



U.S.D.A. FOREST SERVICE
 COLUMBIA RIVER GORGE NATIONAL SCENIC AREA
 902 WASCO AVENUE, SUITE 200
 HOOD RIVER, OR 97031

Telephone: 541-308-1700
 Fax: 541-386-1916

Columbia River Gorge National Scenic Area PROJECT REVIEW APPLICATION

DATE OF APPLICATION: 6/21/16

APPLICANTS	PROPERTY OWNERS
Lower Columbia Estuary Partnership	US Fish and Wildlife Service Port of Camas Washougal City of Washougal Friends of the Columbia Gorge Land Trust
MAILING ADDRESS	MAILING ADDRESS
Deb Marriott, Executive Director 811 SW Natio Parkway, Suite 410 Portland, Oregon 97204	Christopher Lapp, Project Leader U.S. Fish and Wildlife Service Ridgefield National Wildlife Refuge Complex 28908 NW Main Avenue Ridgefield, Washington 98642-0457 David Ripp, Executive Director Port of Camas-Washougal 24 South 'A' Street Washougal, WA 98671 Trevor Evers, Public Works Director City of Washougal 1701 C Street Washougal, WA 98671 Kate McBride, Land Trust Manager Friends of the Columbia Gorge Land Trust 205 Oak Street Hood River, OR 97031
APPLICANT'S SIGNATURE AND DATE	PROPERTY OWNER'S SIGNATURE AND DATE
	USFWS: Port: City: FOCG Land Trust:

PHONE: 503-226-1565 X235	PHONE: 360-887-4106 (USFWS) 360-835-5560 (Port) 360-835-2662 (City) 541-386-5268 X113 (Land Trust)
E-MAIL: ccollins@estuarypartnership.org	E-MAIL: Christopher_lapp@fws.gov david@portcw.com trevor.evers@cityofwashougal.us kate@gorgefriends.org
LOCATION OF PROPERTY (Township, Range, Section, Quarter Section and Tax Lot)	PROPERTY ADDRESS (If Applicable)
Sections 14, 15, 16, 22, 23, 24, 47, 49, and 51 of Township 1 North, Range 4 East (Willamette meridian) Taxlot Numbers: 135305000, 134385000, 135508000, 135308000, 135307000, 134226000	5200 Lewis and Clark Hwy Washougal, 98671
PARCEL SIZE (ACRES): Tax Lot # (Acres) 135305000 (595.3), 134385000 (177.1), 135508000 (211.4), 135308000 (27.1), 135307000 (17.6), 134226000 (21.7)	COUNTY, STATE: Clark County, WA
EXISTING LAND USE: Tax lots 135508000 and 135307000 are or were previously used for private agricultural use. Tax lot 135308000 is undeveloped Port property, zoned for industrial use. The remainder of the project area is public wildlife refuge with pedestrian access trails throughout the site.	

PROJECT DESCRIPTION: Describe your proposed project, including details (plans, elevations, and/or photos) on structures to be built, location and types of utilities and infrastructure, drainfields, accessory buildings, ground leveling, and filling, or any other relevant activity or mitigation measures proposed. Use additional sheets as necessary:

The Lower Columbia Estuary Partnership (LCEP) with Bonneville Power Administration (BPA) and the Port of Camas-Washougal (Port) are proposing to restore approximately 1,000 acres of floodplain habitat along the right (north) bank of the Columbia River within the Steigerwald Lake National Wildlife Refuge (SLNWR), which is managed by the US Fish and Wildlife Service (USFWS). The Project would enhance hydrologic connectivity and floodplain processes between the SLNWR and the Columbia River by making multiple breaches along a circa 1960s US Army Corps of Engineers (USACE) levee and by restoring Gibbons Creek.

This application is in support of the geotechnical investigations required for determining the feasibility of the Project. The attached site plan identifies all areas subject to geotechnical boring and borrow source test pit excavations. This feasibility phase of fieldwork involves the 44 geotechnical borings that were previously excavated within and outside of the CRGNSA (Figure 1). This work will be reviewed post-implementation as a part of this permit application.

Of the 44 total geotechnical borings, 35 borings were drilled as part of a field exploration and laboratory testing program to develop foundation subsurface conditions and soil parameters to use in the design of setback levees. The borings were grouped into rows of one to three borings per cross section location at intervals varying from approximately 500 to 1000 feet along the proposed levee alignments. In total, nineteen (19) borings were aligned along the setback levee centerlines, 8 at the landside toe and 8 at the waterside toe. The total proposed drilling footage was 3,060 feet.

Exploratory drilling of nine (9) additional boring was also conducted at the locations of the appurtenant structures (e.g. floodwall, pedestrian bridges, etc) to collect subsurface information to be used in foundation design and stability analyses. The borings will be drilled to identify subsurface conditions at the structure locations. Of the 9 total borings, 2 borings were drilled at the SR-14 closure structure, 5 at the Gibbons Creek floodwall, and 2 at a proposed pedestrian bridge location.

The majority of the borings (41) were completed during the period of July 27 through August 27, 2015. In January 2016 an additional mobilization of the drilling was conducted to complete the 3 remaining boreholes along the proposed Gibbons Creek floodwall. These borings were not conducted during the summer mobilization due to a delay in landowner permission and were drilled outside the CRGNSA boundary. Western States Soil Conservation, Inc of Hubbard, Oregon performed the borehole drilling using CME 850 and CME 55 rubber trackmounted drill rigs. The boreholes were drilled using mud-rotary and hollow stem auger (HSA) drilling techniques. The drilling was performed under the supervision of an engineer representative from Cornforth Consultants and observed by a cultural resource specialist from Environmental Science Associates to monitor the potential exposure of significant features.

Samples were typically taken at approximately 5-foot intervals using Standard Penetration Tests (SPT). In addition, an occasional 3-inch diameter, thin-walled Shelby tube sample was obtained at select depths to acquire undisturbed soil samples. Where gravel and cobbles were encountered a 3-inch diameter split-spoon sampler (Dames & Moore sampler) was driven in an effort to retrieve soil samples. The exploratory boring depths ranged from 40 to 100 feet. The total drilling footage was approximately 2,565 feet. The exploratory borings were backfilled with cement-bentonite grout.

The drilling program included installation of six (6) standpipes with vibrating wire piezometers (VWPs) to monitor the seasonal groundwater fluctuation. Laboratory testing consisted of grain size distribution (mechanical sieve and hydrometers), natural water contents determination, consolidated-undrained triaxial tests, one-dimension consolidation tests, and Atterberg Limits determination. These laboratory tests were used to determine the foundation soils characteristics, permeability, plasticity, shear strength, and compressibility.

The expected duration of the Steigerwald Lake NWR exploration program was approximately 44 days, which includes 33 days for the drilling, 6 days for the test pits, 3 to 5 days for the access construction. All work would be performed on weekdays during daylight hours, typically between 7 am and 6 pm.

Access to the exploration areas was identified through mostly existing roads including Hwy 14, the levee road, and roads within the refuge and on private property (Figure 1). A few temporary access areas were created where access was required off of existing roads. These roads were temporary and accessed only using track equipment. No laying of gravel or removal of trees was required.

Additional field work under the feasibility phase of the Project is being proposed for the summer/fall 2016 that includes the excavation of up to 55 borrow source test pits (Figure 1). The test pits will be excavated at areas of high elevation within the Project site to identify potential sources of borrow material to be used to construct the setback levees. The test pits provide the characterization of the volume and quality of usable materials within the SLNWR. The test pits are planned along the south side of Steigerwald Lake along the northern edge of the existing levee and in the elevated canal embankment for Gibbons Creek as shown on Figure 1. Test pit excavation will avoid tree removal.

Access to the test pit areas was identified through mostly existing roads including Hwy 14, the levee road, and the access road along the Gibbons Creek elevated canal (Figure 1). A few temporary access areas will be created where access is required off of the existing levee road. These roads will be temporary and accessed only using track equipment. No laying of gravel or removal of trees will be required.

The intent of the test pits would be to observe the soil conditions beneath the ground surface, identify groundwater depth and to obtain bulk samples for laboratory testing. The expected depths of the test pits would be approximately 4 to 7 feet. Upon completion, the excavated soil would be placed back into the pits in lifts of two feet or less, and then compacted by tamping with the back of the trackhoe bucket until the soil is firm and unyielding and matches pre-disturbance contours. The expected duration of the test pit work is approximately 6 days. No test pits would be left open longer than 4 hours.

Test pits will be performed under the supervision of an engineer representative from Cornforth Consultants and observed by a cultural resource specialist from Environmental Science Associates to monitor the potential exposure of significant features.

Soil samples collected from the boreholes will be tested only for engineering properties. The laboratory testing program will include: natural moisture contents, grain size analyses, Atterberg limits plasticity tests, consolidation, direct shear strength tests, and triaxial consolidated undrained shear strength tests. Contaminated soils are not anticipated at the proposed drill sites.

This feasibility phase of the project does not involve the development of any structures or utilities or removal of any existing trees.

The final design of the Project will be completed in 2017 and is anticipated to include grading of channels and wetlands; removal of a non-functional fish ladder; construction of up to two setback levees and/or other flood risk reduction structures; restoration of Gibbons Creek to a free-running stream; revegetation with native plant species; and reconstruction or replacement of pedestrian bridges and a parking lot. A separate CRGNSA application will be developed at a later date for the final Project construction.

APPLICATION CHECKLIST: The following is required to complete your application

Application form completed and signed by applicant and property owner
Completed Site Plan
Key viewing areas checklist (attached)
Names and addresses of adjacent property owners within 200 feet of parcel
Any additional information as required:

KEY VIEWING AREAS: Key viewing areas are important public viewpoints and areas that afford opportunities to view the Gorge scenery. Key viewing areas are listed below. Please check those sites which can be seen from your property.

Historic Columbia River Highway
Sandy River
Portland Women's Forum State Park
✓ Crown Point
✓ Rooster Rock State Park
Multnomah Falls
Larch Mountain
Highway I-84, including rest stops
Bonneville Dam Visitor Centers
Sherrard Point on Larch Mountain
Rowena Plateau/Nature Conservancy Viewpoint
Larch Mountain Road
Wyeth Bench Road
County Road 1230 (Old WA St. Route 14)
✓ Washington State Route 14
Washington State Route 142
Washington State Route 141
Cook-Underwood Road
Dog Mountain Trail
Beacon Rock
Cape Horn
✓ Columbia River
Pacific Crest Trail
Oregon Highway 35

PROJECT SITE PLAN: A plan drawn in black ink at a scale of about 1 inch equal to 200 feet (1:2400) or at a scale providing greater detail must be included with the application.

If the parcel is very large, you may show the project on the portion of the parcel affected by the proposed use. Be sure, however, to show enough of the parcel or some adjacent features, such as roads, so that the reviewers can orient themselves on your map. A small vicinity map showing the subject parcel and surrounding parcels may help.

At a minimum, you must show the following features:

Applicant(s) name

Location and width of existing and proposed roads, driveways, and trails

Scale and north arrow

Location and size of existing and proposed structures

Boundaries of parcel with dimensions and size

Location of existing and proposed services including wells or other water supplies, structures, power and telephone poles and lines and outdoor lighting.

Significant terrain features or landforms

Location and depth of all proposed grading and ditching

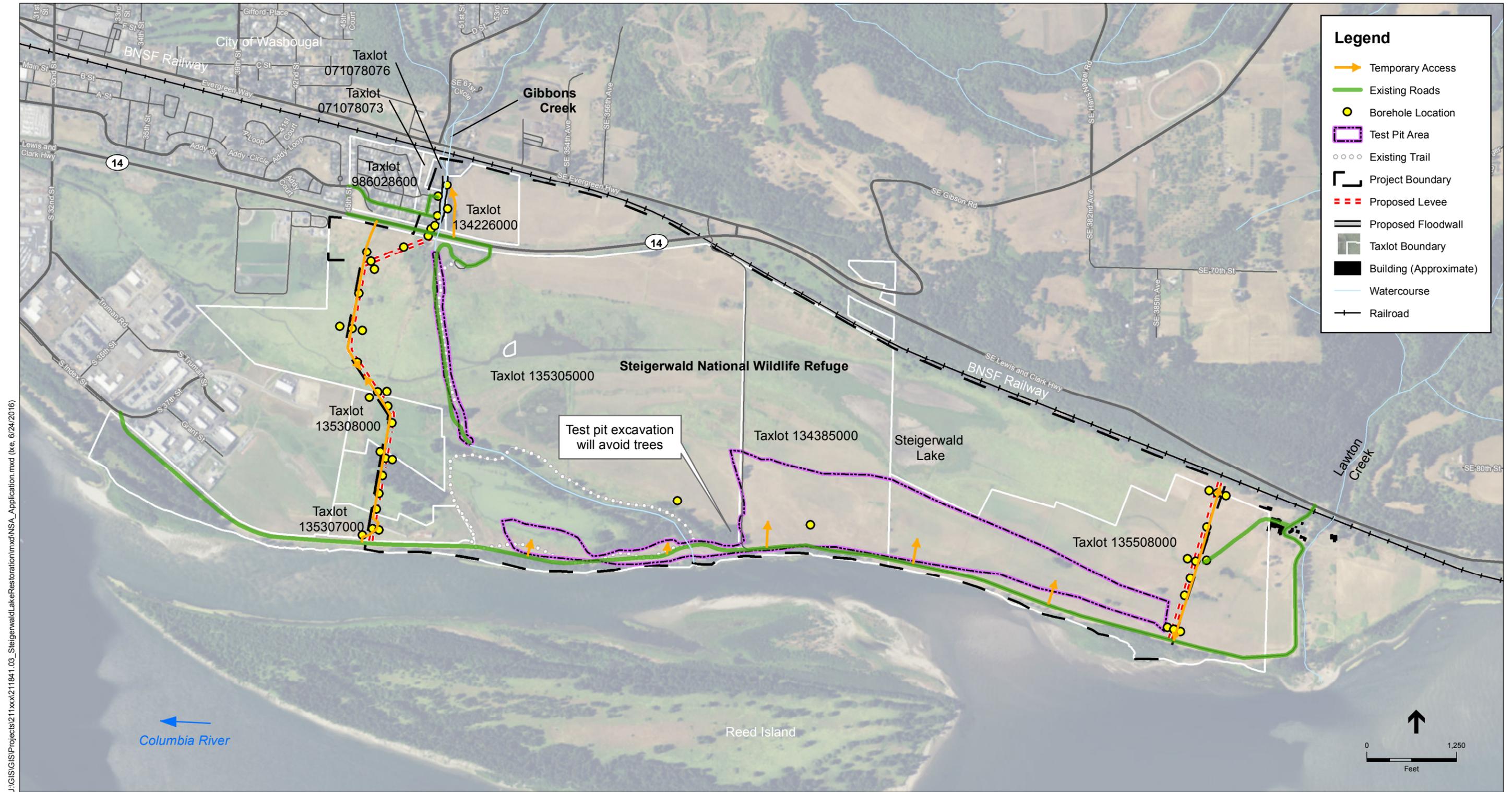
Groupings and species of trees or other vegetation on the parcel

Location and species of vegetation that would be removed or planted

Water courses and bodies of water

**ADJACENT PROPERTY OWNERS AND EXISTING LAND USE
ON ADJACENT PARCELS WITHIN 200 FEET OF PROJECT PROPERTY:**

Township, Range, Section, Tax Lot	Name and Address	Existing Land Use
S16 T1N R4E 071078075	Gibbons Creek Mobile Estates LLC 7885 NW 214 th Pl Hillsboro, OR 97124	Residential
S16 T1N R4E 071078073	Gibbons Creek Mobile Estates LLC 7885 NW 214 th Pl Hillsboro, OR 97124	Residential
S16 T1N R4E 071078076	Christopher J Hickey and Julia M Hickey 4960 Evergreen Way Washougal, WA 98671	Residential
S16 T1N R4E 134133000	DM Stevenson Ranch 1108 E Marina Way Hood River, OR 97031	Residential
S16 T1N R4E 134226000	USFWS – Realty Division NWRS/RE 911 NE 11 th Ave Portland, OR 97232	National Wildlife Refuge
S15, 16, 17, 20, 21, 22 T1N R4E 135305000	USFWS - Ridgefield National Wildlife Refuge P.O. Box 457 Ridgefield, WA 98642	National Wildlife Refuge
S21 T1N R4E 135308000	Port of Camas Washougal 24 S A Street Washougal, WA 98671	Vacant
S15, 22 T1N R4E 135307000	City of Washougal 1701 C Street Washougal, WA 98671	Agricultural
S14 T1N R4E 134385000	USFWS – Realty Division NWRS/RE 911 NE 11 th Ave Portland, OR 97232	National Wildlife Refuge
S24, 23 T1N R4E 135508000	Sharleen James 39315 SE Evergreen Hwy Washougal, WA 98671	Agricultural
RR ROW	BNSF	Railroad
HWY 14 ROW	WSDOT	Highway



U:\GIS\GIS\Projects\211xx\211841.03_SteigerwaldLakeRestoration\mxd\NSA_Application.mxd (rev. 6/24/2016)

SOURCE: LCEP, 2013; Clark County
Service Layer Credits: ESRI 2013



USFW Service
Test Pit Site Plan
Steigerwald Restoration
Washougal, Washington