

TECHNICAL MEMORANDUM

November 16, 2022

To:	Mr. Ali Taysi AVT Consulting 1708 F Street Bellingham, WA 98225
From:	Andrew J. Rossi, B.S. Wildlife Biologist Raedeke Associates, Inc. Courtney Straight, B.S. Wetland & Wildlife Biologist Raedeke Associates, Inc. Richard W. Lundquist, M.S. President / Wildlife Biologist Raedeke Associates, Inc.
RE:	Jones Family Long Subdivision – Wildlife Habitat Assessment (RAI Project No. 2021-072-001)

This report documents the results of our field investigation at the Jones Family property along Chuckanut Bay in Bellingham, Washington (Figures 1 & 2). The purpose of this investigation is to evaluate current wildlife use and habitat conditions within the study area, as well as evaluate any listed, priority, or other protected species such as bald eagles (*Haliaeetus leucocephalus*) and great blue herons (*Ardea herodias*) in the vicinity of the project site.

This Technical Memorandum is intended for submittal to the City of Bellingham as part of an application by the Jones Family Trust to subdivide the property into 37 lots with single-family homes and a reserve tract that includes a building pad for a 38th dwelling unit (Figure 7), as well as create access for an outfall pipe to Chuckanut Bay for stormwater management purposes. Each of the 38 proposed lots (including the reserve tract) includes one single-family home.

Raedeke Associates, Inc. staff visited the study area on July 21, 2021. During this field investigation, we documented wildlife presence, sign, and habitat, and we also described plant communities. We recorded information regarding reproduction, habitat use, and activities of all wildlife species observed. In addition, we noted special habitat features such as large and/or hollow trees, snags [standing dead or partly dead trees at least four inches in diameter at breast height (dbh) and at least six feet tall], and large downed logs.

STUDY AREA LOCATION

The project site consists of a 37.4-acre property, Whatcom County Parcel Nos. 3702130834990000, 3702130755420000, 3702120300040000, and 3702131135500000 in Bellingham, Washington (Figures 1 & 2). This places the property within Sections 12 and 13, Township 37 North, Range 2 East, W.M. Site details received from Ali Taysi (AVT Consulting LLC), on June 7, 2021 determined the property boundaries. Chuckanut Bay is located to the southwest of the project site and Viewcrest Road is located along the northwestern edge with single family homes on all other sides (Figure 3). The BNSF railroad runs across Chuckanut Bay.

PROJECT DESCRIPTION

The proposed activities at the project site include subdividing the property into 38 single-family residential lots. Presently, the project site totals 37.4 acres. An application sketch prepared by Pacific Surveying & Engineering, Inc. (Figure 7) shows the proposed subdivision layout.

Lots 1 through 37 are intended to be developed with single-family homes. Lot 38 will be designated as a reserve tract to protect four existing wetlands and one existing mapped seep, but also contains one proposed single-family home. For further reading on the existing wetlands and their associated buffers refer to the report prepared by NW Ecological Services (2021), which serves as an update and addendum to a previous report prepared by Pacific Ecological Consultants (2010). The development of Lots 1 through 37 will likely involve the removal of forest vegetation to create buildable footprints, and the development of Lot 38 will include removal of vegetation only within the proposed building pad area (Figure 7). Because of the current level of residential development near the proposed project site, the parcels have ready access to all the necessary utilities for single-family homes.

All lots will be located outside of existing mapped wetlands and buffers. Lot 37 extends into Wetland D, but all impacts, including the building footprint, will be located outside of the wetland and associated buffers. The project design also includes a stormwater pipe that runs southeast between Lots 31 and 32 and has a proposed outfall with energy dissipation located above the ordinary high-water line of Chuckanut Bay (Figure 8).

REVIEW OF BACKGROUND INFORMATION

WDFW PHS Database

The current Washington Department of Fish and Wildlife (WDFW 2021a) online Priority Habitats and Species (PHS) database map depicts six PHS entries within a 1,000-foot radius of the project site (Figure 3). The first area is habitat/presence of hardshell clam (*Mercenaria mercenaria*) mapped within Chuckanut Bay along the shoreline of the project site. The next is an area of shorebird concentrations mapped along the shoreline of the project site. The third mapped PHS occurrence is the habitat/presence of Dungeness crab (*Cancer magister*) mapped approximately 400 feet south of the project site. An estuarine and marine wetland is mapped along the shoreline of the project site. A biodiversity area and corridor is mapped approximately 125 feet southwest of the project site at the Chuckanut Village Open Space. Lastly, freshwater forested/shrub wetlands are mapped approximately 800 feet northeast in the Chuckanut Bay Open Space (North).

The occurrences of hardshell clam, shorebird concentrations, and estuarine and marine wetland are the only PHS entries that intersect with the project site. All of these entries exist only at the shoreline along the southeast edge of the project site.

WDFW SalmonScape Database

The current Washington Department of Fish and Wildlife (WDFW 2021b) online SalmonScape database map depicts Chuckanut Creek, approximately 2,000 feet east of the project area, as having the documented presence of listed Winter steelhead, non-listed Residential Coastal Cutthroat trout, spawning habitat for non-listed Fall Chum salmon, and rearing habitat for non-listed coho salmon (Figure 4). Chuckanut Bay, including the shoreline of the project area, is accessible to these species and other salmonid species that are present in the Salish Sea. No salmonid species are indicated as present within the forested portions of the project site (Figure 4).

Washington Natural Heritage Program and Wetlands of High Conservation Value

The Washington Natural Heritage Program (WDNR 2021) database indicates the presence of natural heritage features within the section, township, and range of the project area (Figure 5). The Wetlands of High Conservation Value indicates the presence of a known rare plant and nonvascular species of high conservation value approximately 3,000 feet east of the project site in the vicinity of Arroyo Park. No natural heritage features are indicated as occurring at or in the immediate vicinity of the project site.

EXISTING CONDITIONS

Vegetation and Habitat Description

The site generally consists of well-developed forest vegetation of varying composition and structure and is bordered by residential housing on the west, north, and east, and by Chuckanut Bay on the southeast (Figure 6). The northeastern corner of the project site generally consists of an overstory of bigleaf maple (*Acer macrophyllum*), Oregon ash (*Fraxinus latifolia*), and red alder (*Alnus rubra*) as large as 12 inches dbh. Some willows (*Salix spp.*) and occasional western red cedars (*Thuja plicata*) are also present. The shrub layer is characterized by common snowberry (*Symphoricarpos albus*), oceanspray (*Holodiscus discolor*), and osoberry (*Oemleria cerasiformis*), with some English holly (*Ilex aquifolium*), Himalayan blackberry (*Rubus armeniacus*), and red huckleberry (*Vaccinium parvifolium*). The low understory consists of sword fern (*Polystichum munitum*), poison hemlock (*Conium maculatum*), trailing blackberry (*Rubus ursinus*), Canada thistle (*Cirsium arvense*), herb Robert (*Geranium robertianum*), common rush (*Juncus effusus*), creeping buttercup (*Ranunculus repens*), English ivy (*Hedera helix*), salal (*Gaultheria shallon*), and dull Oregon grape (*Mahonia nervosa*). The far northeastern corner of the site has larger trees including a small number of mature red alders and bigleaf maples ranging up to 18 inches dbh. This area also has a higher proportion of Himalayan blackberry.

The sloping area at the eastern edge of the site that contains four delineated wetlands (Figure 6) is characterized by steeper topography and a dense shrub layer with salmonberry (*Rubus spectabilis*), bracken fern (*Pteridium aquilinum*), skunk cabbage (*Lysichiton americanus*), Himalayan blackberry, large leaf avens (*Geum macrophyllum*), field horsetail (*Equisetum arvense*), and beaked hazelnut (*Corylus cornuta*).

The southeastern portion of the site is characterized by a higher proportion of deciduous trees mixed with Douglas-fir and western redcedar on steeper slopes. There is a dense understory of salal, snowberry, bracken fern, and Himalayan blackberry. An area near the southeastern corner of the site contains one of the four delineated wetlands and was observed with areas of relatively damp soils, and some skunk cabbage plants. In this area of the site we also observed a very large 35-inch dbh Douglas-fir tree.

The southern portion of the site has a forest characterized by Pacific madrone (*Arbutus menziesii*) and Douglas-fir overstory with some serviceberry, willows (*Salix sp.*), and western hemlock (*Tsuga heterophylla*). A portion of the area contains a deciduous forest with rocky outcroppings and very steep slopes and many hiking and game trails. Within this portion of the site a fire created an open understory and scorched the bottoms of tree trunks. A small number of snags that are approximately 18 inches diameter at breast height exist at the toe of the steep slopes along the southern boundary of the site.

The vegetation in the southwestern corner of the site includes a substantial amount of salal with patches of native rose (*Rosa sp.*) and scotch broom (*Cytisus scoparius*). We

also noted a 45-inch dbh Douglas-fir along the southwestern edge of the site that may be located just off-site.

The central portion of the site is characterized by many hummocks with a deciduous canopy of red alder, Sitka willow (*Salix sitchensis*) and black cottonwood (*Populus balsamifera*).

The northwestern corner of the site is characterized by a tree canopy of Douglas-fir, western hemlock, and western redcedar with an open understory dominated by western sword fern. The trees are generally younger and smaller than other areas on the site. The area contains a small number of 23-inch-dbh Douglas-firs and 17-inch-dbh western hemlocks, but most trees are 8 to 10 inches dbh. Some areas in the northwestern portion of the site are also characterized by some larger openings in the overstory and a high percentage of deciduous cover.

The northern edge of the site has a 42-inch dbh black cottonwood. Some stinging nettle is also present in the understory of this area.

The shoreline along the southern edge of the project site is very rocky with large boulders covered with barnacles, clams, and oysters.

A walking path extends through much of the project site that appears to be in use by the local neighbors and their dogs. We observed extensive signs of human activity including tree forts, graffiti, and trash. Many abandoned gravel roads extend throughout the site as well. During our site visit, we also documented the noises from nearby homes, the sounds of passing vehicles on roadways, and passing trains.

Special Habitat Features

Special habitat features include biologic elements such as edges between plant communities or successional stages, snags, and coarse woody debris, which are often important to wildlife (Brown 1985, Johnson and O'Neil 2001, Thomas and Verner 1986). The most distinct edges on the project site were those between the forest habitat and shoreline of the bay, as well as edges between forest and shrub-dominated areas. Edge habitats often support a variety of species adapted to both adjacent habitats.

Snags (dead or partly dead trees at least 4 inches dbh and 6 feet tall) are important to many wildlife species (Cross 1986, Neitro et al. 1985, Scott et al. 1977 in Ohmart and Anderson 1986), for nesting, feeding, and roosting. Throughout the project site we found many snags with evidence of woodpecker excavations. The northeastern corner of the site contains a 5-inch dbh snag approximately 7 feet tall with potential evidence of nesting by cavity-nesting species, but we observed no evidence of current occupation. The southeastern corner of the site contains a red alder snag nearby approximately 22 inches dbh with a potential hairy or downy woodpecker nesting excavation that does not appear to currently be in use. We also found an approximately 40-inch dbh broken-top

stub in the southwestern corner of the site that has several potential nesting excavations, but no signs of current nesting were observed. The western edge of the site has three or four snags including one with an approximately eight-inch by 5-inch cavity opening that has nesting potential for owls or other large cavity nesting birds.

Coarse woody debris includes downed logs and major limbs of trees lying on the ground. Downed logs provide many habitat features, including perch sites, food, nest cavities, and cover for many species, such as some amphibians (Jones 1986). In the slope wetland area on the eastern edge of the site, we found an approximately 38-inch dbh downed Douglas-fir (*Pseudotsuga menziesii*) that appears to have been cut and shows signs of wildlife activity in the area including many types of feathers and scat.

An old gravel road in the western central portion of the site has a large concentration of downed woody debris that would provide some value to wildlife. Small concentrations of downed woody debris also occur in the northeastern corner of the site.

Wildlife Observations

The project site and the surrounding lands provide habitat for a wide variety of native animal species common to young forests, successional shrublands, and palustrine wetlands of the Puget Sound lowlands. Not all the species regularly found in lowland habitats of the Puget Sound area would necessarily inhabit the project site and vicinity, but a variety of species is expected to occur in the habitats found on site. Some species expected to occur on site possibly do so in low numbers or only during certain times of the year. Species likely to be present on this site would also be expected in similar habitats in other areas of the Puget Sound lowlands. During our field investigations, we observed 23 wildlife species, or signs thereof (Table 1).

We observed several snags with cavities that could be used by cavity nesting birds throughout the site. We also saw a stick nest near the center of the site approximately 25 feet high in a Douglas-fir that appeared to be constructed of one-eighth inch thick sticks. The nest was approximately one and one-half feet wide and one foot deep. Two juvenile barred owls (*Strix varia*) were found near the nest but not on the nest tree. It is possible this stick nest belonged to the barred owls, but we cannot be certain as the juvenile owls had already fledged and were quite mobile during our site visit. A pair of Cooper's hawks (*Accipiter cooperii*) were also observed in the northeast corner of the site along Viewcrest Rd.

Regarding other regulated species, we saw no evidence of nesting activity by bald eagles in the vicinity of the project site during our field investigations. We did observe two bald eagles in flight off-site over the bay. We also saw no evidence of great blue heron nesting activity, but we did see three great blue herons perching in the trees overlooking the bay along the southeastern edge of the project site. Broken shells of clams, mussels, etc. are present throughout the southern edge of the site, overlooking the shoreline and

could be foraging remains of herons, racoons, crows, or similar species. We did not observe any other wildlife species or their sign during our field investigation.

EVALUATION OF IMPACTS OF THE PROPOSED PROJECT

As outlined above, the proposed project involves development of the site into single-family residential housing (Figure 7), which is a type of urbanization. The process of urbanization will affect the existing plant and animal communities in three ways: (1) direct changes in and loss of the habitats available; (2) increase in human use and disturbance associated with the roadway; and (3) potential for changes in the hydrologic characteristics of the site, with potential for impacts to wetland and riparian communities (both plants and animals).

Residential development is a process of habitat alteration that changes the characteristics of the plant communities and the habitat available for wildlife. The major features of urbanization include loss of vegetation, isolation or fragmentation of remaining vegetation patches, replacement of native vegetation with ornamental species, removal of snags and downed logs, potential for increase in the use of pesticides, insecticides, and herbicides, the presence of “super” predators (domestic dogs and cats), and increased noise and other disturbance factors (Thomas et al. 1974, Penland 1984, Adams et al. 1985).

Impacts on Vegetation Communities

Development of the site under the proposed plan would remove some of the mixed forest vegetation in the northern portions of the site for construction of homesites, roads, and associated facilities and convert it to buildings and other impervious surfaces, as well as landscaped areas with ornamental plantings. Some trees and other forest vegetation would likely be retained in the developed area but would become more fragmented into smaller patches and function as edge habitat.

The proposed site plan includes designated open space tracts to retain a 200-foot forested buffer along the shoreline of Chuckanut Bay and to encompass the mapped wetlands and their buffers in the eastern portion of the site. This would retain a substantial area of dense conifer forest along the shoreline, as well as the mapped wetlands and their buffers. All critical areas including the wetlands and their buffers will be retained in the proposed site plan.

The proposed development would require the removal of many large, established trees and likely some snags and downed logs across the project area. However, the retained open space areas along the shoreline and encompassing the mapped wetlands would retain many of the observed snags, and downed logs, as well as some of the largest trees observed on-site.

Impacts on Wildlife

Impacts of constructing the proposed development include both temporary impacts during construction and longer-term impacts of habitat alteration. Construction related impacts include increases in noise, dust, human activity, temporary disturbance of vegetation for staging areas, potential erosion and sediment transport from exposed soils, and other potential water quality impacts. These can alter animal behavior, causing avoidance of adjoining habitats, alteration of movement and dispersal patterns, abandonment of nest sites, reduced breeding success, and increased mortality.

Elimination of native vegetation cover and replacement with impervious surfaces and landscaped areas would displace animals inhabiting those areas, would reduce the local populations of native species to a limited degree, and may make the area less suitable for other native wildlife species. Planted ornamentals often support far fewer insect species per unit area than native vegetation due to a smaller amount foliage (less foliage volume) and simpler vegetation structure. Landscaped areas along the roadways throughout the development would likely be managed to limit the growth of tall woody vegetation. Developed landscapes can often facilitate the spread of exotic invasive species (both plants and animals). No invasive species would be included in the proposed landscaping of the development.

This proposed site plan would likely affect wildlife species common to western Washington habitats and is not expected to adversely affect state or federally listed or other priority species. The species observed on site are all common to local habitats and have a demonstrated tolerance to human disturbance. For example, we observed the Cooper's hawks calling to each other along Viewcrest Road as cars drove past, and the barred owls observed on-site began vocalizing and did not flush from their perches as we walked directly beneath them.

The proposed site plan (Figure 7) would provide a vegetated 200-foot buffer between the homes and the shoreline and create a reserve tract for the wetlands present on the project site, which would retain a substantial area of native forest and shrub habitat on site. As outlined below in the "Mitigation" section of this report, lots will extend up to this 200-foot buffer, but homes will only be built in the northern portions of these lots, with restrictions on development in the southern portions, creating an effective buffer of 300 to 400 feet from the ordinary high-water mark of the shoreline, depending on the lot. This would retain many snags, the steep talus slopes, and all the large established perching trees along the bay, which were many of the most unique habitat features at the project site.

Impacts to Endangered, Threatened, Sensitive, and Other Priority Species

The proposed development is not expected to adversely affect state or federally listed species, as none are expected to occur on site. Other priority or protected species observed on site or in the vicinity include pileated woodpecker, great blue heron, and

bald eagles. No active nest or roost cavities of pileated woodpeckers (a state Candidate species) were observed on site. We saw bald eagles flying off-site over the bay and great blue herons perching near the shore in the southeastern corner of the site; however, we did not observe any nesting activity or active nest sites of these species within the vicinity of the currently proposed project site. Retention of a 200-foot forested area along the shoreline, as well as protection of the mapped wetlands and their buffers in the eastern part of the site, would retain substantial perch sites for raptors and herons, including the area where the herons were observed during our site investigation. In addition, foraging areas for herons and eagles in the bay, including habitat for clams and shorebirds shown on the WDFW (2021a) PHS maps, would not be impacted by the proposed development. Consequently, we do not expect the proposed development to adversely affect these species.

Removal of trees and clearing of understory as part of the proposed site plan would cause the displacement of some individuals of common species. However, with the preservation of the majority of Lot 38 as a reserve tract (including the critical areas and buffers contained therein) and the 200-foot vegetated buffer between the lots and the shoreline, we anticipate minimal impacts to common local existing wildlife habitat or special habitat features on the project site as a result of the proposed site plan. The observed use of perching on larger trees on the southeastern border of the project site by herons would not be impacted by the currently proposed development. Similarly, development of the site is not expected to affect endangered, threatened, or sensitive animal species, as none are expected to occur there.

MITIGATION

Mitigation has been defined by the State Environmental Policy Act (SEPA) (WAC 197-11-768; cf. Cooper 1987), and subsequently in a Memorandum of Agreement between the Environmental Protection Agency and the COE (Anonymous 1989). In order of desirability, mitigation may include:

- Avoidance - avoiding impacts by not taking action or parts of an action;
- Minimization - minimizing impacts by limiting the degree or magnitude of the action and its implementation;
- Compensatory Mitigation - may involve:
 - a) repairing, rehabilitating, or restoring the affected environment;
 - b) replacing or creating substitute resources or environments;
 - c) mitigation banking.

Avoidance and Minimization of Impacts

The proposed development (Figure 7) incorporates a number of measures to avoid or minimize potential impacts on plants and fish and wildlife habitat:

- The project would avoid direct impacts to all mapped critical areas, including mapped wetlands and wetland buffers on site, as well as the shoreline of Chuckanut Bay. The proposed site plan would retain the mapped wetlands and their buffers within a reserve tract in the eastern portion of the site.
- The plan also includes retention of existing forest habitat in a 200-foot zone of open space tract along the bay. The development lots will extend up to this 200-foot jurisdictional line, but homes will be situated along the northern portions of these lots, with restrictions on developing the southern portions of the lots, creating an effective buffer and area of retained vegetation along the shoreline of between 300 and 400 feet, depending on the lot.
- Construction limits, including staging areas, would be clearly marked in the field prior to beginning construction activities.
- To the extent feasible, construction staging areas would be located outside of wetland and shoreline buffers to minimize impacts to vegetation
- Critical area buffers temporarily disturbed for construction access and staging would be revegetated with a mixture of native plant species following completion of construction activities
- Appropriate BMPs and TESC measures would be implemented in accordance with an approved SWPPP, consistent with standards of the local stormwater manual (or that in effect at the time of permitting), including specific measures to prevent and control spills of pollutants, and to handle, control, and store potential contaminants. In addition, enhanced stormwater treatment will be incorporated per the WDOE manual for all stormwater exiting from the site.
- Upland stormwater management via dispersion in native vegetated areas will be employed within the project site as conditions allow to minimize/avoid impacts to the shoreline area. The project will provide a stormwater conveyance system that will have an outfall located above the ordinary high-water mark of Chuckanut Bay. Dispersion methods will meet Washington State Department of Ecology approved BMP's, and include energy dissipation via a gabion structure at the end of a piped conveyance to avoid downstream erosion or impacts to the shoreline (Figure 8). This outfall area and energy dissipater will be located above the Mean High Water Mark and Ordinary High Water Mark.

Recommended & Other Potential Mitigation Measures

For the proposed development project, additional measures to avoid or minimize the potential impacts to wildlife could include the following:

- Avoid any increase in levels of human activity & disturbance within the 200' shoreline buffer. Avoid installing any formal walking trails in this area to reduce

disturbance to wildlife from regular human and pet activity. Keeping disturbance levels as similar as possible to baseline levels before any development will help prevent negative impacts on local wildlife communities.

- Retain as many large, healthy trees on-site as possible to promote overall plant species diversity and retain soil stability and habitat functionality. This will also help retain wildlife habitat functions such as nesting and perching platforms. This is especially true of the southeastern edge of the project site, along Chuckanut Bay. The 200-foot retention buffer will help to retain habitat functionality along this area, but retaining any other large trees beyond that buffer, when possible, will further enhance this effort.
- For any replanting that may take place at the project site, focus on planting Pacific Northwest native plant species and reduce the use of non-native ornamental species or cultivars as much as possible.
- Wherever possible, improve the functionality of the local plant community by removing invasive plants such as Himalayan blackberry, holly, and ivy. Any removal of invasive plants that must take place in the spring before fruiting or seeding should be conducted without the use of power tools or heavy equipment wherever possible to avoid any disturbance to potential nesting species on or near the project site.
- In general, where feasible, schedule clearing and grading activities during the dry season (April through September) to avoid or minimize the potential for erosion and sediment deposition. However, if active nests of protected species such as bald eagles or great blue herons be discovered on site, measures to avoid or minimize disturbance during the nesting season (January through August; Azzera 2012, U.S. Fish and Wildlife Service 2007) may need to be implemented.

LIMITATIONS

We have prepared this report for the exclusive use of The Jones Family Trust and their consultants. No other person or agency may rely on the information, analysis, or conclusions contained herein without permission from Mr. Ali Taysi.

The determination of ecological system classifications, functions, values, and boundaries is an inexact science, and different individuals and agencies may reach different conclusions. We cannot guarantee the outcome of such determinations. Therefore, the conclusions of this report should be reviewed by the appropriate regulatory agencies.

We warrant that the work performed conforms to standards generally accepted in our field and has been prepared substantially in accordance with then-current technical guidelines and criteria. The conclusions of this report represent the results of our analysis of the information provided by project proponent and their consultants, together with

information gathered in the course of this study. No other warranty, expressed or implied, is made.

Thank you for the opportunity to prepare this information. If you have any questions, comments, or need additional information, we are available at 206-525-8122 or via email at arossi@raedeke.com or cstraight@raedeke.com.

LITERATURE CITED

- Adams, L.V., L.E. Dove, and T.M. Franklin. 1985. Mallard pair and brood use of urban stormwater-control impoundments. *Wildlife Society Bulletin* 13: 46-51.
- Anonymous. 1989. Memorandum of Agreement between the U.S. Environmental Protection Agency and the Department of Army Concerning the Determination of Mitigation under the Clean Water Act, Section 404 B1 Guidelines. Effective 7 November 1989.
- Azerrad, J. M. 2012. Management recommendations for Washington's priority species: Great Blue Heron. Washington Department of Fish and Wildlife, Olympia, Washington. March 2012.
- Bellingham, City of. 2021. BMC Title 16: Environment. 16.55 Critical Areas. Current through Ordinance 2021-07-029, passed July 12, 2021. Accessed at: <https://bellingham.municipal.codes/BMC/16.55>. Last accessed August 18, 2021
- Brown, E.R. (tech. ed.). 1985. Management of wildlife and fish habitats in forests of western Oregon and Washington. Publ. No. R6-F&WL--192-1985. U.S. Department of Agriculture, Forest Service, Pacific Northwest Region, Portland. 332 pp.
- Cooper, J.W. 1987. An overview of estuarine habitat mitigation projects in Washington State. *Northwest Environmental Journal* 3(1):112-127.
- Cross, S. 1986. Bats. Pages 497-517 in A. Cooperrider, R. Boyd, and H. Stuart, eds. Inventory and monitoring of wildlife habitat. U.S. Department of the Interior, Bureau of Land Management Service Center, Denver, Colorado.
- Eissinger, A. 2020. Post Point Heron Colony Management Recommendations Update 2019. Nahkeeta Northwest Wildlife Services. February 24, 2020 report prepared for City of Bellingham Department of Public Works.

- Johnson, D.H. and T.A. O'Neil. 2001. Wildlife-habitat relationships in Oregon and Washington. Oregon State University Press, Corvallis OR. 736 pp.
- Jones, K. 1986. Amphibians and reptiles. Pages 267-290 *in* Cooperrider, A., R. Boyd, and H. Stuart. Inventory and monitoring of wildlife habitat. U.S. Department of Interior, Bureau of Land Management Service Center, Denver, Colorado.
- Neitro, W.A., V.W. Binkley, S.P. Cline, R.W. Mannan, B.G. Marcot, D.Taylor, and F.F. Wagner. 1985. Snags (wildlife trees). Pages 129-169 *In* Brown, E. (ed.). 1985. Management of wildlife and fish habitats in forest of western Oregon and Washington. Pub. No. R6-F&WL--192-1985. USDA Forest Service, Portland, Oregon. 332 pp..
- NW Ecological Services. 2021. Wetland Delineation Update & Critical Areas Summary for the Edgemoor Viewcrest Properties.
- Ohmart, R., and B. Anderson. 1986. Riparian habitat. Pages 169-199 *in* A. Cooperrider, R. Boyd, and H. Stuart, editors. Inventory and monitoring of wildlife habitat. U.S. Department of the Interior, Bureau of Land Management Service Center, Denver, Colorado.
- Pacific Ecological Consultants. 2010. Jones Family Trust Edgemoor Property Biological Critical Areas Reconnaissance & Delineation Report.
- Penland, S. T. 1984. Avian responses to a gradient of urbanization in Seattle, Washington. Ph.D Dissertation, University of Washington, Seattle, Washington. 407 pp.
- Scott, V., K. Evans, D. Patton, and C. Stone. 1977. Cavity-nesting birds of North American forests. U.S. Department of Agriculture Forest Service Agricultural Handbook 511, Washington, DC.
- Thomas, J.W., and J. Verner. 1986. Forests. Pages 73-91 *in* A. Cooperrider, R. Boyd, and H. Stuart, eds. Inventory and monitoring of wildlife habitat. U.S. Department of the Interior, Bureau of Land Management Service Center, Denver, Colorado.
- Thomas, J.W., R.M. deGraff, and J.C. Mawson. 1974. A technique for evaluating bird habitat. pp. 159-162 *In* Noyes, J.H., and D.R. Prouglbke (eds.). Wildlife in an urbanizing environment. Univ. Mass., Boston. 182 pp.
- U.S. Fish and Wildlife Service. 2007. National bald eagle management guidelines. May 2007.

Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. August 2008 (updated February 2021), Olympia, Washington. 293 pp.

Washington Department of Fish and Wildlife. 2020. State Listed Species & State Candidate Species. Revised February 2020. Available at: https://wdfw.wa.gov/sites/default/files/2020-02/statelistedcandidatespecies_02272020.pdf. Last Accessed March 12, 2021

Washington Department of Fish and Wildlife. 2021a. PHS on the web. Available at: <https://geodataservices.wdfw.wa.gov/hp/phs/>. Last accessed July 14, 2021.

Washington Department of Fish and Wildlife. 2021b. SalmonScape. Available at: <https://apps.wdfw.wa.gov/salmonscape/map.html>. Last accessed July 14, 2021.

Washington Department of Natural Resources. 2021. Wetlands of High Conservation Value. <https://wadnr.maps.arcgis.com/apps/webappviewer/index.html?id=5cf9e5b22f584ad7a4e2aebc63c47bda>. Last accessed August 11, 2021.

Figures and Tables

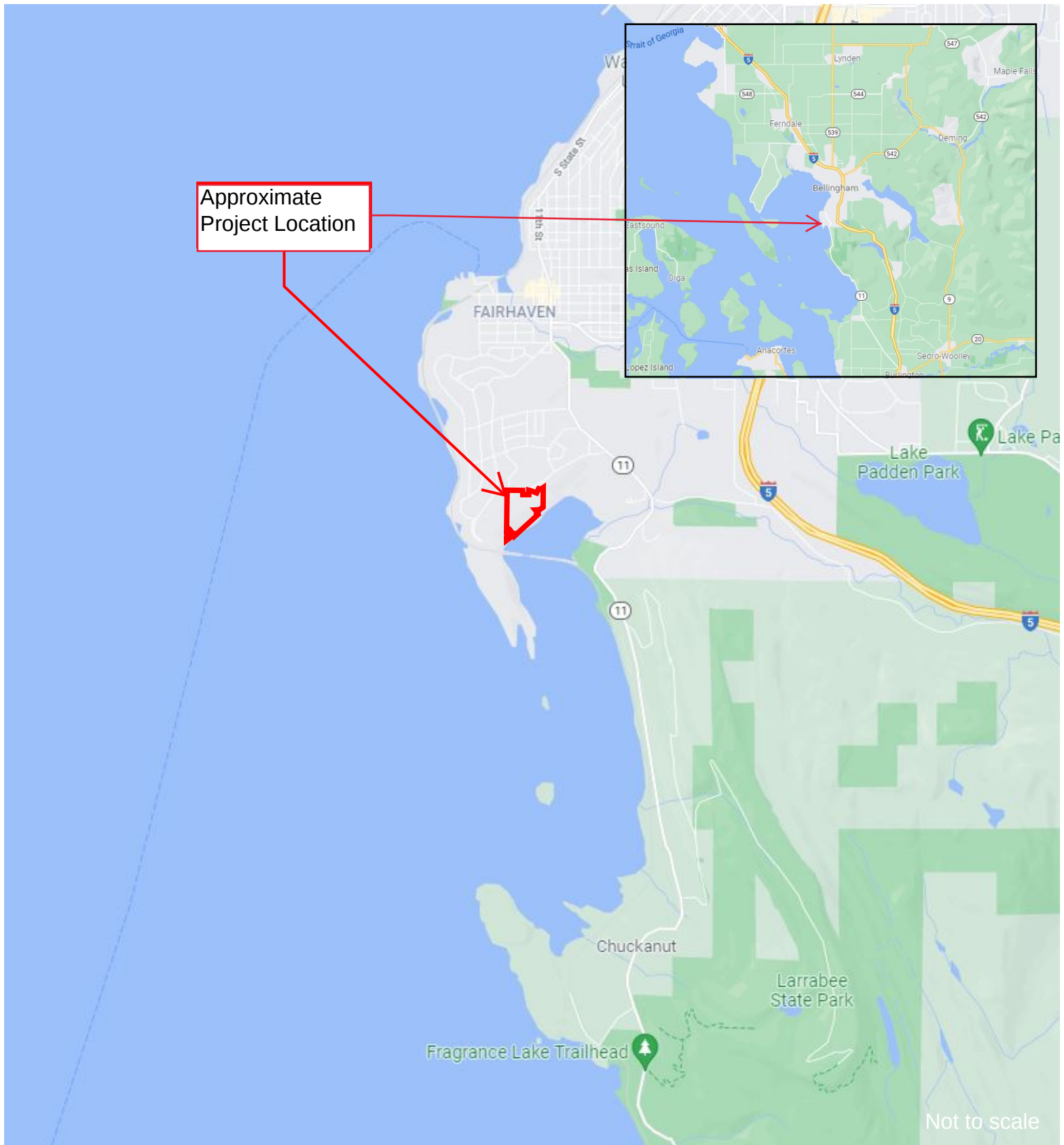


FIGURE 1 - Regional & Vicinity Map Jones Family Long Subdivision, Bellingham WA

Whatcom County Parcel Nos. 370212030004, 370213075542, 370213083499, 370213113550

Bellingham, WA
RAI PROJECT: 2021-072-001

PREPARED: 08/17/2021
BY: CLS



Raedeke
Associates, Inc.

2111 N. Northgate Way,
Suite 219 Seattle, WA 98133

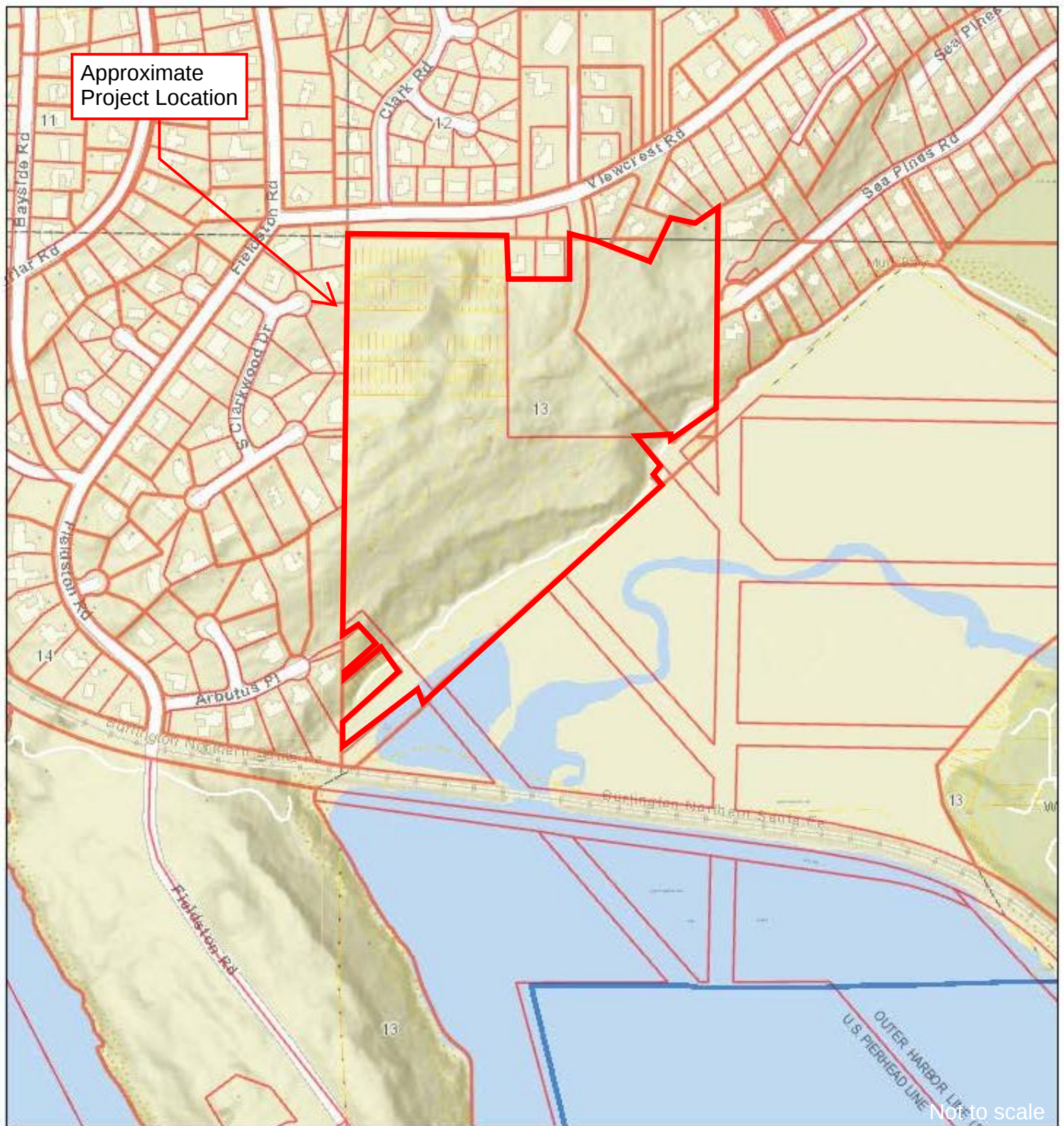


FIGURE 2 - Whatcom County Parcel Viewer Jones Family Long Subdivision, Bellingham WA

Whatcom County Parcel Nos. 370212030004, 370213075542, 370213083499, 370213113550

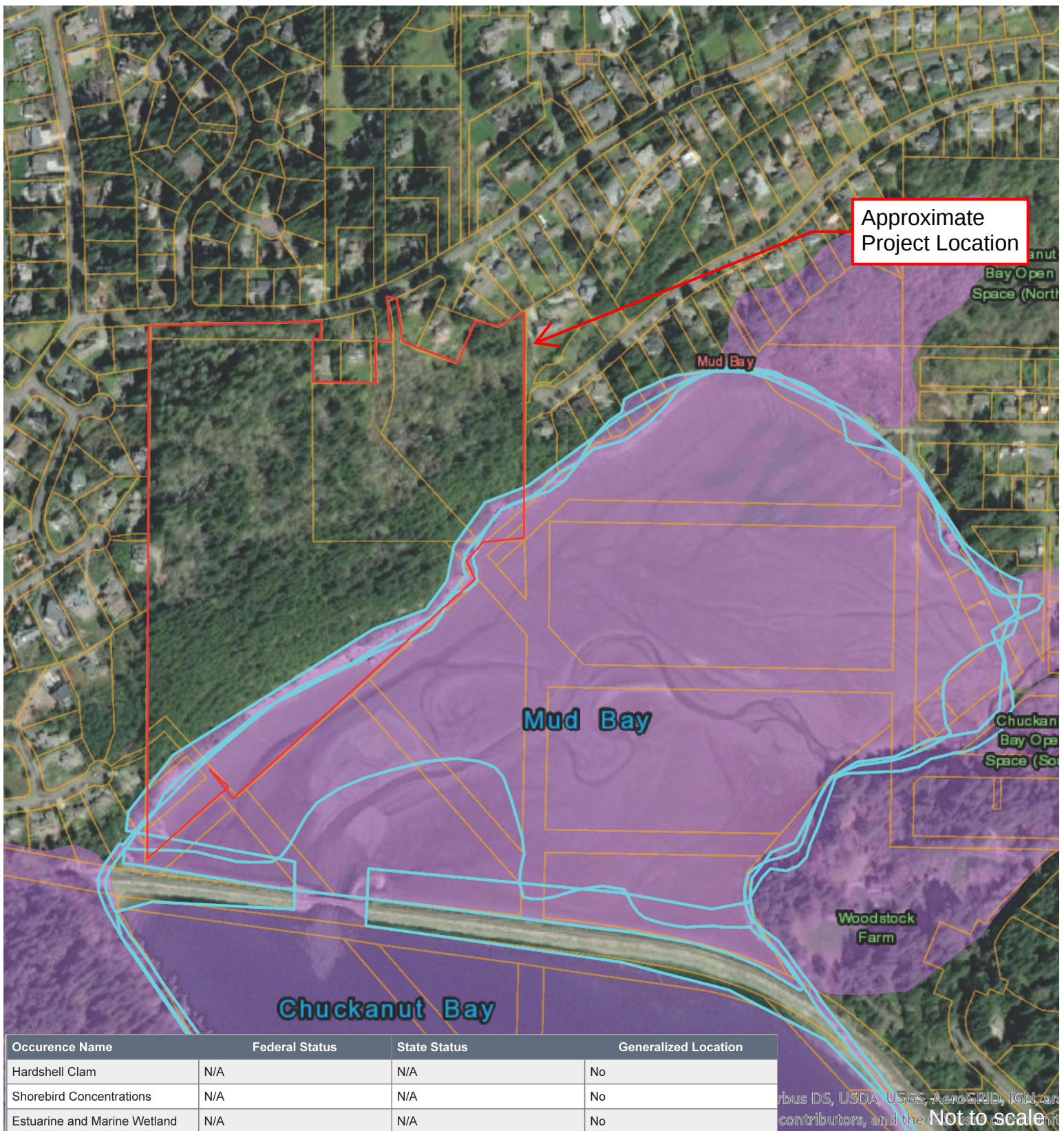
Bellingham, WA
RAI PROJECT: 2021-072-001

PREPARED: 08/17/2021
BY: CLS



Raedeke
Associates, Inc.

2111 N. Northgate Way,
Suite 219 Seattle, WA 98133



LEGEND: **FIGURE 3 - WDFW Priority Species & Habitats** **Jones Family Long Subdivision, Bellingham WA**



Whatcom County Parcel Nos. 370212030004, 370213075542, 370213083499,
 - Mapped Species 370213113550, Bellingham, WA
 RAI PROJECT: 2021-072-001

SOURCE INFORMATION: Washington Fish and
 Wildlife Priority Habitat & Species Online Mapping
 tool - <http://apps.wdfw.wa.gov/phsontheweb/>

PREPARED: 08/17/2021
 BY: CLS

Raedeke
 Associates, Inc.
 2111 N. Northgate Way,
 Suite 219 Seattle, WA 98133

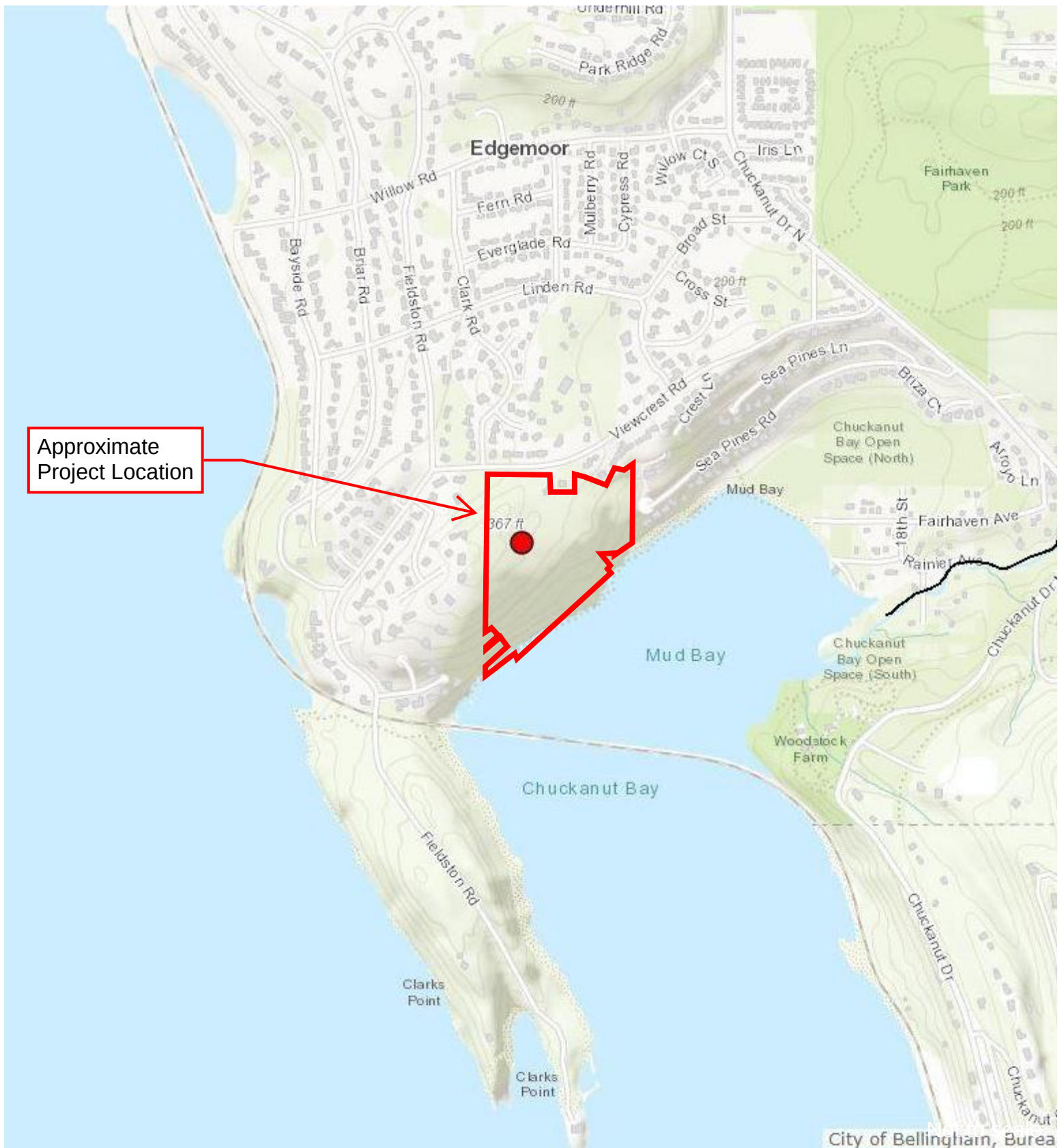


FIGURE 4 - WDFW SalmonScape Jones Family Long Subdivision, Bellingham WA

Whatcom County Parcel Nos. 370212030004, 370213075542, 370213083499, 370213113550

Legend: Fish Distribution

All SalmonScape Species

SOURCE INFORMATION: Washington Fish
and Wildlife SalmonScape Online Mapping tool -
<http://apps.wdfw.wa.gov/salmonscape/map.html>

Bellingham, WA
RAI PROJECT: 2021-072-001

PREPARED: 08/17/2021
BY: CLS



Raedeke
Associates, Inc.

2111 N. Northgate Way,
Suite 219 Seattle, WA 98133

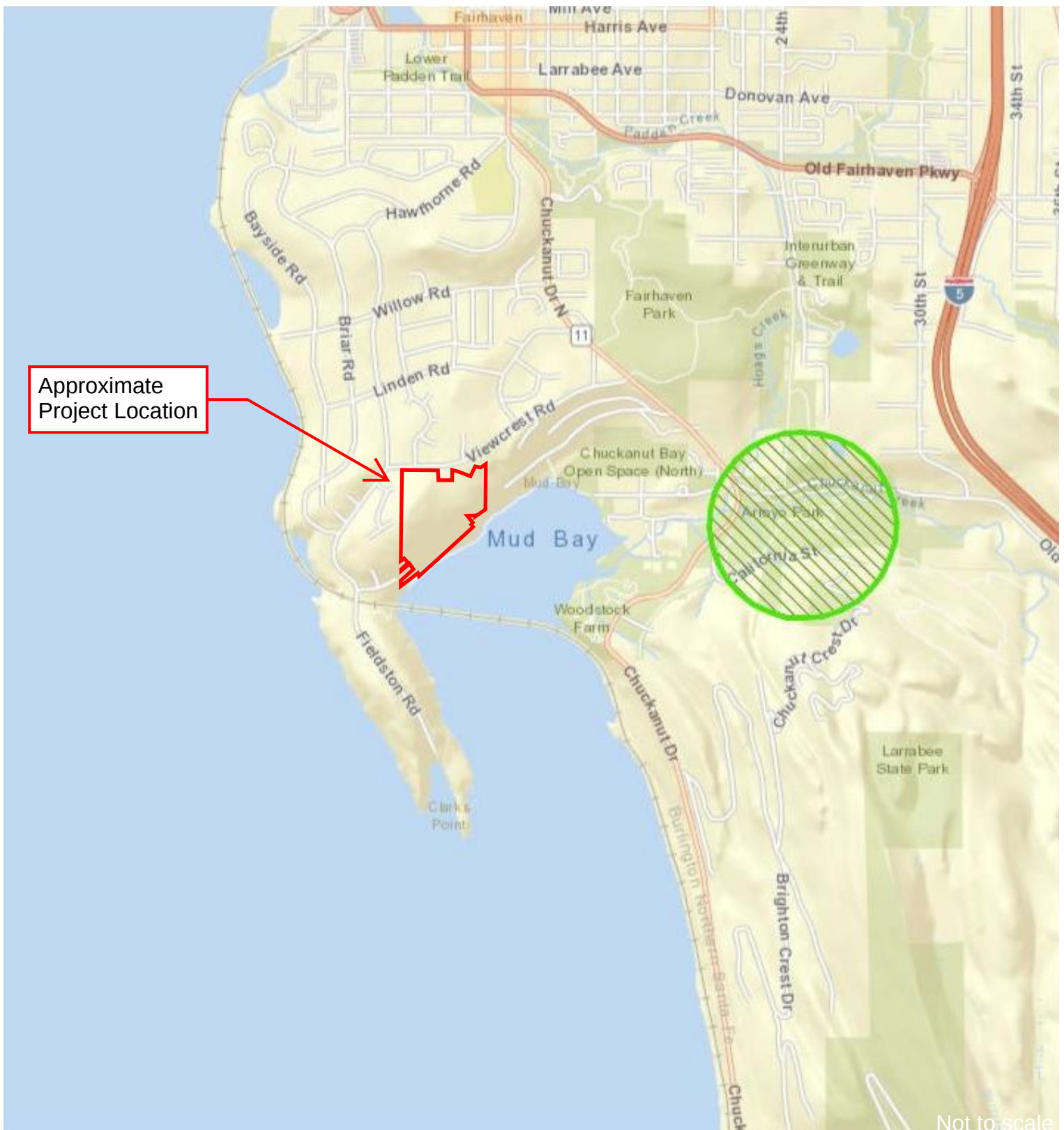


FIGURE 5 - WA DNR Wetlands of High Conservation Value Jones Family Long Subdivision, Bellingham WA

Whatcom County Parcel Nos. 370212030004, 370213075542, 370213083499, 370213113550

Bellingham, WA
RAI PROJECT: 2021-072-001

Legend:

- Known Rare Plants and Nonvascular Species of High Conservation Value
- Counties

PREPARED: 08/17/2021
BY: CLS

Raedeke
Associates, Inc.

2111 N. Northgate Way,
Suite 219 Seattle, WA 98133



Figure 6. Jones Family Long Subdivision Bellingham - Existing Conditions

Map Created By: A. Rossi

Date Created: 20 October, 2021

RAI Project Number: 2021-072-001

0 100 200 400 Feet

Proposed lot and road lines & wetland boundaries and buffers
received from Ali Taysi on 20 October, 2021

Raedeke
Associates, Inc.

2111 N. Northgate Way, Ste. 210
Seattle, WA 98133
Phone 206-925-8122
Wetland Science
Wildlife Biology
Landscape Architecture

LEGAL DESCRIPTION:

LOT B, AS DELINEATED ON ROGAN JONES 2 SHORT PLAT, ACCORDING TO THE SHORT PLAT
RECORDED APRIL 10, 1992, UNDER AUDITOR'S FILE NO. 920410201, RECORDS OF WHATCOMB
COUNTY, WASHINGTON; EXCEPT THAT PORTION LYING WITHIN THE BOUNDARIES OF THE TRACT
OF LAND DESCRIBED IN DEED TO DARRELL G. KAPP, ET UX., RECORDED JUNE 15, 1973,
UNDER AUDITOR'S FILE NO. 1140332.

THE EAST 750 FEET OF THE NORTH 700 FEET OF GOVERNMENT LOT 1, SECTION 13, TOWNSHIP 37 NORTH, RANGE 2 EAST W.A.; EXCEPT LOT 3, BLOCK 18, AMENDED MAP OF SOUTHERN FAIRHAVEN, THE CITY OF FAIRHAVEN, WASHINGTON, ACCORDING TO THE MAP THEREOF, RECORDED IN VOLUME OF PLATS, PAGE 10, OF THE THIRTIETH QUINALT STREET ON THE NORTH AND EAST PORTION OF THE VACATED ALLEY ON THE SOUTH WHICH INURED TO SAID LOT 3 UPON THE VACATION THEREOF; FURTHER EXCEPT THAT PORTION LYING WITHIN ROGAN JONES 2 SHORT PLAT RECORDED UNDER AUDITOR'S FILE NO. 920410201;

FURTHER EXCEPT THAT PORTION DECEIBED IN DEEDS TO THE CITY OF BELLINGHAM, RECORDED UNDER AUDITOR'S FILE NO. 1136193, TO DARRELL G. KAPP AND SUSAN KAPP; RECORDED UNDER AUDITOR'S FILE NO. 1140332, TO LARRY DUTTON AND LINDA DUTTON; RECORDED UNDER AUDITOR'S FILE NO. 1190072; AND TO PATRICIA A. FARIS, RECORDED UNDER AUDITOR'S FILE NO. 1245873; FURTHER EXCEPT 40-FOOT WIDE CHUCKANUT AVENUE AS SHOWN ON THE PLAT OF ROGAN JONES 2 SHORT PLAT.

THAT PORTION OF THE OSOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 12, TOWNSHIP 37 NORTH, RANGE 2 EAST, W.M., LYING SOUTH OF VIEWCREST ROAD AND WEST OF THE WEST LINE OF THAT CERTAIN TRACT OF LAND DESCRIBED IN DEED TO PATRICIA A. FARIS, RECORDED MARCH 23, 1977, UNDER AUDITOR'S FILE NO. 1245873.

LOTS, BLOCKS, VACATED STREETS AND ALLEYS IN THE AMENDED MAP OF SOUTH FAIRHAVEN, IN THE CITY OF FAIRHAVEN, WASHINGTON, ACCORDING TO THE PLAT THEREOF, RECORDED IN VOLUME 4 OF PLATS, PAGE 49, DESCRIBED AS FOLLOWS:

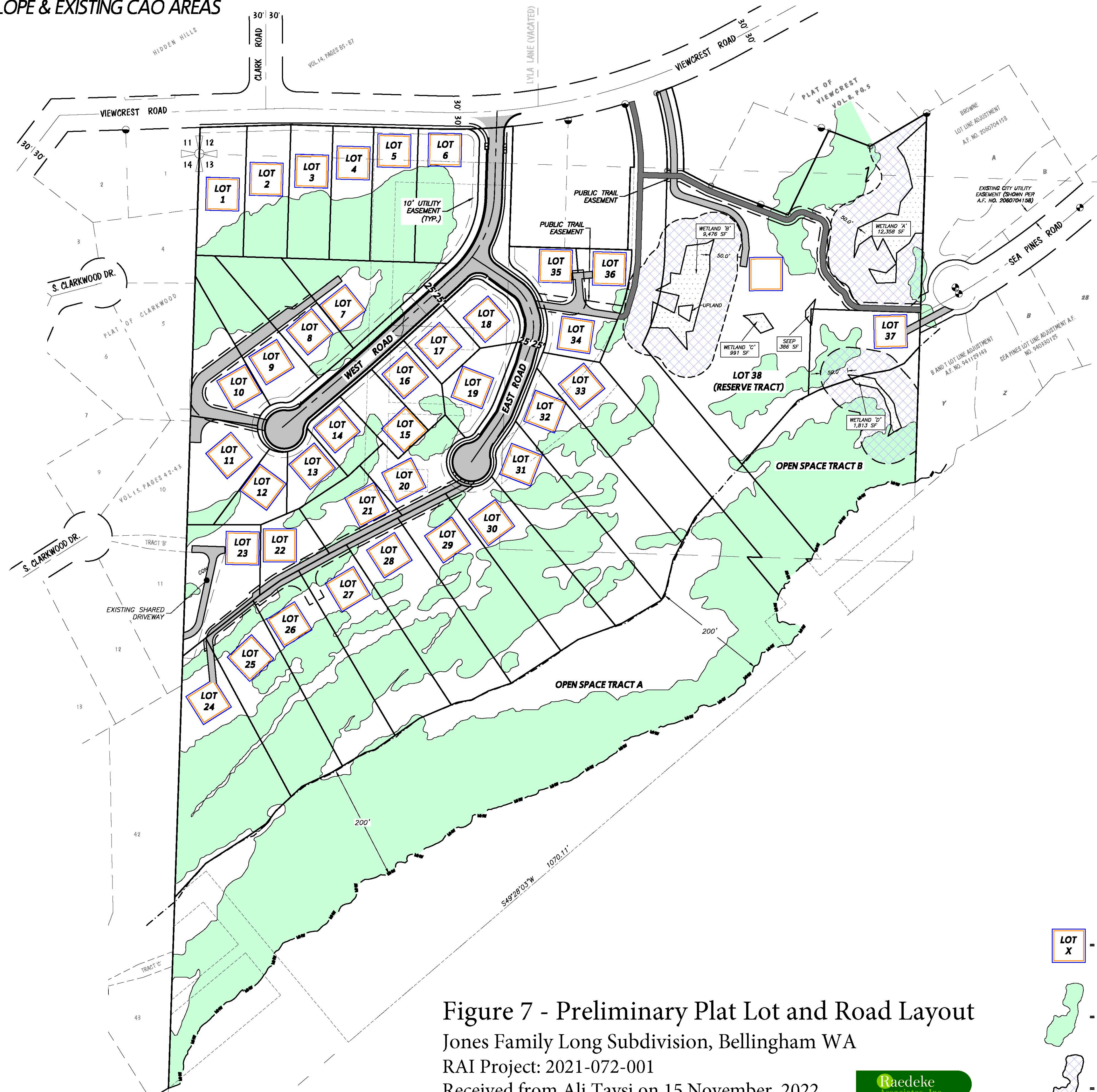
BLOCKS 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16 AND 17; ALL OF BLOCKS 3, EXCEPT LOT 1 AND LOT 2; TOGETHER WITH ALL ALLEYS IN THE ABOVE-DESCRIBED BLOCKS VACATED BY RESOLUTION OF THE CITY COUNCIL OF BELLINGHAM, WASHINGTON, RECORDED JULY 19, 1912 UNDER AUDITOR'S FILE NO. 159473, AND ALL STREETS AND PARTS OF STREETS VACATED BY THE SAID RESOLUTION, EXCEPT THE SOUTHEASTERLY HALF OF CHUCKANUT AVENUE ABUTTING ON LOTS 1 AND 2, BLOCK 3.

FURTHER EXCEPT THE EAST 750 FEET OF THE NORTH 700 FEET OF GOVERNMENT LOT 1,
SECTION 13, TOWNSHIP 37 NORTH, RANGE 2 EAST, W.M.

FURTHER EXCEPT THAT PORTION, IF ANY, LYING WITHIN LOTS OR BLOCKS 113, 114 AND 115, FAIRHAVEN TIDELANDS, OWNED BY THE CITY OF BELLINGHAM.

SURVEY NOTES:

- 1) THIS TOPOGRAPHIC SURVEY WAS PERFORMED AND PREPARED IN ACCORDANCE WITH WAC 332-130-1415.
- 2) DATA FOR THIS SURVEY WAS GATHERED BY FIELD TRAVERSE UTILIZING ELECTRONIC DATA COLLECTION IN JULY 2020 AND MERGED WITH DATA COLLECTED BY LBS IN 2008.
- 3) EQUIPMENT USED: THEOMAT 00'01.5"
EDM: ± 2 PPM, ± 3 MM
- 4) HORIZONTAL DATUM: NAD 83/98, WASHINGTON STATE PLANE NORTH ZONE (GRID) PER CITY OF BELLINGHAM CONTROL MONUMENTS 2047 (MONUMENTED S.I. OF VIEWCREST ROAD & FIELDSTONE AVE.) AND 5281 (PRC IN CENTERLINE OF VIEWCREST ROAD)
- 5) VERTICAL DATUM: NAVD88 PER CITY OF BELLINGHAM VERTICAL CONTROL BENCHMARK #2047.
ORTHO ELEVATION = 209.12
- 6) CONTOURS DEPICTED HEREON MEET OR EXCEED NATIONAL MAPPING STANDARDS FOR 1-FOOT ACCURACY TOPOGRAPHIC SURVEYS AND HAVE BEEN COMPUTER GENERATED FROM GROUND FIELD TOPOGRAPHY GATHERED FOR THIS SURVEY UTILIZING ELECTRONIC DATA COLLECTION
- 7) CONDUCTIBLE UNDERGROUND UTILITY LOCATES SERVICES WERE PERFORMED AND PAINTED BY WASHINGTON STATE ONE-CALL UTILITY RATE SERVICES AND SURVEYED BY FSE FIELD CREWS IN JULY 2020. UTILITIES ARE KNOWN TO EXIST WITHIN THE LIMITS OF THIS SURVEY THAT WERE UNDETECTABLE. ADDITIONAL UTILITY VERIFICATION MAY BE WARRANTED IN AREAS CONSIDERED FOR CONSTRUCTION. AS-BUILTS AND RECORD DRAWINGS WERE USED TO SUPPLEMENT UTILITY INFORMATION WHERE AVAILABLE.
- 8) UTILITY LOCATION AREAS AND LEVEL OF LOCATE ACCURACY WERE DETERMINED BY SURVEYOR AND CLIENT PRIOR TO COMMENCEMENT OF FIELD SURVEY WORK.
- 9) THIS MAP IS NOT INTENDED TO REPRESENT A FORMAL BOUNDARY SURVEY, NOR DOES IT REFLECT ELEMENTS THAT A BOUNDARY SURVEY MAY DISCLOSE. BOUNDARY RELATED ELEMENTS DEPICTED HEREON ARE SHOWN PER 2008 LBS SURVEY OF SUBJECT PROPERTIES.
- 10) WETLANDS SHOWN HEREON DELINEATED IN JUNE 2020 BY NORTHWEST ECOLOGICAL AND SURVEYED BY PACIFIC SURVEYING AND ENGINEERING IN JULY 2020.

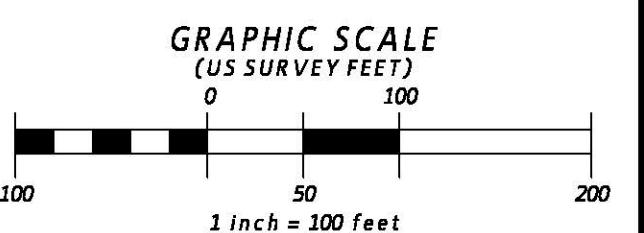


Received from Ali Taysi on 15 November, 2022

60'X60' BUILDING ENVELOPE PURSUANT TO BMC 23.08.060.D.1. THIS AREA DOES NOT NECESSARILY REPRESENT THE ACTUAL BUILDING ENVELOPE, BUT RATHER IS INTENDED TO REPRESENT THAT THE NEW LOT HAS BEEN CONFIGURED TO MEET CITY OF BELLINGHAM "LOT DESIGN" CRITERIA. LOTS 6, 15, 21, 25, 26, 27, 29, & 32 MAY REQUIRE A DEPARTURE (10%)

= GEOLOGICALLY SIGNIFICANT CRITICAL AREA

= WETLAND BUFFER

[illegible]

807 CHUCKANUT SHORE ROAD
BELLINGHAM, WA 98229

FOR ANNE C. JONES FAMILY LP
807 CHUCKANUT SHORE ROAD
BELLINGHAM, WA 98229

SITUATE IN A PORTION OF THE SW 1/4 OF THE SW 1/4 OF SECTION 12, AND THE NW 1/4 OF THE NW 1/4 OF SECTION 13, TOWNSHIP 37 NORTH, RANGE 2 EAST, CITY OF BELLINGHAM, WHATCOM COUNTY, WASHINGTON



909 Squallum Way, Suite 111 | BELLINGHAM, WA 98225
T: 360.671.7387 | F: 360.671.4685
WWW.PSESURVEY.COM | INFO@PSESURVEY.COM

DATA	DRAWN BY	CHECKED BY	FIELD BOOKS
BASE	TJM/DML	ASM	DESIGN:
DESIGN			STAKING:
XREF:	N/A		ASBUILT:
DWG:	2019196_svk_PREPLAT_BLDG+CAD		DATUM
HORIZ. SCALE:	1" = 100'		
VERT. SCALE:	N/A		
JOB#:	2019196		
SHEET		5	9
		VERT.:	NAVD88

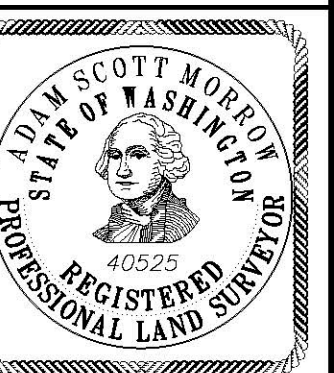


Table 1. Wildlife species (or sign thereof) observed at the Jones Family Long Subdivision project site during site investigation July 21, 2021

Common Name	Scientific Name
American goldfinch	<i>Spinus tristis</i>
American robin	<i>Turdus migratorius</i>
Bald eagle (observed flying over bay)	<i>Haliaeetus leucocephalus</i>
Barred owl	<i>Strix varia</i>
Black bear (scratch marks observed on trees)	<i>Ursus americanus</i>
Black-capped chickadee	<i>Poecile atricapillus</i>
Black-tailed deer	<i>Odocoileus hemionus columbianus</i>
Brown creeper	<i>Certhia americana</i>
Cedar waxwing	<i>Bombycilla cedrorum</i>
Chestnut-backed chickadee	<i>Poecile rufescens</i>
Cooper's hawk	<i>Accipiter cooperii</i>
Dark-eyed junco	<i>Junco hyemalis</i>
Douglas squirrel	<i>Tamiasciurus douglasii</i>
Eastern cottontail	<i>Sylvilagus floridanus</i>
Eastern gray squirrel	<i>Sciurus carolinensis</i>
Glaucous-winged gull	<i>Larus glaucescens</i>
Great blue heron	<i>Ardea herodias</i>
Hairy woodpecker	<i>Leuconotopicus villosus</i>
Northern flicker	<i>Colaptes auratus</i>
Pileated woodpecker	<i>Dryocopus pileatus</i>
Red-breasted sapsucker (foraging excavations)	<i>Sphyrapicus ruber</i>
Spotted towhee	<i>Pipilo maculatus</i>
Steller's jay	<i>Cyanocitta stelleri</i>