

Riparian Areas Regulation Implementation Guidebook



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Contents

Acknowledgements	ii
Preface	iii
1 Introduction to the Riparian Areas Regulation	4
1.1 Background	4
1.2 Where does the Riparian Areas Regulation apply?	7
1.3 What types of development does the Regulation apply to?	8
1.4 What types of development does the Regulation NOT apply to?	9
1.5 What are local governments required to do to meet the Riparian Areas Regulation?	11
1.6 Other environmental concerns with fish and fish habitat during development	15
1.7 Riparian assessment areas and Assessment Reports	19
2 Roles and Responsibilities	24
2.1 Department of Fisheries and Oceans	24
2.2 Ministry of Environment	24
2.3 Local governments	24
2.4 Qualified Environmental Professional	25
2.5 Proponent	26
3 Process for Seeking Project Approval under the Riparian Areas Regulation	27
3.1 Overall process	27
3.2 Activities Permitted within a SPEA	30
3.3 Activities not permitted in a SPEA	31
3.4 Adjustment to SPEA Widths	32
4 Implementation Tools for Local Government	38
4.1 Overview	38
4.2 Basic requirements	38
4.3 Legislative Tools	39
4.4 Approaches to implementing the Riparian Areas Regulation	46
5 Compliance Monitoring and Enforcement	51
5.1 Compliance monitoring	51
5.2 Effectiveness monitoring	52
5.3 Local government enforcement tools	52
5.4 Education	54
5.5 Enforcement roles	54

Appendix 1.	Applying the Regulation: three case studies	55
Appendix 2.	Notification system	72
Appendix 3.	Example letters	87

List of Tables

4-1	Summary of approaches and bylaw options for implementing the Riparian Areas Regulation	47
5-1	Enforcement tools available to local governments	53

List of Figures

1-1	Ways in which healthy riparian areas help to ensure healthy fish populations	5
1-2	Areas where the Riparian Areas Regulation applies	8
1-3	Riparian assessment area	21
3-1	Process for seeking project approval under the Riparian Areas Regulation	28
3-2	Sample scenario showing the Riparian Areas Regulation applied to siting a new single-family house on an existing small lot	33
3-3	Sample scenario showing the Riparian Areas Regulation applied to building an addition on an existing single-family house	35
3-4	Flowchart for applications for approval	
4-1	Sample scenario showing the Riparian Areas Regulation applied to an application to create a new lot	42

Acknowledgement

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Preface

The Riparian Areas Regulation, enabled by the *Fish Protection Act*, came into effect on March 31, 2005. It provides the legislated direction needed by local governments to achieve improved protection of fish and fish habitat in British Columbia.

The Regulation, administered by the Ministry of Environment, applies to riparian fish habitat affected by new residential, commercial and industrial development on land under local government jurisdiction (private land and the private use of Crown land).

The primary purpose of this guidebook is to help local governments, landowners, developers, community organizations and Qualified Environmental Professionals (QEPs):

- understand what the legal requirements of the Riparian Areas Regulation are;
- understand the process for seeking development approval under the Regulation; and
- be aware of the measures that can be used to meet those requirements and the goal of protecting the biological functioning of riparian areas.

The guidebook also:

- provides guidance to ministry staff and others in applying the Regulation; and
- outlines the roles and responsibilities of governments, QEPs and proponents (landowners and developers) in implementing and complying with the Regulation.

Compliance with the Riparian Areas Regulation does not exempt anyone from complying with other applicable federal or provincial laws, local government bylaws or related environmental legislation.

The Riparian Areas Regulation is designed to provide local governments with adequate support, direction and assurance that, with the exercise of due diligence, protection of riparian fish habitat will be achieved. The information presented here has been reviewed and approved by both the Ministry of Environment and the Department of Fisheries and Oceans Canada, and by meeting these standards a developer will avoid impacting riparian habitat.

Note: This guidebook is not the official version of the Riparian Areas Regulation. To obtain the official version, contact [Crown Publications Inc.](#), 521 Fort Street, Victoria, BC V8W 1E7.

1 Introduction to the Riparian Areas Regulation

1.1 Background

What are riparian areas and why are they important?

Riparian areas¹ are the areas adjacent to ditches, streams, lakes and wetlands. These areas, found in all regions of the province, support a unique mixture of vegetation, from trees and shrubs to emergent and herbaceous plants. The vegetation in riparian areas directly influences and provides important fish habitat. It builds and stabilizes stream banks and channels, provides cool water through shade, and provides shelter for fish. The leaves and insects that fall into the water are a source of food for fish². Although they account for only a small portion of British Columbia's land base, riparian areas are often more productive than the adjoining upland and are a critical component of the Province's biodiversity.

Good quality riparian habitat ensures healthy fish populations (see Figure 1-1). The protection of riparian areas is a vital component of an integrated fisheries protection program. The integrity of a riparian area depends on, and is influenced by, the upland area as well as the upstream environment. British Columbia has lost hundreds of kilometres of riparian habitat in the past decades in the Lower Mainland alone. To reverse this trend Section 12 of the *Fish Protection Act* was established to guide and facilitate urban development that exhibits high standards of environmental stewardship, while protecting and restoring riparian fish habitat.

Preventing damage to riparian fish habitat is simpler than restoring it once damage has occurred. Addressing riparian areas through watershed planning integrates a broad approach that ensures all aspects of the watershed are considered, including environmentally sensitive areas, stormwater management and riparian areas.

Does the Riparian Areas Regulation apply?

- Yes, to all streams, rivers, creeks, ditches, ponds, lakes, springs and wetlands connected by surface flow to a waterbody that provides fish habitat.
- No, not to marine or estuarine shorelines. These fish habitats are still subject to the federal *Fisheries Act*.
- No, not to watercourses that are disconnected from fish habitats.

¹ *Riparian area* is defined in section 1(1) of the Regulation as a streamside protection and enhancement area (SPEA).

² *Fish* is defined in section 1(1) of the Regulation as being all life stages of (a) salmonids, (b) game fish and (c) regional significant fish.

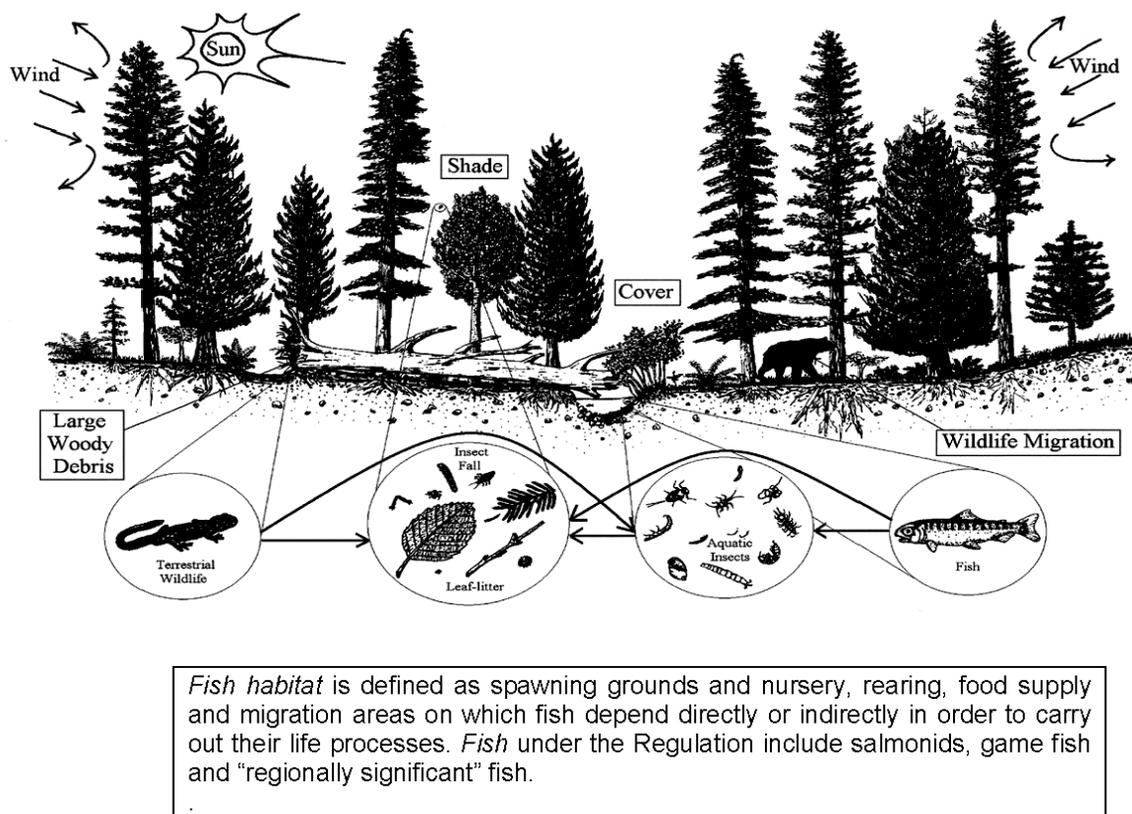


Figure 1-1. Ways in which healthy riparian areas help to ensure healthy fish populations (Ministry of Environment).

What is the Riparian Areas Regulation?

The provincial government passed the Fish Protection Act in July 1997 to help ensure fish have sufficient water and habitat as British Columbia continues to grow and develop. Section 12 of the Act authorizes the Province to establish "policy directives regarding the protection and enhancement of riparian areas that the Lieutenant Governor in Council considers may be subject to residential, commercial or industrial development." These policy directives are intended for local governments (municipalities and regional districts), which are the primary bodies responsible for planning and regulating these forms of development.

The Riparian Areas Regulation, enabled by the *Fish Protection Act*, provides the legislated direction needed by local governments to achieve improved protection of fish and fish habitat. The Regulation applies to riparian fish habitat *only in association with new residential, commercial*

and industrial development³ on land under local government jurisdiction. This includes private land and the private use of the provincial Crown land.

The Riparian Areas Regulation reflects a growing emphasis across North America for better riparian protection. Other provinces such as Ontario and Alberta have adopted legislation that enables or requires local governments to establish setbacks on streams as provisions in their municipal and planning powers. In the United States, where federal legislation protecting wetlands and endangered species requires state laws to do the same, many states and their member counties and municipalities have established riparian protection requirements.

Key components of the Regulation

- Under the Regulation, local governments may allow development within 30 m of the high water mark⁴ of a stream or top of a ravine bank⁵ – provided the prescribed riparian assessment methods have been followed.
- The riparian assessment method requires a Qualified Environmental Professional⁶ (QEP) to provide an opinion – in an Assessment Report –

³ *Development* is defined in section 1(1) of the Regulation as being any of the following associated with or resulting from the local government regulation or approval of residential, commercial, or industrial activities or ancillary to the extent that they are subject to local government powers under Part 26 of the *Local Government Act*: (a) removal, alteration, disruption, or destruction of vegetation; (b) disturbance of soils; (c) construction or erection of buildings and structures; (d) creation of nonstructural impervious or semi-impervious surfaces; (e) flood protection works; (f) 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; (j) subdivision as defined in section 872 of the *Local Government Act*.

⁴ *High water mark* is defined in section 1(1) of the Regulation as being the visible high water mark of a stream where the presence and action of the water are so common and usual and so long continued in all ordinary years, as to mark on the soil of the bed of the stream a character distinct from that of its banks, in vegetation, as well as in the nature of the soil itself, and includes the active floodplain.

⁵ *Top of a ravine bank* is defined in section 1(1) of the Regulation as being the first significant break in a ravine slope where the break occurs such that the grade beyond the break is flatter than 3:1 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 be developed.

⁶ *Qualified Environmental Professional (QEP)* is defined in section 1(1) of the Regulation as being an applied scientist or technologist, acting alone or together with another QEP. He or she must be 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. The applicable professionals include Professional Biologists, Geoscientists, Foresters, Engineers and Agrologists. To be able to certify that they are qualified to conduct the assessment methodology, the individual's area of expertise must be 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 the particular development

that the development will not result in a harmful alteration of riparian fish habitat. The QEP can help plan any new development so that it will avoid impacting fish habitat. The Assessment Report also identifies measures that will be required to maintain the integrity of the riparian area in the development project.

- The assessment methodology in the Schedule of the Regulation ensures that an assessment has been conducted to a standard level and that the standard reporting format is followed. The Assessment Report, submitted electronically to provincial and federal governments, facilitates monitoring and compliance. Based on a detailed assessment of the development area, the Regulation provides a mechanism for allowing site-specific determination of appropriate levels of protection.
- The Regulation is based on current science regarding fish habitat, while recognizing the challenges in achieving science-based standards in an urban environment.
- It is recommended that prior to any development, as defined in the Regulation, the local government responsible for land use decisions be contacted to determine what specific legislative requirements are in place.

1.2 Where does the Riparian Areas Regulation apply?

The Riparian Areas Regulation currently applies only to municipalities and regional districts in the Lower Mainland, on much of Vancouver Island, in the Islands Trust area, and in parts of the Southern Interior (Figure 1-2), as these are the regions of greatest population growth and development.

The following regional districts and all municipalities within them are affected by the Regulation:

- Capital
- Central Okanagan
- Columbia-Shuswap
- Comox-Strathcona
- Cowichan Valley
- Fraser Valley
- Greater Vancouver (except the City of Vancouver)
- Nanaimo
- North Okanagan

proposal that is being assessed. The individual is considered a QEP only for that portion of the assessment that is within their area of expertise, as identified in the assessment methodology.

- Okanagan-Similkameen
- Powell River
- Squamish-Lillooet
- Sunshine Coast
- Thompson-Nicola
- the trust area under the *Islands Trust Act*

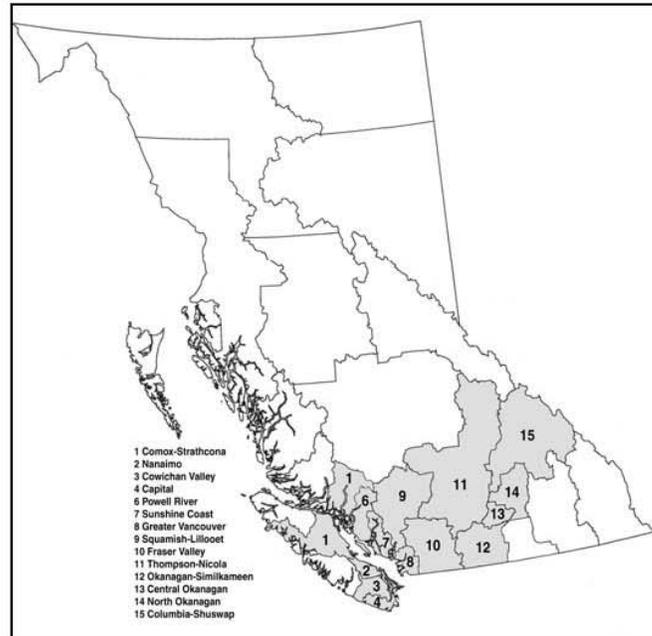


Figure 1-2. Areas where the Riparian Areas Regulation applies.

The Regulation may be phased in elsewhere in the province as the need arises.

Other local governments outside these areas can use the approach set out in the Regulation as a way to prevent riparian disruption or disturbance. See also *Environmental Best Management Practices for Urban and Rural Land Developments: Aquatic and Riparian Ecosystems* (<http://wlapwww.gov.bc.ca/wld/BMP/bmpintro.html>) for guidelines on working in riparian areas.

1.3 What types of development does the Regulation apply to?

As noted above, the Regulation applies to local government regulation or approval of residential, commercial or industrial activities or ancillary activities under Part 26 of the *Local Government Act* as "development" along streams.

That means:

- **activities:**
 - construction or erection of buildings and structures;

- creation of nonstructural impervious or semi-impervious surfaces; and
- subdivision, as defined in section 872 of the *Local Government Act*; and
- **ancillary activities that are done in a association with residential, commercial or industrial development:**
 - removal, alteration, disruption or destruction of vegetation;
 - disturbance of soils;
 - flood protection works;
 - construction of roads, trails, docks, wharves and bridges;
 - provision and maintenance of sewer and water services;
 - development of drainage systems; and
 - development of utility corridors.

1.4 What types of development does the Regulation NOT apply to?

The Regulation does not apply to activities that are NOT residential, commercial or industrial activities or ancillary activities regulated or approved by local government under Part 26 of the *Local Government Act*. The Regulation does not apply to the following:

- *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. Section 911 (8) states: “If a building or other structure, the use of which does not conform to the provisions of a bylaw under this Division is damaged or destroyed to the extent of 75% or more of its value above its foundations, as determined by the building inspector, it must not be repaired or reconstructed except for a conforming use in accordance with the bylaw.”
- *Existing permanent structures, roads and other development* within riparian protection areas are “grand parented.” Landowners can continue to use their property as they always have even if a streamside protection and enhancement area is designated on it. The Regulation also has no effect on any repair, renovation, or reconstruction of a permanent structure on its existing foundation. Only if the existing foundation is moved or extended into a streamside protection and enhancement area (SPEA) would the Regulation apply.
- *Developments that have been approved* but not yet built are honoured. Requests for changes to the approved development may, however, trigger a review with reference to the Regulation, depending

on the significance of the proposed change (e.g., a request for a new zone, different land use, or larger structure than the one approved).

- **Farming activities** are not subject to the Regulation. Most of them are subject to the *Farm Practices Protection (Right to Farm) Act* or other provincial legislation or guidelines. A Farm Practices Guide is being developed that will address stream setbacks for farming activities. However, while the Regulation does not apply to some farming activities themselves,⁷ it does apply to non-farming activities on lands that may otherwise be used, designated, or zoned for agriculture. For instance, construction of non-farming-related building or development of a golf course on Agricultural Land Reserve land would be regulated by local government bylaws and subject to the Regulation.
- **Mining activities, hydroelectric facilities and forestry (logging) activities** are also not subject to the Regulation, as these land uses are regulated by other provincial and federal legislation and not by local governments. However, a local government can regulate how and where mineral or forest products may be processed. For instance, processing activities are usually considered as industrial for the purposes of a zoning bylaw and thus fall within the definition of development that can be regulated under the Regulation. As for these resource extraction activities, the bottom line is that all such land uses are still subject to the federal *Fisheries Act*.
- **Federal lands and First Nations reserve lands** would be exempt from the Regulation but only to the extent that they are already exempt from local government bylaws. However, activities on these lands are still subject to the federal *Fisheries Act*. With regard to

⁷ The *Farm Practices Protection Act* defines “farm operation” as “any of the following activities involved in carrying on a farm business: (a) growing, producing, raising or keeping animals or plants, including mushrooms, or the primary products of those plants or animals; (b) clearing, draining, irrigating or cultivating land; (c) using farm machinery, equipment, devices, materials and structures; (d) applying fertilizers, manure, pesticides and biological control agents, including by ground and aerial spraying; (e) conducting any other agricultural activity on, in or over agricultural land; and includes (f) intensively cultivating in plantations, any (i) specialty wood crops, or (ii) specialty fibre crops prescribed by the minister; (g) conducting turf production (i) outside of an agricultural land reserve, or (ii) in an agricultural land reserve with the approval under the *Agricultural Land Reserve Act* of the Land Reserve Commission; (h) aquaculture as defined in the *Fisheries Act* if carried on by a person licensed, under Part 3 of that Act, to carry on the business of aquaculture; (i) raising or keeping game, within the meaning of the *Game Farm Act*, by a person licensed to do so under that Act; (j) raising or keeping fur bearing animals, within the meaning of the *Fur Farm Act*, by a person licensed to do so under that Act; (k) processing or direct marketing by a farmer of one or both of (i) the products of a farm owned or operated by the farmer, and (ii) within limits prescribed by the minister, products not of that farm, to the extent that the processing or marketing of those products is conducted on the farmer’s farm; but does not include (l) an activity, other than grazing or hay cutting, if the activity constitutes a forest practice as defined in the *Forest Practices Code of British Columbia Act*; (m) breeding pets or operating a kennel; (n) growing, producing, raising or keeping exotic animals, except types of exotic animals prescribed by the minister”.

treaty Settlement Lands, compliance with the Regulation and local government bylaws will be negotiated in each treaty. The policy of the Ministry of Environment is to seek to include the standards set out in the Regulation in treaties.

- **Parks and parkland** are subject to other legislation and may, in some cases, be exempt from the Regulation. In other cases, activities such as commercial development within them may still be subject to the Regulation. As well as activities that are ancillary to residential, commercial, or industrial development may be subject to the regulation. For example if as part of a residential development an area was designated as park, then a trail within the park would be subject to the regulation as it is ancillary to the residential development. In all cases it will depend on the individual circumstances. Therefore, review on a case by case basis would be necessary.
- **Institutional developments** are exempt from the RAR, but are subject to the Federal Fisheries Act and Provincial Water Act. Where an institutional development includes development activities within the riparian area, it is recommended that the developer seek advice from a qualified environmental professional(s) and secure the necessary approvals for meeting applicable regulatory requirements.

1.5 What are local governments required to do to meet the Riparian Areas Regulation?

Overview

The Riparian Areas Regulation directs local governments to protect riparian areas during new residential, commercial and industrial development, through the use of Part 26 in the *Local Government Act*.

The Regulation establishes a science-based process that local governments may apply to achieve riparian area conservation. Implementing the Regulation should be a straightforward process for local governments. They can simply add to their existing permitting and approval process the requirement for the Assessment Report. They can also incorporate into their zoning and general bylaws a level of protection that is consistent with the direction in the Regulation (see chapter 4).

Other Legislation Relating to Developments around Streams

The Riparian Areas Regulation does not supersede or eliminate stream-related requirements of other related legislation. When planning a development, a proponent should determine all the federal, provincial and local government regulations that apply. For a development proponent, this can mean going through two or more regulatory processes resulting in differing requirements.

The Canada *Fisheries Act* (section 35 (1)) notes that “no person shall carry on work or undertaking that results in the harmful alternation, disruption, or destruction of fish habitat.” This can include works such as removal of riparian vegetation and using retaining walls to “harden” a shoreline. The importance of streamside/riparian vegetation as fish habitat has been successfully brought before the courts, and [legal judgments have identified riparian vegetation as fish habitat](http://www.heb.pac.dfompo.gc.ca/habitatpolicy/charges_e.htm) (http://www.heb.pac.dfompo.gc.ca/habitatpolicy/charges_e.htm). Some changes to fish habitat may be permitted if overall there is no net loss of fish habitat and mitigation of impacts is deemed to be appropriate.

The B.C. *Water Act*, section 9, regulates “changes in and about a stream.” The Act allows persons to carry out activities in and about a stream under the authority of an approval or license or by following the *Water Act* Part 7 regulation. That regulation allows persons to carry out specified activities without the need for a formal approval or license. The specified activities can include culvert and clear span bridge installation and minor maintenance of utilities and pipeline crossings. For full requirements and specified activities, see the Part 7 regulation. Section 9 of the *Water Act* generally regulates activities within the stream channel up to the high water mark, while the Riparian Areas Regulation regulates activities in the riparian areas above the high water mark.

It is recommended that prior to any development, as defined in the Regulation, the local government responsible for land use decisions be contacted to determine what specific legislative requirements are in place.

Planning and management of land use

Under the *Fish Protection Act*, section 12(4), a local government affected by a policy directive such as the Riparian Areas Regulation must:

- include riparian area protection provisions in its zoning bylaws and permits, in accordance with the directive, or
- ensure that its bylaws and permits under Part 26 of the *Local Government Act* provide, in the opinion of local government, a level of protection that is comparable to or exceeds that of the directive.

The Regulation does not give local governments any additional powers with respect to streamside protection. Rather, it calls on local governments to use their existing land use planning and management powers under the *Local Government Act* to improve the protection of fish habitat in settlement areas (section 6 of the Regulation⁸).

The Regulation calls for a structured, consistent approach to providing a site-specific riparian area assessment for a new development, to ensure

⁸ As stated in section 6 of the Regulation, when exercising its powers with respect to development, a local government must protect its riparian areas in accordance with this Regulation.

the development does not harm fish and fish habitat. Local government remains free to use its powers under the *Local Government Act* to protect other values while directing a new development applicant to follow the Riparian Areas Regulation to address riparian fish habitat issues.

Requirement for Assessment Reports

Under section 4 of the Regulation, a local government may allow development to proceed as long as:

1. a Qualified Environmental Professional (QEP), in an Assessment Report:
 - certifies he or she is qualified to conduct the assessment
 - certifies he or she has followed the assessment methods set out in the schedule to the Regulation; and
 - provides an opinion that no natural features, functions or conditions that support fish life processes in the assessment area will be harmfully altered, disrupted or destroyed; and
2. the local government is notified by the Ministry of Environment that the ministry and DFO have:
 - been notified; and
 - received the QEP's Assessment Report that meets the above conditions.

Alternatively, a local government can allow development to proceed if DFO, for a particular case, authorizes the harmful alteration, disruption or destruction (HADD) of fish habitat. In this situation, the local government will need to agree with the developer that use of the riparian area is needed and support the application for DFO authorization of the HADD (see section 3.5 in this guidebook).

The Regulation does not restrict a local government's ability to increase the level of protection in riparian areas over that specified in the QEP's Assessment Report. However, a local government cannot reduce the level of protection specified in the Assessment Report without the authorization of DFO.

By hiring a QEP to help design the development, proponents can avoid impacts, assess potential impacts and develop mitigative measures. Meanwhile, governments can focus on monitoring and enforcement.

Requirements for developing monitoring, enforcement and education strategies

The Riparian Areas Regulation (section 5) also requires local governments to work with DFO and the ministry to develop strategies for:

- obtaining certificates from QEPs that projects have been carried out as defined in the Assessment report;

- monitoring and reporting, to ensure QEPs have prepared Assessment Reports according to the prescribed assessment methods and that the development has proceeded consistent with the Assessment Report; and
- educating the public on the protection of riparian areas.

This section of the Regulation recognizes that it will take the efforts of all groups involved to plan new development or redevelopment projects so that riparian areas are effectively protected.

Implementation Options for local governments

There are three basic options available to local governments in implementing the Riparian Areas Regulation. They involve utilizing the Transition Option in Section 8 of the Regulation, following the direction in Section 4 of the Regulation or establishing a regime that in their opinion provides a level of protection that meets or exceeds that in the Regulation.

Section 8 of the Regulation gives local governments two lines of recourse with which to manage the transition from the old Streamside Protection Regulation to the new Riparian Areas Regulation:

- If a local government has previously met the requirements of the Streamside Protection Regulation, then the jurisdiction is deemed to be in compliance with the Riparian Areas Regulation.

In other words, if a local government has bylaws or permits that establish streamside protection and enhancement areas (SPEAs) in accordance with section 6 of the Streamside Protection Regulation, then the local government is considered to have met the requirements of the Riparian Areas Regulation. This means that under the former regulation, the local government will have established SPEAs, consistent with sections 6(1) to 6(4), or established a regime that meets or exceeds a level of protection afforded by these sections of the Streamside Protection Regulation. If this is the case, the jurisdiction will therefore have met or exceeded the Riparian Areas Regulation requirements.

- However, if a local government wants to amend the SPEAs previously set under section 6(1) to 6(4), or a regime established that meets or exceeds a level of protection afforded by these sections of the Streamside Protection Regulation then it must follow the direction in the Riparian Areas Regulation for doing so..

If a local government had not yet provided protection of riparian areas then it must either:

- follow the direction in the Riparian Areas Regulation for doing so, or
- establish a regime that meets or exceeds a level of protection afforded by the Riparian Areas Regulation.

Reducing local government's liability exposure

The approach set out in the Regulation was a risk management approach to liability.

First, the role of local government is clearly defined to make it clear that it is not responsible for the determination of whether a project will result in the harmful alteration of fish habitat. Its role is to ensure projects within the 30-m riparian assessment area do not proceed until it has been advised that the fish habitat requirements of the federal and provincial governments, as set out in the Regulation, have been met.

Second, the model set out in the proposed Regulation is designed to reduce the potential for unacceptable assessments by QEPs and the potential for proponents not to follow direction established in the Assessment Report. The following components were designed specifically to address this major design principle of the model:

- the detailed science-based assessment that is part of the actual Regulation;
- the requirement in the Regulation for notifications to senior governments with the results of the assessment;
- the requirement in the Regulation is for certification by the QEPs that they are qualified and have followed the methodology, and provided their professional opinion of the impact of the development on riparian fish habitat based on the assessment;
- the requirement in section 5 of the Regulation for final review sign-off and reporting back to senior governments by the QEPs on the implementation of the assessment prescriptions;
- compliance and efficacy monitoring; and
- working with the professional associations in the training, responsibility and accountabilities of the members.

Collectively, these measures will reduce the potential for litigation.

1.6 Other environmental concerns with fish and fish habitat during development

The Riparian Areas Regulation deals with riparian fish habitat, and only in association with new residential, commercial and industrial development on land under local government jurisdiction (this includes private land and the private use of provincial Crown land). Other uses are subject to other planning and management approaches.

Although beyond the scope of section 12 of the *Fish Protection Act*, attention also needs to be given to:

- hydrological impacts on fish habitat resulting from land use and development and the associated creation of impervious surfaces;
- water quality impacts on fish from point and non-point source pollution; and
- the role and importance of riparian ecosystems to terrestrial species.

It is anticipated that local governments will choose – as many already have – to address these matters through comprehensive, watershed-based, integrated stormwater and stream corridor planning and management.

Large woody debris (LWD)

Large woody debris can be problematic in urban areas and local governments regularly remove it because it poses a flood hazard to instream structures, primarily culverts.

The abundance of LWD in urban streams is considerably lower than that for forested streams. Areas with more urbanization tend to have more LWD removed from the channel and lower recruitment due to the removal of danger trees. Emphasis needs to be placed on finding opportunities to satisfactorily address both the fish habitat needs and municipal hazard concerns to enable the recovery of urban streams. Past practices of LWD removal should be re-evaluated in light of the importance of LWD to stream environments. It is recommended that local governments work collaboratively with DFO and the Ministry on developing best management practices for managing LWD in urban streams.

The Regulation has designed the SPEA to supply large woody debris (downed trees and large pieces of trees) to streams. Large woody debris (LWD) is an essential component of healthy fish habitat in streams – it contributes to the complexity and stability of stream channels as well as providing cover for fish and aiding in the cycling of stream nutrients.

Watershed planning

Local governments are encouraged to undertake watershed planning because it leads to more informed environmental decisions. Watershed plans consider environmental, cultural and socio-economic values and identify clear and realistic goals, objectives and timelines. They enable the use of best available information, can resolve land and water use conflicts and build partnerships which lead to improved cooperation. Watershed plans reconcile short term actions and future plans for the watershed.

A component of any watershed plan should be riparian protection. The Regulation can be used to provide the riparian fish habitat component of a watershed plan. Recommendations from watershed plans, because they are more comprehensive, may develop setbacks that incorporate a number of interests and values, and may exceed those established solely by following the direction in the regulation.

Stormwater management

During the past 15 years, a significant body of research has been completed regarding the impacts of urbanization on streams, lakes and wetlands. The findings clearly demonstrate that the most important impacts of urbanization on streams in order of importance are:

- Changes in hydrology;
- Changes in riparian corridor;
- Changes in fish habitat within the stream, and
- Water quality

Stormwater is the component of runoff that is generated by human activities. Stormwater is created when land development alters the natural hydrological cycle or “water balance”. To mitigate the cumulative impacts of stormwater resulting from changes to the natural water balance, the Province of BC has developed a guidebook to assist local governments, engineers and planners in clearly understanding the broader issues and strategies currently available to correct stormwater-related problems.

The document “Stormwater Planning. A Guidebook for British Columbia” (2001) is available at the Ministry website:

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

The Greater Vancouver Regional District is incorporating Integrated Stormwater Management Planning as part of their Liquid Waste Management Planning (LWMP) process.

http://www.gvrd.bc.ca/sewerage/stormwater_reports.htm

Based on the current knowledge of the science of stormwater management, certain guidelines can be identified for all land development projects, especially those sites adjacent to watercourses. These include:

- Maintain effective impervious surfaces close to zero;
- Infiltrate or re-use runoff from the development area;
- Retain significant natural (forest) cover across the development site, and
- Maintain an undisturbed SPEA , to ensure proper filtration and maintenance of water quality

Performance targets for stormwater provide the foundation for implementing solutions to eliminate the source of stormwater related

problems. These performance targets can then be translated into design criteria that can be applied at the development site, to design stormwater systems that mitigate the impacts of the development. Site design criteria can provide local government staff and developers with practical guidance in adopting Best Management Practices. Further reference material is available from the following websites:

- http://www.gvrd.bc.ca/sewerage/stormwater_reports.htm
- <http://www.waterbalance.ca/waterbalance/home/wbnIndex.asp>

Stormwater treatments ponds and wetlands cannot not be located within SPEAs without approval from DFO.

Instream works

Often, in undertaking instream works such as pipeline crossings, road crossings, foot bridges, bank repairs and stormwater outfalls, a proponent is required to enter a SPEA or make some modification to a SPEA. These works and their impact on riparian vegetation are to be considered together in the context of instream works.

For some instream works, proponents need only submit a notification under the *Water Act* <http://twbc.bc.ca/03water/licencing/index.html> and apply best management practices. For other instream works with a greater potential for harming aquatic resources, proponents must apply for an approval from the provincial government or an authorization from DFO.

Activities that comply with these laws, regulations and best management practices are not considered to trigger the Riparian Areas Regulation. See the *Best Management Practices for Urban and Rural Land Development* (2005) to find the most up-to-date advice on these activities (<http://wlapwww.gov.bc.ca/wld/BMP/bmpintro.html>). It is important that all recommendations under best management practices be considered to ensure that the potential impacts to riparian vegetation are minimized.

Regional DFO Operational Statements

DFO has [List of Operational Statements available on their website at \[http://www-heb.pac.dfo-mpo.gc.ca/decisionsupport/os/operational_statements_e.htm\]\(http://www-heb.pac.dfo-mpo.gc.ca/decisionsupport/os/operational_statements_e.htm\).](http://www-heb.pac.dfo-mpo.gc.ca/decisionsupport/os/operational_statements_e.htm)

These Operational Statements outline measures and conditions for avoiding the harmful alteration, disruption and destruction (HADD) to fish habitat and thus be in compliance with subsection 35(1) of the Fisheries Act. Proponents are not required to submit their proposal for review by DFO when they incorporate the measures and conditions outlined in the OS into their plans, which include:

- [Aquatic Vegetation Removal](#);
- [Beaver Dam Removal](#);
- [Bridge Maintenance](#);

- [Clear Span Bridges](#);
- [Culvert Maintenance](#);
- [Directional Drilling](#);
- [Dock Construction](#);
- [Ice Bridges](#);
- [Isolated Pond Construction](#);
- [Overhead Line Construction](#);
- [Underwater Cables](#)

DFO is currently developing Operating Statements for lake views and lake access. When using DFO Operating Statements landowners or their agents must check the DFO website for current and applicable Operating Statements.

Wetlands

Wetlands are very sensitive to hydrological changes and water quality degradation. Although the Regulation provides a SPEA for wetlands, if significant soil movement is part of the development plan, a hydrological expert should also be retained. The hydrological expert will evaluate if soil movement will impact the water regime of the wetland and the riparian vegetation. Stormwater should be treated before being discharged into a natural wetland and, again, an evaluation should be undertaken to ensure that input of additional water over more frequent periods will not harm the functioning of the wetland.

Hazards

Some development properties will require assessment and confirmation that the land may be used safely for the purpose intended without undue risk of hazards. Hazards may include flooding, groundwater flows, mud flows, erosion, subsidence, land slip, earthquake or avalanche. With respect to streams, steep slopes found in ravines are often of special concern and require assessment by a professional. Development on areas with thick peaty soils may also cause heaving of soils that may impact the integrity of the SPEA and the watercourse.

1.7 Riparian assessment areas and Assessment Reports

The *Fish Protection Act* directs local governments to protect their riparian areas. For the purpose of the Riparian Areas Regulation, riparian areas are defined as “streamside protection and enhancement areas.” The Regulation defines the streamside protection and enhancement area (SPEA).⁹ Other familiar terms for SPEAs are “stream buffers” or “leave strips.”

Additional specific areas that the Regulation describes are the “riparian assessment area”¹⁰ (see Figure 1-3) adjacent to “streams.” The riparian assessment area is the area where the assessment occurs to determine the SPEA and measures. The definition of “stream”¹¹ includes a watercourse, whether it usually contains water or not, a pond, lake, river, creek, or brook; and a ditch, spring or wetland that is connected by surface flow to a watercourse, pond, lake, river, creek, or brook that provides fish habitat. Streams can be enclosed in ravines¹² or on active floodplains.¹³

The Riparian Areas Regulation requires a development applicant with a project (that is, one proposed within the assessment area) to follow the assessment methodology (see the Schedule to the Regulation) and to complete an Assessment Report.¹⁴ The assessment is used to determine the appropriate SPEA width and the “measures” required to protect and maintain the integrity of the SPEA. Measures are included within the setback result from the simple assessment option, but must be specifically designed when using the detailed assessment option. Measures that must be addressed by the Assessment Report when conducting a detailed assessment include:

⁹ *Streamside protection and enhancement area* is defined in section 1(1) of the Regulation as being an area adjacent to a stream that links aquatic to terrestrial ecosystems and includes both the existing and potential riparian area vegetation and the existing and potential adjacent upland vegetation that exerts an influence on the stream and, the size of which is determined according to this regulation on the basis of an assessment report provided by a qualified environmental professional in respect of a development proposal.

¹⁰ *Riparian assessment area* is defined in section 1(1) of the Regulation means (a) for a stream, the 30-m strip on both sides of the stream, measured from the high water mark, (b) for a ravine less than 60 m wide, a strip on both sides of the stream measured from the high water mark to a point that is 30 m beyond the top of the ravine bank, and (c) for a ravine 60 m wide or greater, a strip on both sides of the stream measured from the high water mark to a point that is 10 m beyond the top of the ravine bank.

¹¹ *Stream* is defined in section 1(1) of the Regulation as including any of the following that provides fish habitat: (a) a watercourse, whether it usually contains water or not, (b) a pond, lake, river, creek or brook, or (c) a ditch, spring, or wetland that is connected by surface flow to something referred to in paragraph (a) or (b).

¹² *Ravine* is defined in section 1(1) of the Regulation as being a narrow, steep sided valley that is commonly eroded by running water and has a slope grade greater than 3:1.

¹³ *Active floodplain* is defined in section 1(1) of the Regulation as being an area that supports 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.

¹⁴ *Assessment Report* is defined in section 1(1) of the Regulation as a report prepared in accordance with the assessment methods to assess the potential impact of a proposed development in a riparian assessment area and which is certified for the purposes of this regulation by a qualified environmental professional (QEP).

- removal of hazard trees
- windthrow
- slope stability
- drip zone and rooting strength
- encroachment
- sediment and erosion control measures
- floodplain concerns
- on-site stormwater management

An Assessment Report contains the results of a Riparian Assessment and is filed electronically with the Ministry (see Appendix 2). The Riparian Areas Assessment Guidebook; Assessment Methodology; Assessment Forms; Assessment Forms Guide: Access to the Notification System; Notification System Guide, and supporting materials for reporting can be found at:

http://www.env.gov.bc.ca/habitat/fish_protection_act/riparian/riparian_areas.html

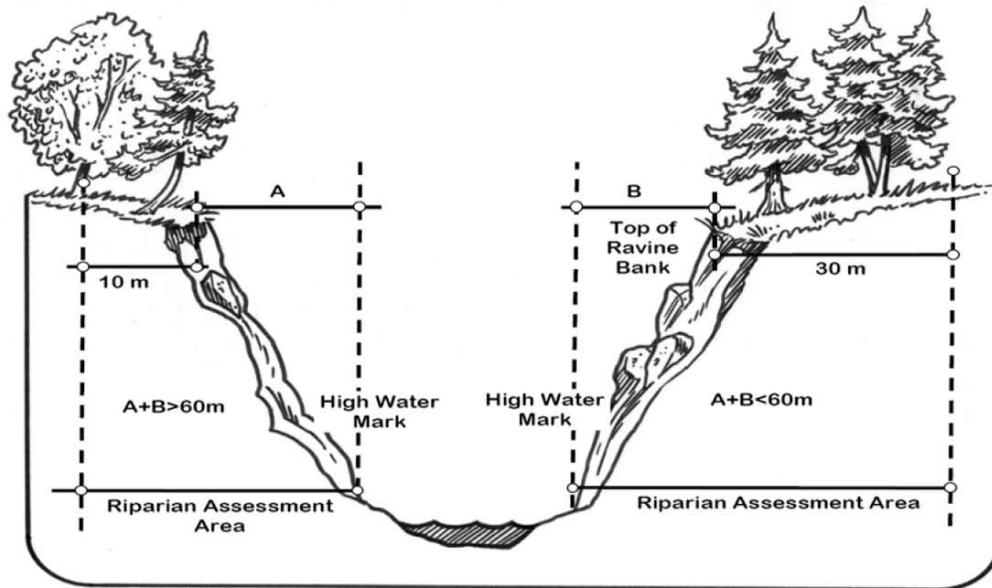


Figure 1-3. Riparian assessment area: a strip 30 m wide on both sides of a stream is measured from the high water mark, or, for a ravine that is less than 60 m wide, from the top of the ravine to a spot 30 m beyond the top of the ravine, or for a ravine that is more than 60 m wide, a strip that is 10 m wide from the top of the ravine.

Two assessments options are available to the proponent to determine the applicable SPEA width:

1. Undertake a “simple assessment,” based on certain stream characteristics including: fish-bearing; nature of stream flows, and status of streamside vegetation. In the simple assessment the SPEA incorporates the measures.
2. Undertake a “detailed assessment” to determine the SPEA width based on a site specific assessment of the features, functions and conditions of the riparian area, In a detailed assessment The SPEA does not include the measures. The measures must be established in addition to the SPEA determination in order to maintain the integrity of the SPEA

The Assessment Report must be prepared by a Qualified Environmental Professional (QEP) (or group of professionals) who understands the interaction of the various natural features, functions and conditions¹⁵ provided within a riparian area. Specific experts may be called upon to provide their respective expertise on site characteristics that may require specific attention, particularly in the development of “measures.”

For example, highly unstable channels may need assessment by a fluvial geomorphologist to help define the appropriate SPEA measures that will assist in maintaining the various features, functions and conditions of the riparian area. In addition, a fisheries biologist may be required to determine fish presence or absence.

The Assessment Report is the document used to support the development application and to notify both DFO and the Ministry of the development. This report must be prepared and signed by the QEPs and integrate the results of the riparian assessment with the characteristics of the proposed development. Guidelines for undertaking the assessment report can be found at:

http://www.env.gov.bc.ca/habitat/fish_protection_act/riparian/riparian_areas.html

¹⁵ *Natural features, functions, and conditions* is defined in section 1(1) of the Regulation as including but not being limited to the following: (a) large organic debris that falls into the stream or streamside area, including logs, snags, and root wads; (b) areas for channel migration, including active floodplains; (c) side channels, intermittent streams, seasonally wetted areas and floodplains; (d) the multicanopied forest and groundcover adjacent to streams that (i) moderate water temperatures, (ii) provide a source of food, nutrients and organic matter to streams, (iii) establish root matrices that stabilize soils and stream banks, thereby minimizing erosion, and (iv) buffer streams from sedimentation and pollution in surface runoff; (e) a natural source of stream bed substrates; (f) permeable surfaces that permit infiltration to moderate water volume, timing and velocity and maintain sustained water flows in streams, especially during low flow periods.

QEPs must, under section 4(2)(a) of the Regulation, certify in the Assessment Report that they are qualified to carry out the assessment; that the assessment methods under the Regulation have been followed; and that, in their professional opinion:

- (i) if the development is implemented as proposed, or
- (ii) if the streamside protection and enhancement areas identified in the report are protected from the development, and if the developer implements the measures identified in the report to protect the integrity of those areas from the effects of the development,

then 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.

Treatment of ravines

The Riparian Areas Regulation assessment methods identify exactly how much riparian vegetation is required to maintain the features, functions and conditions for fish. Although the result may be a SPEA that does not reach the top of the ravine bank, this should not be interpreted as welcoming development within ravines.

It is important that ravines be protected to ensure they protect the integrity of the SPEA. As well, the area should be assessed to ensure it is safe for its intended use. The consequences of ravine bank failure are often close to catastrophic with respect to riparian fish habitat. Because sediment discharges and hard engineering solutions to address bank erosion have significant and long-term effects on riparian fish habitat, they are to be actively avoided. The assessment methodology requires a QEP who is a geotechnical expert to develop measures for proposed development around ravines. The geotechnical expert will evaluate the stability of the ravine bank, the proposed use and identify a setback from the top of the ravine bank to ensure the long term stability of the ravine. The measures and recommendation of the geotechnical expert will be more specific to the site conditions.

Where the SPEA does not include the entire ravine, the use of hard engineering to cut down the height of the ravine to expand developable area is strongly discouraged. This activity is considered to pose a significant risk to fisheries resources and to the integrity of the SPEA and will require review by DFO.

2 Roles and Responsibilities

The federal, provincial and local governments recognize the importance of conservation of fisheries resources and protection of fish habitats to the economic well-being and social fabric of British Columbia communities. A brief summary of the roles and responsibilities of those involved in the Riparian Areas Regulation is presented below.

2.1 Department of Fisheries and Oceans

The Department of Fisheries and Oceans (DFO) Canada is the federal agency responsible for the implementation of the federal *Fisheries Act*, guided by national policies, guidelines, standards and procedures.

Because the Riparian Areas Regulation plays a strong complementary role to the *Fisheries Act*, DFO will assist local governments in their implementation and interpretation of the Regulation (see chapter 3). As well, DFO will consider *Fisheries Act* authorizations where the proponent has exhausted all other available options (see chapter 3).

2.2 Ministry of Environment

The Ministry of Environment is the lead provincial agency responsible for environmental protection of water, land and air quality, including stewardship of biodiversity and environmental monitoring and enforcement.

The Ministry will assist local governments in their implementation and interpretation of the Regulation. It will also assist local governments in achieving compliance with the Riparian Areas Regulation and to monitor that compliance.

2.3 Local governments

Local governments have responsibility for land use decisions which relate to the protection, conservation and enhancement of the environment within their jurisdictions. As such, local governments have the primary responsibility for implementing the Riparian Areas Regulation through their powers under the *Local Government Act*.

Chapter 4 in this guidebook outlines various implementation “tools” that local governments have at their disposal to apply the Regulation.

Relationship between agencies and local governments

The use of the Riparian Areas Regulation for riparian protection, and the shift of senior agencies away from referrals and towards monitoring, does not indicate a diminished relationship between senior agencies and local governments.

For example, where Environmental Review Committees exist with local governments and one or more of the agencies, these processes will continue because they are considered valuable in assisting planning, stewardship, monitoring and enforcement, supporting the screening of major projects by local governments, and encouraging communication. Where relationships have been established on a less formal basis, regional staff from senior agencies will continue to provide advice on plans, policies and education programs to local governments in their regions.

2.4 Qualified Environmental Professional

The Riparian Areas Regulation introduces new standards of environmental protection by requiring a Qualified Environmental Professional (QEP) to follow a standard procedure and provide their opinion to protect riparian areas.

Required QEP qualifications and skills

The QEP, defined in the Regulation, is an applied scientist or technologist acting alone or together with another QEP. To establish a standard for QEP qualifications, the Regulation states that the person must be in good standing as a registered professional with an association constituted under an Act. All QEPs must conduct themselves in accordance with the ethics set out by their association or be subject to disciplinary action by that association.

With respect to the Riparian Areas Regulation, QEPs must act in their area of expertise and identified in the assessment methods. They must exercise professional due diligence in providing their advice. As well, QEPs are accountable for their advice and their work. If a QEP's opinion results in a violation of environmental legislation, he or she may be found liable. It is recommended that QEPs have sufficient errors and omissions liability insurance to cover their exposure.

QEPs should remain current in their training and skills by participating in and completing continuing education training as necessary. Training in the Riparian Areas Regulation (see www.mala.ca/faep) is recommended for those professionals who plan to work with developers, local government and others in implementing this Regulation, to ensure they conduct compliant and effective assessments.

The role and responsibilities of the QEP

The QEP is responsible for conducting a riparian assessment using the assessment methodology in the schedule of the Regulation. QEPs prepare, sign-off, submit and communicate their opinion on the subject development proposal. They need to ensure that their advice is clearly communicated to the development proponent.

QEPs have a role in all phases of a project involving work in riparian areas and should be utilized from the design of a project to its completion. Their professional advice can help prevent and avoid impacts to riparian fish habitats. QEPs can also monitor during construction to ensure that inadvertent diversions from the project design are caught before damage to fish habitat occurs or substantive work proceeds that later must be corrected.

QEPs can be given the authority to halt works on a development property that they are contracted to work on, provided that this does not compromise workers or site safety. This can include consultation with the local, provincial and federal governments.

Regular monitoring of the development activities, such as land clearing and excavation, can be done with a QEP. As part of their due diligence, QEPs are expected to document any compliance problems with respect to riparian areas and water quality so that the problems can be addressed promptly. This documentation can include verbal advice and warnings of non-compliance to the land development proponent. Following up on compliance problems will ensure they were addressed within a reasonable time period and, if they are not addressed, ensure they are reported to the resource agencies.

2.5 Proponent

Where local governments have set riparian areas or streamside buffers based on either the *Fish Protection Act* and/or values other than just fish (stormwater management, recreation, etc.), the proponent – a landowner or developer – must adhere to the requirement. Since each local government may have adopted unique legislation or have made recent changes to its legislation, the proponent must check with the local government prior to undertaking any development activities.

Where riparian areas have not been established, and a local government is willing to consider development, a QEP will be needed to conduct an assessment of the riparian area and prepare an Assessment Report that outlines the SPEA width and associated measures to maintain the integrity of the SPEA. The developer may be required to hire this QEP. Deviation from the results of the assessment could result in damage to fish habitat and the potential for regulatory actions.

When local governments already have a bylaw that is more extensive than the Riparian Areas Regulation, the proponent will need to abide by that bylaw.

3 Process for Seeking Project Approval under the Riparian Areas Regulation

3.1 Overall process

Local government may have enacted bylaws or plans that already meet the requirements of the *Fish Protection Act* (FPA) (this includes previous adoption of a Streamside Protection Regulation bylaw). In this case, the proponent must follow the requirement of the applicable bylaw or plan as specified by the local government.

Figure 3-1 outlines the process that the proponent should follow in seeking approval from local government that has adopted the Riparian Areas Regulation as its approach to complying with the FPA.

Some local governments have Official Community Plans and many have more detailed community-level plans for protecting greenways, maintaining drainage corridors, creating park space, mitigating stormwater impacts, etc. Where local government plans exist to direct development on the project site, any conditions of development that exceed those outlined in this guidebook must still be adhered to. This may add to the development assessment requirements or increase the riparian protection from the Riparian Areas Regulation standards.

It is the responsibility of the proponent and the QEP to be aware of and comply with local government requirements. The federal and provincial governments will respect decisions by local governments within this jurisdiction to set higher standards for environmental protection in their geographic areas, including those that meet or exceed the Riparian Areas Regulation.

Where a local government uses a Riparian Areas Regulation approach, a QEP is required to prepare an Assessment Report (in keeping with the Schedule in the Regulation) to determine the appropriate SPEA width and measures required to maintain the features, functions and conditions of the riparian area. The Schedule includes two assessment methodologies for determining the width of the SPEA and measures. The QEP can be hired by a proponent or a local government. **It is strongly recommended that the QEP assessment to determine the SPEA and mitigation measures be undertaken before detailed design of the development – ideally in the planning stage.**

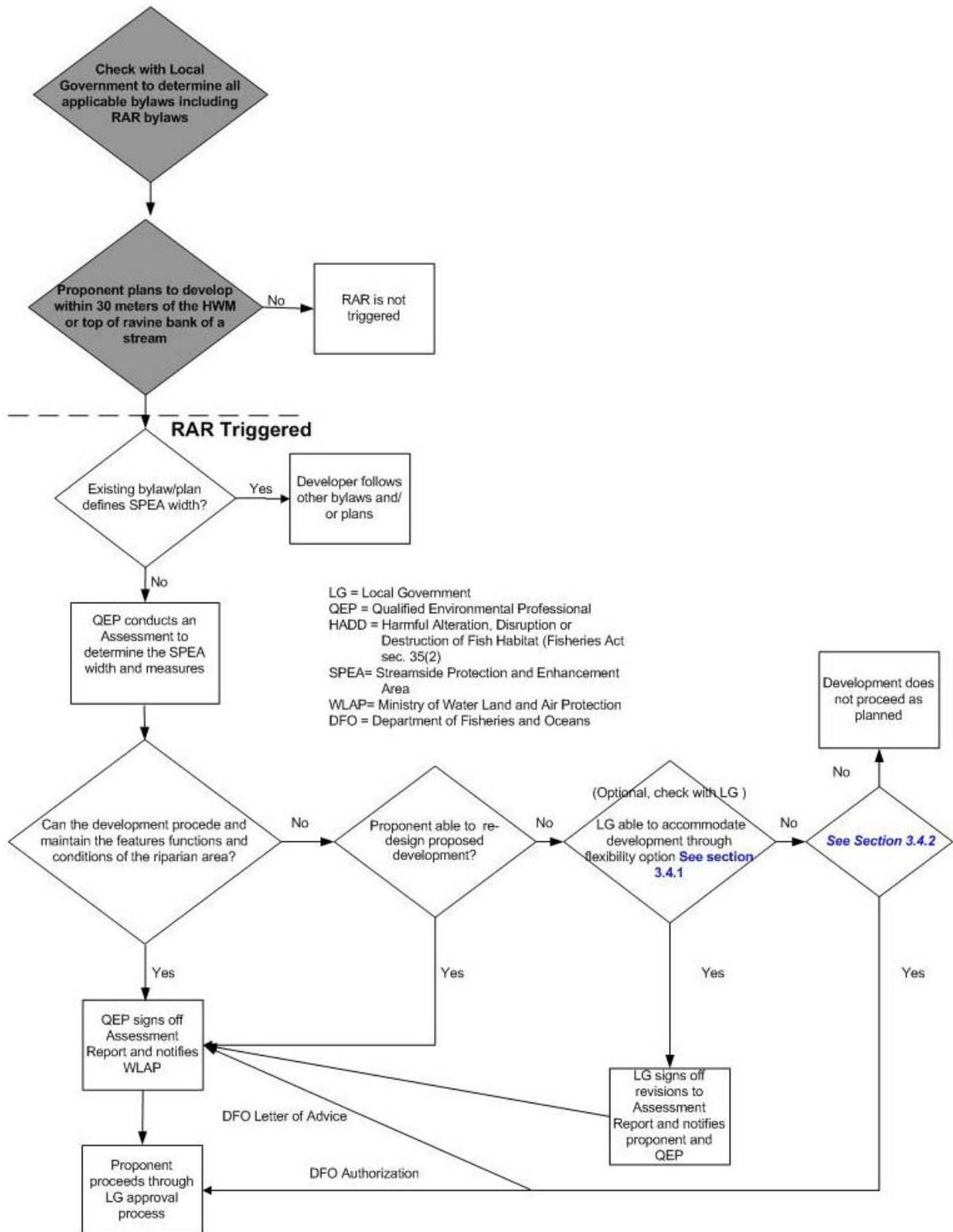


Figure 3-1: Process for seeking project approval under the Riparian Areas Regulation.

The assessment can be used to determine if there will be impact from a proposed development, but it is best used as a tool to plan developments so that they avoid having any impacts. Since determining appropriate measures must take into consideration the final design and layout of the development, submission of the Assessment Report and notification by the QEP may not occur until the development has been designed in detail. It is important to remember the development design does not influence the SPEA; rather it influences the measures necessary to protect the integrity of the SPEA.

If the development can be accommodated with the SPEA width and measures, a QEP is then in a position to provide the opinion in section 4(2) (a) (ii) of the Regulation.

What happens if the development cannot be accommodated in the SPEA width and measures determined?

The first course of action is for the proponent to work with the QEP to redesign the project. The proponent can also discuss the proposal with local government officials. The latter have been afforded some flexibility from DFO in delineating the SPEA (see section 3.3 of this guidebook). The QEP can assist the proponent in following the direction provided to the local government. If the project cannot be redesigned and local government cannot accommodate the proposed development, the only recourse for the proponent is to seek an “authorization” under section 35(2) of the *Fisheries Act* (section 3.5 of this guidebook).

Revisions to an Assessment Report

If the project in question must be revised because of new requirements for additional servicing, a change of design, or use, or because of the need to accommodate local government requirements, the QEP must assess if these changes impact the SPEA and or the measures in the current Assessment Report in the notification system. In doing so, the QEP must assess if any additional measures or revision to existing measures are required as a result of the changes to the development plan.

Then the QEP must resubmit the revised report and again certify that he or she is qualified to undertake the assessment, that the report follows the Regulation Assessment Methodology, and that, in his or her professional opinion, there will be no harmful alteration, disruption or destruction (HADD) of fish habitat.

Previous versions of QEP reports are kept on the notification system (see Appendix 2 in this guidebook). Updates to the notification system will result in a new notification going out to all the government agencies.

It is the opinion of DFO that a proponent who has fully implemented the recommendations certified by a Qualified Environmental Professional who has correctly and fully followed the RAR Assessment Methods and measures has exercised all due diligence in preventing

the harmful alteration, disruption and destruction of fish habitat due to the removal of riparian vegetation.

3.2 Activities Permitted within a SPEA

The vegetation in the SPEA provides the natural features, functions and conditions that support fish life processes. In this regard, the vegetation in the SPEA must be left in a natural, undisturbed state and activities that have the potential to damage it are not permitted in the SPEA. Where a SPEA has been previously disturbed by development activities the objective is to allow regeneration of the vegetation either naturally or through enhancement efforts.

Instream works

Often, in undertaking instream works such as pipeline crossings, road crossings, foot bridges, bank repairs and stormwater outfalls, a proponent is required to enter a SPEA or make some modification to a SPEA. These works and their impact on riparian vegetation are to be considered together in the context of instream works, as previously described in Section 1.5 of this guidebook.+

Fish habitat enhancement works

Fish habitat enhancement activities, including riparian planting, are an acceptable practice within SPEAs if they are done to an appropriate standard. Removal of invasive plant species and garbage is also acceptable as long as care is taken to minimize impacts on the fish habitat and creation of sediment. These are activities that a QEP can provide an opinion on as per section 4(2)(a)(i) of the Regulation. While the involvement of a QEP in planning and overseeing these activities is preferred, the need to involve a QEP will depend on the nature and extent of enhancement works being proposed. For example, planting of native plants by a Streamkeeper group can be undertaken without a QEP but activities that require large machinery to work within the SPEA should involve a QEP or other suitably qualified professional.

Siting of Small Out-buildings

As stated above, the goal for SPEAs that have been previously disturbed by development activity is to restore the vegetation that would naturally occur on the site, either actively by planting or passively by natural recruitment processes. Some local governments review proposals for the construction of small structures (defined as a maximum of 100 square feet) such as sheds. **Every effort should be made to locate these structures outside the SPEA.** However, where this type of structure must be located in a historically damaged SPEA, the local government may approve it as long as the structure has no permanent foundation, no native vegetation will be damaged during construction, and the structure is

located as far from the watercourse as possible. **For Greenfield development sites, these structures cannot be located within the SPEA unless approved by DFO.**

Regional DFO Operational Statements

DFO has a list of **Operational Statements** available on their website at http://www-heb.pac.dfo-mpo.gc.ca/decisionsupport/os/operational_statements_e.htm.

These Operational Statements outline measures and conditions for avoiding the harmful alteration, disruption and destruction (HADD) to fish habitat and thus be in compliance with subsection 35(1) of the Fisheries Act. Proponents are not required to submit their proposal for review by DFO when they incorporate the measures and conditions outlined in the OS into their plans.

- [Aquatic Vegetation Removal*](#) ,
- [Beaver Dam Removal*](#),
- [Bridge Maintenance*](#),
- [Clear Span Bridges*](#),
- [Culvert Maintenance*](#),
- [Directional Drilling](#),
- [Dock Construction*](#),
- [Ice Bridges*](#),
- [Isolated Pond Construction](#),
- [Overhead Line Construction](#),
- [Routine Maintenance Dredging*](#)
- [Underwater Cables](#) .

DFO is currently developing Operating statements for lake views and lake access. When using DFO Operating Statements landowners or their agents must check the DFO website for current and applicable Operating Statements.

3.3 Activities not permitted in a SPEA

Development as defined in the RAR is not allowed within SPEAs except as described in Section 3.2. The following activities that have historically occurred within SPEAS are no longer allowed.

Trails

The construction of formal trail networks within the SPEA are not supported as the construction and maintenance of such a trail systems often causes erosion, compaction of root systems, loss of trees and understory plants. In addition, trial development requires a high standard of hazard tree mitigation all of which significantly impact the form and function of the SPEA. Any formal trail system proposed in the SPEA will require DFO Authorization. However, some passive activities are compatible with protection of the SPEA including: hiking; nature viewing; access to water, and fishing.

Landscaping

Activities such as landscaping (to create lawns and formal gardens, for example) are not acceptable within a SPEA. Where historic damage to SPEAs has occurred through landscaping or other means, education programs should be considered for landowners. The goal is to provide awareness of the importance of riparian vegetation to fish, and to provide suggestions for replanting the areas to appropriate standards. (See Fish Habitat Enhancement Works in Section 3.2). Local environmental groups can assist or provide these education programs to the community and to link to current replanting and other enhancement initiatives. When planning any landscaping works within the SPEA it is essential that only native plant species specific to the region are selected for use.

Sources of information for planning successful riparian planting projects include:

- DFO's Operational Statement for Riparian Planting: http://www-heb.pac.dfo-mpo.gc.ca/decisionsupport/os/riparian-reveg_e.htm
- *Living by Water* - www.livingbywater.ca
- *Naturescape BC* - <http://www.hctf.ca/nature.htm>
- *Stewardship Series*
http://dev.stewardshipcanada.ca/sc_bc/stew_series/NSCbc_stewseries.asp

Stormwater management

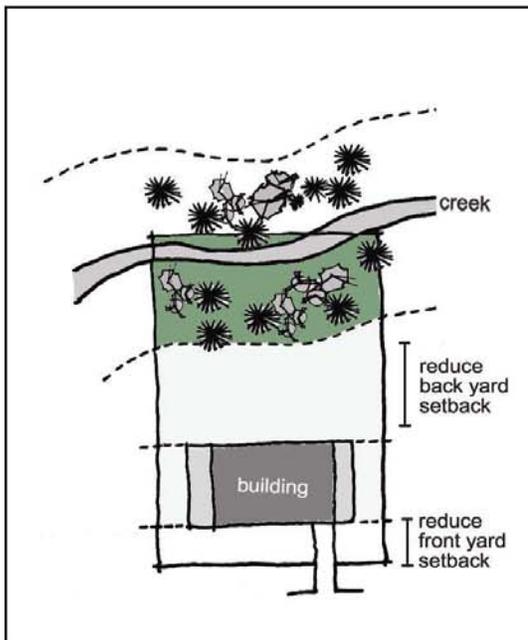
Stormwater treatments ponds and wetlands cannot not be located within SPEAs without approval from DFO.

3.4 Adjustment to SPEA Widths

To successfully protect fish habitat, full SPEA widths and measures must be maintained on every development site as determined through the Assessment Report. Site-specific constraints may exist where the development cannot proceed using the SPEAs arrived at through the Assessment Report. In these cases, proponents may request adjustments from the SPEAs. Requests for adjustments to SPEA widths and measures arise when the ability to develop a property is impaired by the prescribed setback.

3.4.1 Small modification of SPEA boundaries by Local Government

Where minor intrusions into the SPEA are required and will not result in any impact to fish habitat, local governments have some discretionary powers to modify setbacks. A local government should first consider varying other conditions of the development before adjusting the SPEA boundary. The sample scenario in Figure 3-2 shows how the Riparian Areas Regulation requirements could be implemented by someone applying to build a new single-family house on existing small lot.



On older, existing lots that were created before riparian protection measures were considered, it is possible to vary or relax other zoning requirements to provide the riparian protection that is required. For example, in the scenario shown, the front and back yard setbacks required under a zoning bylaw are adjusted to accommodate protection of the riparian area.

Figure 3-2. Sample scenario showing the Riparian Areas Regulation applied to siting a new single-family house on an existing small lot.

Exercising use of this discretionary tool is entirely the choice of a local government. It is under no obligation to use this approach on any development site.

- Local government discretionary powers can allow for the following:
- A local government may “bend” the SPEA boundary such that the

overall riparian area (as calculated in square meters) remains the same. This enables a shifting of the SPEA boundary, but not an overall reduction in the amount of area providing riparian function.

- Bending of the SPEA is not appropriate for sites that have not been previously developed, including Greenfield developments. This tool is intended for use where activities are proposed for small, urban lots.
- “Bending” of the SPEA boundary must not result in any portion of the boundary being less than 10 meters from the high water mark.
- New areas added to the riparian area to make up for those shifted out must be contiguous with the original SPEA area (i.e., there cannot be any disconnected patches) and located as close to the watercourse as possible (i.e., there should not be a panhandle extending >50 m from the watercourse).
- The quality of the existing riparian vegetation must be considered in decisions around “bending” the SPEA boundary (i.e., the boundary should not bend in a place that removes the only large trees in the riparian area from the SPEA). If the developer has retained a QEP, he or she should provide assistance with this aspect of the project. Geotechnical stability can not be compromised in any variation of the SPEA, the QEP will need to reassess the slope stability measures in relation to the new SPEA boundary.
- The SPEA (and areas that are added to the SPEA through this approach) must be planted with native plant species. Planting criteria can be found at http://www-heb.pac.dfo-mpo.gc.ca/decisionsupport/os/riparian-reveg_e.htm.
- Fencing of the SPEA (and areas added to the SPEA through this approach) is at the discretion of Local Government and is often addressed in the QEP assessment in the “Encroachment measures”

Where a local government has applied these discretionary powers, a QEP can provide the opinion under 4(2)(a)(i) of the Regulation. A sample letter for Local Governments to document use of this discretionary power, which the QEP must provide with their Assessment Report, is found in Appendix 3.

The sample scenario in Figure 3-3 shows how the Riparian Areas Regulation requirements could be implemented for someone applying to build an addition an existing single-family house.

Example: In this Example the property owner wants to build an addition to an existing house on a small single-family lot. The 12 m² addition is proposed for the back of the house. There is a stream running through the backyard. The City's Environmental Coordinator (a QEP) has provided simple assessments for most small projects on existing single-family lots. A simple assessment on this site has resulted in a 15-m SPEA from the top of the bank. The proposed addition would encroach into the SPEA as is currently determined (A).

The following options could be considered:

- 1) The owner could hire a QEP to conduct a detailed assessment to see if a lesser or reconfigured SPEA could meet the requirements of the Regulation. There would be an additional cost and the result could be no decrease in SPEA size.
- 2) The owner could redesign the addition so that it does not encroach into the SPEA.
- 3) The City could "bend" the SPEA and average the overall size across the property (B). It could also consider relaxing other zoning bylaw requirements on the lot (setbacks, height restrictions, etc.) to provide riparian area protection
- 4) The owner could retain the original design and location, hire a QEP to prepare an Assessment Report and submit an application to DFO for authorization of a HADD under the Fisheries Act

In the end, the owner and City staff negotiated a combination of options 2 and 3. The owner redesigned the footprint of the addition to conform to a modified SPEA boundary. The City bent the SPEA boundary to reduce the width slightly adjacent to the addition and widen it on the remainder of the property, and also allowed a reduced side yard setback next to the addition. The City also required the owner to plant additional trees and shrubs throughout the SPEA as part of the permit approval, secured through an environmental bond. In this example, the Environmental Coordinator submitted the simple assessment report to the Notification System and also completed the final signoff on any planting to be completed in the riparian area

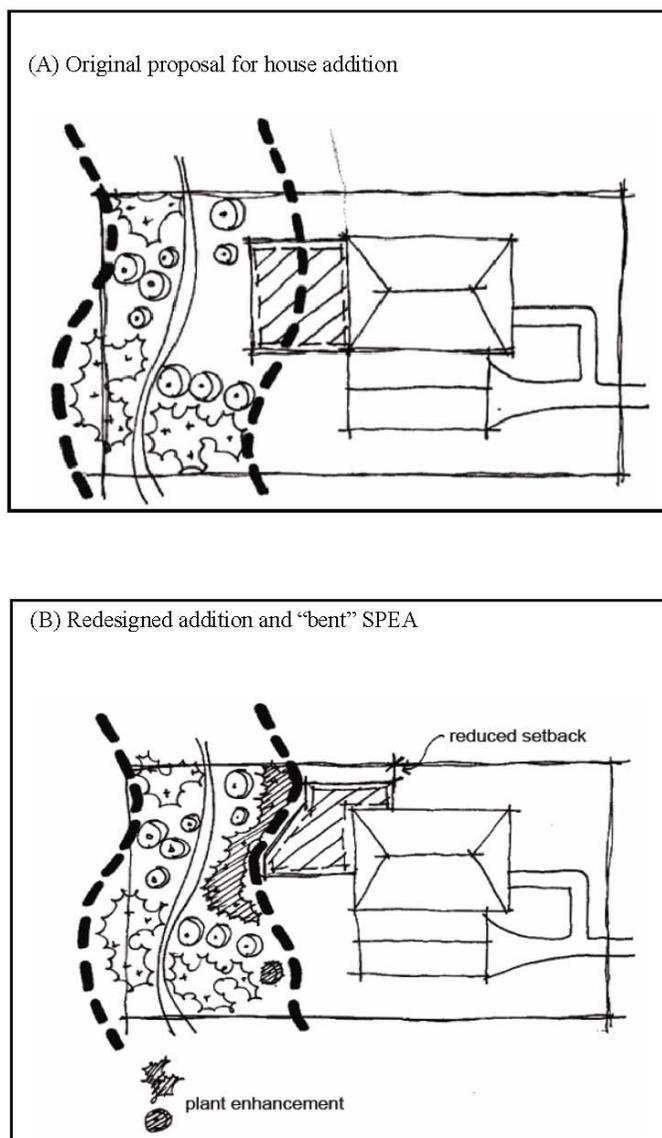


Figure- 3.3. A and B Sample scenario showing the Riparian Areas Regulation

3.4.2 Federal Fisheries Act approvals and Authorizations

Section 4.3 of the regulation sets the direction that local government can allow development to proceed if it is authorized by DFO. It is DFO's position that requests for adjustments are only justified where: the strict application of the riparian setbacks will impose an unreasonable restraint or unnecessary hardship on the use or development of a property; or special circumstances give rise to hardship that is unique to the property in question. Requests for adjustments should not be launched solely to facilitate a more profitable land or building use.

Local governments should play a key role in assessing, negotiating and supporting adjustment requests. They will be approached by the proponent to:

- to assess whether, in their opinion, undue hardship would be caused without an adjustment;
- to assess their options to relax other restrictions on the development(e.g., front yard setbacks) that could alleviate or avoid the need for an adjustment request; and
- to provide their written support for the adjustment request.

Examples of situations that would be considered as causing undue hardship and having justification to apply for an adjustment are outlined below:

1. Where the development project scope is a single lot and the lot cannot be developed at all under the current zoning and with the riparian setback calculated from the detailed or simple assessment which ever is less despite relaxations by local government on other development restrictions.
2. Where a road is required to access a portion of developable land and due to topographic or previous development constraints the only possible location is to parallel the stream within the SPEA for a short distance.

Adjustments must not be considered precedents. A neighboring property receiving an adjustment should not be considered reason to automatically extend that adjustment to another. Each application should be considered individually based on its merits. In particular, where under past regulatory regimes a setback reduction was granted, it should not be considered justification for a reduction under this new regulatory system

Responsibility for the administration of the Fisheries Act rests with the federal Minister of Fisheries and Oceans Canada. Habitat management

staff in the department (DFO-Habitat) have responsibility for protecting fish and fish habitat under the habitat provisions of the Fisheries Act.

Staff are further guided by DFO's "Policy for the Management of Fish Habitat," which contains a long-term objective of net gain of the productive capacity of fish habitats. Where a case for undue hardship exists and an adjustment to a SPEA is requested, DFO will assess whether an Authorization under Section 35(2) of the Fisheries Act is required or if a letter of advice may be issued.

Where a development activity may result in the harmful alteration, disruption, or destruction of fish habitat, DFO-Habitat staff can authorize the activity to go ahead only under section 35(2) of the Fisheries Act. To do that, DFO-Habitat first conducts a screening level assessment of the development project under the Canadian Environmental Assessment Act (CEAA) and may refer the project plans and specifications to other federal agencies, such as the Canadian Wildlife Service and the Canadian Coast Guard Navigable Waters Protection Division. Any residual impacts to fish habitat from the authorized development project are also subject to compensation under the Fisheries Act.

The Decision Framework for the Determination and Authorization of HADD of Fish Habitat (1998) describes DFO-Habitat's approach to reviewing requests for subsection 35(2) authorizations (http://www.dfo-mpo.gc.ca/canwaterseauxcan/infocentre/guidelines-conseils/guides/law-lois/index_e.asp). DFO often authorizes HADDs in relation to stream crossings or instream works (e.g., dredging, culvert installations, drainage maintenance) because these activities cannot always mitigate the full extent of their impacts to fish habitat and do, by their nature, directly impact fish habitat. Without an authorization many of these activities could not occur (in a legal sense). The same cannot be said for activities affecting riparian areas. There is a greater ability to avoid these activities through relocation from riparian areas or redesign.

4 Implementation Tools for Local Government

4.1 Overview

Section 12(4) of the *Fish Protection Act* directs local governments to use their zoning or other land use management bylaws and permits under the *Local Government Act* to implement policy directives established under the Act regarding riparian area protection.

This chapter focuses on legislative tools that local government can use to support the Riparian Areas Regulation. These tools include:

Tool	Legislative Basis
Official Community Plans	<i>Local Government Act, Part 26</i>
Development Permit Areas	<i>Local Government Act, Part 26</i>
Zoning bylaws	<i>Local Government Act, Part 26</i>
Subdivision bylaws	<i>Local Government Act, Part 26 and Land Title Act, Part 7</i>
Development approval and information bylaws	<i>Local Government Act, Part 26</i>
Covenants	<i>Land Title Act, Part 14</i>
Other regulatory bylaws affecting land use	<i>Local Government Act, Part 22 and Community Charter</i>

Other non-legislative tools for the protection and conservation of riparian areas include information and education about stream stewardship, watershed or “integrated stormwater management” plans, parkland acquisition, tax incentives and landowner agreements. Some of these tools are discussed in the last section of this chapter.

4.2 Basic requirements

Whatever tools a local government chooses to use to implement the Regulation, there are three basic things that the applicable regulatory process needs to provide:

- definitions of streams and riparian areas that are consistent with the Regulation;
- a means of triggering a regulatory action if a development activity is proposed to occur in a riparian assessment area; and
- a means of requiring a QEP Assessment Report that complies with the Regulation and its assessment methods.

Local government bylaws and policies do not have to use the same terms that are in the Riparian Areas Regulation. For example, a bylaw may use “waterway” or “watercourse” instead of “stream”; or “leave strip” or “watercourse protection area” instead of riparian area or streamside protection and enhancement area (SPEA). Also a stream may be defined to include a broad range of aquatic habitat and not just fish habitat - and that is fine, as long as it covers the range of water bodies that are included in the Regulation definitions.

The Riparian Areas Regulation has the expectation that the development approval mechanism, such as a rezoning or subdivision approval, a development permit, or development variance permit, would be subject to the Assessment Report conclusions.

4.3 Legislative Tools

Implementing the Regulation does not necessarily require a “new” set of bylaws, policies or procedures. Many local governments already have riparian protection measures in place, and complying with the Regulation is largely a matter of reviewing and revising existing provisions.

Local governments can also use the tools that are available under other parts of the *Local Government Act* to support implementation of the Regulation. Many of the tools are complementary, and local governments may choose to use more than one method to achieve riparian protection. For example, a municipality may adopt objectives to protect riparian areas in its OCP; apply the Regulation’s SPEAs, or equivalent, through Development Permit Areas or zoning bylaw setbacks, and use a watershed plan to define specific SPEAs on a stream system.

For more information about the use of these tools, see publications in the Stewardship Series, particularly “Stream Stewardship: A Guide for Planners and Developers” and “Stewardship Bylaws.” These are available through the Stewardship Centre website at http://www.stewardshipcentre.bc.ca/sc_bc/stew_series/bc_stewseries.asp.

Official Community Plans (OCPs)

Official Community Plans provide the basic direction for land use decisions in a community. Among other things, OCPs can establish policies for “the preservation, protection, restoration and enhancement of the natural environment, its ecosystems and biological diversity” (*Local Government Act*, section 878(1)(d)).

An OCP can acknowledge streams and riparian areas and establish policies for their protection in future planning or development approvals. OCP policies can set forth the objective of meeting the Regulation, and reference the mechanisms or processes for doing so. These OCP policies then guide land use decisions made under local area plans and other land use bylaws.

Development permit areas (DPAs)

Development permit areas can be designated under OCPs for the “protection of the natural environment, its ecosystems and biological diversity” (*Local Government Act*, section 919.1(1)(a)). Land within a DPA “must not be altered” until a development permit has been obtained (*Local Government Act*, section 920(1)(d)). A DPA must be accompanied by guidelines, set out in either the OCP or a zoning bylaw, that address how the objectives of the DPA will be addressed.

Development permit areas are common tools used by a variety of local governments for protecting riparian areas. They allow a local government to regulate a wide range of development activities that involves any form of site disturbance. A development permit can supplement requirements under zoning or subdivision bylaws, as long as it does not vary the zoned use or density.

A drawback of the DPA option is its limited enforcement measures. Violations of the terms of a development permit, or conducting activities in a DPA without a permit, can be addressed only through a court injunction, which can be a time-consuming process. As a consequence, gaining compliance with the objectives of a DPA is usually done more through education and “persuasion.” The requirements in a DPA can also complement the use of other regulatory tools such as the *Fisheries Act* or *Water Act*.

Zoning bylaws

Zoning is the main tool to regulate land use, density, lot sizes and the siting and location of buildings and structures. A zoning bylaw can establish riparian protection in the form of “setbacks” in which structures are restricted. Setbacks are a common requirement of zoning bylaws that

define the distance that structures should be from property lines, other structures, special features, between different land uses, and so on.

When used to implement the Riparian Areas Regulation, setbacks could reflect the Riparian Assessment Area or the SPEA standards either by citing them generally, or by applying the SPEA widths and measures on a stream-by-stream basis.

Zoning bylaws can also set lot sizes to protect riparian areas. Some local governments have included a provision whereby the minimum lot size in particular zones must be defined exclusive of the riparian “setback.” For example, the City of Nanaimo zoning bylaw states that “where a lot contains or abuts a watercourse identified in Schedule G, the required leave strip shall not be included in the calculation of minimum lot area.”

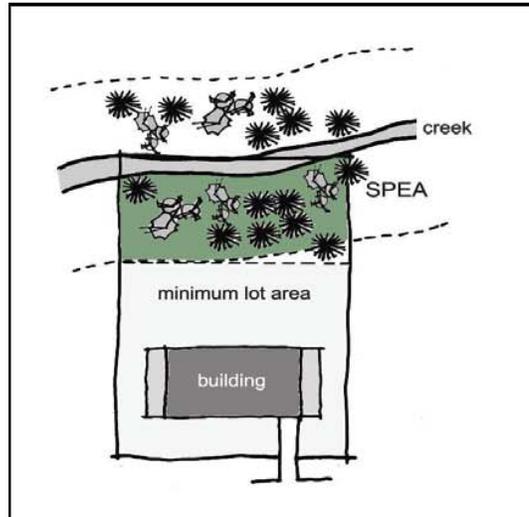
Zoning bylaw requirements are applied in several contexts:

- At time of rezoning, they can be used to achieve riparian protection over an entire parcel.
- At time of subdivision, in directing the size, shape and location of lots to protect riparian areas.
- At time of lot development, in regulating the siting of a building or other structure to avoid a riparian area.

Adjustments from the requirements within a given zone can be considered under a Development Variance Permit, which requires Council or Regional Board approval. Minor adjustments to zoning bylaw requirements can be handled by a Board of Variance, whose primary criterion is the determination of “hardship.” Some local governments may also choose to assign authority for minor development permit approvals to the Approving Officer. Proposed adjustments from simple assessment SPEAs, however, would also trigger the need for a QEP detailed assessment and Assessment Report.

On the other hand, adjustment processes could also be used to allow minor adjustments to other zoning bylaw requirements – such as yard setbacks or parking area requirements – that would help to maintain a SPEA and measures (see sections 3.3 and 3.4 of the guidebook).

The sample scenario in Figure 3-5 shows how the Riparian Areas Regulation requirements could be implemented for someone applying to create a new lot.



A zoning bylaw can require that the creation of new lots must exclude a SPEA in meeting minimum lot area requirements. For example, if the minimum area for a single-family lot under a residential zone is 600 m², the area must be entirely outside the SPEA. The figure illustrates how this might work. Note that in this case, the SPEA would become part of the new lot but would be subject to special protective measures (e.g., part of a development permit area, subject to a restrictive covenant).

Figure 4-1. Sample scenario showing the Riparian Areas Regulation applied to an application to create a new lot.

Subdivision

Under Part 26 (Division 11) of the *Local Government Act*, local governments have the authority to adopt bylaws regarding the provision of works and services as part of subdivision. This authority is the basis for engineering standards that typically apply to the design and construction of roads and utilities. In support of the Regulation, engineering standards can also be used to set requirements for protecting existing vegetation, replanting standards, and erosion and sediment control design standards. All of these measures can support stream and riparian protection.

The Act also requires up to 5% of land to be subdivided to be dedicated as public park. This can be a means by which a local government can acquire, and protect, riparian areas.

The *Land Titles Act* addresses the process of subdivision, including the powers and responsibilities of subdivision approving officers.¹⁶ Subdivision approving officers are obliged to consider local government regulations and policies in reviewing subdivision applications, which would include any riparian area protection provisions.

The Act also authorizes subdivision approving officers to consider matters of public interest, including environmental issues, in approving subdivisions. For instance, they can require covenants on environmentally

¹⁶ In municipalities, the subdivision approving officer is a staff member, outside municipal boundaries, the function of the approving officer is typically held by the Ministry of Transportation, though this is changing as regional districts negotiate the acquisition of subdivision approval authority.

sensitive areas. Subdivision approving officers can also require dedication and improvement of “highways,” which are defined as “any way open for public use.” This could be used to acquire trail rights-of-way to supplement riparian protection where passive access along the outer portion of a riparian area is envisioned.

Development approval procedures and information requirements

Part 26, section 895 of the *Local Government Act* states that a local government that has adopted an OCP bylaw or a zoning bylaw must also define procedures under which a landowner may apply for an amendment to the bylaw or for a permit under either of those bylaws. Development application procedures bylaws typically set out such things as the application form, basic information requirements, timing and means of notification of the application. Such bylaws could be used to require applicants to indicate whether they propose to undertake activities in a riparian assessment area, and if so, require a QEP Assessment Report as part of the application.

Another means of acquiring this information is provided under section 920.1 of the *Local Government Act*, whereby local governments may require “development approval information” of development applicants, which can include natural environment information. Under this section local governments can also specify policies and procedures for providing that information. Again, this can be used to determine whether development will occur in a riparian assessment area and whether an Assessment Report is required.

Other Part 26 powers

Landscaping

Section 909 of the *Local Government Act* provides the authority to require and set standards for landscaping for the purpose (among others) of “preserving, protecting and enhancing the natural environment.” Some local governments have separate landscaping bylaws while others have incorporated landscaping requirements in their zoning bylaws. This can be a source of regulations for preserving and enhancing riparian vegetation.

Surface runoff

Section 907 also allows local governments to set requirements regarding the management of surface runoff, and establish maximum percentages of land area that can be covered by impervious surfaces (roofs, roads, parking lots, driveways, playing courts, etc.). Such powers can assist the protection of streams and riparian areas.

Security

Section 925 authorizes a local government to take security deposits, or bonds, as part of a development permit, development variance permit or temporary use permit. Security deposits can be used for satisfying landscaping conditions that have not been met, correcting an unsafe condition, and correcting damage to the environment resulting from a violation of permit conditions.

Security deposits can help to ensure that riparian protection and enhancement measures are met under any of these permits. However, they need to be of a sufficient amount to act as an incentive to complete the activity required or to cover a local government’s costs if they must take corrective action, and not be considered by a permit holder as “just another cost of doing business.” Security can be valued on the basis of an estimated cost (e.g., 125% of estimated landscaping costs to restore riparian vegetation), and can be held and/or released over several years (e.g., to ensure long-term survival of planted areas).

Restrictive covenants

There are two types of covenants that can be used to protect riparian areas and other environmental features: restrictive and conservation covenants. Restrictive covenants, which can be imposed by local governments, and conservation covenants, which are voluntary agreements, are discussed under “Long term protection of the SPEA,” below.

Other powers under the *Local Government Act* and *Community Charter*

Powers under other parts of the *Local Government Act* or more recently, under the *Community Charter* are not referred to in the *Fish Protection Act* as a means of implementing riparian directives. However, in association with an OCP policy to protect riparian areas, some key regulatory powers from these other sources could be used to meet or beat the Riparian Areas Regulation, or act as effective supplements to Part 26 powers. These additional powers include:

Authority	Legislative Basis*
Soil deposit and removal	CC, sec.8(3)(m) (municipalities) LGA, sec.723 (regional districts)
Tree protection and management	CC, sec.8(3)(c) (municipalities) LGA, sec.923 (regional districts regarding tree cutting in hazardous areas)
Protection of the natural environment	CC, sec.8(3)(j) (municipalities)

*CC – *Community Charter*; LGA – *Local Government Act*

Under any of these authorities, a local government could recognize riparian assessment areas, establish SPEAs and/or require Assessment Reports to evaluate SPEAs and their protective measures. Using these powers allows enforcement by ticketing and fines, which is an advantage in the eyes of some local governments who prefer this more immediate enforcement tool to court proceedings.

The District of North Vancouver provides an example of a unique approach to protecting streams and riparian areas. In 1996, it combined powers under various sections of the former *Municipal Act* to pass its Environmental Protection and Preservation Bylaw. The bylaw, designed to “protect, preserve and conserve our natural setting and ecological systems” as they relate to aquatic areas, sloping terrain, soil and trees, addresses each of these four areas, with a permitting process that is adapted to each of these four areas and a common enforcement section.

Long-term protection of the SPEA

The Riparian Areas Regulation sets out SPEAs which must be adhered to during the development. Long-term riparian protection requires a form of legal protection of setback areas that resides with the land through successive owners of the property. Local governments are encouraged to use their authorities and tools to gain long-term protection of SPEAs. Legal protection can take several forms: dedication of riparian areas as park or greenspace, conservation covenants, restrictive covenants and dedication to a land conservancy organization.

Covenants

There are two types of covenants that can be used to protect riparian areas and other environmental features: restrictive and conservation covenants. Restrictive covenants can be imposed by local governments. Conservation covenants are voluntary agreements. Both are discussed below.

Restrictive covenants

Restrictive covenants are meant to prevent something from happening to a piece of property. They are provided for under section 219 of the *Land Title Act* and have been used to protect environmentally sensitive lands, in particular stream and riparian areas. Registered on land title such that they “flow with the land,” covenants have been applied as a condition of rezoning, subdivision or development permit approval to inform landowners and developers of environmental values.

However, restrictive covenants are variable in their effectiveness as they need to be monitored by the government agency holding the covenant, usually the Ministry or the local government, but rarely are. On re-sale of

a covenanted property, a new property owner may not always be aware of or understand the implications of a restrictive covenant. It is only when a complaint is lodged, usually by another landowner or resident, that covenant violations come to light.

Conservation covenants

Conservation covenants are legally binding agreements registered on title of a property to conserve land or features on that property. They have been developed as a means of protecting ecologically sensitive lands of all types, including riparian areas. Unlike restrictive covenants, conservation covenants are entered into voluntarily and allow landowners to permanently preserve natural features of their property while still retaining ownership and use. Also unlike restrictive covenants, conservation covenants can be held by designated conservation organizations or land trusts as well as local governments.

Conservation covenants can trigger some property tax reductions for landowners in jurisdictions that offer this as an incentive (see below). However, conservation covenants can have significant initial costs for both the organization that will be holding the covenant and the landowner, for legal and administrative assistance in setting them up. Therefore, for a variety of reasons, both conservation organizations and landowners are selective in determining whether a conservation covenant is desirable on a given property.

Property tax exemptions

Property tax exemptions can be used as an incentive for riparian area protection. One example is the [Islands Trust Natural Area Protection Tax Exemption Program](http://www.islandstrust.bc.ca) (NAPTEP) (<http://www.islandstrust.bc.ca>). The Sunshine Coast and Capital Regional Districts are also participating in the program.

4.4 Approaches to implementing the Riparian Areas Regulation

The tools that any local government may choose to use to implement the Regulation will depend on the legislative framework for stream and riparian protection, and the level of information it has at hand regarding streams in its jurisdiction.

Given these factors, this section looks at three general approaches to implementing the Regulation and suggests some of the tools that could be used to apply that approach. The approaches offer increasing levels of “pre-determined SPEAs”, depending on the level of stream-related information and mapping that is available. The suggested approaches are discussed below and summarized in Table 4-1.

Table 4-1. Summary of approaches and bylaw options for implementing the Riparian Areas Regulation

Approach	Explanation	Role of applicant/QEP	Implementation options	tool
1. Adopt the riparian assessment area only	Establish an area that is 30 m from the <i>top of bank</i> or 10 m from the <i>top of ravine bank</i> on all watercourses, within which a SPEA will be defined according to the Regulation assessment methods.	1. BC Land Survey identifies top of bank (and/or top of ravine bank) 2. a) QEP determines SPEA according to simple assessment. OR b) QEP determines SPEA according to detailed assessment.	Official Community Plan Zoning bylaw Development permit area (requires a map) Environmental/stream protection bylaw	
2. Adopt the riparian assessment area and SPEAs generally	Adopt Table 2-1 from the Regulation assessment methods, along with applicable definitions.	1. QEP determines which SPEA applies on site specific basis – i.e., conducts a simple assessment or 2. If applicant wishes to vary from applicable SPEA determined by simple assessment, QEP determines SPEA according to detailed assessment.	Official Community Plan Zoning bylaw Development permit area Environmental/stream protection bylaw	
3. Adopt and designate (pre-determine) SPEAs	Establish/designate SPEAs on streams according to Table 2-1 from the Regulation assessment methods and adopt applicable definitions.	1. BC Land Survey identifies top of bank (and/or top of ravine bank) as Riparian Assessment Area boundary; or 2. If applicant wishes to vary from designated SPEA, QEP determines SPEA according to detailed assessment.	Local Area Plans, Watershed Plans Zoning bylaw Development permit area Environmental/stream protection bylaw	

Approach 1: Adopt riparian assessment areas only

A local government can establish an area around its streams that reflects the riparian assessment area defined in the Regulation’s assessment methods – that is, 30 m from the top of the bank on all streams and ravines less than 60 m in width, or 10 m from the top of the ravine bank for ravines larger than 60 m in width.

Any development proposed in this area would trigger the need for the applicant to have the SPEA defined by a QEP according to the assessment methods. The applicant, in consultation with a QEP, can choose whether to use the simple or detailed assessment to define the SPEA. The QEP would be responsible for completing and submitting an Assessment Report.

The riparian assessment area, and the need to define SPEAs at time of development application, could be established in several ways:

- As a policy in an OCP.
- As a Development Permit Area under an OCP. This would require a map of the streams to which the DPA would apply. The DPA guidelines could refer to the Regulation's assessment methods in its application requirements. Note that streams that may be missed or not shown on the map could be covered by an omnibus statement such as "the SPEAs apply to all streams shown on Schedule X or as determined by the {local government authority}."
- Under a zoning bylaw setback provision.
- In an environmental protection bylaw. The bylaw could refer to the Regulation's assessment methods in its permit application requirements.

Approach 2: Adopt riparian assessment areas and SPEAs generally

A local government could establish riparian assessment areas as well as indicate how SPEAs are to be defined in these areas by adopting the equivalent of Table 2-1 under the simple assessment in the Regulation's assessment methods. This table sets out SPEA widths and measures based on certain stream characteristics: fish-bearing, stream flows and the nature of riparian vegetation.

Applicants proposing development within an assessment area would commission a QEP to determine which of the SPEA widths would apply to their property. If the proposed development occurs outside the applicable SPEA width, then further assessment is not necessary, and the QEP can submit the applicable Assessment Report. If the proposed development encroaches into the defined SPEA, the applicant may choose to: have a detailed assessment carried out to see if an alternative SPEA can be defined that allows for the development as proposed; modify the development plan to avoid the SPEA; or, if adequate modification is not possible, apply for authorization of a HADD under the *Fisheries Act*.

The riparian assessment area and pre-defined SPEA widths and measures could be established in the same ways:

- As a policy in an OCP.
- As a Development Permit Area under an OCP. This would require a map of the streams to which the DPA would apply. The DPA guidelines could refer to the Regulation's assessment methods in its application requirements. Note that streams that may be missed or not shown on the map could be covered by an omnibus statement such as

“the SPEAs apply to all streams shown on Schedule X or as determined by the {local government authority}.”

- Under a zoning bylaw setback provision. Proposed adjustments to a defined SPEA setback (requiring a detailed assessment or HADD authorization) would be handled under a Development Variance Permit process.
- In an environmental protection bylaw. The bylaw could refer to the Regulation’s assessment methods in its permit application requirements.

Approach 3: Adopt and designate (pre-determine) SPEAs

This approach might be considered by local governments who have mapped and classified the streams in their jurisdiction using methods that reflect the former Streamside Protection Regulation or the simple assessment in the assessment methods of the Riparian Areas Regulation. A local government could designate SPEA widths and measures, based on Table 2-1 in the Regulation’s assessment methods, on identified streams for which they have sufficient information to conduct a simple assessment.

For those streams with predetermined SPEA widths and measures, a development applicant would not need to hire a QEP to define the applicable SPEA. They would be required to locate and survey the top of the bank (and/or top of the ravine bank, as applicable) to show where the predetermined SPEA is relative to the proposed development. If the proposed development encroaches into the predetermined SPEA, the applicant may choose to: have a detailed assessment carried out to see an alternative SPEA can be defined that allows for the development as proposed; modify the development plan to avoid the SPEA; or if adequate modification is not possible, apply for authorization of a HADD under the *Fisheries Act*.

If sufficient information is not available for all streams, a local government could “blend” the approaches – for example, using approach 3 on streams that are well documented, and approach 2 on all other streams.

This approach lends itself to being implemented through more detailed Local Area (or Sector) Plans, Watershed Plans or Integrated Stormwater Management Plans. Often adopted under OCPs, these plans then guide rezoning, subdivision and other permitting decisions. Other methods for implementing this approach are similar to those for approach 2:

- *As a development permit area* – In this case, if a DPA is established based on the predetermined SPEA width, any activity proposed within the DPA would require a detailed assessment to justify an alternative SPEA. The DPA guidelines could refer to the Regulation’s assessment methods in its application requirements.
- *Under a zoning bylaw setback provision* – Proposed adjustments to a defined SPEA setback (requiring a detailed assessment or HADD authorization) would be handled under a Development Variance Permit process.
- *In an environmental protection bylaw* – The bylaw could refer to the Regulation’s assessment methods in its application requirements.

Several local governments have adopted stream maps and classifications regarding fish habitat sensitivity, which they then use to establish riparian protection measures in land use decisions. For example, the City of Chilliwack has adopted a Fisheries Sensitive Map that applies five classes of streams based on fish habitat significance and assigns SPEAs accordingly (see Appendix 1, “Community Pilot Project – City of Chilliwack,” for more details).

Stream classification maps can be powerful tools to assist in implementing the Regulation. However, while these maps may reflect the Regulation’s SPEA “standards” regarding fish-bearing potential and/or stream permanence, they may not specifically address riparian vegetation conditions. Local governments who have stream classification maps, or other predetermined riparian protection classes, may need to review their classifications either universally or when applied on a site-specific basis, to ensure that all the stream characteristics used in the Regulation are taken into account.

5 Compliance Monitoring and Enforcement

By meeting the requirements outlined in the previous sections, local governments, developers and landowner will be helping to protect the fish riparian habitat. Failure to meet standards, notifications requirements, or general conditions could result in penalties under the *Water Act* and other legislation such as the federal *Fisheries Act*.

To ensure that changes occur in a way that protects riparian areas, spot inspections and ongoing project monitoring and auditing will be conducted to ensure compliance with the requirements of the Regulation.

5.1 Compliance monitoring

Compliance monitoring establishes the degree to which assessments are consistent with the assessment methods and whether the development is consistent with the results of the assessment. The focus of compliance monitoring is to encourage voluntary compliance by developers. Enforcement actions may be taken when non-compliance occurs. Compliance monitoring has been separated into routine compliance monitoring and complaint-based monitoring. A compliance strategy includes monitoring, education and enforcement.

Routine compliance monitoring

Routine monitoring focuses on project integrity and compliance with approved design. A subset of the Assessment Reports being prepared by QEPs will be reviewed for accuracy, completeness and quality prior to, during and after construction. Construction activities will be monitored during and after development, as well as the developer's compliance with the QEP Assessment Report.

Routine compliance monitoring will be undertaken through a stratified sample based on an assessment of risk.

Inherent in the Riparian Areas Regulation assessment methodology is the fact that a QEP provides an opinion that:

- if the development is implemented as proposed; or
- if the streamside protection and enhancement areas identified in the report are protected from the development, and if the developer implements the measures identified in the report to protect the integrity of those areas from the effects of the development,

then 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.

In essence, QEPs are providing their professional opinion that applying the SPEA width and measures as outlined in their report, will not result in a HADD (section 35 (1) of the *Fisheries Act*).

Complaint-based monitoring

Environmental awareness associated with the development adjacent to watercourses is increasing. Complaints regarding activities within the Riparian Assessment Area will undoubtedly arise and it is anticipated that local government in larger municipalities will receive the majority of complaints from the public and environmental groups. However, both the Ministry and DFO will receive complaints. To maximize the effectiveness and efficiency of this process, a high degree of cooperation among the three levels of government will be implemented.

5.2 Effectiveness monitoring

Riparian vegetation is only one factor that contributes to stream health. The Riparian Areas Regulation sets out SPEAs based on site-specific features to provide riparian functions. Other factors that will affect stream health are: stormwater management, LWD removal for flood hazards, construction and maintenance of instream works, impacts of forestry operations or agriculture operations, and water quality problems ranging from hazardous spills to temperature from impervious areas. A rigorous monitoring program will be able to single out the influence of riparian setbacks to stream health in the presence of these other factors.

The Regulation is designed to use an adaptive management approach. Adaptive management uses information gained from past management experiences to evaluate both success and failure, and to explore new management options. This management process will provide for professional, scientific reviews to evaluate the effectiveness of existing Regulation standards. The review may lead to change in various components of the Regulation.

Effectiveness monitoring needs to be carried out at both the development site and watershed level, and should include a research-based component. In addition, all levels of government should participate in the process.

5.3 Local government enforcement tools

The Regulation is not enforceable in itself. It establishes a due diligence requirement for existing regulatory tools, notably the *Fisheries Act* and the *Water Act*. It relies on other Acts and powers such as those in local

government, provincial and federal jurisdictions. These include the federal *Fisheries Act*, section 35(1), which prohibits the harmful alteration, disruption or destruction of fish habitat; the provincial *Water Act*, section 9, which regulates changes in or about a stream; and some local government bylaws (e.g., tree protection, soil preservation and watercourse protection) that have various powers and applicability depending on their wording.

Protocols will be put in place for coordinating enforcement actions around the Regulation to determine who is best able to undertake cases and what legislation will be used. The preferred course in addressing non-compliance will be to first seek voluntary compliance by the proponent.

The first order of enforcement, however, may be by a local government using the tools at its disposal based on the means by which it is implementing the Regulation. Some of these methods have been mentioned in the previous sections, and include tickets and fines, stop work orders, court actions, withholding approval, security deposits or bonds, and restrictive covenants. They are summarized in Table 5-1.

Table 5-1. Enforcement tools available to local governments

Tool	Source and when to use	Comments
Ticket/fine	Can be applied under a regulatory bylaw established under the <i>Community Charter</i> or Part 22 of the <i>Local Government Act</i> (e.g., tree protection, soil deposit and removal, runoff management, environmental protection).	Provides “a teachable moment”; can be used as a preventative tool instead of, or in addition to, a disciplinary measure. Enforced typically by bylaw enforcement staff who may need training on what constitutes riparian infractions. No avenue for requiring remediation – i.e., no “fix-it” authority unless tickets are used as a means of negotiating a remedy.
Stop work order	Building permits; may be applicable to permits issued under regulatory bylaws (see above).	Allows inspectors or local government staff to stop development activity on a site until infraction rectified. Applicable only while development is under way.
Withhold approval	For rezoning, under the <i>Local Government Act</i> ; for subdivision, approving authority under <i>Land Title Act</i> .	Can withhold approval of preliminary plan or design stage until riparian issues are addressed satisfactorily. For subdivision, the approving officer must be able to justify based on bylaw requirements or “public interest.”
Court order or injunction	Development permits	Stops work until infraction is rectified.
Security deposits/ bonds	Can be required with most forms of permits	Should be of sufficient amount to act as incentive to complete the activity required or to cover a local government’s costs if it must take corrective action.
Restrictive covenants	Rezoning approval, subdivision approval, development permits	Monitored by the government agency holding the covenant. New landowners need to determine if any covenants exist on land that they purchase.

5.4 Education

Informing and educating people about riparian area protection and the requirements of the Riparian Areas Regulation are important parts of the compliance continuum.

Public awareness and understanding prevents inadvertent non-compliance; ensures long-term recognition of the importance of SPEAs during particular types of development and after development is completed; and promotes compliance. By being well informed about both the requirements of the Regulation and the local government's regulatory approach, the public can be involved in reporting inappropriate or non-compliant activities.

Local governments are directed by the Regulation to cooperate with DFO and the Ministry in developing strategies and tools (such as brochures) for education purposes.

5.5 Enforcement roles

How complaints and infractions regarding riparian areas will be responded to will depend on the regulatory tool used by local government to implement the Riparian Areas Regulation. In all cases, the *Fisheries Act* and the *Water Act* may ultimately be sued.

Enforcement will be coordinated between the three levels of government. The enforcement steps taken, and who takes the lead in a particular enforcement action, will depend on the nature and severity of the infraction.

Appendix 1. Applying the Regulation: three case studies

Case Study 1: CITY OF CHILLIWACK

Chilliwack – a city of approximately 70,000 and growing – is located in the Fraser Valley, about 100 km east of the City of Vancouver. With the Vedder-Chilliwack River to the south and the Fraser River to the north, much of the City’s valley bottom is in the Agricultural Land Reserve, driving new residential development onto the surrounding hillsides.

Background - Chilliwack’s Method for Protecting Streams

Chilliwack applies the *Fish Protection Act* through its Fisheries Sensitivity Map (FSM), which was created from over twenty years of inventory data on local watercourses in collaboration with DFO and MWLAP. The map classifies watercourses into one of five categories, and setbacks or Streamside Protection and Enhancement Areas (SPEAs) are assigned according to the classification (Table 1).

For any type of development application – rezoning, subdivision, development permit, or building permit – a property owner is expected to meet the SPEA designated under the FSM. If they must develop within the SPEA, the City facilitates a process, using its Environmental Review Committee structure, that allows property owners to apply for a site-specific variance (Figure 1).

A property owner can initiate the process by presenting an application/letter of request accompanied by a supporting Sensitive Habitat Evaluation report prepared by a Qualified Environmental Professional (QEP).¹⁷ A meeting is scheduled that includes the applicant, the QEP, a City representative and a representative of the Department of Fisheries and Oceans (DFO), where the application

Class	Description	SPEA *
A (Red)	Fish are present or potentially present if introduced barriers or obstructions are either removed or made passable for fish.	30 m
A(0) (Red Dashed)	Inhabited by salmonids primarily during the overwintering period or potentially inhabited during the overwintering period with access enhancement.	30 m
B (Yellow)	Not inhabited by fish and providing water, food and nutrients to downstream fish bearing stream or other water body.	15 m
C (Green)	No significant food/nutrient value. No fish documented.	7.5 m
Unassessed (Orange)	Stream system not yet assessed by biologist.	7.5 m

Table 1. Watercourse classifications under the Fisheries Sensitivity Map (*SPEAs measured from top of bank)

¹⁷ The City has released “Guidelines for Sensitive Habitat Evaluations within the City of Chilliwack” that outline the components of an Evaluation report, and the City’s expectations regarding qualifications and liability adopted by a QEP. The Guidelines can be viewed on the City’s website <http://www.chilliwack.com/main/page.cfm?id=644>.

and report are reviewed. The DFO representative subsequently makes recommendations to the City regarding the proposed variance. Typically, an approval of a SPEA reduction includes conditions such as registering a covenant for a non-disturbance area, planting additional trees and shrubs in the non-disturbance area, and fencing the area.

A development proposal must also conform to setbacks established under Chilliwack's Floodplain Regulation Bylaw as well as regulations under its Watercourse Protection Bylaw, which restricts activities that may damage a watercourse primarily in terms of its drainage capacity.

Following are examples of this process in action, and how it might change under the RAR.

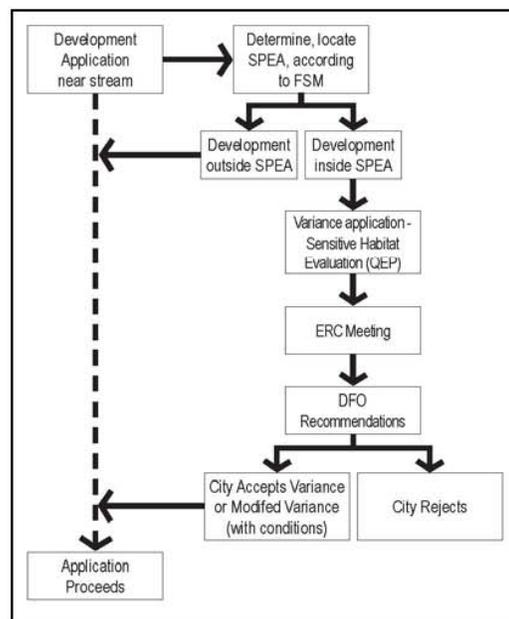


Figure 1: Chilliwack's general development approval process.

Pilot Site One: 46251 Mullins Drive – a ravine situation

This pilot site is located in a developing hillside neighbourhood at the south end of the city known as Promontory. Adjacent to new single-family housing, the 9-ha site was covered with second and third growth mixed forest, which was recently cleared from over half the site (Map 1). A 51-lot single-family subdivision was proposed, with future additions of cluster housing at the north and south ends of the site. The proposal conformed to the existing zoning for the area.

The Stream

Thornton Creek runs through the site from south to north, flowing into Teskey Creek at the northeast property line. The Creek begins in a ravine at the south end of the site, with steep slopes on both sides, flattening as it flows toward the north end of the site.

Thornton Creek is a 'Class B' stream on the City's FSM, indicating that it is non-fish bearing but provides water, food and nutrients to a downstream fish bearing water body. The stream



Map 1. Location of Mullins Road pilot study site.

apparently dries up in the summer months.

RAR Simple Assessment – desktop analysis: Based on the City’s classification as non-fish bearing, and given the presence of existing or potential continuous vegetation for a minimum of 30 m and the non-permanent nature of the stream, the SPEA width under the RAR’s Simple Assessment would be a minimum of 15 m from the top of bank and/or ravine top of bank on both sides of the stream. This concurs with the SPEA designated under the City’s FSM.

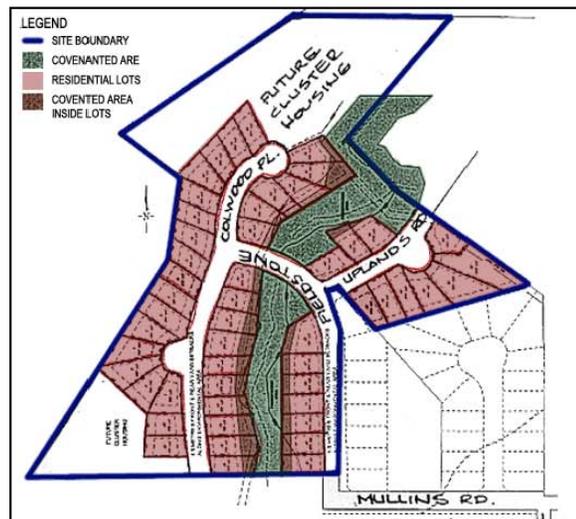
The Review Process

The City issued a preliminary layout approval for the proposal conditional on a Sensitive Habitat Evaluation (SHE) of the Creek. The QEP retained by the applicant found no significant spawning areas or pool habitats on the site, and ascertained that fish would not be able to gain access to Thornton Creek or Teskey Creek upstream of Promontory Road due to an impassible culvert under the road.

The SHE report (which did not apply the RAR Assessment Methods) recommended an average 20-m setback from the high water mark to “protect the majority of the ecological features and functions of Thornton Creek” while allowing development to proceed. The setback area would be covenanted (Map 2). The report also suggested that fish might be able to access the site if a fish ladder is installed under Promontory Road and gravel placed in the Creek to enhance spawning opportunities. A wider average SPEA measured only from the high water mark may have been proposed as a means of reconciling the partial ravine situation.

However, due to concerns over how the setback was defined particularly with respect to the ravine, the senior agencies were unwilling to support the recommended setback. The applicant discontinued the application and subsequently sold the property. The new owner is currently working on a revised development application and is working with an environmental professional to determine a satisfactory SPEA and top of bank measurement.

If the RAR had been applied, the QEP could have chosen to conduct a Detailed Assessment to find the SPEA based on an analysis of the “Zones of Sensitivity”, including measures to address ravine slope stability. Also, a fish presence assessment using the sampling methodology included in the RAR



Map 2. Proposed subdivision showing variable 20-m covenant area along Thornton Creek.

would have helped in determining whether it was worthwhile to recommend measures to overcome the fish access barrier at Promontory Road.

Pilot Site Two: 46305 Cessna Drive – a redevelopment scenario

A second pilot site in Chilliwack is of interest in that it involves redevelopment from a single-family to multi-family land use. Located on Cessna Drive near the airport on the east side of Chilliwack, the 0.9-ha site is adjacent to single-family and townhouse residential developments and is made up of four lots each with single-family homes (Map 3). The development proposal is to consolidate the four lots into an eight building, 31-unit townhouse complex. This type of development fits with the current zoning for the area.



Map 3. Location of Cessna Drive Pilot Site.

The Stream

Semiault Creek flows along the northern boundary of the site. The Creek is classified on the city's FSM as a Class 'A' watercourse, indicating fish presence or potential fish presence, and requiring a 30-m SPEA. In this area, however, Semiault Creek is in a highly degraded state (Picture 1), flowing through a channelized ditch devoid of significant riparian vegetation.

The Creek contains water year-round and provides habitat that is considered suitable for salmon and trout, although none were found in the Creek at the time of assessment for the project. The Creek is inhabited by Salish sucker, an endangered species.

RAR Simple Assessment – desktop analysis: Semiault Creek is considered to be fish bearing. On the south side of the stream where development is proposed, existing and potential vegetation is somewhat discontinuous but averages 30 m and >50 m in a few areas. On neighbouring properties, vegetation is generally 15 m or less. Under the Simple Assessment, the minimum SPEA width would be 30 m from the top of bank. This concurs with the SPEA designated under the City's FSM.



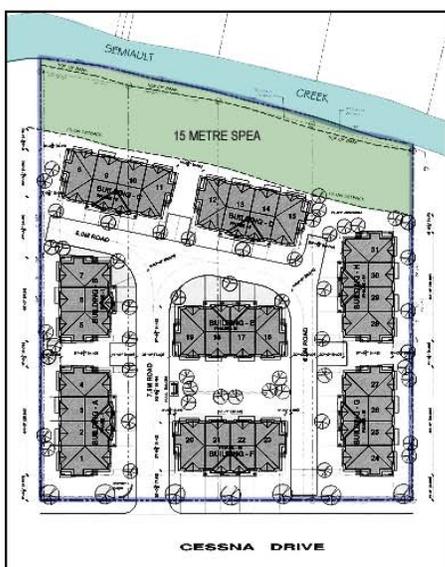
Picture 1. View along Semiault Creek at the north property line facing west. (Photo: City of Chilliwack)

The Review Process

The development proposal required a consolidation of lots and a development permit for form and character. The developer also requested a variance from the 30-m SPEA designated by the FSM classification down to 10-m. The city required a SIE prior to allowing the application

process to continue.

The resulting SHE report (which did not follow the RAR Assessment Methods) concluded that a 12-m building setback would “be adequate to protect the integrity of the riparian area from the effects of the development”.



Map 4. Developer's site plan showing a 15-m SPEA from the top of bank.

The report recommended that all riparian vegetation within 7.5-m of the top-of-bank be retained and where vegetation was lacking, that this zone be replanted with native plants. The QEP felt that by taking these measures, a net benefit would occur for the creek.

Under the City's review process, the DFO representative responded by stating “although a 30-metre wide streamside protection area may not be justified at this time because of the current poor health of the stream and lack of streamside protection on surrounding properties, the streamside area at this site should be no less than 15 m”. He also recommended streamside zone protection measures, rehabilitation planting, and runoff and sedimentation controls. The DFO representative felt that if the additional remediation requirements were

followed within the 15-m SPEA, it would be more beneficial to the stream than taking no remedial measures within a 30-m SPEA (Map 4).

Had the RAR been applied, the result may have been different. If the environmental professional had followed the Assessment Method laid out in the RAR and reached the same conclusion regarding a 12-m SPEA and 7.5 m vegetated zone, that recommendation would have simply moved forward for the City's consideration. On the other hand, by implementing the RAR Assessment Method, the consultant may have determined a SPEA in closer accordance to DFO's final recommendation.

Potential Changes in Chilliwack's Development Review Process under the RAR

Under the RAR, the main changes to the City of Chilliwack's review process would occur at the interface with senior agencies (Figure 2):

- The City already requires applicants proposing to vary from the SPEA under the City's FSM to submit a QEP report, but that report would be required to follow the RAR's Assessment Methods.
- Instead of an Environment Review Committee-based review process, the QEP would submit the report to MWLAP electronically, verifying that he/she is qualified,

adhered to the RAR’s Assessment Methods; and has provided an opinion on the SPEA and conditions for maintaining its integrity.

- MWLAP would forward a notice of receipt of the QEP’s report to the City and the QEP and make it available to the City to download. The City can require that the QEP submit a copy directly to the City when the report is submitted to MWLAP.
- Only if the QEP determines that the development proposal involves a HADD (harmful alteration, disruption or destruction of habitat) under the *Fisheries Act* would he/she refer the report to DFO for authorization under the Act.

Implementing the RAR in Chilliwack

Chilliwack already has many of the ingredients for implementing the RAR.

Fisheries Sensitivity Map (FSM): Under the “Transitional” provisions in section 8 of the RAR, the City’s FSM may be considered the means by which the City has established SPEAs that comply with the former Streamside Protection Regulation (SPR), thereby meeting the requirements of the RAR.

The City wishes to integrate the FSM into the implementation of the RAR. However, while the SPEAs associated with the City’s FSM may reflect the SPR’s classification regarding fish-bearing potential, they do not specifically address riparian vegetation conditions and only indirectly address stream permanence.¹⁸ The FSM classifications may need to be adapted, either universally or when applied on a site- specific basis, to take these additional conditions into account.

Sensitive Habitat Evaluation (SHE): The City already requires an assessment and report by a Qualified Environmental Professional under its SHE Guidelines. Adopting the RAR’s Assessment Methods to address the determination of SPEAs that vary from its FSM would move the City towards full compliance with the RAR.

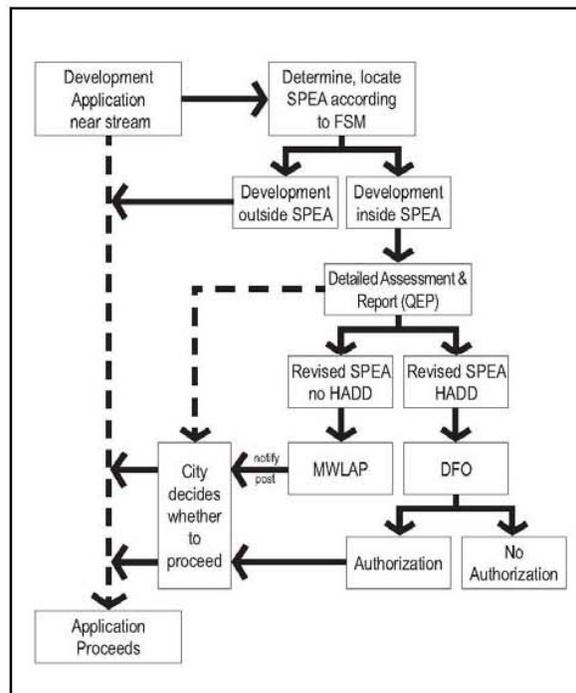


Figure 2: How the development review process could change under the RAR.

¹⁸ The main effect this may have is on the FSM’s classification of non-fish bearing streams that have existing or potential vegetation greater than 30 m.

Official Community Plan (OCP): At a more general level, section 4.3.6 of the City’s OCP contains policies to promote riparian protection and to “work cooperatively” with senior agencies to identify mechanisms for protecting riparian zones. This supports section 5 of the RAR regarding cooperation in developing strategies for RAR-related monitoring, enforcement and education.

The City is now researching the best means of incorporating the RAR into Chilliwack’s regulatory framework. With the help of a consultant, the City is looking at two options for applying its FSM and implementing the RAR.

Option 1: Regulatory Bylaw – The City would create a new bylaw specifically to address watercourse protection in the context of the RAR regulations. This bylaw would require developers to obtain a permit for development around a watercourse, determined through the RAR process. An advantage of this option is that Council would approve the bylaw and its underlying philosophy, and City staff would handle development approval. In addition, it would allow for fines to be issued as a method of regulation.

Option 2: Development Permit Area – The City would create a new Development Permit Area (DPA) under its Official Community Plan to encompass all watercourses. Chilliwack already has several DPAs, including DPA#2 that regulates hillside development to protect habitat and restrict hazardous development; hence, the City already has the administrative procedures and structures in place to handle development permits. The DPA method also allows all types of development activities, not just buildings and structures, to be regulated and provides a certain amount of flexibility in determining site-specific conditions of development.

A disadvantage of this method is that at this point, the City’s Council approves all Development Permits; under the *Local Government Act (sec.176)* this authority could be delegated to designated staff, which may reduce the length of the approval process. However, enforcement of Development Permits requires court injunctions, which can be costly and time consuming.

Acknowledgements : Thanks to the following staff from the City of Chilliwack for providing their time and resources in completing this pilot project: Ian Crane – Director of Development; Chad Hampson – Planning Technician; Ernie Knight – Senior Development Technician; Peter O’Byrne – Senior Development Technician; Karen Stanton – Manager of Development Services; Lisa Thompson – Approving Officer; Jim Vickerson – Senior Planning Technician

Case Study 2: City of Campbell River – WILLOW CREEK TRIBUTARY

The City of Campbell River (the CCR), a community of approximately 30,000 people, is located approximately 150 kilometers north of Nanaimo on the east coast of Vancouver Island. Development in the community has primarily taken place in a three to four kilometer wide strip of land, which rises up from Discovery Passage at the northern tip of the Georgia Basin and stretches along the coastline for over 15 kilometers.

Background – Campbell River’s Methods for Protecting Streams

The City’s Official Community Plan designates a Greenway (Streamside Area) Development Permit Area (DPA) on its watercourses. Developed to comply with the former Streamside Protection Regulation (SPR), the DPA is defined as all lands within 30 metres from the top of bank on streams indicated in a map included in the OCP or as determined by the City. If a development proposal infringes on this area, a Development Permit is required. In essence, the DPA parallels the ‘Riparian Assessment Area’ of the RAR, triggering an assessment to determine the streamside area to be protected.

The Site

The pilot study is a 2.77 ha greenfield site located in an emerging residential area at the south end of the city. The area was logged in the 1980s, and since then has regenerated to a mixed deciduous and coniferous forest. A tributary of Willow Creek flows through the southwest corner of the development site and joins up with Willow Creek about 1 km downstream (Picture 1).



Map 1. Pilot Study Site and Georgia Park Development.

The development site is Phase 5 of a subdivision named Georgia Park; earlier phases of the development are currently under construction. The developer has proposed the creation of 27 single-family lots on the property, ranging from 603m² to 1262 m², consistent with the existing Residential zoning for this property.

The Stream

Biological surveys performed in May 2002 and June 2003 indicated that while fish were not found in the stream on the site, Cutthroat trout were found further downstream.

It was determined that fish access to the site was theoretically possible as there are no physical barriers. However, low water levels would restrict or prevent fish passage onto the site for much of the year, and in-stream habitat was also found to be of poor quality.

RAR Simple Assessment – desktop analysis:

Despite its limitations, the stream could potentially support fish for at least part of the year; consequently, the RAR would categorize it as fish-bearing. The area on both sides of the stream is continuously vegetated for a minimum of 30 m. Therefore, the Simple Assessment procedure would likely assign a minimum SPEA width of 30 m from top of bank on both sides of the stream.



Figure 1. The Willow Creek tributary at south end of the development site.

The Review Process (Figure 1)

At the time of the pilot study, the proposed development had received Preliminary Layout Approval with the requirement to obtain an Environmental Development Permit prior to final design approval.

The project engineer retained a QEP to perform an environmental assessment of the site. With the consent of the applicant, the QEP performed a RAR-based Detailed Assessment to determine the SPEA for the site and conditions for its protection. The QEP employed four of the five “features, functions and conditions” (FFCs) outlined in the Detailed Assessment method –site potential vegetation, channel morphological type, shade, and food and nutrients. The QEP set aside the fifth FCC - filtration – citing the need for completion of a stormwater management plan for the upland area before this condition could be assessed.

Based on this modified Detailed Assessment, the QEP concluded that due to the seasonal flows and poor quality potential habitat, the main objective for maintaining riparian vegetation should be to protect water quality for downstream habitat, and recommended a SPEA of 10-m width from top of bank on either side of the stream.

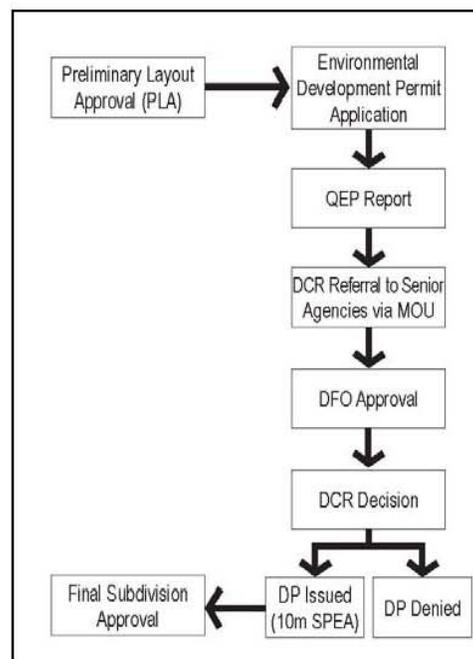


Figure 1: Approval Process for the Pilot Site.

CCR staff received the QEP's report and forwarded it to MOE and DFO via the process established in their existing Memorandum of Understanding (MOU). DFO supported the QEP's 10-metre SPEA recommendation.

Recognizing that drainage needed to be planned in the context of an overall Integrated Stormwater Management Plan for the area (currently in progress), the CCR also accepted the recommended 10m SPEA as sufficiently conservative to protect riparian habitat and preserve future stormwater management options.

The developer was issued a DP requiring that a covenant be registered on the title of all lots adjacent to the stream for any part of those lots that are within 10 metres from the top of bank. Map 2 illustrates the proposed lot layout with the original 30-metre DPA and the 10-meter SPEA to be covenanted.



Map 2: Pilot Site showing 30-m DPA and 10-m SPEA (covenanted).

Potential Changes in the Review Process under the RAR

Under the RAR, the main changes to the review process for this development application, compared to the existing process, would be as follows (Figure 2):

- The QEP report would be submitted by the QEP directly to MOE and DFO rather than being forwarded via the CCR. MOE would notify the CCR and QEP that the report was received, and post it on its on-line database. The CCR may obtain a copy of the QEP's report by accessing the report from the online database, or request that the applicant or QEP provide them with a copy directly.
- There would be no referral or formal consultation between the CCR and the senior agencies on the QEP report and its findings.
- MOE and DFO would acknowledge receipt of the report but would not review it, relying instead on the QEP confirming that they have fulfilled the three required criteria of: being qualified; adhering to the RAR's Assessment Methods; and providing an

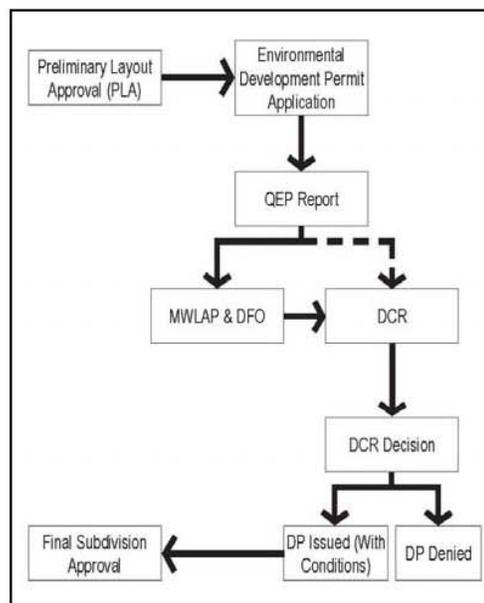


Figure 2: How the Approval Process for the pilot site would change under the RAR.

opinion on the SPEA width and the measures required to maintain the SPEA's integrity.

Adoption of the RAR in the CCR's Bylaws and Processes

Due to the CCR's previous integration of the SPR into its OCP and the staff's experience with streamside protection, implementation of the RAR should be relatively straightforward.

Official Community Plan: The CCR is currently undergoing a review of its OCP, and integrating the RAR into the new Plan is part of that process. It is anticipated that the DPA Guidelines will be revised to take into account the RAR process.

The current DPA Guidelines include a statement: "Notwithstanding the above, the City may, as part of the development permit, vary the setback requirements from a watercourse where it can be demonstrated in a less than desirable existing situation that a 'net positive improvement' for fish habitat will result, or, in a more desirable existing situation that 'no net loss' will result, subject to City, Provincial and or Federal agency review and comment." By this policy, the CCR seeks to provide an incentive for applicants to improve on existing riparian conditions.

Local governments have the authority under section 920(7) of the *Local Government Act* to require enhancement measures within the SPEA, independent of any RAR requirements. However, a local government could not significantly vary the SPEA from that determined by the QEP report in exchange for enhancement measures within the remaining SPEA. Any such variance from a SPEA that is determined by a QEP using the accepted Assessment Methods would be considered a HADD, and would require DFO's authorization under the *Fisheries Act*.

Memorandum of Understanding (MOU): An MOU was signed in 2002 between the CCR, MWLAP, and DFO to "establish a streamlined and more cost-efficient process for deal with land use planning and development applications as they affect the natural environment within the boundaries of the City of Campbell River".

Schedule C of the MOU addresses the responsibilities of each level of government in reviewing applications for development near watercourses and other Environmentally Sensitive Areas. Currently, "moderate" and "major" changes in riparian areas and in-stream works are presented at Coordination Meetings and, in most cases, require written responses from the senior agencies. "Minor" changes in riparian area may be handled by CCR staff.

The RAR Implementation Guide speaks to minor variances to SPEAs that can be made by local governments. This and other process-related changes introduced by the RAR may be up for discussion when the MOU is scheduled for review and renewal in August 2005.

Acknowledgements: Thanks to the following staff from the Planning and Engineering Departments for providing their time and resources in completing this pilot project: Ian Buck – Planner; Ron Neufeld – Engineering Manager; Michael Roth – Environmental Coordinator (Engineering); Sean Roy – Planner; Paul Stanton – Planning Services Manager.

Case Study 3: Thompson-Nicola Regional District -ADAMS LAKE

The Thompson-Nicola Regional District (TNRD) encompasses 45,279 km² in south central British Columbia. Its population of nearly 120,000 is spread among eight municipalities and ten rural electoral areas. The Regional District provides a variety of services, including planning and building inspection, to the electoral areas, and professional support where requested or contracted by some of the smaller municipalities.

Background – the TNRD's Methods for Protecting Streams

For the most part, the TNRD has relied on recommendations from regional staff in the Ministry of Environment (MWLAP) and Fisheries and Oceans Canada (DFO) to establish requirements for riparian and instream protection in development applications. However, the TNRD does have some tools for regulating development around watercourses.

The **Zoning Bylaw**, which applies throughout the Regional District, contains watercourse setbacks ranging from 7.5 m to 60 m from the natural boundary. These setbacks, however, were established for flood management purposes and were not intended to achieve riparian protection.

Developed in collaboration with MWLAP and DFO, the TNRD adopted **Lakeshore Development Guidelines** in June 2004 in response to the ever-growing residential and commercial lakeside development in the Region. The Guidelines attempt to balance recreational development opportunities with goals to protect the quality of these lake environments. The Guidelines establish 30 m setbacks for buildings and vegetation retention from natural boundary on lakes (with some allowance for lakeshore access and views), and 15 m setbacks on streams on lakeshore properties. While the Guidelines themselves have no legislated basis, the TNRD implements them through covenants negotiated at time of rezoning and subdivision, and informally by providing them to developers and residents to guide their development plans on lakeshore properties.¹⁹



Map 1: Pilot Study Site and proposed campground area.

¹⁹ The Guidelines can be viewed on the TNRD's website at <http://www.tnrd.bc.ca/development/planningservices.php> - click on the link to the Guidelines on the pull down menu "Frequently Requested Links".



Picture 1. The shore of Adams Lake viewed from the first campsite bench.

The Pilot Site

The pilot study site is a 7.2-ha parcel within a 21.7-ha rural property located on the northwest shore of Adams Lake (**Map 1**), about 30 km east of the community of Barriere. Accessible only by logging road, the site includes over 400 m of lake shoreline as well as two small watercourses. In the past, the property was logged selectively and then used for logging camps. The property is surrounded by Crown land with mature, mixed forest growth.

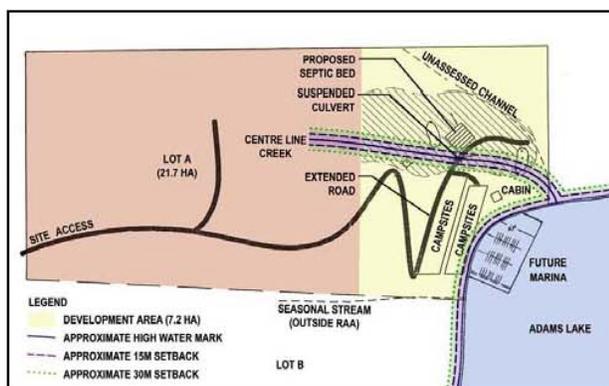
The current owner purchased the land three years ago for development as a recreational vehicle (RV) campground and future marina. The owner cleared most of the 7.2 ha and created two steeply sloped benches parallel to the lakeshore for future RV sites (Picture 1). The existing access road was also extended, two sheds were built, and the hydro line was lengthened to reach the campsite area (Map 2).

The site work was brought to the attention of the TNRD in 2004. Currently zoned RL-1 (Rural), which does not permit campgrounds, the TNRD informed the owner that a rezoning to C-4 (Recreational Commercial) was required. The owner hired an engineer to conduct an environmental assessment as a requirement of the rezoning process.

The Watercourses

Adams Lake: Adams Lake is a significant water body in the TNRD in terms of both size (129 km²) and habitat value. It supports the Adams River sockeye salmon run, one of the largest sockeye populations in the Fraser River system. The Lake and River also contain Kokanee, Rainbow trout, Chinook salmon, Dolly varden and Mountain whitefish.

Centre Line Creek:²⁰ This Creek flows through the northern portion of the site from west to east, draining into Adams Lake. The channel is one to two metres wide, the streambanks are mostly undefined and the stream type is riffle with a few pools. The riparian vegetation is predominantly shrubs with a few young trees.



Map 2: Proposed development scheme including 15-m and 30-m setback lines on Adams Lake and Centre Line Creek.

²⁰ Most information taken from the Draft Environmental Impact Assessment (January 2005) prepared for the applicant.

The Creek has the ability to support Rainbow trout seasonally, but could be dry during the fall and winter. Creek depth is sufficient for Rainbow trout but not for Sockeye salmon passage. The recently constructed road has created a suspended culvert where it crosses the stream, acting as a barrier for fish access west of the road, but no natural barriers to fish passage exist upstream. The riparian zone is disturbed by the recent road construction.

Un-named channel: An additional 50-m of channel with a width of under half a metre was identified intersecting the north end of the property.

RAR Simple Assessment – desktop analysis: Both Adams Lake and Centre Line Creek would be considered fish bearing with existing or potential riparian vegetation of 30-m or greater. A Simple Assessment would therefore indicate SPEA (Streamside Protection and Enhancement Area) widths of 30 m from the top of bank. The un-named channel was not assessed for fish bearing capacity; under the default option, it would be considered fish bearing and also subject to a 30-m SPEA.

The Review Process (Figure 1)

When the owner submitted an application for rezoning, the TNRD compiled a fact sheet about the development and forwarded it to a variety of affected agencies with potential interests in the development, including MWLAP and DFO, as well as the BC Ministries of Health, Forests, Transportation, and Community, Aboriginal & Woman’s Service, and Land and Water BC. The TNRD received comments from interested agencies outlining areas of concerns. The TNRD compiled the comments into technical and assessment requirements and forwarded them to the applicant.

The applicant retained a qualified professional to respond to the TNRD’s requirements. The resulting report has been forwarded to relevant senior agencies for further review and recommendations. The TNRD will negotiate the terms of rezoning with the applicant based on the comments from the responding agencies and on public input through the public hearing required in the rezoning process.

Potential Changes in the TNRD’s Review Process under the RAR

Under the RAR, there would be less direct communication between the TNRD and senior

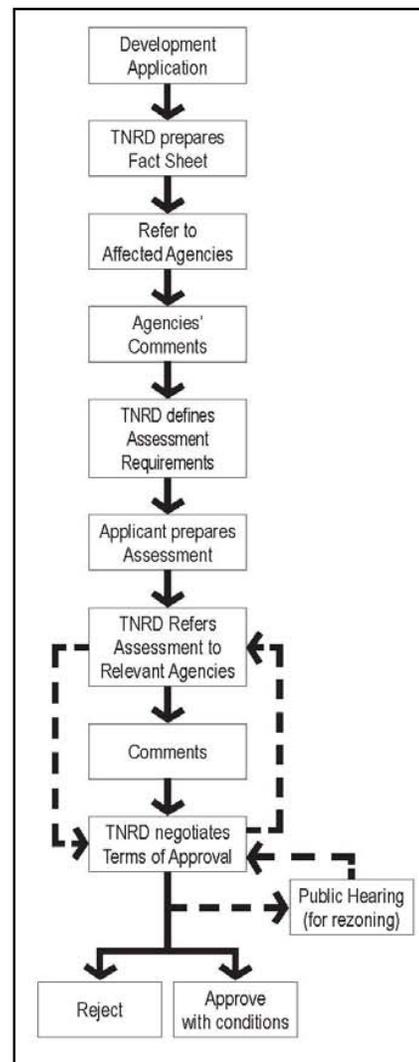


Figure 1: Current TNRD approval process used for the pilot site.

environmental agencies than in current practice (Figure 2):

- A development application would no longer be referred to senior agencies prior to site evaluation. Instead, the TNRD would require a report by a Qualified Environmental Professional (QEP) if a proposed development encroaches, or potentially encroaches, within 30 m of a stream.
- A QEP would undertake the assessment according to the RAR's Assessment Methods. The QEP would submit the report directly to MWLAP using the web-based submittal procedure. In the submission, the QEP would also confirm that the three criteria required under the RAR are fulfilled, namely: the QEP is qualified, that he/she/they adhered to the RAR's Assessment Methods, and they have provided an opinion on the width of the SPEA and the necessary measures for maintaining its integrity.
- MWLAP would notify the TNRD and the QEP that the report has been received, and make it available to the TNRD to view and download. The TNRD could also request that the applicant or QEP provide them with a copy of the report at time of submission.
- If the QEP finds that the proposed development must encroach on the recommended SPEA (which constitutes a HADD - harmful alteration, disruption or destruction of fish habitat), the applicant and/or QEP would also submit the report to DFO with an application for authorization under the *Fisheries Act*.
- The TNRD would proceed with the application on the basis of the SPEA and measures provided in the QEP report. In its final approval of the application, the TNRD may be able to make minor adjustments to the SPEA, based on the flexibility permitted in the RAR Implementation Guidebook.

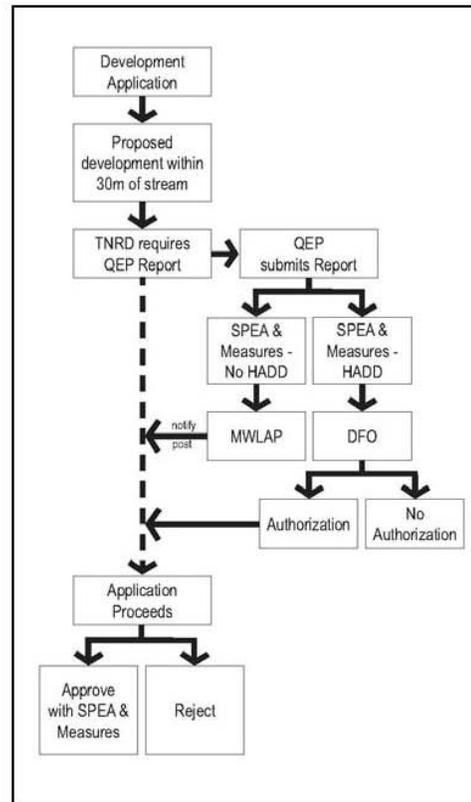


Figure 2: How the Approval Process could change under the RAR.

Implementing the RAR in the TNRD

The TNRD is investigating ways of implementing the RAR through its Zoning Bylaw and Lakeshore Development Guidelines, as well as through the Official Community Plans defined for parts of the Regional District.

Zoning Bylaw: As mentioned previously, the Zoning Bylaw contains setbacks from watercourses for flood management purposes; they are not intended to achieve riparian protection. The TNRD is currently conducting a review and revision of its Zoning Bylaw, and is intending to incorporate its Lakeshore Development Guidelines as part of that revision. This may ‘meet or beat’ the RAR when it comes to setbacks from lakes.

Official Community Plans: There are currently 10 OCPs that cover the more settled parts of the TNRD, but they do not cover all parts of the Region. The TNRD recognizes the potential for creating development permit areas (DPAs) for watercourse protection, though none are as yet defined under the existing OCPs. Nonetheless, several options are being contemplated during 2005, such as:

- Creating a watercourse DPA in each of the existing OCPs, given that these OCPs cover the more populous areas and would therefore, cover the majority of potential development around watercourses;
- Creating watercourse DPAs in each existing OCP but also expanding the boundaries of these OCPs to encompass all lands in the Regional District; or
- Developing a ‘generic’ OCP with policies and/or DPAs that address common needs such as floodplain regulation, wildfire management, the Lakeshore Development Guidelines, and RAR requirements. This generic OCP would be applied to electoral areas or parts thereof that currently do not have OCPs, and existing OCPs would be amended to incorporate these generic policies.

The TNRD is at a crossroads in the development of land use regulations to support watercourse protection in general and the RAR in particular. It is attempting to find a reasonable and efficient method for meeting the RAR requirements given the largely rural/resource nature of this vast region along with limited staff resources, watercourse mapping and data, and private sector expertise. To date, the TNRD has worked closely with MWLAP and DFO staff in the region, and this relationship will likely continue as the TNRD makes the necessary transitions.

Acknowledgements: Thanks to the following staff from Development and Planning Services for providing their time and resources in completing this pilot project: Bob Finley – Manager of Planning; Barb Jackson – Planner; Greg Toma – Director of Development Services; Dan Wallace – Planner; Kristina Watt – Planning Technician.

Appendix 2. The Notification System

The automated Web-based notification system is designed to support the Riparian Areas Regulation. The notification system supports local governments, the Department of Fisheries and Oceans (DFO), and the Ministry of Environment (MWLAP) with riparian area development decisions. This system also:

- provides a mechanism for notification to local, provincial, and federal governments of the receipt of Assessment Reports;
- enables local government, DFO, QEPs, and the MWLAP to query, view, and download Assessment Reports; and
- enables Ministry staff to manage assessments submitted by QEPs.

The main page of the notification system for submitting the Riparian Areas Regulation Assessment Reports allows QEPs and local government to log in and search for an assessment. A QEP can also create or modify an assessment. The following screen designs illustrate how to create, modify, or search for assessments.

Qualified Environmental Professionals

Submission of a New Assessment Report

The QEP should download and complete the Assessment Report form before accessing the notification system. Once an Assessment Report is completed, the QEP will access the system to submit the completed report as per Section 4(2)(b) of the Riparian Areas Regulation. The QEP will need to access the “myid” site for id and password. To acquire a “myid,” go to <http://www.bceid.ca/bsr>

The QEP creates a new Assessment Report by working through a series of seven screens. The steps involve entering information about the primary and secondary QEPs, the developer, and the proposed development and its location. Then the Assessment Report can be uploaded to the system. In the final step, the QEP receives a message that the report has been successfully submitted and saved.

Record the assessment number that is assigned after submitting the Assessment Report. The assessment number is needed for any revisions or searches for the Assessment Report.

The QEP can submit a modified Assessment Report. This requires searching for the assessment report and making changes to the information provided. During a modification, basic information, such as developer or QEP contact information, can be updated, and a modified report can be uploaded. All versions of the report that are uploaded will be retained in the database.

Create Assessment: Step 1 - Primary QEP Details

Step 1 requests the name, email, mailing address and telephone number for the primary QEP. The Designation box, a drop-down choice, is for the professional association of the QEP. The Registration # box is the QEP’s professional resignation number (for example, Agrologist #968). The email must be current as the primary QEP will be sent a notification of submission of their assessment report.

- For all screens**
- Required boxes are marked with a (*).
 - Click on the “Next” button to view the next screen.
 - Click on the “Reset” button to reset only the screen being viewed, not every screen in the series.

Create Assessment: Step 2 - Secondary QEP Details

The screenshot shows a web application interface for creating an assessment. At the top left is the British Columbia logo. To its right is a search bar with a 'Go' button and a link to 'Advanced Search'. Further right are links for 'Main Index', 'Contact Us', and 'Help'. Below the search bar is a breadcrumb trail: 'B.C. Home > Water, Land and Air Protection > Riparian Areas Regulation'. A user login notice states 'You are logged in as PCormie, Logout'. The main content area is titled 'Step 2 - Secondary QEP Details' and contains a form with the following fields:

- First Name :
- Middle Name:
- Last Name :
- Designation : (with a dropdown arrow)
- Registration # :
- Email Address:
- Company name:
- Address Line 1 :
- Address Line 2 :
- City :
- Province/State : (with a dropdown arrow)
- Postal/Zip Code :
- Country : (with a dropdown arrow)
- Phone # :

At the bottom of the form are three buttons: 'Reset', 'Add New', and 'Next'. The footer of the page contains the text 'RAR - Version 1.0' and links for 'COPYRIGHT', 'DISCLAIMER', 'PRIVACY', and 'ACCESSIBILITY'.

In Step 2, enter the name, email, mailing address and telephone number of all secondary QEPs as an Assessment Report can involve more than one QEP. A record is required for every QEP who conducts components of the riparian area assessment. If no secondary QEP is needed for this project, move the “next” screen.

If there is a need for a secondary QEP, the information for that person cannot be added during a modification of the assessment. A new assessment will need to be created and submitted.

Create Assessment: Step 3 - Developer Details

The screenshot shows the 'Step 3 - Developer Details' form. At the top left is the British Columbia logo. A search bar with a 'Go' button and links for 'Advanced Search', 'Main Index', 'Contact Us', and 'Help' are at the top right. A breadcrumb trail reads 'B.C. Home > Water, Land and Air Protection > Riparian Areas Regulation'. Below this, it says 'You are logged in as PCormie, Logout'. The form itself is titled 'Step 3 - Developer Details' and contains the following fields:

Contact First Name :	<input type="text"/>	Address Line 1 :	<input type="text"/>
Contact Middle Name:	<input type="text"/>	Address Line 2 :	<input type="text"/>
Contact Last Name :	<input type="text"/>	City	<input type="text"/>
Email Address:	<input type="text"/>	Province/State :	<input type="text"/>
Company name:	<input type="text"/>	Postal/Zip Code	<input type="text"/>
		Country	<input type="text"/>
		Phone # :	<input type="text"/>

At the bottom right of the form are two buttons: 'Reset' and 'Next'.

At the bottom of the page, there is a footer with 'RAR - Version 1.0' on the left and 'COPYRIGHT | DISCLAIMER | PRIVACY | ACCESSIBILITY' on the right.

In Step 3, enter the name, email, mailing address and telephone number for the development applicant.

Create Assessment: Step 4 - Development Details

The screenshot shows the 'Step 4 - Development Details' form. At the top left is the British Columbia logo. A search bar with a 'Go' button is at the top right. Below the search bar are links for 'Advanced Search', 'Main Index', and 'Contact Us'. The breadcrumb trail reads 'B.C. Home > Water, Land & Air Protection > Riparian Area Regulation'. On the left is a navigation menu with 'RAR Home', 'Assessment Search', 'New Assessment', and 'Logout'. The main form area is titled 'Step 4 - Development Details' and contains the following fields:

- * Development Type: [Dropdown menu]
- * Area of Development: [Dropdown menu]
- Lot Area: [Text input]
- * Riparian Length: [Text input]
- Section 9 Part 7 Activities (Y/N): [Dropdown menu]
- * Proposed Start Date: [Text input]
- * Proposed End Date: [Text input]
- * Nature of Development: [Dropdown menu]

At the bottom of the form are 'Next' and 'Reset' buttons. A note below the buttons states '* - Required fields.' At the very bottom of the page, there is a footer with 'RAR - Version 1.0.0' and links for 'COPYRIGHT', 'DISCLAIMER', 'PRIVACY', and 'ACCESSIBILITY'.

Enter the details of the development in Step 4.

- Choose the Development Type from the drop-down listing (also below):
 - Subdivision: 6 or less Single Family Lots
 - Subdivision: > 6 lot Single Family
 - Subdivision: 3 or less lots Multi-family
 - Subdivision: > 3 or less lots Multi-family
 - Subdivision: Commercial
 - Subdivision: Industrial
 - Construction: Single Family Residential
 - Construction: Low density (< 15 units per ha) Multi-family Family Residential
 - Construction: Med density (1635 units per ha) Multi-family Family Residential
 - Construction: High density (> 36 units per ha) Multi-family Family Residential

- Construction: Commercial
 - Construction: Residential/Commercial
 - Construction: Light Industrial
 - Construction: Heavy Industrial
 - Utility/Service Corridor
 - Accessory Buildings
 - Decks
 - Strata Development
 - Schedule 2 Contaminated Site Review
 - Rural Residential: Outside of Municipality
 - Recreational
 - Landscaping, including fencing, retaining walls, and parking lots
 - Other
-
- Area of Development (ha): The size of the footprint or impact of the proposed development.
 - Lot Area (ha): The size of the property under development.
 - Riparian Length: The length of the riparian area in the lot.
 - Choose “yes” or “no” if the development involves Section 9 Part 7 of the *Water Act*
 - Proposed Start Date/Proposed End Date (entered as year, month, and day): These fields indicate the time frame in which the development will take place.
 - Nature of Development: Options are “New” or “Redevelopment.”

Create Assessment: Step 5 - Location Details

BRITISH COLUMBIA

Search Advanced Search [▶](#) Main Index [▶](#) Contact Us [▶](#)

B.C. Home [B.C. Home](#) > [Water, Land & Air Protection](#) > [Riparian Area Regulation](#)

RAR Home

- Assessment Search
- New Assessment
- Logout

Step 5 - Location Details

* Local Government: * Address Line 1:

* Stream River Name: Address Line 2:

* Legal Description: * Postal Code:

* Stream/River Type: * City:

* Region: * Province/State:

* Watershed Code: * Country:

Latitude: ° ' "

Longitude: ° ' "

* - Required fields

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In Step 5, enter details about the development location.

- Selecting local government (from the drop-down list),
- Provide the name of the stream. For a unnamed stream, format the response as ““parent” stream unnamed tributary.”
- Entering the legal description as the parcel identification number.
- Select the type of stream, creek, wetland or lake from the drop down box.
- Select the Ministry Region (from the drop down list) the system contains the emails for the government officials and sends the notification email to those contacts.

- Enter the watershed code. Refer to <http://bcfisheries.gov.bc.ca/fishinv/basemaps-watershed.html> to find the watershed code. If there is no watershed code select the parent stream code, followed by a comma, and the UTM of the stream from the most downstream location on the lot.
- Take the geographic coordinates (latitude and longitude) from the center of the property and enter them as degrees, minutes and seconds.
- Enter the street address for the development location as completely as possible.

Create Assessment: Step 6 - Upload and Check

The screenshot shows the 'Step 6 - Upload and Check' form on the British Columbia website. At the top left is the British Columbia logo. To the right is a search bar with a 'Go' button and links for 'Advanced Search', 'Main Index', and 'Contact Us'. Below the search bar is a breadcrumb trail: 'B.C. Home > Water, Land & Air Protection > Riparian Area Regulation'. On the left is a sidebar with 'B.C. Home' and 'RAR Home' sections. The 'RAR Home' section contains links for 'Assessment Search', 'New Assessment', and 'Logout'. The main content area is titled 'Step 6 - Upload and Check' and contains an 'Upload PDF File' field with the filename 'h:\RobertaQEPreport.pdf' and a 'Browse...' button. Below the upload field are four questions, each with a radio button for 'Yes' and 'No':

- Question 1: "You are a qualified environmental professional and all other professionals involved in the assessment are qualified environmental professionals; and that you and these other professionals are qualified to perform the assessment of the development proposal (Yes/No)?"
- Question 2: "You and they have carried out the assessment of the development proposal; and you and they have followed the assessment methods in performing the assessment (Yes/No)?"
- Question 3: "Is it you and their profession opinion that no harmful alteration, disruption or destruction will result from the proposed development if the development is implemented as proposed; or no harmful alteration, disruption or destruction will result from the proposed development if streamside protection and enhancement areas are protected and measures identified in you assessment report are implemented by the developer (Yes/No)?"
- Question 4: "Have you attached a complete assessment report (Yes/No)?"

At the bottom right of the form are 'Submit' and 'Reset' buttons.

In Step 6, the QEP must upload the PDF file of the Assessment Report to the system. The notification system accepts PDF files only. In addition, the QEP must answer “Yes” to each question by clicking in the checkbox. Once the questions are complete, the QEP clicks “Submit” to complete the data entry.

If the QEP closes the application or navigates away from the screen without clicking “Submit,” none of the data from the previous screens are saved.

Create Assessment: Step 7 - Complete

The screenshot displays the 'Complete' screen of the assessment creation process. At the top, there is a search bar with a 'Go' button and links for 'Advanced Search', 'Main Index', and 'Contact Us'. The breadcrumb trail reads: 'B.C. Home > Water, Land & Air Protection > Riparian Area Regulation'. The left sidebar contains a 'RAR Home' menu with options for 'Assessment Search', 'New Assessment', and 'Logout'. The main content area features a 'Complete' heading and a message box stating: 'Your assessment has been saved successfully. The assessment number for the assessment you have entered is: 1'. Below this, it advises to 'Please print or record you assessment number as it is not contained in the email' and to 'Use the Left menu to enter a new assessment or to search for and modify saved assessments.' A final note states: 'Notification of the creation of this assessment has been sent to you, DFO, and the appropriate local government. Details of assessments are included in this notification. Check content to ensure correctness. If incorrect, modify you assessment.'

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This is the last screen for creating and submitting an assessment for the notification system. The message on the online version of screen will indicate the notification number, that the assessment was created successfully, and that a notification message of the new assessment will be distributed to you (as the QEP), MWLAP, DFO, and local governments. The notification message includes all the information you have entered in Steps 1 through 6 and the assessment number. Do not lose this number, because you will need it if you want to amend or access the report on this system.

If the mail server is down, the JavaMail returns an error for some reason, or the email is unsuccessful, the system will not save an assessment or send notifications. When a notification cannot be saved, this screen will state that the assessment submission is incomplete and that the QEP should try again later. Although inconvenient, this approach is preferable to having assessments in the system for which no notifications have been sent.

Search for Assessment Report by a QEP

The screenshot shows the British Columbia government website interface for the Riparian Areas Regulation (RAR). At the top left is the British Columbia logo. To the right is a search bar with a 'Go' button and links for 'Advanced Search', 'Main Index', 'Contact Us', and 'Help'. Below the logo is a blue sidebar menu with 'B.C. Home' and links for 'RAR Home', 'Modify Assessment', and 'Create Assessment'. The main content area has a breadcrumb trail: 'B.C. Home > Water, Land and Air Protection > Riparian Areas Regulation'. Below the breadcrumb, it says 'You are logged in as PCormie, Logout'. A 'Search' section is highlighted with a grey background. It contains the text 'Locate the assessment you wish to modify:' followed by an input field for 'Assessment #' with the value '2304332'. Below the input field are two buttons: 'Search' and 'Reset'. At the bottom right of the main content area is a 'Top' button with an upward arrow icon. The footer contains 'RAR - Version 1.0' and links for 'COPYRIGHT', 'DISCLAIMER', 'PRIVACY', and 'ACCESSIBILITY'.

This screen allows the QEP to search for the Assessment Report by assessment number. The assessment number is the number in the notification email. Only the assessment matching the number and authored by the QEP is returned.

Results of a search:

The screenshot displays the user interface of the RAR web application. At the top left is the British Columbia logo. A search bar is located at the top center, with the text 'Search' and a 'Go' button. To the right of the search bar are links for 'Advanced Search', 'Main Index', 'Contact Us', and 'Help'. Below the search bar, a breadcrumb trail reads 'B.C. Home > Water, Land and Air Protection > Riparian Areas Regulation'. A login notification states 'You are logged in as PCormie, Logout'. The main content area features a 'Search' heading and a form with the text 'Locate the assessment you wish to modify:'. The form contains an input field for 'Assessment #' with the value '2304332' and two buttons: 'Search' and 'Reset'. Below the form, a red message reads 'You have not authored any reports with that assessment number.' A 'Top' button is located in the bottom right corner of the main content area. The footer contains the text 'RAR - Version 1.0' and links for 'COPYRIGHT', 'DISCLAIMER', 'PRIVACY', and 'ACCESSIBILITY'.

If the assessment number searched for is not authored by the QEP, either as a primary or secondary author, an error message is displayed. The QEP can request a lost assessment number or have other technical problems email RiparianAreas@Victoria1.gov.bc.ca.

Local Governments

Local governments can search the notification system by logging in using the IDIR account identification provided by MWLAP. Users with IDIR accounts have a more complex search screen for assessments, and results can produce more than one report.

The search screen allows an IDIR user to search for assessments based on a combination of the boxes. Drop-down boxes provide results related to management issues. Assessment Reports can be searched by:

- Assessment #
- MWLAP Region (drop-down box)
- Legal Description (PID)
- QEP/Company Name
- Local Government (drop-down box)
- Nature of Development (drop-down box)
- QEP Designation (drop-down box)

- QEP Registration #
- Stream/River Name
- Stream/River Type (drop-down box)
- Watershed Code
- Development Type (drop-down box)
- Area of Development (drop-down box)

All or any of the boxes can be used to search the database for Assessment Reports. This screen also allows the results to be ordered by assessment, developer name, region, or stream name.

The screenshot displays the 'Assessment Search Results' page. At the top, there is a search bar with a 'Go' button and links for 'Advanced Search', 'Main Index', 'Contact Us', and 'Help'. The breadcrumb trail reads: 'B.C. Home > Water, Land and Air Protection > Riparian Areas Regulation'. The left sidebar contains 'B.C. Home' with links to 'RAR Home', 'Assessment Search', and 'Lookups'. The main content area shows 'Assessment Search Results' for a query that returned 4 results. Below this is a table with the following data:

Assessment #	QEP/Company Name	Developer Name	Stream Name	Assessment Date	Number of Revisions
<input type="radio"/> 2034231	Bob Jones	Wallis Construction	Gold River	2004-02-13	1
<input type="radio"/> 2423455	Will Smith	ECO Homes Ltd.	Elk River	2004-05-03	3
<input type="radio"/> 3146789	Lucy Van Pelt	Sanford & Son	Cold Creek	2005-06-21	6
<input checked="" type="radio"/> 3511234	Jane Gold	Cliff Dawkins	Unnamed Stream #33	2005-07-17	2

Below the table is a 'View' button. At the bottom right of the content area is a 'Top' button. The footer contains 'RAR - Version 1.0' and links for 'COPYRIGHT', 'DISCLAIMER', 'PRIVACY', and 'ACCESSIBILITY'.

This screen displays summary information about the Assessments Reports that meet the search criteria. To view the Assessment Report of interest, click on the empty circle and the “View” button.

Assessment Details

BRITISH COLUMBIA

Search [Go](#) [Advanced Search](#) [Main Index](#) [Contact Us](#) [Help](#)

B.C. Home > [Water, Land and Air Protection](#) > Riparian Areas Regulation

B.C. Home

- RAR Home
- Assessment Search
- Lookups

Search

Assessment Details

Assessment # : 2034231 Stream Name : Gold Stream
 Creation Date : 2004-02-13 Region : Vancouver Island
 Last Modified: 2005-03-16 Latitude : 48' 125"
 Legal Description: Gold Stream Longitude : 123' 21"

Developer Details

Name : Wallis Construction Email : contact@wallis.ca
 Address : 123 Elk St. Victoria BC Phone : 250-920-0123

QEP Details

Role	Name	Company	Address	Email	Phone
P	Bob Jones	EnvTech	55 Broad St. Victoria BC	bjones@envtech	250-920-1111
S	Jim Smith	EnvTech	55 Broad St. Victoria BC	jsmith@envtech	250-920-1111

Attachments

#	Name	Size	Date	Download
1	goldstream01.pdf	263k	2004-02-13	download
2	goldstream02.pdf	55k	2005-03-14	download

RAR - Version 1.0 COPYRIGHT DISCLAIMER PRIVACY ACCESSIBILITY

The assessment tombstone details are displayed on this screen including the amendments or revisions. Users can download the Assessment Reports and view in the browser or save locally. The example above indicates that there is an original report and one revision.

SAMPLE LETTER FROM LOCAL GOVERNMENT TO PROVINCE

Enter Date

File #:

Contact Name

Company Name

Address

City, British Columbia, Postal Code

Dear Sir or Madam:

QEP Assessment # (XXX)_ – Site Address (legal)

The (City/District/Village/Regional District) of Municipality has reviewed the environmental assessment report for the above-noted property, the development plan, and the proposed modified SPEA boundary.

The report proposes a modified SPEA such that, in the opinion of the QEP, the overall riparian area (as calculated in square metres) remains the same and does not result in an overall reduction of the amount of area providing riparian function (see QEP statement & report dated). The SPEA boundary does not result in any portion being less than Insert Min-m from the high water mark. The new area(s) added to the riparian area to make up for the those shifted out are contiguous with the original SPEA area, and are located as close to the watercourse as possible with no extended panhandles. The quality of the riparian vegetation to be retained is excellent with highly functional attributes, and only areas with historical impacts are proposed for width reduction. There are no compromises to geotechnical stability within the area(s) proposed for variation.

We acknowledge the level of effort given in the development plan to avoid the SPEA boundary. Provide a detailed description of changes to the development plan adopted to accommodate the SPEA boundary (attach lot plan and/or orthophoto).

We support the proposed modified Streamside Protection and Enhancement Area (SPEA) determined in the report, and the proposed measures necessary to protect the modified Streamside Protection and Enhancement Area.

This report will form the basis for support of a Development Variance Permit to (name of local government) Council with regard to the protection of the natural features, functions or conditions that support fish life processes.

Yours truly,

(Name)

(Title)