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Environmental Assessment and NEDPA Exemption

13595 Forest Hills Dr, Lake Country



For: Prepared: May 2024 Jade Bay Constructors Ltd.

4108B Evans Road, Oyama BC V4V 2E9

Attn: Planning Department District of Lake

Country



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1 Project Introduction and Assessment Rationale

Sage Environmental Consulting Ltd. (SEC) was retained by Cody Walsh of Jade Bay Constructors Ltd. (the Client) on behalf of the property owner (surname Kopp) to conduct an Environmental Assessment at 13595 Forest Hills Drive, Lake Country, BC Lot 16, Plan KAP50067, Sec 33, TWP 20, O.D.Y.D. (the "Subject Property"). This Environmental Assessment intends to satisfy a request for exemption from the Natural Environment Development Permit Areas for the District of Lake Country (DLC). DLC Official Community Plan (OCP) bylaw #1065, 2018, indicates that the Property is contained within the Natural Environment Development Permit Area (NEDPA) in addition to the following development permit areas: Drainage Corridor Hazard, Wildland Fire, Agri-tourism Accommodation, Wildfire, Hillside, Commercial, Industrial, Multi-unit, and Greenhouse Gas Reduction. The property is zoned as RR1 — Rural Residential under the DLC Zoning bylaw #561, 2007. This assessment identifies any environmentally significant features present to avoid the loss of these features and or functions and will satisfy NEDPA exemption requirements by the DLC.

1.1 Site Details

The subject property is a previously developed residential lot located within the District of Lake Country on the hillside east of Okanagan Lake. There is an existing residence, detached garage, pool and pool house on the property all within the NEDPA.

Table 1: Site Details		
Туре	Details	
Civic Address	13595 Forest Hills Drive, Lake Country BC	
Legal Description	Lot 16, Plan KAP50067, Sec 33, TWP 20, O.D.Y.D.	
PID	018-311-644	
Zoning	RR1	
OCP Designation	Rural Residential	
Size	1.04 acres (DLC GIS) (0.42 hectare)	
Natural Environment DPA	Whole Site	
Agri-tourism Accommodation DPA	Whole Site	
Greenhouse Gas reduction DPA	Whole Site	
Industrial DPA	Whole Site	
Commercial DPA	Whole Site	
Multiple Unit DPA	Whole Site	
Drainage Corridor Hazard DPA	Partial Site	
Hillside	Partial Site	
Wildfire	Whole Site	

1.2 Assessors Experience

This assessment was prepared by Nicole Plysiuk, BIT, an Environmental Scientist with 8 years of experience conducting habitat assessments in British Columbia.

This assessment was reviewed by Jessica Morgan, PAg, RPBio, an Environmental Scientist with 15 years of experience conducting habitat assessments in British Columbia.



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2 Proposed Development

The proposed development includes an addition onto the southwest side of the existing residence, extending the asphalt driveway to connect with an existing retaining wall and removing the existing detached garage. The addition will be largely within the footprint of the existing garage and will utilize the space between the existing residence and garage. The addition will be 154.16m² (1659.4 ft²). The existing garage (to be removed) is 66.12m²(711.7 ft²) for a total footprint increase of 88.04m². The increase in the driveway surface will impact an area that is currently gravel. No changes are proposed around the pool area. The proposed development is within the NEDPA, entirely within a mapped ESA-2 polygon as well as within the Drainage Corridor Hazard Development Area. Access to the Property will utilize the existing paved driveway from Forest Hills Drive.

3 Environmental and Impact Assessment Methods

This assessment is divided into inventory, impact assessment and mitigation phases.

3.1 Public Mapping and Literature review Methods for Environmentally Sensitive Areas (ESAs)

Public mapping and literature review includes the review of publicly available habitat mapping and literature pertinent to the site. The following data sources were considered and collected during the site inventory:

- Ecosystem inventories and mapping review
 - o Biogeoclimatic Ecosystem Classification (BEC) zone
 - Sensitive Ecosystem Inventory (SEI)
 - Sensitive Habitat Inventory and Mapping (SHIM)
 - Conservation Analysis for the Bellavista Goose Lake Range, Coldstream- Vernon,
 Vernon Commonage and Lake Country¹
 - Habitat suitability for known Species and Ecosystems at Risk
- Review of the Landscape Context
 - Contiguity to other ESAs
 - o Edge effects
 - Cumulative impacts
 - o Relation/dependence of ecosystems beyond its boundaries.
- Unique or rare landforms or other aesthetic considerations
- Size of the lot under consideration

3.2 Field Assessment Methods

The Property was traversed on foot to document present habitat conditions, plant species, signs or observations of wildlife species, confirm presence of sensitive habitats, and determine ESA rankings.

3.3 At-Risk Species and Ecosystems Methods

Inventory includes a review of species and ecosystems associated with the Property including:

¹ Haney, A. and K. Iverson. 2008. Report: SEI Inventory: Lake Country https://a100.gov.bc.ca/pub/acat/public/viewReport.do?reportId=7443



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- Species at Risk
- Habitat Features
- Sensitivity
- Conservation Data Center Map Sensitive and Non-Sensitive Occurrences

3.4 Habitat Condition and Sensitivity Assessment Methods

Considerations of condition and sensitivity include:

- Ability to tolerate anthropogenic disturbance,
- Resilience to imposed stresses on an ecosystem,
- Current quality and condition,
- Potential for post disturbance habitat restoration,
- Long term impacts on habitat values and ecosystem functionality, and
- Severity or extent of the disturbance

3.5 ESA Ranking on the Property Methods

ESAs identified on the Property were ranked according to District of Lake Country definitions based on the above noted factors. Conservation values were generated for the individual habitat polygons using the methods outlined in the SEI reporting document². The conservation value was generated by including the three variables (SEI value, quality/condition, and wildlife habitat value). The final conservation value for each habitat polygon was then ranked. The ESA Ranking is as follows:

- ESA 1: High (7.6-10)
- ESA 2: Moderate (5.1-7.5)
- ESA 3: Low (2.6-5.0)
- ESA 4: Not Sensitive (0-2.5)

3.6 Impact Assessment, Mitigation and Enhancement Methods

The impact assessment will be based on the ESAs on the Property and the proposed work to be carried out. The compensation hierarchy will be applied accordingly to avoid and mitigate impacts to higher value ESAs where possible. Compensation and enhancements will be provided where needed to meet District of Lake Country requirements.

3.7 Drainage Corridors Presence / Absence Assessment Methods

As per the District of Lake Country Development Permit Area Guidelines Checklist for Stability, Erosion and Drainage Hazard³, the following information was reviewed during the site assessment. This assessment is limited to the presence / absence of the habitat features listed below and does not satisfy the requirements for a geotechnical hazard or engineering assessment. Should such features be documented on site further assessments may be required and are outside the scope of this assessment.

- Presence of natural watercourses on the property,
- Presence of wetlands or detention ponds.

² Iverson, Krisit. 2006. Sensitive Ecosystems Inventory: Lake Country, 2005 Volume 1: Methods, Ecological Descriptions, Results, Conservation Analysis and Management Recommendations.

³ District of Lake Country. Development Permit Area Guidelines Checklist. Stability, Erosion and Drainage Hazard. www.lakecountry.bc.ca/en/local-government/resources/Planning/DPA-Guideline-Checklists. Accessed July 26, 2023



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4 Environmental and Impact Assessment Results

4.1 Public Mapping and Literature Review Results

Table 2 outlines the results of the desktop review of the property.

Table 2: Literature and Mapping Review Summary		
Туре	Details	
Biogeoclimatic Ecosystem Classification	PP xh1	
(BEC) zone ¹	Ponderosa Pine hot dry	
Sensitive Ecosystem Inventory (SEI) ¹	SEI Class 1 and 3	
	6WD:2NS:2WD	
	60% Conifer Woodland: 20 % Non-sensitive: 20% Conifer	
	Woodland	
Sensitive Habitat Inventory and Mapping	Not available for this area	
(SHIM) ³		
Biodiversity Conservation Strategy ³	Conservation Ranking Class Value: High	
	Relative Biodiversity: Low	
	Habitat Connectivity: High	
	Land Management Class: Private lands (non-ALR)	
Conservation Analysis for the District of	Conservation Zone: Corridor	
Lake Country ³		
Sensitive Ecosystem Ranking/	Total Conservation Value: 6.533	
Environmental Sensitive Area (ESA) ⁴	SER Rank 2	
	ESA 2 Moderate	
Conservation Data Center Species at Risk ⁵	A review of mapped CDC public and masked data	
	showed a record of masked occurrence on the site	
	(Object ID 60228). In consultation with CDC via email, it	
	was confirmed that the proposed development would	
	not impact the masked occurrence due to its distance	
	from the property. American Badger (<i>Taxidea taxus</i>) has	
	mapped critical habitat in the vicinity of the property	
	(Occurrence 74373).	

4.2 Field Assessment Results

A field assessment was conducted at the Property on August 9, 2023. SEC traversed the proposed disturbance area between the existing residence and garage to document and collect data regarding the function and condition of habitat present. The area immediately south of the southern property boundary and adjacent to the existing garage, was visually surveyed for signs of a channel. Weather during the field assessment was overcast and began to lightly rain.

Vegetation documented on the south side of the garage includes, spreading dogbane (*Apocynum androsaemifolium*), rose (*Rosa spp*), tree of heaven (*Ailanthus altissima*), rocky mountain juniper (*Juniperus scopulorum*), cottonwood (*Populus tricocarpa*) saplings and pole sapling size, soopolallie

⁴ Okanagan Habitat Atlas. https://cmnmaps.ca//OKANAGAN/. Accessed July 26, 2023

⁵ B.C. Conservation Data Centre: CDC iMap [web application]. 2023. Victoria, British Columbia, Canada. Available: https://maps.gov.bc.ca/ess/hm/cdc/ Accessed July 26, 2023, and March 27, 2024



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(Shepherdia canadensis), knapweed (Centaurea spp), mullein (Verbascum thapsus) and ponderosa pine (Ponderosa pinus). A row of pyramid cedar hedge lines the southern property boundary.

Existing vegetation between the residence and garage includes mountain ash (*Sorbus spp*), ornamental (non-native) maple (*Acer spp*), snowberry (*Symphoricarpos albus*), 26 sapling ponderosa pines, Oregon grape (*Mahonia aquifolium*), Sycamore (*Plantanus spp*), fireweed (*Chamaenerion angustifolium*), various grasses and an elm (*Ulmus spp*) tree.

Habitat located beyond (northeast) the footprint of the development consisted of gravel, cement block retaining walls, sparce grasses and weed species. Stumps of ponderosa pine trees were also observed in this area.

The area within the mapped open drainage channel was observed from the property boundary adjacent to the existing garage, no evidence of channel or riparian vegetation observed. This area was then observed from Forest Hills Drive looking north and northeast, with no channel observed. There are two manhole covers at the base of the slope between the properties of 13595 and 13575 Forest Hills Drive (see Photo 6).

The property is within the PPxh1 – Ponderosa Pine – Very Hot Dry forest zone, and contains previous disturbance from the construction of the driveway, private residence, pool, garage, retaining walls and associated landscaping. See attached photos for documentation of present habitat condition.

Sparsely vegetated rocky outcrops are important features for snake habitat. Although no such features were observed, it is important to note that the Property is within the range of multiple snake species, which may use the rocky outcrops for basking or migration. At the time of the assessment no active denning sites were identified for American badger. In addition to adequate denning sites, Badgers also require safe connection to a suitable prey source. Neither of these requirements are met within the Property therefore the likely hood of Badgers utilizing the Property is low.

4.3 At-Risk Species and Ecosystems Results

American Badger (*Taxidea taxus*), are mapped as potentially occurring within the site in addition to a masked sensitive occurrence (Object ID 60228)⁶. CDC confirmed via email on August 1, 2023 that due to the location of the property, the proposed development would not cause any impact to the sensitive occurrence.

4.4 Habitat Condition and Sensitivity Assessment Results

Habitat located within the disturbance area has been previously altered with landscaping, retaining walls and removal of native vegetation. The existing habitat has been altered to the point that very little native vegetation and habitat features remain.

4.5 ESA Ranking on the Site Results

Within the area of the proposed development there is extensive previous and present disturbance, lack of native vegetation, presence of invasive weeds, lack of suitable wildlife habitat and lack of ecological

⁶ B.C. Conservation Data Centre: CDC iMap [web application]. 2023. Victoria, British Columbia, Canada. Available: https://maps.gov.bc.ca/ess/hm/cdc/ Accessed July 26, 2023



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connectivity to higher quality habitat, in addition, the low diversity of native vegetation, terrain and wildlife habitat features result is a conservation value of 0.33⁷, **ESA 4: Not Sensitive** ranking, as illustrated in Figure 1: Site Plan.

4.6 Impact Assessment, Mitigation and Enhancement Results

Due to the non-sensitive rating of the habitat, mitigation and enhancement measures are not required. This development, as outlined in this report, will have minimal adverse habitat impacts due to the lack of quality habitat present.

4.7 Drainage Corridors Presence / Absence Assessment Results

Neither a stream channel nor riparian vegetation was observed on the property.

5 Environmental Assessment Conclusion

The Property assessment determined that the proposed development is within an ESA- 4 Non Sensitive area. The assessment did not identify any species at risk, or habitat features of species at risk requiring removal in the area of the proposed project. Vegetation impacted by the proposed project is limited to a small area (88.04m²) that contains horticultural plant species, invasive weed species, sapling ponderosa pine, and sparsely distributed herbs and small shrubs including snowberry, Oregon grape and fireweed. Therefore, any potential impacts will be negligible. The landowners are encouraged to plant native species and manage invasive plant species on their property. Natural Environment DP Area Exemption - The area of impact outside the existing garage (to be demolished) is small (88.04 m² construction footprint, not including the area of the driveway) and within an ESA 4 (Low or Non-sensitive) polygon therefore meets the DLC NEDPA exemption criteria.

6 Protection, Mitigation, Compensation, and Implementation

6.1 Protection and Mitigation

Protection and mitigation measures considered for this development include:

- Nesting bird activity was not noted on the subject Property. Every reasonable effort should be made to avoid clearing and tree removal on the property during identified bird nesting periods. The following general least risk windows apply:
 - Raptors (eagles, hawks, falcons, and owls): Aug 15-Jan 30
 - Herons: Aug 15-Jan 30
 - Other Birds: Aug 31-March 31
- If it is not possible to conduct clearing within these least risk windows, a <u>pre-disturbance nest</u> survey must be conducted prior to construction activities.
- There are no Environmentally significant features within the development area. Outside the
 development area, environmentally significant features to be protected include the indigenous
 vegetation. Where possible, indigenous tree species including the drip zone will be also be
 protected.

⁷ SEI value =0, Quality and Condition= 0.1, Wildlife habitat value=1



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- Invasive weed species within the site and will require management to prevent further
 establishment or spread into undisturbed areas upslope of the construction area. Construction
 machinery will be cleaned prior to arriving on site, and soil disturbance will be avoided outside of
 the construction footprint.
- Native ground cover species and trees should be planted following construction to reduce the amount of irrigation required.
- The impact of re-developing this property will be limited to the building envelope, within a
 historically disturbed area. The presence of invasive weed species in the surrounding area
 indicates seeds are present within the soil and may become established post-disturbance. To
 minimize the impacts of invasive species all disturbed soils must be planted with a native grass
 seed mixture or with native vegetation as soon as possible after disturbance.

A habitat balance sheet is a useful tool when impacts to ESA 1 or ESA 2 ranked areas is unavoidable. There are no ESA1 or ESA 2 ranked areas within the proposed development therefore habitat restoration or enhancement is not required.

7 Habitat Restoration and Landscape Plan

7.1 Tree and Vegetation Management Plan & Replacement Criteria

District of Lake Country Professional Reports and Technical Terms of Reference discuss development requirements in ESA-2 as areas of retention. Section 5.1 (b) of the Terms of Reference outlines that some loss of these (ESA 1 and ESA 2) ESAs may be offset by habitat improvements. Area of loss on this property is limited to 88.04m² within an ESA-4 and does not meet ESA-2 habitat characteristics or requirements. The area of loss is within an ESA-4 due to present habitat condition, connectivity barriers, habitat fragmentation and disturbance to adjacent habitat, as outlined above in Section 4.5 above.

The area of disturbance will be limited to the area between the existing residence and existing garage, as well as extending the existing driveway to connect with an existing retaining wall all within an ESA-4 area. Therefore, habitat restoration will not be required as part of this application as per the OCP Section 21.9.12 (the area of disturbance is <u>not</u> environmentally significant).

8 Summary of Natural Environment DPA Guidelines

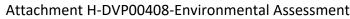
- Timing of development should consider and avoid windows of critical fish and wildlife activities. Fisheries windows are not applicable as no in-stream work is proposed. If development does occur outside a least risk window for nesting birds a QEP Environmental Monitor will be engaged to determine the species, and suitable protection measures.
- Environmentally significant natural areas and features must be identified and avoided. The proposed development is within the NEDPA. This assessment has determined that the proposed development is within an ESA-4 and will not impact any environmentally significant features.
- Subdivision plans should preserve and protect environmental features. NA
- Environmentally sensitive areas must be identified and protected. No environmentally sensitive features are present within the proposed development.



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- Limit development to those areas of the property where minimal impact on environmental features will occur. The development falls within the identified NEDPA, development will be limited to the proposed footprint and within an ESA-4 area.
- Remaining natural areas and sensitive features should be temporarily fenced or otherwise protected from damage prior to commencing development activities. The existing residence, fencing and pool will act as a barrier to features outside the development area.
- Subdivision design should ensure that natural corridors through subdivisions are preserved. NA.
- Indigenous vegetation within environmental buffers must be retained where possible and restored if damaged. Natural vegetation outside of the development footprint will be maintained and protected where possible.
- Access to environmental buffers must be restricted. Access will be limited to the disturbance area required for construction. Staging and holding area during construction should be limited to previously disturbed areas.
- Permeable paving materials should be used to protect groundwater supply and minimize erosion from surface runoff. Access to the proposed development will utilize the existing paved driveway.





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9 Environmental Monitoring and Bonding Information

The District of Lake Country requires an Environmental Monitoring Plan for projects that impact or disturb areas within ESA 1 or ESA 2 areas. This project will be impacting an ESA 4 area and therefore Environmental Monitoring and associated bonding is not required.

10 Closure

This assessment has been created by Sage Environmental Consulting Ltd. exclusively for Jade Bay Constructors Ltd. The conclusions made reflect Sage's best judgment in the light of the information available at the time of preparation. No other warranty, expressed or implied, was made. Any use which a third party makes of this report, or any reliance on or decisions to be made or actions based on this summary, are the responsibility of such third parties. Sage accepts no responsibility for damages, if any, suffered by a third party as a result of decisions made or actions based on this report.

Respectfully Submitted,

Nicole Plysiuk, BIT

Sage Environmental Consulting Ltd.

Jessica Morgan, PAg, RPBio

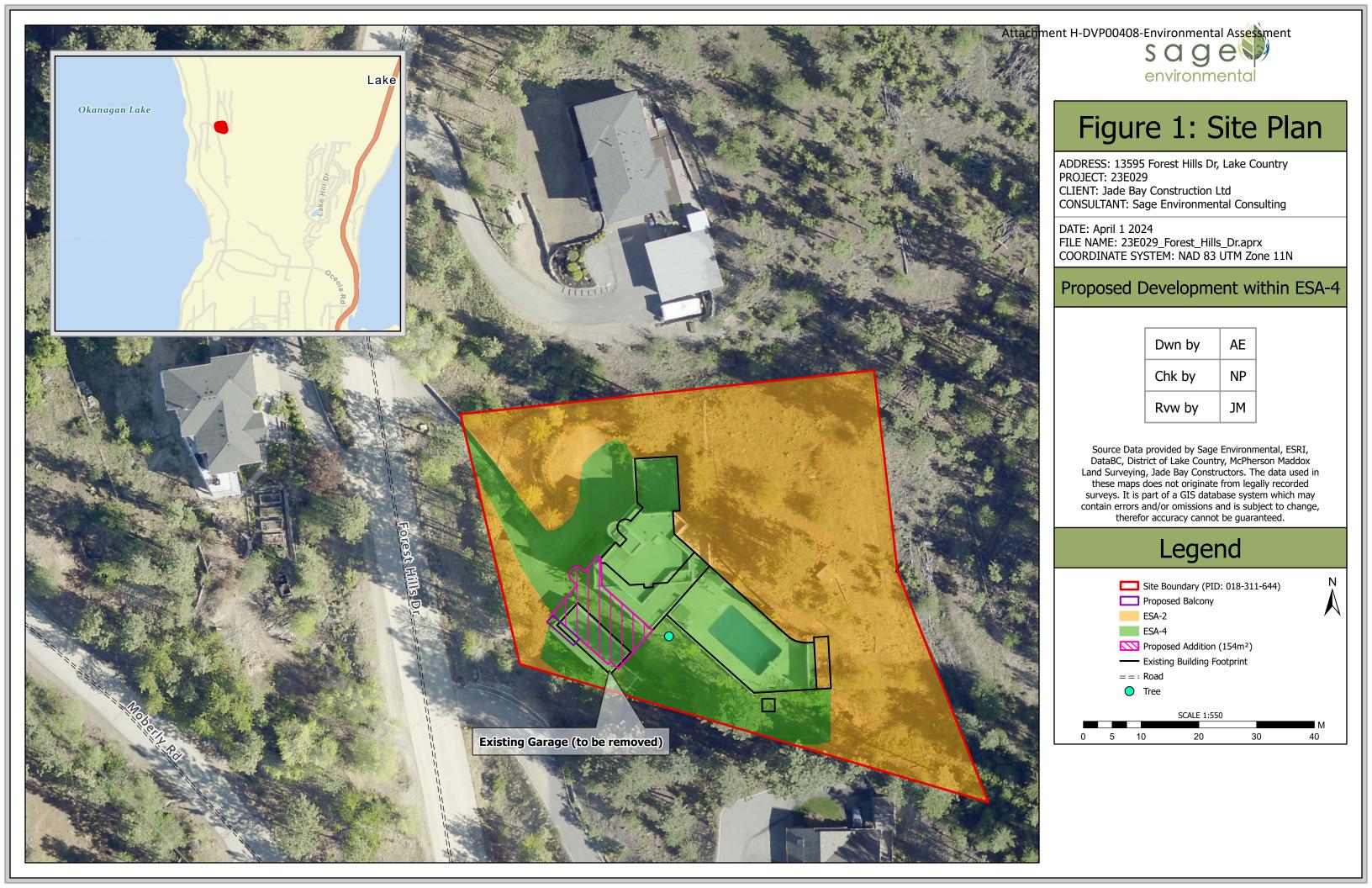
Sage Environmental Consulting Ltd.



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FIGURES

Figures





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APPENDICES

Appendix I - Site Photos







Photo 1: Northwest view of existing habitat located between the residence and garage (August 9, 2023)



Photo 2: Northwest view looking at landscaping vegetation to be removed for development (August 9, 2023)







Photo 3: Existing residence and landscaping looking southeast (August 9, 2023)



Photo 4: Habitat condition downslope of existing pool looking northwest towards the development area (August 9, 2023)





Photo 5: Habitat condition downslope of existing pool looking southeast (August 9, 2023).



Photo 6: Area for the driveway extension, looking west (August 9, 2023).



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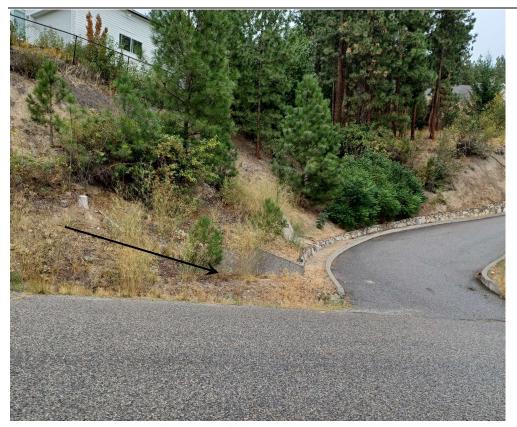


Photo 7: Looking upslope (northwest) from Forest Hills Dr towards property and mapped drainage hazard area. Location of two manholes at arrow. (August 9, 2023).



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APPENDICES

Appendix II: Site Plan

