

## Vegetation, Wildlife & Fish Resources I-5/I-205 Salmon Creek Interchange Project Potential Mitigation Sites

Technical Memorandum
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Date: July 30, 2008

### Introduction

This technical memo describes the vegetation, wildlife and fish resources that exist today at the potential wetland mitigation sites for the Salmon Creek Interchange Project (SCIP). In addition, this memo evaluates what effects the creation/restoration of wetlands on these sites could have on plant and animal populations and their required habitats.

The proposed Salmon Creek Interchange Project is located north of Vancouver, Washington, in unincorporated Clark County, and is a partnership between the Washington State Department of Transportation (WSDOT) and Clark County Public Works. The SCIP proposes to construct a new full interchange at the junction of Interstate-5 (I-5) and NE 139th Street, redesign access to Interstate-205 southbound (I-205) from NE 134<sup>th</sup> Street, and other related transportation system improvements to ease congestion, bring the transportation facilities into compliance with state and local standards, and improve safety. Completion of the project would permanently affect approximately 4.72 acres of wetlands and 6.69 acres of wetland buffer, thereby prescribing the need for wetland mitigation. Wetland mitigation for the project will:

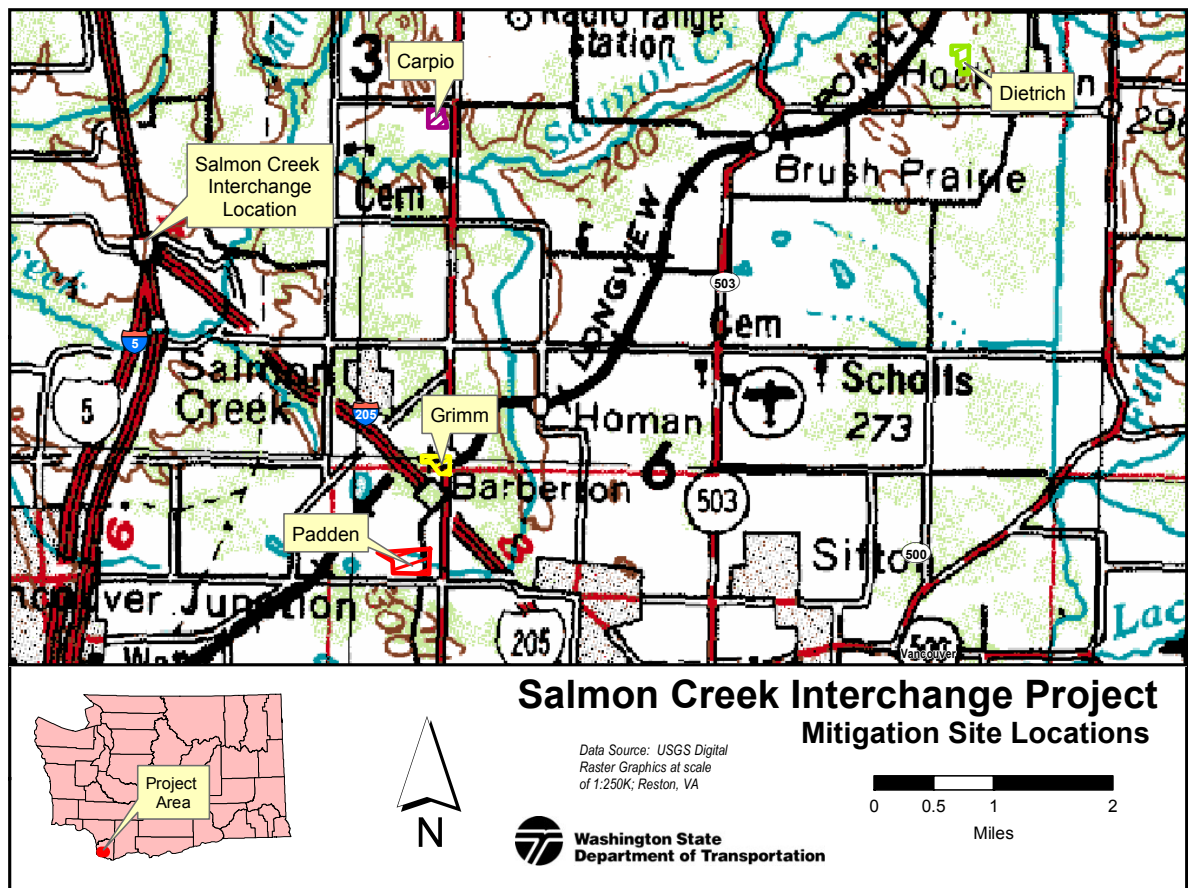
- Use a combination of wetland preservation, wetland rehabilitation, wetland enhancement, and wetland creation to replace wetlands and wetland functions negatively affected within the project area.
- Follow relevant guidelines provided by the Department of Ecology, the U.S. Army Corps of Engineers, Clark County, and WSDOT.
- Implement wetland mitigation in the Salmon Creek watershed.
- Consolidate small impacts from throughout the project area into four proposed wetland mitigation sites located to maximize environmental benefits, including replacing and increasing flood storage potential, providing groundwater recharge opportunities, improving water quality, and expanding wetland wildlife habitat.

Mitigation ratios will depend on the final sites chosen and will be a combination of several mitigation scenarios. Ratios will be based on the Washington State Department of Ecology (DOE) (Granger et al., 2005) and Clark County (Clark County, 2006) requirements, which are analogous.

In addition, buffers surrounding the mitigation sites will be required. These buffers can also serve as wetland buffer mitigation areas as required by Clark County, as wetland buffer impacts will also require mitigation at a minimum 1:1 creation ratio.

Four potential mitigation sites have been proposed totaling approximately 54 acres in size and all are located in Clark County. The legal locations (See Figure 1: Vicinity Map), existing site conditions, and proposed mitigation of the sites are as follows:

**Figure 1: Vicinity Map**



**1. Grimm:** NE ¼ of Section 6, Township 2N, Range 2 E, W.M

**Acres** – Approximately 13.6 acres. Current ownership: Clark County

**Existing Structures** – There are no existing structures within the County-owned mitigation area. A Clark Public Utilities substation is adjacent to the property to the east along NE 72<sup>nd</sup> Ave.

**Description** – The Grimm wetland mitigation site is a nearly level section of land between NE 72<sup>nd</sup> Ave. and I-205 in south central Clark County. Much of the site supports existing degraded emergent wetlands dominated by reed canarygrass and Douglas spirea. An area of higher quality forested

wetland is located at the western edge of the property, although most of this system extends onto private property or WSDOT right-of-way. Because no streams are found within or adjacent to the site, no obvious natural connection to other water bodies is apparent. However, it is believed that the existing wetlands on site are hydrologically connected to Curtin Creek, which is located approximately 0.6 miles to the east. The wetland mitigation site is connected to Curtin Creek by multiple cross-culverts and a stormwater drainage system through private urban development and under the NE 72<sup>nd</sup> Ave. transportation corridor. The existing upland area is dominated by non-native pasture grasses and small shrubs.

The proposed mitigation work would create approximately 3.7 acres of wetland on a small rise (18” – 24” above the surrounding wetland) that passes through the property by excavating to the level of the existing wetland on either side. Other portions of the site would be graded to enhance water quality, water storage, and habitat functions. The creation and enhancement work would form a continuous wetland across the site, provide a greater variety of hydrologic regimes, and more diverse plant communities. It is anticipated that the site, like several of the surrounding wetlands, would be planted with primarily scrub shrub and emergent wetland vegetation, with pockets of forested wetland to add vertical structure and wildlife habitat

**2. Padden:** SE ¼ of Section 6, Township 2N, Range 2 E, W.M

**Acres** – Approximately 10.5 acres. Current ownership: Clark County

**Existing structures** – There are no existing structures within the County-owned mitigation area.

**Description** – The Padden wetland mitigation site is a level, triangular shaped parcel bounded by the Padden Expressway on the north, Northeast Andresen Road on the east, 78<sup>th</sup> St on the south, and an existing Clark County wetland mitigation site to the west. The site is in the middle of a developing urban commercial center that includes Costco, Home Depot, and other retailers, and the high speed Padden Expressway. The portion of the site useable for mitigation is entirely degraded emergent wetlands that form part of the headwaters of Curtin Creek. The site is currently dominated by reed canarygrass with small stands of Douglas spirea, cluster rose, and isolated willow species that appear to correlate with the existing hydrologic regime. Most of the area is inundated to various depths throughout much of the winter and spring. Flows move to the southeast via a ditch and culvert system under NE Andresen Road into the Curtin Creek drainage. There is a documented fish barrier downstream where Curtin Creek crosses under I-205. The adjacent county mitigation site to the west was developed to offset impacts to wetlands as part of the Padden Expressway project. Negative impacts to the existing mitigation site are not anticipated as part of the current mitigation effort.

The proposed mitigation work would rehabilitate approximately 6 acres of headwater wetlands of Curtin Creek. The site would be excavated to provide longer duration inundation and more complex hydrologic regimes, and restore natural channel conditions. The wetland would be planted with primarily scrub shrub and emergent species to match surrounding wetlands. Mitigation activities at the Padden site may involve in-water work within Curtin Creek. If necessary, work below the Ordinary High Water Mark (OHWM) will occur during the in-water work period (July 1 to September 30) and the work area will be dewatered prior to conducting in-water work activities.



### **3. Carpio:** NE ¼ of Section 19, Township 3N, Range 2 E, W.M

***Acreage*** – Approximately 13 acres. Private ownership.

***Existing structures*** – There are no existing structures located within the area proposed for wetland mitigation. The larger Carpio parcel includes a home, barns, and other outbuildings, but they are not part of the mitigation proposal.

***Description*** – The Carpio wetland mitigation site is located in a rolling section of Clark County just north of Salmon Creek. The larger Carpio property borders NE 72<sup>nd</sup> Avenue to the east, but the area proposed for acquisition is set back from the road and is surrounded by low density residential development. The area proposed for mitigation is located on a low north-south ridge between two lobes of hydric soil. The eastern lobe contains a swale that carries seasonal flow to the south toward Salmon Creek. The western lobe contains a small Category 4 wetland dominated by reed canarygrass.

The proposed mitigation work would create approximately 7 acres of wetland within the larger 13 acre site. The remainder of the area would be graded and planted as upland buffer and provide screening between the wetland and surrounding development. Excavation between 4 and 10 feet is expected in order to reach an elevation suitable for wetland hydrology, which may include seasonal high flows from the swale to the east. The wetland would be planted to create a complex mosaic of plant communities and habitat types, and include a large forested component.

### **4. Dietrich:** SW ¼ of Section 13, Township 3N, Range 2 E, W.M

***Acreage*** – Approximately 17 acres. Private ownership.

***Existing structures*** – There are no existing structures located within the area proposed for wetland mitigation. The larger Dietrich complex of properties includes woodlots, agricultural fields, farm structures, wetlands, and home sites.

***Description*** – The Dietrich wetland mitigation site is located just west of the community of Hockinson in eastern Clark County along NE 159<sup>th</sup> Street. The area proposed for acquisition is set back from all county roads and is surrounded by pastures, existing wetlands, woodlots, and a small amount of rural residential development. A large Category 1 wetland complex is adjacent to the proposed area to the east that includes a significant stand of mature Oregon ash forest. Surface and groundwater from the site is currently collected by a drain tile system that discharges to the west into an unnamed tributary to Salmon Creek.

The proposed mitigation work would create approximately 8.6 acres of wetland within the larger 17 acre site. Hydrology would be provided by high seasonal groundwater (the site is all within a mapped hydric soil unit) and a surface water connection with the large wetland to the east. Excavation between 2 and 6 feet is expected in order to reach an elevation suitable for wetland hydrology. The site would continue to drain to the west into the existing connection to the Salmon Creek watershed. The wetland would be graded and planted to create an Oregon ash-dominated wetland system designed to match the adjacent category 1 system adjacent to the east.



## Affected Environment

Biologists used existing information to identify known/documented vegetation, wildlife and fish/aquatic resources of value within the study area, and to identify where there may be knowledge gaps or incomplete information. Sources of existing information consulted for preparation of this technical memo include the WDNR Natural Heritage Program Plant Heritage of Washington, Current and Historic (WDNR, 2007), the WDFW Priority Habitats and Species (PHS) database (WDFW, 2008a), WDFW Washington Lakes and Rivers Information System (WLRIS) database (WDFW, 2008b), Salmon and Steelhead Habitat Inventory and Assessment Program (WDFW, 2002), and aerial photos. Additionally, biologists performed site visits to document the site conditions at Grimm and Padden on May 29, Carpio on May 31 and Dietrich on June 1, 2007.

### Vegetation

Based on collected and compiled information regarding cover types, plant community composition, and current/historic species occurrences, biologists identified a list of state priority rare plant species and federal threatened and endangered plant species that could potentially occur within the study area. This information is summarized in Table 1.

**Table 1. Rare plant species that could potentially occur at the proposed mitigation areas**

Species	Common Name	Federal Status	State Status
<i>Carex densa</i>	Dense sedge	None	Threatened
<b><i>Castilleja levisecta</i></b>	Golden paintbrush	Threatened	Endangered
<i>Cimicifuga elata</i> var. <i>elata</i>	Tall bugbane	Species of Concern	Sensitive
<i>Eryngium petiolatum</i>	Oregon Coyote-thistle	None	Threatened
<i>Euonymus occidentalis</i>	Western wahoo	None	Threatened
<b><i>Howellia aquatilis</i></b>	Water howellia	Threatened	Threatened
<i>Isoetes nuttallii</i>	Nuttall's Quillwort	None	Sensitive
<i>Lasthenia glaberrima</i>	Smooth Goldfields	None	Endangered
<i>Lathyrus torreyi</i>	Torrey's peavine	Species of Concern	Threatened
<b><i>Lomatium bradshawii</i></b>	Bradshaw's desert-parsley	Endangered	Endangered
<i>Montia diffusa</i>	Branching montia	None	Sensitive
<i>Oxalis suksdorfii</i>	Western yellow oxalis	None	Threatened
<i>Perideridia oregana</i>	Oregon yampah	None	Potential Concern
<i>Polemonium carneum</i>	Great polemonium	None	Threatened
	Hairy stemmed Checker-	None	Endangered
<i>Sidalcea hirtipes</i>	mallow		
<i>Spiranthes porrifolia</i>	Western ladies-tresses	None	Sensitive
<i>Symphyotrichum hallii</i>	Hall's aster	None	Threatened
<i>Trillium parviflorum</i>	Small-flowered trillium	None	Sensitive
<i>Wolffia columbiana</i>	Columbia water-meal	None	Potential Concern

**BOLD** = Federally listed species

In order to conduct plant surveys during the appropriate flowering timeframe to determine if state priority rare plant species or federally-listed plant species were present in the project footprint WSDOT utilized the information presented in Table 2. The rare plant species list is inclusive of all



sites, however habitat for each species listed was not present at every site. WSDOT biologists identified plant species found within the proposed mitigation areas during site visits conducted May 29-June 1, 2007. All plant species observed during the site visits were documented (*See Attachment A: Vegetation Survey Results*). WSDOT did not observe any of the species listed in Table 2.

Due to the disturbed nature of the study areas, there is limited habitat for these species. The proposed mitigation projects are not anticipated to impact any rare or federally listed plant species.

## **Fish and Aquatic Resources**

Biologists used existing information to identify fish-bearing waterbodies in the vicinity of the proposed mitigation sites and fish species that may be present in these waterbodies. Biologists coupled this information with observations made in the field. The mitigation sites are all located within Water Resources Inventory Area (WRIA) 28 – Salmon-Washougal, and 6<sup>th</sup> Field HUC 170800010901 (Vancouver), with the southwestern half of the Dietrich site occurring in 170800010606 (Lacamas Creek).

All proposed mitigation sites occur within the range of three listed Evolutionary Significant Units (ESUs) and one listed distinct population segment (DPS) of salmonids under the jurisdiction of NOAA's National Marine Fisheries Service (NMFS). These are: Lower Columbia River (LCR) Chinook, LCR Coho, Columbia River (CR) chum, and LCR steelhead.

A small unnamed tributary to Salmon Creek flows through the eastern edge of the Carpio property. The tributary flows from north to south and joins Salmon Creek approximately 1700 feet south of the property. Surface and groundwater from the Dietrich site outfalls to a Salmon Creek tributary west of the property. Salmon Creek is a tributary to Lake River. In addition, headwater wetlands to Curtin Creek occur on the Padden and Grimm properties. Curtin Creek flows from south to north and joins Salmon Creek more than 3 miles from the Padden site.

No listed salmonids and no resident fish are documented to occur within the unnamed tributary on the Carpio site. Curtin Creek has documented resident coastal cutthroat trout and is presumed to contain migratory coho and winter steelhead. However, the Padden site is located upstream of a fish passage barrier associated with the culvert under I-205. No critical habitat has been designated in the unnamed tributary, Curtin Creek or Salmon Creek in the vicinity of the mitigation sites. The Carpio and Padden mitigation sites contain Essential Fish Habitat (EFH) for Chinook and coho of the Pacific salmon fishery.

Portions of the watershed are substantially degraded as a result of current and historic land use practices. Based on pre-existing information and surveys conducted in support of the project, WSDOT has concluded that the on-site tributaries lack the minimum physical habitat requirements or accessibility necessary for fish use.

## **Wildlife**

Biologists used existing information to identify known/documented wildlife resources, and to identify where and how the proposed work at the mitigation sites might result in direct or indirect impacts to species, populations or their required habitats. Biologists coupled this information with observations made in the field.



**Table 2. Blooming periods for rare plants potentially present in the project areas.**

Plant Name	March	April	May	June	July	August	September	October
<i>Carex densa</i>								
<i>Castelleja levisecta</i>								
<i>Cimicifuga elata var. elata</i>								
<i>Eryngium petiolatum</i>								
<i>Euonymus occidentalis</i>								
<i>Howellia aquatilis</i>								
<i>Isoetes nuttallii</i>								
<i>Lasthenia glaberrima</i>								
<i>Lathyrus torreyi</i>								
<i>Lomatium bradshawii</i>								
<i>Montia diffusa</i>								
<i>Oxalis suksdorfii</i>								
<i>Perideridia oregana</i>								
<i>Polemonium carneum</i>								
<i>Sidalcea hirtipes</i>								
<i>Spiranthes porrifolia</i>								
<i>Symphyotrichum hallii</i>								
<i>Trillium parviflorum</i>								
<i>Wolffia columbiana</i>								
	Historical detections (Dietrich and Carpio-entire site)							
	Recent detections in project vicinity (Carpio-NE corner of property)							



The proposed Padden mitigation site has been identified by WDFW as a priority habitat with a 150 foot buffer. This habitat is defined as a wetland complex associated with Curtin Creek headwaters. The Vancouver Audobon Society has documented over 38 species of birds, including red-winged blackbirds, great blue heron and nesting waterfowl. Additionally, Clark County has identified the entire site as a Non-Riparian Habitat Conservation Area, under the Clark County Habitat Conservation Ordinance (CCC, Chapter 40.440). Non-Riparian Habitat Conservation Areas are identified by and consistent with WDFW priority habitats and species criteria.

Clark County has identified the unnamed tributary on the Carpio property as a Riparian Habitat Conservation Area, under the CCC, Chapter 40.440. Riparian Priority Habitat Areas extend outward on each side of the stream from the ordinary high water mark to the edge of the one hundred (100) year floodplain, or the following distances, if greater:

- (1) DNR Type S waters, two hundred fifty (250) feet;
- (2) DNR Type F waters, two hundred (200) feet;
- (3) DNR Type Np waters, one hundred (100) feet;
- (4) DNR Type Ns waters, seventy-five (75) feet.

This tributary has been identified as a Type F Water as defined in WAC 222-16-030, where Type F streams have fish habitat or potential habitat likely to be used by fish. Due to the disturbances on site, this riparian habitat area has not been maintained.

Lastly, a Riparian Habitat Conservation Area has been identified by the Clark County on the Grimm mitigation site. This area is associated with an isolated pond as no obvious natural connection to other water bodies is apparent or documented. Therefore, no DNR water type has been assigned.

Due to the developed nature of the mitigation site locations, all wildlife species that inhabit the study areas are likely habituated to human disturbance and are tolerant of a certain degree of noise and visual disturbance. Habitats in the study areas may be utilized by wildlife such as raccoon, deer, rabbit, skunk, coyote, garter snake, bull frog, opossum, and assorted bird species. During the field visit, WSDOT biologists observed a few songbird species as well as presence of small mammals and deer tracks, yet determined that habitat does not exist within the project areas to support any federally or state listed endangered or threatened species.

## Potential Project Impacts

### Vegetation

The project will temporarily effect the vegetation on-site, as the sites will be excavated and graded for wetland creation/restoration. The majority of these proposed sites will be disturbed, although forested areas will be avoided. The vegetation that will be impacted is vegetation that is associated with highly disturbed areas and is primarily weedy or invasive species. No trees will be removed. Planting plans for these mitigation sites are currently in development, and include emergent and scrub-shrub wetland communities. Project activities propose to improve the riparian habitat and adjacent areas by removing invasives and planting native riparian species. No documented federal or state listed threatened, endangered, or rare plant species will be impacted by the project.



## **Fish and Aquatic Resources**

Vegetation removal and soil disturbance associated with the project may cause a temporary, short-term increase in erosion potential which can result in increased stream turbidity and sedimentation. Increased turbidity will not interrupt fish foraging activities, movement, and spawning due to the distance to any areas of documented fish presence. Construction of the mitigation sites will not require in water work where documented resident and listed fish species are present. Additionally, minimization measures will be implemented to avoid or minimize habitat impacts. The project will implement a TESC plan and SPCC plan to prevent any adverse impacts to aquatic habitat.

## **Wildlife**

Temporary construction related visual impacts (increased vehicle/equipment/foot traffic and movement) would affect the project sites and surrounding areas and could affect common wildlife species present in the study areas. Construction lighting used at night may disturb wildlife (feeding, movement) especially nocturnal animals. Construction of the projects will result in temporary increases in noise which could affect common wildlife species present in the study areas. There are no known ESA-listed or priority wildlife species located within the mitigation areas that may experience increased noise.



## References

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