

Fennel Creek Trail and Sidewalks Biological Assessment

City of Bonney Lake

July 2009

Parametrix

Fennel Creek Trail and Sidewalks Biological Assessment

Prepared for

City of Bonney Lake
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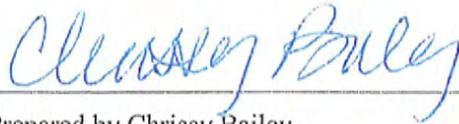
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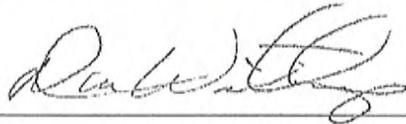
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CERTIFICATION

The technical material and data contained in this document were prepared under the supervision and direction of the undersigned.



Prepared by Chrissy Bailey



Checked by Don Weitkamp



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KEY TERMS

BMPs	Best Management Practices
Corps	U.S. Army Corps of Engineers
DPS	Distinct Population Segment
EFH	Essential Fish Habitat
ESA	Endangered Species Act
ESU	ecologically significant unit
ESU	Evolutionarily Significant Unit
FHWA	Federal Highway Administration
MPH	mile per hour
NHP	Natural Heritage Program
PFMC	Pacific Fishery Management Council
PHS	Priority Habitats and Species
PHS	Priority Habitats and Species
RM	river mile
SR	State Route
TESC	Temporary Erosion and Sedimentation Control
WDFW	Washington Department of Fish and Wildlife
WDNR	Washington Department of Natural Resources
WDNR	Washington Department of Natural Resources
WSDOT	Washington State Department of Transportation

SUMMARY

The City of Bonney Lake proposes to construct approximately 1 mile of the Fennel Creek Trail south of State Route (SR) 410, from the terminus of an existing trail segment to Victor Falls Elementary School. The trail will provide a safe route of travel for students in the vicinity to Victor Falls Elementary School, Mountain View Middle School, and Bonney Lake High School, as well as provide recreational opportunities for all residents of the City. A second phase of this project includes the construction of curb, gutter, and sidewalk along the east side of 192nd Avenue East from Bonney Lake High School to Rhodes Lake Road. Funding from the Federal Highway Administration (FHWA) and the necessity for permits from the U.S. Army Corps of Engineers (Corps) provides a federal nexus for this project to the Endangered Species Act (ESA). We have prepared this assessment in response to ESA listings we received in July 2009 (Appendix A).

The project site is located within the City of Bonney Lake, Pierce County, Washington (see Figure 1 at the end of this report). The sidewalk work will take place within existing rights-of-way along an urban roadway. The existing ground in the areas where construction is planned was previously disturbed for prior roadway construction and is currently surfaced with gravel. Improvements associated with the trail portion of the project include grading and preparatory work for construction of approximately 1 mile of trail and a bridge across Fennel Creek. West of Fennel Creek, the trail will be 10 feet wide with 2-foot shoulders on each side, and will be constructed of porous asphalt at existing grade. The bridge across Fennel Creek will be 60 feet long and 8 feet wide. The bridge will be a pre-fabricated wood structure placed on bridge supports that will be constructed on each side of Fennel Creek above the ordinary high water line. East of Fennel Creek from the creek to the base of the steep slope, the trail consists of a boardwalk measuring 8 feet in width, constructed of wood decking with a 2-inch layer of Class G crowned asphalt paving on top. From the base of the slope up to Victor Falls Elementary, the trail will be constructed of crushed rock or asphalt and be approximately 6 feet wide. At the steepest locations (five locations) this segment of the trail will also include wood stair structures. At the top of the slope the trail will return to a 10-foot pervious asphalt section similar to that used on the west side of Fennel Creek. The project also includes enhancement of 0.95 acre of wetland in the area to compensate for unavoidable impacts resulting from construction of the trail.

The project site is located in the SW and SE quarters of Section 4 and the NW and NE quarters of Section 9, Township 19 N, Range 05 E. The site is located within WRIA 10, HUC 171100140599 – Lower Puyallup River. The planned trail segment runs alongside and crosses Fennel Creek (Stream 0406) in the vicinity of river mile (RM) 3.

The listed and proposed fish species occurring in the project vicinity include the Puget Sound Evolutionarily Significant Unit (ESU) Chinook salmon (*Oncorhynchus tshawytscha*), Puget Sound Distinct Population Segment (DPS) steelhead (*O. mykiss*) and Coastal-Puget Sound DPS bull trout (*Salvelinus confluentus*) (NMFS 2009, USFWS 2009). An aquatic action area is designated in Fennel Creek extending from the bridge 200 feet downstream, and for 200 feet around the Wetland 4 mitigation site. The project does not involve in-water work and will not generate pollutants affecting Fennel Creek; listed species do not occur in the aquatic action area. However, the listed species do occur in aquatic habitat on the periphery of the terrestrial action area (Fennel Creek downstream of Victor Falls) where the terrestrial action area overlaps Fennel Creek. Other species listed for Pierce County were either historically not distributed in the action area, and/or suitable habitat is not present. Therefore, those species are not addressed. Designated critical habitat for the listed species does not occur within the aquatic action area, but does occur in the aquatic habitat within the terrestrial action area downstream of Victor Falls, also only where the terrestrial action area overlaps Fennel Creek.

Direct effects to Chinook salmon, steelhead, and bull trout are avoided because they do not occur within the aquatic action area. Potential indirect effects to these species include temporary changes to water quality and invertebrate and forage fish resources. The project is designed to avoid effects on aquatic species by limiting the potential for erosion and sedimentation through Best Management Practices (BMPs), limiting disturbance in wetlands through the use of a pin pile design for the boardwalk, and by utilizing porous asphalt, where possible, to minimize the potential for stormwater runoff impacts. BMPs will be implemented during construction, and will include dust control, silt fencing, storm drain inlet protection, sediment traps, and temporary and permanent seeding. Significant long-term water quality impacts are not expected to occur if pollution and erosion control BMPs are properly implemented, monitored, and maintained during construction.

The proposed project will have **no effect** on **threatened** Chinook salmon, steelhead, or bull trout. The proposed project will **not result in the destruction or adverse modification** of designated critical habitat for these species. The project will **not adversely affect** Pacific salmon Essential Fish Habitat (EFH).

INTRODUCTION

The City of Bonney Lake proposes to construct 1 mile of the Fennel Creek Trail, south of SR 410 from the terminus of an existing trail segment to Victor Falls Elementary. The City prepared a draft Fennel Creek Trail Plan in 2005 that was subsequently adopted and has become part of the City's Comprehensive Plan. The entire completed trail will extend approximately 6.3 miles from Allan Yorke Park in Bonney Lake to the Foothills Trail, a major regional trail under development by Pierce County and several communities in eastern Pierce County. The Fennel Creek trail will also connect with Pierce County's proposed Flume Line Trail.

The segment of trail currently proposed begins west of Fennel Creek and will be located along a berm at the top of an existing fill slope. At its north end this trail segment will connect to an existing trail segment that terminates at approximately 106th Street East in the Crystal Meadows subdivision. The proposed trail segment will extend from this location south to approximately the south boundary of the Willow Brook subdivision. From here the proposed trail will turn east and cross Fennel Creek, and continue up a steep, wooded slope to Victor Falls Elementary (see Figure 2 at the end of this report).

A second phase of this project includes the construction of curb, gutter, and sidewalk along the east side of 192nd Avenue E from Bonney Lake High School to Rhodes Lake Road. Only sidewalk is being added along the west side of 192nd Avenue. Two small sections of sidewalk will connect existing sidewalks from 188th Avenue E to 192nd Avenue E via 111th Street and 109th Street. This work will take place within existing rights-of-way along an urban roadway. The existing ground in the areas where construction is planned was previously disturbed for prior roadway construction and is currently surfaced with gravel.

The project is located in the SW and SE quarters of Section 4 and the NW and NE quarters of Section 9, Township 19 N, Range 05 E, W.M. The site is located within WRIA 10 (Puyallup/White), 6th field HUC 171100140599 – Lower Puyallup River. Information on listed species and habitats known to occur or potentially occurring in the project vicinity was obtained from state and federal agencies. This information is summarized below (Table 1).

**Table 1. Data and Data Sources for Information on Listed Species
in the Vicinity of the Fennel Creek Trail and Sidewalks Project**

Species and Habitats	Agency/Data Source	Data Provided
Endangered, threatened, rare, and sensitive plant species and high quality plant communities	Washington Department of Natural Resources (WDNR)	No such features occur in the quarter Sections/Township/Range of the proposed project.
Federally threatened and endangered fish and wildlife species	USFWS http://www.fws.gov/westwafwo/speciesmap/PIERCE.html	One threatened species could occur in the project vicinity: (1) Threatened – Coastal-Puget Sound DPS, bull trout.
Federally threatened and endangered fish species	NOAA Fisheries http://www.nwr.noaa.gov/ESA-Salmon-Listings/upload/snapshot-9-08.pdf	Two threatened species could occur in the project vicinity: (1) Threatened – Puget Sound ESU, Chinook salmon. (2) Threatened – Puget Sound DPS, steelhead.
Critical habitat for federally threatened and endangered species	U.S. Fish and Wildlife Service and NOAA Fisheries Federal Register 70: 52630 (NARA 2005a) Federal Register 70: 56260 (NARA 2005b)	Critical habitat has been designated for the Coastal-Puget Sound DPS of bull trout. Critical habitat has been designated for the Puget Sound ESU of Chinook salmon. The main stem of the Puyallup River southwest (downstream) of the project area contains critical habitat for bull trout. Fennel Creek downstream of the project area (below Victor Falls) contains critical habitat for Chinook salmon.
Priority Habitats and Species (PHS)	Washington Department of Fish and Wildlife (WDFW)	No bald eagle nests or wintering areas occur within 2.25 miles of the project. Resident cutthroat, fall Chinook, fall chum, coho, pink salmon, and winter steelhead are present in Fennel Creek downstream of the fish passage barrier at Victor Falls. Other priority habitats and species mapped in the project area include waterfowl concentrations and freshwater wetlands.

PROJECT DESCRIPTION

This segment of the Fennel Creek Trail project will provide 1 mile of nonmotorized trail to serve as a safe route of travel for students in the vicinity to various schools, and provide recreational opportunities for all residents of the City. This segment also includes a bridge across Fennel Creek. The trail segment begins at the south terminus of the existing trail with the Crystal Meadows subdivision, and ends at Victor Falls Elementary School. The trail will be located on a berm at the top of the existing fill slope on which the Crystal Meadows and Willow Brook subdivisions were constructed, west of Fennel Creek. East of Fennel Creek the trail will continue up a steep, wooded slope to Victor Falls Elementary. West of the creek, project actions are proposed within areas that have been previously disturbed for residential

development. East of the creek, project actions are proposed in an area that is mainly wetland and steep slopes, with educational and residential uses existing on the plateau above the slope. Where the trail traverses the steep slope, it will follow the route of the existing informal path. The general setting is suburban residential, characterized by a mix of public and residential uses and open space.

The trail segment project includes the following elements:

- Paved, on grade trail west of Fennel Creek:
 - 10-foot pervious asphalt.
 - 2-foot shoulders, each side.
 - 2:1 side slopes, approximately 10 inches high, each side.
- Nonmotorized bridge across Fennel Creek:
 - 60 feet in length, 8 feet in width
 - Prefabricated bridge structure, constructed of glu-lam beam deck stringers, wood decking with a 2-inch layer of Class G crowned asphalt paving on top, and wood handrails.
 - Bridge supports on either side of Fennel Creek:
 - West of Fennel Creek, the bridge support will be a cast-in-place concrete abutment situated outside of the 100-year floodplain and above the top of the embankment alongside the creek (above ordinary high water line).
 - East of Fennel Creek, the bridge support will consist of either pin piles¹ or a cast in place concrete abutment located within the 100-year floodplain but outside of the regulated floodway.
- Boardwalk trail east of Fennel Creek below steep slope:
 - 8-foot-wide boardwalk, constructed of wood decking covered with 2 inches of Class G crowned asphalt paving on top.
 - Boardwalk will be placed on pin piles (3 pin piles every 12 linear feet).
- Compacted, crushed rock or asphalt paved trail east of Fennel Creek along steep slope:
 - 6-foot-wide pedestrian use trail on an existing path bench, with two switchbacks. Wood stairs may be utilized in the five steepest segments of this segment of the trail.
 - At the top of steep slope the trail will revert to the 10-foot pervious asphalt section utilized west of Fennel Creek.
- Enhancement of 0.95 acre of wetland in the Fennel Creek Corridor, to compensate for unavoidable impacts resulting from trail construction.

¹ Pin piles are an alternative method of foundation footing construction, utilizing small-diameter pipe piles (usually 3 to 4 inches in diameter) that are driven to refusal. Pin piles are commonly used for projects requiring lighter loads; benefits of using this method include needing no heavy machinery and little to no excavation.

Approximately 0.21 acre (9,200 square feet) of new impervious surface is proposed as part of the trail project, all of which will be non-pollution generating. New impervious surfaces include approximately 4,700 square feet of asphalt paving on the proposed bridge and boardwalk, and approximately 4,500 square feet of compacted crushed rock or asphalt for the trail segment on the steep slope east of Fennel Creek. Currently, the trail project area has approximately 0.08 acre (3,600 square feet) of existing impervious surface including the crushed rock service road near the south end of the Willow Brook residential development west of Fennel Creek. Existing conditions of the trail area are compacted gravel and soil with scattered grass and weeds providing low permeability.

Stormwater from the bridge and trail will sheet flow from the bridge and all trail sections and disperse across the native landscape. All new stormwater from the proposed project is non-pollution generating. No significant change in stormwater flow rates or volumes affecting Fennel Creek are anticipated as a result of this project.

Construction will include approximately 1,500 cubic yards of cut and fill. Construction is planned for 120 days between March/April 2010 and June/July 2010, with no construction during the winter months. Typical construction equipment will be used, including backhoes, ground compactors, pneumatic tools, bulldozers, dump trucks, excavators, front end loaders, and jackhammers. A crane will be set in the staging area west of Fennel Creek and utilized to lift the prefabricated bridge structure onto the bridge supports. The bridge will be placed prior to construction of the trail sections east of Fennel Creek, to facilitate access to the east side of the creek for construction purposes. No heavy equipment will be operated in the creek or in the wetlands east of the creek.

Four wetlands have been delineated in the immediate vicinity of the proposed trail. Table 2 indicates the classification, rating, and hydrologic sources for these wetlands. A summary of wetland functions is provided in Table 3. These wetlands were determined not to provide educational or scientific value, or uniqueness and heritage functions. Details regarding the wetlands delineated in the vicinity can be found in the report titled Critical Areas Study, Fennel Creek Trail (Parametrix 2009). The site plan in Figure 2 illustrates the limits of disturbance associated with construction of the trail project. Approximately 218 square feet of Wetland 4 will be directly impacted to support the proposed boardwalk section of the trail. These impacts include grading impacts where the pin piles will be placed. Approximately 3,233 square feet of Wetland 4 will be indirectly impacted through shading from the boardwalk trail section. Wetland mitigation for these impacts is also addressed in further detail in the report named above.

Wetland 4 is a large wetland (103,758 square feet on-site, continuing off-site to the north and south) occurring between Fennel Creek and the slope to the east. The approach to mitigate for unavoidable impacts to Wetland 4 is to enhance other portions of Wetland 4 to the north of the proposed impacts within the palustrine emergent section of the wetland. Enhancement of this portion of the wetland (0.95 acre) will increase the habitat functions and to some degree the water quality functions of Wetland 4.

Table 2. Classification, Rating, and Hydrologic Sources for Wetlands in the Fennel Creek Trail

Wetland	Area (SF)	Area (Acre)	Ecology Rating ²	City of Bonney Lake Rating ³	Wetland Buffer ⁴ (width in feet)	Classification ⁵	Hydrology
1	677	0.02	III	III	75	PEM	Riverine
2	1,247	0.03	III	III	75	PEM	Riverine
3	16,906	0.39	II	II	150	PFO, PEM	Riverine
4	>103,758	2.38	II	II	150	PFO, PEM	Riverine, Slope

Table 3. Summary of Wetland Function for Wetlands in the Fennel Creek Trail Area

Function	Wetland 1	Wetland 2	Wetland 3	Wetland 4
Flood Flow Alteration	Moderate	Moderate	Moderate	Moderate
Sediment Removal	Low	Low	Moderate	Moderate
Nutrient and Toxicant Removal	Moderate	Moderate	High	Moderate
Shoreline Stabilization/Erosion Control	Low	Low	Moderate	High
Organic Matter Production/Export	Moderate	Moderate	Moderate	High
General Habitat Suitability	Moderate	Moderate	Moderate	High
Aquatic Invertebrate Habitat	Moderate	Moderate	High	High
Amphibian Habitat	Moderate	Moderate	High	High
Wetland Mammal Habitat	N/A	N/A	N/A	N/A
Wetland Bird Habitat	N/A	N/A	N/A	N/A
Fish Habitat	Moderate	Moderate	Moderate	Moderate
Native Plant Richness	Low	Low	Low	High

The sidewalk portion of the project includes approximately 6,950 linear feet of sidewalk that will be 5 feet wide. As outlined above, the sidewalk is proposed to replace existing gravel shoulders and provide safe walking routes for children attending area schools who currently walk along roads with no sidewalks. Approximately 3,150 cubic yards of cut and fill will be necessary for the sidewalk portion of the project, which will create approximately 0.27 acre of new impervious surface. All of the new impervious surfaces are non-pollution generating. New impervious surfaces will be installed in areas of lawn and landscaping that have been planted in the right-of-way and need to be removed for installation of the concrete sidewalk. Stormwater from the new sidewalks will be collected with the existing runoff generated from this right-of-way and conveyed to the infiltration facility in the Bonney Lake Manor subdivision. The sidewalk portion of the project is proposed for construction in summer 2009 with typical construction equipment. No detour routes will be necessary.

² Hruby (2004)

³ Wetland rating according to City of Bonney Lake Municipal Code Chapter 16.22

⁴ Wetland buffer according to City of City of Bonney Lake Municipal Code Chapter 16.22

⁵ Cowardin et al. (1979). PFO = palustrine forested, PEM = palustrine emergent

Operation of the project will not result in changes to current traffic patterns. No new traffic will be generated by the proposed project. Access to previously inaccessible properties will not be provided by the project because the area is currently generally accessible from existing streets, from the Willow Brook and Crystal Meadows developments west of Fennel Creek, and from development on the plateau east of the creek. Operation of the trail and sidewalks are not expected to significantly increase noise above ambient noise levels. There are no other projects that are known to be dependent on completion of this project.

ACTION AREA

An action area includes “all areas to be affected directly and indirectly by the federal action and not merely the immediate area involved in the action” (NARA 2005b). No significant, permanent indirect impacts are anticipated to occur to ESA listed species or their designated critical habitat as a result of this project. No in-water work is associated with this project, and there will be no significant change in the rate, chemical composition, or volume of stormwater entering Fennel Creek. Stormwater from the trail’s pedestrian bridge will sheet flow into the creek; however, the bridge is a non-pollution generating surface and runoff is not anticipated in amounts that would significantly impact Fennel Creek.

Construction-related noise was utilized to establish the terrestrial action area. The terrestrial action area was determined to extend for a 2,667-foot radius around the immediate construction area, defined as the footprint of the trail and new sidewalks. An aquatic action area was developed for the bridge crossing that extends 200 feet downstream in Fennel Creek, and for 200 feet around the Wetland 4 mitigation area (see Figure 3 at the end of this report). The action area for the mitigation site is considered aquatic because it is located within a wetland. The 200-foot downstream distance is based on the maximum extent to which water quality impacts (sedimentation) could occur within Wetland 4 as a result of mitigation activities and in Fennel Creek during bridge construction.

The terrestrial action area is based on noise. For transportation projects, traffic noise typically determines the baseline noise level in the project area. The level of highway traffic noise depends on the volume of traffic, the speed of the traffic, and the volume of trucks in the flow of traffic (USDOT 1995). In the vicinity of the project site, Angeline Road is identified as a Collector roadway with a 35 mile per hour (MPH) speed limit. Utilizing an estimated volume of 950 ADT (City of Bonney Lake 2006), which equates to 95 vehicles per hour, and the base percentage of truck traffic per Washington State Department of Transportation (WSDOT) “typical” noise levels, typical baseline traffic noise level for this roadway type can be estimated at approximately 56 dBA (WSDOT 2008).

The noisiest construction equipment anticipated for use in this project includes a grader, which generates up to 89 dBA at 50 feet. The next noisiest equipment anticipated are pneumatic tools, which generate up to 85 dBA at 50 feet. Utilizing the rules for decibel addition, 1 dBA is added to the higher decibel value, resulting in a combined total noise level for all equipment of 90 dBA at 50 feet (WSDOT 2008). The standard reduction for point source (construction) noise is 6 dB per doubling of distance from the source. Based on the attenuation of point source noise from construction, noise levels would be elevated above pre-project ambient levels for a distance of approximately 2,667 feet (Table 4). This point represents the distance where construction noise is expected to be indistinguishable from background ambient noise.

Table 4. Terrestrial Noise Attenuation for Fennel Creek Trail and Sidewalks Project

Distance from Noise Source (feet)	Noise from Equipment (dBA) ^a
50	90.0
100	84.0
200	78.0
400	72.0
800	66.0
1600	60.0
3200	54.0

^a Assumes equipment point source noise of 91 dBA at 50 feet and a 6.0 dB reduction per doubling of distance.

BIOLOGICAL RESOURCES

In July 2009 Parametrix accessed ESA listing information for species that may occur in the action area from the USFWS, NMFS, Washington Department of Natural Resources, and the Washington State PHS database. USFWS identified a variety of proposed, endangered, and threatened species potentially present in Pierce County. Most of the species listed for Pierce County were either not historically distributed within the action area, and/or the action area does not contain suitable habitat to support the species. Information on federally listed threatened and endangered species under the NMFS jurisdiction was accessed at <http://www.nwr.noaa.gov/ESA-Salmon-Listings/upload/snapshot-9-08.pdf>. The Department of Natural Resources Natural Heritage Program (NHP) database indicates that no threatened or endangered plants occur in the quarter sections, township, or range in which the project is located (WADNR 2009). Natural heritage features occur in the SE quarter of Section 9, Township 19N, Range 05 E, while the project is located in the NW and NE quarters of Section 9 (Appendix B).

The listed and proposed fish species identified by the USFWS and NMFS as occurring in the project vicinity include Puget Sound Chinook salmon, Puget Sound steelhead, and Coastal-Puget Sound bull trout (NMFS 2009, USFWS 2009).

Habitat in the project vicinity that supports these species includes Fennel Creek (Stream 0406) and the mainstem Puyallup River (Stream 0021). The areas of Fennel Creek below Victor Falls (approximately 2,000 feet downstream/south of the proposed bridge crossing) support Chinook, steelhead, and cutthroat. Steelhead spawn below Victor Falls, and Chinook and pink salmon spawn in the lower 1/2 mile of Fennel Creek above the Puyallup River. Bull trout rear in the mainstem Puyallup River. Chum spawn in the lower mile of Fennel Creek above the Puyallup River. Coho spawn below Victor Falls (Williams et al. 1975; WDFW 2009; Streamnet 2009).

In April 2009 a Parametrix staff biologist conducted a site inspection to evaluate the existing habitat opportunities for listed and candidate species in the action area and identify potential project impacts on these species. Terrestrial habitat along the project corridor includes riparian vegetation along portions of the creek, with limited understory and no special habitat components. West of Fennel Creek the project corridor is in an area that has previously been disturbed for residential development. East of the creek, the trail corridor winds through forested portions of Wetland 4 and up a steep, forested slope containing an informal pathway. There is a large wetland system located east of Fennel Creek that includes palustrine emergent and palustrine forested components (Wetland 4). The riparian corridor extends north and south out of the study area along Fennel Creek. Photos of the project area are included in Appendix C.

IMPACT AVOIDANCE AND MINIMIZATION

Construction will utilize BMPs to avoid and minimize the potential for impacts to listed species. The proposed action will incorporate the measures listed below to avoid impacts.

- Temporary Erosion and Sedimentation Control (TESC) Plan to provide adequate water quality protection.
- Erosion control of disturbed areas using silt fencing.
- Weekly inspection of erosion control devices (dry season). Work crews immediately mobilized to repair, install replacements, or install additional controls as necessary.
- Sediment-laden water will be run through sediment traps before discharge.
- Staging and stockpile areas will be located in previously developed areas.
- The project contractor will use heavy equipment having the least impact necessary to accomplish the authorized work (e.g., low ground pressure, minimally sized, rubber tired, etc.).
- Refueling will be conducted within a designated area at least 150 feet from Fennel Creek.
- Vehicles operated within 150 feet of a water body will be inspected daily for fluid leaks and leaks will be repaired before leaving a staging area.

EFFECTS DETERMINATIONS

The only listed or proposed species occurring in the project vicinity are fish. These species do not occur in the aquatic portion of the action area. Listed species occur downstream from Victor Falls, which is more than 200 feet downstream from the bridge crossing. The terrestrial action area, which is based on construction noise, overlaps Fennel Creek but construction noise will not impact listed fish species. Stormwater from the project's new non-pollution generating impervious surfaces will continue to sheet flow and be dispersed across the project area. The project is not anticipated to significantly increase the volume or rate of stormwater flowing into Fennel Creek, or the chemical composition of such runoff. Therefore, the proposed project will have **no effect** on Chinook salmon, steelhead, or bull trout.

The proposed project will **not result in the destruction or adverse modification** of designated critical habitat for the listed species.

The Pacific Fishery Management Council (PFMC) designated EFH for the Pacific salmon fishery, federally managed ground fishes, and coastal pelagic fisheries in 1999. No designed EFH occurs in the immediate vicinity of the proposed project. The mainstem Puyallup River contains EFH for anadromous Pacific salmon over 1 mile downstream from the project area. Therefore the project will **not adversely affect** designed EFH.

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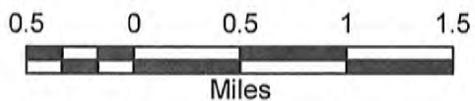
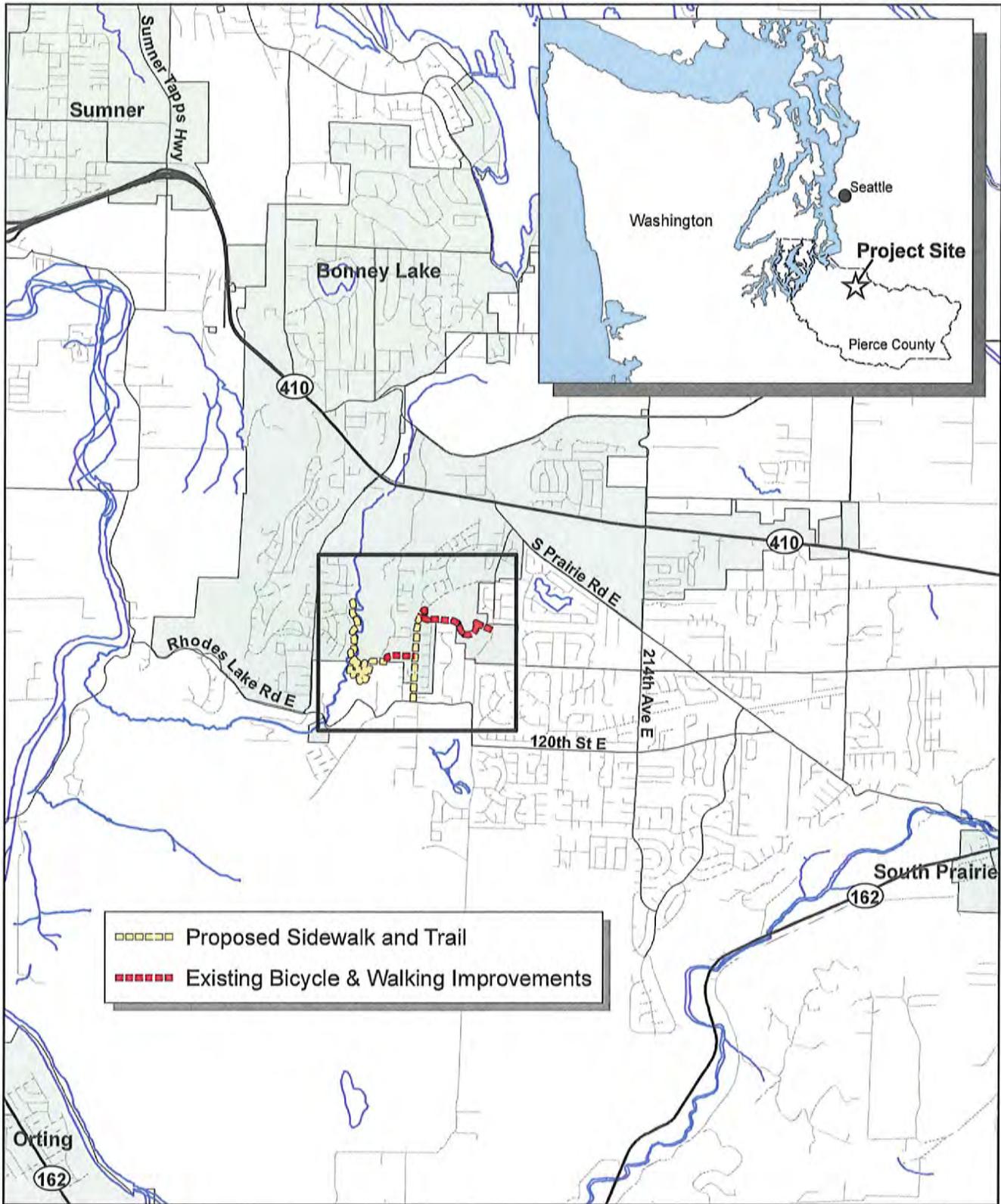


Figure 1
Vicinity Map
Fennel Creek Trail and Sidewalks

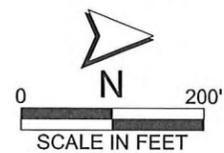
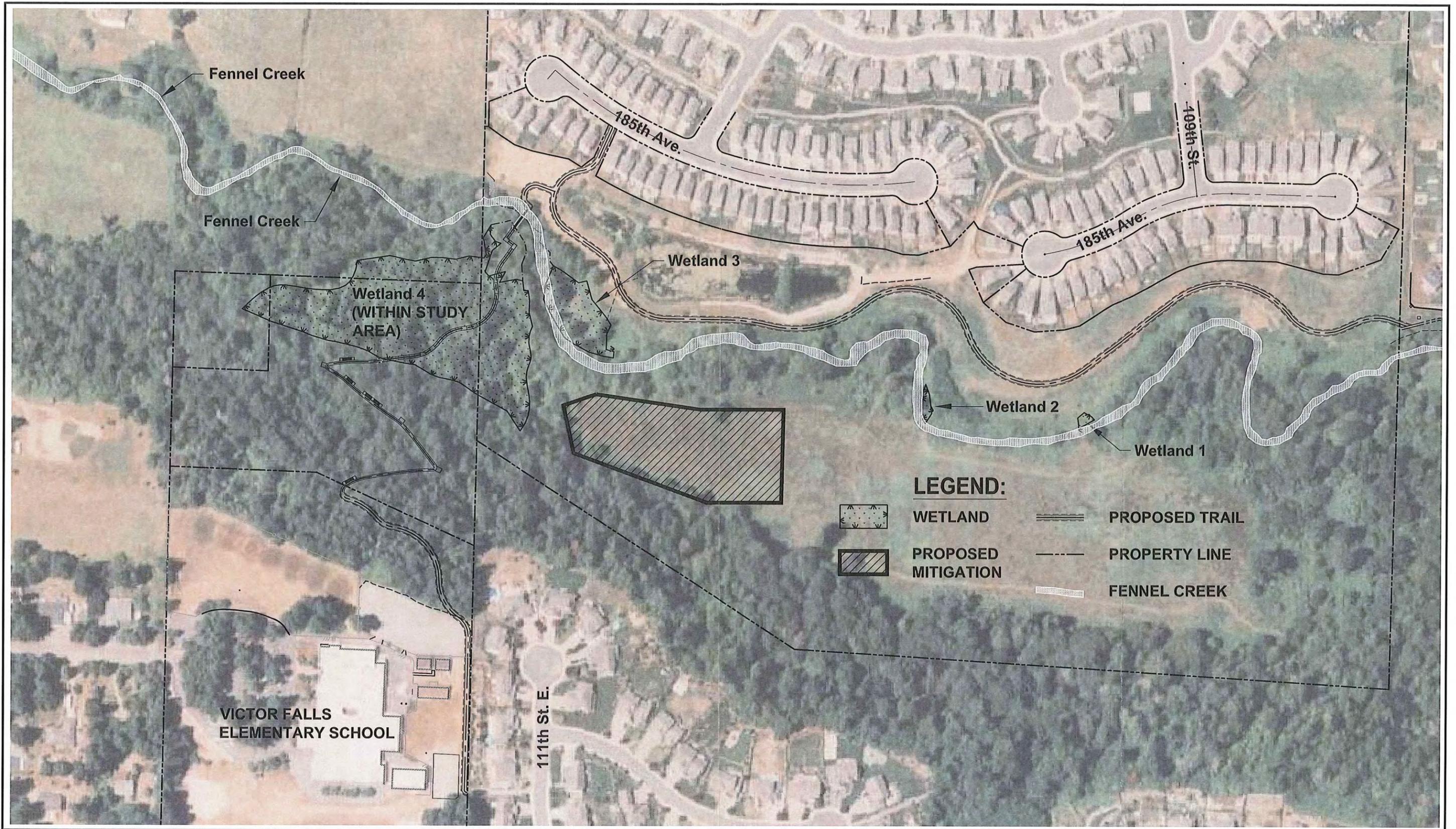


Figure 2
Fennel Creek Trail
Project Site Plan

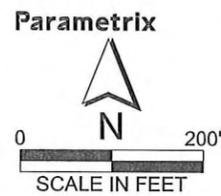


Figure 3
Fennel Creek Trail / 192nd Ave Sidewalks
Action Area

APPENDIX A
Species Listings

Endangered Species Act Status of West Coast Salmon & Steelhead

(Updated Sept. 25, 2009)

Species ¹		Current Endangered Species Act Listing Status ²	ESA Listing Actions Under Review	
Sockeye Salmon (<i>Oncorhynchus nerka</i>)	1	Snake River	Endangered	
	2	Ozette Lake	Threatened	
	3	Baker River	Not Warranted	
	4	Okanogan River	Not Warranted	
	5	Lake Wenatchee	Not Warranted	
	6	Quinalt Lake	Not Warranted	
	7	Lake Pleasant	Not Warranted	
Chinook Salmon (<i>O. tshawytscha</i>)	8	Sacramento River Winter-run	Endangered	
	9	Upper Columbia River Spring-run	Endangered	
	10	Snake River Spring/Summer-run	Threatened	
	11	Snake River Fall-run	Threatened	
	12	Puget Sound	Threatened	
	13	Lower Columbia River	Threatened	
	14	Upper Willamette River	Threatened	
	15	Central Valley Spring-run	Threatened	
	16	California Coastal	Threatened	
	17	Central Valley Fall and Late Fall-run	Species of Concern	
	18	Upper Klamath-Trinity Rivers	Not Warranted	
	19	Oregon Coast	Not Warranted	
	20	Washington Coast	Not Warranted	
	21	Middle Columbia River spring-run	Not Warranted	
22	Upper Columbia River summer/fall-run	Not Warranted		
23	Southern Oregon and Northern California Coast	Not Warranted		
24	Deschutes River summer/fall-run	Not Warranted		
Coho Salmon (<i>O. kisutch</i>)	25	Central California Coast	Endangered	
	26	Southern Oregon/Northern California	Threatened	
	27	Lower Columbia River	Threatened	• Critical habitat
	28	Oregon Coast	Threatened	
	29	Southwest Washington	Undetermined	
	30	Puget Sound/Strait of Georgia	Species of Concern	
31	Olympic Peninsula	Not Warranted		
Chum Salmon (<i>O. keta</i>)	32	Hood Canal Summer-run	Threatened	
	33	Columbia River	Threatened	
	34	Puget Sound/Strait of Georgia	Not Warranted	
	35	Pacific Coast	Not Warranted	
Steelhead (<i>O. mykiss</i>)	36	Southern California	Endangered	
	37	Upper Columbia River	Endangered	
	38	Central California Coast	Threatened	
	39	South Central California Coast	Threatened	
	40	Snake River Basin	Threatened	
	41	Lower Columbia River	Threatened	
	42	California Central Valley	Threatened	
	43	Upper Willamette River	Threatened	
	44	Middle Columbia River	Threatened	
	45	Northern California	Threatened	
	46	Oregon Coast	Species of Concern	
	47	Southwest Washington	Not Warranted	
	48	Olympic Peninsula	Not Warranted	
	49	Puget Sound	Threatened	• Critical habitat
50	Klamath Mountains Province	Not Warranted		
Pink Salmon (<i>O. gorbuscha</i>)	51	Even-year	Not Warranted	
	52	Odd-year	Not Warranted	

¹ The ESA defines a "species" to include any distinct population segment of any species of vertebrate fish or wildlife. For Pacific salmon, NOAA Fisheries Service considers an evolutionarily significant unit, or "ESU," a "species" under the ESA. For Pacific steelhead, NOAA Fisheries Service has delineated distinct population segments (DPSs) for consideration as "species" under the ESA.

**LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES AND CRITICAL HABITAT;
CANDIDATE SPECIES; AND SPECIES OF CONCERN
IN PIERCE COUNTY
AS PREPARED BY
THE U.S. FISH AND WILDLIFE SERVICE
WESTERN WASHINGTON FISH AND WILDLIFE OFFICE**

(Revised November 1, 2007)

LISTED

Bull trout (*Salvelinus confluentus*)

Canada lynx (*Lynx canadensis*)

Gray wolf (*Canis lupus*)

Grizzly bear (*Ursus arctos* = *U. a. horribilis*)

Marbled murrelet (*Brachyramphus marmoratus*)

Northern spotted owl (*Strix occidentalis caurina*)

Major concerns that should be addressed in your Biological Assessment of project impacts to listed species include:

1. Level of use of the project area by listed species.
2. Effect of the project on listed species' primary food stocks, prey species, and foraging areas in all areas influenced by the project.
3. Impacts from project activities and implementation (e.g., increased noise levels, increased human activity and/or access, loss or degradation of habitat) that may result in disturbance to listed species and/or their avoidance of the project area.

Arenaria paludicola (marsh sandwort) [historic]

Castilleja levisecta (golden paintbrush) [historic]

Howellia aquatilis (water howellia)

Major concerns that should be addressed in your Biological Assessment of project impacts to listed plant species include:

1. Distribution of taxon in project vicinity.
2. Disturbance (trampling, uprooting, collecting, etc.) of individual plants and loss of habitat.
3. Changes in hydrology where taxon is found.

DESIGNATED

Critical habitat for bull trout

Critical habitat for the marbled murrelet

Critical habitat for the northern spotted owl

PROPOSED

None

CANDIDATE

Mardon skipper (*Polites mardon*)

(Roy Prairie and Tacoma) Mazama pocket gopher (*Thomomys mazama* ssp. *glacialis* and *tacomensis* [historic])

Oregon spotted frog (*Rana pretiosa*)

Streaked horned lark (*Eremophila alpestris strigata*)

Taylor's checkerspot (*Euphydryas editha taylori*)

Yellow-billed cuckoo (*Coccyzus americanus*)

SPECIES OF CONCERN

Bald eagle (*Haliaeetus leucocephalus*)

California wolverine (*Gulo gulo luteus*)

Cascades frog (*Rana cascadae*)

Fender's soliperlan stonefly (*Soliperla fenderi*)

Larch Mountain salamander (*Plethodon larselli*)

Long-eared myotis (*Myotis evotis*)

Long-legged myotis (*Myotis volans*)

Northern goshawk (*Accipiter gentilis*)

Northern sea otter (*Enhydra lutris kenyoni*)

Northwestern pond turtle (*Emys* (= *Clemmys*) *marmorata marmorata*)

Olive-sided flycatcher (*Contopus cooperi*)

Oregon vesper sparrow (*Pooectetes gramineus affinis*)

Pacific lamprey (*Lampetra tridentata*)

Pacific Townsend=s big-eared bat (*Corynorhinus townsendii townsendii*)

Peregrine falcon (*Falco peregrinus*)

River lamprey (*Lampetra ayresi*)

Slender-billed white-breasted nuthatch (*Sitta carolinensis aculeata*)

Tailed frog (*Ascaphus truei*)

Valley silverspot butterfly (*Speyeria zerene bremeri*)

Western gray squirrel (*Sciurus griseus griseus*)

Van Dyke=s salamander (*Plethodon vandykei*)

Aster curtus (white-top aster)

Botrychium ascendens (triangular-lobed moonwort)

Castilleja cryptantha (obscure paintbrush)

Cimicifuga elata (tall bugbane)

Cypripedium fasciculatum (clustered lady=s slipper)

Lathyrus torreyi (Torrey's peavine)

APPENDIX B
DNR Natural Heritage Information



June 22, 2009

Chrissy Bailey
Parametrix Inc
8770 Tallon Lane NE
Lacey WA 98516

RECEIVED

JUN 29 2009

PARAMETRIX
LACEY, WASHINGTON

**SUBJECT: City of Bonney Lake – Construct one mile of Fennel Creek Trail
(T19N R05E S04,09)**

We've searched the Natural Heritage Information System for information on rare plants and high quality native wetland and terrestrial ecosystems in the vicinity of your project. A summary of this information is enclosed. In your planning, please consider protection of these significant natural features. Please contact us for consultation on projects that may have an effect on these rare species or high quality ecosystems.

The information provided by the Washington Natural Heritage Program is based solely on existing information in the database. There may be significant natural features in your study area of which we are not aware. These data are being provided to you for informational and planning purposes only - the Natural Heritage Program has no regulatory authority. This information is for your use only for environmental assessment and is not to be redistributed. Others interested in this information should be directed to contact the Natural Heritage Program.

The Washington Natural Heritage Program is responsible for information on the state's rare plants as well as high quality ecosystems. For information on animal species of concern, please contact Priority Habitats and Species, Washington Department of Fish and Wildlife, 600 Capitol Way N, Olympia WA 98501-1091, or by phone (360) 902-2543.

For more information on the Natural Heritage Program, please visit our website at http://www.dnr.wa.gov/ResearchScience/Topics/NaturalHeritage/Pages/amp_nh.aspx. Species lists and fact sheets, as well as rare plant survey guidelines are available for download from the site. For the self-service system, please follow the Reference Desk link to Location Search. Please feel free to call me at (360) 902-1697 if you have any questions, or by e-mail at sandra.moody@dnr.wa.gov.

Sincerely,

Sandy Swope Moody, Environmental Review Coordinator
Washington Natural Heritage Program

Enclosures

Land Management Division, PO Box 47014, Olympia WA 98504-7014

1111 WASHINGTON ST SE ■ MS 47000 ■ OLYMPIA, WA 98504-7000
TEL (360) 902-1000 ■ FAX (360) 902-1775 ■ TTY (360) 902-1125 ■ TRS 711 ■ WWW.DNR.WA.GOV

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RECYCLED PAPER

WASHINGTON NATURAL HERITAGE INFORMATION SYSTEM
ENDANGERED, THREATENED AND SENSITIVE PLANT SPECIES &
HIGH QUALITY WETLAND ECOSYSTEMS AND HIGH QUALITY TERRESTRIAL ECOSYSTEMS
IN THE VICINITY OF FENNEL CREEK TRAIL, CITY OF BONNEY LAKE
REQUESTED BY PARAMETRIX INC

Data Current as of June 2009
Page 1 of 1

<u>TOWNSHIP, RANGE AND SECTION</u>	<u>ELEMENT NAME</u>	<u>STATE STATUS</u>	<u>FEDERAL STATUS</u>
T19N R05E S09 SE	<i>Lycopodiella inundata</i> (Bog clubmoss)	S	

WASHINGTON NATURAL HERITAGE INFORMATION SYSTEM
Rare Plant Species

FEDERAL STATUS DEFINITIONS- (Note: Federally listed plant species are subject to the US Endangered Species Act.)

LE = Listed Endangered: Any taxon that is in danger of extinction throughout all or a significant portion of its range and that has been formally listed as such in the Federal Register under the Federal Endangered Species Act.

LT = Listed Threatened: Any taxon that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and that has been formally listed as such in the Federal Register under the Federal Endangered Species Act.

PE = Proposed Endangered: Any taxon that is in danger of extinction throughout all or a significant portion of its range and that has been proposed for listing as such in the Federal Register under the Federal Endangered Species Act.

PT = Proposed Threatened: Any taxon that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and that has been proposed for listing as such in the Federal Register under the Federal Endangered Species Act.

C = Candidate species: Taxa for which current information indicates the probable appropriateness of listing as Endangered or Threatened and that has been published in the Federal Register as a candidate for listing under the Federal Endangered Species Act.

SC = Species of Concern: Species whose conservation standing is of concern but for which status information is still needed. Species of concern lists are not published in the Federal Register.

STATE STATUS DEFINITIONS- (Note: The state ESA does not include provisions to list or protect rare plant species – the state rare plant list is advisory only.)

E = Endangered: Any taxon in danger of becoming extinct or extirpated from Washington within the foreseeable future if factors contributing to its decline continue. Populations of these taxa are at critically low levels or their habitats have been degraded or depleted to a significant degree.

T = Threatened: Any taxon likely to become Endangered in Washington within the foreseeable future if factors contributing to its population decline or habitat degradation or loss continue.

S = Sensitive: Any taxon that is vulnerable or declining and could become Endangered or Threatened in the state without active management or removal of threats.

X = Possibly Extinct or Extirpated from Washington: Based on recent field searches, a number of plant taxa are considered to be possibly extinct or extirpated from Washington. Taxa in this group are all high priorities for field investigations. If found, they will be assigned one of the above status categories.

R = Review: Taxa of potential concern, but for which no status has yet been assigned.
Group 1 = Taxa in need of additional field work before a status can be assigned.
Group 2 = Taxa with unresolved taxonomic questions.

W = Watch: Taxa more abundant and/or less threatened in Washington than previously assumed.

Non-Vascular Plant:

P = Priority: At this time, there is insufficient information to assign a statewide status to most of the non-vascular taxa. For now, the lichen and macrofungi lists have been divided into two priority groups based on criteria of occurrence pattern, vulnerability, threats, degree of protection, and taxonomy.

APPENDIX C
Project Area Photos



Photo 1. View north towards Crystal Meadows subdivision, from berm west of Fennel Creek.



Photo 2. View south of Creek towards Meadow Brook subdivision from berm west of Fennel Creek.



Photo 3. View south towards Meadow Brook subdivision stormwater pond from berm west of Fennel Creek.



Photo 4. View south of Meadow Brook stormwater pond from west of Fennel Creek.



Photo 5. View north from west of Fennel Creek, near Meadow Brook stormwater pond.



Photo 6. Habitat conditions in vicinity of proposed bridge crossing Fennel Creek.



Photo 7. View of south end of Meadow Brook subdivision from between pond and Fennel Creek.



Photo 8. View looking west at upland buffer of Wetland 1.



Photo 9. View looking west at upland buffer of Wetland 3.



Photo 10. View of palustrine emergent portion of Wetland 4.



Photo 11. View of upland buffer east of Wetland 4 on steep slope.