Information Package for Developing Near Streams and Ravines in Accordance with the STREAMSIDE PROTECTION BYLAW (1465-2005)

September 2011

These information sheets provide information to landowners and builders about developing near streams and ravines. It explains how development can occur while protecting fish and wildlife habitat, and reducing risk of natural channel and ravine erosion.

These regulations apply to any landowner seeking to build within 30m of a watercourse's top of bank. As the brochure explains, Streamside Protection and Enhancement Areas (SPEAs) vary from 15-30m for fish-bearing watercourses, to 5-30m for non-fish-bearing watercourses.

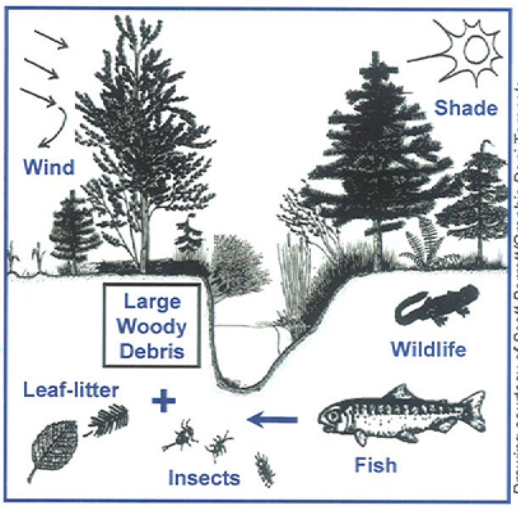
Note: This information is provided for convenience only and is not in substitution of applicable City Bylaws or Provincial or Federal codes, laws, or permits (e.g. Provincial Water Act, Contaminated Sites requirements, Canadian Environmental Assessment Act approvals, Wildlife Permits, etc). It is your responsibility to ensure that any existing or proposed construction or other works complies with any applicable Bylaws, Codes, laws or permits.

What is a Stream?

A stream includes a watercourse or source of water supply, whether usually containing water or not, a pond, lake, river, creek, brook, ditch, and a spring or a wetland that is integral to a stream and provides fish habitat. Streams may still be fish habitat despite being channelized and/or being dry during portions of the year. A Qualified Environmental Professional can determine if a stream is fish habitat or not.

What is a Streamside Protection and Enhancement Area (SPEA)?

A SPEA (also called a riparian area) is an area adjacent to a stream that links aquatic to terrestrial ecosystems and includes both existing and *potential* riparian vegetation and existing and *potential* upland vegetation that exerts an influence on the stream. **SPEAs are "no disturbance" areas** (i.e. no development activity of any kind is permitted within them).



Drawing courtesy of Scott Barrett/Graphic Dani Tarangle

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Why Protect Streamside Vegetation?

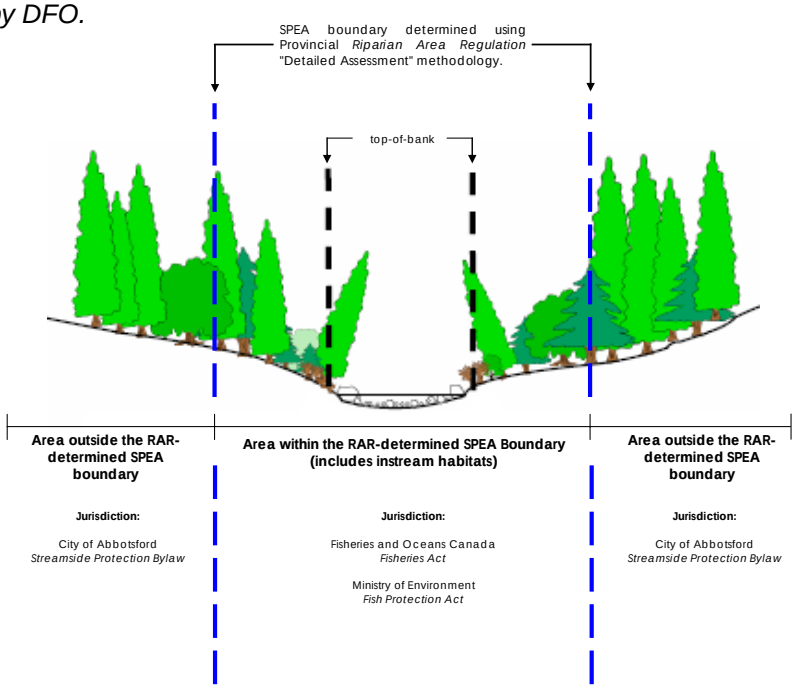
Streamside vegetation is critical for healthy streams and to protect neighbouring properties:

- Streamside vegetation drops food and nutrients into streams for fish;
- Tree roots and shrubs along the banks provide fish with hiding places away from predators and moderate the water temperature during the hot summer months;
- Dense vegetation stabilizes stream banks and prevents excessive erosion;
- The SPEA protects water quality by filtering rainwater runoff and slowing flow from heavy rains. The spongy soils soak up excess water and release it slowly, protecting people and property from floods and sudden bank erosion; and
- SPEAs are also critical for wildlife, as the majority of wildlife in BC use these streamside areas at some point in their life cycles. The SPEAs also act as corridors that wildlife can use to move from one area to another.

Legal Requirements for Managing Land near Streams

The federal *Fisheries Act* is a long-standing and powerful Act dedicated to protecting fish and fish habitat. Anyone harming fish habitat may be subject to prosecution by the Federal Government under the *Fisheries Act*. In January 2001, the Provincial government enacted the Streamside Protection Regulation (SPR) under the *Fish Protection Act*. In July 2004, the SPR was replaced by the Riparian Area Regulation (RAR), which provides an alternate model for determining stream setbacks which relies on a Qualified Environmental Professional assessment which is forwarded to the federal and provincial agencies without provision for local consultation. Under the RAR, local governments were able to either establish setbacks in accordance with the previous SPR prior to the RAR being adopted or have the RAR come into force in their jurisdiction. Consequently, the City of Abbotsford developed the *Streamside Protection Bylaw* (1465-2005), which in the opinion of local government "meets or beats" the requirements of the *Fish Protection Act*.

Jurisdiction of the City of Abbotsford *Streamside Protection Bylaw* is depicted in the figure below. *Note: Activities that do not require City permits (e.g., retaining walls less than 1.2m high, sheds smaller than 4.3m^2, backyard landscaping, etc) must still meet the federal Fisheries Act requirement of not damaging streamside vegetation, so should be kept outside of SPEAs, unless approved by DFO.*



Where does the Streamside Protection Bylaw apply?

These regulations apply to any landowner seeking to develop within 30m of a watercourse's top of bank. Specifically, the bylaw applies in the following circumstances:

- Subdivision;
- Construction or erection of buildings and structures;
- Development associated with non-farm uses within the ALR;
- Removal, alteration, disruption or destruction of vegetation (i.e. tree/plant removal);
- Removal, deposit or disturbance of soils;
- Creation of non-structural impervious or semi-impervious surfaces;
- Flood protection works;
- Construction of roads, trails, docks, wharves and bridges;
- Provision and maintenance of sewer and water services;
- Development of drainage systems; or
- Development of utility corridors.

Some types of development have been excluded from this process because of their scale or because other processes are in place to address environmental impacts. The Bylaw does not apply in the following circumstances:

- Regular maintenance of a property, but NOT including tree/plant removal, or construction of any sort (i.e. patios, fences, retaining walls, gazebos, etc);
- Interior renovations, and non-structural exterior renovations (i.e. those renovations that do not expand the footprint of the building);
- Streamside enhancement activities (i.e. planting native species, removing invasive species such as Himalayan Blackberry, Japanese Knotweed, Scotchbroom, etc); or
- Agricultural uses and farm practices (NOTE: the Bylaw does apply to non-farm uses within the ALR)

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What is the required setback?

Streamside Protection and Enhancement Areas (SPEAs) vary from 15-30m for fish-bearing watercourses, to 5-30m for non-fish-bearing watercourses, as per the following matrix:

Summary Matrix of Streamside Protection and Enhancement Area Widths

<table>
<tr><th rowspan="3">Existing or potential** streamside vegetation conditions</th><th colspan="4">Streamside Protection and Enhancement Area width*</th></tr>
<tr><th rowspan="2">Fish Bearing</th><th colspan="2">Non Fish Bearing</th><th rowspan="2">Ravines >60m in width***</th></tr>
<tr><th>Permanent</th><th>Non Permanent</th></tr>
<tr><td>Continuous areas ≥30 m or discontinuous but occasionally > 30 m to 50 m</td><td colspan="2">At least 30m</td><td>At least 15m</td><td rowspan="4">10 m</td></tr>
<tr><td>Narrow but continuous areas = 15 m or discontinuous but occasionally > 15 m to 30 m</td><td rowspan="2">Greater of:
-existing width, or
-potential width, or
-15m</td><td colspan="2">15m</td></tr>
<tr><td>Very narrow but continuous areas up to 5 m or discontinuous but occasionally > 5 m to 15 m</td><td colspan="2">At least 5m & up to 15m</td></tr>
</table>

*Measured from the Top of Bank
**Potential vegetation is considered to exist if there is a reasonable ability for regeneration either with assistance through enhancement or naturally, and is considered to not exist on that part of an area covered by a permanent structure
***Measured from Left Top of Bank to Right Top of Bank, excluding the stream channel (left high water mark to right high water mark)

NOTE: Adequate space should be provided from the edge of the SPEA to buildings and structures. The City typically requires an additional 5m setback of the building envelope to the SPEA boundary in order to ensure adequate space for a formal yard area and/or to ensure space for building maintenance.

Top of bank:

1. The point closest to the boundary of the active floodplain of a stream where a break in the slope of the land occurs such that the grade beyond the break is flatter than 3:1 at any point for a minimum distance of 15 metres measured perpendicularly from the break; or

2. For a floodplain area not contained in a ravine, the edge of the active floodplain of a stream where the slope of the land beyond the edge is flatter than 3:1 at any point for a minimum distance of 15 metres measured perpendicularly from the edge.

Top of ravine bank: 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 metres measured perpendicularly from the break, and the break does not include a bench within the ravine that could be developed.

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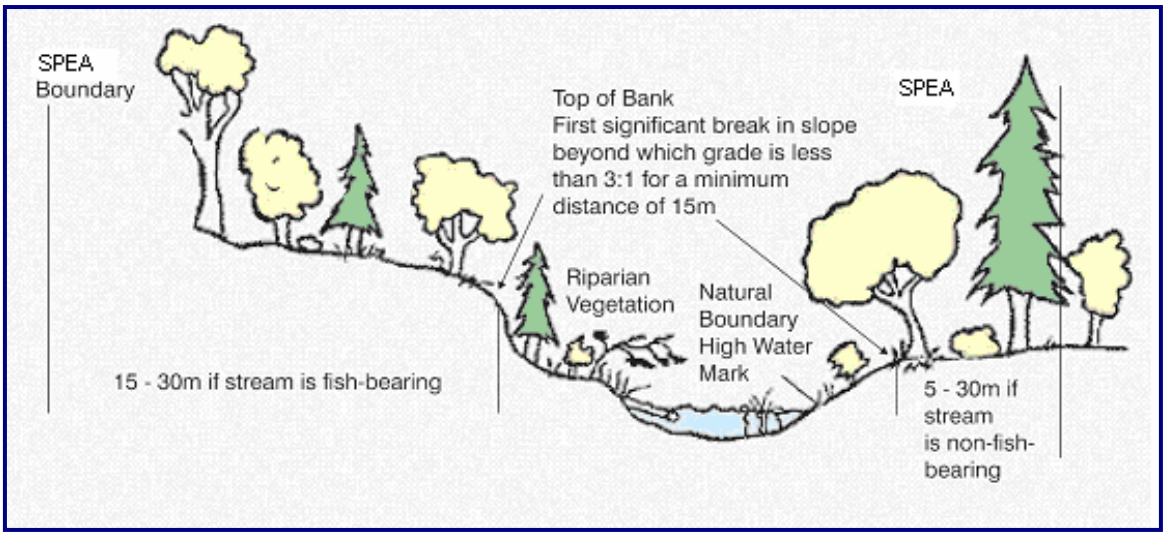

In order to determine the specific applicable setback for a property, a Basic Fish Habitat Assessment Report should be prepared by a Qualified Environmental Professional (QEP). This report must contain the following information:

(a) a completed Qualified Professional Declaration Form (see Appendix A);

(b) a survey sketch of the proposed development area indicating the top of bank and centerline of any stream within that area and delineating the relevant SPEA. This is all to be overlaid on an orthophoto;

(c) a basic description of existing fish and fish habitat of any stream within the proposed development area, limited to the following info:

i. fish presence

ii. stream permanence

iii. existing or potential vegetation conditions

Qualified Environmental Professional (QEP) is an applied scientist or technologist who practices in a relevant applied sciences field including without limitation, the field of agrology, forestry, biology, engineering, geomorphology, geology, hydrology, hydrogeology, or landscape architecture, whether acting alone or together with another qualified environmental professional, if

a) the individual is registered and in good standing in British Columbia with an appropriate professional organization constituted under an Act, acting under that association's code of ethics and subject to disciplinary action by that association,

b) the individual's area of expertise is recognized in the assessment methods as one that is acceptable for the purpose of providing all or part of an assessment report in respect of that development proposal, and

c) the individual is acting within that individual's area of expertise.

*A list of local QEPs is available upon request from the City of Abbotsford Environmental Coordinator

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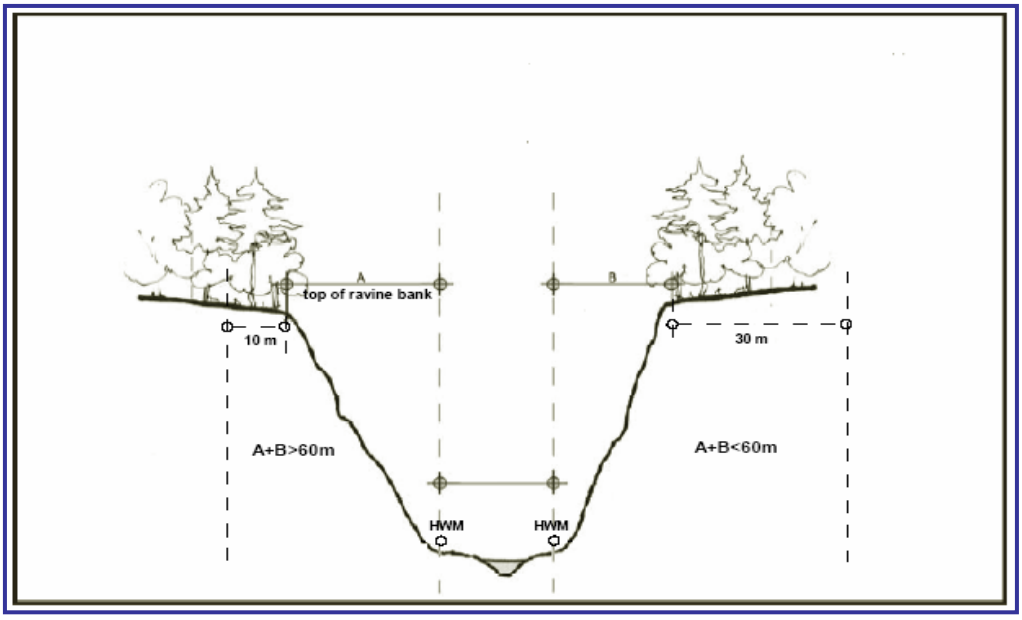
How are SPEAs measured in ravines?

Where A+B>60m, the SPEA is at least 10m from top of bank.
Where A+B<60m, the SPEA is to be determined using the matrix above.



Is it Fish-bearing?

Fish bearing stream: a stream in which fish are present or potentially present if introduced barriers or obstructions are either removed or made passable for fish

Non fish bearing stream: a stream that (a) is not inhabited by fish, and (b) provides water, food and nutrients to a downstream fish bearing stream or other water body

*Note: Fish includes all life stages of (a) salmonids, (b) game fish, and (c) regionally significant fish

One option available is to assume that fish are present and use a 30 metre setback. In many situations, whether a stream is fish bearing or not has less effect on the SPEA width than the vegetation conditions. Alternatively, there are a few options for determining if a stream is fish bearing:

- The Community Mapping Network (http://www.cmnbc.ca) provides information on stream locations and known fish presence/absence. The City provides updates to the CMN as new stream mapping is completed.
- The Fisheries Information Summary System is maintained by the Ministry of Environment and DFO, and can be accessed via http://www.env.gov.bc.ca/fish/fiss/index.html
- MOE and/or DFO staff in your region may have data on fish presence in local streams
- Stewardship groups or local residents may also be sources of documented or anecdotal information.

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Proving fish absence is a very time consuming process as it involves multiple site visits over numerous seasons. Fish absence can be determined by hiring a QEP to undertake a fish absence study in accordance with standards for field sampling, data collection and data recording established by the Forest Practices Code *Fish-stream Identification Guidebook.* Timing and location is also important. One time or single-site sampling is not considered adequate for confirming species absence without other indications, such as significant barriers, no flow periods, or some other water quality limiting factor. Streams must be sampled during all seasons that a species of fish is expected to be present. This may be limited to periods when the stream is accessible and/or has sufficient flows.

Is the stream permanent or non-permanent?

Permanent stream: a stream that typically contains surface waters or flows for periods more than 6 months in duration

Non-permanent stream: a stream that typically contains surface waters or flows for a period less than 6 months in duration

Stream flow permanence is a factor only in determining a SPEA on non fish bearing streams with existing or potential vegetation greater than 30 m in width. In this case, the minimum SPEA width is either 15 or 30 m depending on whether the stream is permanent or not. It is important to keep in mind that the default value is permanent. The QEP must adequately document that a stream is non-permanent and provide the rationale in their report. In order to adequately determine stream permanence, multiple site visits are required during different seasons, and often over several years. Hence, this investigative work should occur well in advance of development.

Is the vegetation existing or potential?

Existing vegetation: includes native and non-native vegetation

Potential vegetation: is considered to exist if there is a reasonable ability for regeneration either with assistance through enhancement or naturally, and considered to not exist on that part of an area covered by a permanent structure

A permanent structure is any building or structure that was lawfully constructed, placed or erected on a secure and long lasting foundation on land in accordance with any local government bylaw or approval condition in effect at the time of construction placement or erection.

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Table 1. What are permanent structures?

Structure	
Building	**Permanent** if constructed and compliant with permits, approvals and standards required at the time of construction; this includes buildings that pre-date current permitting processes but which are considered "legal" whether or not they conform to current zoning or building standards.
Public road	**Permanent** if the road alignment is consistent with a current transportation plan and can not be changed.
Private road	**Permanent** if it is required as access for an existing use that is not subject to change (i.e., not subject to redevelopment, rezoning or subdivision wherein road alignment could change).
Temporary access	**Temporary** if an alternative, permanent access will be developed as part of site development.
Parking area	**Permanent** if it is associated with a permitted structure and is required to meet minimum local government parking standards for the existing use (i.e., parking area can not be reduced, altered, moved or relocated). **Temporary** if the area is subject to new development, redevelopment, rezoning or subdivision, is not associated with a permanent structure, and/or the parking area can be reduced, or reasonably altered, or relocated.
Landscaped area	**Temporary** if it could be modified over time to provide more natural riparian conditions
Playing field, playground or golf course	**Permanent -** however, there may be room and opportunity to relocate structures or allow streamside areas to be 'naturalized' without compromising the recreational use. **Temporary** if the land is being used in this capacity in the short term, while being held for another recreational or other purpose.
Trail	**Permanent** if it is an integral part of an existing or approved trail network, has been in use for an extended period of time and/or there is no room or opportunity to relocate it. **Temporary** if it does not have structures (i.e.: boardwalks, viewing platforms, access control structures, bridges) associated with it or there is room or opportunity to relocate the trail, especially portions that are degrading streambanks and riparian vegetation.
Outdoor storage associated with a commercial, industrial or utility operation	**Permanent** if it is associated with a permitted structure, the existing use of which is to be retained, storage use is in compliance with all other appropriate legislation, and storage area can not be reduced, altered, moved or relocated. **Temporary** if the existing property use will not be retained; the site is subject to new development, redevelopment, rezoning or subdivision; the storage facility would not be considered a permitted structure; and/or the storage area can be reduced altered, moved or relocated.
Utility works and services	**Permanent** if it is an authorized use in compliance with all other appropriate legislation. Where the utility is underground for which a right of way exists for servicing purposes, the right of way within the streamside area should be naturalized or revegetated with minimum vegetation clearing to allow service vehicle access to the area.
Dykes, levees	**Permanent** if the structure is provincially or federally approved, and intended to provide long-term flood protection to associated properties. **Temporary** if the structure is not intended to provide long term protection, may be feasibly moved back or realigned, or is planned to be decommissioned as part of an infrastructure renewal program.

*from Riparian Areas Regulation Assessment Methodology (March 2006)

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Variance Requests

The City encourages all development to comply with the Streamside Protection Bylaw. However, there may be occasions when a variance to the SPEA is required due to limited site developability (i.e. the lot will otherwise be sterilized, no ability to re-configure the development due to irregular lot configuration, etc) and where all options to minimize encroachment into the SPEA have been exhausted (i.e. zoning bylaw variances, relaxations to road standards, density bonusing, etc). In these circumstances, a variance to the SPEA may be requested at the Habitat Review Panel (HRP) in accordance with the following guidelines:

- Submission of a much more extensive Detailed Fish Habitat Assessment Report (see below for requirements);
- Provision of an Engineer's Sign Off stating that the development meets the requirements outlined in DFO's Urban Stormwater Guidelines and Best Management Practices for Protection of Fish and Fish Habitat Draft Discussion Document (2001);
- One electronic copy and two hardcopies of the Detailed Fish Habitat Assessment Report must be submitted to the Environmental Coordinator and one hardcopy must be submitted to the DFO representative at least two weeks in advance of the HRP meeting in order to allow sufficient time for review.

Details about the Habitat Review Panel (HRP)

- The HRP is composed of a representative from DFO, COA Environmental Coordinator, City Staff coordinating the permit process, the developer, and the QEP that prepared the report;
- Variances to the Streamside Protection Bylaw must not exceed the HRP's jurisdiction; as such the HRP has representation from senior government agencies to ensure that the final SPEA meets statutory minimums;
- HRP meets once per month, on the second Thursday of the month;
- At the HRP, the proponent presents their application and responds to questions;
- The proposed SPEAs are evaluated, with the end result being that the HRP rejects, modifies, or accepts the proposed SPEAs;
- If an approval is given, a decision sheet is signed by all parties involved. This decision sheet together with a copy of the meeting minutes forms the approval document. The Environmental Coordinator will forward an electronic copy of the HRP decision sheet and meeting minutes to the proponent within 10 working days of the meeting;
- The HRP may determine that the application exceeds the jurisdiction of the HRP and hence the project requires a Fisheries Authorization. In some of these cases, this approval process will need to be coordinated between the proponent's consultant and DFO.

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Developers Benefit from Environmental Protection:

Higher prices: Homeowners are willing to pay at least 5–15% more for properties near natural open space (Quayle and Hamilton 1999; Curran 2001).

Faster approvals: Developers can spend a great deal of time (and money) in the approvals process. Where councils and the public support the environmental benefits of a project, it is more likely to move faster through the approvals process (Curran 2001).

Faster sales: Houses sell more quickly when they are close to greenspace. For homebuyers, access to natural open space is one of the most important features in a residential neighbourhood (Quayle and Hamilton 1999; Curran 2001).

Reduced costs: 'Green infrastructure' in Surrey's East Clayton development will reduce development costs by 20% and will lower the base cost of housing by 25% per square foot (Smart Growth BC 2002).

Marketing edge: The U.S. National Association of Homebuilders encourages the planting of trees because it increases the marketability of new developments (Petit 1998).

*from Ministry of Environments 'Develop With Care: Environmental Guidelines for Urban and Rural Land Development in British Columbia' (March 2006)

Where SPEA variances are requested, a Detailed Fish Habitat Assessment Report is required. The report requirements are as follows:

(a) a completed Qualified Professional Declaration Form (see Appendix A);

(b) a description of the proposed development, including a proposed work schedule and all works related to site preparation, construction and post construction monitoring or maintenance;

(c) site photographs and a survey drawing of the proposed development area indicating the top of bank and centerline of any stream within that area and delineating the relevant SPEA;

(d) a description of existing fish and fish habitat of any stream within the proposed development area;

(e) a determination of the setback if full compliance were achieved with the Streamside Protection Bylaw, as well as a determination of the RAR "Detailed Assessment" setback, which provides the boundaries of HRP jurisdiction (the HRP does not require assessment forms to be submitted to the RAR Notification System);

(f) a survey drawing that shows (1) the proposed SPEA, (2) the SPEA in full compliance with the Bylaw, (3) the RAR Detailed Assessment setback, (4) top of bank, and (5) centerline of the stream;

(g) details of any potential loss of streamside protection area from the proposed development and a plan for mitigation;

(h) mitigation measures to minimize the potential for harmful impact to fish and fish habitat;

(i) recommendation as to whether or not the proposed development should proceed based on the assessment results;

(j) recommendation as to whether or not a further assessment is required;

(k) recommendation as to how activities related to the proposed development would be monitored, including identification of a class of appropriately qualified professionals for monitoring those activities; and

(l) if fish sampling was undertaken, electronic copies of the Fish Collection Permit Reports.

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Habitat Review Panel (HRP) Review Criteria

The HRP may consider the following factors when reviewing applications:

(a) Setbacks outlined in existing HRP-reviewed local area plans and integrated stormwater management plans

(b) Comprehensiveness of environmental, fisheries, and wildlife assessments

(c) Exhaustion of all options to minimize encroachment into the SPEA (i.e. site reconfiguration, zoning bylaw variances, relaxations to road standards, density bonusing, etc)

(d) Flooding and floodplain risk management

(e) Geotechnical and hydrological considerations

(f) Ravine protection

(g) The provision of adequate streamside width to ensure tree stand integrity

(h) Hazard Tree Assessment and windthrow assessments

(i) Best Management Practices for wildlife buffers

(j) Assessment of the SPEA as a wildlife corridor

(k) Location of existing buildings – a landowner may construct on the footprint of existing buildings even if they are within a setback

(l) Total area of proposed SPEA – it may be possible to "bend" a SPEA, so long as:

  i. the total area remains the same,

  ii. key habitat values and significant trees are protected,

  iii. parts of the SPEA are not isolated

  iv. a "panhandle" situation is not created

(m) Lot developability – SPEAs should not sterilize a lot

(n) Infrastructure requirements, including sewers, trails, utilities, roads, etc.

(o) Proposed mitigation – a minimum of 2:1 mitigation is required and a higher ratio is looked upon favourably

The DFO representative at the HRP will determine whether any SPEA variance exceeds the HRP jurisdiction and requires additional federal approvals (i.e. a Fisheries Authorization). The DFO Representative will also determine whether or not the site's stormwater management plan meets the requirements outlined in DFO's Urban Stormwater Guidelines and Best Management Practices for Protection of Fish and Fish Habitat Draft Discussion Document (2001).

Redevelopment/Infill Sites

On older, previously developed properties, it may very difficult to locate building envelopes while still respecting the SPEA. Sometimes buildings are already located within the SPEA. In these situations the landowner/builder should work on a site layout that attempts to maximize the SPEA. Each of these redevelopments is unique and will require review through the City Environmental Review Committee. The HRP will typically look favourably on applications where:

- the building extends away from top of bank;
- the SPEA boundary has been "bent", so that the averaged setback remains the same (i.e. in some areas the SPEA exceeds the bylaw requirement in order to off-set any intrusions into the SPEA); and
- streamside enhancement planting is included in the site plan

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Replacing a building that was damaged or destroyed

An owner applying to replace a building or structure that had been located within a SPEA is required to obtain a variance; however, the building or structure generally would be allowed to be reconstructed at the same location subject to other guidelines being met and subject to DFO review to ensure there are no impacts to fish and fish habitat. Notwithstanding the above, preference would be for the replacement building or structure to be set back from the stream as much as feasible on the property. This applies only to legally-constructed buildings damaged or destroyed to the extent of 75% or more of its value above the foundation. Undamaged buildings or illegally constructed buildings may not be allowed to be reconstructed in the same location.

Trails and Infrastructure

Any construction of trails or infrastructure (e.g. roads, sewers, stormwater systems, sediment control facilities) within a SPEA must be approved by the City Habitat Review Panel, and may be subject to mitigation requirements. This requirement applies to both on-site and off-site infrastructure. Wherever possible trails will be constructed at least 15m from top of bank, with viewpoints constructed down to watercourses as appropriate (e.g. bridge). Trails should be combined with service access facilities as appropriate, to minimize incursions into the streamside area.

Hazard Trees

Danger trees include standing dead trees that are vertical or lean towards the work area, as well as some live trees with large dead branches or tops. Danger trees located within the SPEA should be assessed by a Certified Arborist with appropriate training to determine if they pose a high risk to the adjacent development (i.e. a Certified Tree Risk Assessor). If a tree is determined to be unsafe, the Certified Arborist should provide recommendations to reduce or eliminate the threat to safety. Trees felled within a SPEA are to be left as coarse woody debris. Any trees that are felled should be replaced with native trees. If you are concerned about the safety of any trees in the SPEA, contact the City's Environmental Coordinator (contact info on page 14). Hazard tree removal from within the SPEA may also require approval from DFO.

Watercourse Crossings

Crossings in watercourses with fish habitat value require Fisheries and Oceans Canada (DFO) and Ministry of Environment (MOE) approval in accordance with the *Fisheries Act* and the *Water Act,* respectively. If the City is unsure whether the watercourse is considered fish habitat, a Fish Habitat Assessment will be required. This is to be undertaken by a Qualified Environmental Professional at the developer/property owner's expense. While the City does not have a permitting process for watercourse crossings on private property, if the crossing is on City property (i.e. road Right-of-Way), a Highway Excavation Permit is required from Engineering.

Faster approvals are obtained if a clear span crossing is chosen in place of a culvert. DFO will allow for clear span crossings without an approval as per their "Operational Statement" regarding clear span crossings (found at http://www-heb.pac.dfo-mpo.gc.ca/decisionsupport/os/operational_statements_e.htm). Additionally, a provincial *Water Act* approval is required for a culvert installation, but installation of a clear span crossing only requires a notification to be submitted.

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Protecting the SPEA During and After Construction

Special care must be taken to protect SPEAs both during and after site development. The following measures should be taken:

(a) **Restrictive Covenants:** Once the boundary of the SPEA is approved, it must be flagged by the QEP, surveyed by a BC Land Surveyor (BCLS) and protected through a restrictive covenant. The City will provide the developer a template document to assist in this legal protection. This surveyed SPEA boundary must be shown on all drawings associated with the project.

(b) **Protection Fencing:** The SPEA boundary is to be physically located on the ground by a BCLS prior to site disturbance. Before construction starts, place protection fencing along the SPEA boundary to ensure that vegetation is not damaged during construction. The fence should be chainlink or a 2x4 wood frame with snow fencing affixed to it. The fence must be located beyond the drip lines of any trees located within the SPEA. Fencing must be maintained in good condition throughout the construction period. Once construction is complete a permanent fence must be erected along the SPEA boundary.

(c) **Signage:** During construction, signage should be placed along the temporary protection fence to inform construction personnel of the sensitive habitat beyond the fence. Upon completion of construction, permanent signs should be placed every 15 metres along the permanent fence (see Appendix B).

(d) **Tree Protection:** A physical barrier should be erected to protect trees. The barrier should be erected at the drip line of the tree canopy in order to ensure that the majority of the trees roots are protected.

(e) **Erosion and Sediment Control:** During construction do not allow any soil, cement, grout, oil, grease or other contaminants to enter the stream or stormdrains in the street. Refer to the City's handout: "Erosion and Sediment Control (ESC) Bylaw: How the ESC Bylaw Applies to Development Sites Smaller Than 2000m^2". ESC facilities are not typically permitted within SPEAs.

(f) **Stormwater Management:** Stormwater management structures are not typically permitted within SPEAs. All efforts should be made to return stormwater resulting from development adjacent to the SPEA to its natural hydrologic flow. If a variance is requested, the ERC requires an Engineer's Sign Off stating that the development meets the requirements outlined in DFO's Urban Stormwater Guidelines and Best Management Practices for Protection of Fish and Fish Habitat Draft Discussion Document (2001). See the following websites for more information on stormwater management:

   a. Water Balance Model: www.waterbalance.ca

   b. Stormwater Planning: A Guidebook for British Columbia http://www.env.gov.bc.ca/epd/epdpa/mpp/stormwater/stormwater.html

   c. DFO's Urban Stormwater Guidelines: http://www.dfo-mpo.gc.ca/Library/277967.pdf

(g) **Timing of Site Clearing**. Site clearing is not permitted until SPEAs have been finalized, covenanted, fenced off, and senior agency approvals in place. To protect bird nests and avoid contravention of the Wildlife Act, clearing should not occur between April 1st and July 31st.

(h) **Monitoring**. The proponent should engage an environmental monitor during construction to ensure that all environmental standards are complied with. Longer-term monitoring reports may be required for planting survival, stormwater management, SPEA integrity, and other factors.

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The Zoning Bylaw Floodproofing Provisions

In addition to the Streamside Protection Bylaw, the City also governs building setbacks from watercourses through its Zoning Bylaw. The Floodproofing Provisions of the Zoning Bylaw state that no building shall be constructed within the minimum setback area from the high water mark of a watercourse, as specified in the following table:

Watercourse	Minimum Setback
Clayburn Creek (outside the Fraser River floodplain to the east of the intersection of Old Clayburn Road with Clayburn-Straiton Road)	30.0 m
Fraser River (within the Fraser River floodplain)	60.0 m
Nathan Creek	30.0 m
Poignant Creek	30.0 m
Sumas River (within Sumas River floodplain)	30.0 m
Any other lake, slough, swamp, pond or watercourse (including tributaries)	15.0 m
Ditches	7.5 m

Further, where landfill is used to achieve any required elevation pursuant to the Zoning Bylaw, no portion of the landfill slope shall encroach upon the setback areas specified in the above table.

For more information

The staff in the Community Planning Division are happy to assist and help you comply with the Streamside Protection Bylaw. If you have a question about streams, stream setbacks, or the Habitat Review Panel, please contact us at:

City of Abbotsford
Economic Development and Planning Services
Community Planning
32315 South Fraser Way
Abbotsford, BC V2T 1W7

Tel: 604-864-5510
Fax: 604-853-4981
www.abbotsford.ca

Or contact an environmental staff person directly:

Rod Shead, Senior Sustainability Coordinator
rshead@abbotsford.ca
Tel: 604-851-4174

Tanya Bettles, Environmental Coordinator
tbettles@abbotsford.ca
Tel: 604-851-4186

Pauline Favero, Environmental Coordinator
pfavero@abbotsford.ca
Tel: 604-851-4173

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APPENDIX A: *Streamside Protection Bylaw* Qualified Environmental Professional Declaration Form

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Streamside Protection Bylaw
Qualified Professional Declaration Form

Project Name:

Project Location:

HRP File No.: 5285-20/HRP-

ASSESSMENT METHOD AND IMPACTS

I , _____ , declare that I am a "Qualified Professional"[1] as defined under the City of Abbotsford's *Streamside Protection Bylaw* and declare that I have carried out an assessment of the development proposal/activity in a manner that is consistent with the Simple Assessment Methods described in the provincial *Riparian Area Regulation* . I also declare that the Streamside Protection and Enhancement Areas (SPEAs) identified in the submission to the Abbotsford Habitat Review Panel (HRP), along with measures identified to protect and maintain the integrity of identified SPEAs, will not result in a harmful alteration, disruption or destruction of natural features, functions, and conditions that support fish life processes.

Signature: _____

Professional Organization and Member Number: _____

MEASURES TO PROTECT AND MAINTAIN SPEA

The qualified professional must consider additional 'measures' to protect and maintain the integrity of the SPEA. Each of the measures below must be discussed in the HRP submission and signed off below by the qualified professional(s) that provided expertise to the project for that 'measure'. If the project will require a City of Abbotsford *Environmental Development Permit* (EDP) some 'measures' may be addressed under that permit, if so, write EDP in relevant boxes.

MEASURE	QUALIFIED PROFESSIONAL SIGNATURE	PROFESSIONAL ORGANIZATION AND MEMBER NUMBER
1. Danger Trees		
2. Windthrow		
3. Slope Stability		
4. Protection of Trees within the SPEA		
5. Prevention of SPEA Encroachment		
6. Erosion and Sediment Control		
7. Stormwater Management		
8. Floodplain Concerns		

1. Under the City of Abbotsford *Streamside Protection Bylaw* a "Qualified Professional" means an applied scientist or technologist who practices in a relevant applied science or technology field including, without limitation, the field of agrology, forestry, biology, engineering, geomorphology, geology, hydrology, hydrogeology, or landscape architecture, whether acting alone or together with another qualified environmental professional, if

   (a) the individual is registered and in good standing in British Columbia with an appropriate professional organization constituted under an Act, acting under that association's code of ethics and subject to disciplinary action by that association,

   (b) the individual's area of expertise is recognized in the assessment methods as one that is acceptable for the purpose of providing all or part of an assessment report in respect of that development proposal, and

   (c) the individual is acting within that individual's area of expertise.

APPENDIX B: SIGNAGE FOR ENVIRONMENTALLY SENSITIVE AREAS

The City of Abbotsford requires signs to be attached to fencing along the boundaries of areas protected by restrictive covenant or otherwise designated as an Environmentally Sensitive Area. The signs must meet the following criteria unless otherwise specified by the City:

1. Dimensions must be 10 1/2 in x 5 in (27.0 cm x 12.5 cm) and the format and message must be as shown on the next page.
2. Must be made from sign grade aluminium with a white reflective surface or a white enamel surface.
3. Dark lettering (e.g. black, green, blue) using either premium 7 year 2 mil vinyl lettering, or screen printed lettering.
4. Holes at the corners, or as otherwise required, so that they can be wired onto chainlink fencing or nailed onto cedar fencing.
5. Altered to eliminate sharp corners.
6. One sign must be posted along the fence every 14 - 15 m (45 - 50 ft), or at the back of each lot (*whichever creates the least distance between signs*).
7. Signs must be readily visible to the users of the affected property.

Notes:

- Sign grade aluminium is the same type of aluminium that traffic signs are made from.
- Vinyl lettering tends to be used when only a few signs are required. When more than ten signs are required most sign companies screen print the lettering. Screen printing is recommended since screen printed lettering is more durable than vinyl lettering.
- If a sign company has already made up this sign template for screen printing for another customer, the cost of a screen printed sign may be less than a vinyl lettered sign.

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ENVIRONMENTALLY SENSITIVE AREA BEYOND THIS FENCE

DO NOT DISTURB

This **Environmentally Sensitive Area** is protected by municipal, provincial, and federal environmental legislation.