

City of Burnaby Guide for Developing Near Streams



Table of Contents

Introduction..... 3

Regulatory Context 3

City Review Process for Streamside Protection and Enhancement Areas (SPEAs) 4

ERC Type 1 Applications (Local Area Plans, Rezoning, Subdivision, PPA, Fill Permit), and
ERC Type 2 Applications (Residential (R1) Small-Scale Multi-Unit Housing Development) 5

ERC Type 3 Applications: Infrastructure Development (e.g. utility corridors, new capital
infrastructure development*, communications infrastructure) 6

ERC Application Fees..... 7

Considerations for Review..... 8

Existing Permanent Structures and Development within a SPEA..... 11

Frequently Asked Questions 12

Appendix A – Burnaby Streamside Protection and Enhancement Areas Bylaw (Zoning Bylaw
6.23) 14

Appendix B – Determining the Width of the Streamside Protection and Enhancement Area
(SPEA) 17

Appendix C – Environmental Review Committee Guide for Applicants..... 19

Appendix D – Guidelines for Riparian Planting and Signage 25

Introduction

The purpose of this guide is to outline the City of Burnaby streamside development review process. The audience for the guide is City and agency staff, landowners, and developers. The guide is a living document, and is updated as needed.

Streams, including many types of watercourses and water bodies, are important to the City and its citizens for providing habitat for fish and wildlife, aesthetic and recreational values, and other benefits to society. These aquatic ecosystems depend not only on protection of water quality and the stream channel itself, but also on healthy adjacent vegetation in order to stabilize stream and ravine banks, provide shade to maintain cool water temperature, and provide a source of food and nutrients to the streams. For this reason, the City ensures that development setbacks are established in order to provide for these features, functions and conditions, consistent with fisheries regulations and best practices.

Accordingly, the City's Zoning Bylaw defines the *Streamside Protection and Enhancement Area* as an "area adjacent to a stream that links aquatic to terrestrial ecosystems and includes both the riparian area vegetation and the adjacent upland vegetation that exerts an influence on the stream."

Other types of environmentally sensitive areas, such as forests, are identified in the City's Official Community Plan as "Green Zones." Development within these areas is subject to review and implementation of the Planning and Design Principles for ESAs, approved by Council in 1995, and may also be subject to Environmental Review Committee review. Refer to the City website for additional information about [developing around environmentally sensitive areas](#).

Regulatory Context

The Federal Fisheries Act (1985) is the highest level of government regulation protecting fish habitat. The Act prohibits harmful alteration, disruption or destruction of fish habitat and non-compliance is enforceable through criminal prosecution. To provide guidance to landowners and developers for protecting fish habitat from development impacts, in 1992, the provincial and federal governments published the *Land Development Guidelines for Protection of Aquatic Habitat*, which included recommended setbacks. The City of Burnaby has implemented these guidelines, in part through an Environmental Review Committee (ERC) process, since that time.

In 2005 the provincial government enacted the Riparian Areas Regulation (RAR), under the provincial Fish Protection Act, replacing the earlier Streamside Protection Regulation (2001). The RAR outlines requirements for establishing development setbacks from streams, lakes and wetlands.

To comply with provincial and federal regulations, and ensure a high standard of environmental protection, the City of Burnaby established the Streamside Protection and Enhancement Areas (SPEA) Bylaw (Zoning Bylaw Section 6.23; Appendix A of this document). This Bylaw outlines setback requirements, and is administered by the City Planning and Development Department. The Environmental Review Committee (ERC) consists of City staff and reviews applications for development in environmentally sensitive areas, including applications for variances to the setbacks defined in the Bylaw.

The goal of the ERC in relation to streamside development is to ensure compliance with Section 6.23 of the Zoning Bylaw as well as federal and provincial environmental regulations, and to provide a timely and coordinated review of development applications, in the context of strategic City plans.

City Review Process for Streamside Protection and Enhancement Areas (SPEAs)

Setbacks for Streamside Protection and Enhancement Areas (SPEAs) apply to all types of development within the City, and should be considered early in the development planning process. Review by the Planning and Development Department for applicability of the SPEA Bylaw is triggered when development is proposed within 30m of the top of bank of a stream or ravine, the *Riparian Assessment Area*. Proponents may inquire directly to the Planning and Development Department for this review, or may be referred internally from other departments.

Note: “development” is defined in the Zoning Bylaw as “a change in the use of any land, building or structure for any purpose and shall include the carrying out of any building, engineering, construction or other operation in, on, over or under land, or the construction, addition, or alteration of any building or structure.”

The SPEA Bylaw therefore applies in many cases even if a building permit or development permit is not required (e.g. construction of retaining walls, driveways, underground utilities and significant vegetation clearing or changes to landscaping). As outlined on page 11, maintenance of existing structures and landscaping within a SPEA is allowed under the Bylaw.

The Planning and Development Department coordinates streamside planning for development applications, including for Community Plans, Rezoning, Subdivision and Preliminary Plan Approval applications (Type 1 Applications); for review of Building Permits for Residential (R1) Small Scale Multi-Unit Housing (Type 2 Applications); and for general review of other types of development in environmentally sensitive areas (Type 3 Applications). If an owner applies for a Building Permit for a property that is potentially affected by a setback for a stream on or adjacent to the property, the file is forwarded to the Planning and Development Department for review.

City projects involving *development* in or near riparian areas are also subject to the SPEA Bylaw and in some cases to broader environmental impact assessment and mitigation strategies. This includes construction of new buildings, trails, parking lots, playing fields, and associated infrastructure, or other significant change or disturbance to the vegetation/soils within riparian areas. *Maintenance of existing structures and routine works* within riparian areas by the City, such as sediment removal from established collection ponds, culvert replacement, road work, bridge replacement, maintenance of existing infrastructure or trails/landscaping, and riparian restoration by the City, may be processed via direct review and Notification of DFO and MoE.

Review of infrastructure development by other agencies (e.g. utilities, regional government) may be undertaken via the ERC and/or through interdepartmental City review, usually coordinated by either the Planning and Development Department or Engineering Department, often in consultation with the Parks, Recreation and Culture Department.

The steps and considerations below are applicable to most types of development within 30m of the Top of Bank or Top of Ravine Bank of a stream, in order to meet the intent and requirements of the City Zoning Bylaw.

NOTE:

- **'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 wetland that is integral to a stream and provides fish habitat (Burnaby Zoning Bylaw Section 6.23).
- In low-gradient areas where the topographic **Top of Bank** is not obvious, the Top of Bank is measured from the 'edge of the active floodplain,' as determined by a qualified environmental professional, based on riparian vegetation as well as soil and water indicators. The edge of the active floodplain for wetlands is delineated based on accepted ecological field indicators and wetland classification.

ERC Type 1 Applications (Local Area Plans, Rezoning, Subdivision, PPA, Fill Permit), and ERC Type 2 Applications (Residential (R1) Small-Scale Multi-Unit Housing Development)

Process (see also Figure 1)

1. **If development is proposed within 30m of a stream or ravine, contact the City of Burnaby Planning and Development Department** to confirm the required Streamside Protection and Enhancement Area (SPEA or *streamside setback*) according to the Bylaw, and whether an Environmental Review would be required in order to carry out the proposed development. In some cases, proponents may need to supply additional information, such as a survey plan, at this stage. If the development CAN be carried out without encroachment into the SPEA, staff will advise that the project may proceed, sometimes subject to conditions for protection of the SPEA, and/or other City requirements. If the development CANNOT be carried out without encroachment into the SPEA, an application for variance of the SPEA must be made to the Environmental Review Committee (ERC).
2. **Prepare an Environmental Review Committee (ERC) submission**, if the development CANNOT be carried out without encroachment into the SPEA, and/or if it involves potential impacts to streams and sensitive ecosystems (e.g. stream crossings). It is recommended for proponents to consult with Planning staff regarding the necessary documentation and for assistance in designing the project to meet the intent of the Bylaw. Refer also to Appendix C for a guide and checklist for ERC applications.
3. **Submit the required documentation**, two weeks in advance of the ERC meeting, for review. The ERC meets every two months, on the last Wednesday of the month, in the Planning and Development Department at Burnaby City Hall. The ERC meeting schedule and submission deadlines are provided in Appendix C.
4. **Attend ERC meeting.** Proponents may attend the ERC meeting, to provide an overview of the project and answer questions.
5. **Receive ERC comments.** Usually within 10 business days, the City Planning and Development Department will advise the proponent of any recommendations and, if approved by the General Manager of Planning and Development, an approval may be

thereby granted for a variance (relaxation) to the SPEA. This variance may be subject to conditions. Although the ERC decision may be forwarded separately, it will also be integrated into other City approvals and correspondence (e.g. Tentative Approval letter). The proponent may be required to submit additional documentation and plans prior to project initiation, such as legal surveys for covenant registration or landscape/restoration plans.

6. **Implement** any pre-requisites as stipulated by the ERC (e.g. submission/approval of landscaping plans for the riparian area), and carry out the development in compliance with ERC and other City requirements.
7. **Conduct monitoring and maintenance** if required as a condition of ERC approval.

Note: Applications to the Board of Variance (BOV) are separate from the ERC process. The BOV may require an ERC decision regarding relaxation of the SPEA, if required to proceed with development, prior to reviewing an application for relaxation of setbacks from property lines in accordance with the Zoning Bylaw.

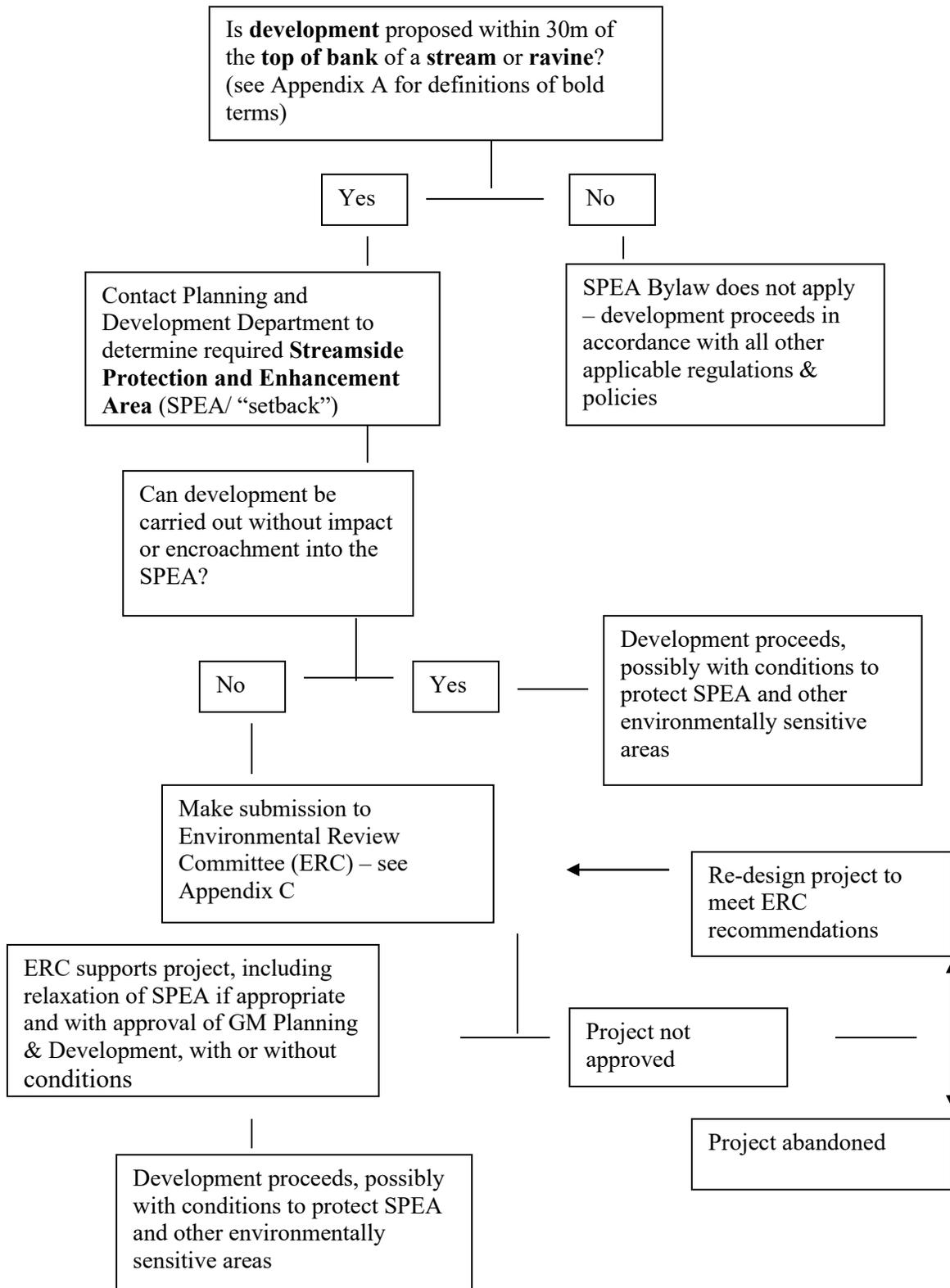
ERC Type 3 Applications: Infrastructure Development (e.g. utility corridors, new capital infrastructure development*, communications infrastructure)

Proponents submitting applications for review of infrastructure development projects in environmentally sensitive areas and/or involving stream crossings, generally follow the same process as for Type 1 or 2 Applications, with some differences, including:

- A variance for SPEA relaxation may not be applicable, if the project involves a linear corridor type of development. Nevertheless, opportunities for enhancement of the SPEA should be addressed.
- Additional information may be required regarding proposed methods of crossing streams and mitigating construction impacts.
- An environmental impact assessment report may be required, depending on the nature and scope of the project, addressing for example Species at Risk, cumulative impacts, habitat connectivity and soil disturbance.
- Some types of projects may be subject to review and recommendations from the ERC, without an associated formal ERC Decision (e.g. if no SPEA relaxation is required).
- Refer to Appendix C for additional information requirements.

**As noted above, routine City works, infrastructure replacement and maintenance of existing infrastructure may be processed via direct review and Notification by DFO.*

Figure 1 – Streamside Environmental Review Process



ERC Application Fees

The following fees apply to ERC applications, beginning in 2020:

see our website: [Environmental-Review-Committee](#)

The fees are in accordance with the Planning and Building Fees Bylaw:

<https://bylaws.burnaby.ca/media/Consolidated/14485CC.pdf>

Considerations for Review

The topics below describe some additional details and considerations for ERC applications and ongoing management of the property, for compliance with the SPEA Bylaw.

- 1. Environmental Protection Policy.** The City has several guiding policies for environmental protection, embedded in the Official Community Plan and other strategic plans. Project proponents should respect the intent of these policies and the SPEA Bylaw. Variances to the Bylaw may be considered where implementation of the required setback is *infeasible*, i.e. would not allow for any development and use of the site according to the prevailing zoning, and/or where a net benefit to the watercourse may be achieved (e.g. relaxation of the SPEA combined with significant enhancement).
- 2. Streamside Protection and Enhancement Area (SPEA).** The boundary of the required SPEA (a.k.a. “*setback*”) is to be identified on all development plans, as defined in the City Zoning Bylaw. All buildings, structures and development must be located outside the SPEA, and the SPEA must be maintained in a natural state (except as outlined in #4 below). If an application is being made for relaxation of the SPEA to less than the minimum Bylaw requirements, both the required and proposed SPEA must be shown on application plans (refer to Appendix C for other application requirements).
- 3. Vegetation Management within the SPEA.**
 - Restoration of the SPEA to a healthy native plant community is encouraged.
 - Existing formal yards within the SPEA may be retained where the lot is not subject to development or redevelopment, however restoration of the vegetation community for habitat purposes may be required as a condition of development approval.
 - For new landscaping within the SPEA, only native plants suited to the site may be installed.
 - Existing native trees and vegetation within the SPEA must be retained except where they are subject to an alternate landscaping plan approved by the ERC.
 - Removal of invasive species within the SPEA is allowed and encouraged when carried out as a part of an approved landscape enhancement plan. Homeowners may undertake minor maintenance (such as weeding) and pruning, however approval must be obtained for large scale invasive species removal, to ensure best management practices are used (e.g. for preventing erosion and sedimentation).
 - Removal of danger trees within the SPEA is allowed where appropriate, but must be approved by the City, normally under the advice of an ISA-certified arborist.

4. Review Criteria. Factors considered in reviewing applications to the ERC may include (but are not limited to):

- Setbacks outlined in existing approved local area plans and integrated stormwater management plans
- Environmental, fisheries and wildlife assessments
- Flooding and floodplain risk management
- Geotechnical and hydrological considerations
- Ravine protection
- The provision of adequate SPEA width to ensure tree stand integrity
- The retention and protection of significant trees on site and on adjacent properties (City property or neighbouring lots)
- Best Management Practices for wildlife buffers
- Location of existing buildings
- Total area of the proposed SPEA – it may be possible to “bend” the setback in certain circumstances, to result in no net reduction in total area of the SPEA
- Development potential of a lot with implementation of the required SPEA
- Infrastructure requirements, including sewers, trails, utilities, roads, etc.
- Proposed compensation and mitigation
- Stormwater best management practices

5. SPEA Protection Once the boundary of the SPEA is confirmed, it must be integrated into the landscape design and shown on submitted landscape and building drawings. The SPEA must be clearly marked in the field and fenced to protect the area from construction impacts (see item 9). Permanent fencing or installation of a ‘live barrier’ may be required as a condition of ERC approval, for long term protection of the SPEA (see item 7). Wherever possible the SPEA should be integrated as a positive asset into the site. Permanent protection of the SPEA with registration of a restrictive (no-build) covenant may be required as a condition of development approval.

6. Enhancement Planting. All streamside planting should follow provincial planting criteria or other suitable planting recommendations as determined by the City (refer to Appendix D). For development projects involving rezoning, subdivision, and some SSMUH projects, the City may require bonding for enhancement works and planting, including site preparation, plant materials, fencing, signage, native plant survivability assurance, invasive species management, inspection, and maintenance works. Planting monitoring and maintenance for a 5 year period is typically required, with 50% of funds returned after initial site preparation and planting, and 10% returned after each subsequent year (subject to approved monitoring and maintenance reports), or an alternate arrangement at the discretion of the City.

7. Invasive Species Management. Removal of invasive species, and replanting with native species, is encouraged as a component of streamside enhancement. Due to the aggressive nature of most invasive species, ongoing maintenance and monitoring is normally required for successful control and eradication. Advice regarding the details of these activities should be obtained from a qualified professional. The following advice is provided as a general guide.

- Planting should be inspected every 45 days during the first two growing seasons (May 1, June 15, August 1, and September 15) to remove new growth of invasive species (hand

tilling, pulling, or pruning) and inspect trees for signs of moisture stress or beaver damage. Hand-watering should be implemented if required.

- In years 3, 4, and 5, planting sites should be inspected around May 15 and September 15 and invasive plants should be removed or cut. More frequent maintenance clearing should be undertaken if invasive plant growth is increasing. Replanting native species lost due to excessive invasive species re-growth may be required as a condition of maintenance.
- Removal of invasive species from steep slopes requires extra care, to avoid erosion, sedimentation and slope failure. Such sites should only be treated under the direction of a qualified environmental professional, using best management practices for slope stabilization and erosion/sediment control.

8. Permanent Fencing. Fencing may be required to retain the SPEA in a natural undisturbed condition in perpetuity, depending on the adjacent land uses. The type of fencing used will depend on the objectives of the site, and could range from a low impact design (e.g. split rail fence) combined with signage, to a tall fence of wood and/or metal where trespassing is a concern. Generally, fencing should be at least four feet tall, to prevent a person easily stepping over the fence. Where possible, fencing should allow the movement of wildlife through a riparian area. In some cases, dense plantings, often including thorny (native) plants may be used to discourage human access into riparian setback areas. Fencing or live barriers must be shown on all landscape drawings.

9. Signage. Permanent signage may be required, denoting the boundary of the SPEA. Signage should follow Provincial Guidelines (see Appendix D).

10. Protective Fencing during Construction. All SPEAs must be protected during the construction process by 6 foot high portable metal panel fences or high visibility snow fencing secured with a sturdy wood frame, which must be located on the outside of the drip-line of any trees adjacent to the edge of the SPEA. The protective fencing layout shall be identified on all drawings. Fencing must be inspected and approved by the City Landscape Technician prior to the initiation of site clearing. Fencing must be maintained in good condition throughout the construction period.

11. 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 Environmental Review Committee, and may be subject to compensation requirements. Wherever possible trails will be constructed outside of the SPEA or at least 15m from the top of bank, with appropriately designed viewpoints constructed to minimize impacts. Trails should be combined with service access facilities where possible, to minimize incursions into the streamside area.

12. Erosion and Sediment Control. Site clearing and development must be undertaken to ensure that stream bank stability is not compromised, and that sediment-laden water does not enter downstream watercourses. Erosion and sediment control plans and associated measures are required for all sites subject to rezoning, subdivision, PPA or fill permit, and may be a requirement of infrastructure projects.

13. Stormwater Management. On-site stormwater management, including source controls to limit surface runoff and remove pollutants, as and where approved by the City, is encouraged. However, stormwater management structures must not be constructed within the SPEA except with prior approval of the ERC.

14. Timing of Site Clearing. Site clearing shall not occur until ERC approval and all appropriate City and other regulatory agency approvals/permits have been granted, and following any required notification periods. The SPEA fencing and any required erosion and sediment control measures must be in place prior to commencement of site clearing. To protect bird nests and avoid contravention of the Wildlife Act, clearing should not occur between March 15 and August 15. If clearing outside of this period is not feasible, the developer should retain a registered professional biologist to carry out a nesting survey and implement the recommended measures to avoid disturbing nesting birds.

15. Monitoring. Proponents of projects involving rezoning, subdivision, PPA or Fill Permit, and some infrastructure projects, should engage an environmental monitor during construction, to ensure compliance with environmental standards. Longer-term monitoring may be required to ensure planting survival, stormwater management, ecological restoration and other factors.

16. Other Provincial and Federal Approvals. Projects may require additional senior government approvals (e.g. Provincial Water Act, Contaminated Sites requirements, Canadian Environmental Assessment Act approvals). It is the responsibility of the proponent to comply with all provincial and federal Acts, and to complete all relevant notifications.

Existing Permanent Structures and Development within a SPEA

The SPEA Bylaw allows that existing permanent structures (buildings with foundations) located within a SPEA may be *repaired or reconstructed on their existing foundations*, as long as:

- the reconstruction entails less than 75% of the value of the structure above the foundations;
- the resulting repair/reconstruction does not increase the lateral encroachment into the SPEA; and
- the existing foundation is retained (staff in the Planning and Building Departments determine whether a major foundation repair is allowable under this clause).

Proposals involving demolition and reconstruction or new development within a SPEA require a submission to the ERC.

Existing structures and features (trails, sheds, lawns, etc.) within SPEAs are usually allowed to remain if the property is not undergoing development, however they may be required to be removed or modified as a condition of relaxation of a SPEA, or other City approval process(es).

New development is not allowed within the SPEA (even if an existing structure is allowed to remain), including: constructing impervious or semi-impervious areas; clearing vegetation (except where approved as part of a restoration/enhancement project); constructing playing fields or sports courts; constructing retention walls, trails, walkways, stairs; constructing buildings even if a building permit is not required (e.g. sheds, gazebos); re-grading or conducting other major modifications to the property involving soil and vegetation disturbance.

Frequently Asked Questions

1. Is streamside protection a new requirement?

No. The 1992 Land Development Guidelines first prescribed streamside protection. The City has been implementing streamside setbacks from this date. The methods for designating width of setbacks were amended by the provincial government in 2001, and again in 2005. Burnaby's Streamside Protection and Enhancement Areas Bylaw has been in place since 2005. The City has kept pace with regulatory changes at the provincial and federal level, and has always placed a high importance on ecosystem and stream protection.

2. Do requirements apply to all City land developments?

Yes, the Streamside Bylaw applies to all land development in the City.

3. How do I calculate the Streamside Protection and Enhancement Area (SPEA)?

The Planning and Development Department (Ecosystem Planner or designate) will make the determination of the SPEA width required, or will review a consultant's determination of the SPEA width, to ensure compliance with the Bylaw. For information only, see Appendix B for an overview of how the SPEA is calculated.

4. Can development be constructed up to the edge of the SPEA?

- If a development proposal does not require variance (relaxation) of the bylaw, and as long as all associated construction disturbance and development is kept outside of the SPEA, there is no requirement for additional buffer area.
- In cases where a variance to the required SPEA is sought, the development needs to allow for sufficient space for access around and maintenance of the new buildings/structures.
- For residential developments, adequate formal rear yard space must also be provided, to allow for enjoyment of outdoor space without encroaching into the SPEA. For development of new single family homes through subdivision, the minimum rear yard width required is normally in accordance with what is permitted in the prevailing residential zoning district.

5. Can projecting structures such as decks be constructed within a SPEA if the main part of the structure remains outside the SPEA?

No, all development must remain clear of the boundary of the SPEA.

6. What if there is already a permanent structure within the Streamside Protection and Enhancement Area?

Landowners can repair or reconstruct a home on its existing foundation, subject to the conditions described on Page 11 above. Proposals that do not meet these criteria will require an application to the ERC.

7. Is construction of small structures or formal landscaping allowed within the SPEA?

The intent of the Streamside Protection and Enhancement Area is to provide a natural area for habitat and stream protection, and the Zoning Bylaw prohibits "development" within this area, therefore no small structures or formal landscaping are allowed within the SPEA. As stated by the Ministry of Environment:

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.

Structures that existed within the SPEA prior to enactment of the Streamside Bylaw may be allowed to remain in place, unless the property is subject to redevelopment, in which case removal of the structures may be required as a condition of development approval.

8. How do I know if a Streamside Protection and Enhancement Area has already been calculated for my property?

Staff will check the City files and the electronic database and can advise the proponent or landowner if there is a record of previous SPEA establishment or a previous ERC review for the property.

9. How does the City process fit with the provincial Riparian Area Regulation?

The City's process complies with the provincial Riparian Area Regulation, as it meets or exceeds the regulation.

10. Is there a method for varying a Streamside Protection and Enhancement Area?

Yes, if the lot would be undevelopable with the required SPEA, variances may be considered. Applications are coordinated by the Planning and Development Department and are taken through the Environmental Review Committee (ERC) process. ERC reviews can take 4-8 weeks.

11. Are there special construction measures for building near watercourses?

Yes. Builders must ensure that the SPEA is protected from damage, including vegetation and soil disturbance, and must ensure that materials are not stockpiled within the riparian area, and must prevent erosion and sedimentation and pollutant discharge. Some projects are subject to requirements for erosion and sediment control plans and measures; Inquiries can be directed to the Engineering Department at 604-294-7460 or engineering@burnaby.ca.

12. What monitoring occurs following project completion?

Monitoring and maintenance may be required as a condition of an ERC decision for SPEA variances. These requirements may vary by project, however monitoring and maintenance for enhancement planting in the SPEA is often required for 10 years. The City may conduct periodic auditing of sites that were previously subject to compliance issues or ERC requirements. The City also acts on complaints regarding works in streamside areas.

13. What other environmental regulations do I have to follow?

It is the responsibility of the proponent/landowner to ensure that all other federal and provincial requirements are followed.

Appendix A – Burnaby Streamside Protection and Enhancement Areas Bylaw (Zoning Bylaw 6.23)

Burnaby Zoning Bylaw

6.23 Streamside Protection and Enhancement Areas

1) In this section unless the context otherwise requires:

'active floodplain' means an area of land within a boundary that is indicated by the visible high water mark or water level of a stream that is reached during annual flood events as evidenced by riparian area conditions described in the definition of 'riparian area';

'existing vegetation' means native and non-native vegetation;

'fish' means all life stages of

- (a) salmonids;
- (b) game fish, and
- (c) regionally significant fish

'fish bearing stream' means 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' means 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;

'non-permanent stream' means a stream that typically contains surface waters or flows for periods less than 6 months in duration;

'permanent stream' means a stream that typically contains continuous surface waters or flows for a period more than 6 months in duration;

'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;

'ravine' means a narrow, steep sided valley that is commonly eroded by running water and with slope grades greater than 3:1;

'riparian area' means the area adjacent to a stream that may be subject to temporary, frequent or seasonal inundation, and supports plant species that are typical of an area of inundated or saturated soil conditions, and that are distinct from plant species on freely drained adjacent upland sites because of the presence of water;

'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 wetland that is integral to a stream and provides fish habitat;

'streamside protection and enhancement area' means an area adjacent to a stream that links aquatic to terrestrial ecosystems and includes both the riparian area vegetation and the adjacent upland vegetation that exerts an influence on the stream, the width of which is determined according to subsections (2) and (3);

'top of bank means:

- (a) 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 of 15 metres measured perpendicularly from the break, and
- (b) 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 edge;

'top of ravine bank' means 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.

- 2) (a) Streamside protection and enhancement areas are those areas determined with reference to the following existing or potential vegetation conditions by measuring perpendicularly away from the top of the bank or top of the ravine bank on either side of a stream:
- i) intact and continuous areas of existing or potential vegetation equal to or greater than 50 metres wide;
 - ii) limited but continuous areas of existing or potential vegetation equal to 30 metres wide or discontinuous but occasionally wider areas of existing or potential vegetation between 30 and 50 metres wide;
 - iii) narrow but continuous areas of existing or potential vegetation equal to 15 metres wide or discontinuous but occasionally wider areas of existing or potential vegetation between 15 and 30 metres wide;
 - iv) very narrow but continuous areas of existing or potential vegetation up to 5 metres wide or discontinuous but occasionally wider areas of existing or potential vegetation between 5 and 15 metres wide interspersed with permanent structures.
- (b) With reference to vegetation conditions in subsection (a), streamside protection and enhancement areas must be:
- i) if subsection (a)(i) or (ii) applies, at least 30 metres wide measured perpendicularly away from the top of the bank for all fish bearing streams or for non fish bearing streams that are permanent;
 - ii) if subsection (a)(i), (ii) or (iii) applies, at least 15 metres wide measured perpendicularly away from the top of bank for non fish bearing streams that are non-permanent;
 - iii) if subsection (a)(iii) applies, at least 15 metres wide measured perpendicularly away from the top of bank for non fish bearing streams that are permanent;
 - iv) if subsection (a)(iii) or (iv) applies, the greater of the widths determined under subsection (a) (iii) or (iv) or at least 15 metres wide measured perpendicularly away from the top of the bank for all fish bearing streams;
 - v) if subsection (a)(iv) applies, at least 5 and up to 15 metres wide measured perpendicularly away from the top of the bank for all non fish bearing streams.
- (c) If a stream is in a ravine that is less than 60 metres wide in total width from top of the ravine bank to top of ravine bank, not including the stream channel within its active floodplain boundaries, protection is to be consistent with subsection (b)(i) through (v), where appropriate, from the top of the ravine bank.
- (d) If a stream is in a ravine that is more than 60 metres in total width from top of ravine bank to top of ravine bank, not including the stream channel within its active floodplain

boundaries, a protection and enhancement area must be at least 10 metres wide measured perpendicularly away from the top of the ravine bank.

- 3) The Director Planning and Building may, after review by the Environmental Review Committee and receipt of the application fee as specified in the Burnaby Planning and Building Fees Bylaw, vary the boundaries of a streamside protection and enhancement area in circumstances where the establishment of the streamside protection and enhancement area pursuant to the criteria set out in subsection (2) is unfeasible. The following factors may be considered:
 - (a) physical conditions;
 - (b) existing parcel sizes;
 - (c) existing roads, trails, works or services;
 - (d) proposed roads, trails, works and services needed to provide access or services to otherwise developable land or to connect to existing roads, trails, works or services.

- 4) No development shall occur on any land within a streamside protection and enhancement area.

B/L No. 13936-18-09-24

- 5) This section shall not apply in respect of a building or structure described in section 911(8) of the Local Government Act, if a building permit is issued only for the purpose of enabling reconstruction or repair of a permanent structure on its existing foundation.

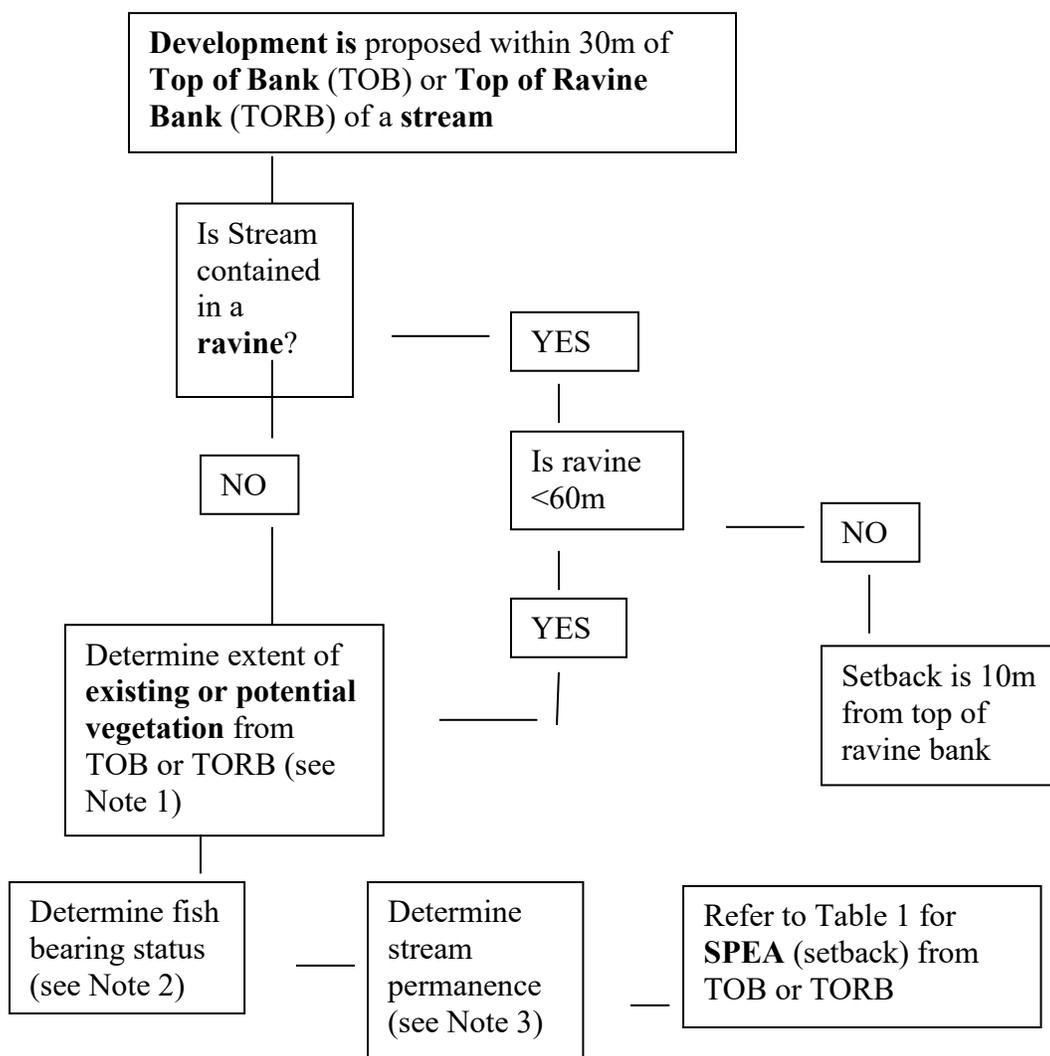
(B/L no. 11884-05-04-11)

Appendix B – Determining the Width of the Streamside Protection and Enhancement Area (SPEA)

The City Planning and Development Department will make the official designation of the required Streamside Protection and Enhancement Area (SPEA), and/or approve the SPEA determined by a landowner or consultant, to ensure consistent compliance with the Bylaw. The information below is a summary for information only; please contact the Planning Department for additional clarification.

The following flow chart summarizes the process for determining the applicable SPEA, based on the Bylaw. Refer to Appendix A for definitions of bolded terms.

Figure 2 – Determining SPEA Width



NOTES FOR FIGURE 2:

- Existing or Potential Vegetation (EPV)** is the area of land between the top of bank of a stream or ravine and a permanent structure (building with foundation or municipal road). Its width is determined by measuring perpendicularly from the top of bank, to a maximum of 50m, using GIS and orthophotos. EPV width is an average, measured at a series of locations at 40m intervals up- and down-stream of the mid-point of the subject lot. Only open sections of the watercourse are included in EPV width measurement. Up to 11 measurements are recorded for a single-sided assessment (where stream setbacks from only one side of a watercourse affect a property) or 22 measurements for a dual-sided assessment (where a stream flows through a property).

Existing or Potential Vegetation (EPV) Categories based on the average width:

- equal to or greater than 50m*
 - 30m to 49m*
 - 15m to 29m*
 - <5m or between 5m and 14m*
- Fish-bearing status.** The City has mapped most watercourses and classified them based on known or potential fish accessibility. The default if not known is to assume the stream is fish bearing.
 - Stream permanence.** A permanent stream “means a stream that typically contains continuous surface waters or flows for periods more than 6 months duration” (Zoning Bylaw S. 6.23). Flow records or indicators related to hydrology, vegetation and soils, may be used to determine stream permanence. The default if not known is to assume the stream is permanent.

Table 1 – Streamside Protection and Enhancement widths to comply with Burnaby Bylaw 6.23

| Vegetation category | Streamside Protection and Enhancement Area | | |
|---------------------|--|-------------------|-------------------|
| | Fish bearing | Non-fish-bearing | |
| | | Permanent | Non-permanent |
| i | Min. 30m | Min. 30m | Min. 15m |
| ii | Min. 30m | Min. 30m | Min. 15m |
| iii | Min. 15m* | Min. 15m | Min. 15m |
| iv | Min. 15m* | Min. 5m, Max 15m* | Min. 5m, Max 15m* |

* In these cases, the width of the SPEA is equal to the **greater** of: the width of the average EPV, or the minimum indicated.

Appendix C – Environmental Review Committee Guide for Applicants

This Guide summarizes the ERC process for project review including applications for a relaxation (variance) to the development setback required under the Streamside Protection and Enhancement Areas Bylaw (Zoning Bylaw Section 6.23). Applicants are asked to ensure all the required documentation has been submitted to the City in advance of the ERC submission deadline, preferably with enough time to re-submit any missing documentation if required.

It is the responsibility of all applicants to ensure the submission package is complete; incomplete submissions may not be accepted and may result in delays for project review and approval. Please see the checklist at the end of this Guide.

1. Before Submitting an ERC Application

- a. Contact the City Planning and Development Department to ensure your project is subject to the Streamside Bylaw and ERC review, what particular information is required, and which application form (Type 1, 2, or 3) should be used for the submission. The ERC Checklist below is a guide only, and may not address site-specific considerations.
- b. **The following fees apply to ERC applications:**
See our website: [Environmental-Review-Committee](#)
The fees are in accordance with the Planning and Building Fees Bylaw: <https://bylaws.burnaby.ca/media/Consolidated/14485CC.pdf>
- c. Refer to the ERC Submission Deadlines and Meeting Schedule below (and on the ERC website [Environmental-Review-Committee](#)), and plan accordingly.
- d. If the application entails a request for a relaxation in streamside setbacks, consider what modifications to the proposed development could be made instead of or along with a setback relaxation, to allow for the maximum feasible protection of the stream, respecting the intent of the Bylaw.
- e. If the application entails a request for a relaxation to the streamside setbacks, there is typically an expectation for enhancement to and long-term protection of the habitat within the streamside setback area, where such opportunities exist. Depending on the nature and scale of the proposal, this could include removal of invasive plants, replanting with native plants, restoration or enhancement of the stream channel (with appropriate regulatory approval and professional consultation), registration of a restrictive covenant over the setback area (Section 219 covenant) and maintenance and monitoring of restored areas. Identifying such opportunities and indicating a commitment to undertake them, at an early stage of the project, is a prudent step.

- f. If the proposal is likely to cause harm to fish habitat under the Federal Fisheries Act, there may be a requirement from Fisheries and Oceans Canada (DFO) to create compensation habitat. Generally, enhancement of existing habitat is not sufficient in this situation, and new habitat would be required. Where feasible, the compensation habitat should be created on-site.
- g. The ERC process is designed to meet the City's Streamside Bylaw as well as federal and provincial fisheries regulations. The ERC process was implemented to allow for flexibility, to consider relaxations to streamside setbacks where appropriate, while also upholding the City's longstanding commitment to the protection of sensitive ecosystems. City staff can help applicants to design a project for a better likelihood of a successful outcome, however insofar as federal/provincial regulations also apply, the outcome of an application cannot be guaranteed.

2. Submitting an ERC Application and payment of fees

- a. Refer to the ERC Checklist at the end of this Guide regarding necessary information to include in the submission package.
- b. Provide **one** hard copy of the submission package, delivered to the front desk of the Planning and Development Department, attention to "Environmental Planning", by 4:00 pm on the day of the ERC submission deadline, two weeks prior to the ERC meeting (contact Environmental Planning staff for a current schedule).
- c. Provide **one** digital copy of the submission package, in PDF format, to the Planning and Development Department (ecoplanning@burnaby.ca), by 4:00 pm on the day of the ERC submission deadline. Digital files may be emailed to (ecoplanning@burnaby.ca), with 'ERC Submission' in the subject line. If you are not able to create a digital copy, please make this known to the Planning and Development Department when you drop off your hard copy submission.
- d. The Planning and Development Department staff will generate an invoice for the ERC application fee upon confirming that the submission is complete based on the ERC Checklist (see following section of this document). The invoice will be provided to the applicant for payment (online, or in person; e.g. at the cashier on the main floor of the main building at City Hall; a cheque payable to City of Burnaby can also be mailed to us, noting it is for the ERC site address matching that in your application).
- e. The application fee must be paid in full a minimum of 1 week prior to the ERC meeting. If payment is not received by that time, the application will be removed from the agenda.
- f. A refund on an ERC application is not granted, except under the following circumstances: Partial refund equal to the amount of the ERC application fee minus \$100.00 is granted if the application is withdrawn prior to the scheduled ERC meeting.

3. The ERC Meeting

- a. Applicants will be advised of the time when their application is to be reviewed, in advance of the ERC meeting. Applicants or their representative(s) are welcome to attend the ERC meeting, but are not required to do so. Most applicants choose to attend, so they can answer questions from the ERC members to clarify details of the proposed development.
- b. ERC meetings are held in the Planning and Development Department, on the third floor of Burnaby City Hall.
- c. It is recommended to arrive at the Planning and Development Department 15 minutes prior to the scheduled time of the ERC meeting, and to allow for some potential delay in the start time of the meeting, due to the uncertain time required for review of other applications on the agenda.
- d. During the ERC meeting, applicants will be asked to provide a brief overview of their project proposal. ERC members may ask the applicant questions of clarification. The applicant will then leave the meeting and the ERC will discuss the project and document their recommendations.

4. After the ERC Meeting

- a. The ERC will finalize the meeting recommendations, and, if a relaxation to the streamside setback is required, forward those recommendations to the General Manager Planning and Development for approval. Consultation with other City departments will also be carried out as required after the meeting.
- b. Applicants will be advised of the outcome of the ERC meeting as soon as possible; please allow for a minimum of ten (10) business days following the ERC meeting.
- c. ERC decisions will be integrated into other City approvals (development applications) and requirements.

ERC CHECKLIST

The following information is normally required for all submissions to the ERC, however note that additional site-specific information may also be required; please contact Environmental Planning staff to confirm what information is appropriate for the submission.

Note that project types are classified as follows:

- **Type 1 (Application fee applies):** Local Area Plans, Rezoning, Subdivision, Preliminary Plan Approval or Fill Permit.
- **Type 2 (Application fee applies):** Residential (R1) Small-Scale Multi-Unit Housing (includes new construction, additions, and accessory buildings or structures).
- **Type 3 (No fee):** Infrastructure and development within Environmentally Sensitive Areas (ESAs), e.g. utility corridors, communications infrastructure, trail development, new City infrastructure in ESAs.

| Documentation Required for ERC Submission | Type 1 | Type 2 | Type 3 |
|--|--------|--------|--------|
| ERC Application Form filled out in full – note, ALL fields must be filled in, even if additional information is attached. | ✓ | ✓ | ✓ |
| Location map indicating location of property/site in relation to City streets and nearby stream(s) – may entail airphoto or street map location, e.g. from Burnaby WebMap GIS. | ✓ | ✓ | ✓ |
| Airphoto focused on the subject property / site, showing property lines and stream(s). Contact the Planning and Development Department for assistance if you do not have access to the Burnaby WebMap GIS. | ✓ | ✓ | ✓ |
| Survey Plan showing existing site features and proposed development (see guidelines on page 5). | ✓ | ✓ | ✓ |
| Geotechnical report - <i>is only required if the property is flagged as a floodplain or slope instability area.</i> | TBD | TBD | TBD |
| Environmental assessment report (e.g. stream channel characteristics, vegetation/wildlife species present, Species at Risk considerations, anticipated impacts and mitigation measures). | ✓ | ✓ | ✓ |
| Approved Engineering Pre-Application Report and Site Sketch Engineering Development Review Process | | ✓ | |
| Arborist Report An arborist report must be prepared by an ISA Certified Arborist to assess existing trees either for retention or removal including on City land and neighbouring lots. Tree Removal & Replacement | ✓ | ✓ | ✓ |
| Site plans, building plans or design drawings of proposed engineering works. | | | ✓ |
| Summary of construction impacts mitigation (erosion and sediment control, site clearing, scheduling, monitoring, re-vegetation, bank stabilization, etc.). | ✓ | + | ✓ |
| Photographs showing representative site conditions. | ✓ | ✓ | ✓ |
| Planting Plan identifying at a minimum the area proposed to be planted, restored or enhanced; planting details can also be shown in the application, or may be requested by the ERC as a condition of approval. | ✓ | ✓ | ✓ |

+ Item maybe requested to support the application

Survey Plan Requirements: ALL the items below must be shown where they occur on the subject property (unless not applicable to the project); more than one drawing may be provided if the plan is unclear with all items shown together, however in that case they must be produced at the same scale.

| | |
|--|---|
| | <ul style="list-style-type: none"> • Property lines, public rights of way, easements. |
| | <ul style="list-style-type: none"> • Areas proposed or required by City for right of way dedication. |
| | <ul style="list-style-type: none"> • Location of stream(s) and/or watercourses, including stream channel, wetland boundary, lakeshore, ditch or pond. Include name of stream(s) if known. |
| | <ul style="list-style-type: none"> • Top of bank or top of ravine bank (note definition from City Streamside Bylaw below). |
| | <ul style="list-style-type: none"> • City Bylaw-mandated streamside setback as per Planning and Development Department confirmation (MUST be shown even if project is applying for a relaxation). |
| | <ul style="list-style-type: none"> • Contour lines, where steep slopes are involved. |
| | <ul style="list-style-type: none"> • Tree survey, including location, diameter at breast height and species, at a minimum for all trees within and immediately adjacent to the development footprint and adjacent to the setback. |
| | <ul style="list-style-type: none"> • Location of <u>existing and proposed</u> development elements, clearly labelled including: <ul style="list-style-type: none"> – Building footprint(s) – principle building and accessory buildings or structures – Road – public or private – Driveway – Retaining wall – Patio or other engineered land surface treatment (concrete, asphalt, artificial turf, etc.) – Location/description of utilities (sewer / water / storm main, storm service connections, Hydro or gas lines); indicate any proposed changes to utilities. NOTE: Undisclosed utility works in streamside areas associated with the project may require further ERC review, with potential project delay. |
| | <ul style="list-style-type: none"> • Proposed streamside setback (if different from Bylaw-mandated setback) |
| | <ul style="list-style-type: none"> • Survey Plans MUST be drawn in METRIC, and must include a SCALE BAR, NORTH ARROW and LEGEND |

From Burnaby Zoning Bylaw Section 6.23:

‘top of bank’ means:

- (c) *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 of 15 metres measured perpendicularly from the break, and*
- (d) *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 edge;*

‘top of ravine bank’ means 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.

ERC Submission Deadlines and Meeting Schedule

All meetings will be held from **1:00pm-4:00pm** on the **last Wednesday of every second month**, unless otherwise indicated in the schedule below and on our website: [Environmental-Review-Committee](#).

Meetings are held in the Planning and Development Department Conference Room (3rd Floor, City Hall, 4949 Canada Way). Participants can attend the meeting online via a link that will be shared ahead of the meeting.

2025

| Application Deadline (two weeks prior to meeting) | Meeting Date |
|---|------------------------|
| January (2 weeks prior to the ERC Meeting, by 4pm) | January |
| March (2 weeks prior to the ERC Meeting, by 4pm) | March (or early April) |
| May (2 weeks prior to the ERC Meeting, by 4pm) | May |
| July (2 weeks prior to the ERC Meeting, by 4pm) | July |
| September (2 weeks prior to the ERC Meeting, by 4pm) | September |
| November (2 weeks prior to the ERC Meeting, by 4pm) | November |

Appendix D – Guidelines for Riparian Planting and Signage

Ministry of Environment Riparian Restoration Guidelines

Riparian Restoration Plans should be prepared and supervised by an appropriately qualified professional. The riparian restoration plan should be sufficiently detailed to allow for monitoring for conformity to the plan as well as plant survival rates.

Planting Guidelines:

A list of recommended tree and shrub species is provided on page 2.

¹ d = dry, m = moist, w = wet

◆ denotes fruit-bearing species

- All riparian plantings should be based on 1 tree or shrub per 1 square metre density.
- All tree/shrub species should be of guaranteed nursery stock.
- The botanical name should be used when ordering stock to ensure that the desired native species is being purchased. Each specimen should be tagged with the botanical name and the tag should be left attached after planting.
- Stock planted during the fall (Sept. – Oct.) and spring (March – April) has the greatest likelihood of surviving. Regular watering may be required until the plants are established. Additional advice on proper planting procedures should be obtained from the nursery supplying the stock.
- Coniferous trees should comprise not less than 10% nor more than 25% of the tree stock planted.
- Tree stock should be a minimum of 1.2 m (4 ft) in height when purchased and planted 1.5 to 2 m apart.
- Planting on a given area being enhanced must be successful to an 80% take. If more than 20% die over one year, replanting is required.
- A minimum of 50% of trees and shrubs planted should be fruit-bearing species.

Structural Guidelines

Wherever a development site will result in land clearing activities, the opportunity exists to salvage and translocate structural materials (i.e. downed wood, stumps, mossy rocks, vascular plants, non vascular plants) into the remaining environmentally sensitive areas. These key forest floor features provide a diversity of habitats for both invertebrates and vertebrate species.

- Salvaged large woody debris and stumps from the development site should be placed in previously damaged riparian areas to provide structural habitat features for small wildlife and amphibians.
- Mossy rocks and herbs can be salvaged from the development site to help ‘seed’ the restored area with native groundcover species.
- Large projects are well suited to the creation or translocation of wildlife trees within the area undergoing restoration/enhancement.

Recommended Native Plant Species for Riparian Fish and Wildlife Habitat

(NB: species not native to lowland Coastal Areas have been removed from the original version of this list, per Burnaby City staff)

Deciduous Trees

| Botanical Name | Common Name | Mature Height (m) | Best Growth Conditions ¹ |
|--|---------------------|-------------------|-------------------------------------|
| <i>Acer circinatum</i> | vine maple | to 7 | m-w |
| <i>Acer glabrum</i> var. <i>douglasii</i> | Douglas maple | to 10 | d-m |
| <i>Acer macrophyllum</i> | broadleaf maple | to 35 | d-m |
| <i>Alnus rubra</i> | red alder | to 25 | m |
| <i>Betula papyrifera</i> var. <i>commutata</i> | western white birch | to 30 | m-w |
| ◆ <i>Crataegus douglasii</i> | black hawthorn | to 10 | m |
| ◆ <i>Populus balsamifera</i> or <i>P.trichocarpa</i> | black cottonwood | to 50 | m-w |
| ◆ <i>Prunus emarginata</i> | bitter cherry | 2-15 | m |
| <i>Rhamnus purshiana</i> | cascara | to 10 | d-w |
| <i>Salix lucida</i> ssp. <i>lasiandra</i> | Pacific willow | to 12 | w |

Coniferous Trees

| Botanical Name | Common Name | Mature Height (m) | Best Growth Conditions ¹ |
|------------------------------|--------------------|-------------------|-------------------------------------|
| <i>Picea sitchensis</i> | Sitka spruce | up to 70 | m |
| <i>Pinus monticola</i> | western white pine | to 40 | m-d |
| <i>Pseudotsuga menziesii</i> | Douglas-fir | to 70 | d |
| <i>Thuja plicata</i> | western red cedar | to 60 | m-w |
| <i>Tsuga heterophylla</i> | western hemlock | to 60 | d-w |

Shrubs*

| Botanical Name | Common Name | Mature Height (m) | Best Growth Conditions ¹ |
|--|-----------------------|-------------------|-------------------------------------|
| ◆ <i>Amelanchier alnifolia</i> | saskatoon | 1-5 | d-m |
| ◆ <i>Cornus sericea</i> or <i>C. stolonifera</i> | red-osier dogwood | 1-6 | m |
| ◆ <i>Corylus cornuta</i> var. <i>californica</i> | beaked hazelnut | 1-4 | m |
| <i>Holodiscus discolor</i> | oceanspray | to 4 | d-m |
| <i>Physocarpus capitatus</i> | Pacific ninebark | to 4 | w |
| ◆ <i>Rosa nutkana</i> | Nootka rose | to 3 | d-m |
| ◆ <i>Rosa gymnocarpa</i> | baldhip or dwarf rose | to 1.5 | d-m |
| ◆ <i>Rubus parviflorus</i> | thimbleberry | 0.5-3 | m |
| ◆ <i>Rubus spectabilis</i> | salmonberry | to 4 | m-w |
| <i>Salix hookeriana</i> | Hooker's willow | to 6 | w |
| <i>Salix lucida</i> spp. <i>lasiandra</i> | Pacific willow | to 12 | w |
| <i>Salix scouleriana</i> | Scouler's willow | 2-12 | m |
| <i>Salix sitchensis</i> | Sitka willow | 1-8 | m-w |
| ◆ <i>Sambucus racemosa</i> var. <i>arborescens</i> | red elderberry | to 6 | m |
| ◆ <i>Sorbus sitchensis</i> | Sitka mountain ash | 1-4 | m |
| ◆ <i>Symphoricarpos albus</i> | snowberry | 0.5-2 | d-m |
| ◆ <i>Vaccinium parvifolium</i> | red huckleberry | to 4 | m |

Additional Species Recommended by City of Burnaby – July 2011

Shrubs

| Botanical Name | Common Name | Mature Height (m) | Best Growth Conditions¹ |
|--|-----------------------|--------------------------|---|
| ◆ <i>Ribes sanguineum</i> | Red flowering currant | 1-2 | d |
| <i>Philadelphus lewisii</i> | Mock orange | to 3 | d |
| ◆ <i>Corylus cornuta var californica</i> | Beaked hazelnut | to 4 | d |
| ◆ <i>Gaultheria shallon</i> | Salal | 0.5-1 | d-m |
| <i>Lonicera involucrata</i> | Black twinberry | to 3 | m |
| ◆ <i>Oemleria cerasiformis</i> | Indian plum | to 10 | d-m |
| <i>Spiraea douglasii, ssp. douglasii</i> | Hardhack | 1-2 | m-w |
| ◆ <i>Ribes bracteosum</i> | Stink currant | To 3 | m-w |
| ◆ <i>Mahonia nervosa</i> | Dull Oregon grape | 0.5-1 | d |

Deciduous Trees

| Botanical Name | Common Name | Mature Height (m) | Best Growth Conditions¹ |
|-------------------------|---------------------------|--------------------------|---|
| <i>Cornus nuttallii</i> | Western flowering dogwood | to 20 | d-m |
| ◆ <i>Malus fusca</i> | Pacific crabapple | To 12 | m-w |

Herbaceous / Groundcover

| Botanical Name | Common Name | Mature Height (m) | Best Growth Conditions¹ |
|----------------------------------|--------------------------|--------------------------|---|
| <i>Polystichum munitum</i> | Sword fern | 0.5-1 | d-m |
| <i>Blechnum spicant</i> | Deer fern | 0.3-0.5 | M |
| <i>Maianthemum dilatatum</i> | False lily of the valley | 0.2 | M |
| ◆ <i>Arctostaphylos uva-ursi</i> | Kinnikinnick | 0.2 | d |

SIGNS FOR LEAVE STRIP BOUNDARIES

Leave strips are the areas of land and vegetation adjacent to watercourses that are to remain in an undisturbed state throughout and after the development process. The regional Fish, Wildlife and Habitat program recommends the attachment of signs to posts along the leavestrip boundaries. The signs should meet the following criteria:

1. Dimensions should be 10 1/2 in x 5 in (27.0 cm x 12.5 cm) and format and text should be as shown on the following page.
2. Made from sign grade aluminium with a white reflective surface or a white enamel surface. Sign grade aluminium is the same type of aluminium that traffic signs are made from.
3. Dark lettering (e.g. black, green, blue) using either premium 7 year 2 mil vinyl lettering, or screen printed lettering. 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 the this sign template for screen printing for another customer, the cost of a screen printed sign may be less than a vinyl lettered sign.
4. Holes at the corners, or as appropriate, so that they can be attached to the cedar posts.
5. Altered to eliminate sharp corners.
6. One sign must be posted along the leavestrip boundary every 14 - 15 m (45 - 50 ft), or at the back of each lot. (whichever results in the least distance between signs).
7. Must be readily visible to the users of the affected property.

For further information, please contact the following:

Ecosystem Planning & Protection
BC Environment, Lower Mainland Region
10470-152nd St., Surrey BC V3R 0Y3
Phn: (604) 582-5235 Fax: (604) 582-5305
Web-site: <http://www.elp.gov.bc.ca/sry>

**SENSITIVE FISH AND WILDLIFE HABITAT
BEYOND THIS FENCE**

PLEASE DO NOT DISTURB

THIS AREA IS PROTECTED UNDER THE FEDERAL FISHERIES ACT

**BC MINISTRY OF ENVIRONMENT
AND PARKS**

**FISHERIES & OCEANS
CANADA**

Dimensions
10 1/2" x 5"