

Schedule B

District of Summerland Terms of Reference Environmental Assessment Reports

INTRODUCTION

The purpose of this document is to describe the requirements for an Environmental Assessment (EA) report submitted to meet the requirements of the Neighborhood Planning process as described in Section 6.1 of the Official Community Plan. EAs are typically requested by the local government for greenfield developments at the time of a proposed land use change. An EA is critical for the planning phase of the development to ensure significant environmental values are identified and protected prior to any preparatory site disturbances. The report should document plant communities, aquatic and wildlife habitat values, aquatic and wildlife species presence, rare and endangered ecosystems and species, adjacent land use and threats, general factors affecting lot layout (flood and site stability) and, where appropriate, potential habitat enhancement/protection opportunities. The proposed development plans must reflect the results and recommendations of the EA and provide a reasonable building, servicing and living envelope.

This Terms of Reference is intended as a reference to guide property owners/developers in determining the scope of work required by qualified registered professionals. The qualified professional must be a Registered Professional Biologist who has experience with the ecosystems and wildlife species of the Okanagan region, with standard development practices, and with published Best Management Practices (BMPs).

EAs are broken down into the following two phases that can be completed and reported together or separately.

Ecological Assessment Phase- this phase, the intention of which is to assess both the biological conditions and physical conditions of a site, **must be carried out in advance of any preliminary layout plan and prior to any preparatory site disturbances.** The Ecological Assessment Phase determines a development footprint respectful of sensitive ecosystems and helps streamline the development approval process.

Impact Assessment and Mitigation Phase- this phase is generally carried out after the preliminary layout plan and outlines the impact, if any, of the development footprint on sensitive ecosystems and recommends mitigation measures to minimize or cause no impact.

This Terms of Reference is intended for property development applicants and is to be undertaken by a Qualified Environmental Professional (QEP), a Registered Professional Biologist (RPBio), who has local experience with regard to sensitive ecosystems and wildlife species of the Okanagan region, with standard development practices, and with published Best Management Practices (BMPs). Other qualified professionals may be required to augment the findings of the RPBio and satisfy the requirements of the EA report.

DATA DELIVERABLES

The following is a list of requirements that must be completed for the EA reports:

1. **Environmental assessment reports** prepared, signed and sealed by an RPBio and adhering to all regional bylaws, federal and provincial legislation, regulation and standards.
2. **Site description** including legal description (e.g. lot number, district lot, plan number, etc.), OCP designation, zoning category, and Agricultural Land Reserve (ALR) status should be shown on the location map or stated in the report.
3. **Location map** at appropriate scale (minimum 1:10,000 and maximum 1:50,000) indicating the regional setting. This information should be overlaid on the most current orthographic photo.
4. **Site maps** at appropriate scale (minimum 1:500 and maximum 1:5,000) indicating the layout of project components and activities including:
 - a) topographic survey, where available, when development is occurring on or near slopes that are greater than 20%, showing natural slope contours (at appropriate contour intervals of 1 to 5 meters);
 - b) topographic survey of post development contours, if available;
 - c) survey data collection points and transects, if applicable;
 - d) all exposed soil surfaces (trails, roads, talus, etc.);
 - e) results from ecological assessment (see below under Environmental Assessment);
 - f) 'top of bank', and/or distance from the 'natural boundary', for steep slopes and aquatic features that would be affected by setbacks and buffers; and,
 - g) riparian (i.e. RAR) setbacks if applicable.

This information should be overlaid on the most current cadastral map with an orthographic photograph background outlining all surrounding property boundaries and uses. Map legends must show clear descriptions of all symbols used as per provincial standards.

5. **Final Report** should be delivered with one colour hard copy and one digital copy in pdf format. Maps should be presented in full-size, colour format printed to scale. Digital GIS data must be provided in a file format and projection requested by the municipality.
6. **Site plans / sketches / colour photographs**, if available, indicating project location, site features and activities identified in relation to easily identifiable landmarks such as those found on accompanying maps.
7. **Appropriate referencing** of all image and data sources will be clearly indicated, as well as the date this information was developed to certify that the most up-to-date information available was used in completing the relevant assessments.

ENVIRONMENTAL ASSESSMENT

The policy, legislation, bylaw or regulatory framework that triggered the preparation of the Environmental Assessment must be clearly described within the introductory section of the EA.

Ecological Assessment Phase

1. **Background information** for the site collected by government agencies or in published literature will be gathered, assessed, presented and referenced. Information gaps may also be filled from local information sought from other interested parties including local experts, current and past owners, neighbors, and other local groups to make up for the typical short time-frame and limited fieldwork undertaken to complete EAs.
2. **Ecological assessment** will include the use of background information, to formulate an overview of all habitats and features within the subject property. This overview will then guide the design of species specific inventories to be performed at the best time of year for that species and habitat use.

The ecological assessment and site maps (1:500 – 5,000) will be prepared to include:

- a) Vegetation - an overview of the various plant species and plant communities;
- b) Terrestrial/aquatic wildlife – list of species found including fish distribution, methods of assessment and expected/potential terrestrial/aquatic wildlife use;
- c) Sensitive ecosystems¹ (using a standard method such as Sensitive Ecosystem Inventory, Terrestrial Ecosystem Mapping or Biogeoclimatic Ecosystem Classification (BEC) to the site series) based on the most recent products available and ground truthing;
- d) Adjacent lands including protected areas, agricultural status(ALR) and local government zoning if appropriate;
- e) Observations and/or records of federally listed (endangered, threatened, or special concern), provincially ranked (Red or Blue), or regionally significant species and plant communities for all life stages;
- f) Habitat, including significance and condition, of federally listed (endangered, threatened, special concern), provincially ranked (Red or Blue) or regionally significant species and plant communities for all life stages;
- g) Other existing environmentally valuable resources², including corridors, wildlife trees, and hibernacula, etc.;
- h) Landforms, site stability, geological and topographical features and contours – this may be highlighted for further assessment by a geotechnical professional;
- i) Detailed contour maps and cross sections are required, if available, for sites with slopes greater than 20%;
- j) Surface and ground water features including swales, wetlands, draws, spring discharge or recharge areas, floodplains, top of bank, high water mark; and,

¹ refers to any fragile and/or rare portion of a landscape with relatively uniform dominant vegetation. Sensitive ecosystems include wetlands, riparian areas, grasslands, woodlands, older forests, cliffs and bluffs, and sparsely vegetated land.

² As defined within: Develop with Care: Environmental Guidelines for Urban and Rural Land Development in British Columbia. Ministry of Environment. March 2006.

- k) Land use history including existing structures, paved and unpaved roads, soil disturbance, logging, and land clearing (this does not include an archaeological assessment).
3. **Rare and endangered species** records, within and adjacent to the subject property, will be determined using all available data including, but not limited to: (e.g. Conservation Data Centre's (CDC) online Ecosystem Explorer, Ministry of Environment's Conservation Framework, online Species Inventory Database (SPI) and local expert knowledge. If rare and endangered species are suspected to potentially utilize the site, a species specific inventory must be conducted, in the appropriate seasons.
 4. **Riparian Areas Regulation** generally applies, if the proposed development project involves disturbance of land within 30 m of a watercourse; 30 m of the top of bank of a ravine less than 60 m wide; or 10 m of the top of bank of a ravine more than 60 m wide. A RAR assessment must be appended to the EA and the Streamside Protection and Enhancement Area (SPEA) setback must be shown on the site map.
 5. **Environmentally Sensitive Area (ESA)** stratification of ecosystems³ and identification of environmentally valuable resources occurring within the study area based on their environmental sensitivity. The designation of ESAs is a key element in the planning process as it identifies area constraints and opportunities (avoidance/conservation, mitigation, and restoration) thus encouraging a more integrated and sustainable development plan. The following four-class rating system shall be applied to all ESA evaluations.
 - a) **ESA – 1 High:** Locally and provincially significant ecosystems, extremely rare and/or of critical importance to rare wildlife species. These areas may also represent a diverse range of habitats and contribute significantly to the overall connectivity of the habitat and ecosystems. Avoidance and conservation of ESA-1 designations is the primary objective.
 - b) **ESA – 2 Moderate:** Locally or provincially significant ecosystems, uncommon and important to rare wildlife species. ESA-2 should be avoided, but if development is pursued, portions of the habitat must be retained and integrated to maintain the contiguous nature of the landscape. Some loss to these ESAs can be offset by habitat improvements to the remaining natural areas found on the property.
 - c) **ESA – 3 Low:** Ecosystems that may have low to moderate conservation values because of importance to wildlife (e.g. disturbed or fragmented ecosystems or habitat features). These areas may contribute to the diversity to the landscape, although based on the condition and adjacency of each habitat the significant function within the landscape is limited. If development is pursued in these areas the impacts should be offset by habitat improvements in other more sensitive natural areas found on property.
 - d) **ESA – 4 Not Sensitive:** Little or no inherent ecological value or importance as wildlife habitat. The majority of development should occur within ESA-4 areas.

³ Ecosystem (terrestrial): A volume of earth-space that is composed of non-living parts (climate, geologic materials, groundwater, and soils) and living or biotic parts, which are all constantly in a state of motion, transformation, and development. No size or scale is inferred (Pojar et al., 1987).

6. **ESA criteria/rating system** developed and used in the evaluation of ESAs must be included in the EA report. Principle components will be required in evaluating the sensitivity of ecosystems and environmentally valuable resources, and delineating buffers around these areas. ESAs differ in their biological value within the study area and within the surrounding region and their biological value at the time of assessment can be thought of as falling somewhere along a continuum from very high to low biological value depending on a number of factors.

The primary components to be considered during the ranking and mapping of ESAs include the following. Not all will be relevant at each site and other factors than these may require consideration as well.

- a) Ecosystem mapping refined to 1:5,000 or less, including structural stage and seral association or condition. (*Note: BEC site series is the base unit for TEM, but designed for forested ecosystems*);
- b) Rarity in the region, province, country, including historical loss;
- c) Landscape context including contiguity to other ESAs (buffering function) and whether the area is vital to health of ecosystems beyond its boundaries (water catchment, storage/recharge zone);
- d) Habitat suitability for provincially ranked and/or federally listed or significant species;
- e) Presence of important environmentally valuable resources (e.g. breeding/spawning areas, hibernacula, migration stop over, connectivity corridors, reported sightings of uncommon species, ungulate winter range);
- f) Species diversity/habitat complexity;
- g) Ecosystems at risk in the Okanagan including riparian (including subsurface flow and recharge areas), wetlands, grasslands, rock outcrops, talus and cliffs, old growth, and low elevation forests⁴;
- h) Vulnerability to anthropogenic disturbance (e.g. soil disturbance, road conflicts, pets, invasive plants);
- i) Current condition (biological integrity) function, structure, stability and probability of restoration to a functional level or ecological capability; and,
- j) Cumulative impacts from surrounding land uses.

Currently, stratifying ESAs are to be completed from a primarily objective approach relying on all existing information and a professional understanding of the functional requisites of the existing ecosystems, including the potential for provincially ranked and/or federally listed or significant species. Where ESA evaluations require a more subjective approach, a clearly articulated discussion/rationale will be provided in the report. It is recognized that environmental consultants use a variety of methods to weight the various relevant factors. However, it must be clear in the report of the consultant which factors were considered in determining the biological value of a site.

7. **Ecological assessment results** will be used to guide project design and planning for the development. Applicable BMPs will be recommended regarding alternative development standards and design that incorporate the ESAs and environmentally valuable resources identified within the lot area (e.g. covenants and buffers).

⁴ Sensitive Ecosystem Inventory, Okanagan Valley: Vernon to Osoyoos 2000-2007(Iverson et al., 2008)

Impact Assessment and Mitigation Phase

1. **Proposed Development Description** incorporates the information from the ecological assessment and examines it in context of the proposed development. It includes:
 - a) Description of existing site conditions, development proposal, reasons for work and alternatives, phasing, and timing and required development applications;
 - b) Current site plan, if available, superimposed, if appropriate, on the most current cadastral map with an orthographic photograph background of the subject property;
 - c) Summary of current and proposed provincial legislation, local government bylaws, policies and permitted uses affecting the subject property; and,
 - d) Other relevant provincial, municipal and agency policies, existing studies and issues (e.g. servicing, stormwater management, open space dedication) related to the sensitive ecosystems, and provide an opinion as to the conformity of the proposal to these policies and guidelines.

Impacts

2. **Assessment** of the potential impacts of the development proposal on ESAs and environmentally valuable resources before, during, and after construction. Evaluate and describe the significance of all potential impacts by considering:
 - a) Magnitude,
 - b) Geographic extent,
 - c) Timing,
 - d) Duration,
 - e) Frequency,
 - f) Reversibility; and,
 - g) Likelihood of occurrence.
3. **Short/long term impacts** as well as direct and secondary impacts will be identified; and,
4. **Consider cumulative impacts** including previous, current and possible future disturbance on the site and in surrounding lands, watercourses and subsurface drainage. This means both the effects of the surroundings on the proposed development and vice versa. This includes consideration of wildlife travel corridors to surrounding habitats.
5. **Residual impacts** that cannot be mitigated need a plan developed for compensation and restoration. Provide recommendations for future assessments.

Mitigation and Development Guidelines

6. **Avoidance** must be the priority action before mitigation and compensation options are considered. The EA will be used as a tool for the design phase by using BMPs⁵ to avoid

⁵ E.g. Develop with Care: Environmental Guidelines for Urban and Rural Land Development in British Columbia. Ministry of Environment. March 2006.

identified ESAs and environmentally valuable resources. Recommended avoidance approaches could include:

- a. Delineate 'no-disturbance areas' or 'buffers⁶' around ESAs to be in accordance with the Ministry of Environment's most current Best Management Practices (BMPs), and amendments thereto. Permanent fencing may be necessary along some buffers where development and/or related-activity are anticipated.
 - b. Permanent disturbances such as roads and structures must not be located on non-disturbance areas as identified by the QEP.
 - c. Avoid disturbance to sites where provincially ranked and/or federally listed or significant plant species or communities occur, and maintain critical habitat structures such as old trees, snags, trees with cavities, and natural grasslands.
 - d. Integrate existing native vegetation with new landscaping within the developed areas.
 - e. Prevent disturbance of nesting sites and breeding areas.
 - f. Conserve trees in communities (groups of trees along with their associated understorey) rather than isolating individual specimens.
 - g. Retain connectivity between habitats to create interconnectedness, especially for wildlife travel routes (e.g. conservation area, park, trail and wildlife and fish corridors).
 - h. Use alternative development standards such as *Land Title Act* covenants, cluster development, or retention of attractive habitat features (e.g. rocky outcrops, wildlife trees).
 - i. Voluntary stewardship measures such as agreements/contracts, leases or eco-gifts to protect the feature or area.
7. **Mitigation and compensation** will be considered if identified impacts cannot be avoided. All mitigation, restoration, and compensative prescriptions will include clearly articulated performance standards that are based on the best available science and that reflect the structural and functional objectives of projects. Refer to provincial BMPs when determining site specific mitigation measures. Describe all feasible mitigation measures and their anticipated effectiveness in maintaining the health, form and function of natural ecosystems and features by reducing or eliminating potential impacts from development. Outline the design and prescriptions to best protect ESAs and environmentally valuable resources and/or to compensate for permanent loss or degradation associated with (within or adjacent to) the proposed development. Recommended mitigation measures include:
- a. Manage erosion and sediment impacts during and after construction according to measures prescribed in the most current provincial BMPs, amendments thereto, or other standards or guidelines adopted or approved by the District of Summerland.
 - b. Control invasive plant species using site and species appropriate methods (e.g. hand pulling, digging, cutting, and mowing).
 - c. Schedule construction ONLY during recommended timing windows for species.
 - d. Design linear corridors such as roads, driveways, or trails to be as narrow as possible, create as little disturbance as possible and configure them to allow for wildlife crossings.
 - e. Wherever possible, use permeable surfaces or other means to minimize impact and maintain the characteristics of the non-disturbance areas.

⁶ If more than one buffer width is recommended based on BMPs for a particular sensitive area (e.g. wetland), the largest possible recommended width will be used for redesign and mitigation.

- f. Manage access to ‘non-disturbance areas’, especially for vehicles and livestock.
 - g. Where there are extenuating circumstances preventing the protection of important ESAs, the recommendations of Provincial and/or Federal governments, and/or staff, and/or council in the context of the EA report will be considered. Options may include development modifications, enhancement opportunities, or dedicating or restoring comparable habitat area elsewhere on the property.
 - h. As a final option, compensation for any environmental losses from development could be administered by offsetting measures at a 3:1 ratio on the “no net loss principle”. This could include rehabilitation, restoration and enhancement of habitat areas or features that have been subject in the past to debilitation and other negative impacts.
8. **Security deposits or bonding** may be required by the District in accordance with section 925 of the Local Government Act. If development conditions include mitigation, compensation, maintenance or monitoring plans, the applicant shall post a security deposit in an amount **determined by the QEP** and deemed acceptable by the local government. The security shall be sufficient to guarantee that all required mitigation measures will be completed, monitored and furthermore continue to function properly as prescribed.
9. **Monitoring Reports** may be required by the District, by a QEP, to monitor that the required measures of the permit have been implemented as designed. Monitoring will be conducted to avoid the following situations:
- a) condition in a permit respecting landscaping has not been satisfied;
 - b) an unsafe condition has resulted as a consequence of contravention of a condition in a permit; or
 - c) damage to the natural environment has resulted as a consequence of a contravention of a condition in a permit.

Identify who (e.g., agencies, departments, developers and/or personnel) will be responsible for monitoring potential impacts, and propose a monitoring schedule including who will perform the monitoring. Identify who is accountable for potential impacts that might occur, and who would be responsible for unintended but foreseeable impacts. In most cases the developer will be responsible for hiring a monitor. Recommend a monitoring plan for prevention, mitigation and compensation activities for the period before, during, and after construction, where appropriate. The monitoring plan will include, but is not limited to:

- The installation of temporary fencing to clearly delineate ‘no disturbance areas’ around ESAs and other areas designated for protection;
- Pre-construction meeting onsite between QEP and contractors to insure all site workers are aware of non-disturbance areas;
- Monitors or the District must be given the authorization to stop work if they believe that on-site conditions are in contravention of the conditions of the permit;
- Regular monitoring reports sent to the District and regulatory agencies involved and a final ‘substantial completion’ report at the end of the project.