DOWL

EUGENE WATER & ELECTRIC BOARD

ECOLOGICAL INVENTORY REPORT

Final – February 2021

EWEB

Feb. 11, 2021

INTRODUCTION

At the request of the Eugene Water and Electric Board (EWEB), DOWL has prepared this report documenting and evaluating the natural features on a 10-acre, undeveloped, parcel of land in south Eugene that was acquired by EWEB in the 1950s for future water storage. The site occupies a block bounded by East 40th Avenue to the north, Hilyard Street to the east, East 43rd Avenue to the south, and Ferry Street to the west (Figure 1, Vicinity Map).

The open space provided by the East 40th Avenue site is popular with nearby residents and EWEB is seeking to minimize impacts to the natural features of the site while providing necessary infrastructure improvements (Photo 1, Ridgetop Informal Trail).

The purpose of this report is to provide EWEB with a detailed description of the site so that ecological values can be factored into final tank siting decisions.

BACKGROUND

EWEB is Oregon's largest customer-owned utility. EWEB provides water and electricity to the Eugene community, as well as parts of east Springfield and the McKenzie River valley. As a public utility EWEB is chartered by the City of Eugene to serve the interests of its citizens by providing reliable, affordable water and electricity for its customers.

The EWEB water distribution system currently includes four base level water storage tanks that provide storage for the entire distribution system. The existing tanks are Hayden Bridge (15 million gallons (MG) constructed in 2001); College Hill (15 MG constructed in 1939); Hawkins Hill (20 MG constructed in 1961); and Santa Clara (20 MG constructed in 1974).

FIGURE 1: VICINITY MAP

PHOTO 1: RIDGETOP INFORMAL TRAIL

Three of the tanks have significant structural issues and are expected to fail during an earthquake event. Hydraulic issues exist which result in inefficient filling and draining cycles, affecting water quality. In addition, due to a leaking roof and potential water quality issues, the Oregon Health Authority Drinking Water Services requires EWEB to repair or decommission College Hill by the end of 2023.

Through the 2015 Water Master Plan effort and subsequent structural evaluations, it has been determined that replacing the large base level tanks with multiple smaller, distributed tanks would provide resilient and redundant facilities, enhance operations, and improve water quality.

As part of their 10-year Capital Improvement Pan (CIP), EWEB intends to construct one new 7.5 MG tank with the potential for a second tank in the future, on the East 40th Avenue site. In addition to the new tank or tanks, the CIP also includes construction of a new 36-inch diameter water transmission main between West Amazon Street and the intersection of East 40th Avenue and Patterson Street. The transmission main work is being timed to coincide with planned City of Eugene street projects.

ASSESSMENT METHODS

Desktop Review of Published Materials

Prior to the on-site natural resources inventory, DOWL Environmental Specialists conducted a desktop review of published materials related to the site. Reviewed published materials included:

- East 40th Avenue Arborist Report (Cameron McCarthy, 2020)
- Historical aerial photos
- Current aerial photos of the City
- US Fish & Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) (USFWS 2020)
- Oregon Department of Agriculture (ODA) Threatened and Endangered Plant Species List (ODA, 2020)
- Willamette Valley Oak and Prairie Cooperative (WVOPC) Strategic Action Plan (WVOPC, 2020)
- Wildlife-Habitat Relationships in Oregon and Washington (O'Neil and Johnson, 2001)
- Oregon Department of Fish & Wildlife (ODFW) Oregon Conservation Strategy (ODFW, 2016)

Information Solicited from Neighbors and Others

To augment the information that would be collected during the on-site investigation, DOWL solicited, via email, information regarding plant and animal observations from neighbors and other individuals and organizations with knowledge of the site. On October 13, 2020 EWEB emailed 48 neighbors requesting information that they would be willing to share with DOWL regarding their knowledge of the site's natural features. In addition, DOWL contacted Dr. Bart Johnson a Landscape Architecture and Ecology professor at the University of Oregon who has conducted research with students at the site for the past 20 years.

Field Investigation

On October 8th and 9th, 2020 DOWL Environmental Specialists visited the site to map the vegetation and characterize and evaluate the existing on-site ecological conditions, including wildlife species, wildlife habitat and plant communities. The DOWL team conducted a series of meander surveys to gain an understanding of the entire parcel. During the surveys the team noted plant species present, physical/structural characteristics of the vegetation, evidence of disturbance, relative health of the trees and understory vegetation, and the locations of individual habitats and associated plant communities.

Conducting a series of site visits throughout an entire year would have resulted in a more complete inventory of species that occupy or use the site. However, a fairly robust list of likely species for a small site can be developed based on habitats that are present. A particular set of habitats will support a fairly predictable set of species. While butterflies and spring wildflowers could not be inventoried during the fall site visit, their presence is documented in the species lists provided by neighbors and local experts familiar with the site.

Using the information collected during the meander surveys, a topographic map, the results of the tree survey that was included with the Arborist Report (Cameron McCarthy 2020), and GIS, DOWL developed a map of plant communities present on the site.

ASSESSMENT RESULTS

Desktop Review

Historic Vegetation

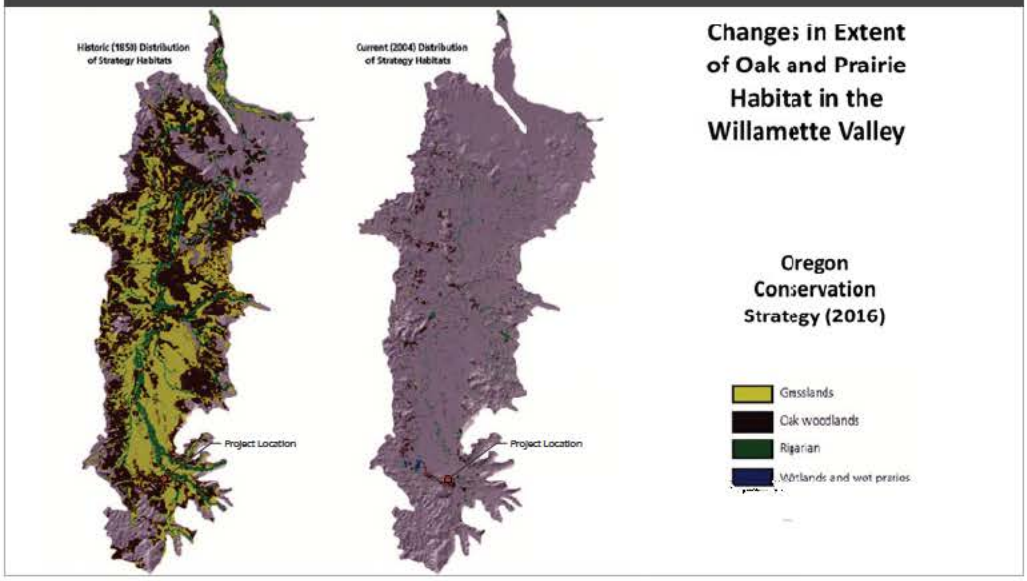
According to multiple sources and as reported in the 2020 Willamette Valley Oak and Prairie Cooperative Strategic Action Plan (WVOPC 2020), prior to Euro-American settlement in the mid-1800s, large expanses of grassland and oak-dominated habitats covered the floor of the Willamette Valley, forming a complex mosaic of upland and wet prairie, oak savanna, and oak woodland mixed with broad bands of riparian forest lining major rivers. In general, open prairie occupied a central position within the valley bottom surrounded by bands of savanna and woodland, transitioning to conifer forest on the valley fringes and on some north facing hillslopes. Based on information derived from the General Land Office (GLO) survey notes from the 1850s, it is estimated that 61 percent (1,461,469 acres) of the valley floor was occupied by oak or prairie habitat at the time.

Early naturalists and settlers to the Willamette Valley described wide expanses of prairie interspersed with oak savanna and oak woodland, which Native Americans maintained by setting low intensity fires. The native inhabitants of the valley influenced the vegetation over thousands of years by initiating frequent fires to burn off brushy vegetation in order to improve conditions for hunting, gathering, and possibly travel. During this period, a diverse community of animals and plants evolved that could withstand or even depend upon regular fire including fire-resistant oak.

After settlers moved into the valley in the mid-1800s and began suppressing fires, many of the oak and prairie dominated landscapes were gradually overtaken by conifers and other woody vegetation or converted to farms and cities.

The extent of oak and prairie habitat is greatly diminished in the valley and now covers less than 10% of its historic range (Figure 2, Willamette Valley Change in Extent of Oak and Prairie; Figure 3 Eugene Change in Extent of Oak and Prairie Habitat). What remains is generally found in highly fragmented patches and in most cases is significantly impacted by invasive species and colonizing woody vegetation.

FIGURE 2: WILLAMETTE VALLEY CHANGE IN EXTENT OF OAK AND PRAIRIE



Arborist Report

The Arborist Report prepared for the site in 2019 and 2020 by Cameron McCarthy Landscape Architecture & Planning (Appendix A) described two distinct woodlands on the site—one dominated by Douglas fir and the other dominated by oak. The report included a detailed tree inventory map that identified individual trees by species and size. In addition, the report included recommendations for maintaining or improving the health of the woodlands as well as recommendations for minimizing impacts to trees during proposed site development activities.

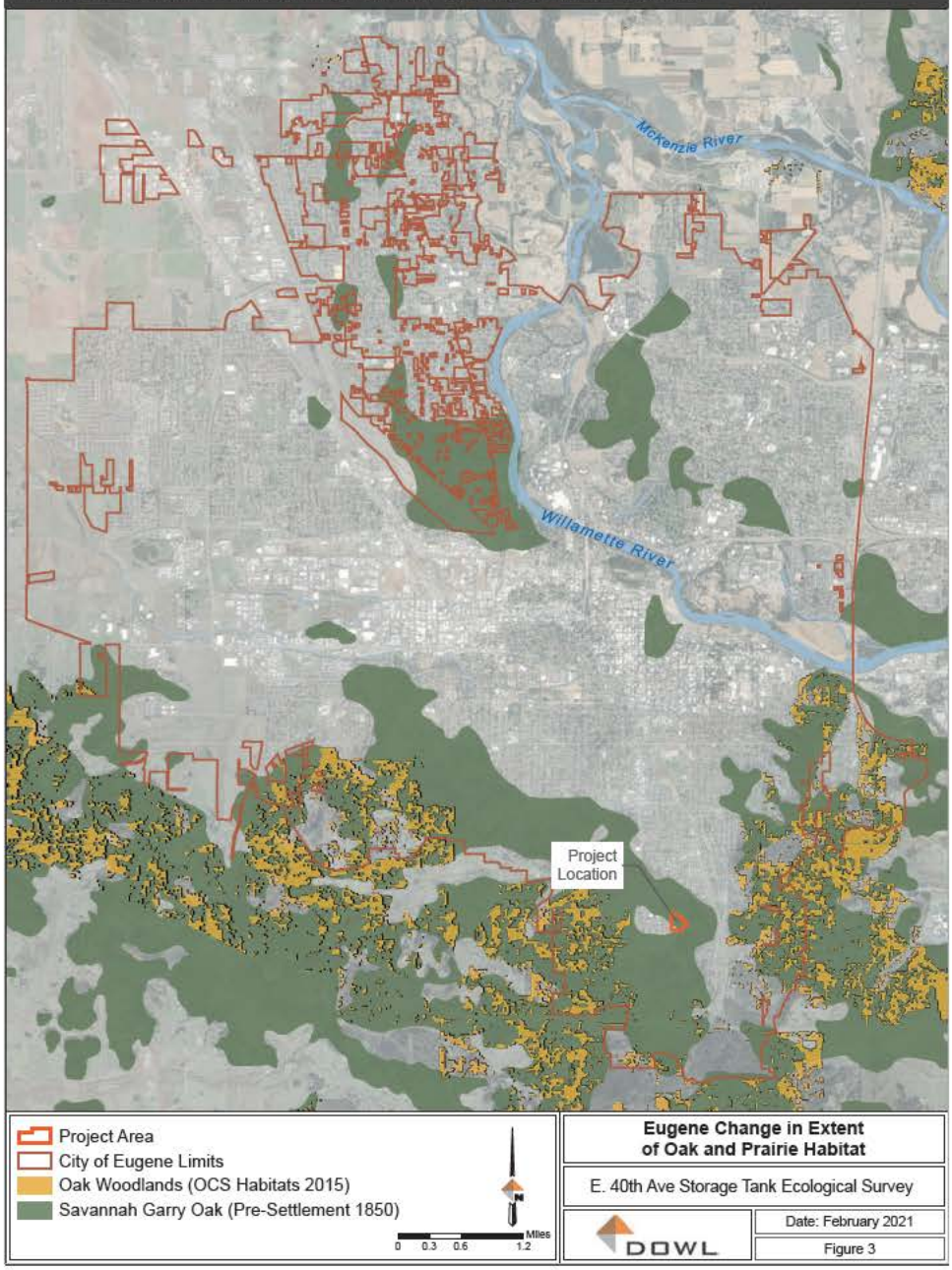
State and Federal Threatened and Endangered Species

The State of Oregon and the federal government maintain separate lists of Threatened and Endangered (T&E) species. These are species that are at some degree of risk of becoming extinct.

The Oregon Department of Fish and Wildlife (ODFW) maintains a list of native wildlife species in Oregon that have been determined to be either "threatened" or "endangered" according to criteria set forth by rule (OAR 635-100-0105). State threatened and endangered plant listings are handled through the Oregon Department of Agriculture, and most State invertebrate listings are handled through the USFWS and the Oregon Biodiversity Information Center.

Under federal law the U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) share responsibility for implementing the federal Endangered Species Act of 1973. In general, USFWS has oversight for terrestrial and freshwater species and NOAA for marine and anadromous species. In addition to information about species already listed, the USFWS-Oregon Field Office maintains lists of candidate species and Species of Concern.

FIGURE 3: EUGENE CHANGE IN EXTENT OF OAK AND PRAIRIE HABITAT



The USFWS Information, Planning, and Consultation (IPaC) system generates lists of species and other resources such as critical habitat (collectively referred to as trust resources), under the USFWS jurisdiction that are known or expected to be on or near a project area. The list may also include trust resources that occur outside the project area but that could potentially be directly or indirectly impacted by activities in the project area. According to the USFWS, determining the likelihood and extent of effects a property may have on trust resources typically requires gathering additional site-specific and project-specific information such as vegetation/species surveys.

The IPaC report (Appendix B) for the East 40th Avenue site identified three threatened or endangered birds, one fish, one insect and four plant species that could potentially occupy the site. Species identified by the USFWS IPaC system for the East 40th Avenue site, along with their federal and state listing status are listed in Table 1.

Table 1. Listed Species Identified by USFWS as Potentially Occurring Near East 40th Avenue Site

Species	Listing Status		Habitat
	Federal	Oregon	
BIRDS			
Marbled murrelet *Brachyramphus marmoratus*	Threatened	Threatened	Old-growth Douglas fir forest
Northern spotted owl *Strix occidentalis caurina*	Threatened	Threatened	Old-growth Douglas fir forest
Yellow-billed cuckoo *Coccyzus americanus*	Threatened	Not Listed	Riparian deciduous forests
FISH			
Bull trout *Salvelinus confluentus*	Threatened	Not Listed	Cold water streams
INSECTS			
Fender's Blue Butterfly *Icaricia icarioides fenderi*	Endangered	Endangered	Habitats that support perennial Lupine species
PLANTS			
Bradshaw's Desert-parsley *Lomatium bradshawii*	Endangered	Endangered	Wet prairie
Kincaid's Lupine *Lupinus sulphureus ssp. kincaidii*	Threatened	Threatened	Upland prairie remnants
Nelson's Checker-mallow *Sidalcea nelsoniana*	Threatened	Threatened	Wet prairies and stream sides
Willamette Daisy *Erigeron decumbens*	Endangered	Endangered	Wet prairie grasslands and drier upland prairie sites

Input from Neighbors and Others Familiar with Site

In response to the solicitation for information about the site from local experts and from neighbors DOWL and EWEB received responses from three community members with extensive professional Pacific northwest ecological experience and knowledge, and six neighbors. A summary of the comments received are presented below. Direct transcripts of the full comments received, as well as all species lists provided by the commenters are presented in Appendix C.

Neighbors

Neighbors reported that the site supports many different species of birds and butterflies, as well as deer, racoons, and wild turkeys. One neighbor noted that during the 1960's quail, pheasants, skinks, snakes, and tree frogs were common; and that deer, raccoons and wild turkeys are a more recent addition. That same neighbor noted that there are fewer species of wildflowers now than in the 1960's and 1970's.

Concerns expressed by neighbors regarding tank construction on the site included the loss of the existing Douglas fir forest; the potential for decreased safety and property values; the potential for tank construction and operation to have a negative effect on the current ecosystem; and a concern that the timing of the natural resources site investigation during the fall likely resulted in many species common on the site not being accounted for.

Professional Ecologists

The following professionals provided input regarding the site: Jeff Krueger; Dr Bart Johnson; and Ed Alverson. Jeff Krueger works closely with the Willamette Valley Oak and Prairie Cooperative, managing the development of a valley-wide strategic action plan to protect and enhance oak and prairie habitats.

Dr. Bart Johnson is a Landscape Architecture and Ecology professor at the University of Oregon who has conducted research with students at the site for the past 20 years. Ed Alverson is a local naturalist who works as the Natural Areas Coordinator for the Lane County Parks Division. Each of the professional ecologists:

- Emphasized the regional significance of the oak habitat, and the importance of preserving and managing it.
- Noted that the Oregon Conservation Strategy identifies prairie, savanna, and oak woodlands as conservation priorities in the Willamette Valley.
- Stated that conifer encroachment is threatening the oak habitat, and strongly recommended that Douglas-fir at the site be thinned to follow best management practices for reducing fire hazard, and improving habitat value for native wildlife.

Jeff Krueger explained that the Willamette Valley Oak and Prairie Cooperative Strategic Plan notes the rapid decline and degradation of these once common oak and prairie habitats across the valley and calls for identification and conservation of remnant oak and prairie habitats where they exist and for the management of these properties in a way that preserves and enhances the oak and prairie vegetation over the long-term. Mr. Krueger encouraged EWEB to support the valley-wide efforts to protect this valuable and rapidly declining habitat type locally, including East 40th Avenue site, and the at-risk wildlife species it supports (e.g., native pollinators, Western bluebirds, white-breasted nuthatch, etc.).

Dr. Bart Johnson provided a plant species list generated by his students over the years and noted that the site contains a large proportion of native species, including three native bunchgrasses that are valued as cornerstones of local upland native prairies and Oregon white oak savannas. He also noted that the City of Eugene has made the acquisition and restoration of prairie and oak habitats one of its top conservation, recreation and educational priorities, and strongly urged EWEB to work with the city to strengthen the habitat and civic value of the neighborhood through prairie and oak habitat restoration.

Ed Alverson pointed out that the presence of ponderosa pine and California black oak in addition to the Oregon white oak is unique to the Willamette Valley and recommended that efforts be taken to preserve these species, in addition to the Oregon white oak. Mr. Alverson noted that while the East 40th Avenue site is a relatively small parcel, it is worth considering the value of small sites to conservation goals, as part of a diverse strategy and a complement to large protected tracts; and that for oak-associated birds, the habitat on the EWEB parcel is part of a larger habitat block that includes remnant oak stands located on nearby residential lots.

Mr. Alverson also noted the presence on the site of one individual of spurge laurel, a very problematic non-native species that can be extremely invasive in oak woodlands and recommended that given its potential for being an invader it would be good to prioritize inventory and removal of this species in a management plan.

Local Conservation Groups Input

This report will be shared with the public as well as local conservation organizations.

ON-SITE OBSERVATIONS

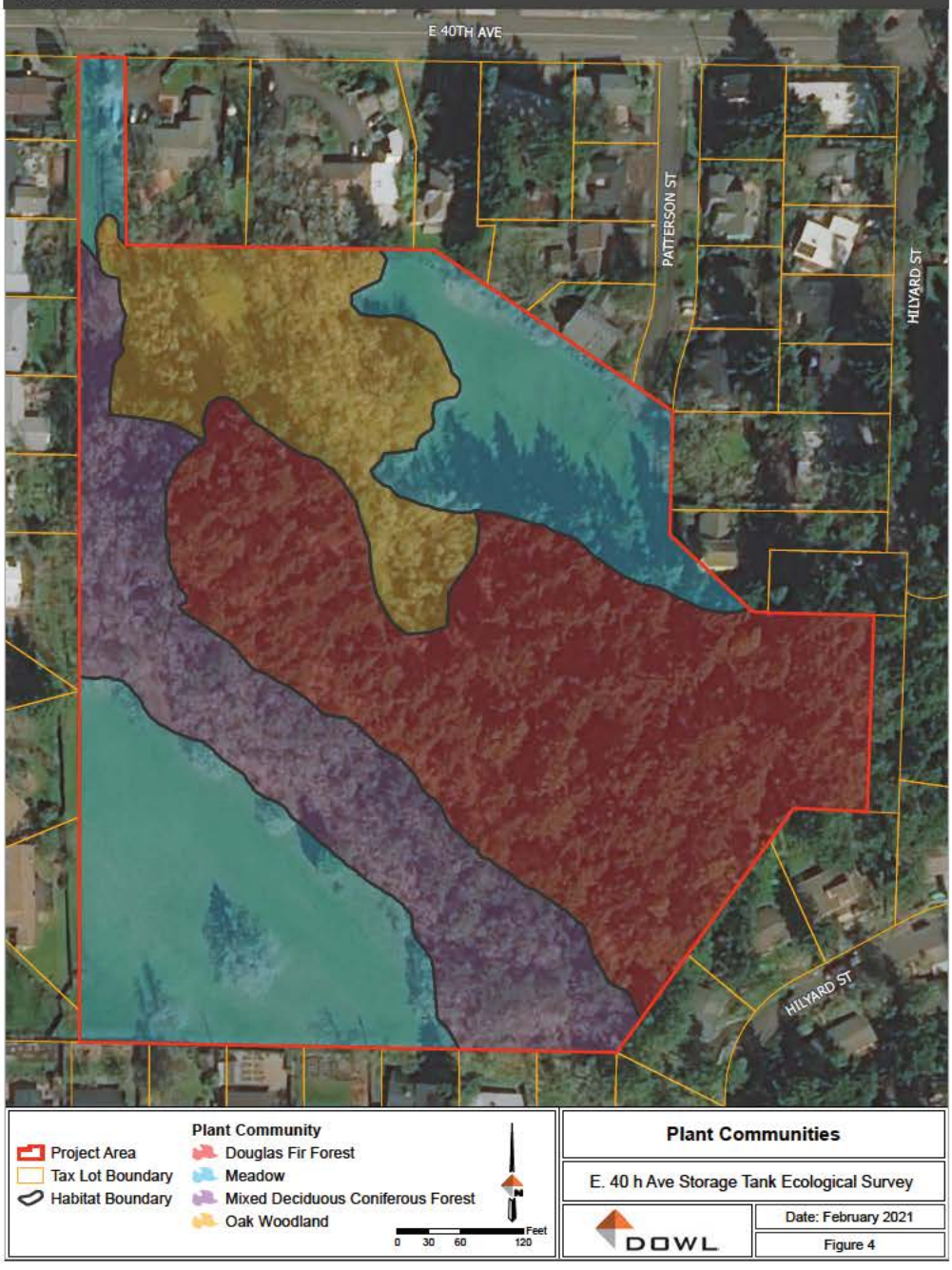
The project site is bordered on all sides by residential development. The nearest surrounding streets are East 40th Avenue to the north, Hilyard Street to the east, East 43rd Avenue on the south, and Ferry Street on the west. The site is characterized by a steep sided topographic ridge that is oriented northwest to southeast across the site. The middle of the ridgetop includes a slight topographic depression, with comparatively higher ground to the northwest and southeast of the depression. The northeast and southwest corners of the site are relatively flat.

On-site vegetation is characterized by regularly mown meadows in the northeast and southwest corners; mature Douglas fir forest on the top of the ridge; mixed evergreen and deciduous forest on the south facing slope of the ridge; and oak woodland/oak savanna occupying the topographically lowest portion of the ridge, extending down the north side of the ridge and extending beyond the northern boundary of the site.

Based on the conditions observed on the site, the trust resources identified in the IPaC report and presented in Table 1 would not be expected to occur on the site. None of these species or their primary habitats (old-growth forest, remnant prairie, wet prairie, cold water streams, or riparian forests) were identified during the site investigation or were reported as having been observed by neighbors or others contacted about the site.

While the regularly mown areas on the east and west sides of the site could potentially be enhanced/restored to support dry prairie habitat conditions, based on the presence of only a few prairie species and the predominance of non-native grasses and forbs these areas would not be considered dry prairie habitat. Historic disturbance and regular mowing have effectively removed any native prairie habitat that may have existed on the site in the past. However, based on the observed conditions the potential to reestablish dry prairie habitat on this site does exist.

FIGURE 4: PLANT COMMUNITY MAP



Wildlife-Habitat Types

Several classification systems for describing habitats and vegetation types exist, and for this project DOWL employed the classification system described in Oregon and Washington Wildlife Species and Their Habitats (O'Neil and Johnson 2001). The O'Neil and Johnson system used a cluster analysis procedure that considered 541 native breeding species and 119 Pacific Northwest vegetation, land use, and marine groupings to identify 32 wildlife-habitat types.

DOWL identified the following three wildlife-habitat types recognized under the O'Neil and Johnson classification system on the East 40th Avenue site:

- **Westside grassland** occupying the northeast and southwest corners of the site
- **Westside lowland conifer-deciduous forest** on the top of the ridge, and on the south facing slope of the ridge; and
- **Westside oak and Douglas-fir forest** occupies the lowest portion of the ridge and extends down the north side of the ridge and continues beyond the north edge of the site.

Within the three wildlife-habitat types DOWL identified the following four distinct plant communities (Figure 4, Plant Community Map).

1.Douglas Fir Forest

This plant community is located on the top of the ridge that dominates the site and is characterized by a mostly closed single-layer tree canopy. This plant community supports relatively few native shrubs and little understory herbaceous vegetation. The overstory is dominated by large even-aged Douglas fir, with a few smaller Douglas firs, occasional big-leaf maple, Himalayan blackberry, trailing blackberry, occasional snowberry, Oregon grape, ornamental cherry, and English ivy in the understory. The eastern third of this plant community is composed almost completely of large Douglas firs. The central and western portions of this area support a somewhat more mixed assemblage of trees including big-leaf maple, and California black oak.

On the western slope of the ridge a more-recently disturbed area is characterized by small trees including Douglas fir saplings, ornamental cherry, Oregon ash, cultivated pear saplings, English ivy, and Himalayan blackberry.

The conifer-dominated plant community is expanding to the north and northwest into the oak-dominated plant community.

PHOTO 2: INTERIOR OF DOUGLAS FIR FOREST

PHOTO 3: ENGLISH IVY

PHOTO 4: DOUGLAS FIR FOREST CANOPY

While it does contain large trees, the Douglas fir forest present on the E. 40th Avenue site is not considered to be old-growth or late successional forest. Old-growth and late successional are interchangeable terms used to describe forests that have existed for many years, usually 200 years at least, and that have over time developed a complex structure. Late successional or old growth forests typically include very large diameter living trees, some with broken tops; living trees with large bark pockets and obvious signs of decay, and a high percentage of standing dead trees (snags) with large cavities or that are mostly hollow. These forests often include a sub canopy that includes smaller shade-tolerant trees, and a well-developed herbaceous understory. According to the Oregon Conservation Strategy, late successional mixed conifer forests are defined by plant species composition, overstory tree age and size, and the forest structure. They include characteristics such as a multi-layered tree canopy, shade-tolerant tree species growing in the understory, large-diameter trees, and a high volume of dead wood, such as snags and logs. Late Successional Conifer Forests are older forests (hundreds of years old), generally occurring below 3,500 feet, but sometimes occurring up to 4,000 feet. Western hemlock is almost always co-dominant and usually dominates the understory. The understory typically supports shrub and forb species, such as vine maple, salal, sword fern, Cascade Oregon grape, western rhododendron, huckleberries, twinflower, vanilla leaf, and oxalis. In the absence of disturbance, Douglas-fir forests eventually will convert to western hemlock .

The conifer forest on the East 40th Avenue site contains some large Douglas fir trees but does not contain very large diameter trees, or more than just a few trees with broken tops, or any large trees with obvious signs of decay. The relatively low percentage of standing dead trees, the lack of an understory layer of smaller shade -tolerant trees, and the very minimal herbaceous understory are features that do not support characterizing the site as late successional/old-growth forest.

2.Mixed Deciduous Coniferous Dry Forest

The mixed deciduous coniferous dry forest occupies the southern edge of the ridgetop and extends down the southern slope of the ridge. This plant community is characterized by a relatively closed, multi-layered tree canopy. The overstory is dominated by Pacific madrone, big-leaf maple, Oregon white oak, California black oak, and ponderosa pine of varying heights; the understory includes Oregon ash seedlings, smaller Pacific madrones, small cherry trees, snowberry, honeysuckle,

PHOTO 5: INTERIOR OF MIXED FOREST

PHOTO 6: SOUTHERN EDGE OF MIXED FOREST *(NOTE PONDEROSA PINE)*

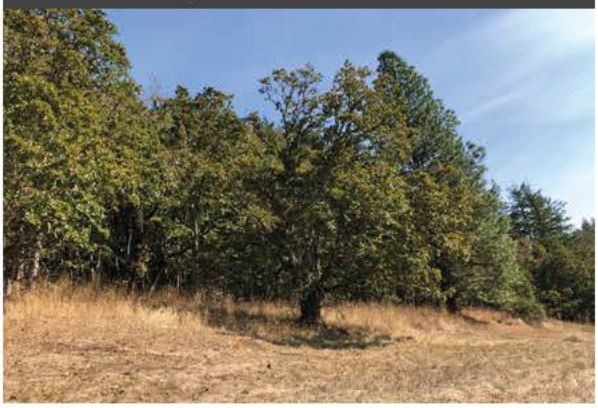


PHOTO 7: LARGE OREGON WHITE OAK IN OAK WOODLAND

PHOTO 8: OAK WOODLAND

and Oregon grape. The outer southern edges of this plant community also support Oregon white oaks. The presence of ponderosa pine in this forest is somewhat notable as this native pine is becoming less common in the Willamette Valley and is recognized by ecologists as a species that should be promoted and managed for when possible.

3.Oak Woodland

The central portion of the ridgetop and the northern slope of the ridge extending to the northwest corner of the site support an oak-dominated plant community. The oak dominated habitat ranges from oak woodland characterized by mature, relatively widely-spaced Oregon white oaks and a sparse shrub understory and grasses beneath; to oak woodland dominated by somewhat more-closely spaced Oregon white oaks and California black oaks with a more dense shrub understory, to a few areas of very widely-spaced oaks with a grass-dominated understory. The areas of very widely spaced oaks could be classified as oak savanna or as a continuation of the oak woodland; however, both oak woodland and oak savanna are recognized as threatened Willamette Valley habitats prioritized for protection and restoration.

The edges of the oak dominated plant communities adjacent to the Douglas fir forest are being overtopped and outcompeted by rapidly encroaching Douglas fir trees. In addition, the understory of the oak habitat contains poison oak and English ivy, both of which are threats to the survival of the native species.

4.Meadow

The northeast and southwest corners of the site support a regularly mown meadow. The meadows are characterized by grasses and weedy forbs including fescue, bluegrass, dandelion, and Queen Anne's lace. Local naturalists report that these areas support three native bunchgrass species that are considered cornerstone species of native Willamette Valley upland prairies, as well as wildflowers including camas, western buttercup, and fawn lily. While these native plant species do not dominate the meadows, their presence suggests these area could be managed in such a way as to reestablish a native prairie habitat that could support additional native plants as well as insects including butterflies and other native pollinator species.

PHOTO 9: OAK SAVANNA

PHOTO 10: SOUTHWAEST MEADOW

PHOTO 11: NORTHEAST MEADOW

Table 2. Wildlife-Habitat Types Identified on East 40th Avenue Site

Wildlife-Habitat Type (O'Neil and Johnson 2001)	**Location**	**Plant Community Name** Dominant Species	**Structure**	**Current Habitat Condition**
Westside Grassland	Northeast and southwest corners of site	**Meadow** Fescue, bluegrass, dandelion, Queen-Anne's lace	Closed (>70% cover) single-layer canopy	Low. Mostly non-native species, regularly disturbed (mowing)
Westside Lowland Conifer-Deciduous Forest	Ridgetop	**Mature Douglas fir forest** Douglas fir, salal, low Oregon grape, sword fern	Closed canopy (>70% cover); single-layer tree canopy; large mostly even-aged trees with high canopy, few lower branches, and furrowed bark.	Moderate. Little shrub or herbaceous understory; few snags; little downed wood; low understory plant species diversity; little disturbance
Westside Lowland Conifer-Deciduous Forest	South facing slope of the ridge	**Mixed coniferous deciduous forest** Big-leaf maple, Pacific madrone, Oregon white oak, California black oak; Ponderosa pine; snowberry, western hazel	Closed canopy (>70% canopy closure); multi-layer canopy (trees, shrubs, herbs)	Moderate. little disturbance;
Westside Oak and Douglas-Fir Forest	At lowest elevation on the ridgetop, extending down north side of ridge, continuing off-site to the north	**Oak woodland** Oregon white oak, California black oak, cherry	Open (<70% closure) canopy;	Moderate to High; relatively few invasive species; healthy oaks but conifers are advancing and shading the oaks

Observed Wildlife

DOWL observed the following wildlife species during the October 2020 site investigation: white-breasted nuthatch, red breasted sapsucker, northern flicker, scrub jay, pileated woodpecker, hairy or downy woodpecker, Steller's jay, American crow, black-capped chickadee, ruby-crowned kinglet, western gray squirrel, and black-tailed deer. The white-breasted nuthatch and western gray squirrel are recognized by the Oregon Department of Fish & Wildlife as Sensitive species and are identified in the Oregon Conservation Strategy as a high priority for conservation and recovery efforts in the Willamette Valley ecoregion. Both the white-breasted nuthatch and the western gray squirrel are oak woodland-dependent species.

Table 3. Wildlife Observed on East 40th Avenue Site

Wildlife Species	State Status	Typical Habitat	Oregon Conservation Strategy Status
White-Breasted Nuthatch	Sensitive	Occupies oak forests and woodlands	High priority for conservation & recovery efforts in the Willamette Valley ecoregion
Northern Flicker	N/A	Occupies open forests and forest edges adjacent to open country, typically avoid dense forests. It is a common resident throughout Oregon.	N/A
Red Breasted Sapsucker	N/A	Occupies moist coniferous coastal forest and mixed deciduous-coniferous coastal forest west of the Cascade crest. Nest cavities are typically in large snags or live trees with decayed interiors. It is a fairly common breeder in the northern part of the state from the coast to the Cascades and south to the southern Cascades	N/A
Scrub Jay	N/A	Occupies deciduous, scrubby, open or semi-open terrain with thick brush, neighborhoods, gardens, farms, often near oaks.	N/A
Pileated Woodpecker	N/A	Prefers mature forests and younger forests with large snags and logs, requiring large diameter snags for nesting and foraging.	N/A
Hairy or Downy Woodpecker	N/A	Found mostly at low to moderate elevations in deciduous and mixed deciduous-coniferous forests throughout much of the state, and less often in coniferous forests.	N/A
Steller's Jay	N/A	A common resident in mesic and dry conifer and mixed conifer-hardwood forests from valley floors to near timberline. Nests in trees or shrubs and often places the nest near the trunk and within 10-16 feet from the ground.	N/A

Wildlife Species	State Status	Typical Habitat	Oregon Conservation Strategy Status
American Crow	N/A	Very common resident west of the Cascades in interior valleys, urban areas, and along the coast and is a fairly common resident throughout the Coast Range lowlands and in the west cascade foothills.	N/A
Black-Capped Chickadee	N/A	Resides at low to moderate elevations in western Oregon from the Willamette Valley and coastal counties to Douglas County, in mixed and deciduous woods; willow thickets, groves, shade trees.	N/A
Ruby Crowned Kinglet	N/A	Breeds in high elevation forests, primarily east of the Cascade crest, where it is common in summer, and in the Blue, Wallowa, and locally in the Warner mountains. It is frequently found late in spring in areas where they do not breed and is found throughout Oregon in winter.	N/A
Western Gray Squirrel	Sensitive	Occupies forests where there are maples, tanoak, madrone, Douglas-fir, white fir, and pines. They prefer older oak trees with large limbs and continuous canopy cover to facilitate movement.	High priority for conservation & recovery efforts in the Willamette Valley ecoregion
Black-Tailed Deer	N/A	Typically found in brushy areas at the edges of forests and chaparral thickets, not in dense forests; recently disturbed habitats such as clear cuts or burns, with their characteristic grasses, forbs, and shrubs.	N/A

Regional Significance of On-Site Wildlife-Habitat Types

As described above, the East 40th Avenue site supports Douglas fir forest, mixed deciduous coniferous forest, oak woodland, and meadow. The Oregon Department of Fish & Wildlife's Oregon Conservation Strategy (OCS), a blueprint for conservation in Oregon, identifies oak woodland as a Strategy Habitat that is important for the continued existence of some of Oregon's species of greatest conservation need.

The OCS also identifies Late Successional Coniferous Forest as a strategy Habitat but based on the age of the trees (most likely less than 150 years old), the single or at most two canopy layers, and the relative lack of snags and the lack of very large diameter trees, the on-site Douglas fir forest would not be considered a late successional coniferous forest recognized by the OCS.

The goals of the OCS are to maintain healthy fish and wildlife populations by maintaining and restoring functioning habitats, preventing declines of at-risk species, and reversing declines in these resources where possible. The OCS identifies 11 Strategy Habitats, including Oak woodlands, that provide important benefits to Strategy Species, which are defined as having small or declining populations, are at-risk, and/or are of management concern. The OCS lists oak and grassland dependent species as high priority for conservation and recovery efforts in the Willamette Valley ecoregion.

According to the OCS, oak woodlands have been impacted by conversion to other land uses, invasive species, and vegetation changes due to fire suppression. As a result of conifer plantings and changes in fire frequency and intensity after European settlement, Douglas-fir now dominates in many areas of the Willamette Valley foothills. Oak habitats are being converted to agriculture, residential, and other uses in the Willamette Valley, the Coast Range foothills, and the coastal hills in southern Oregon.

Because much of the remaining oak woodlands are in private ownership and maintenance of these habitats requires active management, cooperative incentive-based approaches are crucial to conservation. Loss of oaks, particularly large-diameter, open-structured trees valuable to wildlife, is of particular concern because oak trees have a slow growth rate, slowing restoration success. In addition, reproduction and recruitment of younger trees are poor in many areas.

In addition to OCS the Willamette Valley Oak and Prairie Cooperative which includes representatives from organizations including ODFW, the City of Eugene, and the Natural Resources Conservation Service recognizes the importance and relative rarity of oak woodlands and has developed a strategy for protecting and restoring these habitats in the Willamette Valley.

Species and Habitats of Special Concern& Applicable Environmental Regulations

USFWS IPaC did not identify federally listed threatened or endangered species that would be expected to occupy the site; and no species or habitat for federally or state listed threatened or endangered species were observed.

The site does support nesting habitat for birds protected under the federal Migratory Bird Treaty Act (MBTA), administered by the United States Fish & Wildlife Service (USFWS). Under the MBTA it is illegal to pursue, possess, injure or kill migratory birds. Most wild birds, with the exception of European starlings, house sparrows, and rock doves, that will be encountered in Oregon are protected under the MBTA. In western Oregon, vegetation clearing in areas that could support nesting birds covered under the MBTA is typically prohibited between March 1 and July 31 to avoid destroying active bird nests and harming nesting migratory birds. EWEB is committed to timing tree removal and other activity that could disturb nesting migratory birds, to avoid nesting season.

On-site Habitat Functions and Values

Brief descriptions of the habitat value provided by each plant community are presented below. Possible habitat enhancement or restoration approaches for each plant community are listed in Table 4. Once the locations for the new water storage tanks are determined, more detailed approaches to restoring and enhancing the remaining habitats can be developed.

Mature Coniferous Forest

Due to the single overstory canopy layer, relatively closed canopy and relatively low diversity of understory species, the mature Douglas-fir forest provides moderate habitat value.

Mixed Deciduous Dry Forest on South-facing Slope

Due to the multiple canopy layers present and the diversity of species including broadleaved evergreen, broad-leaved deciduous, and evergreen conifer trees. Species include including California black oak and Ponderosa pine, and several native understory shrub species, the mixed deciduous forest on the south facing slope provides moderate to high habitat value.

Oak Woodland

Due to the relatively wide spacing of the trees, and the open and relatively weed-free understory, the oak woodland on the northwest side of the property provides moderate to high habitat value. This area also offers good opportunities for habitat restoration/enhancement due to its relatively healthy condition.

Meadow

Due to the predominance of non-native herbs and grasses and regular mowing, the meadow community provides relatively low habitat value. However, due to the presence of well-drained soils and some native dry prairie species, this area offers opportunities for prairie establishment/enhancement.

Table 4. Possible Restoration/Enhancement Approaches

Wildlife-Habitat Type (O'Neil and Johnson 2001)	**Possible Restoration/Enhancement Approaches**	**Resulting Habitat Condition** New Habitat Features
Westside lowland conifer-deciduous forest (Mature Douglas-fir forest)	• Create canopy openings. • Thin to protect oak woodland from shading and to reduce fire risk. • Plant shade intolerant trees, shrubs and herbs in the new openings. • Create snags. • Leave downed wood. • Control invasive species.	**Moderate to High** Additional canopy strata: understory trees, shrubs, herbs. Increased species diversity (shade-intolerant trees, shrubs, herbs). New structural habitat. New ground-level habitat for amphibians, insects, fungi.
Westside lowland conifer-deciduous forest (Mixed coniferous deciduous forest)	• Create canopy openings. • Plant shade intolerant trees shrubs and herbs in the new openings. Protect Ponderosa pine and California black oak; manage habitat to promote these species. • Control invasive species.	**High** Increased species diversity. Preservation and maintenance of relatively uncommon Willamette Valley habitat containing ponderosa pine and California black oak. Diversified structural habitat. New ground-level habitat for amphibians, insects, fungi.
Westside oak and Douglas-fir forest (Oak woodland)	• Control invasive species. • Maintain open understory—continue mowing. • Remove encroaching Douglas firs and other woody invaders.	**High** Relatively healthy oak woodland community is maintained.
Westside grassland (Meadow)	• Plant oaks and native understory shrubs. • Plant native upland prairie species. • Limit mowing.	**Moderate to High.** New oak savannah habitat (relatively uncommon plant community) established. Increased species diversity. New structural habitat . New upland prairie habitat established. Increased pollinator habitat.

SUMMARY/CONCLUSIONS

Several habitats exist on the site; unlike many undeveloped urban sites, the site is dominated mostly by native plants . No threatened or endangered species are known to occupy the site however the white-breasted nuthatch and the western gray squirrel which are both recognized as Sensitive by ODFW were observed on site in October 2020, and the site provides nesting habitat for birds protected under the Migratory Bird Protection Act.

Despite the large size of some of the individual trees in the Douglas fir forest on top of ridge in the middle of the site, this forested community does not provide particularly high habitat value when compared with the adjacent on-site oak woodland. Oak woodlands were once common in the Willamette Valley but are now relatively rare, and have been identified by state and local resource protection agencies as priority habitats for protection and restoration. Each habitat identified on the site could benefit from enhancement or restoration efforts.

NEXT STEPS

Once the location of the water storage tanks is confirmed, DOWL will identify and quantify the potential impacts to onsite natural resources and work with EWEB to identify impact avoidance, minimization, and mitigation/restoration opportunities.

Potential mitigation/restoration strategies could include

- Enhancing the oak habitat by removing ivy and poison oak and removing conifers that are currently shading the edges of the oak woodland
- Creating openings in the remaining Douglas forest canopy to create conditions that would favor additional light-tolerant plant species to establish
- Repurposing felled trees as installed snags to provide additional structural habitat in the currently snag-deficient forest
- Enhancing the meadow area to provide pollinator habitat, and potentially recreate an oak savanna habitat.

REFERENCES

Johnson, David H, and T. O'Neil. 2001. *Wildlife-Habitat Relationships in Oregon and Washington.*

Oregon Department of Agriculture. 2020. *Threatened and Endangered Plant Species List.*

Oregon Department of Fish & Wildlife. 2016. *Oregon Conservation Strategy.*

US Fish & Wildlife Service. 2020. *Information for Planning and Consultation (IPaC).*

Willamette Valley Oak and Prairie Cooperative. 2020. *Willamette Valley Oak and Prairie Cooperative Strategic Action Plan.*

APPENDIX A - ARBORIST REPORT

EWEB

DOWL

CAMERON McCARTHY LANDSCAPE ARCHITECTURE & PLANNING
160 East Broadway ▪ Eugene Oregon 97401
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Aug 26, 2019
UPDATE: Sep 09, 2020

City of Eugene
Eugene, Oregon

RE: EWEB 40th Ave, Arborist Report

Introduction:
This report was prepared for a future development of an EWEB owned parcel of land, Map 18031720, Tax Lot 01000. The property is located in the Southeast neighborhood of Eugene. It is nestled within and surrounded by a residential neighborhood. The site can be best accessed at the end of Patterson Street, off of 40th Ave.

Tree Felling Criteria for this project are presented below. Tree diameters in the reports are the diameter at 4.5 feet above grade (DBH) and for trees larger than 6-inches in DBH within private property and 2-inch in DBH within the public right of way. Tree diameters for multi-stemmed trees are the sum of the 3 largest stems at 4.5 feet above grade. Limbs counted are identified before the DBH measurement in parentheses. For example, a double stemmed tree that has a total DBH of 10-inches would be noted as (2) 10". A triple stemmed 10" DBH tree would be noted as (3) 10". Please see the Tree Inventory Plan, Diagram A, for the Tree's corresponding identification number and Tables A-F (UPDATE) with additional notes pertaining to each individual tree. Tree species, diameter size, and health/condition are identified in those attached tables.

The study for this report evaluated the health of trees within the private property.

Observations:
A variety of trees are present on site. Most of the trees are either natives or naturalized species. Tree species on the site include the following trees: Western Service Berry (*Amelanchier alnifolia*), Pacific Madrone (*Arbutus menziesii*), Single Seed Hawthorn (*Crataegus monogyna*), Oregon Ash (*Fraxinus latifolia*), Ponderosa Pine (*Pinus ponderosa*), Cherry (Prunus sp.), Douglas Fir (*Pseudotsuga menziesii*), Pear (*Pyrus sp.*), Oregon White Oak (*Quercus garryana*), and California Black Oak (*Quercus kelloggii*).

UPDATE: Species also include Bigleaf Maple (*Acer macrophyllum*).

The site is currently an undeveloped natural area comprised of woodlands along the ridgeline and meadows on the northeast and southwest corners of the property. It appears some maintenance and care has been given to the site. Few noxious species were seen. Evidence suggests that occasional mowing occurs which helps keeps the noxious species that were seen at bay. Walkers frequent the pedestrian trails winding along the ridgeline in the middle of the woodland. There are two distinct woodlands on the site: a Douglas fir woodland and an Oak woodland. Overlap of the two occurs. Both types of forests are very indicative of this area in the Pacific Northwest and this site has both. Prior to European settlement, the Oak woodland was the predominant type of woodland in the Willamette Valley. Since then, without the historic burning of the Willamette Valley, a natural succession to Douglas Fir woodlands has prevailed.

Douglas Fir Woodland

Oak Woodland

The Douglas fir woodland is a healthy mix of young trees and old trees, dead trees, and openings. While predominately Douglas fir, a few different species were also seen. There are several areas in the forest where trees are thick and compete for light, nutrients, soil, and water. Very thin canopies with vegetation only at the tops are the result of this. Thinning of the forest in several locations would benefit some of the younger trees and could help to create a stronger forest. Trees to consider thinning would be those with damaged tops, those with multiple tops, those that are competing heavily with their neighbors for space/sunlight, those with disease or pest, those physically resting on others, and those with any sort of health defect that renders them of less value than another.

Co-dominant leaders

Open understory: bramble

Canopies: some opening & some overcrowding

UPDATE: The relatively open understory of the Douglas fir woodland is teeming with *Toxicodendron diversilobum* (Poison Oak), *Hedera helix* (English Ivy) and blackberry species, in addition to the usual innocuous natives. In addition to Poison Oak and English Ivy, Wisteria and Honeysuckle vines were also noted as climbing several of the trees. English Ivy in particular causes bark damage when allowed to climb unchecked, and removal is difficult without causing more harm to the tree. There were several cases of extreme ivy infestation. This noxious species should be brought under control to avoid spread and damage to the woodland over time.

The Oak woodland has some open canopy spaces with the help of maintenance and storm damage. Without maintenance, the Douglas fir woodland could and would take over. Some thinning has occurred either by restoration efforts or due to storm damage. Opening up the canopy and allowing for more horizontal growth can benefit an Oak woodland. Most of the dieback on the Oaks is due to the Douglas firs outcompeting the Oaks for available sunlight, nutrients, and space. To help strengthen the Oak woodland, it is recommended to remove the Douglas firs that are outcompeting the oaks, meaning, any Douglas Fir that is within 10 ft of an Oak's canopy, should be removed if it is deemed a priority to keep the Oaks. The understory under the Oaks has been maintained as well, more so than within the Douglas fir forest.


Oak woodland with grass understory

The majority of the oaks had skeletonized leaves which is indicative of pests. As the trees are more mature, the trees did not seem to be significantly affected by the pest damage. In addition, the majority of the Oaks had galls caused by oak apple gall wasps. Galls usually occur on leaves and stems, but also may occur on flowers, fruits, twigs, branches, trunks, and roots. Gall-making insects are generally not considered pests as they do not damage the oak tree host but may cause earlier defoliation. Although there are some insecticides registered for use against gall-making insects, their use is generally unwarranted, and not recommended here. Furthermore, pesticides may kill beneficial insects that help control gall-making insects and could damage the health of the woodland's ecosystem.

Oakleaf Galls

Insects

Skeletonized leaves

The understory is thin, with a mix of native understory and noxious species, comprised of *Rubus ursinus*, the native blackberry and *Rubus armeniacus*, Himalayan blackberry. In addition and much to my dismay, a healthy amount of *Toxicodendron diversilobum*, Poison Oak is scattered around. Mowing has helped keep the understory controlled, but there are still areas of thick poision oak which made it difficult to take some tree measurements. Honeysuckle vines were also seen climbing on at least a dozen of the Oaks. Noxious species with the ability to do tree damage include *Hedera helix*, English Ivy. For a forest of this size, little ivy was seen but it's location was tracked and can be seen more precisely within the individual tree data tables. Without proper maintenance, English Ivy has the ability to take over and can damage the full woodland of trees. Currently, it has a scattered existence throughout the woodland.

Possible Nest in Oak

Inosculation

English Ivy beginning to climb

Poison Oak vines climbing trunk

English Ivy climbing trunk

Fir outcompeting Oaks

With a couple of exceptions, the trees themselves are only in decent health. It's typical of these trees to have uneven, high arching, narrow, and thin canopies. This type of canopy forms as such in response to the sunlight condition available for growth. With limited space, trees can only get so wide. On the contrary to only decent individual tree health, the health of the woodland is good. Together, the trees form a very large mature canopy. Deadwood on the trees is what would be typical for a forest as opposed to the safety and maintenance requirements of an urban environment. Dead snags are throughout which provide good habitat.

The trees at the edge of the woodland are quite possibly the most important. They provide support and protection to the interior stand of trees. They provide wind cover for the tall, spindly, less structurally sound trees that could bend or blow over in storms. If a portion of the site is cut for development, the new edge of the woodland would be subject to failures of individual trees as they are not adapted to be perimeter trees. Significant limbs could fail as their existing windbreak would be missing. As with many things biological, the impacts could be immediate or delayed for years. Frequently, tree decline due to construction is on a delayed time table. As with all trees, adequate health and safety monitoring of the trees is the only way to reduce risk. To mitigate the impacts of the inner woodland becoming a perimeter tree, it is recommended to plant new trees along the perimeter.

Natural Areas:
This site is a natural area surrounded by a neighborhood that is home to many bird species. Many bird nests and woodpecker homes were seen.

Erosion considerations:
This site is on slopes greater than 10 percent along the south side of the ridgeline. Development is being considered with this in mind. Soils should be evaluated to determine if soils are more prone to erosion. Tree removal in these areas could have implications on surface runoff. Erosion control measures will be required to prevent erosion. The design team, the Contractor, and the City will need to work together to ensure proper erosion control measures are put into place immediately following the removal of any of the trees along these slopes.

Recommendations:
Care shall be taken during construction around existing trees to remain. The location of significant roots can be determined during the planning phase and creative designs can be implemented to accommodate the expansion of these major roots. The goal to reduce impacts to the soil and root system can be achieved through various methods. Fencing will reduce impacts to the soil and root systems during construction. Excavation options to reduce root damage to the trees being preserved include hydraulic or air spading, horizontal boring, and hand digging for soil removal without cutting or damaging roots of 1-1/2-inches or larger. Horizontal boring at a depth of at least 24-inches is optimal. A thick layer of mulch should be applied to the zone of protection to feed the tree and keep moisture levels intact during the construction period.

Cut and Fill in and around existing tree roots can affect the overall health of the tree. While cut is most intrusive, as it directly eliminates an energy (food and water) source, fill can also impact feeder roots in trees. Trees are better equipped to adapt to fill than cut. If fill is required, it is recommended to keep fill materials at least 10-ft from the base of the tree and to infill either by hand or with use of heavy equipment where only the bucket enters the protected area, and the weight of the machinery stays

outside the tree protection area to avoid soil compaction. No more than 30% of the tree's root zone should be impacted with cut or fill for optimal health of the tree.

Tree protection measures and construction access accommodations shall be fine-tuned after the site design has been refined. Coordination between the arborist, planners/designers, and the contractor is critical to protecting the trees to remain to the greatest extent practicable. Respect for the designated protection zone is critical to ensure the long-term health of the tree. All too often I'll see the designated protection zone impacted for 'just a day' or 'just one time'. Impact using heavy equipment can severely impact the soils and can be all it takes to kill the tree 5 to 10 years down the road.

Living limbs shall be pruned for construction late in the dormant season or very early in spring before leaves form. Growth is maximized during these seasonal times and wounds will have the ability to close at a faster rate, meaning there will be less available time for pathogens to get established which cause more harm to the tree. Flowering trees should be pruned after blooming. Routine maintenance pruning of dead or dying branches can be done at any time.

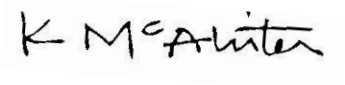
Tree removal is recommended if more than 30% of their critical root zones will be impacted to accommodate construction. The design team will identify trees to be removed.

To mitigate tree removal, the landscape plan should replace trees per jurisdictional requirement to restore the urban forest. Strategic planting of new trees could help windproof the remaining stand of trees.

Assumptions and Limiting Conditions:

- The data given in this report reflects an opinion of the conditions present on-site at the time of inspection. The inspection was limited to visual examination only without excavation, probing, or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the trees on the property may not arise in the future.
- Care has been taken to obtain all information from reliable sources. The consultant can neither guarantee nor be responsible for the accuracy and completeness of the information provided by others.
- Consultant shall not be required to give testimony or to attend court by reason of any report unless subsequent contractual arrangements are made, including payment of additional fees.
- Missing pages or alteration of any report invalidates entire report.
- Possession of a report does not imply a right of publication without the written consent of the consultant.
- Neither all nor any part of the contents of this report, nor a copy thereof, shall be conveyed to the public through advertising, public relations, news, sales or other media, or for a larger database without the expressed written consent of the consultant.

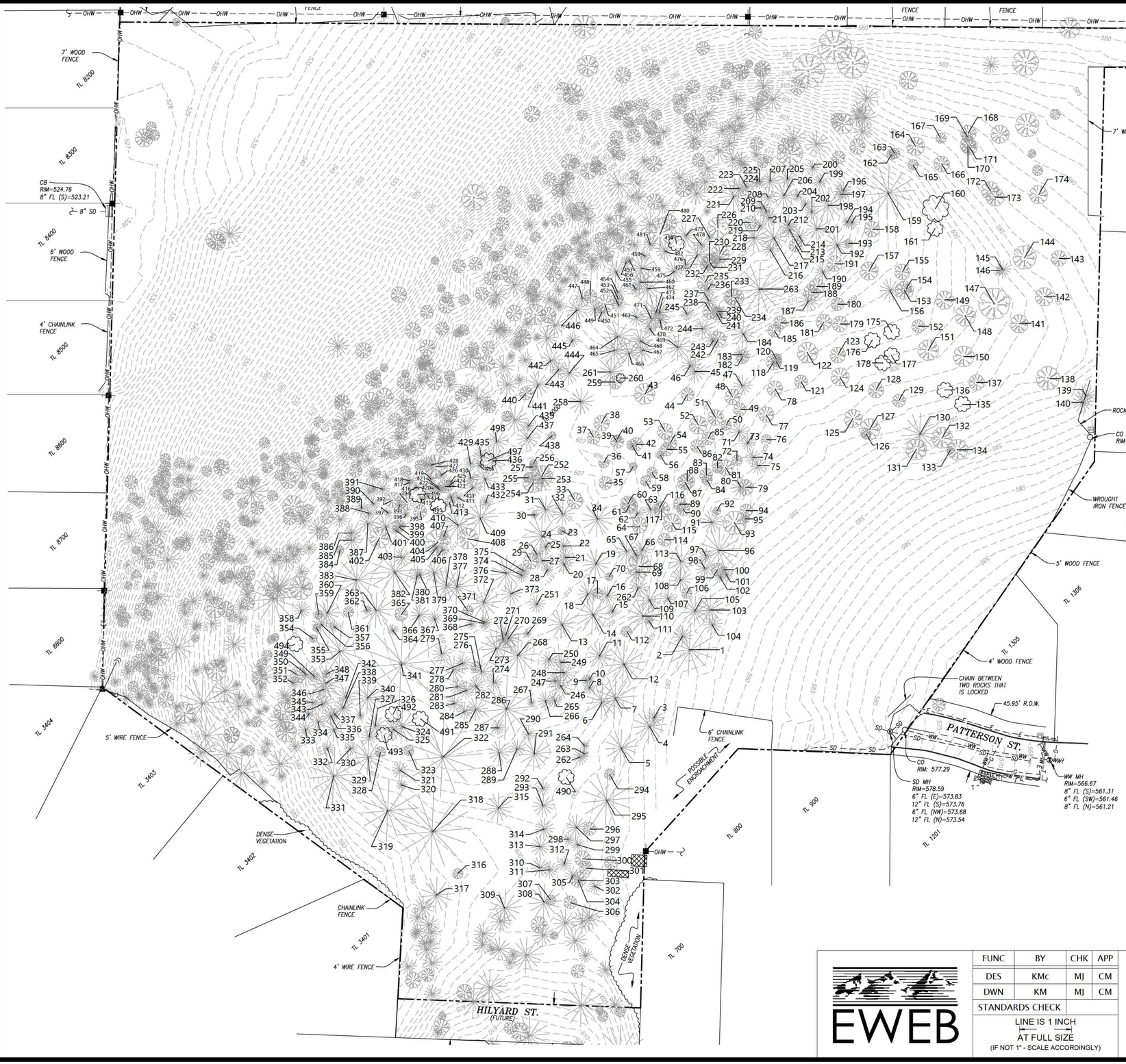
Regards,



UPDATE:

Kristena McAlister
ISA Certified Arborist, PN 7734A

Matthew Jorgensen
ISA Certified Arborist, PN-8810A



LEGEND

——·——	PROPERTY LINE
	EXISTING TREE per survey
	EXISTING TREE per arborist field review
131	TREE IDENTIFICATION NUMBER

EWEB

FUNC	BY	CHK	APP
DES	KMc	MJ	CM
DWN	KM	MJ	CM
STANDARDS CHECK			

LINE IS 1 INCH AT FULL SIZE
(IF NOT 1" - SCALE ACCORDINGLY)

WATER SYSTEMS
RESERVOIRS

EWEB WORK ORDER NO. 19-070-PSC

DATE: 09/09/20 | SCALE: 1'=40'-0"

DWG NO: 37619

PROJECT SHEET NO: DIAGRAM_A | REV 0

9/10/2020 11:11 AM MATT JORGENSEN

	Genus & Species	Common Name	DBH (in)	CANOPY (ft)	Health/ Condition *	Arborist Notes	Ivy on trunk	Thin/sparse canopy	Co-dominant Leader	Surface Roots	% Deadwood	Suckers
1	Pseudotsuga menziesii	Douglas Fir	48	58	2	surface roots have stripped bark, pruning needed. Lean towards north for sun	✓			✓	50%	
2	Pseudotsuga menziesii	Douglas Fir	18	30	2	dead top with new growth		✓	✓		10%	
3	Prunus avium	Mazzard Cherry	15	50	2	40 degree lean west, cavity at buttress roots				✓	15%	
4	Pinus ponderosa	Ponderosa Pine	30	30	2	narrow canopy		✓			40%	
5	Pseudotsuga menziesii	Douglas Fir	28	35	3	uneven canopy, possible girdling roots	✓	✓			10%	
6	Pseudotsuga menziesii	Douglas Fir	30	49	2	high branching		✓			15%	
7	Pseudotsuga menziesii	Douglas Fir	38	50	2	sap, dead lower limbs		✓			25%	
8	Pseudotsuga menziesii	Douglas Fir	9	13	2	2-inch vine of poison oak on tree trunk		✓			10%	
9	Pseudotsuga menziesii	Douglas Fir	8	10	2	top branching only		✓			10%	
10	Pseudotsuga menziesii	Douglas Fir	8	13	2	top branching only		✓			10%	
11	Pseudotsuga menziesii	Douglas Fir	28	42	2	fruiting fungus at buttress roots, poison oak vine, insect damage		✓			40%	
12	Pseudotsuga menziesii	Douglas Fir	38	53	2	poison oak at base		✓			40%	
13	Pseudotsuga menziesii	Douglas Fir	26	35	2	blackberry and ivy at base	✓	✓		✓	40%	
14	Pseudotsuga menziesii	Douglas Fir	36	33	2	vines on trunk 30-40 feet up trunk, new lion tailing/flagging on trunk		✓			40%	
15	Pseudotsuga menziesii	Douglas Fir	8	15	2	thin canopy		✓	✓		40%	
16	Pseudotsuga menziesii	Douglas Fir	13	20	2	thin canopy		✓		✓	40%	
17	Pseudotsuga menziesii	Douglas Fir	9	30	2	wilting leaves		✓		✓	10%	
18	Prunus avium	Mazzard Cherry	20	25	2	blackberries at base, very thin canopy, abrasions from neighboring tree					35%	
19	Pseudotsuga menziesii	Douglas Fir	22	35	2	poison oak at base		✓			30%	
20	Pseudotsuga menziesii	Douglas Fir	18	20	2	exposed wood at trunk flares, sap, rock outcropping at base		✓			30%	
21	Pseudotsuga menziesii	Douglas Fir	17	15	2	water sprouts on trunk, uneven canopy, foliage on SW only, surface roots with bark damage		✓		✓	20%	
22	Pseudotsuga menziesii	Douglas Fir	12	15	2	dead top		✓			20%	
23	Pseudotsuga menziesii	Douglas Fir	(2) 11	30	2	wound at base of trunk with exposed wood, wilting leaves		✓			15%	
24	Pseudotsuga menziesii	Douglas Fir	32	45	3			✓			25%	
25	Pseudotsuga menziesii	Douglas Fir	10	15	2			✓			15%	
26	Pseudotsuga menziesii	Douglas Fir	9	15	2	uneven canopy		✓			15%	
27	Pseudotsuga menziesii	Douglas Fir	17	20	2			✓			20%	
28	Pseudotsuga menziesii	Douglas Fir	10	15	2		✓	✓			40%	
29	Quercus kelloggii	California Black Oak	12	12	1	deadwood, exposed wood, dead top, no canopy		✓			75%	
30	Pseudotsuga menziesii	Douglas Fir	8	15	2	poison oak vine on trunk, top is likely dead		✓			15%	
31	Pseudotsuga menziesii	Douglas Fir	22	30	2	branching (waterspouts), possible decay at base		✓			25%	
32	Pseudotsuga menziesii	Douglas Fir	20	30	2	high canopy					10%	
33	Quercus garryana	Oregon White Oak	30	40	2	uneven canopy, lean west, shaded on east side (no branching) due to limited canopy space					5%	
34	Pseudotsuga menziesii	Douglas Fir	30	45	3	trunk flare exposed					20%	
35	Quercus garryana	Oregon White Oak	11	22	1	uneven canopy, w/SW lean, ivy to top of tree	✓				0%	
36	Quercus garryana	Oregon White Oak	12	N/A	0	dead					100%	
37	Quercus garryana	Oregon White Oak	18	25	2	Nest in tree (unknown if nest has current resident) included bark, exposed wood, decay	✓		✓		50%	
38	Quercus garryana	Oregon White Oak	12	20	2	decay, broken limbs, deadwood	✓				20%	
39	Quercus garryana	Oregon White Oak	(3) 20	28	2	bark injury with decay, small cavity, possible nest on middle trunk					10%	
40	Prunus avium	Mazzard Cherry	6	24	2	growing within oak tree and canopy intertwined, poor form					10%	
41	Quercus garryana	Oregon White Oak	8	19	2	thin canopy, high branching, growing close to neighboring clump, small cavity, decay, exposed wood, fungus					0%	
42	Quercus garryana	Oregon White Oak	(3) 28	51	2	another 10" tree removed, clump form, shared canopy, trunk injury					10%	
43	Quercus kelloggii	California Black Oak	18	36	2	large dead branch on west side, cavity, south lean					25%	
44	Quercus garryana	Oregon White Oak	(2) 21	23	1						60%	
45	Pseudotsuga menziesii	Douglas Fir	19	N/A	0	full of conks on trunk, snag remains intact			✓		100%	
46	Pseudotsuga menziesii	Douglas Fir	17	N/A	0	full of conks on trunk, snag remains intact					100%	
47	Pseudotsuga menziesii	Douglas Fir	17	N/A	0	full of conks on trunk, snag remains intact					100%	
48	Quercus garryanna	Oregon White Oak	(2) 24	32	3	poison oak vine growing up tree trunk					10%	

Plan ID	Genus & Species	Common Name	DBH (in)	CANOPY (ft)	Health/ Condition*	Arborist Notes	Ivy on trunk	Thin/sparse canopy	Co-dominant Leader	Surface Roots	% Deadwood	Suckers
49	Quercus garryana	Oregon White Oak	10	21	2	poison oak and blackberry at base					20%	
50	Quercus garryana	Oregon White Oak	6	8	1	top of tree dead, alive first 10-ft in height only, deadwood and decay					60%	
51	Quercus garryana	Oregon White Oak	12	31	2	poison oak, deadwood, and decay					5%	
52	Quercus garryana	Oregon White Oak	18	31	3	ivy and V-shaped crotch at codominant union	✓		✓		5%	
53	Quercus garryana	Oregon White Oak	15	N/A	0	tree cut at base, likely due to storm destruction					100%	
54	Quercus garryana	Oregon White Oak	10	32	2	deadwood, gauls with insects, decay, uneven canopy	✓				10%	
55	Quercus garryana	Oregon White Oak	12	15	2	tons of ivy damage, large limb broken off with clean cut	✓				15%	
56	Prunus avium	Mazzard Cherry	(3) 14	32	2	ivy up to top of tree, multistemmed (5) stems, decay at base	✓				15%	
57	Quercus garryanna	Oregon White Oak	10	N/A	n/a	tree cut at base					100%	
58	Quercus garryana	Oregon White Oak	9	17	2	high canopy	✓				10%	
59	Fraxinius latifolia	Oregon Ash	9	17	3	even form with some deadwood					15%	
60	Quercus garryanna	Oregon White Oak	15	N/A	0	dead, cut at base likely due to storm damage					100%	
61	Quercus garryana	Oregon White Oak	(2) 30	N/A	0	dead, cut at base likely due to storm damage					100%	
62	Pseudotsuga menziesii	Douglas Fir	11	26	2	branches crossing with oak, bark damage from oak falling		✓			30%	
63	Pseudotsuga menziesii	Douglas Fir	12	40	2	crossing limbs in canopy					30%	
64	Quercus garryana	Oregon White Oak	12	30	2	co-mingling with Doug fir, bark injury		✓			5%	
65	Pseudotsuga menziesii	Douglas Fir	18	35	2	uneven canopy					30%	
66	Pseudotsuga menziesii	Douglas Fir	16	35	2	uneven canopy		✓			30%	
67	Pseudotsuga menziesii	Douglas Fir	8	15	2	growing up between oak branches/canopy		✓			10%	
68	Quercus garryana	Oregon White Oak	28	45	1	mostly dead with some high foliage, decay at base	✓				65%	
69	Pseudotsuga menziesii	Douglas Fir	24	40	2	extremely high canopy, needs pruning	✓	✓			30%	
70	Prunus avium	Mazzard Cherry	8	24	3	wilting leaves					5%	
71	Pseudotsuga menziesii	Douglas Fir	18	N/A	0	fungus					100%	
72	Quercus garryanna	Oregon White Oak	17	40	2	high arching canopy, poison oak vines growing up trunk					10%	
73	Pseudotsuga menziesii	Douglas Fir	12	18	1	uneven canopy, dead top					50%	
74	Pseudotsuga menziesii	Douglas Fir	12	N/A	0	poison oak growing up trunk, mower damage on roots				✓	100%	
75	Pseudotsuga menziesii	Douglas Fir	13	N/A	0	dead, snag remains intact, fungus growing up on trunk					100%	
76	Prunus avium	Mazzard Cherry	8	20	2	poor form, crossing branches, uneven canopy, bark damage, lean north					20%	
77	Quercus kelloggii	California Black Oak	14	30	2	broken limbs, lean n / NW, decay in deadwood					20%	
78	Quercus garryana	Oregon White Oak	12	30	2	thick poison oak vines climbing up trunk, trunk union with V-crotch			✓		10%	
79	Quercus garryana	Oregon White Oak	16	23	2	poison oak, poor form, inosculation of trunks					10%	
80	Pseudotsuga menziesii	Douglas Fir	16	N/A	0	dead snag with fruiting fungus bodies					100%	
81	Quercus garryana	Oregon White Oak	22	60	2	thin but wide canopy, broken limbs due to storm damage					20%	
82	Prunus avium	Mazzard Cherry	8	20	2	wilted / curled leaves, lean northwest, leaning into oak (tree 81), exposed wood					10%	
83	Quercus garryana	Oregon White Oak	10	22	2	uneven, thin, sparse canopy	✓	✓			20%	
84	Prunus avium	Mazzard Cherry	8	20	2	even canopy, upright form, limbs crossing over neighboring oak					15%	
85	Quercus garryana	Oregon White Oak	8	20	1	uneven canopy, inundated with ivy	✓				20%	
86	Quercus garryana	Oregon White Oak	10	20	1	uneven canopy, inundated with ivy	✓				20%	
87	Quercus garryana	Oregon White Oak	16	31	2	blackberry, poison oak, missile toe, thin high canopy	✓				15%	
88	Quercus garryana	Oregon White Oak	14	25	2	thin, high canopy, broken limb with decay, uneven canopy	✓				10%	
89	Quercus garryana	Oregon White Oak	14	N/A	0	tree cut at base, stump only remains					100%	
90	Quercus garryana	Oregon White Oak	10	10	2	uneven canopy, blackberry, small cavity at base					30%	
91	Pseudotsuga menziesii	Douglas Fir	20	40	2	insect damage on bark, poison oak vines climbing up trunk			✓		20%	
92	Amelanchier alnifolia	Western Service Berry	(2) 12	25	2	sap, insect trap from USDA, inosculation of branching, decay with fungus	✓				30%	
93	Quercus kelloggii	California Black Oak	32	32	2	major decay, cavities, deadwood, poison oak, blackberry, competing with nearby Prunus	✓				50%	
94	Prunus avium	Mazzard Cherry	11	35	2	bark damage, exposed wood, broken central leader, leaf curl					50%	
95	Prunus avium	Mazzard Cherry	7	20	2	uneven canopy, curled leaves, decay with broken limbs, nest					25%	
96	Pseudotsuga menziesii	Douglas Fir	44	50	3	uneven canopy, edge condition tree, more sun, new central leader	✓				20%	
97	Arbutus menziesii	Pacific Madrone	10	25	3	small cavity providing habitat, exposed wood at another cavity, lean west, uneven canopy					10%	

EWEB

FUNC	BY	CHK	APP
DES	KMc	MJ	CM
DWN	KM	MJ	CM
STANDARDS CHECK			

LINE IS 1 INCH AT FULL SIZE
(IF NOT 1" - SCALE ACCORDINGLY)

WATER SYSTEMS
RESERVOIRS

EWEB WORK ORDER NO. 19-070-PSC
DATE: 09/09/20
SCALE: 1'=40'-0"
DWG NO: 37619
PROJECT SHEET NO: TABLE_A
REV 0

9/10/2020 11:19 AM MATT JORGENSEN

Plan ID	Genus & Species	Common Name	DBH (in)	CANOPY (ft)	Health/ Condition*	Arborist Notes	Ivy on trunk	Thin/sparse canopy	Co-dominant Leader	Surface Roots	% Deadwood	Suckers
98	Pseudotsuga menziesii	Douglas Fir	19	30	2	sap by broken limbs, blackberry, poison oak					10%	
99	Prunus avium	Mazzard Cherry	10	25	2	curving form, competing for light, uneven canopy, exposed wood at damaged bark				✓	5%	
100	Pseudotsuga menziesii	Douglas Fir	8	20	1	poor form, uneven canopy, no central leader, one sided canopies reaching for light					40%	
101	Pseudotsuga menziesii	Douglas Fir	12	25	2	poor form, uneven canopy, no central leader, one sided canopies reaching for light	✓				15%	
102	Pseudotsuga menziesii	Douglas Fir	10	20	2	poor form, uneven canopy reaching for light, thin foliage	✓				30%	
103	Pseudotsuga menziesii	Douglas Fir	30	35	2	bald faced hornet nest on ivy vines climbing trunk, honeysuckle vine, one sided canopy	✓				15%	
104	Pinus ponderosa	Ponderosa Pine	18	25	2	possible nest, uneven canopy, blackberry, poison oak, honeysuckle vines on trunk	✓				30%	
105	Pseudotsuga menziesii	Douglas Fir	30	35	2	blackberry, poison oak, possible nest	✓				30%	
106	Prunus avium	Mazzard Cherry	10	30	3	poison oak, Oregon grape at base, uneven canopy, cavity at base, exposed wood, nice form				✓	15%	
107	Pseudotsuga menziesii	Douglas Fir	10	25	2	competing for sunlight, sparse foliage		✓			15%	
108	Pseudotsuga menziesii	Douglas Fir	24	35	2	poison oak vine, high canopy, hummingbird interest in tree					5%	
109	Pseudotsuga menziesii	Douglas Fir	26	40	2	dead ivy on trunk with bark damage, poison oak at base of tree	✓				15%	
110	Pseudotsuga menziesii	Douglas Fir	30	50	2	high canopy, sparse canopy, poison oak			✓		25%	
111	Prunus avium	Mazzard Cherry	8	30	2	tons of sap at base, lean west with curled trunk, crossing branches					20%	
112	Prunus avium	Mazzard Cherry	(2) 17	45	2	poor form, bark injury with exposed wood, broken central leader					5%	✓
113	Pseudotsuga menziesii	Douglas Fir	34	50	2	high canopy, poison oak, uneven canopy	✓				30%	
114	Prunus avium	Mazzard Cherry	10	30	2	ivy, blackberry, poison oak, sap at wound on trunk, exposed wood	✓				15%	
115	Quercus kelloggii	California Black Oak	16	30	2	high canopy, dead limbs, lean to south, cavity, smaller leaves on top indicative of decline	✓				30%	
116	Quercus kelloggii	California Black Oak	18	0	0	tree cut at base, stump only remains					100%	
117	Quercus kelloggii	California Black Oak	12	0	0	tree cut at base, stump only remains					100%	
118	Quercus garryana	Oregon White Oak	12	20	2	uneven canopy, decay, shared canopy with neighboring trees		✓			20%	✓
119	Quercus garryana	Oregon White Oak	8	17	2	uneven canopy, shared canopy with neighboring trees		✓			10%	✓
120	Quercus garryana	Oregon White Oak	10	15	2	uneven canopy, shared canopy with neighboring trees		✓			10%	✓
121	Quercus garryana	Oregon White Oak	(2) 24	30	3	1 of the 2 trunks has a broken top, gauls, skeletonized leaves					5%	
122	Quercus garryana	Oregon White Oak	18	50	3	open form, some broken limbs with decay, thin high canopy, gauls, skeletonized leaves					15%	
123	Quercus garryana	Oregon White Oak	12	22	2	bark damage with exposed wood in a couple locations, uneven canopy, gauls, skeletonized leaves, trunk leaning for available sunlight					15%	
124	Quercus garryana	Oregon White Oak	16	40	2	uneven branching, twisted branching structure, gauls, skeletonized leaves					15%	
125	Quercus garryana	Oregon White Oak	15	40	2	uneven canopy, leaning towards available light, decay at broken limbs, gauls, skeletonized leaves					10%	✓
126	Quercus garryana	Oregon White Oak	(3) 18	20	2	inosculation, growing under neighbor, uneven canopy, deep cavity in center reader, poor form, gauls, skeletonized leaves			✓		10%	
127	Quercus kelloggii	California Black Oak	(2) 45	62	3	some dead limbs with decay, open even canopy	✓				15%	
128	Quercus garryana	Oregon White Oak	(2) 24	34	3	gauls, skeletonized leaves	✓				15%	
129	Quercus garryana	Oregon White Oak	(3) 38	42	2	gauls, skeletonized leaves, poison oak vine up tree, sparse canopy, watersprouts	✓				20%	
130	Pseudotsuga menziesii	Douglas Fir	38	50	2	3 smaller Prunus avium at base of tree, open wound with sap, broken limbs high up in canopy	✓		✓	✓	5%	
131	Quercus garryana	Oregon White Oak	(3) 60	42	3	gauls, skeletonized leaves, wide open canopy, branching towards meadow, bark damage					5%	
132	Quercus garryana	Oregon White Oak	(3) 72	50	2	center cavity competing with fir for space / light, bark damage with exposed wood	✓				50%	
133	Quercus garryana	Oregon White Oak	(3) 15	15	2	clump of 3, uneven canopy, poor form, gauls, skeletonized leaves					15%	
134	Prunus avium	Mazzard Cherry	16	36	2	exposed wood with mower damage, small deadwood					15%	
135	Quercus garryana	Oregon White Oak	12	20	2	gauls, skeletonized leaves, heavy with lichen, bark damage					20%	
136	Quercus garryana	Oregon White Oak	19	40	3	uneven canopy, gauls, skeletonized leaves					10%	
137	Quercus garryana	Oregon White Oak	(2) 26	34	2	leaning south, gauls, skeletonized leaves		✓			10%	
138	Quercus garryana	Oregon White Oak	21	38	4	full even canopy, lower limbs present, gauls, skeletonized leaves, debris pile beneath					10%	

Plan ID	Genus & Species	Common Name	DBH (in)	CANOPY (ft)	Health/ Condition*	Arborist Notes	Ivy on trunk	Thin/sparse canopy	Co-dominant Leader	Surface Roots	% Deadwood	Suckers
139	Pseudotsuga menziesii	Douglas Fir	20	30	4	one canopy, two trunks, storm damage with broken limbs					5%	
140	Pseudotsuga menziesii	Douglas Fir	16	30	4	one canopy, two trunks (with tree 141), storm damage with broken limbs					5%	
141	Quercus garryana	Oregon White Oak	18	48	3	one canopy, two trunks (with tree 140)					5%	
142	Quercus garryana	Oregon White Oak	18	40	2	slightly uneven canopy, leaf miners					5%	
143	Quercus garryana	Oregon White Oak	(2) 32	55	3	exposed wood with decay, gauls, skeletonized leaves, multiple trunk injuries					10%	
144	Quercus kelloggii	California Black Oak	26	55	3	vinca minor at base of tree, sparse but broad canopy, decay in limbs, possible nest					5%	
145	Pseudotsuga menziesii	Douglas Fir	14	25	3	tall canopy, young adventitious shoots / sprouts at 4-ft height off trunk					5%	
146	Crataegus monogyna	Single Seed Hawthorn	(2) 13	25	2	poor form, crossing branches					20%	
147	Quercus garryana	Oregon White Oak	24	55	3	large open canopy					5%	
148	Quercus garryana	Oregon White Oak	18	45	3	leaning southwest, bark damage with exposed wood, cavity, gauls, skeletonized leaves					5%	
149	Quercus garryana	Oregon White Oak	(2) 29	33	2	sparse canopy, upright form		✓			10%	
150	Quercus garryana	Oregon White Oak	16	35	3	bark damage (but into wood), gauls, skeletonized leaves					10%	
151	Quercus garryana	Oregon White Oak	16	35	3	injury with exposed wood at base, gauls, skeletonized leaves		✓			15%	
152	Prunus avium	Mazzard Cherry	11	30	2	trunk callus, bleeding bark injury thick with sap, thin canopy, dry					20%	
153	Quercus garryana	Oregon White Oak	15	36	2	crowded by neighbors, decay, sparse canopy, gauls, skeletonized leaves					20%	
154	Prunus avium	Mazzard Cherry	10	40	2	phloem problems with sap pustules, uneven canopy, broken central leader				✓	20%	
155	Quercus garryana	Oregon White Oak	(3) 42	40	2	upright form, cavity with included bark, damage to surface roots					15%	
156	Pseudotsuga menziesii	Douglas Fir	16	40	2	thin foliage but dense branching, damage to surface roots				✓	20%	
157	Quercus garryana	Oregon White Oak	15	23	2	exposed buttress root flare, sparse canopy, poor form, premature color, gauls, skeletonized leaves			✓	✓	20%	
158	Quercus garryana	Oregon White Oak	15	35	2	exposed wood at trunk injuries, blackberry understory, gauls, skeletonized leaves	✓				20%	
159	Pseudotsuga menziesii	Douglas Fir	48	50	2	storm damage with broken limbs, high canopy, adventitious shoots off trunk, poison oak vines on trunk, insect holes in bark					20%	
160	Quercus kelloggii	California Black Oak	36	58	3	large snag in trunk, uneven form					15%	
161	Arbutus menziesii	Pacific Madrone	9	23	3	bark damage with exposed wood, blackberry, poison oak at base, even canopy					5%	
162	Quercus garryana	Oregon White Oak	10	20	2	shared canopy with tree 163, thin upright canopy, woodpecker damage, gauls, skeletonized leaves					5%	
163	Quercus garryana	Oregon White Oak	11	20	2	shared canopy with tree 162, gauls, skeletonized leaves					5%	
164	Quercus garryana	Oregon White Oak	(2) 30	30	3	exposed wood at base, bark damage, uneven full canopy with decay, gauls, skeletonized leaves					15%	
165	Quercus garryana	Oregon White Oak	(3) 32	44	3	poison oak and honeysuckle vines on trunk, upright form, canopy is high with gauls, skeletonized leaves					5%	
166	Quercus garryana	Oregon White Oak	13	38	3	umbrella shaped canopy, cavity at base, trunk flare with damage and expose wood, gauls, skeletonized leaves					10%	
167	Quercus garryana	Oregon White Oak	(2) 21	24	2	uneven canopy with dead snag as third trunk, gauls, skeletonized leaves					20%	
168	Quercus garryana	Oregon White Oak	17	30	3	gauls, skeletonized leaves, shared canopy					5%	
169	Quercus garryana	Oregon White Oak	9	25	3	gauls, skeletonized leaves, shared canopy					15%	
170	Quercus garryana	Oregon White Oak	15	31	2	gauls, skeletonized leaves, shared canopy, exposed wood with decay and fungus					10%	
171	Quercus garryana	Oregon White Oak	14	37	3	gauls, skeletonized leaves, shared canopy, broken limbs due to recent storm damage					15%	
172	Quercus garryana	Oregon White Oak	15	35	3	ivy at base, insects on decay, bark damage with exposed wood, thin canopy					5%	
173	Quercus garryana	Oregon White Oak	16	40	2	ivy at base, adventitious shoots off trunk, uneven canopy					5%	
174	Quercus garryana	Oregon White Oak	(2) 33	56	2	adventitious shoots, thin canopy within inner branching / center or crown due to storm damage, horizontal form					10%	
175	Quercus garryana	Oregon White Oak	12	21	2	gauls, skeletonized leaves, bark damage, exposed wood at base, decay, uneven canopy					15%	
176	Quercus garryana	Oregon White Oak	17	34	2	sparse canopy, bark damage, exposed wood, 2 large limbs as dead snags, woodpecker holes, boring insects					20%	
177	Quercus garryana	Oregon White Oak	(2) 24	46	2	fungus, decay, skeletonized leaves, gauls, uneven canopy, one sided canopy, honeysuckle vines					20%	
178	Quercus garryana	Oregon White Oak	18	45	3	uneven canopy, gauls, skeletonized leaves					10%	

EWEB

FUNC	BY	CHK	APP
DES	KMc	MJ	CM
DWN	KM	MJ	CM
STANDARDS CHECK			

LINE IS 1 INCH AT FULL SIZE
(IF NOT 1" - SCALE ACCORDINGLY)

WATER SYSTEMS
RESERVOIRS

EWEB WORK ORDER NO. 19-070-PSC
DATE: 09/09/20
SCALE: 1'=40'-0"
DWG NO: 37619
PROJECT SHEET NO: TABLE_B
REV 0

9/10/2020 11:20 AM MATT JORGENSEN

Plan ID	Genus & Species	Common Name	DBH (in)	CANOPY (ft)	Health/ Condition*	Arborist Notes	Ivy on trunk	Thin/sparse canopy	Co-dominant Leader	Surface Roots	% Deadwood	Suckers
179	Quercus garryana	Oregon White Oak	14	35	3	upright form, competing for sunlight, gauls, skeletonized leaves					10%	
180	Quercus garryana	Oregon White Oak	11	15	1	upright form, fungal decay, no limbs left on trunk, tree in decline					10%	
181	Quercus garryana	Oregon White Oak	14	32	3	gauls, skeletonized leaves, high canopy with bark damage with exposed wood					5%	
182	Quercus garryana	Oregon White Oak	(2) 18	25	1	tree in decline, 2 snags present, exfoliating bark, tree is outcompeted by Douglas Fir					50%	
183	Pseudotsuga menziesii	Douglas Fir	18	35	2	Poison oak around base of tree & vining up trunk, thin foliage, bleeding sap at injury with exposed wood					25%	
184	Pseudotsuga menziesii	Douglas Fir	26	40	2	poison oak cines on trunk, high canopy, conk 10-ft up trunk on the uphill side of tree					10%	
185	Quercus garryana	Oregon White Oak	12	20	2	gauls, skeletonized leaves, flimsy, bark damage with exposed wood, decay on deadwood, uneven canopy, growing as one canopy with Tree 186					5%	
186	Quercus garryana	Oregon White Oak	13	20	2	gauls, skeletonized leaves, uneven canopy, bark damage with exposed wood, growing as one canopy with Tree 185					10%	
187	Pseudotsuga menziesii	Douglas Fir	26	40	3	adventitious shoots off trunk					15%	
188	Quercus garryana	Oregon White Oak	(2) 20	N/A	0	snag remains, no foliage present					100%	
189	Pseudotsuga menziesii	Douglas Fir	18	40	2	poison oak vines up trunk of tree, bleeding sap at bark injury without exposed wood, dead branches hanging,					10%	
190	Pseudotsuga menziesii	Douglas Fir	17	40	2	high canopy with dead limbs down low, blackberry understory					10%	
191	Quercus kelloggii	California Black Oak	16	40	2	deadwood with decay and fungus, twisting form, poison oak bines at base					30%	
192	Pseudotsuga menziesii	Douglas Fir	26	35	2	thick ivy 30-ft up tree trunk, bleeding sap, bark damage	✓				10%	
193	Prunus avium	Mazzard Cherry	8	30	2	poor form, woodpecker activity	✓				10%	
194	Pseudotsuga menziesii	Douglas Fir	8	15	1	significant lean uphill on neighboring Douglas fir, dead top, poor structural integrity					15%	
195	Pseudotsuga menziesii	Douglas Fir	10	15	2	uneven, one-sided canopy, shelf fungus at base to 20-ft in height, honeysuckle vines				✓	10%	
196	Pseudotsuga menziesii	Douglas Fir	24	30	3	uneven, one sided canopy growing together as one canopy with tree 197					5%	
197	Pseudotsuga menziesii	Douglas Fir	18	30	3	uneven, one sided canopy growing together as one canopy with tree 196					10%	
198	Pseudotsuga menziesii	Douglas Fir	36	45	2	prolific conk growth on trunk of tree, bark damage from leaning tree 194, poison oak vines					15%	
199	Pseudotsuga menziesii	Douglas Fir	14	25	2	uneven canopy, adventitious shoots off trunk, n central leader					10%	
200	Pseudotsuga menziesii	Douglas Fir	10	40	2	even canopy with sparse thin foliage, poison oak climbing					15%	
201	Pseudotsuga menziesii	Douglas Fir	18	35	2	poison oak vines on trunk, thin canopy	✓				20%	
202	Pseudotsuga menziesii	Douglas Fir	12	25	2	poison oak vines, thin, high canopy, uneven sparse canopy		✓			5%	
203	Pseudotsuga menziesii	Douglas Fir	9	25	2	think, uneven canopy, poison oak vines climbing		✓			5%	
204	Pseudotsuga menziesii	Douglas Fir	10	25	1	conks on trunk, uneven thing canopy, poison oak vines		✓			15%	
205	Pseudotsuga menziesii	Douglas Fir	18	30	2	poison oak climbing, conks, broken central leader with new growth, adventitious shoots off trunk, possible nest		✓			15%	
206	Pseudotsuga menziesii	Douglas Fir	28	35	2	honey suckle and poison oak vines on trunk, small cavity at base of tree		✓			15%	
207	Pseudotsuga menziesii	Douglas Fir	20	35	2	uneven canopy, broken central leader		✓			15%	
208	Pseudotsuga menziesii	Douglas Fir	18	30	2	honey suckle and poison oak on trunk, uneven canopy, adventitious shoots off trunk		✓			10%	
209	Pseudotsuga menziesii	Douglas Fir	20	30	2	honey suckle and poison oak on trunk, uneven canopy, adventitious shoots off trunk		✓			10%	
210	Pseudotsuga menziesii	Douglas Fir	14	25	2	uneven canopy, thin at top, blackberries and poison oak understory		✓			20%	
211	Pseudotsuga menziesii	Douglas Fir	16	25	2	poison oak on trunk, sparse foliage		✓			10%	
212	Pseudotsuga menziesii	Douglas Fir	16	25	2	conks, poison oak climbing, uneven thin canopy		✓			15%	
213	Pseudotsuga menziesii	Douglas Fir	16	30	2	adventitious shoots off trunk, bark damage, poison oak vines					10%	
214	Pseudotsuga menziesii	Douglas Fir	17	30	2	poison oak vines, decay on trunk, fungus, uneven canopy					10%	
215	Quercus garryana	Oregon White Oak	11	25	2	poor form, uneven canopy, lanky in form, decay, tree is being outcompeted by Douglas firs					15%	
216	Pseudotsuga menziesii	Douglas Fir	14	30	2	uneven canopy, conks on trunk		✓			10%	
217	Pseudotsuga menziesii	Douglas Fir	28	50	2	uneven canopy, two top		✓			20%	
218	Pseudotsuga menziesii	Douglas Fir	26	40	2	curbed trunk, some browning foliage, fungus on trunk, poison oak, uneven					15%	

Plan ID	Genus & Species	Common Name	DBH (in)	CANOPY (ft)	Health/ Condition*	Arborist Notes	Ivy on trunk	Thin/sparse canopy	Co-dominant Leader	Surface Roots	% Deadwood	Suckers
219	Pseudotsuga menziesii	Douglas Fir	8	20	2	uneven canopy, thin foliage / branching, outcompeted for sun / canopy space		✓			5%	
220	Quercus kelloggii	California Black Oak	12	40	2	leaning, high canopy, skeletal leaves, shaded out					5%	
221	Pseudotsuga menziesii	Douglas Fir	36	50	3	high canopy, water sprouts, insect damage on trunk, honeysuckle, poison oak climbing trunk					15%	
222	Pseudotsuga menziesii	Douglas Fir	22	40	2	poison oak vines, bleeding sap, uneven canopy, adventitious shoots off trunk		✓			15%	
223	Pseudotsuga menziesii	Douglas Fir	16	30	2	uneven canopy, only foliage on tree is extremely high, bleeding sap, fungus		✓			20%	
224	Pseudotsuga menziesii	Douglas Fir	11	25	2	uneven canopy, adventitious shoots off trunk, broken top bent over		✓			15%	
225	Pseudotsuga menziesii	Douglas Fir	13	30	2	broken top / dead top		✓			30%	
226	Quercus kelloggii	California Black Oak	28	40	3	decay and insects on broken limbs, minor leaf damage, poison oak and blackberry at base					15%	
227	Pseudotsuga menziesii	Douglas Fir	7	25	2	bark injury with exposed wood, sap, sparse canopy		✓			15%	
228	Quercus kelloggii	California Black Oak	16	30	2	major lean, uneven canopy, poison oak at base					25%	
229	Pseudotsuga menziesii	Douglas Fir	19	40	2	wide canopy, sparse foliage, poison oak climbing with blackberry		✓			20%	
230	Quercus garryana	Oregon White Oak	16	25	2	poison oak climbing, uneven canopy with lean, sparse foliage		✓			5%	
231	Quercus garryana	Oregon White Oak	16	25	2	poison oak climbing, twisted form, woodpecker house / hole, animal cavity					5%	
232	Quercus garryana	Oregon White Oak	9	N/A	0	snag remains, no foliage present					100%	
233	Quercus garryana	Oregon White Oak	21	45	2	upright, uneven canopy, tree shaded out, decay with boring insects on deadwood					15%	
234	Quercus kelloggii	California Black Oak	17	20	1	leaning, uneven canopy, shaded out, little foliage left					30%	
235	Quercus kelloggii	California Black Oak	(2) 32	55	2	lean with one, upright with other trunk, shaded out					10%	
236	Pseudotsuga menziesii	Douglas Fir	15	30	2	poison oak vines, broken top, uneven canopy		✓			10%	
237	Pseudotsuga menziesii	Douglas Fir	16	30	2	poison oak vines, uneven thing canopy		✓			30%	
238	Quercus kelloggii	California Black Oak	18	25	2	split bark with decay, broken limbs, shaded out, sparse foliage					30%	
239	Pseudotsuga menziesii	Douglas Fir	9	20	2	uneven canopy, poison oak and blackberry at base		✓			10%	
240	Pseudotsuga menziesii	Douglas Fir	13	30	2	uneven canopy, poison oak and blackberry at base	✓	✓			20%	
241	Quercus garryana	Oregon White Oak	8	20	1	tree is leaning, resting on neighboring fir, exposed wood with insects, uneven canopy and sparse foliage, tree is shaded out, upper half of tree is dead					40%	
242	Quercus kelloggii	California Black Oak	16	30	2	severe lean. Resting on tree 243, tree in decline, decay, cavities at base of tree					30%	
243	Pseudotsuga menziesii	Douglas Fir	16	56	2	uneven canopy, high canopy, lots of dead lower limbs, oak resting on it					15%	
244	Pseudotsuga menziesii	Douglas Fir	18	35	2	bark damage with oak leaning on it, poison oak at base, fungus on limbs		✓			20%	
245	Pseudotsuga menziesii	Douglas Fir	(2) 24	40	2	nail in trunk, broken leader on one of trunks, thing canopy		✓			25%	
246	Pseudotsuga menziesii	Douglas Fir	24	40	3	thin canopy, wood nailed into trunk					15%	
247	Pseudotsuga menziesii	Douglas Fir	16	25	2	one sided canopy		✓			15%	
248	Pseudotsuga menziesii	Douglas Fir	26	30	2	twisted trunk, poison oak vines up trunk, bark damage		✓			15%	
249	Pseudotsuga menziesii	Douglas Fir	15	25	2	dead top, one sided		✓			20%	
250	Pseudotsuga menziesii	Douglas Fir	14	30	2	one sided canopy		✓			10%	
251	Pseudotsuga menziesii	Douglas Fir	14	35	2	dead / missing top, thin foliage	✓				5%	
252	Quercus garryana	Oregon White Oak	18	40	2	growing with fir, boring insects, high canopy, uneven canopy, cavity high in tree					15%	
253	Pseudotsuga menziesii	Douglas Fir	28	50	2	high canopy, growing with oak tree 252			✓		15%	
254	Quercus kelloggii	California Black Oak	19	40	2	high arching canopy, uneven, reaching for light, thin foliage					10%	
255	Prunus avium	Mazzard Cherry	10	30	2	reaching for light					10%	
256	Prunus avium	Mazzard Cherry	6	25	2	reaching for light					5%	
257	Prunus avium	Mazzard Cherry	6	25	2	reaching for light, splitting bark					5%	
258	Pseudotsuga menziesii	Douglas Fir	26	45	3	high branching structure, browning foliage, possible nest					10%	
259	Quercus garryana	Oregon White Oak	12	20	2	blackberry / poison oak, uneven canopy, high canopy					15%	
260	Quercus garryana	Oregon White Oak	14	20	2	blackberry / poison oak					10%	
261	Pseudotsuga menziesii	Douglas Fir	20	25	2	poison oak vines up trunk					20%	

EWEB

FUNC	BY	CHK	APP
DES	KMc	MJ	CM
DWN	KM	MJ	CM
STANDARDS CHECK			

LINE IS 1 INCH AT FULL SIZE
(IF NOT 1" - SCALE ACCORDINGLY)

WATER SYSTEMS
RESERVOIRS

EWEB WORK ORDER NO. 19-070-PSC
DATE: 09/09/20
SCALE: 1'=40'-0"
DWG NO: 37619
PROJECT SHEET NO: TABLE_C
REV 0

9/10/2020 11:20 AM MATT JORGENSEN

Plan ID	Genus & Species	Common Name	DBH (in)	CANOPY (ft)											
262	Pseudotsuga menziesii	Douglas Fir	13	22	2.0	central leader broken, thin canopy, blackberries at base	X	X				10%			
263	Pseudotsuga menziesii	Douglas Fir	8	17	2.0	leaning, uneven canopy, leader bent, ivy/vinca/blackberry at base		X				5%			
264	Pseudotsuga menziesii	Douglas Fir				dead									
265	Pseudotsuga menziesii	Douglas Fir	11	21	2.0	blackberry, poison oak, one sided canopy due to crowding	X	X				5%			
266	Pseudotsuga menziesii	Douglas Fir	13	24	2.0	blackberrry, poison oak, ivy, watersprouts, few lower limbs	X	X				5%			
267	Pseudotsuga menziesii	Douglas Fir	8	13	1.0	blackberrry, poison oak, ivy, cead central leader	X	X				15%			
268	Pseudotsuga menziesii	Douglas Fir	32	45	3.0	blackberrry, poison oak, ivy						25%			
269	Pseudotsuga menziesii	Douglas Fir	6	9	2.0	poison oak		X				5%			
270	Pseudotsuga menziesii	Douglas Fir	14	12	2.0	blackberrry, poison oak, ivy, many watersprouts close to trunk, tight canopy, one sided/uneven canopy due to crowding		X				5%			
271	Pseudotsuga menziesii	Douglas Fir	20	48	2.0	blackberrry, poison oak, ivy, many watersprouts close to trunk, tight canopy, one sided/uneven canopy due to crowding						20%			
272	Pseudotsuga menziesii	Douglas Fir	10	13	2.0	blackberrry, poison oak, ivy, many watersprouts close to trunk, tight canopy, one sided/uneven canopy due to crowding		X				5%			
273	Pseudotsuga menziesii	Douglas Fir	26	30	2.0	blackberrry, poison oak, watersprouts, one sided		X				15%			
274	Pseudotsuga menziesii	Douglas Fir	12	9	2.0	blackberrry, poison oak, ivy, watersprouts, one sided, crowding						5%			
275	Pseudotsuga menziesii	Douglas Fir	16	20	2.0	blackberrry, poison oak, high thin canopy	X	X				15%			
276	Prunus avium	Mazzard Cherry	9	30	2.0	blackberrry, bark damage, one sided, crowding						5%			
277	Pseudotsuga menziesii	Douglas Fir	12	18	2.0	blackberry, high canopy, crowded, watersprouts		X				30%			
278	Pseudotsuga menziesii	Douglas Fir	21	30	2.0	blackberry, one sided, bark injury at base, bark peeling, sap seeping	X					25%			
279	Pseudotsuga menziesii	Douglas Fir	16	27	2.0	blackberrry, poison oak, lower limbs dead	X	X				35%			
280	Pseudotsuga menziesii	Douglas Fir	12	14	1.0	blackberrry, poison oak, dead central leader, one sided, bark injury with sap dripping, watersprouts		X				15%			
281	Pseudotsuga menziesii	Douglas Fir	13	10	2.0	blackberrry, poison oak, compartmentalized bark damage, high canopy, watersprouts		X				10%			
282	Pseudotsuga menziesii	Douglas Fir	14	20	2.0	blackberrry, poison oak, one sided	**X**	**X**				10%			
283	Pseudotsuga menziesii	Douglas Fir	11	21	2.0	blackberrry, poison oak, ivy, cead central leader, boring insect presence, sap, one sided		X		X		10%			
284	Pseudotsuga menziesii	Douglas Fir	15	20	2.0	blackberrry, poison oak, ivy, one sided						5%			
285	Pseudotsuga menziesii	Douglas Fir	14	18	2.0	blackberrry, poison oak, ivy, one sided						5%			
286	Pseudotsuga menziesii	Douglas Fir	36	45	2.0	blackberrry, poison oak, watersprouts, broken lower side limbs	X					20%			
287	Pseudotsuga menziesii	Douglas Fir	X	X	0.0	snag									
288	Pseudotsuga menziesii	Douglas Fir	18	32	2.0	blackberrry, poison oak, dangling deadwood, one sided				X		5%			
289	Pseudotsuga menziesii	Douglas Fir	12	18	2.0	blackberrry, poison oak, one sided, bark damage, sap dripping	X					5%			
290	Pseudotsuga menziesii	Douglas Fir	12	20	1.0	blackberrry, poison oak, one sided, dead central leader	X					5%			
291	Pseudotsuga menziesii	Douglas Fir	25	30	2.0	blackberrry, poison oak, thistle, cut/stacked wood at base	X	X				5%			
292	Pseudotsuga menziesii	Douglas Fir	10	15	1.0	blackberrry, poison oak, bark damage, exposed wood/injuries, geranium, broken leader, insect damage, one sided	X	X				10%			
293	Pseudotsuga menziesii	Douglas Fir	20	20	2.0	blackberrry, broken central leader, broken side branch				X		5%			
294	Quercus kelloggii	California Black Oak	9	12	2.0	vinca, inosculation at base, (1) trunk removed (formerly 2 low codominant), skelotonized leaves, wood decay, exposed wood at cut						10%			
295	Pseudotsuga menziesii	Douglas Fir	54	40	3.0	evidence of boring insects, minimal sap dripping, insects on dead limbs	X					15%			
296	Prunus avium	Mazzard Cherry	8	33	2.0	broken central leader, leaning				X		10%			
297	Pinus ponderosa	Ponderosa Pine	18	25	2.0	wisteria climbing 20', high canopy, cage embedded in bark						5%			
298	Pseudotsuga menziesii	Douglas Fir	8	18	1.0	dead leader, spindly, declining		X				10%			
299	Pseudotsuga menziesii	Douglas Fir	11	8	2.0	bark damage, sign, sap, dead leader, high branching		X				5%			
300	Prunus avium	Mazzard Cherry	15	30	2.0	one sided, looking for light, insect/wildlife presence, boring insects									
301	Prunus avium	Mazzard Cherry	10	24	2.0	insects, galls on trunk, big lean, broken at top						5			
302	Pseudotsuga menziesii	Douglas Fir	12	20	2.0	one sided, ivy, blackberry, woodpile at trunk, boring insect presence, bark damage, leader damaged	X	X				15			
303	Pseudotsuga menziesii	Douglas Fir	8	10	2.0	blackberrry, shaded out	X	X				5			
304	Quercus kelloggii	California Black Oak	14	15	1.0	broken top, dead at top, watersprouts, fighting for light, leaning	X					30			
305	Pseudotsuga menziesii	Douglas Fir	14	21	2.0	watersprouts, high canopy, blackberry, shaded out						10			
306	Prunus avium	Mazzard Cherry	11	30	2.0	big lean, blackberry, searching for light	X					15			
307	Prunus avium	Mazzard Cherry	9	25	2.0	bark damage, one sided, blackberry, poison oak, broken limbs, crowded									
308	Pseudotsuga menziesii	Douglas Fir	31	34	2.5	blackberrry, poison oak,						15			
309	Pseudotsuga menziesii	Douglas Fir	28	35	2.0	major ivy climbing very high, poison oak, severe bark damage from ivy, one sided	X				X	10			
310	Pseudotsuga menziesii	Douglas Fir	16	26	2.0	blackberry, boring isect presence, sap dripping, one sided, watersprouts, crowded	X					15			
311	Pseudotsuga menziesii	Douglas Fir	16	25	2.0	blackberrry, poison oak,		X				15			
312	Pseudotsuga menziesii	Douglas Fir	13	27	1.5	nest, large bark fissures, broken leader				X		10			
313	Pseudotsuga menziesii	Douglas Fir	15	20	2.0	one sided		X				5			

Plan ID	Genus & Species	Common Name	DBH (in)	CANOPY (ft)											
314	Pseudotsuga menziesii	Douglas Fir	18	32	2.0	snag adjacent, broken top		X		X		5			
315	Pseudotsuga menziesii	Douglas Fir	26	39	2.0	blackberry, lean, curved trunk	X					10			
316	Prunus avium	Mazzard Cherry	(2) 17	25	2.0	both leaders broken at top, blackberry				X					
317	Pseudotsuga menziesii	Douglas Fir	26	30	2.0	watersprouts, high canopy, poison oak, minimal lower branching, shaded in past		X				10			
318	Pseudotsuga menziesii	Douglas Fir	72	60	2.5	extreme poison oak, insects and decay on deadwood	X					15-20			
319	Pseudotsuga menziesii	Douglas Fir	66	60	3.0	poison oak, honeysuckle, decay and insects on deadwood						15-20			
320	Pseudotsuga menziesii	Douglas Fir	8	19	2.0	blackberry, poison oak, one sided		X				5			
321	Pseudotsuga menziesii	Douglas Fir	14	15	2.0	high canopy, one sided		X				5			
322	Pseudotsuga menziesii	Douglas Fir	55	60	2.5	blackberrry, wildlife/woodpecker damage sap dripping, broken deadwood with decay/insects	X					15			
323	Acer macrophylum	Bigleaf Maple	(2) 11	30	2.0	second leader at base, shaded		X		X		5			
324	Pseudotsuga menziesii	Douglas Fir	24	40	2.5	bark damage at buttress root		X				15			
325	Pseudotsuga menziesii	Douglas Fir	18	15	2.0	one sided, narrow, shaded/crowded, poison oak	X	X				15			
326	Pseudotsuga menziesii	Douglas Fir	21	24	2.0	watersprouts, curved trunk, poison oak, blackberry, bark damage, sap dripping	X					10			
327	Pseudotsuga menziesii	Douglas Fir	9	18	2.0	damaged central leader, poison oak	X	X				10			
328	Acer macrophylum	Bigleaf Maple	8	35	2.0	crowded, blackberry, broken central leader, broken lower limb						10			
329	Pseudotsuga menziesii	Douglas Fir	24	35	2.5	blackberrry, honeysuckle, poison oak	X					15			
330	Pseudotsuga menziesii	Douglas Fir	10	10	1.0	watersprouts, central leader questionable	X	X				15			
331	Pseudotsuga menziesii	Douglas Fir	41	40	2.5	blackberrry	X					20			
332	Pseudotsuga menziesii	Douglas Fir	7	15	2.0	watersprouts, high canopy, bark damage, broken leader, bark damage at base, ivy, blackberry									
333	Pseudotsuga menziesii	Douglas Fir	13	20	2.0	blackberrry, poison oak, ivy, one sided, sap dripping	X	X							
334	Pseudotsuga menziesii	Douglas Fir	13	20	2.0	bark damage at base, blackberry, honeysuckle, watersprouts, old broken leader		X				20			
335	Pseudotsuga menziesii	Douglas Fir	19	30	2.0	one sided, high canopy	X	X				20			
336	Pseudotsuga menziesii	Douglas Fir	13	20	2.0	blackberrry, poison oak, leaning, one sided, leader dead, crowded, watersprouts	X	X				15			
337	Pseudotsuga menziesii	Douglas Fir	7	6	1.0	blackberrry, poison oak, deac leader, watersprouts, minimal branching		X				20			
338	Pseudotsuga menziesii	Douglas Fir	16	25	2.0	blackberrry, poison oak, cotoneaster, downed wood		X				25			
339	Pseudotsuga menziesii	Douglas Fir	8	10	1.0	blackberrry, poison oak, honeysuckle	X	X				25			
340	Pseudotsuga menziesii	Douglas Fir	26	35	2.0							20			
341	Pseudotsuga menziesii	Douglas Fir	60	86	2.5	many cut/pruned limbs, sap dripping, broken limbs						10			
342	Pseudotsuga menziesii	Douglas Fir	14	25	2.0	blackberrry, poison oak, watersprouts, one sided						20			
343	Pseudotsuga menziesii	Douglas Fir	15	12	2.0	blackberrry, watersprouts, narrow, honeysuckle		X				10			
344	Pseudotsuga menziesii	Douglas Fir	8	8	1.0	blackberrry, dead leader, declining		X				50			
345	Pseudotsuga menziesii	Douglas Fir	20	25	2.0	sap dripping, codominant leader (one died)		X		X		20			
346	Pseudotsuga menziesii	Douglas Fir	22	30	2.0	one sided, crowded, poison oak, sap dripping		X				15			
347	Pseudotsuga menziesii	Douglas Fir	28	35	2.0	one sided, crowded, poison oak, sap dripping		X				15			
348	Acer macrophylum	Bigleaf Maple	6	30	2.0	leaning, looking for light, blackberry, poison oak									
349	Pseudotsuga menziesii	Douglas Fir	8	10	1.0	dead leader, watersprouts, one sided						10			
350	Pseudotsuga menziesii	Douglas Fir	18	25	2.0	blackberrry, poison oak,		X				15			
351	Quercus kelloggii	California Black Oak	12	25	2.0	big lean, small canoy at very top		X				10			
352	Pseudotsuga menziesii	Douglas Fir	11	20	1.0	2 broken leaders, dead leader, one sided, downed wood, leaning, dangling deadwood		X				20			
353	Pseudotsuga menziesii	Douglas Fir	39	45	2.5	buttress root decay and insects, sap dripping, old broken limbs, honeysuckle, poison oak		X			X	20			
354	Quercus kelloggii	California Black Oak	(2) 11	25	2.0	crowded, 2 trunks emerge at base						20			
355	Prunus avium	Mazzard Cherry	(2) 10	20	2.0	both central leaders broken						35			
356	Pseudotsuga menziesii	Douglas Fir	15	25	2.0	one sided				X		15			
357	Pseudotsuga menziesii	Douglas Fir	9	20	2.0	broken central leader, watersprouts, decay at base, old suckers have died, cavity		X				20			
358	Pseudotsuga menziesii	Douglas Fir	14	20	2.0	poison oak, leader declining, gunstock at base, not vigorous		X				15			
359	Acer macrophylum	Bigleaf Maple	6	25	2.0	poison oak, watersprouts, crowded						5			
360	Pseudotsuga menziesii	Douglas Fir	22	30	2.0	one sided, early gunstocking occurred, poison oak						15			
361	Prunus avium	Mazzard Cherry	9	25	2.5	splitting bark at bottom of trunk, watersprouts, poison oak						10			
362	Pseudotsuga menziesii	Douglas Fir	8	10	1.0	shaded out/crowded, central leader dead		X				40			
363	Pseudotsuga menziesii	Douglas Fir	29	40	2.5	cuts on bark (possible hatchet), nails in trunk, sign hung on trunk, heavy sap drip						15			
364	NOT PRESENT														
365	Acer macrophylum	Bigleaf Maple	13	40	1.5	standing water in cavity at base with rot, chopping/carving in bark, many bad limbs with damage, blackberry,						25			X
366	Pseudotsuga menziesii	Douglas Fir	17	30	2.0	bark damage from people, sap drippin, nails in trunk, poison oak		X				15			

EWEB

FUNC	BY	CHK	APP
DES	KMc	MJ	CM
DWN	KM	MJ	CM
STANDARDS CHECK			

LINE IS 1 INCH AT FULL SIZE
(IF NOT 1" - SCALE ACCORDINGLY)

WATER SYSTEMS RESERVOIRS

EWEB WORK ORDER NO. 19-070-PSC

DATE: 09/09/20 | SCALE: 1'=40'-0"

DWG NO: 37619

PROJECT SHEET NO: TABLE_D | REV 0

9/10/2020 11:23 AM MATT JORGENSEN

Plan ID	Genus & Species	Common Name	DBH (in)	CANOPY (ft)										
367	Pseudotsuga menziesii	Douglas Fir	11	20	2.0	blackberrry, poison oak,		X			20			
368	Pseudotsuga menziesii	Douglas Fir	8	20	2.0	blackberry, watersprouts, broken central leader, one sided		X			10			
369	Pseudotsuga menziesii	Douglas Fir	(2) 18	20	2.0	one sided, dead leader, blackberry, poison oak		X			10			
370	NOT PRESENT													
371	Quercus kelloggii	California Black Oak	8	30	2.0	blackberrry, poison oak, bark damage, leancling, looking for light					10			
372	Pseudotsuga menziesii	Douglas Fir	27	45	2.5	blackberrry, poison oak, honeysuckle		X			15			
373	Pseudotsuga menziesii	Douglas Fir	18	25	2.0	blackberrry, poison oak, one codominant leader dead		X	X		20			
374	Pseudotsuga menziesii	Douglas Fir	12	20	2.0	blackberrry, poison oak, one sided		X			10			
375	Pseudotsuga menziesii	Douglas Fir	10	20	2.0	blackberrry, poison oak, one sided, central leader weak or dead		X			10			
376	Pseudotsuga menziesii	Douglas Fir	22	35	2.0	poison oak, one sided, dangling deadwood, decay on deadwood	X				20			
377	Pseudotsuga menziesii	Douglas Fir	29	50	2.0	blackberrry, poison oak, one sided, watersprouts, bark damage at base at buttress roots, sap dripping, decay					10			
378	Pseudotsuga menziesii	Douglas Fir	29	50	2.0	blackberrry, poison oak, one sided			X		15			
379	Pseudotsuga menziesii	Douglas Fir	16	25	2.0	blackberrry, poison oak, one sided, watersprouts, brokel leader		X			15			
380	Pseudotsuga menziesii	Douglas Fir	7	15	1.0	blackberrry, poison oak, bark damage, very one sided, broken leader		X			20			
381	Pseudotsuga menziesii	Douglas Fir	16	25	2.0	blackberrry, poison oak, bark damage, very one sided	X				20			
382	Pinus ponderosa	Ponderosa Pine	36	30	3.0	good condition	X				5			
383	Pseudotsuga menziesii	Douglas Fir	39	50	3.0	lower half one sided, watersprouts	X			X	15			
384	Quercus kelloggii	California Black Oak	6	10	2.0	blackberrry, poison oak, leaning, looking for light, cavity, leaf skeletonizing present		X						
385	Pseudotsuga menziesii	Douglas Fir	18	30	2.0	poison oak, OR grape, snowberry, one sided	X	X			10			
386	Pseudotsuga menziesii	Douglas Fir	14	25	2.0	blackberrry, poison oak, one sided, watersprouts	X	X			10			
387	Pseudotsuga menziesii	Douglas Fir	15	25	2.0	reaching for light, growing through oak canopy, poison oak, little bark damage, sap dripping, one sided		X			10			
388	Pseudotsuga menziesii	Douglas Fir	8	20	1.5	blackberrry, poison oak, watersprouts, broken central leader		X			20			
389	Pseudotsuga menziesii	Douglas Fir	9	20	1.5	blackberrry, poison oak, one sided, dead central leader	X	X	X		10			
390	Pseudotsuga menziesii	Douglas Fir	8	20	1.0	dead central leader, watersprouts	X	X			25			
391	Pseudotsuga menziesii	Douglas Fir	12	25	2.0	high canopy, minor sap bleeding		X			15			
392	Quercus kelloggii	California Black Oak	(2) 32	50	2.0	multi trunk (codominant from base, 3 but one is dead), lean south, cavity in center between leaders, skeetonized leaves, growing through firs, cavity at base with standing water, nails in trunk, fungus present, insect presence, poison oak, blackberry, weeds in cavity, watersprouts			X		10			
393	Pseudotsuga menziesii	Douglas Fir	10	20	2.0	broken central leader, crowded, one siced, watersprouts, oak leaning on trunk, poison oak	X	X			15			
394	Quercus kelloggii	California Black Oak	13	40	2.0	leaning, barc damage, 3" deep cavity, skeletonized leaves, watersprouts, shaded, crowded					15			
395	Quercus kelloggii	California Black Oak	13	25	2.0	leaning, crowded, shaded, touching other trees, large old cut at base (compartmentalized), poison oak		X			15			
396	Pseudotsuga menziesii	Douglas Fir	8	20	1.0	watersprouts, crispy top, conks, poison oak		X	X		30			
397	Pseudotsuga menziesii	Douglas Fir	6	20	1.0	central leader broken, poison oak, one sided, watersprouts, crooked trunk		X			15			
398	Pseudotsuga menziesii	Douglas Fir	11	15	2.0	poison oak, watersprouts, one sided		X			20			
399	Quercus kelloggii	California Black Oak	11	20	1.5	large dead limbs, leaning, needs light, skeletonized leaves, poison oak, decay at base and old limbs, insect presence		X			30			
400	Pseudotsuga menziesii	Douglas Fir	9	10	2.0	one sided, poison oak, watersprouts		X			10			
401	Pseudotsuga menziesii	Douglas Fir	20	35	2.5	blackberrry, poison oak,					10			
402	Quercus kelloggii	California Black Oak	20	35	2.0	dieback, shaded, reaching for light, one sided	X				25			
403	Pseudotsuga menziesii	Douglas Fir	14	40	1.5	blackberrry, poison oak, broken central leader		X	X		20			
404	Quercus kelloggii	California Black Oak	24	40	2.0	blackberrry, poison oak, many large dead/broken limbs, major lean, light starved, crowded, watersprouts		X			30			
405	Pseudotsuga menziesii	Douglas Fir	11	25	2.0	blackberrry, poison oak, watersprouts, broken central leader			X		15			
406	Pseudotsuga menziesii	Douglas Fir	11	30	2.0	blackberrry, poison oak, one sided, broken central leader	X				10			
407	Pseudotsuga menziesii	Douglas Fir	10	25	2.0	blackberrry, poison oak, ones sided, watersprouts, central leader dying		X	X		15			
408	Quercus kelloggii	California Black Oak	24	60	2.0	blackberrry, poison oak, deep cavity at base where old codominant leader was, shaded but tall		X			20			
409	Pseudotsuga menziesii	Douglas Fir	28	35	2.0	blackberrry, poison oak, dieback, decay on dead limbs, smooth brown lesions on trunk		X			20			
410	Pinus ponderosa	Ponderosa Pine	40	50	3.0	blackberrry, poison oak, looks good	X				15			
411	Pseudotsuga menziesii	Douglas Fir	9	20	2.0	blackberrry, poison oak,watersprouts, bent leader dying, one sided		X			10			
412	Pseudotsuga menziesii	Douglas Fir	7	15	1.5	one sided, high small canopy, crowded watersprouts, growing through oak canoy		X			10			
413	Quercus kelloggii	California Black Oak	(2) 20	30	1.5	blackberrry, poison oak, watersprouts, bark damage, low crotch, skeletonized leaves, leaning, shaded, multistem		X	X		50			
414	Pseudotsuga menziesii	Douglas Fir	8	20	1.5	blackberrry, poison oak, one sided, central leaders broken, watersprouts		X			40			
415	Pseudotsuga menziesii	Douglas Fir	8	20	1.5	blackberrry, poison oak, one sided, central leaders broken, watersprouts		X			40			

Plan ID	Genus & Species	Common Name	DBH (in)	CANOPY (ft)										
416	Pseudotsuga menziesii	Douglas Fir	7	20	1.5	one sided, broken top, watersprouts		X			25			
417	Pseudotsuga menziesii	Douglas Fir	6	20	1.5	one sided, watersprouts, central leader declining, dieback		X			20			
418	Pseudotsuga menziesii	Douglas Fir	15	30	2.0	one sided					10			
419	Pseudotsuga menziesii	Douglas Fir				dead								
420	Pseudotsuga menziesii	Douglas Fir				dead								
421	Pseudotsuga menziesii	Douglas Fir	7	15	1.5	bent central leader, one sidec, dying top, crowded		X						
422	Pseudotsuga menziesii	Douglas Fir	6	15	1.5	watersprouts, one sided, leader dying, crowded		X						
423	Quercus kelloggii	California Black Oak	11	25	1.5	major lean, big cut at base, major decay/insects		X			25			
424	Quercus kelloggii	California Black Oak	8	25	2.0	leaning on fir, crowded, looking for light, skeletonized leaves (minimal)					15			
425	Pseudotsuga menziesii	Douglas Fir	10	20	2.0	oak leaning on trunk, one sided, poison oak					10			
426	Pseudotsuga menziesii	Douglas Fir	8	25	2.0	one sided, watersprouts, crowded, broken central leader					5			
427	Quercus kelloggii	California Black Oak	16	30	2.0	old codominant leader is dead, decay, cavity with debris, boring insect presence, crowding, reaching for light					15			
428	Pseudotsuga menziesii	Douglas Fir	13	30	2.0	watersprouts, one sided, crooked trunk, broken central leader								
429	Pseudotsuga menziesii	Douglas Fir	9	20	2.0	watersprouts, one sided, crooked trunk		X			10			
430	Pseudotsuga menziesii	Douglas Fir	13	20	1.0	many conks, decay fungi, one sided, watersprouts					25			
431	Pseudotsuga menziesii	Douglas Fir	15	25	2.0	high canopy, poison oak		X			15			
432	Pseudotsuga menziesii	Douglas Fir	11	30	1.5	watersprouts, central leader dying, one sided		X			30			
433	Pseudotsuga menziesii	Douglas Fir	20	30	2.0	bent trunk, gunstocking, old leader injury, one sided, watersprouts, poison oak					15			
434	Pseudotsuga menziesii	Douglas Fir	12	25	2.0	high canopy					15			
435	Pseudotsuga menziesii	Douglas Fir	15	20	2.0	one sided, watersprouts		X			15			
436	Pseudotsuga menziesii	Douglas Fir	22	35	2.0	one sided					15			
437	Pseudotsuga menziesii	Douglas Fir	20	40	2.0	uneven canopy, poison oak	X				10			
438	Prunus avium	Mazzard Cherry	8	26	2.0	bark damage on trunk, blackberry					5			
439	Pseudotsuga menziesii	Douglas Fir	8	25	1.5	watersprouts, dying central leader		X			30			
440	Quercus garryana	Oregon White Oak	12	30	2.0	major poison oak, tight limb angles	X				20			
441	Pseudotsuga menziesii	Douglas Fir	24	40	2.5	watersprouts, has space to grow					15			
442	Pseudotsuga menziesii	Douglas Fir	16	25	2.0	poison oak, one sided	X							
443	Pseudotsuga menziesii	Douglas Fir	13	25	2.0	codominant leaders at 2 points: 1/3 and 2/3 up trunk, poison oak, one sided	X	X		X	10			
444	Pseudotsuga menziesii	Douglas Fir	(2) 35	35	2.0	multistem, one sided, V crotch low on tree, poison oak, blackberry, debris in crotch	X			X	15			
445	Pseudotsuga menziesii	Douglas Fir	11	25	2.0	dieback		X			20			
446	Pseudotsuga menziesii	Douglas Fir	16	25	2.0	one sided, low gunstocking, high canopy					15			
447	Pseudotsuga menziesii	Douglas Fir	14	25	2.0	adjacent/touching a snag, one sided, bent central leader, leaning, crooked trunk, watersprouts					20			
448	Quercus kelloggii	California Black Oak	11	25	2.0	deep cavity at base with conk, watersprouts, dieback, skeletonized leaves, leaning, low light		X			5			
449	Pseudotsuga menziesii	Douglas Fir	14	30	2.0	crowded, poison oak				X	10			
450	Pseudotsuga menziesii	Douglas Fir	14	35	2.0	poison oak, one sided, crooked trunk, multiple central leader deaths			X	X	20			
451	Quercus kelloggii	California Black Oak	(2) 30	40	2.0	nails in trunk, one dead leader (third), cavity with standing water, fourth and fifth leaders gone and remnants decaying, deep 12"+ cavity, poison oak			X		25			
452	Pseudotsuga menziesii	Douglas Fir	11	30	1.0	sap bleeding, bark damage, dead central leader		X			40			
453	Quercus garryana	Oregon White Oak	9	15	2.0	dead previously codominant leader at base, decay, leaning, needs light, crowded, skeletonized leaves, poison oak					10			
454	Pseudotsuga menziesii	Douglas Fir	15	25	2.0	dead branches, scraggly		X			25			
455	Pseudotsuga menziesii	Douglas Fir	17	35	2.0	one sided, watersprouts, oison oak					15			
456	Pseudotsuga menziesii	Douglas Fir	6	15	2.0	broken top, watersprouts, one sided, poison oak		X			5			
457	Pseudotsuga menziesii	Douglas Fir	6	15	1.0	broken top, watersprouts, one sided, poison oak		X			5			
458	Pseudotsuga menziesii	Douglas Fir	10	15	1.0	sap bleeding at branch wound, watersprouts, broken central leader, thin high canopy		X			15			
459	Pseudotsuga menziesii	Douglas Fir	18	30	2.0	one sided				X	15			
460	Pseudotsuga menziesii	Douglas Fir	19	25	2.0	one sided, poison oak					10			
461	Pseudotsuga menziesii	Douglas Fir	8	25	2.0	central leader broken, watersprouts, bark damage at base		X			15			
462	Pseudotsuga menziesii	Douglas Fir	21	40	2.0	one sided down low					10			
463	Pseudotsuga menziesii	Douglas Fir	14	25	2.0	poison oak, one sided, watersprouts, broken central leader					5			
464	Pseudotsuga menziesii	Douglas Fir	23	35	2.0	poison oak, one sided	X			X	15			
465	Pseudotsuga menziesii	Douglas Fir	23	40	2.0	poison oak, one sided down low					15			
466	Pseudotsuga menziesii	Douglas Fir	18	35	2.0	poison oak, one sided					10			
467	Pseudotsuga menziesii	Douglas Fir	20	35	2.0	one sided	X				10			

EWEB

FUNC	BY	CHK	APP
DES	KMc	MJ	CM
DWN	KM	MJ	CM
STANDARDS CHECK			

LINE IS 1 INCH AT FULL SIZE
(IF NOT 1" - SCALE ACCORDINGLY)

WATER SYSTEMS
RESERVOIRS

EWEB WORK ORDER NO. 19-070-PSC
DATE: 09/09/20
SCALE: 1'=40'-0"
DWG NO: 37619
PROJECT SHEET NO: TABLE_E
REV 0

9/10/2020 11:23 AM MATT JORGENSEN

Plan ID	Genus & Species	Common Name	DBH (in)	CANOPY (ft)											
468	Pseudotsuga menziesii	Douglas Fir	18	25	2.0	old broken central leader, crooked trunk	X					15			
469	Pseudotsuga menziesii	Douglas Fir	20	35	2.0	broken limb down low	X					15-20			
470	Pseudotsuga menziesii	Douglas Fir	12	25	1.5	poison oak, one sided	X	X				20			
471	Pseudotsuga menziesii	Douglas Fir	17	25	2.0	poison oak, one sided, crowded		X				15-20			
472	Pseudotsuga menziesii	Douglas Fir	13	25	2.0	poison oak, one sided, crowded		X				20			
473	Pseudotsuga menziesii	Douglas Fir	21	30	2.0	watersprouts, crowded		X				15			
474	Pseudotsuga menziesii	Douglas Fir	11	15	1.5	broken central leader, one sided, watersprouts, crowded		X				15			
475	NOT PRESENT														
476	Pseudotsuga menziesii	Douglas Fir	20	30	2.0	poison oak		X				30			
477	Pseudotsuga menziesii	Douglas Fir	18	30	2.0	poison oak, watersprouts, one sided						25			
478	Pseudotsuga menziesii	Douglas Fir	16	30	2.0	one sided, high canopy, bark injury high on trunk (falling tree?)						10			
479	Pseudotsuga menziesii	Douglas Fir	21	40	2.0	one sided, big madrone leaning on trunk, conk, decay		X		X		10			
480	Quercus kelloggii	California Black Oak	23	50	2.5	competition for light with firs, crowded, leaning					X	5			
481	Pseudotsuga menziesii	Douglas Fir	12	25	1.5	one sided, broken top, watersprouts		X				20			
482	Pseudotsuga menziesii	Douglas Fir	17	35	2.0	high canopy		X				15			
483	NOT USED														
484	NOT USED														
485	NOT USED														
486	NOT USED														
487	NOT USED														
488	NOT USED														
489	NOT USED														
490	Pseudotsuga menziesii	Douglas Fir	40	40	2.0	blackberry, poison oak, dead central leader, heavy insect presence, gunstocking, insect/wildlife presence on snag, exposed wood, sap dripping dense canopy	X					20			
491	Pseudotsuga menziesii	Douglas Fir	8	20	1.0	poison oak, blackberry, dead leader, one sided	X	X				20			
492	Pseudotsuga menziesii	Douglas Fir	18	15	1.0	poison oak, bark damage, fungal conk, decay, sap dripping, watersprouts, leader dead	X	X				15			
493	Pseudotsuga menziesii	Douglas Fir	9	20	1.0	blackberry, poison oak, dead leader with codominant new leaders	X			X		15			
494	Pseudotsuga menziesii	Douglas Fir	13	25	2.0	broken central leader, old suckers at base. 9" deep cavity		X				20			
495	Quercus kelloggii	California Black Oak	17	35	2.0	watersprouts, major lean south, reaching for light, compartmentalized bark damage, damage at base, cavities, blackberry, poison oak		X				15			
496	Pseudotsuga menziesii	Douglas Fir	8	25	1.5	blackberry, poison oak, dead top, one sided				X		25			
497	Pseudotsuga menziesii	Douglas Fir	12	15	2.0	one sided, watersprouts		X				10			
498	Pseudotsuga menziesii	Douglas Fir	17	25	2.0	high canopy		X		X		15			
499	Pseudotsuga menziesii	Douglas Fir	9	20	1.0	multiple bark injuries, bleeding sap, broken central leader, watersprouts, one sided		X							

*Condition		
5 =	excellent	perfect form, little to no deadwood. all limbs have good attachments, no sign of decay
4 =	very good	good form, multi-leader, but with good attachment, 10% or less large deadwood
3 =	good	unbalanced or incomplete crown, tight limb angles, 15-20% larger deadwood
2 =	poor	Evidence of some decay, 20-30% larger deadwood, history of being topped.
1 =	very poor	Structurally unsound, extensive decay, dieback, poor form, unbalanced or greatly reduced crown.

EWEB

FUNC	BY	CHK	APP
DES	KMc	MJ	CM
DWN	KM	MJ	CM
STANDARDS CHECK			

LINE IS 1 INCH AT FULL SIZE
(IF NOT 1" - SCALE ACCORDINGLY)

WATER SYSTEMS
RESERVOIRS

EWEB WORK ORDER NO. 19-070-PSC
DATE: 09/09/20
SCALE: 1'=40'-0"
DWG NO: 37619
PROJECT SHEET NO: TABLE_F
REV 0

9/10/2020 11:24 AM MATT JORGENSEN

APPENDIX B - IPAC REPORT

EWEB

DOWL

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Oregon Fish And Wildlife Office
2600 Southeast 98th Avenue, Suite 100
Portland, OR 97266-1398
Phone: (503) 231-6179 Fax: (503) 231-6195
https://www.fws.gov/oregonfwo/articles.cfm?id=149489416

In Reply Refer To: February 03, 2021
Consultation Code: 01EOFW00-2021-SLI-0206
Event Code: 01EOFW00-2021-E-00407
Project Name: E 40th Ave tank

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to investigate opportunities for incorporating conservation of threatened and endangered species into project planning processes as a means of complying with the Act. If you have questions regarding your responsibilities under the Act, please contact the Endangered Species Division at the Service's Oregon Fish and Wildlife Office at (503) 231-6179. For information regarding listed marine and anadromous species under the jurisdiction of NOAA Fisheries Service, please see their website (http://www.nwr.noaa.gov/habitat/habitat_conservation_in_the_nw/habitat_conservation_in_the_nw.html).

Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Oregon Fish And Wildlife Office
2600 Southeast 98th Avenue, Suite 100
Portland, OR 97266-1398
(503) 231-6179

Project Summary

Consultation Code: 01EOFW00-2021-SLI-0206
Event Code: 01EOFW00-2021-E-00407
Project Name: E 40th Ave tank
Project Type: WATER SUPPLY / DELIVERY
Project Description: water tank construction
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@44.0100168,-123.08344807263985,14z

Counties: Lane County, Oregon

Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Marbled Murrelet *Brachyramphus marmoratus* Population: U.S.A. (CA, OR, WA) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Northern Spotted Owl *Strix occidentalis caurina* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Fishes

NAME	STATUS
Bull Trout *Salvelinus confluentus* Population: U.S.A., conterminous, lower 48 states There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8212	Threatened

Insects

NAME	STATUS
Fender's Blue Butterfly *Icaricia icarioides fenderi*	Endangered

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/6659

Flowering Plants

NAME	STATUS
Bradshaw's Desert-parsley *Lomatium bradshawii*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/5743

Kincaid's Lupine *Lupinus sulphureus ssp. kincaidii*	Threatened

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/3747

Nelson's Checker-mallow *Sidalcea nelsoniana*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/7340

Willamette Daisy *Erigeron decumbens*	Endangered

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/6270

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

APPENDIX C - COMMENTS FROM NEIGHBORS AND LOCAL NATURALISTS

EWEB

DOWL

Patrick Keller

From: Jeff Krueger [redacted] >
Sent: Monday, November 30, 2020 5:24 PM
To: Laura.Farthing@EWEB.ORG; Lizzie Zemke; Jennifer.Connors@EWEB.ORG
Subject: [EXT] Elliot Hill Vegetation Management

Hello all. I am a landscape architect and ecologist and live in south Eugene about a half mile from Elliot Hill. I have often enjoyed visiting this fantastic natural site in the heart of the city. I understand you're determining future management priorities on this property and I wanted to weigh in.

In a professional capacity, I have been working closely with the Willamette Valley Oak and Prairie Cooperative (https://willamettepartnership.org/wvopc/) for a number of years, managing the development of a valley-wide Strategic Action Plan to protect and enhance this rapidly declining habitat type. This plan notes the rapid decline and degradation of these once common habitats across the valley and calls for identification and conservation of remnant oak and prairie habitats where they exist (Elliot Hill) and for the management of these properties in a way that preserves and enhances the oak and prairie vegetation over the long-term. In particular, the plan calls for reduced conifer encroachment, which shade and eventually kill the oaks, and for controlling invasive vegetation such as non-native trees (e.g., cherry and hawthorn) and shrubs (e.g., blackberry and Scotch broom).

I would encourage EWEB to support our valley-wide efforts to protect this valuable and rapidly declining habitat type locally, including Elliot Hill, and the at-risk wildlife species it supports (e.g., native pollinators, Western bluebirds, white-breasted nuthatch, etc.).

Thank you for your careful consideration of this issue and for all the EWEB does for our community.

Best, Jeff Krueger ([redacted])

Patrick Keller

From: Bart Johnson <[redacted]>
Sent: Friday, November 27, 2020 7:44 PM
To: Lizzie Zemke
Cc: Laura Farthing
Subject: Re: [EXT] Re: forested site on E. 40th in south Eugene
Attachments: MNRS_Elliott_Tugman[1].jpg; Elliot Hill plant list 2001.xlsx

Lizzie and Laura,

Thanks for the reminder and apologies for not being able to respond sooner.

I went back to my class files, located our plant species list from spring 2001 and formatted for your use (attached). This data was collected from a set of randomly-located 1 m2 plots, and thus not intended to be a complete species list. You'll see that the site contains a large proportion of native species, including three native bunchgrasses that are valued as cornerstones of our upland native prairies and Oregon white oak savannas, and uncommon in natural areas inside Eugene city limits. There are also some beautiful prairie and oak-pine savanna wildflowers including camas, western buttercup, fawn lily and native onions. I've done less observations of animals at the site but have seen both Western gray squirrel, one of 20 mammals listed as strategy species in Oregon, and White-breasted (Slender-billed) Nuthatch, one of 58 birds listed as Oregon strategy species, both of which depend on Oregon white oak habitats. Both are officially listed as sensitive species in Oregon.

I've been conducting class projects at Elliot (EWEB) Hill for nearly 25 years now. The main reason is that it is a key remnant of our Willamette Valley oak savanna, which has been identified as one of the most important strategy habitats for conservation in the State of Oregon (https://www.oregonconservationstrategy.org/). Our savanna and prairie grasslands were the dominant ecosystems of the Willamette Valley floor and foothills prior to Euro-American settlement (circa 1840) and are listed as among the most imperiled ecosystems on North America, have suffered approximately 95% loss since that time. Elliot Hill was singled out in the Eugene Metro Natural Resource Study (circa 2000) as part of the Elliot Hill/Tugman Park oak complex. Both these two natural areas and much of the intervening neighborhoods are the core of a neighborhood with substantial remnant savanna oaks still persisting in residential yards.

One of the key threats to remaining oak habitats in Oregon is invasion from Douglas-fir, which represents an important but still common forest type in the Pacific Northwest. This is exactly the situation at Elliot Hill. I've watched as Douglas-fir have continued to overtop and suppress the oaks at Elliot Hill, killing many in the process. Ponderosa pine, another important savanna species is also sensitive to Douglas-fir invasion and suffering at Elliot Hill as a consequence. Given that oak savanna and prairie are high-priority Oregon strategy habitats, my hope has long been that EWEB or the city would manage the site to restore oak savanna and woodland. This doesn't necessarily mean I would advocate that all Douglas-fir should be removed from the site. There are a few large, Douglas-fir on the site and, having a minor Douglas-fir component to oak savanna and woodland can also benefit some native species such as the western gray squirrel. There are also areas on the eastern edge of the site that have completely converted to Douglas-fir and thus pose less of a current threat to the oaks than the areas where oak and ponderosa pine are still alive. However, as a fire ecologist I would also strongly recommend that Douglas-fir at the site be thinned to follow best management practices for reducing fire hazard, which generally means at least 10' of space between tree crowns to reduce the threat of a crown fire. Such thinning would also allow the Douglas-fir to retain their lower branches and deeper canopies, improving habitat value for native wildlife.

In summary, Elliot Hill is a remnant of our once extensive prairie and oak savanna ecosystems. These ecosystems are top conservation priorities in the state of Oregon and the nation. They also provide high recreational and aesthetic values, as evidenced by the open oak woodland on the north of the site. The City of Eugene has made the acquisition

and restoration of prairie and oak habitats one of its top conservation, recreation and educational priorities. I strongly urge EWEB to work with the city to strengthen the habitat and civic value of the Elliot Hill-Tugman Park neighborhood through prairie and oak habitat restoration.

Please feel free to contact me if you have any questions. If there is anywhere else I should submit these comments to have them entered into the public record, please let me know.

Sincerely,

Bart Johnson

--
Bart R. Johnson, Ph.D. MLA
Professor
Department of Landscape Architecture
University of Oregon
[redacted]

From: Lizzie Zemke <lzemke@dowl.com>
Date: Friday, November 27, 2020 at 3:38 PM
To: Bart Johnson [redacted]
Subject: RE: [EXT] Re: forested site on E. 40th in south Eugene

Hi Bart
I am getting close to having a draft report for EWEB about their site on east 40th Ave. I spent a long and enjoyable day in October walking through the site and noting plant communities etc. and have what I think is a good description and assessment of the conditions out there. It would be really helpful at this point for me to see a plants and animals lists for the site—I saw a white-breasted nuthatch, a sapsucker and several other bird species while I was out there but because I was there for only a day I am sure there are many regular visitors that I missed.

Also it would be helpful to hear your thoughts on the relative habitat value provided by the different plant communities on the site and your thoughts, if you have any, on potential restoration and enhancement approaches for whatever habitat remains once the water tanks are constructed.

I know you said you were busy until after December 1st, so I am wondering if you would have time sometime next week to talk with me about the site? I will submit a draft to EWEB with a few gaps that still need to be filled on Monday. One of those yet-to-be-filled gaps will be for input that I receive from you and from some local environamtal organizations. Thanks!

-Lizzie

Lizzie Zemke, PWS, CERP
Environmental Specialist

DOWL
(425) 869-2670 | office
(425) 947-8523 | direct

From: Bart Johnson <[redacted]>
Sent: Friday, November 6, 2020 6:42 PM
To: Lizzie Zemke <lzemke@dowl.com>
Subject: [EXT] Re: forested site on E. 40th in south Eugene

Lizzie, I'd be happy to speak with you or provide commentary. What are your timelines? I've got a lot of tight deadlines until early December but if this is a critical time for you lets talk soon.

bart

From: Lizzie Zemke <lzemke@dowl.com>
Date: Friday, November 6, 2020 at 1:56 PM
To: Bart Johnson [redacted]
Subject: forested site on E. 40th in south Eugene

Hi Mr. Johnson
I am working with Laura Farthing at EWEB on a project to locate a new water tank on a forested EWEB-owned site in Eugene that I understand you and your students are familiar with. Neighbors of the site are understandably very interested in preserving as much of the forest as possible and my job is to prepare a report and map that describes and evaluates the on-site habitat, identify wildlife species that use the site, and help EWEB site the tank in the least environmentally-damaging location possible.

I have visited the site and am in the process of developing a map of the plant communities I observed. I observed a number of bird species during my site visit and neighbors have shared their wildlife observations with me as well. I am wondering if you might have additional information about the site that you would be willing to share with me either via email or a phone call.

Any information you might be able provide would be much appreciated! Thanks!

Lizzie Zemke, PWS, CERP
Environmental Specialist

DOWL

(425) 869-2670 | office
(425) 947-8523 | direct

8410 154th Avenue NE Ste 120
Redmond, WA 98052

www.dowl.com

Patrick Keller

From: Edward Alverson <[redacted]>
Sent: Sunday, December 13, 2020 3:38 PM
To: ALVERSON Edward R; Bart Johnson; Laura.Farthing@EWEB.ORG; Lizzie Zemke; Jennifer.Connors@EWEB.ORG
Subject: [EXT] Re: Elliot Hill comments to EWEB due
Attachments: EWEB Elliot Hill 2013 crop.jpg; EWEB Elliot Hill 1990 crop.jpg; EWEB Elliot Hill 1960 crop.jpg

Laura and Lizzie – I hope it is not too late to follow up on this topic. I was able to get out to the site last weekend, so now I have a better handle on the site characteristics and context. The Elliot Hill parcel includes upland prairie, oak savanna, oak and mixed oak-conifer woodland/forest, and conifer forest. All of these habitats are of value but it is the prairie, savanna, and oak woodland this is particularly important to highlight, given that these habitat types were formerly very extensive in the Willamette Valley but have experienced extreme reduction in extent (90% to 99%) due to agriculture, urbanization, and fire suppression. Indeed, the Elliot Hill property is a remnant of a formerly extensive mosaic of prairie and savanna that was found in that part of Eugene, indications of which are evidenced by native oaks persisting in people's yards and other developed properties. The condition of the landscape is well documented from the original government land surveys in the 1850's (I can provide more site-specific detail on the 1850's surveys if that would be helpful.

I've also attached aerial photos from 1960, 1990, and 2013 to provide some perspective on the very substantial change that has impacted the oak habitat on the parcel in recent years as conifers have taken over areas that previously were oak-dominated. This photo sequence speaks to the need for active management of oak habitats to sustain their continued existence as conifers expand their territory in the face of fire exclusion.

If you haven't already seen it, the Oregon Conservation Strategy (https://oregonconservationstrategy.org) is a good starting point as it identified prairie and savanna (under "Grasslands") and oak woodlands as conservation priorities in the Willamette Valley. The presence of ponderosa pine and California black oak is also significant; these species are often associated with Oregon white oak in Lane County but are absent (black oak) or very scattered (ponderosa pine) elsewhere in the Willamette Valley.

If you go to the Compass mapping tool and zoom in to the Elliot Hill site you will see that the property is located within the West Eugene Conservation Opportunity Area. Further detail on conservation priorities for Willamette Valley prairie and oak habitats can be found in the Willamette Valley Oak-Prairie Cooperative Strategic Action Plan, which was completed earlier this year: https://willamettepartnership.org/wvopc/

While Elliot Hill is a relatively small parcel, it is worth considering the value of small sites to conservation goals, as part of a diverse strategy and a complement to large protected tracts. And, in some cases (such as for oak-associated birds) the habitat on the EWEB parcel may be part of a larger habitat block that includes remnant oak stands located on nearby residential lots. A recent journal article published in the Proceedings of the National Academy of Sciences highlights the value of small habitat remnants for conservation, and specifically references the Willamette Valley as a case in point: https://www.pnas.org/content/pnas/116/3/909.full.pdf

Also I might mention that if habitat conservation is not be the primary purpose for EWEB owning this property, figuring out how to incorporate multiple objectives is an important challenge. This is actually true for many sites in the Willamette Valley where multiple objectives need to be accommodated. This can take a bit of extra effort, but given how much of the historic prairie and oak habitat in the Willamette

Valley has been lost in the past 170 years, it is important. I'd be happy to provide further information or feedback on the site if that would be helpful. Getting a more complete handle on species that are present on the property would be really useful thing for developing and implementing a management plan. For example, when I visited the property last weekend I observed several very problematic non-native species, including ivy, shining geranium, and spurge laurel. Ivy is pretty easy to remove, and shining geranium is very difficult once established. I only saw one plant of spurge laurel, which can be extremely invasive in oak woodlands. Given its potential for being an invader it would be good to prioritize inventory and removal of this species in a management plan.

Feel free to follow up with me if I can be of any further assistance.

Ed Alverson

[EXTERNAL ⚠]

The closest to a formal point of contact for the EWEB report and recommendations are Laura and Lizzie.

Laura Farthing <Laura.Farthing@EWEB.ORG>

Lizzie Zemke <lzemke@dowl.com>
Jennifer Connors <Jennifer.Connors@EWEB.ORG>

Of them, Laura is the lead contact from what I can tell and is the one completing the draft report.

The other route is one she gave below. I'm going to take my submitted comments and also submit them through one of the links provided:

"As discussed, here is the link that includes the instructions to contact EWEB's board. There are options to email your commissioner directly, to contact the board directly, and if you scroll down to the information about the upcoming board meeting there is a link to a form for providing public comment. http://www.eweb.org/about-us/board-of-commissioners"

Best, Bart

Patrick Keller

From: stephen anderson [redacted] >
Sent: Wednesday, October 14, 2020 7:39 PM
To: Lizzie Zemke
Subject: Re: [EXT] Ecological Study

Lizzie,
Here is the list....we have lived here for 21 years, and can attest that nearly all of the wildlife listed are regular residents of these woods...not just passing through. We find it strange that the sequence of the tanks is exactly backwards, if they truly wish to protect habitat. Obviously, one day, all three tanks will need to be completed, but there is no good reason to locate the first tank right in the stand of old growth trees that will devastate much of the crucial habitat for animals that live here now. It would not seem unreasonable to ask for a reversal of the tank sequence in light of this fact. We are willing to bet it didn't even cross the minds of the engineers to think outside their initial plan, which did not take into account the present timber grove....except for the fact that it is in the way. Please keep us apprised of your progress, call if you have any questions.

Stephen Anderson
[redacted]
Eugene, OR 97405

[redacted]

Birds and animals of EWEB Hilyard

Varied Thrush
Robin
Hairy Woodpecker
Downy Woodpecker
Pileated Woodpecker
Towhee
Chickadees
Barred Owl
Western Screech Owls
Stellar's Jay
Yellow-rumped warbler
Bush Tit
Ruby-crowned Kinglet
Allen's Hummingbird
Western Flicker
Cedar Waxwing
Evening Grosbeak
Sharp-shinned Hawk
Oregon Junco
Pygmy Nuthatch
Red-breasted Sapsucker
Grey Squirrel
Raccoon

Opossum
Black-tailed Deer
White-crowned Sparrow
Vaux's Swift
Violet-green Swallow
Scrub Jay
Lesser Goldfinch
Song Sparrow
Chestnut-backed Chickadee
Common Bush-tit
Rio Grand Turkey
Great Horned Owl
Cooper's Hawk

On Wed, Oct 14, 2020 at 1:25 PM Lizzie Zemke <lzemke@dowl.com> wrote:

> Hello Mr. Anderson
>
> Thanks for getting back to me. Please do forward your bird and animal sightings list to me. We would like as much additional information about the site as we can get!
>
> -Lizzie
>
> **Lizzie Zemke, PWS, CERP**
> Environmental Specialist
>
> **DOWL**
> (425) 869-2670 | office
> (425) 947-8523 | direct

From: stephen anderson [redacted]>
Sent: Tuesday, October 13, 2020 4:37 PM
To: Lizzie Zemke <lzemke@dowl.com>
Subject: [EXT] Ecological Study

I have a list of the birds and animals we regularly see in these EWEB woods. Several of our neighbors compared what we know and see. Please contact me, if I'm this is where my list should be forwarded. Also, given the tank locations already laid out, a pertinent question comes to mind: given the devastating impact of the present location of tank number one on the present habitat used by many of the denizens on our list, why wouldn't it be possible to reverse the tank numbers, which would leave intact for many more years the habitat that birds such as our Pileated Woodpeckers depend upon. I'm guessing it's a question that the engineers never even considered, but for those of us living here it would make a world of difference in the coming decades. It's a question that deserves an answer. Also, I find it curious

that the wildlife/ecological survey is being done this late in the year, when many of our birds have already begun their migrations, and aren't here to be considered.

Stephen Anderson

[redacted]

Patrick Keller

From: Carol Anne Anderson [redacted] >
Sent: Thursday, October 15, 2020 4:46 PM
To: Lizzie Zemke
Subject: [EXT] EWEB Response regarding Flora and Fauna

Thank you for your interest in obtaining information from those of us who reside adjacent to or near the E 40th EWEB property in Eugene.

Though my family has lived here for 45 years, I know little about the wildlife except that it is to be enjoyed. I have few comments.

Regarding plant life. Our family has enjoyed the many trees and a lovely display of buttercups in the springtime. There also are some low-growing lilies at that time. In late summer the family enjoyed picking blackberries until the poison oak overwhelmed us. I would suggest that keeping the ground below the trees or dead trees cleaned would be smart for maintenance and fire prevention.

Regarding animals. There are entirely too many raccoons and plenty of squirrels. A neighbor has put up some sort of bat home (for lack of the proper name) which is not appreciated. The birds are nice. Most specifically, we have enjoyed the flickers which visit our garden annually. We always assumed it was the same pair who visited. But this year when smoke was so thick from fires, we noticed a flock of thirty or more stop by en route out of the area. A wonder to see.

We worry about vagrants for our property safety and appeal. There are teens who like to hang out in the warm months. Some have had little campfires and there.

Thank you for listening. I'm sure many of my neighbors are much more informed and educated in this area. Good luck.

Carol Anderson

Patrick Keller

From: David de Lorenzo [redacted] >
Sent: Saturday, October 17, 2020 5:34 PM
To: Lizzie Zemke
Cc: Martha Dickey
Subject: [EXT] Fauna and Flora Information re: EWEB Project
Attachments: Species Observed at 4260 Hilyard Street.docx

Hi Lizzie,

My wife, Martha, and I live on property that abuts the EWEB property on which they intend to build water storage tanks.

I understand that you are requesting information about wildlife that lives in this vicinity. I am writing to provide you with a list of the fauna and flora that **we have observed at our home** since we moved here in September 2016. That list is attached with this email.

We are quite concerned about the impact this project will have on the species listed on the attached. This area is a comprehensive ecosystem that supports these species and the major changes being planned to the area will have a rippling effect on that entire system.

Let me know if you have any questions.

cheers,

David
+++++++
David de Lorenzo & Martha Dickey
[redacted]
Eugene, OR 97405
[redacted]
+++++++

Please send your input to me by Monday, Oct. 26 at the email address below.

Additionally, if you are aware of anyone else who might have specific natural resource or wildlife use information to share about the site, please feel free to forward this message and my contact information to them. Thank you for your help, I hope to hear back from you soon!

Lizzie Zemke, PWS, CERP
DOWL Environmental Specialist
lzemke@dowl.com

Patrick Keller

From: Mary Ann Hanson [redacted] >
Sent: Wednesday, October 14, 2020 2:51 PM
To: Lizzie Zemke
Subject: [EXT] EWEB Water Storage Improvement Project historical information on site flora and fauna

WARNING: External Sender - use caution when clicking links and opening attachments.

Hello,

I am one of EWEB's neighbors living at the foot of Elliott Hill. My parents bought this house about 1963 and lived here until their deaths a few years ago. I was a teenager when we moved here from another part of the Eugene area and lived in the family home until I married and moved away. My husband and I returned in 1993 to help my aging parents. We still live here. So I have a fairly long history with what we always called "The Hill." As a young person I loved nature and everything about it, so I collected insects, flowers, etc.

I remember how different The Hill was in 1963. There were quail, pheasants, skinks, snakes and tree frogs. I don't remember deer, raccoons, or wild turkeys being present, but surely they were here in smaller numbers. There was an occasional opossum and possible a skunk - the odor was distinctive!

I do miss the butterflies - I only counted six or seven species this year. That is related to your work though, as many host plants are gone. The wild flowers were legion at first. There were many fewer houses then, of course. Here is a brief list of those I remember:

Achillea millefolium
Aquilegia formosa
Berberis (repens?)
Camassia quamash (blue but one white flowered plant) Claytonia lanceolata (pink)
Corallorhiza striata Dichelostemma congestum Dodecatheon dentatum (I remember they were pink though) Erythronium oreganum Fritillaria lanceolata Goodyera oblongifolia Iris tenax
Lupinus bicolor Plantago lanceolata Prunella vulgaris Ranunculus sp.
Rosa (two forms)
Saxifraga sp.
Sidalcea sp.
Tellima grandiflora
Trillium ovatum
Viola sempervirens?

Cornus nuttallii
Ribes sanguineum

Mary Ann Hanson [redacted]

Patrick Keller

From: stephen anderson [redacted] >
Sent: Tuesday, October 13, 2020 4:37 PM
To: Lizzie Zemke
Subject: [EXT] Ecological Study

I have a list of the birds and animals we regularly see in these EWEB woods. Several of our neighbors compared what we know and see. Please contact me, if I'm this is where my list should be forwarded. Also, given the tank locations already laid out, a pertinent question comes to mind: given the devastating impact of the present location of tank number one on the present habitat used by many of the denizens on our list, why wouldn't it be possible to reverse the tank numbers, which would leave intact for many more years the habitat that birds such as our Pileated Woodpeckers depend upon. I'm guessing it's a question that the engineers never even considered, but for those of us living here it would make a world of difference in the coming decades. It's a question that deserves an answer. Also, I find it curious that the wildlife/ecological survey is being done this late in the year, when many of our birds have already begun their migrations, and aren't here to be considered.

Stephen Anderson

[redacted]

Patrick Keller

From: Carol Anne Anderson <[redacted]>
Sent: Tuesday, October 20, 2020 3:52 PM
To: Lizzie Zemke
Subject: Re: [EXT] EWEB Response regarding Flora and Fauna

Thank you for your kind follow up.

Of course I neglected to mention the obvious deer and the horrible rats.

Cheers. Have fun.

On Tue, Oct 20, 2020 at 1:56 PM Lizzie Zemke <lzemke@dowl.com> wrote:

> Hello Ms. Anderson
>
> Thanks so much for letting us know your thoughts on the E 40th Ave site. I saw several flickers out there myself when I visited a week or so ago, but the sight of 30 must have been impressive! We will keep you informed as the project progresses.
>
> -Lizzie
>
> **Lizzie Zemke, CERP**
> Environmental Specialist
>
> **DOWL**
> (425) 869-2670 | office
> (425) 947-8523 | direct
>
> ---
>
> **From:** Carol Anne Anderson [redacted]
> **Sent:** Thursday, October 15, 2020 4:46 PM
> **To:** Lizzie Zemke <lzemke@dowl.com>
> **Subject:** [EXT] EWEB Response regarding Flora and Fauna
>
> ***WARNING:*** *External Sender - use caution when clicking links and opening attachments.*
>
> Thank you for your interest in obtaining information from those of us who reside adjacent to or near the E 40th EWEB property in Eugene.
>
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Regarding animals. There are entirely too many raccoons and plenty of squirrels. A neighbor has put up some sort of bat home (for lack of the proper name) which is not appreciated. The birds are nice. Most specifically, we have enjoyed the flickers which visit our garden annually. We always assumed it was the same pair who visited. But this year when smoke was so thick from fires, we noticed a flock of thirty or more stop by en route out of the area. A wonder to see.

We worry about vagrants for our property safety and appeal. There are teens who like to hang out in the warm months. Some have had little campfires and there.

Thank you for listening. I'm sure many of my neighbors are much more informed and educated in this area. Good luck.

Carol Anderson

Patrick Keller

From: Laura Farthing <Laura.Farthing@EWEB.ORG>
Sent: Sunday, October 18, 2020 4:31 PM
To: Lizzie Zemke
Cc: Jennifer Connors
Subject: [EXT] Fwd: Reminder: E. 40th Ecological Study

See below.

Thanks,

Laura

Begin forwarded message:

> **From:** Jackie Mikalonis [redacted]
> **Date:** October 18, 2020 at 2:53:02 PM PDT
> **To:** Water Storage <water.storage@EWEB.ORG>
> **Subject: Re: Reminder: E. 40th Ecological Study**
>
> Caution: This email originated from outside of the organization
>
> Lizzie,
>
> Thank you for the opportunity to provide feedback. As an adjacent property owner I may have information useful to the study. Please let me know what and how the data should be organized. Thank you.
>
> Jackie Mikalonis
> [redacted]
> Eugene
>
> Sent from my iPhone
>
> > On Oct 17, 2020, at 1:23 PM, Eugene Water & Electric Board <water.storage@eweb.org> wrote:

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PEOPLE
WHO MAKE
IT HAPPEN

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