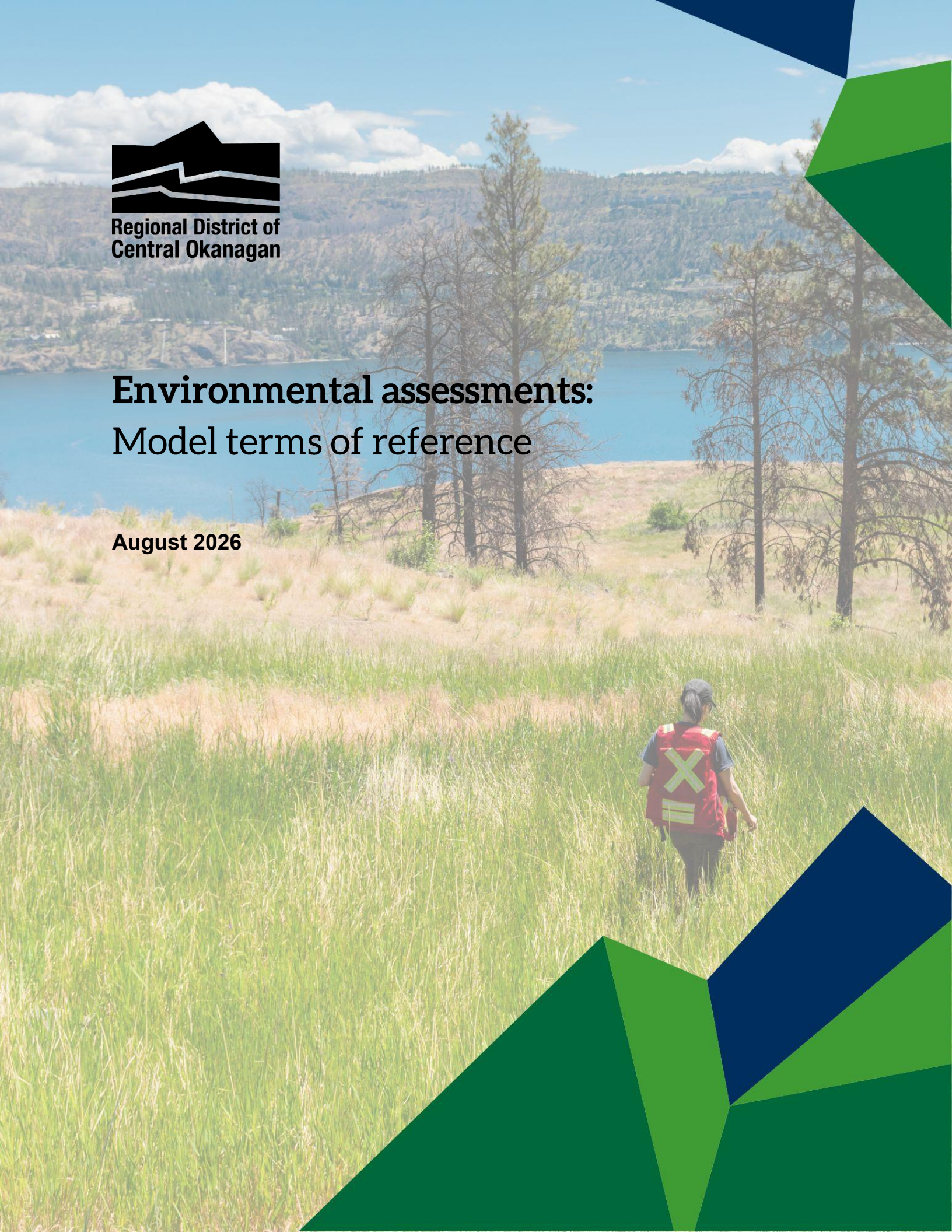




**Regional District of
Central Okanagan**

Environmental assessments: Model terms of reference

August 2026



Land acknowledgement

The RDCO acknowledges our presence on the traditional, ancestral and unceded $\text{t}\acute{\text{m}}\text{x}^{\text{w}}\acute{\text{u}}\text{l}\text{a}^{\text{?}}\text{x}^{\text{w}}$ (land) of the syilx / Okanagan people who have resided here since time immemorial. We recognize, honour and respect the syilx / Okanagan lands upon which we live, work and play.

Acknowledgements

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The report was prepared by Ecoscape Environmental Consultants.



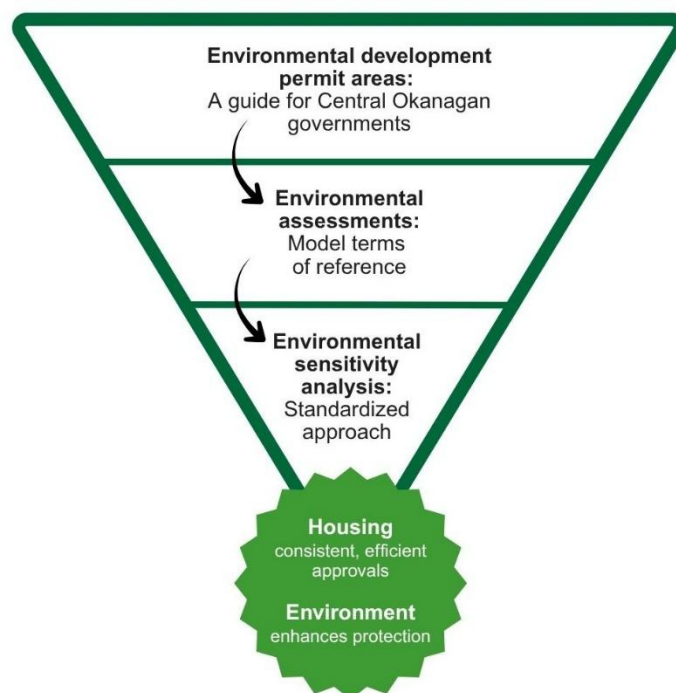
Contents

INTRODUCTION	2
WORKING WITH A QUALIFIED ENVIRONMENTAL PROFESSIONAL	3
THE ROLE OF AN ENVIRONMENTAL ASSESSMENT	4
DETAILED REPORT AND MAPPING REQUIREMENTS	4
EXECUTIVE SUMMARY	4
REGULATORY CONTEXT	5
ENVIRONMENTAL ASSESSMENT PROCESS	6
PHASE 1: ENVIRONMENTAL INVENTORY AND SENSITIVITY ANALYSIS.....	6
PHASE 2: IMPACT ASSESSMENT	7
PHASE 3: PROTECTION, MITIGATION AND COMPENSATION	8
PHASE 4: MONITORING, RESTORATION MAINTENANCE AND PERFORMANCE SECURITY	11
PERFORMANCE SECURITY CALCULATION.....	14
SUBMISSION PACKAGE REQUIREMENTS:	14
REFERENCES	18
APPENDIX A: ENVIRONMENTAL ASSESSMENT REPORT OUTLINE.....	19
APPENDIX B: ACCEPTABLE DATA COLLECTION METHODOLOGIES.....	21
APPENDIX C: WATERCOURSE DEFINITIONS	22

Introduction

The purpose of this document is to support Central Okanagan governments with a model Terms of Reference for Environmental Assessments. This document provides a standardized template that can be used to support a more efficient and coordinated approach to professional environmental assessment reports throughout the region. As a voluntary resource, each member government's authority to establish and update their own Terms of Reference, as appropriate within their context, is fully recognized. It is also recognized that the policy, legislation, bylaw or regulatory framework that triggers the preparation of an environmental assessment may vary by project, particularly where works may impact terrestrial areas versus waterbodies, or by jurisdiction based on specific permitting processes and the associated bylaws specific to a given jurisdiction. As such, this document offers recommended best practices with the intent of supporting greater consistency across jurisdictions in the setting of development permit application submission requirements for works proposed in environmentally sensitive areas.

This project was identified as a priority in the [Priority Projects Plan \(2024-2028\)](#), which was endorsed by the Regional Board in 2024. The need for a consistent regional approach was determined through a collaborative process with input from regional partners. In tandem, the RDCO has developed a set of regional best practice guides entitled *Environmental development permit areas: A guide for Central Okanagan governments* and companion *Environmental assessments: Standardized approach* to inform the preparation of professional environmental assessment reports. Together, these three guides comprise a regional environmental framework system of resource materials to support member governments within the Central Okanagan.



The project partners would also like to acknowledge our syilx / Okanagan First Nation partners who continue to steward the region as their traditional, ancestral and unceded territory. While this guide presents a contemporary scientific perspective, the importance of syilx / Okanagan knowledge and ongoing collaboration in regional environmental stewardship is also respectfully acknowledged. Further, the project partners look to existing efforts underway, such as the Foreshore Integrated Management Planning (FIMP) program led by Living Lakes Canada for leadership in integrating Indigenous Knowledge into environmental data and mapping efforts within the Okanagan.

Working with a Qualified Environmental Professional

A Qualified Environmental Professional (QEP) is required to oversee the environmental assessment process. The QEP should be engaged by the proponent early in the site planning process to identify environmental constraints and opportunities. A pre-application meeting with the applicant, QEP and approving authority planning staff is highly recommended prior to permit submission to clarify environmental assessment requirements.

The QEP, at minimum, will have knowledge and experience in:

- ▶ Assessing the unique ecosystems and wildlife of the Okanagan region.
- ▶ Standard development practices where the QEP must be prepared to work within a comprehensive design process, advising on site conditions that will direct the design of the development and coordinating with other project professionals such as geotechnical engineers to ensure factors such as slope stability and stormwater management are coordinated with environmentally sensitive areas to establish the appropriate development footprint, in addition to assessing construction practices, such as soil removal and deposit, that may negatively impact environmental or agriculturally sensitive areas, if not appropriately managed.
- ▶ Adapting requirements from multiple approval agencies to ensure the project design and construction process meet all legislative and regulatory requirements.
- ▶ Published Best Management Practices and/or have training accredited by organizations such as the Society for Ecological Restoration.

A QEP with the above outlined experience could include Registered Professional Biologists (RPBio), Registered Biology Technologists (RBTech) and Professional Agrologists (PAg). Additional training or specialization beyond the professional designations, such as a Certified Ecological Restoration Practitioner (CERP), is encouraged where site-specific factors require specialization in bioengineering or similar fields.

Environmental Assessment (EA) reports are to be signed and sealed by a QEP registered in British Columbia and signed off within the document or by a covering letter bound into the document. The original signed and sealed report must be submitted following the professional practice guidelines for signing/sealing of the QEP's governing association. The person and corporation who prepared the report must be identified and the person or corporation who

provided the funding or who requested the report – also known as the permit applicant – must be identified.

Other professionals or supporting technical staff may contribute to the content of an EA report. All personnel working on the assessment and their contributions must be acknowledged. Proof of experience, designations and/or training must be provided in the form of a one-page Biography or C.V. from each professional and technical staff contributing to the data collection, results and interpretations in the report.

The role of an Environmental Assessment

Environmental Assessment (EA) reports should:

- ▶ Systematically evaluate net environmental effects and consider connectivity beyond the site to avoid fragmenting larger ecosystems.
- ▶ Present recommendations that make every effort to avoid negative impacts on **very high and high value** environmentally sensitive areas and identify effective compensation, where impacts are expected, to achieve the no net loss goal.
- ▶ Use best available information, including syilx / Okanagan knowledge if available.
- ▶ Provide clear, concise documentation with reference to applicable regulations.

Detailed report and mapping requirements

See Appendix A: Environmental Assessment report outline for EA report outline.

Executive summary

An executive summary should be provided in the EA report that highlights the most important information. At minimum, the following must be included:

- ▶ Overview of proposed works.
- ▶ Confirmation of the project's conformity to relevant policies/regulations including confirmed approvals from any required permitting/licencing agencies.
- ▶ Any documented species-at-risk and/or critical habitat.
- ▶ A summary figure depicting the project Disturbance Footprint and Environmentally Sensitive Area (ESA)¹ polygons.

¹ For a detailed description of the ESA categories and their definition and purpose, please see the companion *Environmental sensitivity analysis: Standardized approach*

If necessary, due to unavoidable disturbance to ESA 1 or ESA 2 areas, the executive summary should also include a Habitat Balance table summarizing disturbance area by ESA category and resulting compensation and/or restoration areas. The table must coordinate with the figure to indicate areas of compensation/restoration.

Regulatory context

The EA must conform to all municipal bylaws and master plans, regional, provincial and federal legislation, regulations, applicable standards and best practices. The policy, legislation, bylaw or regulatory framework that triggered the preparation of the EA must be clearly described. This framework will determine the issues that need to be addressed in the EA. As such a pre-application meeting with the approving authority is critical to confirm assessment requirements before initiating the EA. Such a meeting should cover the development project description, relationship to adjacent properties and current and/or proposed zoning and Official Community Plan (OCP) objectives relevant to the site, parcel or study area.

The following examples help illustrate varying regulatory context which would need to be discussed in the EA:

- ▶ Developments requiring EAs should be performed generally in accordance with the *B.C. Environmental Assessment Act* and must also provide compensation strategy details, as per Phase 3 and 4 of the process identified in this document, to meet local government development permit requirements.
- ▶ A pre-application meeting with a municipal government may identify Agricultural Land Reserves (ALR) buffer requirements that would need to be coordinated with the development disturbance footprint.
- ▶ A geotechnical hazard assessment (if applicable) must be referenced by the QEP to ensure landslide safety risks are considered.

Where other applicable provincial and/or federal legislation (e.g., Water Sustainability Act, Riparian Areas Protection Regulation, Navigable Waters, Heritage Conservation Act, Wildlife Act, etc.) relevant to the proposed works is identified, the EA must list all application submissions, approvals, etc. and timelines for approvals must be clearly described. Senior government approval confirmation must be supplied prior to local government permitting authorizations unless an exception is made by the senior approving authority.

Any data collected or used to inform any part of the EA must be included. An in-text summary of the findings should be provided with raw data included as an appendix or upon request. Data may include wildlife surveys, danger tree assessments, hydrological measurements and others (see Appendix B: Acceptable data collection methodologies for a list of accepted data collection methodologies).

A description of the methods used, including any changes or alterations to standardized collection procedures, must be summarized within the report or listed in full as an appendix. Credible, peer-reviewed, or similar expert sources, must be used to inform the assessment.

Environmental Assessment process

The preparation of an EA typically contains the following phases:

- ▶ Phase 1: Environmental inventory and sensitivity analysis
- ▶ Phase 2: Impact assessment
- ▶ Phase 3: Protection, mitigation and compensation plan
- ▶ Phase 4: Monitoring, restoration maintenance and performance security

Phase 1: Environmental inventory and sensitivity analysis

The QEP is required to report on biological and geophysical conditions to establish the Phase 1 inventory baseline for the purposes of assessment in Phase 2. The goal of the inventory is to identify areas with distinctive ecological characteristics. Specifically, areas considered ecologically fragile or rare, areas providing critical ecological functions or services, habitats that support species at risk and/or areas relatively unmodified by human influences. A detailed methodology for Phase 1 is provided in companion *Environmental assessments: Standardized approach*. It outlines consistent procedures for evaluating ecosystem condition, wildlife habitat suitability and ecological connectivity. This standardized approach is recommended to ensure data collection procedures and environmental assessment methods are adequately reported, allowing reproducibility and the use of consistent scientific standards appropriate to the assessed landscape.

The level of effort, in terms of personnel and time spent on site evaluations, including the time of year and length of site evaluations, must be reported in the EA. Site conditions likely absent during the evaluation period need to be explicitly stated. Where possible, these conditions should be assessed by alternative methods (e.g., desktop analysis) or a plan for assessment during the permit review process must be provided to allow consideration prior to final approval. If development is planned within ESA-1 or ESA-2 areas and there is a high potential for species at risk, the site assessment must be delayed to a suitable timing window to document species presence and uses of on-site habitats consistent with Resources Information Standards Committee (RISC) standards.

Phase 4 of the EA process may not be needed if efforts are made to avoid impacts to ESA-1 and ESA-2 sites identified through the Phase 1 process, saving the proponent time and money. Avoiding impacts will also reduce the efforts needed to complete Phase 2, avoiding additional regulatory reviews and consultant time for restoration plan design costs. It will also avoid the significant multi-year maintenance process required to support restoration works. Restoration is a complex process often fraught with challenges outside the proponent's control (e.g., plant failure due to severe weather and wildlife damage). Hence, the most cost-effective approach is often avoidance of ecosystem impacts by avoiding disturbance of ESA 1 and ESA 2 sites identified in the Phase 1 process. It is recommended that the project applicant engage a QEP early to support identification of favourable development areas and the establishment of feasible project timelines.

Phase 2: Impact assessment

An impact assessment should include a detailed description of the effects of the proposed development on the landscape, considering all negative impacts to ecosystem function and lost ecosystem services. Both temporary (e.g. construction noise and movements that may disrupt wildlife) and permanent (e.g. any vegetation removal, even if the vegetation will be replaced with native species) disturbance must be assessed. The area of disturbance, also known as the disturbance footprint, will include construction disturbances and future use disturbances (e.g. trail creation) and will be shown on a surveyed site plan overlaid with the identified ESA polygons. In addition to illustrating the disturbance extent on a site plan, a data summary table must be included to provide the following:

- ▶ Environmentally Sensitive Areas (ESA-1 to -4) lost (m² and % of each category)
- ▶ Ecosystems lost, with respect to broad ecosystem categories from the Sensitive Ecosystem Inventory (SEI) (% and m²)
- ▶ Natural and/or functional habitat loss that supports life requisites such as breeding, rearing, feeding, cover, etc. for species at risk. If so, which species and life requisites are impacted?
- ▶ Cumulative loss of broad SEI ecosystems. How does the loss of these ecosystems correspond to the remaining ecosystem types at the municipal and regional scales, as identified in the updated SEI (Pedersen et al. 2024)? Have ecosystem retention targets been established at the municipal and/or regional scale? If so, is the development in line with the targets?
- ▶ Is there a potential for direct harm to wildlife? At-risk species? Can it be mitigated?
- ▶ Canopy cover loss (% and m²) - should be considered under permanent disturbance assessment due to the low survivorship of trees.
- ▶ Connectivity loss (i.e., does this development contribute to the degradation of remaining habitat corridors?).
- ▶ Off-site impacts - effects from construction activities such as soil removal must be assessed and management recommendations provided to avoid negative impacts elsewhere.

The impact assessment must consider and integrate findings and recommendations from other studies completed or underway that relate to the site and follow any other legislative requirements. Such requirements should be identified in the report to provide clarity on the complete scope of impacts and any restoration requirements. For example, provincial requirements to restore habitat in waterways under the Water Sustainability Act should be identified and those restoration plans provided along with the upland restoration plan.

The QEP must identify the rationale for any disturbance deemed temporary if they propose a different ratio of compensation or mitigation for the area impacted by temporary disturbance. For example, construction noise may be deemed temporary and mitigation in the form of avoiding

sensitive nesting periods may be proposed with no additional compensation. However, tree removals and replanting in the same area would not be considered temporary and a compensation ratio must be calculated with consideration of the loss of the mature tree's high value ecosystem services. The QEP must consider any bylaws or legislation directing the calculation of impact compensation, such as tree protection bylaws that require compensation tree planting based on the tree size or other appraisal/assessment process.

Phase 3: Protection, mitigation and compensation

Protection of sensitive areas (avoidance)

Local government environmental regulations must support the enforcement of legislation from senior governments. As such, the mitigation hierarchy of avoid, mitigate, restore should be followed in the adjudication of any development proposal. Developments should be designed to use existing ESA-3 and ESA-4 areas to avoid negative impacts from development within more sensitive ESA-1 and ESA-2 polygons. The EA report must describe efforts taken to avoid impacts to ESA-1 and ESA-2 areas, including, but not limited to, locating building and infrastructure development footprints and zones of disturbance outside of ESA-1 and ESA-2 areas. The QEP must provide recommendations for development options that illustrate workable relationships between key sensitive features of the site and the proposed development of the site (e.g. zoning, land uses, infrastructure/utility components, buffers, protection and rehabilitation zones, etc.). Clearly present these options on site plans by mapping the comprehensive disturbance footprint along with ESA polygons.

A rationale may be provided for development works being proposed outside ESA-3 or -4 areas based on site access or other constraints, but consideration of all options must be illustrated. Relevant regulations may require the modification of development plans to meet statutory environmental protections.

Where a proposal limits development to non-sensitive areas, the authorizing jurisdiction may allow a simplified environmental assessment process and minor scale construction monitoring plan. Moreover, post-construction monitoring/restoration will not be necessary, and these reduced requirements significantly reduce costs to the applicant.

Mitigation

Mitigation measures and recommendations to reduce harm to the environment, as required by legislation and regulation, must be clearly outlined in the EA report. Based on the impact assessment results, the QEP will use their expertise to tailor mitigation measures to address site-specific concerns (e.g., disturbance boundaries, erosion and sediment control, spill response, etc.) or incidents with a reasonable likelihood of occurring (e.g., concrete spill response, etc.). Temporary disturbance may be best addressed by mitigation measures such as soil removal management recommendations to ensure soil is placed in appropriate temporary locations for on-site reuse or removed to an appropriate off-site location that meets regulatory requirements.

Climate change considerations (carbon sequestration of retained ecosystems and carbon flux due to proposed development) can be addressed in the EA. The approving authority may consider specific mitigation measures and/or recommendations to reduce the development's contributions to climate change identified by the QEP. However, these measures must be presented separately from any restoration compensation necessary to mitigate impacts to habitat.

Compensation

Compensation must be based on the “No Net Loss” principle – a principle that strives to balance unavoidable habitat, environment and ecological service losses with replacement of those items on a project-by-project basis so that further reductions may be prevented. Every effort must be made to avoid, minimize and restore the negative impacts of development, so that the damages resulting from human activities are balanced by equivalent or greater gains in habitat and biodiversity.

In general, compensation is expected to be based on land area. Compensation works must be prioritized onsite, and it is expected that compensation areas will only be identified on ESA-3 or -4 lands to compensate for the loss of higher value areas on the site. As this will reduce the developable area, it is beneficial to first assess opportunities to revise the project proposal to avoid impacts on ESA-1 or -2 areas. The local authorizing jurisdiction may consider restoration recommendations in riparian areas considered ESA-1 only due to their proximity to a watercourse. This allowance may only occur if the riparian vegetation community is disturbed or degraded to a level equivalent to ESA-3 or -4. Utility corridors or similar rights-of-way are often not suitable restoration areas due to the limitations on trees and mowing requirements. At best these areas may offer suitable buffer space around higher value ecosystem features being protected or restoration areas being planted.

A compensation habitat balance sheet must be supported by the Phase 2: Impact assessment, including the amount (m²) of encroachment in sensitive areas and the proposed restoration areas (m²) based on the target habitat types to be gained through habitat construction, restoration and/or enhancement. Indicate whether the replacement habitat is the same type as the lost habitat to encourage ‘like for like’ compensation. This compensation assessment must include a site plan illustrating restoration areas and losses. The areas of compensation should be formally surveyed to allow for registration of a conservation covenant to protect the value invested into the area through restoration.

Compensation areas will be set based on a ratio that meets minimum requirements set by the approval authority but also be determined based on the following factors that may limit achievement of the “no net loss” goal:

- ▶ Time lags in achieving habitat replacement.
- ▶ Risks associated with the success of compensation measures.
- ▶ Relative significance of the impacted habitat (e.g. does it support threatened, endangered and/or economically important species).

- ▶ Whether compensation is occurring on-site or off-site.
- ▶ Whether the replacement habitat is of the same type as the lost habitat.
- ▶ Compensation proposed is fragmented (e.g. narrow sections likely to be encroached on by human activity).
- ▶ Whether compensation will require human intervention (e.g. ongoing maintenance to clear turtle crossing culverts or support bat boxes). If maintenance is required, the value of the compensation should be downgraded, and a long-term maintenance plan must be provided. The landowner will be required to maintain any such habitat replacement features.

Compensation shall be required at a 2:1 ratio, at minimum, for ESA-2 areas, although the actual ratio based on the above factors may direct the QEP to set a higher ratio. For example, the unique features of the site may indicate a higher ratio if there is an increased risk to successful restoration and reduced probability of survivorship above 80% (e.g. planting on dry south facing slopes, planting in areas of high rodent populations where new plant loss is expected, severe invasive species infestations, or planting in locations not frequently monitored to ensure temporary irrigation is functioning). A detailed restoration maintenance plan with high frequency irrigation and weed management, with a correspondingly significant performance security, may also be considered in determining the ratio if the efforts are expected to significantly reduce the risk of vegetation failure. Demonstration of a net gain in productive capacity of habitat may also be considered when proposing adjustments to the compensation ratio.

When it is deemed necessary to allow impacts to ESA-1, for public infrastructure of benefit to the community, such as a bridge, or where a site has 100% coverage by ESA-1 or -2 lands and impacts are unavoidable, those impacts must be minimized to the greatest degree possible and mitigation measures employed. An allowance of up to 20% disturbance may be considered on sites with 100% ESA-1 or -2 coverage. For an ESA-1 area, at minimum a 3:1 compensation ratio will be required unless the assessment indicates a higher ratio is necessary to achieve no net loss of the target habitat type and area as per the same factors noted above for ESA-2s.

Where compensation cannot feasibly occur on-site, a financial contribution may be considered to allow equivalent compensation works off-site. Any contribution may only be utilized by the authorizing jurisdiction to support like-for-like restoration efforts and funds may be used to support land acquisition or temporary maintenance in addition to restoration installations. The compensation contribution must be of equivalent financial value to the cost of undertaking installation and maintaining a restoration site of the appropriate size based on the compensation ratio (for a minimum of five years or until 80% survivorship of the plant material is achieved). Off-site compensation should occur within the same landscape or ecological unit as the area being impacted. Moreover, like-for-like compensation is preferred over replacing lost habitat with a different type of habitat. However, replacing with unlike habitat may be preferable in cases when the replacement habitat will have higher productivity and/or will address a limiting factor within the natural system affected.

Trees are particularly challenging to replace in the Central Okanagan and as such many local governments utilize bylaws to specifically regulate tree removals. Those bylaws should be referenced by the QEP where tree removals are required so to ensure replacement tree requirements are followed. On smaller sites, a compensation ratio may be replaced by a minimum number of required replacement trees as per local government bylaw. Where a larger areal impact is identified and it is impractical to identify individual tree losses, the following calculation could be employed by the QEP to supplement the compensation ratio assessment and aid in determining the number of replacement trees needed to address the amount of tree canopy lost.

- $\text{Area being removed (m}^2\text{)} / 10 \text{ m}^2 = \text{number of compensation trees required.}$

For example, if a total of 250 m² is being removed, a total of 25 trees would be required to be planted (250 m²/10 m²). However, these restoration prescriptions must be coordinated with wildfire risk mitigation assessments when required. QEP's must work with Registered Professional Foresters to determine the appropriate trees per hectare calculation. Wildfire mitigation work should be considered beneficial to the ecosystem and an opportunity to restore historic ecosystem conditions (prior to intensive wildfire suppression). When coordinated with wildfire mitigation work, the local authorizing jurisdiction should consider invasive management, cultural burning and grassland vegetation planting as high value compensation work.

Covenants

Where compensation is necessary, or when ESA-1 or -2 areas are identified for protection, a covenant must be registered over those areas. A covenant is necessary to protect the investment in restoration undertaken and prevent future development encroachment into sensitive areas. The covenant must be registered on title by the applicant but should be based on the requirements of the authorizing jurisdiction to include allowances for future wildfire mitigation and maintenance of vegetation to protect ecosystem values.

Phase 4: Monitoring, restoration maintenance and performance security

Projects may or may not require restoration works. Where no loss of habitat is identified and compensation is not required, a project may only require QEP monitoring during construction to mitigate impacts. The QEP must provide mitigation recommendations that may include on-site oversight of the installation of temporary exclusion fencing, silt fencing to protect water quality, or guidance on soil removal (while following off-site deposit regulations), for example. The QEP must also set an appropriate monitoring schedule in coordination with construction contractors to ensure the QEP is present for any high impact activities, particularly any activities that may accidentally impact retained ecosystem features due to proximity or type of machinery involved. These recommendations must be presented in the form of a monitoring plan.

Where compensation is required, the monitoring plan must also include monitoring post-construction to identify interventions, when necessary, to promote restoration success. Monitoring is required during planting, to guide contractors implementing the restoration planting plan developed by the QEP, as well as during the plant establishment period to ensure invasive

weeds are managed and new plants are watered in addition to any other maintenance activities, like the installation of rodent guards, recommended by the QEP to reduce the risk of plant loss. In all cases, where a QEP performing monitoring observes that active construction activities (or past activities) have been completed not in compliance with an associated and issued Development Permit, the QEP is obligated to immediately report these activities to the respective local government authority for potential enforcement action.

Performance securities are meant to encourage the construction, establishment maintenance and monitoring to be completed according to regulatory requirements. Security amounts are estimated based on the monitoring schedule and, when required based on the Phase 2: Impact assessment, a compensation restoration and maintenance plan. The security amount must have an equivalent financial value to the cost of undertaking installation (i.e. planting, site grading, etc.) and maintaining a restoration site of the appropriate size based on the compensation ratio. A performance security is required as a legislated financial tool used to guarantee that in the event of a developer or contractor default, funds are available to construct and maintain prescribed environmental mitigation and compensative works during the establishment period by the permitting jurisdiction.

Duration

A minimum establishment maintenance period for restoration sites will be set by the local jurisdiction, usually three to five years. Federal regulators have begun setting 10-year maintenance periods. The QEP shall provide recommendations for the duration of maintenance/monitoring obligations within this context based on the nature of the proposed mitigation and/or compensation works. A project with minimal impact may only require a short-term construction monitoring plan. The duration should be based on specific maintenance or monitoring requirements and the likelihood and expense of correcting failures with respect to the design and expected ecological function. Within the restoration maintenance plan, the maintenance activities should be clearly described and a schedule outlined that includes the cost of all activities including:

- ▶ Monitoring visits and observation tracking (with photo points) to support assessment of survivorship.
- ▶ Manual watering or temporary irrigation systems (identify weekly/monthly watering schedule).
- ▶ Rodent protection installation, monitoring of protection and potential replacement due to damage.
- ▶ Invasive weed management, which may require multiple sessions depending on the best practices for managing specific invasive species.
- ▶ Adjustment for inflation if the expected maintenance period will exceed five years.

The performance security shall remain held by the local government until the QEP's report of substantial performance is accepted following the three- to five-year establishment period. Larger or more extensive restoration projects may require longer bonding durations at the

discretion of the municipality. The recommended procedure for accepting, holding and returning securities is as follows:

- ▶ Local government approves restoration plan and accepts financial security.
- ▶ Construction works commence with concurrent environmental monitoring.
- ▶ QEP submits periodic monitoring reports directly to the applicable jurisdiction(s) at a minimum frequency of once per month during construction and at higher frequency when high risk activities are being undertaken. For sites not requiring restoration, the QEP may submit their final monitoring report following demobilization of all construction activities.
- ▶ Environmental mitigation and/or restoration works are undertaken.
- ▶ QEP submits installation report to confirm restoration works were installed according to requirements and to confirm date of maintenance establishment period initiation to start the clock on the three- to five-year establishment period.
- ▶ QEP submits ongoing monitoring reports (one per growing season at minimum) until establishment period (three to five years) is complete.
- ▶ The QEP may request partial security return on behalf of the applicant based on the level of establishment after year two of annual monitoring. This request must provide rationale for return, current survivorship and the percentage of the works complete. Photo points linked to specific restoration polygons must be included in the request. Deficiencies will not be accepted.
- ▶ Following the identified minimum years of establishment monitoring, QEP submits final report to confirm that the restoration and maintenance plan bonded for has been completed according to the approved plan and permit requirements for the works have been satisfied, including:
 - » Summary of the compensation or mitigation works completed.
 - » Photos of the restoration works that are geo-referenced (or otherwise identified from a consistent reference photo points) so that the photo sites can be identified during inspection visits.
 - » Identifies the survivorship outcomes observed (minimum 80% of works proposed).
- ▶ Local government completes on-site inspection to confirm completion consistent with development permit.
- ▶ If deficiencies are identified, a revised restoration plan may be required from a QEP with re-start of maintenance period. A revised map will also be required to identify ESA polygons if the boundaries have changed.
- ▶ If no deficiencies are found the performance security may be returned.

Deficiencies are determined by comparison of the site with the approved restoration plan. The following minimum threshold will apply, although the approving authority may consider an alternative definition of successful restoration provided by a QEP:

- ▶ Minimum survivorship of new plantings of 80%.
- ▶ Maximum invasive weed coverage of 25% for grasslands and 15% for all other ecosystems. Alternatively, weed coverage should not exceed existing conditions pre-development.
- ▶ Habitat use observed.

If deficiencies are identified the local government will withhold a portion of the security deposit reflective of the cost to rectify the deficiencies, until the site is brought into compliance with the approved compensation restoration plan.

Performance security calculation

Securities are often regulated by local governments via development application procedures bylaws and may be best aligned with existing financial procedures for permitting. It is recommended that a performance security be at least 125% of the estimated cost of the prescribed works for monitoring the development process and/or any required compensation/mitigation activities with their associated restoration maintenance plan, including:

- ▶ QEP monitoring costs during and post-construction, including the three- to five-year plant establishment period. Post construction, QEPs should monitor the site at minimum annually and recommends replacement plants, as necessary.
- ▶ Invasive species management during and post-construction, including the three- to five-year plant establishment period.
- ▶ Erosion and sediment control activities and monitoring.
- ▶ Compensation plantings (if deemed necessary) – materials and labour.
- ▶ Maintenance costs during the three- to five-year plant establishment period (e.g. watering/irrigation, supplemental planting, etc.).

Submission package requirements:

EAs are the foundation of a permit application to undertake works in an environmentally sensitive area. However, the EA is supported by documentation from many sources. It is recommended that all items be submitted for the permit application as a single complete package file (as a reduced PDF) and as individual electronic data files conforming to the submission standards (e.g., GIS open data standards, corporate data or drawing submission policy) of the authorizing agency. Package requirements include:

- ▶ Legal site description, including plan number, lot number and district lot, any existing covenants, rights-of-way, easements or similar legal limitations to the development

and/or restoration. Universal Transverse Mercator (UTM) coordinates of the site location where specific works will occur may be required for large parcels. Digital copies of mapped information must be provided in a format compatible with the ESRI platform (shapefiles) in NAD83 UTM Zone 11. Any measurements to establish elevations and mapped polygon boundaries must be completed by the QEP in coordination with a registered surveyor to ensure mapping accuracy.

- ▶ A location map at an appropriate scale (1:20,000) indicating the regional setting. This information should be overlaid on the most current cadastral map. Maps should be presented in full-size, colour format and at least one copy must be to scale. Any additional copies at a reduced size must be clearly marked “not to scale”.
- ▶ A site map at an appropriate scale (between 1:200 and 1:5,000) indicating the layout of project components and activities, inclusive of the complete disturbance footprint. This information should be overlaid on the most current cadastral map outlining all surrounding surveyed property boundaries. Map legends should show clear descriptions of all symbols used and all dimensions/measurements shall be listed in metric. The mapped disturbance footprint will be referenced by the approving authority to identify the location of required temporary fencing to prevent accidental disturbance and must be determined based on the following:
 - » Construction mobilization areas and material storage.
 - » Grading extent.
 - » Structure footprints, including all accessory structures, permanent fences and retaining walls. Structural elements must be sized to allow a buffer space around the structures, preventing encroachment into environmentally sensitive areas, to accommodate workers, equipment and materials. At minimum a 0.5m buffer is required from the edge of any structure within the disturbance footprint. If machine access is required, then larger buffer areas may be necessary. If an area is disturbed during construction, then it must be included in the development footprint. Additionally silt fencing and erosion control measures should also occur within the disturbance footprint.
 - » Any areas impacted by activities requiring land disturbance such as buried utilities on-site septic tanks and any connections to off-site utilities.
- ▶ Site profiles and cross-sections in sufficient quantity to demonstrate terrain conditions prior to disturbance and intended conditions post-development. Geotechnical assessments must be completed according to the approval authority’s requirements in hazardous condition development permit areas and coordinated with this environmental assessment.
- ▶ Site plans/sketches/colour photographs indicating project location must include site features and activities in relation to easily identifiable landmarks such as those found on accompanying maps. Photo points must be georeferenced or clearly identified via

descriptions with measurements from permanent landmarks on site. Photo points must be planned to support future monitoring of key site features.

- ▶ A discussion summarizing the Phase 1: Methodology biophysical inventory results and commentary on key sensitivities like connectivity to other critical habitat, including a summary table with each ecosystem polygon and description.
- ▶ A summary table of ESAs including Relative Ecosystem Value (REV), Quality/Condition Value (CDV), Wildlife Rating (WLR) and the Conservation Value (CSRV) by polygon.
- ▶ Based on the completion of Phase 1, the submission should include figures that identify:
 - » The developable area and limits of disturbance footprint.
 - » Proximity to designated environmentally sensitive areas such as those previously identified in municipal mapping documents (Official Community Plans or otherwise) overlaid with the project disturbance footprint.
 - » After the ESA determination has been completed, the QEP will provide an analysis of the developable area, establishing the maximum disturbance footprint, which ideally is the sum of ESA-3 and ESA-4 areas within the site.
 - » Other site considerations, such as geotechnical limitations, ALR buffers, existing infrastructure or site servicing constraints, should be discussed as well to provide rationale for the most reasonable developable area.
 - » The mapping analysis, based on the Phase 1: Methodology, must support the delineation of ESAs to be shown on a standalone map that includes the disturbance footprint polygon. The disturbance footprint and ESA polygons map should be provided in the executive summary of the EA.
- ▶ The Phase 2: Impact Assessment should be summarized in a tabular format and, where appropriate, area (measured in metric) and percentage of area impacted must be listed. A corresponding figure illustrating the disturbance footprint and impact areas should be provided where loss of ESA-1 or-2 area is proposed.
 - » Evidence of the necessity of any proposed encroachment into ESA-2 must be provided, including a map indicating the necessary compensation restoration area on site within ESA-3 or -4 polygons, to mitigate the impacts of ESA-2 encroachment. ESA-1 encroachment is not supported on private property unless necessary for public utilities/infrastructure that will become the responsibility of the local government to meet the needs of the wider community.
 - » Based on the outcome of the Phase 2-4, a habitat balance sheet may be required in the format of a table that compares areas of impact to areas of compensation. This table must be provided along with a table summarizing performance security costs.

- ▶ A monitoring plan must be provided to support QEP oversight during construction of the proposed development. When impacts are identified that require compensation, the monitoring plan must include a multi-year schedule during the planting and plant establishment period. This plan is recommended to be formatted as a table to clearly identify the schedule and support the approving authority in establishing the performance security return timeline.
- ▶ Performance security calculation table indicating itemized or unit costs where appropriate for monitoring, installation and maintenance, with labour costs.

All images and data must be appropriately referenced with the date when this information was accessed or published to certify that the most up-to-date information available was used in completing the relevant assessments.

Maps should include environmentally relevant data including Terrestrial Ecosystem Mapping (TEM) from the recently updated SEI (Pederson et al., 2024) and previously or newly identified habitat and/or wildlife features. Environmentally relevant data includes aquatic and terrestrial habitats, steep slopes, previously and/or newly identified wildlife corridors and watercourses (especially small wetlands which may not be regionally mapped). See Appendix C: Watercourse definitions for further information on watercourse definitions.

References

- Pedersen, S., D. Austin, K. Hawes and M. A. Olson-Russello. 2024. 2021 Update of the Central Okanagan Sensitive Ecosystem Inventory (SEI): Change Summary and Technical Report. Prepared for the Regional District of Central Okanagan. Prepared by Ecoscape Environmental Consultants Ltd. File No. 22-4475.
- Ryan, M., D. Lloyd and K. Iverson. 2022. A Field Guide to Ecosystem Classification and Identification for the Southern Thompson-Okanagan. Land Manag. Handb.76.

Appendix A: Environmental Assessment report outline

Please use this as a guide and incorporate applicable sections into your submission.

1. Executive summary

- Overview of proposed works
- Confirmation of the project's conformity to relevant policies/regulations including confirmed approvals from any required permitting/licencing agencies
- Any documented species-at-risk and/or critical habitat
- A summary figure depicting the project Disturbance Footprint and Environmentally Sensitive Area (ESA) polygons²
- Habitat balance table

2. Introduction

- Scope of work
- Proposed development
- Study area

3. Background information

- Regulatory overview
- Information sources
- Ecosystem mapping methods

4. Environmental assessment

- Ecosystem communities
- Ecosystem mapping results
- Conservation ranking
- Vegetation
- Wildlife and habitat
- Species and ecosystems at risk
- Environmentally sensitive areas

5. Impact assessment

- Environmental effects
- Impact summary – Compensation habitat balance sheet (“No Net Loss Principle”)
- Mitigation strategy

6. Environmental management plan

² For a detailed description of the ESA categories and their definition and purpose, please see the companion *Environmental sensitivity analysis: Standardized approach*

- 6.1. Mitigation measures
 - Wildlife management
 - Vegetation management
- 6.2. Environmental monitoring
- 6.3. Timing windows and buffers
- 6.4. Site preparation: site access, mobilization and laydown areas
- 6.5. Water quality monitoring – will a bypass be required?
- 6.6. Fish salvage and relocation (if required)
- 6.7. Erosion and sediment control plan
- 6.8. Vegetation and wildlife
 - Species at risk and habitat management
 - Invasive plant management
 - Site restoration
- 6.9. Concrete management
- 6.10. Equipment maintenance and fueling
- 6.11. Groundwater management
- 6.12. Soil management
 - Contaminated soils
- 6.13. Air quality management
 - Noise and vibration
- 6.14. Waste management plan
- 6.15. Emergency spill response
- 7. Restoration and Monitoring Plan**
 - Restoration plan
 - Performance security, including 125% contingency
- 8. References**

Appendix B: Acceptable data collection methodologies

- ▶ Canadian Aquatic Biomonitoring Network (CABIN) Methodology
- ▶ Resources Information Standards Committee (RISC) standards and background documents for natural and cultural resources inventories, including collection, storage, analysis, interpretation and reporting of inventory data. Inventory Standards - Province of British Columbia (gov.bc.ca)
- ▶ Riparian Area Protection Regulation Assessment Methods
- ▶ The Wildlife / Dangerous Tree Assessor's Course Workbook: Parks and Recreation Module
- ▶ Tree Risk Assessment Qualification (TRAQ) for Certified Arborists
- ▶ UBCO Wetland Delineation and Assessment Course

Appendix C: Watercourse definitions

The watercourse definitions below are provided for ease of reference, with the important caveat that watercourse identification should be confirmed by a QEP. Multiple legislative definitions may apply depending on the specific circumstances and regulatory context, which can be interpreted by the QEP.

Riparian Areas Protection Regulation definitions

"stream" means

- a) a watercourse or body of water, whether or not usually containing water, and
- b) any of the following that is connected by surface flow to a watercourse or body of water referred to in paragraph (a):
 - i. a ditch, whether or not usually containing water
 - ii. a spring, whether or not usually containing water
 - iii. a wetland

"stream boundary", in relation to a stream, means whichever of the following is farther from the centre of the stream:

- a) the visible high water mark of a stream where the presence and action of the water are so common and usual, and so long continued in all ordinary years, as to mark on the soil of the bed of the stream a character distinct from that of its banks, in vegetation, as well as in the nature of the soil itself
- b) the boundary of the active floodplain, if any, of the stream

"ravine" means a narrow, steep-sided valley that is typically eroded by running water and has a slope grade greater than 3:1

"top of a ravine bank" means the first significant break in a ravine slope where:

- a) the grade beyond the break is less than 3:1 for a minimum distance of 15 m measured perpendicularly from the break, and
- b) the break does not include a bench within the ravine that could be developed.

"wetland" means land that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal conditions does support, plant species that are typical of inundated or saturated soil conditions, including swamps, marshes, bogs, fens, estuaries and similar areas that are not part of the active floodplain of a stream.

Water Sustainability Act definitions

"stream" means (a) a natural watercourse, including a natural glacier course, or a natural body of water, whether or not the stream channel of the stream has been modified, or (b) a natural source of water supply, including, without limitation, a lake, pond, river, creek, spring, ravine,

gulch, wetland or glacier, whether or not usually containing water, including ice, but does not include an aquifer.

“stream channel”, in relation to a stream, means the bed of the stream and the banks of the stream, both above and below the natural boundary and whether or not the channel has been modified, and includes side channels of the stream.

Land Act definitions

“Natural boundary” means the visible high water mark of any lake, river, stream or other body of water where the presence and action of the water are so common and usual, and so long continued in all ordinary years, as to mark on the soil of the bed of the body of water a character distinct from that of its banks, in vegetation, as well as in the nature of the soil itself.

“High water mark” means the visible high water mark of a stream where the presence and action of the water are so common and usual, and so long continued in all ordinary years, as to mark on the soil of the bed of the stream a character distinct from that of its banks, in vegetation, as well as in the nature of the soil itself, and includes the active floodplain.