



## Process for ESA DP Applications at Time of Development Approval

No.: DEVAPPS-08

Date: 2017-06-19

Revised: 2018-08-08

### Purpose:

To provide information on requirements for a Development Permit (DP) where an Environmentally Sensitive Area (ESA) may be impacted as part of a development application (Rezoning, Subdivision, Development Permit or Building Permit).

### Background:

ESA DPs are designated in the City's Official Community Plan (OCP) for the protection of the natural environment, its ecosystems and biodiversity. Under provincial authority, the City of Richmond first introduced ESA Development Permit Areas in 1991. Mapping and guidelines for ESAs are included in the OCP, available here [www.richmond.ca/cityhall/bylaws/ocp/sched1.htm](http://www.richmond.ca/cityhall/bylaws/ocp/sched1.htm). ESAs are also shown on the City of Richmond Interactive Map available here: [www.richmond.ca/discover/maps.htm](http://www.richmond.ca/discover/maps.htm).

The City's objective is to achieve long-term protection of all ESAs, encourage the restoration of natural habitats within these areas and connect ESAs with other ecological areas. Where development impacts to the ESA are unavoidable, City Staff will work with applicants to minimize disturbance, ensure a net gain in habitat area and ecosystem function, and support the City's Ecological Network.

### Implementation:

Unless an activity is exempted under Section 14 of the OCP, any disturbance to an ESA requires an ESA DP. There are three types of ESA DP:

- Type 1: Where impact to the ESA is a direct result of farming, the applicant must prove legitimate farm use through government records, such as a BC Farm Number or BC Assessment record, for an exemption to the ESA DP. The applicant may also be required to provide a farm plan to the satisfaction of the Director of Development;
- Type 2: Where minimal disturbance to the ESA is proposed, or where farm use is proposed but legitimate farm use cannot be proven, a Type 2 DP may be required. City Staff will work with the applicant to determine if the impacts can be avoided. A Type 2 ESA DP may require an environmental assessment completed by a Qualified Environmental Professional (QEP);
- Type 3: Where more significant impact to the ESA is proposed, City Staff will work with the applicant to determine short and long-term requirements for habitat and ecosystem function on-site. A Type 3 ESA DP will require an environmental assessment and a strategy to compensate for any loss of ESA, completed by a QEP and consistent with guidelines in the OCP.

Minimum requirements for Type 2 and 3 ESA DPs include the following general requirements:

- A plan for minimizing disturbance of the ESA. This may include re-design of project elements to avoid significant impacts;
- A site inventory, including a survey of trees and vegetation within and adjacent to the ESA;
- A plan that ensures no net loss of total ESA on-site (e.g. designating additional ESA lands elsewhere, and re-vegetating those areas to meet habitat and ecosystem enhancement objectives in the OCP).

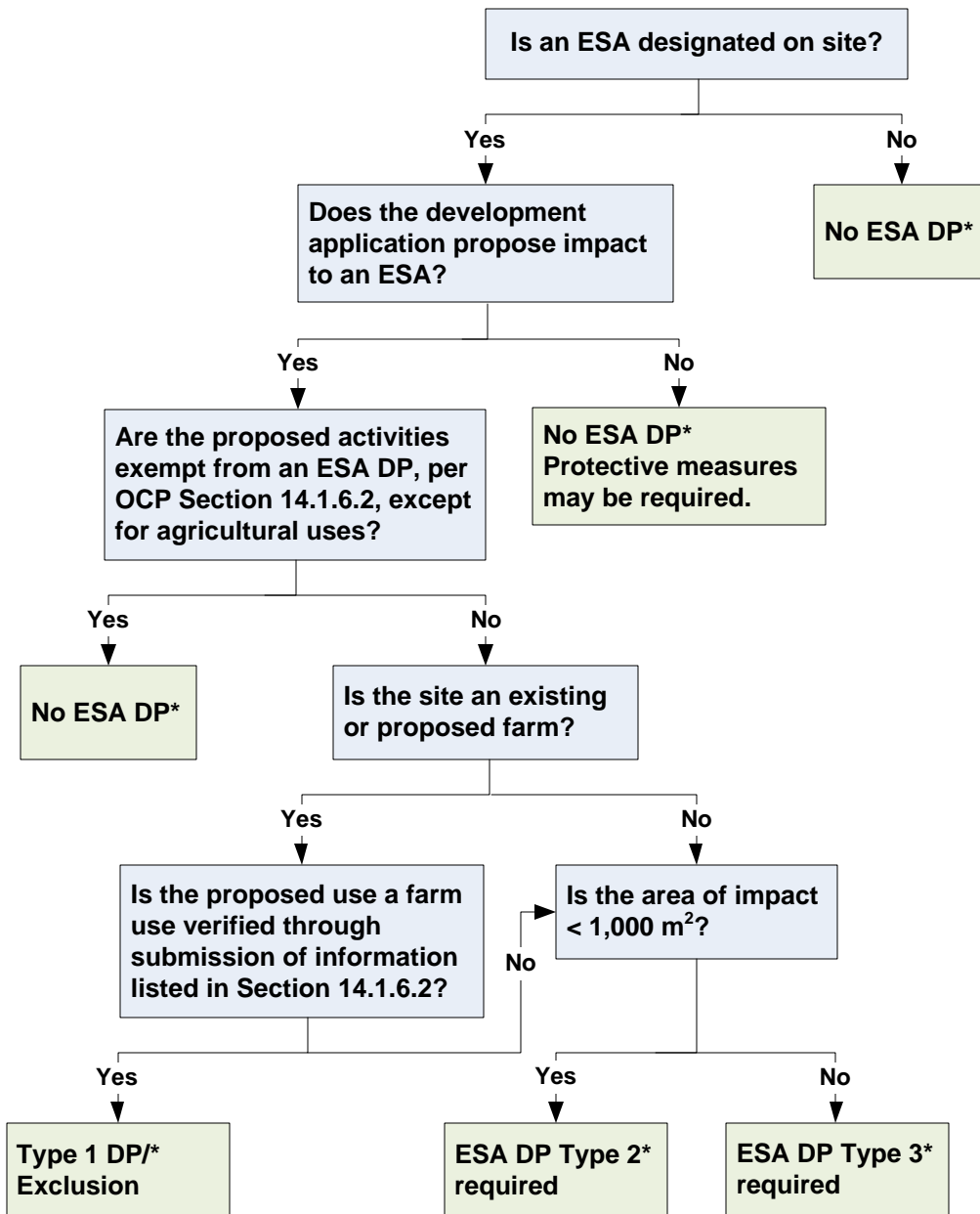
Additional requirements may include:

- An environmental monitoring program;
- A landscape restoration plan;
- A landscape security.

Terms of Reference for reporting on ESAs are attached. In all cases, City Staff will advise on the process, requirements and next steps at time of application.

See attached →

# Determining Type of ESA DP at Time of Development Application



\*Confirm with City staff that your project meets all requirements.



*The purpose of these Terms of Reference is to provide guidance for professional reporting in the case of existing, proposed or potential impact to an Environmentally Sensitive Area (ESA), as designated by Official Community Plan Bylaw 9000. Following these guidelines will help applications to be processed efficiently. The applicant is encouraged to discuss these requirements with planning staff prior to submitting an environmental report for an ESA.*

## 1. Introduction

Within the 2041 Official Community Plan (OCP), the City of Richmond has identified Environmentally Sensitive Areas (ESA) where vegetation, natural features and other biophysical characteristics contribute to the City's ecological health. There are five broad ESA classifications, although many ESAs show characteristics of more than one type:

- **Intertidal** – coastal areas within 30 m of high water mark (seaward), which include mudflats, vegetated estuarine or salt marsh communities, tidal channels or shallow ponds, and also developed shorelines with rip rap, pilings and docks.
- **Shoreline** – contiguous with the Intertidal ESA, coastal areas that extend inland 30 m from high water mark. Land uses are variable and may include perimeter diking, trails, parking or roads.
- **Upland Forest** – stands or patches of forest typically associated with birch trees (native and non-native), red alder, black cottonwood, western hemlock and western redcedar. May include a mix of trees, shrubs and understory vegetation such as ferns, forbs and mosses.
- **Old Field and Shrub Land** – transitional areas that are temporarily or permanently abandoned agricultural areas, and support a mix of grass, shrubs and forb vegetation not limited to native species.
- **Freshwater Wetland** – areas with vegetation and soils influenced by the presence of standing freshwater, either existing or historical.

Richmond's ESAs form part of the City's Ecological Network (EN), a connected system of natural and semi-natural areas that also includes parks and protected riparian areas. Designated since 1991, ESA mapping was updated in 2012. The City's Ecological Network Management Plan was adopted in 2015 with a goal to connect, protect and restore natural areas across the city. The existing mapping (available through Richmond Interactive Map) provides an overview of ESAs, however, as natural systems are dynamic and constantly changing, the location and condition of ESAs requires verification in the field at the time of development application.

Under authority granted by the Province through the Local Government Act, all ESAs are designated as Development Permit (DP) areas for the purpose of protecting the natural environment, its ecosystems and biodiversity. Prior to any land development on a property with a designated ESA – including an application for rezoning, Development Permit, subdivision, demolition or construction – the City will assess whether disturbance is likely, and whether a Development Permit is required.

## 2. QEP Responsibility and Qualifications

Qualified Environmental Professionals (QEP) play a critical role in the successful implementation of the Environmentally Sensitive Areas (ESA) Development Permit (DP) approval process. QEP expertise and experience is required to accurately verify the location and condition of ESAs shown on the City's maps and to recommend detailed protection and restoration options that will satisfy the objectives for ESA DP areas.

Any report required as part of an ESA DP must be completed by a Qualified Environmental Professional (QEP) familiar with Richmond's unique context. This includes Richmond's historic bog and intertidal lowland ecosystem, its low and flat topography, high water table and associated flood risks, impacts from urbanization and human disturbance, infestation of invasive species, and high proportion of land used for agriculture.

The lead QEP must be a Registered Professional Biologist (RPBio) with the BC College of Applied Biology in a relevant and appropriate discipline. Additional QEPs or professionals may be required to support an ESA DP application, including professionals registered with the British Columbia Society of Landscape Architects (BCSLA) or the Association of Professional Engineers and Geoscientists of British Columbia (APEG).

## 3. Meeting the ESA DP Reporting Requirements

The following document provides a general Terms of Reference (ToR) for reporting expectations when applying for an ESA Development Permit. These guidelines are intended to ensure that all QEP reports are complete and have a consistent format. This standardized reporting structure will facilitate and streamline the DP application review process by improving communication between staff, applicants and QEPs.

While these Terms of Reference provide a general guide for professional reporting on ESA DP applications, it is recognized that each site and development proposal is unique. In some instances, it may only be necessary to provide some of the information contained in these ToR. In other instances, additional requirements may be warranted. The applicant or QEP is encouraged to contact the City early in the planning process with any questions and so that the necessary information is identified in a timely manner.

These ToR provide guidance to applicants and their QEPs in meeting the OCP guidelines for ESA DPs at the time of development. Should there be any conflict between these ToR and any City bylaw or policy, the City bylaw or policy shall be held as correct.

## 4. Report Contents

The following report structure and content is recommended for all submissions for an ESA DP. Depending on the context and magnitude of disturbance proposed, some content may not be required. Where certain criteria is not applicable, the QEP must still note that the criteria has been considered but does not apply.

- a) **Introduction** – *provide a brief introduction of the site, development proposal, ESA type and location.*
  - Provide an overview of the current site uses and history, as well as neighbouring uses including: site location and size, area description, land use, zoning and ALR status (both on site and on adjacent properties).
  - Provide an overview of the development proposal, type of development application (DP, Rezoning, Subdivision, Building Permit etc.) and any relevant past or future development approvals.

- Describe the location, size (in m<sup>2</sup>) and types of ESAs identified on and off site.
  - Provide a context map (recommended at a minimum of 1:20,000) showing on-site ESAs and any contiguous ESAs or ESAs on neighbouring properties.
  - List any additional permits required from government agencies (i.e through Department of Fisheries and Oceans, Agricultural Land Commission, City of Richmond, Port of Vancouver etc) or federal or provincial acts that apply (Water Sustainability Act, Species at Risk Act, the Wildlife Act).
- b) **Biophysical Inventory** – *describe in detail the physical and biological baseline information for the site and its immediate surroundings; as natural systems are dynamic and constantly changing, the location and condition of ESAs requires verification in the field at time of application. The inventory should include all environmentally significant features within 100 m of the site.*
- Describe, map and quantify the location of ESAs on and adjacent to the property. Describe in detail the condition of these ESAs and connectivity to ESAs on neighbouring properties, as well as their context within the City’s identified Ecological Network (EN).
  - Where applicable, complete a review of higher order sources and note significant findings, including but not limited to: Metro Vancouver Sensitive Ecosystem Mapping, British Columbia Conservation Data Centre, iMAP BC, Wildlife Tree Stewardship Program, the Habitat and Inventory Mapping (SHIM) program, FREMP habitat coding, Provincial Fisheries Inventory data, Federal Fisheries data, Provincial Ministry of Environment’s Habitat Wizard and EcoCat, and the Committee on the Status of Endangered Wildlife in Canada.
  - Describe, list and quantify density and size of plant communities (trees, shrubs and herbs) present and specify which species are native, non-native or considered invasive.
  - If there are trees on or immediately adjacent to the site, include an arborist report with an inventory of all Bylaw sized trees (per the Tree Protection Bylaw 8057) on-site and within 5 m or dripline, whichever is greater, of the property boundary. This inventory should include tree species, diameter, height and health. Provide a map showing the location of these trees, preferably as surveyed by a British Columbia Land Surveyor. Provide a summary of the findings and recommendations from the arborist report.
  - List all observed wildlife (aquatic and terrestrial). Describe limitations to wildlife use at the time of the site visit (ie. time of year, length of time on site, weather).
  - Provide details of any observations or signs of species-at-risk or their critical habitat.
  - Describe significant natural features and functions such as but not limited to wildlife trees, veteran trees, active bird nests, wetlands, streams, hives, pollinator plant communities, and wildlife corridors.
  - Identify and describe the location of all waterbodies and any Riparian Management Areas (per the Riparian Areas Regulation Response Strategy 2006).
  - Describe significant topographical features, geological and hydrogeological soil type and condition, and hydrological regime including depth of water table.
  - Describe any threats to the ESA, such as clearing for development or agriculture, flood protection measures, invasive plant and animal species, pest and disease incidences (e.g. bronze birch borer).
  - Describe any previous environmental compensation or enhancement activities.
  - Note whether the biophysical inventory is consistent with the ESA type as classified in the OCP, and if not, describe how the ESA could be better classified.
  - Include photographs showing as much of the ESA as possible as well as notable features and functions.
  - Provide inventory mapping at a suitable scale that clearly illustrates grade and the location of ecological features discussed in the biophysical inventory. Recommended scale is from 1:200 to 1:5,000.

- c) **Impact Assessment of the Proposed Development or Disturbance** – *examine and describe potential impacts of the development or disturbance on the ESAs.*
- Describe, quantify the extent and map all proposed disturbances to the ESA, including but not limited to proposed buildings and structures, grading or fill, servicing, driveways, landscaping and staging for construction.
  - Describe any unauthorized prior disturbances to the ESA, including cumulative impacts to contiguous neighbouring ESAs and the EN.
  - Confirm whether sufficient area is available within the parcel but outside of the ESA to achieve the use and density permitted by the existing zone (per Zoning Bylaw 8500).
- d) **Mitigation Strategy** – *propose a strategy to avoid and mitigate development impacts to the ESA.*
- Specify which areas of the site, based on the biophysical inventory, should not be disturbed, either temporarily (e.g. during nesting season) or permanently, and describe how those areas will be protected during and after construction.
  - Where possible, provide options for alternative site layouts and buffers to protect existing ESAs.
  - Provide recommendations for delineating and protecting the ESA during construction, including fencing (temporary or permanent), timing of works, QEP monitoring, nesting surveys, relocation of wildlife, and erosion and sediment control measures.
  - Provide a rationale to support the preferred mitigation strategy, and how the approach will help to achieve the stated goals for the ESA, and the City’s objectives for ESAs and the EN.
- e) **Compensation Strategy for Unavoidable Impacts** – *for impacts to the ESA that cannot be avoided, propose a compensation strategy that will achieve a net gain in ESA.*
- Describe the proposed approach for compensating for any loss of ESA, including describing in detail the methods required to establish a functioning ESA. Compensation strategies typically include restoration of soils, removal of invasive species, replanting with native species and installation of wildlife habitat features (e.g. woody debris, boulders, wildlife trees, perches). See Appendix A for detailed planting requirements.
  - Report and map all areas proposed as compensation for development impacts. Where net gain in ESA area cannot be achieved on site, provide a strategy for achieving a net gain in function and/or net gain through off-site compensation.
  - Define goals for the ultimate condition of the ESA on-site. These should be consistent with the objectives listed in OCP Section 14.7, however, these may differ from objectives for the designated ESA classification.
  - Define any opportunities for enhancing existing features.
  - Identify any areas on-site but outside of the ESA that hold high ecological value and that offer opportunities for re-alignment of ESA boundaries.
  - Describe how connectivity within the EN or other significant environmental features will be maintained or improved.
  - Describe how impacts to the site’s hydrogeological regime will be minimized.
  - Identify the proposed treatment for eradication of any invasive species on-site. Restoration and replanting as well as a maintenance program for these areas must be addressed in the landscape plan and through monitoring and maintenance.
  - Provide a descriptive summary comparing pre-development conditions to post-development conditions in terms of quality of wildlife habitat, natural area connectivity, ground vegetation, tree canopy cover, soil and soil moisture, permeable surface coverage, water quality and drainage and other ecosystem services.
  - Provide an area-based balance sheet that proves a net gain of the total area of ESAs and natural areas present on-site before and after development, based on the proposed compensation plan.

- f) **Landscape Plan** – *provide a map that illustrates impacts to the ESA, and the proposed mitigation, compensation and restoration strategy.*
- Provide a map that illustrates the location of existing ESAs and all proposed disturbances, mitigation and compensation. This map should be an appropriate scale to show all site details (recommended scale from 1:200 to 1:5,000). It is recommended that the base for this map be a survey by a BC Registered Land Surveyor. In addition to clearly illustrating the planned development or disturbance footprint, the map should show finished grades, cross sections and drainage.
  - Show the location of ESAs, natural plant communities, trees and natural features to be protected on and off-site. Where appropriate, temporary and permanent fencing should be shown, including tree protection fencing.
  - Show the location of invasive plant species to be eradicated.
  - Show the location of erosion and sediment control measures, including protective fencing.
  - Show the location, size and species of trees, shrubs and vegetation to be established on site. The plan should target 100% native species and include soil preparation and planting methods (see Appendix A for more detail).
  - Upon approval of the landscape plan, the following may be required:
    - landscape security based on cost of materials, labour and yearly monitoring, plus contingency; and
    - legal survey plans for the purpose of registering any necessary legal agreements.
- g) **Monitoring and Maintenance** – *provide a plan for monitoring and maintenance of the mitigation and compensation plan.*
- Provide measurable parameters for determining if mitigation and compensation requirements were successful in protecting or establishing a functioning ESA. This should include details on the reporting that will be submitted following completion of the landscape plan.
  - Specify how frequently the QEP will visit the site during construction or disturbance, and after installation of the landscape specified in f), above, and specify the compliance period necessary to confirm the requirements of the mitigation and compensation strategies have been met. Typically, the monitoring and maintenance period is three to five years depending on the complexity of the project, as justified by the QEP and as approved by the City.
  - Describe specific criteria for determining the successful establishment of the landscape plan, and the conditions for sign-off by the City and a release of any bonds. Typically the landscape security is returned in increments when yearly monitoring reports are submitted, as long as the ESA is determined to be healthy and functioning. Criteria for determining success of the ESA landscape plan should be measurable, for example minimum percent survivability, height of plants/trees and water quality measures.
  - Specify the contents and format of the completion report and subsequent monitoring reports:
    - monitoring reports should include a description of on-site activities, and summarize compliance with the mitigation and compensation strategy, the health and condition of compensation areas and any further recommended actions to ensure compliance; and
    - monitoring reports must be submitted to the City within one month of each site visit. These reports should be cumulative and include all site visits.
  - Provide instructions to future owners for the long-term maintenance of the ESA following completion of the monitoring and maintenance period.

## **5. Peer Review**

Depending on the complexity of the site, scale and scope of the proposed development, availability of information and field data, and staff's ability to review and respond, an independent 3<sup>rd</sup> party review may be requested with costs borne by the developer/applicant.

## **6. Submission**

Environmental reporting should be provided as two hard copies and an electronic copy with all maps and attachments as unlocked pdfs. Hard copies should be signed and sealed by the RPBio. The final report may be registered on title via a Restrictive Covenant on the ESA at the time of development approvals.

## **7. Implementation**

Adoption of an ESA DP may require submission of a landscape security and registration of legal agreements to protect the ESA and/or to allow the City to access the ESA in case the landscape plan is not implemented as proposed.



## Appendix A – Recommended Standards for Restoration Planting

- **Topsoil** – topsoil must meet Canadian Landscape Standards for growing medium and be weed free. Soils must be placed un-compacted to a depth of 50 cm and textured in a cross slope pattern if on a slope to help reduce erosion.
- **Planting Material** – all planted material must conform to the Canadian Landscape Standards for container grown stock. All shrubs and ferns must be well established in 1 gallon pots or larger. All conifer and deciduous trees must be at least 1 m tall and in 2 gallon pots or larger.
- **Water and Irrigation** – on-site irrigation shall be available for the duration of on-site plant storage and through the first summer growing season.
- **Planting Time** – the ideal planting time is October–November to ensure the highest possible plant survival rates. If planting is done outside of these windows, the Owner should plan a watering schedule (in summer) or protection from frost (in winter) based on recommendations from the QEP.
- **Planting Methods** – planting methods shall adhere to the Canadian Landscape Standards. Typical spacing should be 5 m triangular spacing for trees and 1 m triangular spacing for all shrubs, herbs and ferns.
- **Mulch** – install surface mulch at the time of planting. Mulch will help retain soil moisture and suppress
- **Bird Nesting Windows** – land disturbance or planting may be affected by bird nesting windows; where there is potential impact to birds’ nests, all activities must be under the guidance of a QEP.
- **Fisheries Windows** – land disturbance may be affected by fisheries windows; where there is potential impact, all activities must be completed under the guidance of a QEP.

Table 1 provides a list of recommended native plants and trees that are suitable and preferred for most ecosystems in Richmond’s ESA areas. This assumes a soil nutrient regime of medium to rich and a soil moisture regime of moist to wet. While not complete, this list can be used a guide when developing restoration prescriptions.

**Table 1: List of Recommended Native Shrubs/Herbs, Large Trees, and Medium-sized Trees**

Shrubs/Herbs		Large Trees	
	Common Name	Botanical Name	Common Name
<i>Amelanchier alnifolia</i>	Saskatoon	<i>Abies grandis</i>	Grand fir
<i>Cornus stolonifera</i>	Red-osier dogwood	<i>Acer macrophyllum</i>	Bigleaf maple
<i>Corylus cornuta</i>	Beaked hazelnut	<i>Betula papyrifera</i>	Paper birch
<i>Gaultheria shallon</i>	Salal	<i>Picea sitchensis</i>	Sitka spruce
<i>Holodiscus discolor</i>	Ocean spray	<i>Populus balsamifera ssp. trichocarpa</i>	Black cottonwood
<i>Lonicera involucrata</i>	Black twinberry	<i>Pseudotsuga menziesii</i>	Douglas-fir
<i>Rosa nutkana</i>	Nootka rose	<i>Thuja plicata</i>	Western redcedar
<i>Rosa gymnocarpa</i>	Baldhip rose	<i>Tsuga heterophylla</i>	Western hemlock
<i>Oemleria cerasiformis</i>	Indian plum	Medium Size Trees	
		Botanical Name	Common Name
<i>Philadelphus lewisii</i>	Mock-orange	<i>Cornus nuttallii</i>	Pacific dogwood
<i>Physocarpus capitatus</i>	Pacific ninebark	<i>Crateagus douglasii</i>	Black hawthorn
<i>Polystichum munitum</i>	Sword fern	<i>Malus fusca</i>	Pacific crabapple
<i>Ribes bracteosum</i>	Stink currant	<i>Prunus emarginata</i>	Bitter cherry
<i>Ribes sanguineum</i>	Red flowering currant	<i>Rhamnus purshiana</i>	Cascara
<i>Rubus parviflorus</i>	Thimbleberry	<i>Sorbus sitchensis</i>	Sitka mountain ash
<i>Rubus spectabilis</i>	Salmonberry		
<i>Salix Sp</i>	Willow (Pacific, Scouler, Sitka, Hooker's)		
<i>Sambucus racemosa</i>	Red elderberry		
<i>Spiraea douglasii</i>	Hardhack		
<i>Symphoricarpos albus</i>	Snowberry		

## Appendix B – ESA Development Permit Reporting Checklist

The following is a checklist of requirements for an ESA Development Permit application:

- Confirmation of report requirements with City staff.
- The lead QEP is an RPBio.
- Report structure:
  - Introduction (*introduction of the site, development proposal, ESA type and location, context map (1:20,000 scale), methodology, and any other applications, approvals or permits required*).
  - Biophysical Inventory (*describe in detail physical and biological baseline information for the site and immediate surroundings, including all environmentally significant resources within 100 m of the site, and an inventory map (1:200 to 1:5,000 scale)*).
  - Impact Assessment (*examine and describe potential impacts of the development or disturbance based on findings of the biophysical inventory*).
  - Impact Mitigation (*propose a strategy to mitigate development impacts to the ESA*).
  - Compensation for Unavoidable Impact (*for impacts to the ESA that cannot be avoided, propose a compensation strategy that will achieve a net gain in ESA*).
  - Landscape Plan (*provide a map (1:200 to 1:5,000 scale) that illustrates impacts to the ESA, mitigation and compensation strategy supported by a BCSLA registered professional as needed*).
  - Monitoring and Maintenance (*provide a plan for monitoring and maintenance of the mitigation plan*).
- Two hard copies, signed and sealed by the lead RPBio.
- An electronic copy, with all maps and attachments as unlocked files.