



5309 Shilshole Avenue NW
Suite 200
Seattle, WA 98107
206.789.9658 **phone**
206.789.9684 **fax**

www.esassoc.com

memorandum

date January 22, 2015

to Jon Jainga, City of Seattle Parks and Recreation

cc David Graves, City of Seattle Parks and Recreation

from Claire Hoffman, Ilon Logan, and Lisa Adolfson

subject Cheasty Trail Pilot Project - Wetland Reconnaissance and Wildlife Habitat Assessment

The City of Seattle Parks and Recreation Department (City) proposes to construct a Pilot Trail project in the Cheasty Greenspace located on Beacon Hill in Seattle, Washington. The preliminary layout of the proposed trail system consists of soft-surface bike and pedestrian trails (Figure 1). Bridges or boardwalks are proposed for areas where the trail will need to cross wetlands or streams and these trail sections would be shared by pedestrians and bicycles. Six entry points are proposed along the perimeter of the greenspace to allow public access to the trail system.

ESA was contracted by the City to conduct a preliminary environmental review of the greenspace and proposed trail system. Our scope of work included a wetland reconnaissance and a wildlife habitat assessment. This information was gathered to provide a baseline of existing conditions, inform the project design process, and determine potential regulatory requirements.

Methodology

ESA performed a review of existing information regarding wetlands and streams, wildlife, and wildlife habitats in the Cheasty Greenspace and vicinity. Sources of information included historic and current aerial photographs, City of Seattle GIS data, National Wetland Inventory (NWI) data, the Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) database, and other readily available data.

A field investigation was performed on December 19th, 2014 and January 5th, 2015. The study area for the field investigation concentrated on the preliminary trail alignment shown on Figure 1. Wetlands were identified based on conditions at the time of the field visit by applying the wetland determination method described in the Regional Supplement (Western Mountains, Valleys, and Coast) to the Corps of Engineers 1987 Wetland Delineation Manual Corps (Corps, 2010). A Trimble Geo-XT GPS unit was used to record the approximate location of the wetland boundaries, but a formal wetland delineation was not conducted. Wetlands were classified according to the Washington State Department of Ecology's (Ecology) Wetland Rating System for Western Washington (Hruby, 2014). Habitat was assessed using

the methods described in *Wildlife Habitat Relationships in Oregon and Washington* (Johnson and O'Neil, 2001).

Existing Information

The City of Seattle GIS data (City of Seattle, 2014) shows six wetlands in the Cheasty greenspace with some overlapping portions of the preliminary trail alignment. All six of these wetlands also occur either fully or partially on the Seattle Housing Authority properties to the east of Cheasty Greenspace. The NWI data shows the same six wetlands, but depicts a seventh wetland just north of Andover Street and just outside of the Cheasty Greenspace (USFWS, 2014). A wetland reconnaissance conducted in 2003 found one riparian wetland with an associated stream and second stream in the study area (Sheldon & Associates, 2003). The wetland-stream complex corresponds to one of the wetlands in the City's GIS database while the other does not correspond with any mapped information.

According to the PHS database, the majority of the Cheasty Greenspace is considered a "Biodiversity Area and Corridor with Terrestrial Habitat" (WDFW, 2014). No occurrences of threatened or endangered or other sensitive species have been documented on the site. No soil survey data is available for the study area (NRCS, 2014).

Habitat Assessment

The Cheasty Greenspace is a 43 acre parcel located within the Cedar River-Lake Washington watershed in Water Resource Inventory Area (WRIA) 8, Cedar-Sammamish. The greenspace is located near the western boundary of the watershed, which drains to Lake Washington. Land use in the watershed is highly urbanized with residential and commercial uses dominating the area surrounding the greenspace. The Cheasty Greenspace contains one of the few areas of undeveloped forest in the vicinity. The Jefferson Park golf course is present immediately west of the greenspace and provides additional vegetation, although it is landscaped and maintained.

Three major habitat types as described by Johnson and O'Neil (2001) are present in the study area: westside lowland conifer-hardwood forest; westside riparian wetlands; and herbaceous wetlands. Westside riparian wetlands include palustrine forested (PFO) and palustrine scrub-shrub (PSS) wetlands. Occurrences of these habitats in the greenspace are described in detail below as well as herbaceous, or palustrine emergent (PEM) wetlands. The forest is composed of mostly deciduous broadleaf species in the tree canopy. Red alder, black cottonwood, and big-leaf maple are the dominant species. Only a few coniferous trees, such as western red cedar, are present. A few mature Pacific madrone are also present. The trees are medium to large, averaging 12 to 24 inches diameter base height (dbh) with a few large black cottonwood trees measuring over 36 inches dbh. Understory plants include vine maple, salmonberry, red alder and Himalayan blackberry. The herbaceous layer contains sword fern, salal, Oregon grape, and trailing blackberry. The tree canopy is mostly multistoried and closed across the greenspace with only a few gaps. Habitat elements observed include snags, downed logs, stumps, moss and lichens, leaf litter, and pockets of forested or emergent wetland (described in greater detail below).

In general, the forest and wetland habitats in the study area provides substantial wildlife habitat. Within the greenspace, there are limited interruptions to connectivity and the habitats are well interspersed. Threats to habitat integrity include the dumping of refuse and multiple species of invasive or nonnative

plants, including Himalayan blackberry, English ivy, and English holly, as well as escaped cultivated species such as English laurel. However, activities to remove these species from the site have been highly successful in recent years and planted native vegetation is becoming established. In the vicinity of the greenspace, other patches of deciduous or coniferous forest occur in patches disrupted by residential development, roads, and utilities. Habitat connectivity between the greenspace and landscaped habitats present on the golf course exists in some areas. The greenspace is also somewhat connected to smaller undeveloped patches of forest present on the east-facing slopes on both sides of Cheasty Boulevard to the north.

The forest and wetland habitats contain a diverse community of trees and shrubs that provide food and shelter for a number of songbirds and woodpeckers, amphibians, and small mammals. Bird species observed during field investigation included Steller's jay, northern flicker, downy woodpecker, American robin, golden-crowned kinglet, black-capped chickadee, bushtit, Bewick's and winter wren, song sparrow, and Anna's hummingbird. Pileated woodpecker excavations were encountered in multiple trees and snags across the greenspace. These bird species are considered common residents in Puget Sound lowlands. Other common species that likely inhabit the greenspace include sharp-shinned hawk, red-breasted nuthatch, dark-eyed junco, hermit thrush, golden-crowned sparrow, American goldfinch, and spotted towhee. Neotropical migrants such as orange-crowned warbler and Swainson's thrush are likely to breed in the area during spring and summer. No mammals or amphibians were observed during field investigation, but species expected to be present in the greenspace include western gray squirrel, Northern raccoon, Virginia opossum, coyote, Pacific chorus frog, garter snake and potentially deer.

Wetland Reconnaissance

Nine wetlands and two potential wetlands were observed during the wetland reconnaissance investigation (Table 1, Figure 2, and Photos 1-4). The City uses the Washington State Wetland Rating System for Western Washington (SMC 25.09.160) and all wetlands were rated as category III or IV. The wetlands occur in depressions or on slopes and the majority are linear features trending west to east within narrow or broad ravines. The primary sources of wetland hydrology include groundwater seeping from the hillsides and precipitation. Dominant vegetation in forested and scrub/shrub wetlands consists of black cottonwood, red alder, salmonberry, and Himalayan blackberry, while emergent wetlands contain soft rush, lady fern, horsetail, and buttercup. Wetland soils typically meet the hydric soil indicator "F3 depleted matrix" and are characterized by Munsell matrix colors of 10 YR 4/2 and redox concentrations. Upland areas adjacent to wetlands are typically brown loams with Munsell matrix colors of 10 YR 3/2 to 10 YR 3/4.

The two potential wetlands are areas that support some wetland vegetation and hydrology indicators, but lack sufficient indicators of hydric soil to meet the definition of a wetland (Figure 2). These areas warrant further investigation.

One watercourse flowing west to east and extending the width of the greenspace was found (Figure 2). A relatively new black corrugated plastic pipe had been laid in the channel and the watercourse flows partially through and partially around the pipe. Both the watercourse and pipe begin at Cheasty Boulevard and there appears to be a culvert under the road, indicating this to be a drainage feature. This watercourse does not meet criteria to be classified as a stream under SMC 25.09.

Figure 2 shows the approximate location of each wetland, the watercourse and potential wetlands identified during the reconnaissance and Table 1 provides a summary of wetland characteristics.

Table 1. Wetland Summary

Wetland ID	Approximate size (square feet)	Preliminary Wetland Rating and Buffer	Hydrogeo-morphic and Cowardin Classifications	Description
W1	100 SF ¹	Category IV No buffer ²	Depressional Emergent	Small ponded area with two linear fingers extending east. <i>Previously mapped:</i> No <i>Veg:</i> Soft rush, English ivy, mannagrass, Himalayan blackberry, sword fern, black cottonwood on edges. <i>Soil:</i> Hydric indicator F3 (depleted matrix), sandy-loam with cobble and gravel. <i>Hydro:</i> Source is groundwater. Saturated to the surface, ponding 1-3 inches in a 5 foot diameter area. Groundwater at 10 inches.
W2	1,000 SF	Category IV 50 feet	Slope Emergent	Linear slope wetland with mostly bare ground (muddy). <i>Previously mapped:</i> No <i>Veg:</i> English ivy, black cottonwood, youth on age, giant horsetail, beaked hazelnut, and Himalayan blackberry. <i>Soil:</i> Hydric indicator F3 (depleted matrix), sandy-loam with cobble. <i>Hydro:</i> Source is hillside seeps and groundwater. Saturated to the surface. Groundwater at 10 inches.
W3	6,000 SF ¹	Category IV 50 feet	Slope Forested / Scrub-shrub / emergent	Multiple vegetation community wetland that continues off-site to the east, near the intersection of 28th Ave S and S Genesee St. <i>Previously mapped:</i> City of Seattle GIS database; NWI <i>Veg:</i> Slough sedge, creeping buttercup, youth on age, field horsetail, giant horsetail, American skunkcabbage, red alder, vine maple, sword fern, salmonberry, Himalayan blackberry, English holly, and planted Western red cedar (mitigation). <i>Soil:</i> Hydric indicator F2 (gleyed matrix) and F3 (depleted matrix) A4 (sulfuric odor). <i>Hydro:</i> Source is from swale/ seep at the top and a more defined watercourse along southern edge (1-2 feet wide with steady flow). Contains sheet-flow with no defined bed and bank.

W4	95,000 SF ¹	Category III 60 feet	Depressional Scrub-shrub / emergent	Largest wetland situated in broad ravine north of works yard. Area of restoration/erosion control on southern edge. May connect to Wetland 11, but unknown as the “middle” not delineated (not along the preliminary trail corridor). Contains snags. <i>Previously mapped:</i> Sheldon & Associates; partially in City of Seattle GIS database and NWI <i>Veg:</i> Red alder, black cottonwood, salmonberry, Himalayan blackberry, creeping buttercup, water parsley, youth on age, watercress, English holly, and laurel. Dense patch of laurels on western edge. <i>Soil:</i> F2 (depleted matrix). <i>Hydro:</i> Source is from hillside seeps and groundwater. East-west watercourse flows through wetland. Water comes from west under Cheasty Boulevard, no culvert found. Saturated in some areas with ponding 1-5 inches.
W5	700 SF	Category IV No buffer ²	Depressional Scrub-shrub	Small wetland situated in shallow east-facing ravine. <i>Previously mapped:</i> City of Seattle GIS database; NWI <i>Veg:</i> Youth on age, Himalayan blackberry, common ladyfern, salmonberry, and red alder <i>Soil:</i> F2 (depleted matrix) <i>Hydro:</i> Source is from hillside seeps and groundwater. Trickle of sheet flow on surface.
W6	700 SF	Category IV No buffer ²	Depressional (Slope) Scrub-shrub	Small wetland situated in shallow east-facing ravine. <i>Previously mapped:</i> No <i>Veg:</i> Salmonberry, Himalayan blackberry, and youth on age. <i>Soil:</i> F2 (depleted matrix) <i>Hydro:</i> Source is from hillside seeps and groundwater. Saturated to the surface.
W8	400 SF	Category IV No buffer ²	Depressional Emergent	Small wetland at top of slump in land. “Past slide area” mapped in this area. <i>Previously mapped:</i> NWI <i>Veg:</i> Himalayan blackberry, creeping buttercup, largeleaf avens, bentgrass, and horsetail <i>Soil:</i> F2 (depleted matrix) <i>Hydro:</i> Source is seeps and groundwater. Saturated to the surface. Standing water at 9 inches, some ponding on the surface.

W9	2,500 SF ¹	Category IV 50 feet	Depressional (Slope) Scrub-shrub /emergent	Small degraded wetland <i>Previously mapped:</i> No <i>Veg:</i> Himalayan blackberry, especially on east. Youth on age, red alder, salmonberry, lady fern, and horsetail. <i>Soil:</i> F2 (depleted matrix), gravelly loam <i>Hydro:</i> Channel flows to the east out of the wetland and likely offsite. Western portions of wetland has channelized watercourse in black corrugated plastic pipe. Channel flows under Himalayan blackberry. Water from seeps and groundwater.
W11	7,000 SF ¹	Category IV 50 feet	Depressional Scrub-shrub /emergent	Wetland situated in shallow ravine. May be connected to Wetland 4, channel in wetland continues to the east. Area not delineated as not along the trail corridor. <i>Previously mapped:</i> Sheldon & Associates <i>Veg:</i> Salmonberry, Himalayan blackberry, youth on age, English ivy, red alder, reed canarygrass, and sedge. <i>Soil:</i> F2 (depleted matrix), silty loam and sandy loam <i>Hydro:</i> Source is groundwater. Trickle flow in surface ponding. Groundwater at 10 inches, saturated at 5 inches.

¹ Wetland area extends offsite or out of the preliminary trail alignment; area determined visually using GIS information in order to provide preliminary estimates.

² Category IV wetlands under 1,000 square feet in total size have the characteristics described in subsection 25.09.160.B.1.C and do not have a standard buffer. Mitigation measures required under subsection 25.09.160.C.3.

Regulatory Considerations

In the City of Seattle, wetlands and wildlife habitats are protected by the City's Environmentally Critical Areas regulations (SMC 25.09). The City protects these areas through specific regulations for each type of critical area and requires additional safeguards to ensure that development and construction activities avoid adverse impacts to wetlands and watercourses, habitat, and neighboring properties. These safeguards may include wetland buffers or setbacks and tree and/or vegetation protections, as well as mandatory construction best management practices.

Development of the greenspace would be subject to the regulations in 25.09. Table 1 contains the preliminary wetland rating and corresponding wetland buffer per the City's regulations (SMC 25.09.160). Because the greenspace has been mapped and designated by the WDFW, it meets the criteria for a Fish and Wildlife Habitat Conservation Area (FWHCA) in SMC 25.09. The regulations do not include development setbacks or buffers for FWHCAs, but a review of proposed development impacts on wildlife habitats is required. The watercourse found in the greenspace does not meet the criteria to be classified as a stream, but would likely be considered a FWHCA.

Trail projects by public agencies may be exempt from review by the Department of Planning and Development under the City's Environmentally Critical Areas regulations provided a number of conditions are met, intrusion in a buffer or critical area benefits the public, and the project is located and designed to minimize environmental disturbance (SMC 25.09.45H). Any development activity within an identified Environmentally Critical Area is subject to all applicable regulation of the Seattle Municipal Code. Additional design and planning is needed to determine whether the proposed project meets the exemption criteria.

In terms of wetland regulations at state and federal levels, the wetlands in Cheasty Greenspace are subject to the Clean Water Act provisions. Impacts from dredging or filling wetlands would require a permit from the US Army Corps of Engineers (Corps) and Ecology. The wetlands may be considered "isolated" and thus not regulated by Federal law. However, they would be regulated under the State Clean Water Act, (Revised Code of Washington [RCW] 90.48) which prohibits pollution (including fill material) from entering into waters of the state. Wetland impacts could be avoided by using soft-surface trails and precast concrete or pin-pile supports for boardwalks or bridges (these structures are not considered "fill" by the Corps or Ecology).

Lastly, trees in the City are specifically valued and legally protected under various regulations in addition to the Environmental Critical Areas section (SMC 25.09.230). These include the Tree Protection Ordinance (SMC 25.11) and specific environmental policies (SMC 25.05.675). Exceptional trees are specifically protected and defined as a tree or group of trees that constitutes an important community resource because of its unique historical, ecological, or aesthetic value. Once a trail alignment is determined, the City may require a survey for exceptional trees be conducted by a licensed arborist per SMC 25.11.

Limitations

Within the limitations of schedule, budget, scope-of-work, and seasonal constraints, we warrant that this study was conducted in accordance with generally accepted environmental science practices, including the technical guidelines and criteria in effect at the time this study was performed, as outlined in the Methods section. A formal wetland delineation was not conducted and the level of information gathered does not meet the requirements necessary for state and federal wetland permitting. The results and conclusions of this report represent the authors' best professional judgment, based upon information provided by the project proponent in addition to that obtained during the course of this study. No other warranty, expressed or implied, is made.

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PHOTOGRAPHS



Photo 1. Wetland 2, facing south-east (December 19, 2014).



Photo 2. Wetland 4, near the western edge facing north (December 19, 2014).

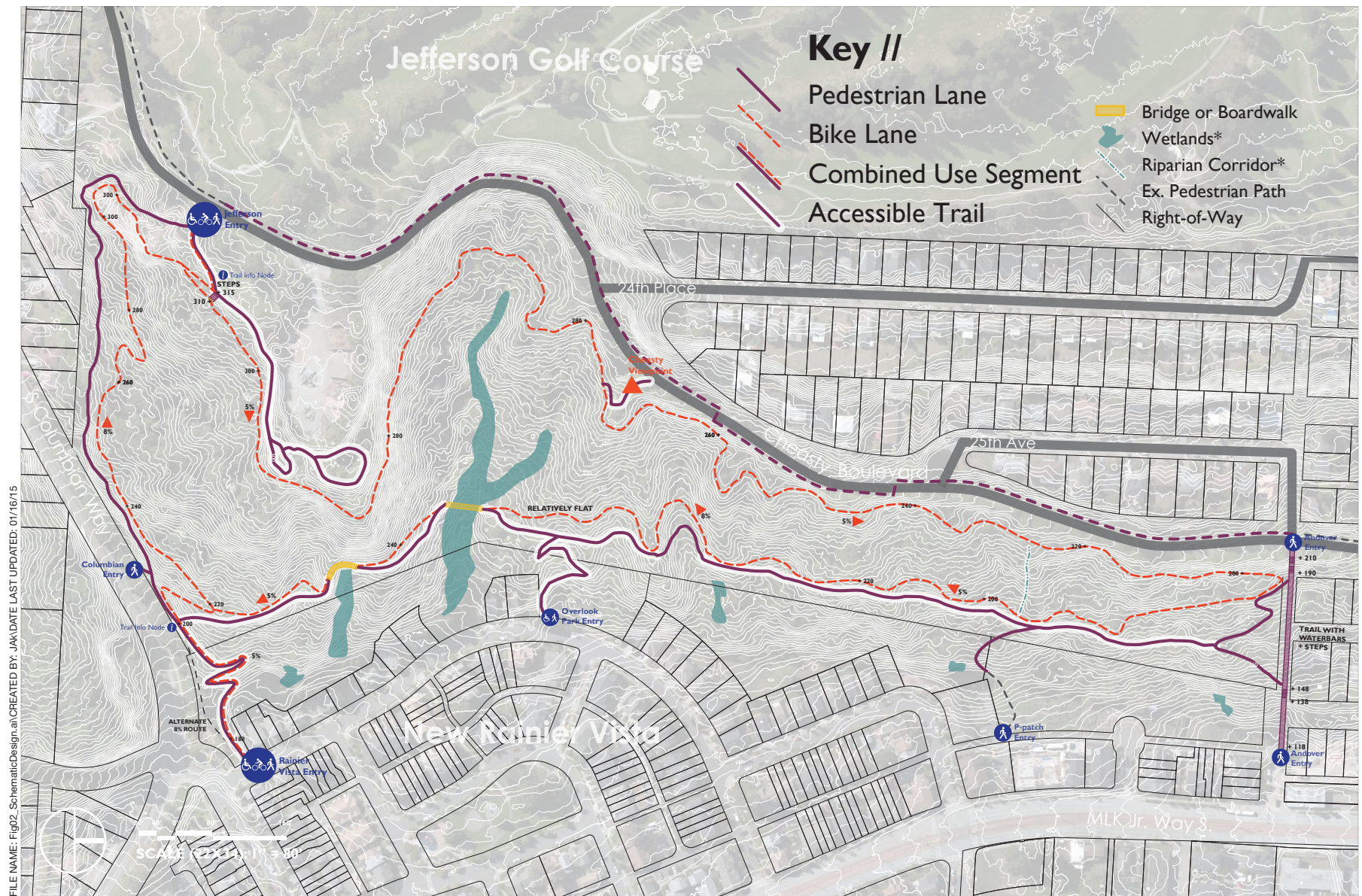


Photo 3. Wetland 8, facing north (January 5, 2015).



Photo 4. Wetland 11, facing south (January 5, 2015).

FIGURES



SOURCE: Johnson Southerland

Cheasty Trail Environmental Review . 140744.01

Figure 1
Cheasty Trail Schematic Design



SOURCE: ESA 2013 (aerial), ESA 2014, OSM 2014

Cheasty Trail Environmental Review. 140744.01

Figure 2
Wetland Reconnaissance