipal staff], and of the [parks staff] with respect to landscaping. Security deposited under the provisions of this bylaw shall be returned to the owner only.
8. Deposits will not be returned until a professional engineer or landscape architect has certified the works. A professional engineer must certify on-lot infiltration trenches and vegetated swales, and a landscape architect must certify absorbent landscaping, vegetated swales, and pervious paving.
9. The City will provide partial refunds, except for the landscaping, in accordance with the following:
  - a. partial refunds will be based on the proportion of the work completed, inspected, and, if required, tested in accordance with certified, detailed progress reports submitted by the consulting engineer and approved by the [municipal staff – development services].
  - b. partial refunds will not be made more frequently than once every month.
  - c. partial refunds are permitted only to a maximum of [e.g., 90 percent] of the value of the work completed.
  - d. Any costs incurred by the City that are recoverable from the owner, or otherwise, will be deducted from any partial refund irrespective of whether or not the recoverable amount relates to the same work as the partial refund.

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1. Before the issuance of a development permit within a sensitive ecosystem, an applicant is required to provide a security in the form of cash, certified cheque, or an unconditional, irrevocable letter of credit drawn on a Canadian chartered bank in a form acceptable to the Director of [ ] in an amount equal to 30% of the estimated cost of the work to be performed under the permit to a maximum of \$[10,000] to ensure full and proper compliance with provisions of this bylaw and all terms and conditions of the permit.
2. If the applicant does not comply with the terms and conditions of the permit or the provisions of this bylaw the [local government] may use all or a portion of the security deposit or call for and receive the funds secured by the letter of credit and use the funds to remedy the non-compliance, or if the work under the permit is not completed within one month before the expiry date of the letter of credit, the [local government] may call for and receive the funds secured by the letter of credit and retain the funds until the applicant delivers a replacement letter of credit to the [local government] in the same form and amount; and at the discretion of the [local government], all or part of this security may be held for up to three years of issuance.
3. Before issuance of a permit for work on land owned by the [local government], an applicant is required to obtain and maintain, at all times during the period of validity of the permit, public liability insurance in the amount of \$5,000,000, in connection with the obligations under this bylaw with deductibles and terms reasonably satisfactory to the [local government], with the [local government] listed as an “Additional Named Insured” and evidence of this coverage must be provided in the form of an insurance certificate, and with a provision that the insurer will notify the [local government] in writing at least 30 days prior to cancellation of the policy, and will deliver a certified copy of such policy to the [local government] upon demand.



## 15.11 Appendix K – Regulatory Bylaws Provisions

### 15.11.1 Tree and Landscaping Policies and Bylaws

#### a) Tree Bylaw

##### Application

1. This part applies to all lands within the [local government] and to the following:
  - a. wildlife trees;
  - b. trees protected by a restricted covenant pursuant to section 219 of the *Land Title Act* (R.S.B.C. 1979, c 219);
  - c. [specific species of a specific diameter e.g., Western Yew trees (*Taxus brevifolia*) having a diameter greater than 0.25 metre, measured .80 metre above the natural ground level];
  - d. trees having a diameter greater than [specific diameter, e.g., 0.75 m for coastal ecosystems and 0.50 m for inland ecosystems measured 1 metre above the natural ground level];
  - e. trees shown as “to be retained” on a plan attached to a development permit; and
  - f. trees located within 30 metres of an ESA or watercourse as set out in Schedule [ ].

##### Prohibition

2. No person may cut or remove a tree from land:
  - a. without a development permit issued pursuant to this bylaw, or
  - b. contrary to a permit issued pursuant to this bylaw.
3. No person may damage a tree:
  - a. by any activity that would significantly interrupt or stop the flow into, or introduce a substance toxic into, the cambium layer of a tree by such means as cutting, scarring, constricting, piercing, or crushing the cambium layer;
  - b. by applying or placing a substance in a concentration toxic to the tree on the leaves, limbs, trunk, or roots of the tree or within the drip line of the tree or into groundwater flowing to the tree;
  - c. by failing to maintain the tree in a manner conducive to its survival, including methods set out in “Pruning and Tree Repair” and “British Columbia Landscape Standard”;

#### TREE BYLAW

**This section on tree bylaws was adapted from the Highlands Tree Management Bylaw and District of North Vancouver Environmental Protection Bylaw.**

## TREE PLANTING/ RETENTION REQUIREMENTS

**These measurements should be developed with reference to historical tree densities, contemporary conservation purposes, and other priorities such as fire prevention. For another approach that designates replacement ratios based on ecosystem characteristics, see p. 39 of *Stewardship Bylaws: A Guide for Local Government*.**

- d. by breaking limbs, topping, deadheading, or pruning contrary to the methods set out in “Pruning and Tree Repair”;
- e. by doing any of the following within 3 metres of, or within the drip line of, the tree, whichever is the greater distance:
  - i. soil compacting;
  - ii. depositing or removing of soil;
  - iii. placing of concrete or other hard or impervious surface; or
  - iv. by doing any blasting within 2 metres of the drip line of a tree.

### Replacement Trees

4. Replacement trees shall be provided and maintained at the expense of the owner as follows:
  - a. if a person cuts down or allows a tree to be cut down contrary to the provision of a permit or any provision of this bylaw, the person shall replace it as required by this bylaw;
  - b. if this bylaw requires replacement trees, they shall be of the species and size at the time of planting shown on Schedule [ ];
  - c. replacement trees shall be maintained for the following periods from the date of acceptance of the planting by the [delegate]:
    - i. for Streamside Protection and Enhancement Areas, for a three-year period.
    - ii. for all other plantings, for a one-year period.
  - d. if a replacement tree dies within the maintenance period, it shall be replaced at the owner’s expense;
  - e. all installation and maintenance shall be in accordance with the British Columbia Landscape Standard.

### **b) Tree Planting/Retention Requirements (as part of Policy Manual, Zoning Bylaw, or Development Permitting)**

New development must meet the following standard, using any of the three options below:

1. Tree preservation. At least 5 centimetres of existing tree diameter per 90 square metres of site area must be preserved. On lots that are smaller than 300 square metres or smaller, at least 8 centimetres of existing tree diameter must be preserved per lot. This standard may be met using trees on the lot and within 2 metres of the edges of the lot. Trees within public and private rights-of-way may not be used to meet this standard. When this option is used, a tree preservation plan as part of an EIA is required.

2. Tree planting. At least 5 centimetres of tree diameter per 90 square metres of site area must be planted. On lots that are 300 square metres or smaller, at least 8 centimetres of tree diameter must be planted per lot.
3. Tree Fund. This option may be used when site characteristics or construction do not support the preservation or planting options.
  - a. The Tree Fund fee is collected by [municipal department] and is administered by the [municipal department]. The funds collected will be used to plant trees on public or private property in the same watershed as the site.
  - b. Applicants must contribute the cost to purchase and plant trees as set out in (c) below. The cost to purchase and plant trees will be adjusted annually as determined by the [municipal department] based on current market prices per centimeter for materials, labor, and maintenance.
  - c. The applicant must contribute the following to the Tree Fund before a building permit will be issued:
    - i. for lots with 300 square metres or more of area, the cost to purchase and plant at least 5 centimetres of tree diameter per 90 square metres of site area, or
    - ii. for lots with less than 300 square metres of area, the cost to purchase and plant at least 8 centimetres of tree diameter per lot.

### 15.11.2 Soil Removal and Deposit Bylaw<sup>10</sup>

#### Prohibition

1. No person shall, unless exempted by this bylaw, remove soil or deposit soil or other materials:
  - a. without a permit issued pursuant to this Bylaw, or
  - b. contrary to a permit issued pursuant to this bylaw.

#### Exemption from Permit

2. A permit shall not be required when the soil removal or deposit:
  - a. is related to the construction of buildings or structures accurately shown on scaled drawings submitted as part of the application for a building permit, and for which a building permit is in good standing;
  - b. is related to development in accordance with an approved subdivision of land;
  - c. is in accordance with a valid development permit;
  - d. occurs on land not more than 0.5 hectares in size, does not exceed

<sup>10</sup> See more detailed provisions on erosion/sediment control plans in section 15.11.3, Watercourse Protection Bylaws

#### **SOIL REMOVAL AND DEPOSIT BYLAW**

**This section on soil removal and deposit was adapted from Kelowna Soil Deposit Bylaw, No. 8504, Mission Soil Deposit Bylaw and Soil Removal Bylaw, *Stewardship Bylaws: A Guide for Local Government*, and West Vancouver Soil Removal and Deposit Regulation.**

1 metre in depth at any point, when the slope of the fill or excavated surface does not exceed two horizontal to one vertical (2:1), when for the deposit of soil, the slope of the existing ground does not exceed 15 percent, and when the operation involves less than 20 cubic metres of soil per parcel of land per calendar year;

- e. is performed by an employee or agent of the [local government] in the creation or maintenance of a public trail, park, or recreation facility, or in the reclamation of a disturbed area;
- f. is required as part of a solid waste processing and disposal operation, including a composting facility, that has the appropriate senior and local government approvals;
- g. is required as part of the clean-up or remediation of contaminated soils as directed and approved by the Ministry of Environment;
- h. is required for the construction or maintenance of a private sewage disposal system for which a sewage disposal permit pursuant to the *B.C. Health Act* has been issued;
- i. involves the open storage of soils that are intended to be processed and removed in connection with a present lawful use of the land on which they are stored.

### Application Requirements

- 3. Unless a requirement is waived by the [local government], every application for a permit shall include detailed plans, data, and specifications prepared by a registered professional engineer for the Province of British Columbia, or any other qualified professional, in a satisfactory form, and the application shall contain information with respect to the following matters:
  - a. the legal description of the property, including the name and address of the registered owner.
  - b. all pertinent topographic features, including existing buildings, structures, watercourses, and tree cover.
  - c. the proposed slopes that will be maintained upon completion of the soil deposit.
  - d. The methods proposed to control the erosion of the banks of the deposit.
  - e. the proposed methods of drainage control for the site during and after the deposit operation.
  - f. the proposed methods of access to the site during the deposit operation, including the routing of truck and vehicular traffic supplying the soil.
  - g. the proposed methods of noise and dust control during the deposit operation.

- h. the proposed buffer zones and tree retention areas and the location, grade, and width of proposed berms.
- i. the specific description and proposed metric volumes of soil intended for deposit or removal.
- j. the proposed progressive stages of deposit, depicting contours at no greater than 1-metre intervals, grades, and slopes on separate plans for each stage, including specific completion dates for each stage.
- j. the proposed contour of the ground in its final state upon completion of the deposit, with contours at no greater than 1-metre intervals, showing the methods of access and positive methods of permanent drainage on a separate plan.
- k. a restoration plan if the proposed removal or deposit of soil is within 30 metres of an environmentally sensitive area, as defined in Schedule [ ].

### Damages Repaired

- 4. All damage to adjacent [local government] or privately owned drainage facilities, roads, lanes, or other property, or natural watercourses, resulting from the removal or deposit of soil shall be repaired by the permit holder at his or her expense.

### Erosion Control

- 5. No permit holder shall cause or allow any soil or other matter or thing originating from the lands to obstruct or pollute any drainage facility or watercourse.
- 6. Erosion control measures shall be provided during soil removal and deposit activities, at the expense of the owner, as follows:
  - a. for parcels smaller than 0.5 hectare, if deposit or removal is less than 20 cubic metres in one year, and if outdoor works are undertaken in the dry period from May 1 to September 30, best management practices shown in Table [ ] are required;
  - b. for soil removal or deposit activities in excess of 20 cubic metres per year, on parcels greater than 0.5 hectare, or if outdoor works are undertaken in the wet season between October 1 and April 30, a permit is required and works should include:
    - i. the best management practices shown in Table [ ];
    - ii. additional erosion control measures identified in an erosion and sediment control plan prepared by a certified erosion control specialist at the expense of the owner;
    - iii. a letter from a certified erosion control specialist confirming his or her appointment for field reviews during construction; and
    - iv. a letter from a certified erosion control specialist confirming that the required erosion control works were employed as specified.

**WATERCOURSE PROTECTION BYLAW**  
**This section on watercourse protection was adapted from the City of Burnaby Watercourse Protection Bylaw, District of North Vancouver Environmental Protection Bylaw, District of Metchosin Protection and Management of Rainwater Bylaw No. 467 2004, Stewardship Bylaws: A Guide for Local Government, and West Vancouver Watercourse Protection Bylaw.**

- c. applications for exemptions to the best management practices requirements in Table [ ] will be considered as follows:
  - i. applications must be supported by a letter from a certified erosion control specialist.
  - ii. the letter must state which practices should be exempt and what mitigation measures will be employed.
  - ii. the application must include confirmation that a certified erosion control specialist has been appointed for field reviews during construction and that the required erosion control works will be employed as specified.

### Restoration

7. The permit holder shall complete all restoration works within one year of the expiration date of the permit. If the restoration works are not duly and properly completed within one year of the expiration date of the permit, the [local government] may, in addition to the penalties hereinafter prescribed, draw upon the security deposit and complete all or part of the restoration works at the cost of the permit holder and deduct from the security deposit the cost of such completion, and the balance of the security deposit, if any, shall be returned to the permit holder, less any administration costs incurred by the [local government]. If the security deposit is insufficient to cover the actual cost of completing the restoration works, the permit holder shall pay such deficiency to the [local government] immediately upon receipt of the [local government]'s bill for same. It is understood that the [local government] may do such work either by itself or by contractors employed by the [local government]. If the restoration works are completed by the permit holder as herein provided, then the security deposit shall be returned to the permit holder.

### 15.11.3 Watercourse Protection Bylaw

#### Prohibition

1. No person shall discharge or allow or cause to be discharged into any drainage system, watercourse, water body (including wetlands) any pollutant, domestic waste, trucked liquid waste, or any other waste or deleterious substance prohibited by the *Waste Management Act* (British Columbia), or the *Fisheries Act* (Canada).
2. No person shall:
  - a. do anything that would, directly or indirectly, foul, obstruct, or impede a watercourse or wetland; or
  - b. drain or fill a wetland.
3. No person shall do any work within a watercourse:
  - a. without a permit issued pursuant to this bylaw; or

- b. contrary to a permit issued pursuant to this bylaw.

### Open Watercourse

- 4. Land development planning, design, and construction shall maintain an open watercourse policy, whereby:
  - a. watercourses and wetlands shall remain above ground and shall be enclosed only where crossed by highways. Bridges shall be required rather than culverts in the areas designated in Schedule [ ];
  - b. all wetlands shall remain undrained and unfilled; and
  - c. crossings of fish-bearing or potential fish-bearing open watercourses shall be fish-passable.

### Habitat Replacement

- 5. If a person drains or fills a wetland or damages riparian habitat contrary to this bylaw or a permit:
  - a. the person shall replace the habitat, at his or her own expense, at a ratio of 3:1 (replacement habitat of three times the size of the drained or filled wetland or riparian damage).
  - b. replacement wetland and riparian habitat shall be constructed in accordance with a habitat replacement plan developed by a certified aquatic biologist and approved by the [local government];
  - c. replacement habitats shall be maintained for a three-year period from the date of acceptance of their creation by the [delegate];
  - d. if the plants planted as part of the replacement habitat die within the maintenance period, they shall be replaced at the owner's expense.

### Sediment and Erosion Control

- 6. Any person undertaking any development requiring a permit, permission, or approval by the [local government], shall submit a sediment control plan in accordance with this bylaw for the development as part of the application for permit, permission, or approval and obtain the approval of the [local government] to the sediment control plan before proceeding with the development, and it shall be the responsibility of the owner of the land on which the work is being performed to ensure that the sediment control plan is implemented.
- 7. The [local government delegate] may waive the requirement for a sediment control plan if, in his or her reasonable opinion, the work that is the subject of the permit, permission, or approval is not likely to create a risk of depositing sediment in a watercourse system.
- 8. If the requirement for a sediment control plan is waived, the owner must utilize the guidelines for sediment control that are attached to the bylaw as Schedule [ ].
- 9. A sediment control plan shall set out works and measures required during development to prevent the discharge of prohibited substances to

a watercourse system and shall be signed and sealed by a professional engineer or as directed by the [local government delegate e.g., municipal engineer].

10. The sediment control plan shall include:
  - a. detailed plans, specifications, and design calculations necessary to describe any works required to convey, control, and treat suspended solids in runoff water from the site of the development;
  - b. a monitoring program to measure the suspended solids in the runoff water discharged from the development;
  - c. an operation and maintenance program to be implemented during the development that contains a maintenance schedule and methodology and maintainer's name and address and emergency contact telephone number; and
  - d. a letter of undertaking signed by a professional engineer who undertakes responsibility for the management of the sediment control plan, including:
    - i. the inspection of the development to ensure that construction is in accordance with the approved Sediment Control Plan;
    - ii. the periodic inspection of the development to ensure that runoff water leaving the site of the work does not constitute fouling;
    - iii. inspection of the receiving waters of the watercourse system during the development, to determine whether fouling has occurred.
11. The owner shall inspect, maintain, and operate the sediment control works required by a sediment control plan for the duration of the development as set out in the sediment control plan.
12. The owner shall submit the results of the suspended solids monitoring program, and all inspections conducted by the professional engineer pursuant to the sediment control plan will be made available to the [local government delegate] through weekly reports.
13. All disturbed surfaces shall be protected against the loss of soils through the use of silt fencing as shown in Figure [ ], to be located wherever surface drainage will leave the site as overland flow. Watercourses and water bodies (including wetlands) shall be protected by placing the silt fencing along the bank of the channel or the upland side of the natural boundary. Bare areas subject to erosion shall be covered by hand-placed straw mulch or equivalent erosion control blanket.
14. When disturbed catchment areas exceed 0.20 hectare, a sediment basin as described in Figure [ ] shall be constructed. This requirement may be waived by the [delegate] in rocky areas when construction is completed in the April to October period and finished with a non-erodible surface.

15. Erosion and sediment control measures shall be constructed before clearing or excavation commences and remain in place until all construction and landscaping are complete. Sediment traps may be converted to constructed wetlands at this time. Sediment traps shall be cleared of sediments between September 01 and September 30 each year and re-excavated any time the available storage has been reduced by one-third of the original volume.

### Rainwater Management

16. Rainwater shall be fully treated on-site, or in the case of a subdivision, within the original parcel from which the new parcel was created.
17. An applicant must design and install rainwater management facilities on-site to maintain pre-development rainwater quality, as much as is practicable, so that the quality of rainwater leaving the site at post-development shall be equal to or better than the quality of rainwater leaving the site at pre-development, such that there is no deterioration of water quality.
18. All water quality control and treatment facilities required for development shall be designed, installed, and maintained in accordance with the requirements in Appendix [ ].
19. If a lot or development site is used for a high-risk activity (as a potential pollution source, defined in Appendix [ ]), the owner or applicant shall implement additional pollution controls and management practices specified in Appendix [ ].
20. In cases where the effective impervious area coverage on a lot is [e.g., 5%] or greater, rainwater runoff from that lot shall be controlled to ensure that the total suspended solids loading rate (i.e., kilograms per hectare per year) is matched to pre-development conditions, as determined by [municipal delegate or project engineer].



## 15.12 Appendix L – Riparian Areas Bylaw Provisions

Two approaches are offered here for setbacks.

- SPEA setbacks can be designated in maps or in a table in the guidelines for different parts of watercourses (see, for example, the table in this section).
- Blanket setbacks can be established for existing neighbourhoods and future neighbourhoods (greenfield sites), with further differentiation for permanent and non-permanent watercourses/wetlands (e.g., 30-metre setbacks for permanent and 15-metre setbacks for non-permanent);

### 15.12.1 Development Permit Guidelines

Exemptions for which a Development Permit is Not Required

1. A development permit is not required for the following activities:
  - a. gardening and yard maintenance activities within an existing landscaped area, such as mowing lawns, pruning trees and shrubs, planting vegetation, and minor soil disturbance that does not alter the general contours of the land;
  - b. the construction of a fence if no native trees are removed and the disturbance of native vegetation is restricted to 0.5 m on either side of the fence;
  - c. the construction of a small accessory building such as a pump house, gazebo, garden shed, or playhouse if all of the following apply:
    - i. the building is located within an existing landscaped area;
    - ii. no native trees are removed;
    - iii. the building is located a minimum of 5 m from the high-water mark of the stream; and
    - iv. the total area of small accessory buildings is less than 10 m<sup>2</sup>;
  - d. the construction of a private trail if all of the following apply:
    - i. the trail is 1 meter wide or less;
    - ii. no native trees are removed;
    - iii. the surface of the trail is pervious (for example soil, gravel, or wood chips);
    - iv. the trail is designed to prevent soil erosion where slopes occur; and
    - v. where the trail parallels the stream, the trail is more than 5 m

#### **DEVELOPMENT PERMIT GUIDELINES**

**The development permit guidelines in this Appendix were adapted from Regional District of Central Okanagan Westside OCP Appendix A-5 pp.1-5 (including Tables 5-3) and Ellison OCP Appendix A-5; Kelowna OCP pp.7-14 to 19 (including Table 7-1); Nanaimo OCP DPA 23 pp.80-20 to 8-23 and Detailed Watercourse Development Permit Guidelines; Saanich Streamside DPA; and West Vancouver OCP.**

- away from the high-water mark of the stream;
- e. agricultural use within the Agricultural Land Reserve;
- f. ecological restoration and enhancement projects undertaken or authorized by the Director of Planning or [environmental protection staff];
- g. construction, maintenance, or operation of:
  - i. municipal works and services undertaken or authorized by the [local government]; and
  - ii. parks works and services undertaken or authorized by the [regional district];
- h. emergency actions required to prevent, control, or reduce an immediate threat to human life, the natural environment, or public or private property including:
  - i. forest fire, flood, and erosion protection works;
  - ii. protection, repair, or replacement of public utilities;
  - iii. clearing of an obstruction from a bridge, culvert, or stream;
  - iv. bridge repairs; and
  - v. removal of hazardous trees.

### Designation

2. No development shall occur within a Streamside Protection and Enhancement Area (SPEA) except for the following:
  - a. works authorized by the Minister of Fisheries and Oceans or a regulation under the *Fisheries Act* (Canada); and
  - b. works and activities that comply with the laws, regulations and best management practices of the *Water Act*: for example, bank repairs, stormwater outfalls, road crossings, footbridges, and pipeline crossings.
3. The width of the SPEA will be determined in one of the following two ways:
  - a. as specified in Appendix [ ] of the Official Community Plan; OR as specified in Table [ ] below, or
  - b. by a qualified environmental professional (QEP) acting in accordance with the Riparian Areas Regulation of the *Fish Protection Act*.

**TABLE [ ]: STREAMSIDE PROTECTION AND ENHANCEMENT AREA SETBACKS (OCP DEVELOPMENT PERMIT GUIDELINES) EXAMPLE**

	<b>STREAM</b>	<b>STREAM REACH</b>	<b>STREAMSIDE PROTECTION AND ENHANCEMENT AREA M2</b>
1	Bradley	All	15
2	Chestnut	Downstream of Hardy Road	10
3	Chestnut	Upstream of Hardy Road	30
4	Kirkby	All	30
5	Moira	All	30
6	Pilot	Downstream of Dock Street	15
7	Pilot	Upstream of Dock Street	50
8	Rowan	All	30
9	Rathby	All	10
10	Rumpole	All	10
11	Wennert	All	15

i. Setbacks apply to both sides of the stream.

ii. In areas along Pilot Creek (upstream of Dock Street), the \_\_\_\_\_ will pursue the establishment of a Streamside Protection and Enhancement Area that will average 30 metres in width plus an additional 20-metre Riparian Management Zone (Public Route of Access dedication) for a total width of approximately 50 metres. The Streamside Protection and Enhancement Area along Pilot Creek may vary in width but shall be of sufficient width to include any significant natural features (e.g., vegetation, water features, fish and wildlife habitat, escarpments, terraces, steep valley sides, and cliffs).

4. Notwithstanding Guideline 3, if a minor intrusion into a SPEA determined in accordance with 2(a) or 2(b) is required and the SPEA is greater than 15 m wide, the SPEA boundary may be adjusted to accommodate the intrusion if all of the following apply:
  - a. the SPEA intrusion is situated within an existing landscaped area.
  - b. adjustment of the SPEA boundary does not result in any portion of the boundary being less than 10 m from the high-water mark
  - c. terrain stability is not compromised.
  - d. land is added to the SPEA equal in area to that removed so that there is no reduction in the overall area of the SPEA within the property (as calculated in square metres).
  - e. new areas added to the SPEA to replace those removed are contiguous with the original SPEA and located as close to the stream as possible.
  - f. there is no reduction in the quality of the fish and wildlife habitat provided by the SPEA.
  - g. a BCLS survey plan is provided that identifies the high-water mark of the stream, top of the ravine bank and SPEA boundary in relation to the property lines and existing and proposed development.

OR

5. For watercourses in existing neighbourhoods:
  - a. avoid net loss of riparian habitat within 15 metres of the top of the watercourse bank or edge of wetland.
  - b. within 15 metres of the top of the watercourse bank or edge of wetland, locate new construction or erection of buildings and structures or non-structural impervious or semi-impervious surfaces, at least as far back from the watercourse or wetland as any existing development.
  - c. keep free of new construction or erection of buildings and structures or non-structural impervious or semi-impervious surfaces the area within 5 metres of the top of the watercourse bank or edge of the wetland.
  - d. when it is not practical to avoid net loss of riparian habitat within 15 metres of the top of the watercourse bank or edge of the wetland, provide compensatory habitat approved by the [local government] to achieve no net loss of riparian habitat, by replanting or restoring a similar area on the same watercourse or wetland, or contributing to a [municipal] habitat restoration program in an amount equivalent to the cost of providing such compensatory habitat.
6. For watercourses in areas contemplated for future development:
  - a. locate development on portions of the site that are least environmentally sensitive.
  - b. in order to achieve no net loss of riparian habitat, keep free of development the area within 30 metres of the top of the watercourse bank or edge of the wetland. The [local government] may consider an alternative Streamside Protection and Enhancement Area for a watercourse or wetland that is consistent with the objectives of this development permit designation and the provincial *Fish Protection Act*.
  - c. when it is not practical to avoid net loss of riparian habitat within an area determined under this section, provide compensatory habitat approved by the [local government], acknowledging any compensation measures approved by the Department of Fisheries and Oceans, to achieve no net loss of riparian habitat, by, in order of preference:
    - i. replanting or restoring a similar area on a watercourse or wetland in the [local government]; or
    - ii. contributing to a [municipal] habitat restoration program in an amount equivalent to the cost of providing such compensatory habitat.

## General Guidelines

7. Direct drainage of rainwater from developed sites into the Streamside Protection and Enhancement Area and Watercourses is prohibited. Rainwater will be managed on site with a focus on infiltrating approaches to management.
8. Maintain pre-development volumes, timing, and rates of rainwater infiltration or recharge to groundwater systems, except where alterations restore or enhance natural regimes.
9. Minimize the extent of impervious areas covering groundwater infiltration areas and storm runoff associated with the riparian assessment area.
10. Enhance, and where feasible, restore watercourses in already developed areas to improve watercourse quality from uplands to inlets.
11. Minimize alteration of the contours of the land outside the areas approved for buildings, structures, and site accesses by minimizing the deposit of fill and the removal of soil.
12. Minimize the removal of native trees outside the areas approved for buildings, structures and site accesses.
13. Develop and implement a soil erosion and sediment control plan as part of site design and construction to prevent the discharge of sediment-laden water into the stream.
14. Install temporary fencing and signage to prevent encroachment into the SPEA during construction.
15. During construction, protect the protected root zones of trees located within the SPEA and those identified for retention outside the SPEA.
16. Address terrain stability concerns that may have an impact on the SPEA.
17. Additional measures may also be required depending on the degree of potential impacts of the development on the SPEA and the condition of the SPEA, including but not limited to:
  - a. provision of a BCLS survey plan that identifies the high-water mark of the stream, top of the ravine bank, and SPEA boundary in relation to the property lines and existing and proposed development;
  - b. planting of native vegetation and removal of invasive non-native vegetation within the SPEA in accordance with an approved habitat restoration plan;
  - c. environmental monitoring during the construction phase;
  - d. installation of a permanent fence to demarcate the SPEA;
  - e. reduction of wind-throw hazard within the SPEA;
  - f. registration of a natural-state covenant over the SPEA; and

- g. dedication of the stream to the [local government].
18. When development is considered in SPEAs, the [local government] may use the following methods to prevent or minimize encroachment into the environmentally sensitive area:
- a. bare land strata to allow flexibility in conserving the feature or area;
  - b. density transfer, or density averaging, to the developable portion of a site with steep slopes (greater than 30 degrees);
  - c. development variance permits to vary conditions other than use or density (such as front and/or rear-yard setbacks, increasing the maximum site coverage of buildings provided that density is not increased, increasing the maximum building height, reducing parking space requirements); and/or
  - d. voluntary stewardship such as covenants to protect the feature or area.
19. For wetlands with areas greater than 10 hectares, an additional wetland review area of 100 metres beyond the wetland boundary is established (see Map [ ]). The management objective is for protection of ecological function. Permitted uses include preservation and conservation uses as well as roads, bridges, non-motorized municipal trails, and utility corridors.
20. Permit conditions for private floats, wharfs and docks include the following:
- a. dock construction materials must be inert (e.g., natural untreated cedar, precast concrete, or steel). Materials that can leach contaminants (for example, creosote-treated or chromated copper arsenate (CCA) preserved wood) are prohibited.
  - b. no disruption to vegetation, slope, or foreshore habitat from construction or the structure is allowed without demonstration of net positive improvement to the riparian areas. This includes the seasonal removal and storage of floating structures.
  - c. structures should be maintained to appropriate safety standards to avoid disruption to vegetation, slope, or foreshore habitat.
  - d. construction plans must be submitted before permit approval and construction. Plans should include:
    - i. name of legal owner and lot number/address where the dock will be installed;
    - ii. map indicating lot and proposed location of dock;
    - iii. horizontal distance that dock will extend into the lake from the shore and structure dimensions;
    - iv. type of installation (floating or fixed on pilings); and
    - v. construction materials to be used.

## 15.13 Appendix M – Enforcement

### Maintaining Validity of Permit

1. A permit is valid while
  - a. everything done under the permit conforms with the provisions of this bylaw, including the terms and conditions of the permit;
  - b. all federal and provincial approvals remain in effect;
  - c. all information provided in support of the application for the permit is correct; and
  - d. any person providing services required under this bylaw has adequately met the requirements of this bylaw. Failure to meet any of these provisions invalidates the permit.

### Order to Comply

2. If the holder of a permit has failed to maintain the validity of the permit, the Manager, Environment Services, Environmental Protection Officer, Environmental Control Technician, Bylaw Enforcement Officer, Building Inspector, or [local government staff] may serve on such person an Order to Comply, which requires the person to remedy the noncompliance within 14 days or if, in the opinion of the Environmental Protection Officer, special circumstances exist, on a date the Officer considers reasonable in the circumstances.
3. The Manager, Environment Services, Environmental Protection Officer, Environmental Control Technician, Bylaw Enforcement Officer, Building Inspector, Arborist, or [local government staff] shall serve the Order to Comply on the holder of the permit by:
  - a. personal service, or
  - b. return registered mail to the address of the holder of the permit as it appears on the application for the permit. When an Order to Comply is not personally served, it is deemed to have been served on the third day after mailing or posting.
4. A person upon whom an Order to Comply has been served may, by giving notice in writing to the Municipal Clerk at least 72 hours prior to the expiry of the time given in the Order to Comply to remedy any contradictions of the bylaw, appeal to the Council who shall hear and determine the appeal by confirming, amending, or rescinding the Order to Comply.

### Remedies – Watercourses

5. If during the development, any prohibited substance enters a watercourse system, the owner shall immediately notify the appropriate federal, provincial, and municipal agencies and under the appropriate direction, take remedial steps to remove such substance.

**The bylaw clauses in this appendix were adapted from North Vancouver (District) Environmental Protection Bylaw and West Vancouver Watercourse Protection Bylaw,**

6. If any person is carrying on any development or any other activity in contravention of this bylaw that, in the opinion of the Manager, Environment Services, Environmental Protection Officer, Environmental Control Technician, Bylaw Enforcement Officer, Building Inspector, Arborist, or [local government staff], is causing or is likely to result in a discharge of a prohibited substance into a watercourse system, then the Manager, Environment Services, Environmental Protection Officer, Environmental Control Technician, Bylaw Enforcement Officer, Building Inspector, Arborist, or [local government staff] may order the immediate suspension of all or any portion of such development or other activity by posting a notice to that effect at the place where the development or other activity is occurring.
7. No person shall continue development or other activity at a place where the Manager-Environment Services, Environmental Protection Officer, Environmental Control Technician, Bylaw Enforcement Officer, Building Inspector, Arborist, or [local government staff] has ordered the immediate suspension of all or any portion of such development or other activity by posting a notice to that effect. The Manager-Environment Services, Environmental Protection Officer, Environmental Control Technician, Bylaw Enforcement Officer, Building Inspector, Arborist, or [local government staff] may further direct that steps be taken to prevent further fouling.
8. If in the opinion of the Manager, Environment Services, Environmental Protection Officer, Environmental Control Technician, Bylaw Enforcement Officer, Building Inspector, Arborist, or [local government staff], immediate steps should be taken to prevent the escape of a prohibited substance or to stop an escape that is ongoing, or if the Manager, Environment Services, Environmental Protection Officer, Environmental Control Technician, Bylaw Enforcement Officer, Building Inspector, Arborist, or [local government staff] is not satisfied that the owner has taken appropriate steps to mitigate the damage, then the [local government] may enter onto the land to take such steps as are necessary in the circumstances.

### Tree Replacement

9. Except when a Tree Cutting Permit is issued as a remediation measure for the unlawful cutting or removal of a tree, any person who cuts or removes a tree without, or contrary to, a Tree Permit shall immediately replace such tree with another of the same species and of a height not less than 2 metres or 10% of the height for the species, whichever is the greater, or replace it with approved species of the same basal area, and maintain the replacement tree.

### Designation of Bylaw

10. This bylaw is designated pursuant to sections 260 and 264 of the *Community Charter* as a bylaw that may be enforced by means of a ticket in the form prescribed.

## Designation of Bylaw Enforcement Officer

11. The Manager-Environment Services, Environmental Protection Officer, Environmental Control Technician, Arborist, bylaw enforcement officers, building inspectors, and [local government staff] are designated to enforce this bylaw by means of a ticket pursuant to sections 260 and 264 of the *Community Charter*.

## Inspection

12. [local government] staff are hereby authorized to enter at all reasonable times upon any property for the purpose of ascertaining whether the regulations of this bylaw are being observed as detailed by [s.16 of the *Community Charter* or ss. 268, 314.1 *Local Government Act*].

## Ticketing

13. The words or expressions listed below in the Designated Expression column are authorized to be used on a ticket issued pursuant to sections 260 and 264 of the *Community Charter* to designate an offence against the respective section of this bylaw appearing opposite in the Section column, and the amounts appearing in the Fine column below are the fines set pursuant to sections 260 and 265 of the *Community Charter* for contravention of the respective section of this bylaw appearing opposite in the Section column:

DESIGNATED EXPRESSION	SECTION OF BYLAW	FINE
Discharge of fouling material	[ ]	\$500
Conduct works in stream corridor without permit	[ ]	\$500
Conduct works in stream corridor contrary to permit	[ ]	\$500
Cut tree without permit	[ ]	\$250
Cut tree contrary to permit	[ ]	\$250
Remove tree without permit	[ ]	\$300
Remove tree contrary to permit	[ ]	\$300
Deposit soil without permit	[ ]	\$100
Deposit soil contrary to permit	[ ]	\$250
Remove soil without permit	[ ]	\$100
Remove soil contrary to permit	[ ]	\$250
Apply or use pesticides without [permit/exemption]	[ ]	\$100
Apply or use pesticides contrary to [permit/exemption]	[ ]	\$300

## Offence

14. Every person who contravenes any provisions of this bylaw commits an offence punishable upon summary conviction and is liable to a fine not exceeding \$10,000.00.



## 15.14 Appendix N – Definitions

### A

**Active floodplain** means an area of land that supports, or in an undisturbed condition would support, floodplain plant species and is:

- a. adjacent to a stream that may be subject to temporary, frequent, or seasonal inundation; or
- b. within a boundary that is indicated by the visible high-water mark.

**Agricultural use** means a “farm operation” conducted in a manner consistent with “normal farm practice” as defined in the *Farm Practices Protection (Right to Farm) Act*.

### D

**Development** means any activity referred to in Section 920(1) of the *Local Government Act* and includes the:

- a. removal, alteration, disruption, or destruction of vegetation;
- b. removal, deposit, or disturbance of soils;
- c. construction or erection of buildings and structures;
- d. creation of non-structural impervious or semi-impervious surfaces;
- e. construction of roads, trails, docks, wharves, and bridges;
- f. provision and maintenance of sewer and water services; and
- g. subdivision.

### E

**Ecosystem** means a functional unit consisting of all of the living organisms and abiotic (non-living) factors of a unit or portion of the landscape, together with the processes that link them, including nutrient cycling and energy flow.

**Excessive suspended solids discharge** means the discharge of a fluid containing total suspended solids of 25 milligrams or more per litre above background total suspended solids of the receiving environment during the months of May to September, or 75 milligrams or more per litre above background total suspended solids of the receiving environment during the months of October to April.

## F

**Fill** means soil, sand, gravel, rock, or other material that can be used to alter the contours of land.

**Fish** means all life stages of salmonids, game fish, and regionally significant fish.

**Fish bearing** means a stream in which fish are present or potentially present if introduced barriers or obstructions could be removed or made passable for fish.

**Fish habitat** means that the stream is either fish bearing or is connected by surface flow to a stream that is fish bearing.

**Floodplain plant species** means plant species that are typical of an area of inundated or saturated soil conditions and that are distinct from plant species on freely drained adjacent upland sites.

**Fouling** means to deposit, discharge, spill, dump, or wash, whether directly or indirectly, a prohibited substance into a watercourse system.

## G

**Grasslands** means areas where native grasses and grass-like plants are the dominant vegetation.

## H

**High-water mark** means the visible high-water mark of a stream in which the presence and action of water are so common and usual, and so long continued in all ordinary years, as to leave a mark on the soil of the stream banks, above which there is a change in the character of the soil and vegetation. The high-water mark is the edge of the active floodplain.

## I

**Integrated watershed management** means a process of decision-making regarding uses and modifications of habitat features within a watershed to balance diverse goals and uses for environmental resources, and to consider how cumulative actions may affect the long-term sustainability of these resources.

## L

**Landscaped area** means an area significantly altered by human activity where there is the continuous maintenance of no vegetation, cultivated vegetation, and/or landscape materials, including but not limited to stones, boulders, cobbles, pavers, and decorative concrete.

## N

**Native** means a species that occurs naturally in the area and is not introduced.

**Natural features, functions and conditions that support fish life processes** include but are not limited to:

- a. streams and their active floodplains;
- b. the multi-canopied forest and ground cover adjacent to streams that;
  - i. moderates water temperatures;
  - ii. provides a source of food, nutrients, and organic matter to streams;
  - iii. establishes root matrices that stabilize soils and stream banks, thereby minimizing erosion; and
  - iv. buffers streams from sedimentation and pollution in surface runoff;
- c. large organic debris that falls into the stream or streamside area, including logs, snags, and root wads;
- d. natural sources of stream-bed substrates; and
- e. permeable surfaces that permit infiltration to moderate water volume, timing, and velocity and maintain sustained water flows in streams, especially during low-flow periods.

## O

**Owner** means any person who is registered under the *Land Title Act* as the owner of the land, or any other person who is in lawful possession of land, or who is in lawful possession or occupancy of any building situated on the land.

### DEFINITIONS

**This section on definitions is adapted from the Campbell River OCP p.9(4); Kelowna OCP p.DEF-2 to 3; Regional District of Central Okanagan Westside OCP Appendix A-5 pp.5-6; Metchosin Protection and Management of Rainwater Bylaw No. 467 2004; Saanich Streamside DPA and West Vancouver Watercourse Protection Bylaw.**

## P

**Paving** means any graded and hardened surface covered with materials comprised of asphalt, concrete, masonry, or combinations thereof.

**Prohibited substance** means:

- a. pesticides, herbicides, fertilizers, soaps, detergents, household and commercial grade cleaning compounds, paints, solvents, chemicals, chlorinated water, waste oil or any material or substance which is a hazardous product, contaminant, toxic substance, deleterious substance, special waste, dangerous good, or reportable substance that is identified or described in or defined by any applicable statute, regulation, or law, including any substance whose discharge to the watercourse system would violate the *Fisheries Act* or the *Environmental Management Act* and [Watercourse Protection Bylaw];
- b. any sediment, rock, gravel, sand, clay, silt, earth, construction or excavation wastes, cement, concrete, exposed aggregate wash water, or other substance which, when introduced into a watercourse system, will at the point of deposition constitute an excessive suspended solids discharge, cause a temperature increase of 2 degrees Celsius or more, or cause the pH of receiving waters to be outside the range 3.0 above or below background.

**Protected root zone** means the area of land surrounding the trunk of a tree that:

- a. has been specifically delineated on a plan by a certified arborist or such other person as approved by permit issued by the [local government staff]; or
- b. in the absence of such information, the area of land surrounding the trunk of a tree contained within a circle having a radius that is calculated by multiplying the diameter of the tree at breast height by 18.

**Protected tree** shall mean:

- a. a Garry Oak tree (*Quercus garryana*);
- b. an Arbutus tree (*Arbutus menziesii*);
- c. a Pacific Dogwood tree (*Cornus nuttallii*);
- d. a Pacific Yew tree (*Taxus brevifolia*);
- e. a Cascara tree (*Rhamnus purshiana*);
- f. a Manzanita tree (*Arcotostaphylos columbiana*);
- g. a Douglas-fir tree (*Pseudotsuga menziesii*), having a diameter greater than 60 centimetres (24 inches);
- h. etc.;
- i. any tree having a diameter greater than 80 centimetres (31.5 inches).

## Q

**Qualified environmental professional (QEP)** means an applied scientist or technologist, acting alone or together with another qualified environmental professional, if

- a. the individual is registered and in good standing in British Columbia with an appropriate professional organization constituted under an Act, acting under that association's code of ethics and subject to disciplinary action by that association,
- b. the individual's area of expertise is recognized in the assessment methods as one that is acceptable for the purpose of providing all or part of an assessment report in respect of that development proposal, and
- c. the individual is acting within that individual's area of expertise.

## R

**Rainwater management facility** means a facility used to convey, treat, detain, infiltrate, or retain rainwater to preserve or mimic the natural hydrologic cycle, or to fit within the capacity of existing infrastructure, on a development site.

**Ravine** means a narrow, steep-sided valley with slope grades greater than 3:1 (33%).

**Riparian areas** are the moist, nutrient-rich lands adjacent to streams. Riparian areas are transitional zones between aquatic and terrestrial (or upland) ecosystems and often exhibit vegetation characteristics of both; they are not as dry as upland environments and not as wet as aquatic or wetland systems.

## S

**Sediment and erosion control plan** means the specifications, drawings, plans, and design calculations for development to control and monitor the discharge of any prohibited substance from any source into a watercourse system.

**Sensitive ecosystem** means any parcel of land, large or small, under public or private control, that provides, contains, or includes productive, rare or sensitive habitat, ecosystems, or landforms. These designated areas are sensitive to disturbance by human activity and they require special treatment in order to protect their value. Sensitive ecosystems in [local government] include the following:

- a. avian trees (nesting and perch)
- b. rare woodlands, mature old-growth forests, and broadleaf and coniferous woodlands
- c. watersheds
- d. watercourses, water bodies, wetlands and their associated aquatic habitats, and riparian areas
- e. grasslands
- f. ocean foreshore
- g. unique or special landforms such as cliffs, points, or coastal bluffs;
- h. etc.

**Soil** means the soil, sand, gravel rock, or other substance of which land is composed.

**Stream** includes any of the following that provides freshwater fish habitat:

- a. a watercourse, whether it usually contains water or not;
- b. a pond, lake, river, creek, or brook; and
- c. a ditch, spring, or wetland that is connected by surface flow to something referred to in paragraph (a) or (b).

**Streamside Protection and Enhancement Area (SPEA)** means the area adjacent to a stream that links aquatic to terrestrial ecosystems and includes both the riparian area and the adjacent upland area that exerts an influence on the stream, the width of which is determined in accordance with [ ].

**Structure** means any material or a combination of materials that is built, constructed, or erected, the use or presence of which requires location on the ground or water or attachment to something having a location on the ground or water.

## T

**Tree** means any living, erect, woody plant that is 5 metres or more in height; or 10 cm or more in diameter.

**Top of the ravine bank** means the first significant break in a ravine slope where the grade beyond the break is flatter than 3:1 (33%) for a minimum distance of 15 m measured perpendicularly from the break, and the break does not include a bench within the ravine that could reasonably be developed. Any slope change greater than 3:1 must result in a greater than 1.0 m elevation gain between the points where the slope is less than 3:1.

**Total suspended solids** means the solid matter that is retained on a 4.5-Micron pore filter paper when the material is tested in compliance with the analytical requirements described in Schedule 3 of the *Fisheries Act*.

## W

**Watercourse** means a creek, pond, lake, river, stream, or brook, whether usually containing water or not and any spring or wetland that is integral to a watercourse.

**Watercourse system** means watercourses and waterworks, ditches, drains or sewers, drainage works, mains, pipes, culverts, catch basins, leads, and curbs and gutters, located in the [local government] on private or public property, by which surface or ground water is conveyed to receiving waters; excludes rainwater control basins (but not their discharge outlets or channels).

**Wetland** means land, with or without visible banks, that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal conditions supports, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, and similar areas, and that also includes all land within 7.5 metres of any land meeting that description, measured horizontally.



# For More Information

Questions? Comments? We would appreciate feedback on this document. Please contact:

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