



ENVIRONMENTAL ASSESSMENT REPORT

FOR
445 GRAFTON ST
ESQUIMALT BC, V9A 6S4

PREPARED FOR:
MAC RENO-DESIGN-BUILD
5285 WEST SAANICH RD
VICTORIA, BC, V9E 2E8

PREPARED BY:
CORVIDAE ENVIRONMENTAL CONSULTING INC.
PROJECT #2026-024
APRIL 2026



EXECUTIVE SUMMARY

This Environmental Assessment report was prepared for the proposed single-family residential development at 445 Grafton St. to address the Township of Esquimalt's Natural Environment Development Permit Area (DPA) No. 1. The assessment encompasses the entire property and includes identification of environmental features, evaluation of potential impacts from development, and recommendations for environmental protection measures that ensure compliance with DPA No. 1.

Methods included a desktop review and field survey, with focus on documentation of natural features and current conditions on the property, and potential environmental impacts pertaining to construction of a single-family residence and landscape installations.

Potential environmental effects of the development include terrain and soil disturbance, vegetation loss and invasive species spread, as well as impacts to wildlife and wildlife habitat, and aquatic and riparian areas. Environmental mitigation strategies have been recommended to reduce or avoid these effects and include retention of mature trees within the Property where feasible, avoidance of sensitive timing windows, invasive species management, wildlife friendly landscape designs (including habitat enhancement via bird nest and bat boxes), and implementation of erosion and sediment control measures.

Given the current land use, urban setting, and absence of at-risk species or high-value habitats, the proposed construction at 445 Grafton St., is expected to have minimal environmental impact. Proposed residence and landscape designs will preserve mature conifers that provide valuable raptor nesting potential, wildlife refuge, and habitat connectivity to adjacent areas. Implementation of the recommended mitigation measures will ensure compliance with regulatory frameworks and promote environmental protection during and after development.



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LIST OF ACRONYMS

BC	British Columbia
CDC	Conservation Data Centre
CDFmm	Coastal Douglas-fir moist maritime
CRD	Capitol Regional District
EA	Environmental Assessment
DPA	Development Permit Area
PNB	Present Natural Boundary
QEP	Qualified Environmental Professional
ToE	Township of Esquimalt
OCP	Official Community Plan



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CAVEAT

This Environmental Assessment (EA) report has been prepared with the best information available at the time of writing, including the Township of Esquimalt (ToE) Official Community Plan (OCP), public mapping databases, communications with the client, a site visit, review of site plans and design drawings and other documentation relevant to the project. This EA report has been developed to assist the project in remaining in compliance with relevant environmental regulations, acts and laws pertaining to the project and to identify and mitigate the expected environmental impacts of the project.

This report and assessment were prepared by a qualified environmental professional. All relevant technical manuals and guidelines were adhered to, and the findings and recommendations are grounded in current knowledge, supplemented by professional judgment where data gaps exist. The Environmental Assessment has been conducted in alignment with Corvidae's professional scope of practice and in accordance with the code of ethics established by the College of Applied Biology.



1 INTRODUCTION

Corvidae Environmental Consulting Inc. (Corvidae) was retained to provide this Environmental Assessment (EA) report for the proposed residential development at 445 Grafton Street in Esquimalt, BC (“the Property”) (PID: 001-105-248; Lot A, Esquimalt Plan VIP32070 Subsidy Lot 30). This EA report addresses the Natural Environment Development Permit Area (DPA) No. 1 within the Property, as per the Township of Esquimalt (ToE) Official Community Plan (OCP). The Property is 0.21 ha in area and is currently zoned as Single Family Waterfront Residential (RS-3) within the ToE of the Capital Regional District (CRD). The landowner is proposing to replace the existing single-family residence and landscaping on the Property (Appendix A).

The Property is bound by a common property access right-of-way to the north, an RS-3 residential lot to the east, Grafton St. right-of-way to the west, and Denniston Municipal Park to the south. A portion of the southeast property boundary is waterfront bound by the Present Natural Boundary (PNB) of the Juan de Fuca Strait. Property boundaries are shown in Figure 1, designated by the red polygon.

This document addresses the requirements in Section 18.1 of ToE Bylaw No. 2922 and provides an assessment of the environmental features of the Property, potential impacts of the proposed development, recommendations for the protection of environmentally sensitive features, and methods to minimize impacts of the proposed development.





Property Boundary and Location		N  1:1,700
Figure #1		
Mac Reno Design Build 445 Grafton St, Esquimalt BC, V9A 6S4		
Legend		
 Property Boundary		
Imagery Source: [CRD 2023 Imagery]		
UTM Zone 10U, NAD 83		
020406080m 		
CORVIDAE ENVIRONMENTAL CONSULTING INC.		
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2 REGULATORY CONTEXT

This EA is designed to comply with the provisions set out in ToE OCP for development permit areas and for compliance with the provisions for environmental protection contained in the following relevant legislation:

2.1 MUNICIPAL

- Township of Esquimalt OCP, Bylaw No, 2922 (ToE 2025).

DPA 1 – Natural Environment

Development Permit Area No. 1 is designated for the purpose of establishing objectives for: Section 488 (1)(a) – protection of the natural environment, its ecosystems and biological diversity

18.5 Guidelines

The expertise of qualified environmental professionals (retained by applicants) is strongly encouraged and may be required in certain circumstances.

18.5.1 Lands Free of Development

Lands to remain free of development, with conditions:

- 1. Lands within 7.5 m of the high watermark of the Gorge Waterway shall be retained in as natural a state as possible. Where the land has been previously altered, the area shall be restored with native trees and plants.*
- 2. New buildings/ structures shall not be located within 20 m of the high watermark of the Gorge Waterway.*
- 3. New buildings/ structures shall not be located within 10 m the high watermark of the Strait of Juan de Fuca.*
- 4. Replacement of, expansion of, densification and intensification of the use of existing buildings within 20 m of the high watermark of the Gorge Waterway is discouraged; detached accessory dwelling units are strongly discouraged in this location.*
- 5. Replacement of, expansion of, densification and intensification of the use of existing buildings within 10 m of the high watermark of the Strait of Juan de Fuca is discouraged and detached accessory dwelling units are strongly discouraged in this location.*

18.5.3 Biodiversity

Landscaping features that will protect, restore, and enhance biodiversity. Where feasible:

- 1. Landscaping should include native plant and tree species, non-invasive species, and drought tolerant species. Where feasible, at least 30% of plants should be native plants.*
- 2. Choose trees and plants for site conditions; consider shade, sunlight, heat, wind-exposure, sea spray tolerance, and year-round moisture requirements in their placement.*
- 3. Consider the habitat and food needs of birds, pollinators, and humans in tree and plant species selection and placement; native plantings and food gardens compliment each other.*
- 4. Avoid monoculture plantings, especially expanses of turf grass outside of playing field sites.*



5. *Snags, logs, driftwood and rock cairns may be used as interesting landscaping features that also provide habitat for native flora and fauna.*
6. *Incorporate a vertical vegetation structure (vertical habitat) including layers of ground cover, shrub, understorey and canopy in landscape design.*

18.5.4 Drainage, Erosion, Stormwater, and Absorbent Materials

1. *Incorporate rain gardens, bio-swailes, rain barrels, and small depressions into landscaping.*
2. *Prioritize planted and pervious surfaces and design paved areas to direct water towards vegetated areas.*

18.5.5 Protect, Restore and Enhance Shorelines

Measures to protect, restore, and enhance local shorelines. When it is feasible:

1. *Waterfront developments are encouraged to adopt a 'soft shore' restoration approach to the care of their foreshore property (i.e. Green Shores for Homes).*
2. *Avoid the expansion of dock area, bulkheads, groins, or other shoreline hardening structures. Removal or reductions in the surface area of existing private docks is encouraged.*
3. *Where shoring methods are required to prevent erosion or the sloughing of the shoreline, choose bio-engineering methods over the use of sea walls or retaining walls. Where sea walls or retaining walls are the only means of effectively preventing erosion, design in consultation with qualified environmental professionals as well as engineering professionals. 90 Township of Esquimalt | Official Community Plan*
4. *Ensure that shoreline modifications do not result in a net loss of ecological functions. Incorporate measures to protect ecological shoreline functions and ecosystem-wide processes. Plan for the enhancement of impaired ecological functions.*

18.5.6 Bird Biodiversity and Better Buildings

Incorporate architectural features that limit collisions between birds and windows:

1. *Avoid the use of monolithic glass, clear glass, mirrored glass, tinted glass, polished stone, and polished metal that can be highly reflective.*
2. *In locations where vegetation or the environment is likely to reflect on surfaces, reduce the mirror effect by using ultraviolet patterned glass (fritted or acid etched), frosted glass, exterior louvers, external blinds, sunshades, spandrel panels, mullions, shutters, grilles, and canopies.*
3. *When using patterns on glass to increase visibility to birds, ensure that the patterns are affixed to the exterior surface of the glass, and are high contrast and spaced no more than 50 mm apart.*
4. *Limit outdoor lighting and direct light toward pedestrian areas. Consider use of shielding, timers, motion sensors, and down-lighting. Use International Dark-Sky Association approved lighting fixtures in outdoor locations. Outdoor lighting should be no brighter than necessary, be fully shielded (directed downward and designed to serve pedestrian needs), have minimal blue light emissions and only be on when needed. Avoid vanity lighting, and lighting directed into the night sky and trees tops.*
5. *Cap and screen all ventilation pipes and grates. Avoid openings greater than 20 mm x 20 mm.*
6. *Encourage increased front yard habitat along quieter streets to reduce bird vehicle conflicts.*



6. *Choose a mix of coniferous and deciduous trees to enhance bird species diversity.*

The guiding principle for the use of Development Permits is found within the Local Government Act. Development Permit Areas can be designated for purposes such as, but not limited to protecting, enhancing and restoring the biodiversity and ecological values and functions of environmentally sensitive areas; fostering compatibility between development, existing land uses and environmentally sensitive areas; maintaining connectivity between sensitive ecosystems; and protecting water quality and quantity.

The DPAs overlapping the Property are shown in Figure 2.

2.2 PROVINCIAL

- *Environmental Management Act*
- *Invasive Species Council of BC (Coastal ISC)*
- *Water Sustainability Act*
- *Weed Control Act*
- *Wildlife Act*

2.3 FEDERAL

- *Canada Fisheries Act*
- *Canadian Environmental Protection Act*
- *Migratory Birds Convention Act*
- *Species at Risk Act (SARA)*





**Development Permit Areas
Overlapping the Property**

Figure #2

Mac Reno Design Build
445 Grafton St, Esquimalt BC, V9A 6S4

Legend

 Property Boundary

Development Permit Areas - Esquimalt

 1 - Natural Environment

 2 - Protection of Development
from Hazardous Conditions

Imagery Source: CRD 2023 Imagery

UTM Zone 10U, NAD 83

0 100 200 300 400 m

1:13,602



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3 METHODOLOGY

3.1 DESKTOP SURVEY

Baseline biophysical conditions were compiled by reviewing the best available data and information including existing reports for the area and conducting searches of online provincial and federal databases:

- BC Conservation Data Centre (BC CDC 2025a and 2025b)
- BC HabitatWizard (Province of BC 2025)
- Aerial photographs of the Property (Google Earth 2025)
- CRD mapping system and database (CRD 2025)
- Township of Esquimalt Official Community Plan Bylaw No. 922 (ToE, 2025)

3.2 FIELD SURVEY

A field survey of the Property was completed by a Qualified Environmental Professional (QEP) from Corvidae on November 18th, 2025. The survey included characterization of terrain, vegetation and habitat types, wildlife sign and species observations, wildlife habitat features, and current conditions of the Property (including existing disturbance). Photographs from the field survey are included as Appendix B.

4 DESKTOP AND FIELD RESULTS

4.1 LAND USE

The Property is 0.21 ha in area and is currently zoned for Single Family Waterfront Residential (RS-3) within the ToE. There is an existing vacant single-family residence on the Property, which is located approximately 17 m away from the closest point of the PNB. The Property contains a series of terraced retaining walls to establish plateaued areas downslope towards the rocky shoreline. A small beach is separated from the Property by a concrete retaining wall.

4.2 CLIMATE AND BIOGEOCLIMATIC ZONES

The Property is located within the Coastal Douglas-fir (CDF) biogeoclimatic zone, specifically in the Moist Maritime Coastal Douglas-fir Subzone (CDFmm) (BC CDC 2026). The CDFmm occurs at low elevations (<150 m) along southeast Vancouver Island, the southern Guld Islands, and part of the Sunshine Coast. The CDFmm has the mildest climate in Canada. This subzone has a long growing season with warm, dry summers and mild, wet winters.

4.3 TERRAIN AND SOILS

Soils in the CDF biogeoclimatic zone are generally derived from morainal, colluvial, and marine deposits, and are typically Brunisols, grading with increased precipitation to Humo-Ferric Podzols (Nusdorfer et al. 1991). Soils on the Property consist mostly of undifferentiated bedrock (70%) with the remainder (30%) composed of well drained sandy loam (Rumsley Soil Association) (BC SIFT 2021).

The topography of the Property is generally characterized by a series of relatively level terraces with a gentle downward gradient



extending from the northern boundary toward the southern shoreline. The Property has been historically modified through the construction of retaining walls to manage the natural slope and maintain usable plateau areas. A substantial retaining wall is located at the seaward extent of the lawn area, marking the transition between the upland portion of the Property and the marine foreshore. The shoreline itself consists mostly of exposed bedrock outcrops with one small cove featuring a beach with cobble substrate.

4.4 VEGETATION

Dry forests in the CDFmm zone are typically dominated by Douglas-fir, arbutus, and western redcedar. Grand fir and shore pine may also be present. Salal (*Gaultheria shallon*), dull Oregon-grape (*Mahonia nervosa*), ocean spray (*Holodiscus discolor*), baldhip rose (*Rosa gymnocarpa*), and red huckleberry (*Vaccinium parvifolium*) are common in the shrub layer. Bracken fern (*Pteridium aquilinum*), snowberry (*Symphoricarpos spp.*), grasses, and pacific sanicle (*Sanicula crassicaulis*) are common in the herb layer. Oregon beaked moss (*Eurhynchium oreganum*), step moss (*Hylocomium splendens*), and electrified cat's-tail moss (*Rhytidiadelphus triquetrus*) dominate the well-developed moss layer (Nuszdorfer et al. 1991)

Vegetation composition across the Property is variable and reflects historical landscaping and ongoing maintenance. The overstory canopy is discontinuous and consists of individual stands of mature Douglas-fir (*Pseudotsuga menziesii*) and western redcedar (*Thuja plicata*). The native shrub layer is dominated by oceanspray (*Holodiscus discolor*), with limited species diversity in upland areas. Large portions of the Property consist of maintained lawn and turf grasses within previously cleared areas. Localized, dense patches of the invasive species English ivy (*Hedera helix*) are present at the base of mature trees in the upper portions of the Property. Shoreline vegetation is characterized by native shrub cover, including oceanspray and willow species (*Salix spp.*), which contribute to bank stability and nearshore habitat function. No plant species listed under provincial or federal species at risk legislation were observed during the field survey.

4.5 WILDLIFE HABITAT

The field survey was conducted in November; therefore, only resident wildlife was observed. Species observed included California gull, common merganser, American robin, chestnut-backed chickadee, and North American river otter (scat). The Property supports a moderately disturbed habitat with a mix of terrestrial and shoreline habitats dominated by lawn and infrastructure. Majority of the Property is characterized by mature douglas-fir trees that provide shade, and potential nesting and perching habitat for birds and small mammals. Maintained grass landscaping demonstrates human modification and contributes to a limited native understory. The shoreline portion of the Property includes a small cove with rocky outcrops that offer intertidal refuge, foraging opportunities, and localized habitats for marine wildlife. The below sections provide a summary of the existing or potential wildlife habitat areas on the Property.

4.5.1. TREES AND SHRUBS

Trees and shrubs on the Property may provide nesting and roosting habitat for birds, including migratory songbirds, year-round resident species, raptors, and owls. Vegetation throughout the Property provides refuge from surrounding development and cover from predators and harsh weather conditions.



Flowering/fruited plants identified on the Property may provide forage for bird and mammal species.

4.5.2. SNAGS

Snags also identified as “wildlife trees” provide valuable wildlife habitat through easy excavation for nesting cavities and food (forage cavities) as well as raptor nesting and perch trees. Additionally, once a snag is no longer sound and falls, it can provide cover and foraging opportunities for mammals and provides nutrients to the soil through decomposition (Coarse Woody Debris). No snags were identified within the Property during the field survey, however as mature coniferous and deciduous tree species on the Property age, there is a potential for some of them to develop into snags in the future.

4.5.3. NESTS & DENS

No nests or mammal dens were observed during the field survey. The field survey took place outside of the sensitive time period for Migratory Birds; therefore, the chances of identifying an active nest were very low, and no nests that are protected year-round were present.

4.5.4. ROCKY OUTCROP

Sunny, open areas such as rocky outcrops provide habitat for nesting seabirds. Rocky outcrops and concrete retaining walls are present along the southern and southeastern perimeter of the Property. The rock face is steep and does not contain deep crevasses or cracks (Appendix B; Photo 1). The surfaces are shaded and protected by overhanging vegetation. Therefore, the rock face area along the shoreline may contain habitat features valuable to reptiles and/or shorebirds.

4.6 SHORELINE AREA

The shoreline area associated with the Property is located along the marine shoreline of the Juan de Fuca Strait and is characterized by a predominantly rocky outcrop foreshore interspersed with cobble substrate and shrubby overhanging vegetation. A small cove is present on the property. The upper shoreline and immediate riparian transition zone support mature native shrubby vegetation, which is well established atop rock features and contributes to shoreline stability, erosion resistance, and nearshore habitat complexity. This vegetation provides shading and organic input to the intertidal environment and supports ecological functions such as foraging and refuge opportunities for marine and terrestrial species. The absence of extensive fine sediments along the shoreline reduces susceptibility to erosion, and the existing natural shoreline configuration remains largely intact, consistent with the ecological objectives of DPA No. 1.

4.7 FISH AND FISH HABITAT

The marine shoreline environment adjacent to the Property provides potential fish and fish habitat within the nearshore environment of the Juan de Fuca Strait. The rocky shoreline and cobble substrate support structurally complex habitat that may be used by a variety of marine fish species for foraging, shelter, and migration, particularly during juvenile and sub-adult life stages. The presence of mature shrubby vegetation along the upper shoreline contributes organic inputs and shading that support nearshore productivity and habitat function. No in-water works are proposed as part of the development, and all construction activities will occur landward of the present natural boundary.



4.8 SENSITIVE ECOSYSTEMS & SPECIES AT RISK

A query of the BC CDC iMap tool yielded occurrences of 4 species at risk, 1 ecosystem at risk, and no critical habitats within one-kilometer radius of the Property (BC CDC 2026).

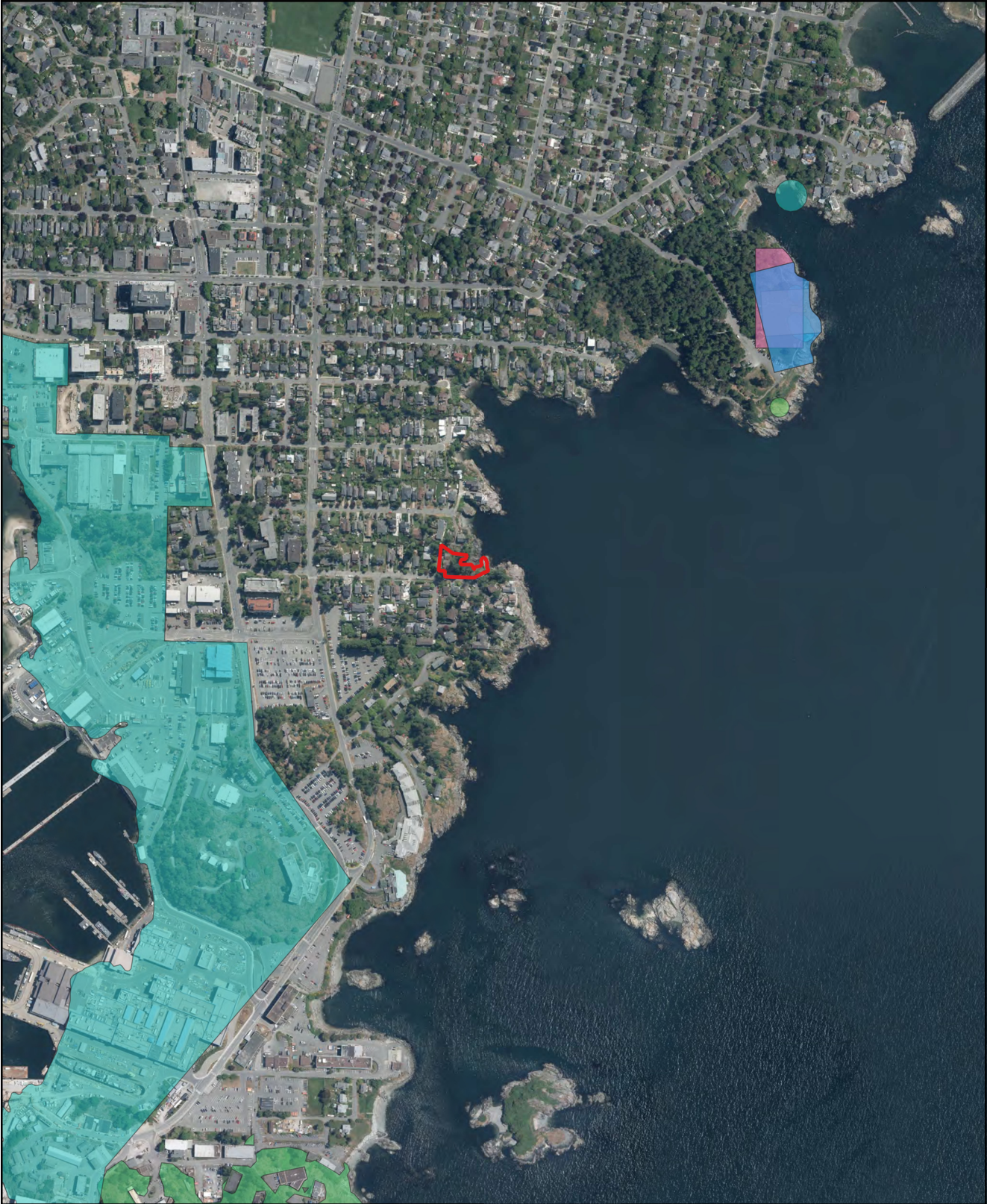
Table 1. Species and Ecosystems at Risk that may occur in the vicinity of the Property.

Common Name	Scientific Name	BC Provincial Status ¹	SARA Schedule 1 Status ²	Required Habitat Characteristics	Suitable Habitat Present on the Site?
Species					
Bear's-foot sanicle	<i>Sanicula arctopoides</i>	Red	1-Threatened (2003)	Found in coastal bluffs, headlands, dunes grassy slopes, scrub (FNA 2024) or dry maritime meadows on level to moderate slopes, with well to rapid drainage on shallow soils or bedrock with severe exposure to wind and/or salt spray (BC CDC, 2025).	Yes – within the rocky outcrops along the shoreline of the Property. No bear's-foot sanicle was observed during surveys.
Coast microseris	<i>Microseris bigelovii</i>	Red	1 – Endangered (2007)	Found in low lying, level to near-level open meadows and sparsely vegetated gravel sites including grasslands, shrublands, meadows, vernal pools and sparsely vegetated rocky outcrops and Garry oak coastal bluffs (COSEWIC 2006).	No - Given the topography and orientation of the site, this species is unlikely to occur. No coast microseris was observed during surveys.
Macoun's meadow-foam	<i>Limnanthes macounii</i>	Blue	1 – Threatened (2006)	Found in seasonally wet pools and depressions or in seepage streams and slopes at low elevations in coastal areas (Ceska and Ceska 2003). Commonly occurs in sparse Douglas-fir, Garry oak, and arbutus forests.	No – given the topography of the site containing a moderate consistent slopes and no pools or wet depressions, this species is unlikely to occur. No Macoun's meadow-foam was observed during surveys.
Poverty clover	<i>Trifolium depauperatum</i> var. <i>depauperatum</i>	Blue	--	Found in facultative grasslands, shrublands, meadows and Garry oak ecosystems with frequent disturbance.	No – given the current mix of ornamental and native tree and shrub species on the Property, this species is unlikely to occur. No poverty clover were observed during surveys.



Common Name	Scientific Name	BC Provincial Status ¹	SARA Schedule 1 Status ²	Required Habitat Characteristics	Suitable Habitat Present on the Site?
Wandering Salamander	<i>Aneides vagrans</i>	Blue	1 – Special Concern (2018)	Moist coniferous forests; in forest edge, forest clearings, talus, and burned over areas. Usually found under bark, in rotten logs, or in rock crevices. May aggregate in decayed logs in summer. Requires large (greater than 20 inches in diameter) down logs of mid-decay classes with sloughing bark (Thomas et al. 1993). Logs are primary microhabitat in spring, summer, and fall on Vancouver Island (Davis 2002).	No – given the lack of coarse woody debris on the Property and existing landscape installation, this species is unlikely to occur. No wandering salamander were observed during surveys.
Ecosystems					
Garry oak / California brome	<i>Quercus garryana</i> / <i>Bromus carinatus</i>	Red	n/a	Found primarily on hillsides and rocky knolls with dry, southern exposures and may have occurred more commonly on deep organic enriched soils where it was maintained by early fire management. This open woodland community typically occurs in places where pockets of deeper loamy soils have formed in bedrock cracks or between large pieces of colluvium. It often forms a mosaic with the Garry oak / oceanspray ecological community, which occupies the drier and shallower micro-sites.	No - Although some species often found within this ecological community were present onsite, the general conditions of the Property do not support this ecosystem at risk, and California brome was not observed onsite during the field survey.

¹ BC CDC 2026a² Government of Canada 2026



Sensitive Ecosystems and Species at Risk within 1 km of the Property	
Figure #3	
Mac Reno Design Build 445 Grafton St, Esquimalt BC, V9A 6S4	
Legend	Property Boundary Critical Habitat for Federally Listed SAR Bear's-foot Sanicle Coast Microseris Macoun's Meadowfoam Species at Risk bear's-foot sanicle Garry oak / California brome Macoun's meadow-foam poverty clover Wandering Salamander
Imagery Source: CRD 2023 Imagery	N
UTM Zone 10U, NAD 83	070140210280 m
1:5,667	CORVIDAE ENVIRONMENTAL CONSULTING INC.
Project 2026-024	Rev # 0 [01/22/2023] [JW]

5 POTENTIAL ENVIRONMENTAL IMPACTS

The potential impacts of the proposed development of the Property on the environment include:

- Impacts and changes to terrain and soils,
- Loss of existing vegetation and spread of invasive plant species,
- Change in / loss of wildlife habitat availability and wildlife mortality risk, and
- Erosion of soils and sediment transport within and around the project area.

Mitigation and restoration measures recommended to avoid or reduce the environmental impact of the activities proposed on the Property are included in Section 6 of this report.

5.1 TERRAIN AND SOILS

Potential impacts of the proposed development on terrain and soils on the Property include:

- Erosion: excavation could expose subsoils that are more prone to erosion.
- Slope stability & soil structure: development will likely require excavation, potentially altering natural slope stability and soil horizons.
- Soil compaction: using heavy equipment for fill placement can result in soil compaction which can reduce soil porosity and aeration, water filtration, root penetration (vegetation) and surface pooling (if impermeable layers are created).
- Contamination: potential for contamination is introduced with deleterious substances, and any unclean fill brought onto the Property as this increases the potential for introducing heavy metals, hydrocarbons, or invasive species.

5.2 VEGETATION

The effects of any vegetation removal associated with construction may and increased susceptibility to invasive plants, not only in the cleared areas but also in adjacent plant communities. Vegetation immediately adjacent to cleared areas may experience changes to the canopy structure and understory plant community composition due to windthrow and increased light and moisture penetration.

Invasive plants are particularly adept at colonizing degraded plant communities and disturbed soils. Invasive plants establish readily in disturbed areas as they have a broad ecological tolerance and grow and propagate quickly. The effects of invasive plant establishment may be the reduction or displacement of native species through competition and occupying habitats.

5.3 WILDLIFE

Habitat loss and alteration from vegetation clearing can cause displacement of wildlife, disturbance of wildlife corridors, use of less suitable habitat, reduced foraging ability, increased energy expenditure, and lower reproductive success. Reduced habitat effectiveness can occur as a result from the creation of habitat edges and the introduction of buildings with many windows into previously unused spaces can increase mortality risk for birds.

Short-term disturbance may occur as a result of increased noise, vibration, human presence, and the operation of construction equipment, which may temporarily displace wildlife from portions of the site and adjacent



areas. Construction lighting, if used, may also temporarily alter wildlife movement patterns, particularly for nocturnal species. These effects are expected to be transient, with wildlife likely to re-occupy the area following completion of construction, particularly where native vegetation is retained and reinstated.

Where trees are in poor health (as identified by the arborist), both tree removal and topping to a safe height reduce the habitat availability and effectiveness for wildlife. A tree that's been topped to a safe height loses many of the features that are valuable to wildlife. Removal of the crown, upper branches, and natural breakage result in less shelter, fewer available nesting spots, and a less diverse community fungi. Topped trees often exhibit altered decay patterns, not developing the same soft, hollow spaces or loose bark that many animals rely on.

5.4 SHORELINE AREAS

The shoreline environment adjacent to the Property may experience indirect effects associated with the proposed construction of a single-family residence; however, the potential for adverse impacts is limited due to the proposed development setback of greater than 10 metres from the PNB. No in-water or shoreline alteration works are proposed, and all construction activities will occur landward of the setback requirement. Potential pathways of impact are primarily indirect and include increased surface runoff, sediment mobilization, and accidental release of construction-related materials to the nearshore marine environment. Given the substantial setback, the existing rocky shoreline configuration, and the implementation of appropriate erosion and sediment control and stormwater management measures, the likelihood of sediment or deleterious substances entering the aquatic environment is low. With these measures in place, the proposed development is not expected to result in measurable changes to nearshore water quality, shoreline stability, or aquatic habitat function, and residual environmental effects to the aquatic environment are anticipated to be negligible.

5.5 FISH AND FISH HABITAT

The proposed construction of a single-family residence has the potential to result in indirect effects on fish and fish habitat, primarily through changes in surface runoff, erosion, and the introduction of sediment or deleterious substances to the adjacent marine environment. The property is located adjacent to the foreshore, which may provide nearshore habitat for marine and estuarine fish species during various life stages. Although no in-water works are proposed and all development will occur landward of the PNB, poorly managed construction activities could result in sediment-laden runoff entering the marine environment, potentially affecting water quality and nearshore habitat function. With implementation of appropriate erosion and sediment control measures, stormwater management practices, and adherence to applicable setback requirements, as described in Section 6 of this report, the risk of adverse effects to fish and fish habitat is anticipated to be low. The proposed development, as designed and mitigated, is not expected to result in the harmful alteration, disruption, or destruction of fish habitat.



6 RECOMMENDATIONS & MITIGATION MEASURES

The following recommendations are provided to ensure the proposed single-family residential development and associated landscaping activities remain compliant with DPA No. 1 (Natural Environment) of the ToE OCP (Bylaw No. 2922). Per the BC Mitigation Hierarchy (Government of British Columbia, 2019), these measures are intended to avoid, minimize, or mitigate potential adverse effects on environmentally sensitive features associated with the waterfront property, including aquatic and riparian areas, vegetation communities, wildlife habitat, and fish habitat.

Implementation of these recommendations will reduce environmental risk during construction and post-construction occupancy while maintaining the ecological function of the site.

6.1 TERRAIN AND SOILS

To reduce the impact on terrain and soils, the following mitigation measures should be implemented:

- Follow natural grade and contours during development detailed design, where possible.
- Restore vegetation outside of permanent development footprints immediately post-construction to stabilize soils.
- Avoid unnecessary tree clearing, where possible.
- Use engineered fill with proper compaction specs and testing (ensure clean, uncontaminated material is used).
- Cover and stabilize the fill surfaces quickly during rain events (i.e., cover with poly or erosion control blankets).

6.2 VEGETATION AND INVASIVE SPECIES

Vegetation retention is a key component of DPA No. 1, particularly where native shoreline and upland vegetation contribute to ecological integrity. Existing native trees, shrubs, and groundcovers should be retained wherever feasible and incorporated into the final site design. Vegetation removal should be limited to the minimum area necessary to accommodate the proposed residence and associated landscaping.

Any invasive plant species identified on-site, such as English ivy, should be removed using best management practices that prevent further spread. Disposal of invasive plant material should occur off-site at an approved facility. Disturbed areas should be promptly replanted with native species appropriate to coastal CDFmm ecosystems to restore ecological function and reduce the likelihood of invasive species re-establishment.

To ensure tree root protection of existing mature tree stands on the Property, underground pipes and infrastructure should be placed within paved areas or previously disturbed areas to avoid tree root damage. If damage is unavoidable, infrastructure should be placed greater than 0.6 m below the soil surface to minimize root damage, as described in DPA No. 1.

All new plantings proposed as part of the landscape design should primarily consist of native plant and tree species representative of the CDFmm biogeoclimatic zone, consistent with the existing vegetation on the Property described in Section 4.5 of this report. Additional native plant species that could be incorporated into the landscaping include western



redcedar, grand fir, arbutus, red alder, bigleaf maple, sword fern, and salal. Section 18.5.3 of DPA No. 1 emphasizes the importance of prioritizing native vegetation in residential landscapes to support habitat connectivity, enhance biodiversity, and maintain the natural aesthetic character of the neighbourhood. In alignment with the ToE's objectives, the use of native vegetation and food gardens along the outer boundaries of the Property is encouraged to complement adjacent boulevards and public spaces. Additionally, selecting native seed mixes for exposed soils will reduce the risk of invasive species establishment and promote long-term ecological resilience.

Landscape installations should incorporate the following design considerations:

- Support habitat and food requirements for birds and pollinators.
- Avoid monoculture planting and extensive turf grass areas.
- Use hedgerows and trees strategically to buffer urban noise and reduce wildlife-vehicle collisions.
- Employ natural groundcover materials, such as bark mulch, to protect soils and enhance ecological function.
- Maximize the absorption of air and noise pollution.
- Incorporate stormwater management features, including rain gardens, bioswales, rain barrels, and natural depressions, to minimize surface runoff.
- Achieve approximately 100% plant or canopy coverage within two years of installation.
- Maintain vertical vegetation structure, including groundcovers, shrubby understory, and tree canopy, to provide layered habitat for wildlife.

These measures will help ensure that the landscaping contributes to the ecological integrity of the Property, supports local wildlife, and aligns with the objectives of DPA No. 1 while enhancing the overall natural aesthetic of the site.

Refer to the Canadian Landscape Standards during landscape installations¹. When selecting new plant species for the Property the following site conditions should be taken into consideration to ensure survivability:

- Shade
- Sunlight
- Heat
- Wind-exposure
- Sea spray tolerance
- Year-round moisture

¹ Canadian Landscape Standard available at: Canadian Landscape Standard | CSLA



6.3 WILDLIFE AND WILDLIFE HABITAT

The site provides potential habitat for a range of coastal and urban-adapted wildlife species. To minimize disturbance, vegetation clearing and tree removal should be conducted outside of the general bird nesting period (March 1 to August 31), where feasible. If works must occur during this period, a pre-clearing nest survey should be completed by a QEP, and appropriate buffers established around any active nests identified. While no raptor nests were observed on the site during the field survey, if works are to occur during the nesting season for bald eagles and osprey (January to July), a pre-construction survey for new raptor nests should be completed by a QEP, and appropriate buffers established around any active nests identified.

Landscaping plans should prioritize native, biodiverse vegetation that provides foraging and shelter opportunities for birds and small mammals, supporting long-term habitat use following construction. Architectural design elements for new buildings should incorporate bird-safe measures, such as blinds, sunshades, or canopies, to reduce the risk of window collisions. For the protection of small mammals, all ventilation pipes and grates larger than 2.0 cm × 2.0 cm should be properly capped or screened. Exterior lighting associated with the residence should be designed to minimize light spill into adjacent natural areas and the foreshore by using downward-directed, shielded fixtures as directed by the International Dark-Sky Association.

New plantings should be selected to meet the habitat and food requirements of birds and pollinators. Vegetable and food gardens should complement pollinator-friendly plantings; for example, approximately 50% of shrubs should be fruit-bearing to provide wildlife with a food source. Inclusion of flowering vascular plants will encourage pollinator activity, which can also enhance the productivity of garden crops. CWD and natural organic materials such as tree stumps, rocks, and logs should be retained or strategically placed on-site to support insects, native flora, and soil enrichment. Maintaining a diversity of habitat types, including a combination of mature trees, shrubs, and shoreline vegetation, will enhance overall biodiversity and provide functional habitat for native birds and other wildlife. With implementation of standard mitigation measures, including timing construction activities to avoid sensitive periods, minimizing vegetation removal, and restoring disturbed areas, temporary impacts to wildlife are anticipated to be low.

Removal of poor health/dead trees and snags within the vicinity of the new residence, and thus the reduction in available wildlife habitat for cavity nesting birds and bats, can be offset by addition of bird nest boxes and bat boxes on the property, as well as retention of the trunk onsite as large woody debris. Corvidae recommends that for every dead tree removed, one habitat enhancement structure (bird nest box or bat box) be installed. When trees or snags are removed, portions of the trunk should be placed as large woody debris in natural areas on the property or incorporated into the landscaping, contributing to wildlife and insect habitat, and future soil amendment as the wood decays. This balance of habitat enhancement to offset minor habitat is in the spirit of the DPA 1 guidelines.

6.3.1. BIRD NEST BOX SPECIFICATIONS

Nest boxes for birds provide safe, predator-proof spaces for birds to raise their young. Key features and considerations for bird nest boxes include the following:

- Entrance hole diameter determines which birds can use the box



- 25mm (1 inch) for small birds like chickadees.
 - 32mm (1.25 inches) for larger birds like sparrows or bluebirds
- Dimensions of the box should be about 10-12 inches tall, with a floor area of 4x4 inches
- The roof should be slanted to allow rain to run off.
- Include small ventilation holes near the top for airflow.
- Include small drainage holes in the bottom to prevent water buildup.
- Mount approximate 5-20 feet above the ground, facing away from prevailing winds

6.3.2. BAT BOX SPECIFICATIONS

Bat boxes are designed to mimic natural roosting spaces like tree bark or cavities, offering bats a secure place to rest during the day. Key features and considerations for bat boxes include the following:

- A single-chamber bat box should be about 24 inches tall, 14 inches wide, and 3-4 inches deep.
- The bottom of the box should have a rough surface or grooves (i.e., landing strip) to help bats climb inside.
- Include small ventilation slots near the top for airflow.
- Use untreated wood, as bats are sensitive to chemicals.
- Mount the box 12-20 feet high on a pole, building or tree, in a sunny location (bats prefer warmth).

6.4 AQUATIC AND RIPARIAN AREAS

The Property is situated adjacent to the marine foreshore and contains marine riparian features that contribute to shoreline stability, water quality, and habitat connectivity. To protect these ecological values, all construction activities, new infrastructure, and modifications to existing infrastructure should maintain a minimum setback of 10 m from the high-water mark of the Juan de Fuca Strait. Within this buffer, no permanent structures, fill placement, or soil disturbance should occur unless expressly authorized by the ToE.

DPA No. 1 discourages the installation of docks or other hard shoreline structures. Where shore stabilization infrastructure is required to prevent erosion, bioengineering solutions are preferred over seawalls or retaining walls. A QEP and a licensed engineering professional should be consulted for the design of any construction or stabilization work within the shoreline area.

Temporary construction access and staging areas should be confined to previously disturbed portions of the Property and clearly delineated using high visibility fencing prior to the start of work. Equipment, materials, and hazardous substances must not be stored within the riparian area. Landscaping adjacent to the shoreline should utilize native, deep-rooted species that enhance bank stability and provide natural shading, rather than hardscaping or non-native ornamental plantings. In accordance with DPA No. 1, exterior lighting should be designed to minimize light spillage into aquatic environments to reduce anthropogenic disturbances.

All new construction and modifications to existing infrastructure must respect the 10 m setback from the high-water mark. Native vegetation within this riparian buffer should be retained to preserve habitat and



foraging areas for fish and wildlife, ensuring the continued ecological function of the shoreline and alignment with the objectives of DPA No. 1.

6.5 FISH AND FISH HABITAT

The marine foreshore adjacent to the property has the potential to support fish and fish habitat, particularly as rearing or migratory habitat for coastal species. No work is proposed below the PNB; however, indirect effects such as sedimentation and runoff must be carefully managed. Construction activities should be timed, where possible, to avoid sensitive fish periods, and all mitigation measures described in this report should be implemented to prevent deleterious substances from entering the marine environment.

Stormwater discharge points should be designed to dissipate flow and prevent erosion or direct scouring of the foreshore. Runoff should be treated through infiltration or vegetated swales to improve water quality prior to discharge, thereby protecting downstream fish habitat.

As no in-water works are proposed and all construction will occur landward of the PNB, potential effects to fish and fish habitat are primarily indirect (e.g., sediment-laden runoff and disturbance). With implementation of appropriate erosion and sediment control, stormwater management, and adherence to best management practices and DFO's timing windows of least risk, the proposed development can avoid, mitigate, or minimize harmful impacts to fish and fish habitat.

6.6 EROSION AND SEDIMENT CONTROL

The primary focus of erosion and sediment control (ESC) planning is erosion control; if there is no erosion then there is no sediment. Erosion control is far more cost effective to implement and manage than sediment control.

The following mitigation measures should be implemented to minimize the potential effects of the project on the natural environment:

- Heed weather advisories and scheduling initial clearing work to avoid excessive rainy periods (>10 mm in 24 hours) that may result in high flow volumes and/ or increase erosion and sedimentation.
- Keep ESC measures in place and maintained for the duration of activities.
- Regularly inspect and maintain Erosion and Sediment Control measures for the duration of the project.
- If required for the retention of temporarily exposed soils during construction activities biodegradable absorbent landscaping materials such as leaf mulches, wood chips, and/or nutrient-rich topsoil from local organic material can be permanently installed. Alternatively, straw wattles, or coco matting, or similar ESC products may be temporarily implemented to assist with the erosion control during construction activities.
- Preserve and enhance existing treed areas to optimize natural water absorption through root zones, and interception by crown cover.
- Design impervious surfaces (e.g., driveways) to direct water towards vegetated areas for natural absorption and irrigation.



- Intersperse paved surfaces with vegetation and trees to reduce surface run-off and absorb overflow while reducing the local heat island effect.
- Use porous and/or permeable paving to reduce surface run-off.

6.7 POLLUTION CONTROL, FUELING AND SPILL RESPONSE

All construction equipment accessing the Project should be in good working order. Any leaks should be repaired prior to commencing work. If any fueling of equipment is required it will be done with drip-trays underneath on site, in the parking lot or set staging area. There will be no fueling of equipment within the 30 m of a riparian area.

A large, labeled mobile spill kit capable of mitigating spills of 100 litres of fuel is recommended to be kept on site. The kit should contain the following materials or equivalent:

- absorbent pads (hydrocarbons and antifreeze)
- absorbent socks (oil, gas & diesel)
- a jar of plug n dike (leak stop compound)
- 1 spill instruction sheet

7 RESIDUAL ENVIRONMENTAL IMPACTS

With implementation of the mitigation measures outlined above, residual environmental effects associated with the proposed development are anticipated to be low and localized. The project is not expected to result in significant long-term adverse effects on marine or terrestrial ecological values, nor to compromise the ecological objectives of DPA No. 1.

Ongoing stewardship of the property, including responsible landscaping practices, invasive species management, and protection of retained vegetation, will further reduce residual impacts over the life of the development. The recommendations provided herein are considered sufficient to support compliance with the ToE's OCP and to protect the natural environment associated with the site.

8 CONCLUSION

An Environmental Assessment of the proposed single-family residence at 445 Grafton St in Esquimalt, BC has been presented in this report, including site specific recommendations to ensure compliance with DPA No. 1 of the Esquimalt OCP.

Implementation of the mitigation measures recommended in this report will minimize the residual effects of the proposed development and help meet regulations and protect the environment throughout development. By retaining native vegetation and wildlife habitat features where possible, siting the new residence more than 10 m from the PNB, scheduling work outside breeding seasons, removing invasive species, using erosion and sediment controls, and offsetting of minor habitat loss through bird boxes and bat boxes, the environmental impacts from the project will be minimized.



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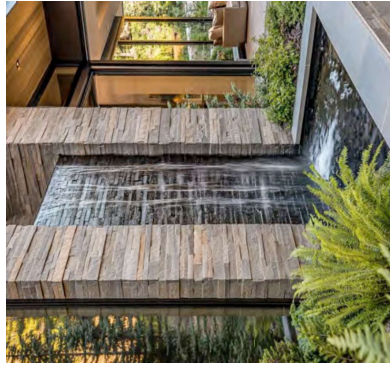
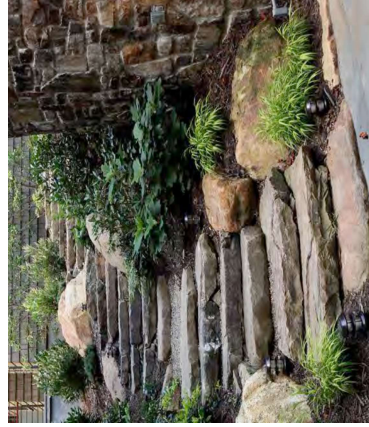
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APPENDIX A: SITE LANDSCAPING PLANS



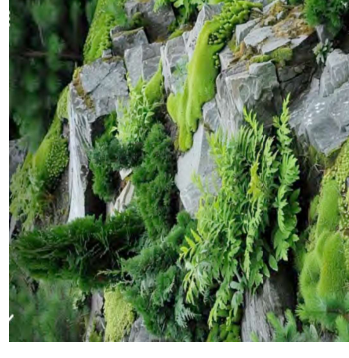
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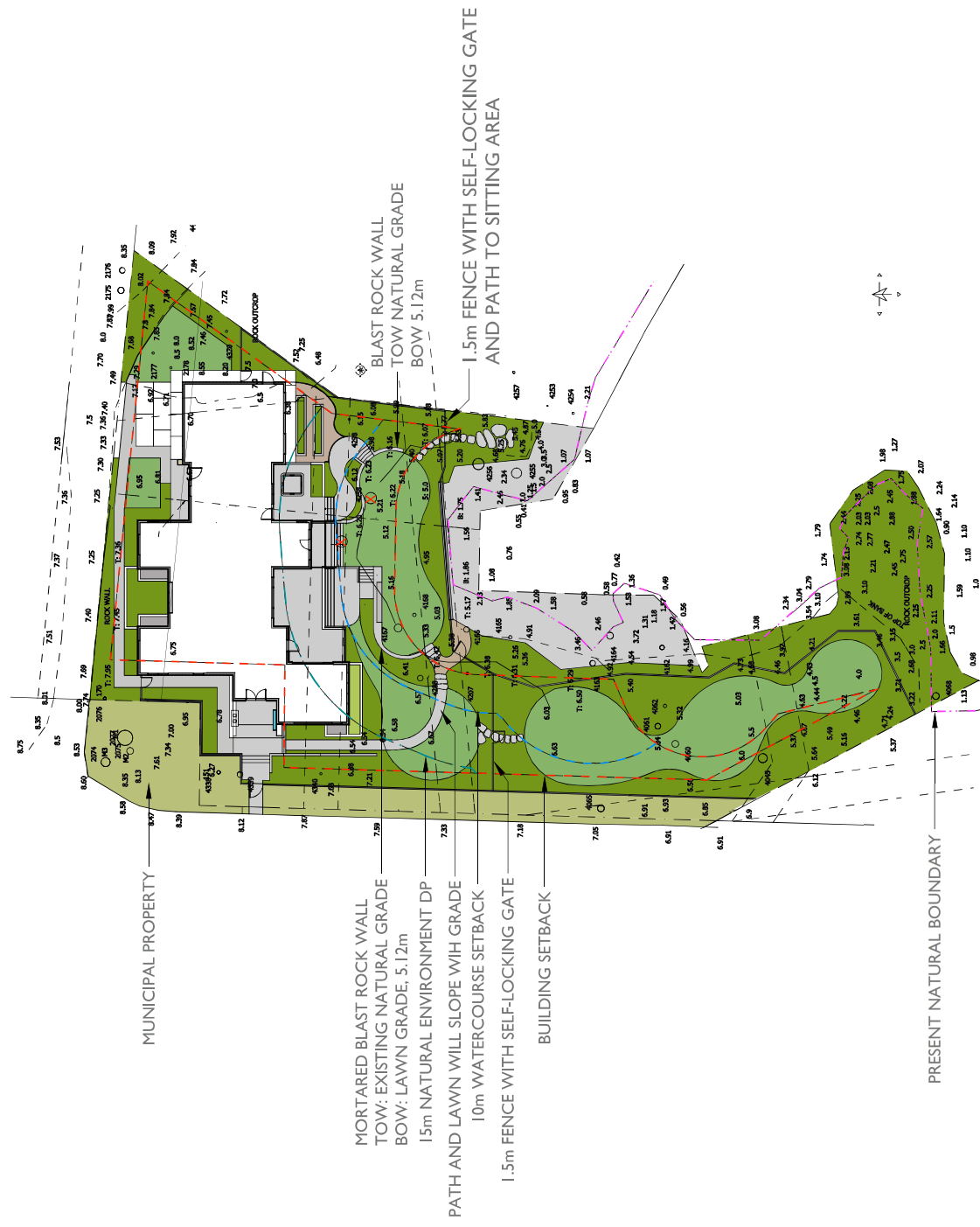
Greenspace Designs
Sustainable Landscape Design

LANDSCAPE CONCEPT SKETCH, MEGAN AND TYSON GREEN
445 GRAFTON STREET, ESQUIMALT BC | SCALE 1" = 30'

SIMPLE, NATURAL PLANTINGS



OVERALL CONCEPT



Greenspace Designs

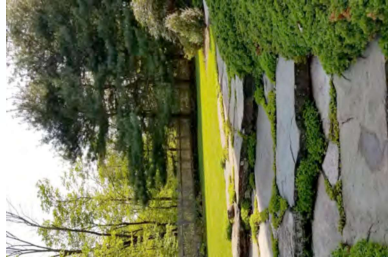
LANDSCAPE CONCEPT SKETCH, MEGAN AND TYSON GREEN
445 GRAFTON STREET, ESQUIMALT BC | SCALE 1" = 30'

FRONT YARD CONCEPT



BACK YARD CONCEPT

STONE PATH THROUGH
LAWN AND SIDE YARD



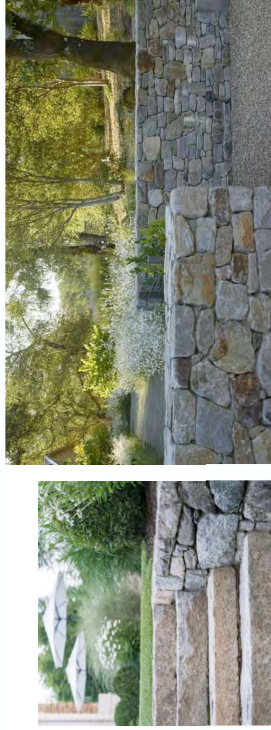
BUILT-IN BENCH



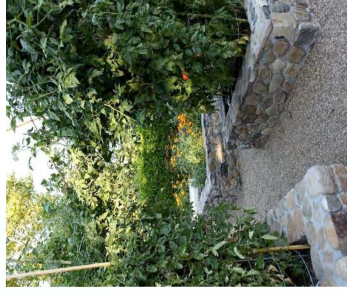
STONE STEPS



STONE SLAB STEPS, STONE WALLS WITH NATURAL TOP AND TIGHT JOINTS



STONE PLANTERS



INTERIOR MESH FENCING AND GATES



445 GRAFTON STREET-REPLACEMENT TREE PLANNING

TREE RETENTION, REMOVAL AND REPLACEMENT PLAN
SCALE 1:200



TREE LEGEND:

- TREES TO BE REMOVED
- EXISTING TREE TO RETAIN
- PROPOSED NEW TREE

SUGGESTED TREE LIST



ACER JAPONICUM 'ACONITIFOLIUM'
FENLEAF FULL MOON MAPLE



ACER PALMATUM 'SHIRAGANABA'
LION'S MANE JAPANESE MAPLE



CORNUS KOUKA 'HIS SATOY'
RED FLOWERING KOUKA DOGWOOD



MAGNOLIA X CORNELL 'LEONARD MESSEL'
PINK CORNELL MAGNOLIA



ACER PALMATUM 'SIBUTU'
SIBUTU JAPANESE MAPLE



MAGNOLIA SEBODII
OTAMA MAGNOLIA



ACER PALMATUM 'RED DRAGON'
RED LACELAJ JAPANESE MAPLE



CHONANTHUS RETULUS
CHINESE FRINGE TREE



ACER PALMATUM 'KIKUGINO'
FLOATING CLOUDS JAPANESE MAPLE



ACER SHIRAZAWANUM 'AUREUM'
GOLDEN FULL MOON MAPLE



Greenspace Designs

Sustainable Landscape Design

PROJECT TITLE :
PROPOSED TREE PLAN
TYSON, GREEN AND MEGAN GLODOWSKI
445 GRAFTON STREET, ESQUIMALT BC
PAGE TITLE :
PROPOSED TREE REPLACEMENT PLAN, PAGE ONE OF ONE
DATE :
OCTOBER 21, 2025
SCALE :
1:200



APPENDIX B: SITE PHOTOGRAPHS



Photo 1. View north of aquatic environment and shoreline area of the Property on November 18, 2026.



Photo 2. Existing concrete retaining wall on the Property.



Photo 3. Shoreline access on the Property, view of existing terraces and retaining walls.



Photo 4. Existing mature trees and vegetation on the Property.

