



**172nd / 190th  
Corridor Plan**

**Technical Memorandum #5.5: Biological Resources Baseline Conditions  
Clackamas County, Oregon**

*Prepared for:*



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## EXECUTIVE SUMMARY

### 1.0 INTRODUCTION

The purpose of this technical memorandum is to document biological resources within the 172<sup>nd</sup>/190<sup>th</sup> Corridor Plan Project Study Area (PSA) identified during field surveys for three proposed roadway improvement alternatives associated with the project. This information will be used by the project team to guide the development of future roadway improvements in the PSA by minimizing and/or avoiding adverse impacts to natural resources to the extent possible.

#### 1.1 PROJECT PURPOSE

The purpose of this project is to effectively address the 172<sup>nd</sup>-190<sup>th</sup> corridor congestion and safety problems, serve future north-south traffic, serve expected population growth in Damascus, Happy Valley, the Pleasant Valley Plan Area and Gresham, and to serve the growing demand for regional travel.

#### 1.2 PROJECT DESCRIPTION

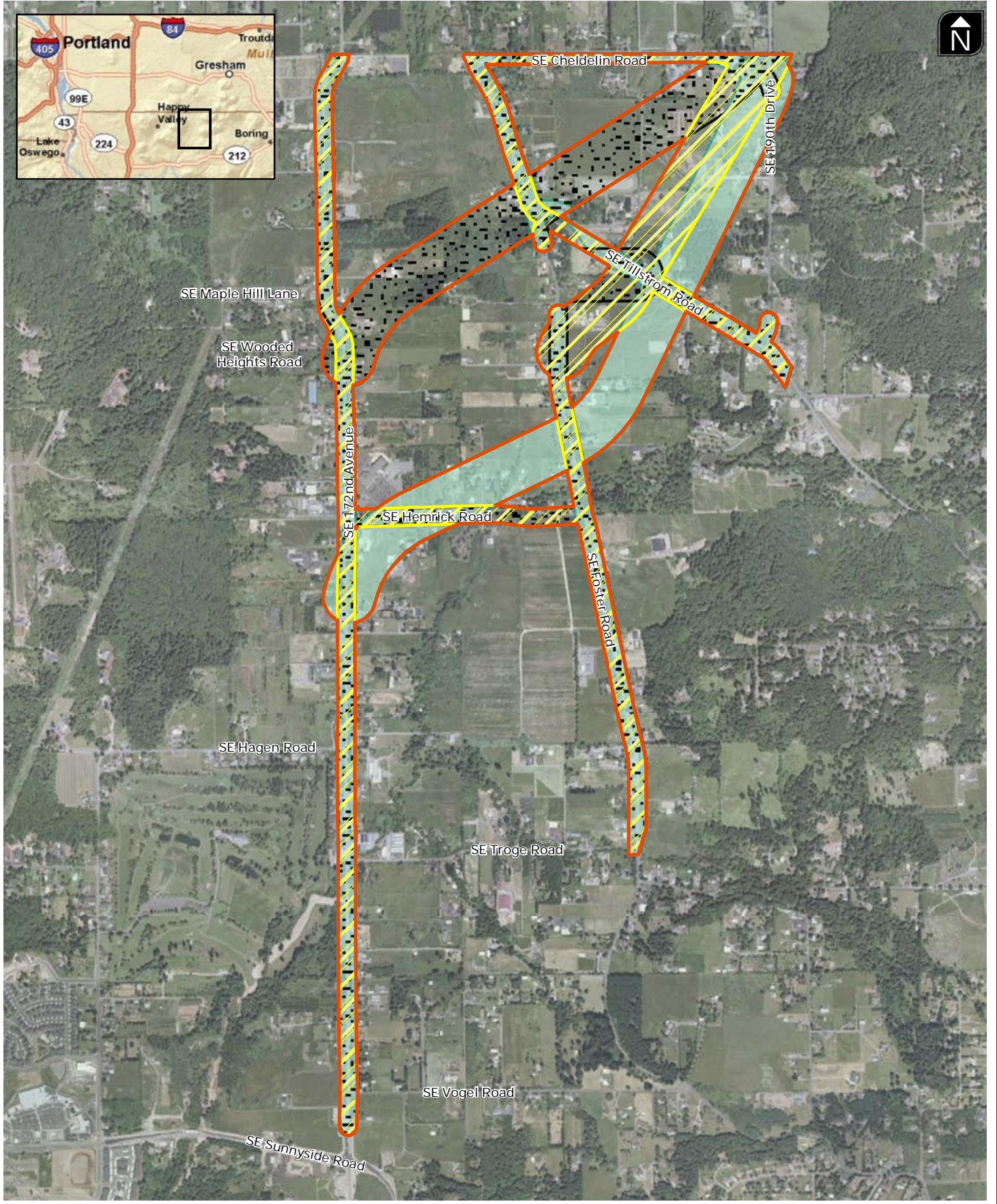
The proposed project includes developing and evaluating roadway improvement alternatives for the SE 172<sup>nd</sup> Avenue corridor from SE Sunnyside Road to the Multnomah County line as well as developing and evaluating design alternatives for a potential new major arterial between SE 172<sup>nd</sup> and SE 190<sup>th</sup> Drive near the county line.

The area around the 172<sup>nd</sup>/190<sup>th</sup> Corridor Plan PSA was recently added to the Portland Metropolitan Urban Growth Boundary (part in 1998 and the remainder in 2002) and is planned for urban development at an average density of at least 10 units per net buildable acre for the residential areas. There are also planned commercial and employment areas within the City of Damascus. Some of this development has already begun to occur. Existing conditions along SE 172<sup>nd</sup> Avenue and SE 190<sup>th</sup> Drive lack the needed continuity and capacity to serve future traffic demand created by anticipated urban growth. There are limited locations where this type of connection/facility can occur due to topographic constraints and existing urban buildout. In addition, planning efforts reveal that there are no other physically viable, cost-effective north-south routes in this portion of Clackamas County.

#### 1.3 PROJECT STUDY AREA – ROADWAY ALTERNATIVES

The original PSA for the project discussed in Technical Report 5.1 included all land within the 18 potential alternatives that were originally considered for the project. A revised PSA (hereafter referred to as PSA) has been developed to identify three potential roadway alignments that may be improved during implementation of the proposed 172<sup>nd</sup>/190<sup>th</sup> Corridor Plan project. This PSA has been refined based on the results of the design team's roadway infrastructure improvement alternatives screening process (Figure 5.5-1).

Alternative AT-02 travels north from SE Sunnyside Road along SE 172<sup>nd</sup> Avenue, turning northeast at SE Wooded Heights Road and intersects with SE 190<sup>th</sup> Drive at the Multnomah County line.



SE Maple Hill Lane

SE Wooded Heights Road

SE 172nd Avenue

SE Hemrick Road

SE Cheldelin Road

SE 190th Drive

SE Tillstrom Road





SE Foster Road

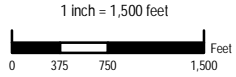
SE Hagen Road

SE Troge Road

SE Vogel Road

SE Sunnyside Road

-  Project Study Area (PSA) - 334.3 acres
-  Alternative AT-06\*
-  Alternative AT-02\*
-  Alternative AS-10a\*



Source: Aerial photo, NAIP 2009. Project Study Area from OTAK. Inset map from ESRI.  
 \*Alternatives shown have been clipped to Project Study Area.



This product is for information purposes only and may not be suitable for legal, engineering or surveying purposes. This information or data is provided with the understanding that conclusions drawn from such information are the responsibility of the user.

Figure 5.5-1  
 Project Location & Vicinity Map  
 172nd/190th Corridor Plan  
 Clackamas County, Oregon

Alternative AT-06 extends north from SE Sunnyside Road along SE 172<sup>nd</sup> Avenue, turning northeast just south of SE Hemrick Road, crossing SE Foster Road and SE Tillstrom Road before turning north at the intersection with SE 190<sup>th</sup> Drive just south of the Multnomah County line.

Alternative AS-10a extends north from SE Sunnyside Road along SE 172<sup>nd</sup> Avenue to the Multnomah County line. Another section travels northeast from SE Foster Road approximately 1,700 feet north of SE Hemrick Road, crossing SE Tillstrom Road and connecting to SE 190<sup>th</sup> Drive at SE Cheldelin Road.

The PSA is a single composite of potential impact areas for all three alternatives. It extends north from SE Sunnyside Road along SE 172<sup>nd</sup> Avenue to the Multnomah County line and along SE Cheldelin Road between SE Foster Road and SE 190<sup>th</sup> Drive. The PSA also extends to the east along SE Hemrick Road to SE Foster Road. The PSA encompasses portions of SE Foster Road, SE Tillstrom Road, and SE 190<sup>th</sup> Drive (Figure 5.5-1). The PSA includes a 200-foot buffer from the centerline of existing roadways and a 600-foot buffer from the approximated centerline of proposed new roadways.

#### 1.4 LANDSCAPE SETTING AND LAND USE

The PSA is located near the western foothills of the Cascade Range in Oregon at the northern end of the Willamette Valley Physiographic province. The PSA is located at the eastern edge of the Portland metropolitan area within the urban growth boundaries of Damascus, Gresham and Happy Valley and within unincorporated Clackamas County.

The majority of the PSA has been disturbed and includes zoned residential, rural, and agricultural areas. The PSA is mostly comprised of single family homes and small farms consisting of agriculture and/or livestock uses. Most of the farms are smaller than 20 acres in size. Alfalfa and hay fields dominate the agricultural uses; cattle, horses, sheep, and chickens are the predominant livestock within the PSA. In addition, several ornamental plant nurseries are also located within the PSA. The most developed areas within the PSA are located along SE 172<sup>nd</sup> Avenue and include Pleasant Valley Greenhouses, Scouters Mountain Elementary School and Abundant Life Church.

Multiple arterial roads including SE 172<sup>nd</sup> Avenue and SE Foster Road, and many tertiary roadways are located within the PSA. No roads wider than two lanes are located within the PSA. There are currently no passing lanes or turn lanes, and all roads lack sidewalks or bicycle lanes.

Some forested areas remain within the PSA; however, these areas are relatively small and isolated. The largest contiguous forest within the PSA is located within the 600 foot buffer of Alternative AT-02 between SE 172<sup>nd</sup> Avenue and SE Foster Road. This forested area is a second-growth, mixed conifer-deciduous forest.

Rock Creek and a number of its tributaries flow through the PSA. The southern and central portions of the PSA are located within the Clackamas River – Rock Creek Watershed (170900110607 6<sup>th</sup> field hydrologic unit code [HUC]) and the northern portion of the PSA is located within the Upper Johnson Creek Watershed (170900120101 6<sup>th</sup> field HUC), both of which eventually drain to the Willamette River. Rock Creek, the main waterway within the PSA, is a perennial, second order tributary of the Clackamas River. Rock Creek has a watershed of approximately 12 square miles. Rock Creek's headwaters are located on the northeast slope of a small butte near SE Borges Road, east of the PSA, at approximately 700 feet above mean sea

level (msl). Rock Creek discharges into the Clackamas River just south of Highway 212, approximately 1.5 miles southwest of the PSA (USGS 1984).

## 2.0 METHODS

The following sections of this report summarize the primary biological resources and potential impacts identified during an office-based review and subsequent field reconnaissance of the PSA by Mason, Bruce, and Girard, Inc. (MB&G).

The best available published resources were used to determine the potential presence of sensitive fish, wildlife and plant species within the PSA during the office-based review:

- U.S. Fish and Wildlife Service (USFWS) list of federally listed, proposed, candidate species and species of concern which may occur in Clackamas County (USFWS 2010a);
- A project-specific Oregon Biodiversity Information Center (ORBIC) database search (ORBIC 2010);
- The Element of Occurrence Record for sensitive species and wildlife list for the Clackamas River – Rock Creek Watershed and the Upper Johnson Creek Watershed (OSU 2010);
- A StreamNet database search (StreamNet 2010);
- The Oregon Department of Agriculture (Currin pers. comm. 2009) list of state-listed threatened or endangered plant species which may occur in Clackamas County;
- An interview with Lori Hennings, Senior Natural Resource Scientist at Metro, to obtain PSA-specific biological information (Hennings pers. comm. 2010).

General fish and wildlife habitat information was also reviewed prior to fieldwork in order to analyze areas that may be impacted by the three remaining roadway alternatives. The O’Neil and Johnson Wildlife – Habitat Relationships in Oregon and Washington (O’Neil and Johnson 2001) were used to classify wildlife habitat types within the PSA based on aerial photographs and photographs taken within the PSA by the project team. Wildlife-habitat community polygons were mapped within the PSA at a 1:10,000 scale which provided a broad-scale habitat analysis. The minimum mapping unit for analysis was 2 acres. Wildlife-habitat communities within the PSA were qualified based on abundance (number of acres), diversity of native species, presence of noxious weeds, and human-related disturbance within the community.

Wildlife corridors were digitized in Geographic Information Systems (GIS) based on the Green Systems – Habitat Connections map provided in the Draft Damascus/Boring Concept Plan (Damascus/Boring 2010). Regionally significant fish and wildlife habitat (Class I and II riparian areas) data was provided by Metro, the local regional government for Clackamas, Multnomah, and Washington Counties (Metro 2010). The Damascus Natural Features Inventory, Natural Resources Report was also evaluated to identify potential wildlife habitat for the portions of the Rock Creek watershed within the PSA (Winterbrook Planning 2007).

MB&G biologists conducted field reconnaissance on April 18<sup>th</sup> and 20<sup>th</sup>-22<sup>nd</sup>, 2011 to further guide the selection process for the three proposed roadway alternatives. The main goals of the field reconnaissance were to assess general habitat conditions for sensitive fish, wildlife and botanical species; to assess dominant vegetation assemblages, including noxious weed species observed; and to observe general land use conditions affecting natural resources. Particular attention was paid during the field reconnaissance to streams and the surrounding habitats within the PSA. Vegetation community and habitat type boundaries originally digitized during the

office-based review process were refined during the field reconnaissance to approximate their location in relation to the proposed project alternatives. All botanical and wildlife species or their habitats that were identified as potentially occurring within the PSA during the office-based review of published resources were surveyed during the field reconnaissance. Fish surveys were not conducted during this field reconnaissance; MB&G biologists relied on data previously collected by the Oregon Department of Fish and Wildlife (ODFW) (ODFW 1999, 2003).

Multiple areas within the PSA were inaccessible to MB&G due to lack of Right-of-Entry from private landowners. Alternative AT-02 had approximately 42%, Alternative AT-06 had 46%, and Alternative AS-10a had 44% Right-of-Entry from landowners. These percentages do not include field reconnaissance conducted from public road Rights-of-Way. In addition, MB&G biologists used accessible adjacent properties whenever possible to identify potential biological resources on the inaccessible lands; therefore, the actual area that MB&G surveyed during the field reconnaissance is greater than the land encompassed by properties that had granted Right-of-Entry. For lands within the PSA that were not accessible, could not be reviewed from public Right-of-Way, or were not adjacent to an accessible parcel, MB&G relied on existing environmental data that was included in Technical Memorandum 5.1.

After the field reconnaissance, MB&G analyzed collected data using ESRI ArcPad GIS software to determine the potential impacts for each alternative. The three proposed alternatives were reviewed for their ability to comply with state, federal, and local permitting processes as part of a “fatal flaw” analysis. A “fatal flaw” is defined for the purposes of this report as any action that would not likely be permitted by the state, federal, and local agencies or departments, based on MB&G best professional judgment.

### 3.0 BIOLOGICAL RESOURCES RESULTS

The following sections detail the results of the office-based review and field reconnaissance for botanical and wildlife species and their habitats within the PSA.

#### 3.1 BOTANICAL RESOURCES

Fifteen sensitive botanical species with the potential to occur within Clackamas County were identified during a records review of the data sources discussed in Section 2.0. Twelve of these sensitive botanical species have the potential to occur within the PSA. These twelve species are listed in Table 5.5-1 along with their preferred habitat and presence of mapped critical habitat, if applicable.

**Table 5.5-1. Sensitive Botanical Species Identified During Records Review of the 172<sup>nd</sup>/190<sup>th</sup> Corridor Plan PSA.**

Common Name	Scientific Name	Mapped Critical Habitat (Yes or No)	Preferred Habitat	Potential Habitat Present within PSA	Flowering Period	Federal Listing Status	State Listing Status	Source
Cold-water corydalis	<i>Corydalis aquae-gelidae</i>	No	Riparian habitats in closed canopy coniferous or deciduous forests, growing in or near cold flowing water on gravelly sand seeps and small streams. <sup>1</sup>	SE Hemrick Road tributary to Rock Creek and Rock Creek.	June—early September <sup>1</sup>	SOC	C	USFWS
Howell's daisy	<i>Erigeron howellii</i>	No	Often found in moist, rocky sites, on protected slopes within mixed coniferous forests. <sup>1</sup>	Westside Lowlands Conifer Hardwood Forest wildlife-habitat community <sup>2</sup> (see Section 3.2)	Early May—mid-July <sup>1</sup>	SOC	C	USFWS
Nelson's checkermallow	<i>Sidalcea nelsoniana</i>	No	Relatively open areas on damp soil, in meadows, wet prairie remnants, fencerows, roadsides, deciduous forest edges, occasionally Oregon ash wetlands. <sup>1</sup>	Multiple locations within PSA.	May—September <sup>1</sup>	T	T	USFWS, ODA
Pale blue-eyed grass	<i>Sisyrinchium sarmentosum</i>	No	Margins of wet meadows. <sup>3</sup>	Multiple locations within PSA.	June—July <sup>2</sup>	SOC	C	USFWS
Peacock larkspur	<i>Delphinium pavonaceum</i>	No	Dry roadsides, well-drained native prairie. <sup>1</sup>	Multiple locations within PSA.	Late April—early July <sup>1</sup>	SOC	E	USFWS, ODA
Tall bugbane	<i>Cimicifuga elata</i> var. <i>elata</i>	No	In or at margins of moist conifer forests or mixed conifer deciduous forests. <sup>1</sup>	Westside Lowlands Conifer Hardwood Forest wildlife-habitat community <sup>2</sup> (see Section 3.2)	Late May—early August <sup>4</sup>	N/A	C	ORBIC

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Common Name	Scientific Name	Mapped Critical Habitat (Yes or No)	Preferred Habitat	Potential Habitat Present within PSA	Flowering Period	Federal Listing Status	State Listing Status	Source
Thin-leaved peavine	<i>Lathyrus holochlorus</i>	No	Low elevation roadsides, fencerows, creek banks, forest edges, oak savannas, shrublands, and grasslands. <sup>1</sup>	Multiple locations within PSA.	May—July <sup>3</sup>	SOC	N/A	USFWS, ORBIC
Water howellia	<i>Howellia aquatilis</i>	No	Freshwater ponds, lakes, sloughs that may dry up by the end of summer. <sup>1</sup>	Large pond east of SE Foster Road, north of Natures Acres Boarding Kennels.	May—June (August) <sup>1</sup>	T	T	ODA
White rock larkspur	<i>Delphinium leucophaeum</i>	No	Dry bluffs and open ground, now restricted to ditches and fencerows; rocky basalt cliffs. <sup>1</sup>	Multiple locations within PSA.	Late May—early August <sup>1</sup>	SOC	E	USFWS, ODA
Whitetop aster	<i>Sericocarpus rigidus</i>	No	Low elevation, moist native prairies, on well-drained upland soils in oak savannas. <sup>1</sup>	No native prairies or oak savannas present within PSA.	July—early September <sup>1</sup>	SOC	T	USFWS, ODA
Willamette daisy	<i>Erigeron decumbens</i> var. <i>decumbens</i>	Yes (outside of PSA)	Native wetland and upland prairie, oak savanna, heavier soils, restricted to native prairie grassland. <sup>1</sup>	No native prairies or oak savannas present within PSA.	May—early August <sup>1</sup>	E	E	USFWS, ODA
Willamette Valley larkspur	<i>Delphinium oregonum</i>	No	At low elevations in Willamette Valley; most commonly found in wet prairies with shrubby or Oregon ash overstory; also roadsides, fencerows, dry oak woodlands, open hillsides, and well-drained native prairies. <sup>1</sup>	Multiple locations within PSA.	May—July <sup>1</sup>	SOC	C	USFWS

E= Listed Endangered; T= Listed Threatened SOC= Species of Concern SC= Sensitive critical; SV= Sensitive vulnerable;

SU= undetermined status

<sup>1</sup> Oregon Flora Project 2010

<sup>2</sup> O’Neal and Johnson 2001

<sup>3</sup> Eastman 1990

<sup>4</sup> Washington Department of Natural Resources 2011

Most areas within the PSA experience land uses and contain disturbances to habitat that likely limit the ability for sensitive plants to be present (e.g., agricultural cultivation). However, with the exception of peacock larkspur (*Delphinium pavonaceum*), the field reconnaissance was performed outside of the flowering period for all the sensitive botanical species listed above; therefore, MB&G biologists were not able to positively determine whether several sensitive botanical species were present within the PSA.

During the field reconnaissance, MB&G biologists observed *Sidalcea* sp. growing along roadsides in the PSA (see Figure 5.5-2). However, MB&G biologists were not able to conclusively identify the plants because Nelson's checkermallow does not bloom until June or July and flowers are what distinguish this species from other *Sidalcea* species known to occur in this area (Eastman 1990). However, due to previous botanical surveys performed in the general vicinity of this project by the field personnel, it is very likely that the *Sidalcea* sp. observed is meadow checkerbloom (*Sidalcea campestris*), a relatively common species, and not the sensitive species Nelson's checkermallow (*Sidalcea nelsoniana*). Based upon MB&G's best professional judgment, the potential presence of sensitive botanical species does not constitute a fatal flaw in the alternative screening process at this time. Additional botanical surveys may be needed as refinement of the preferred Build Alternative occurs.

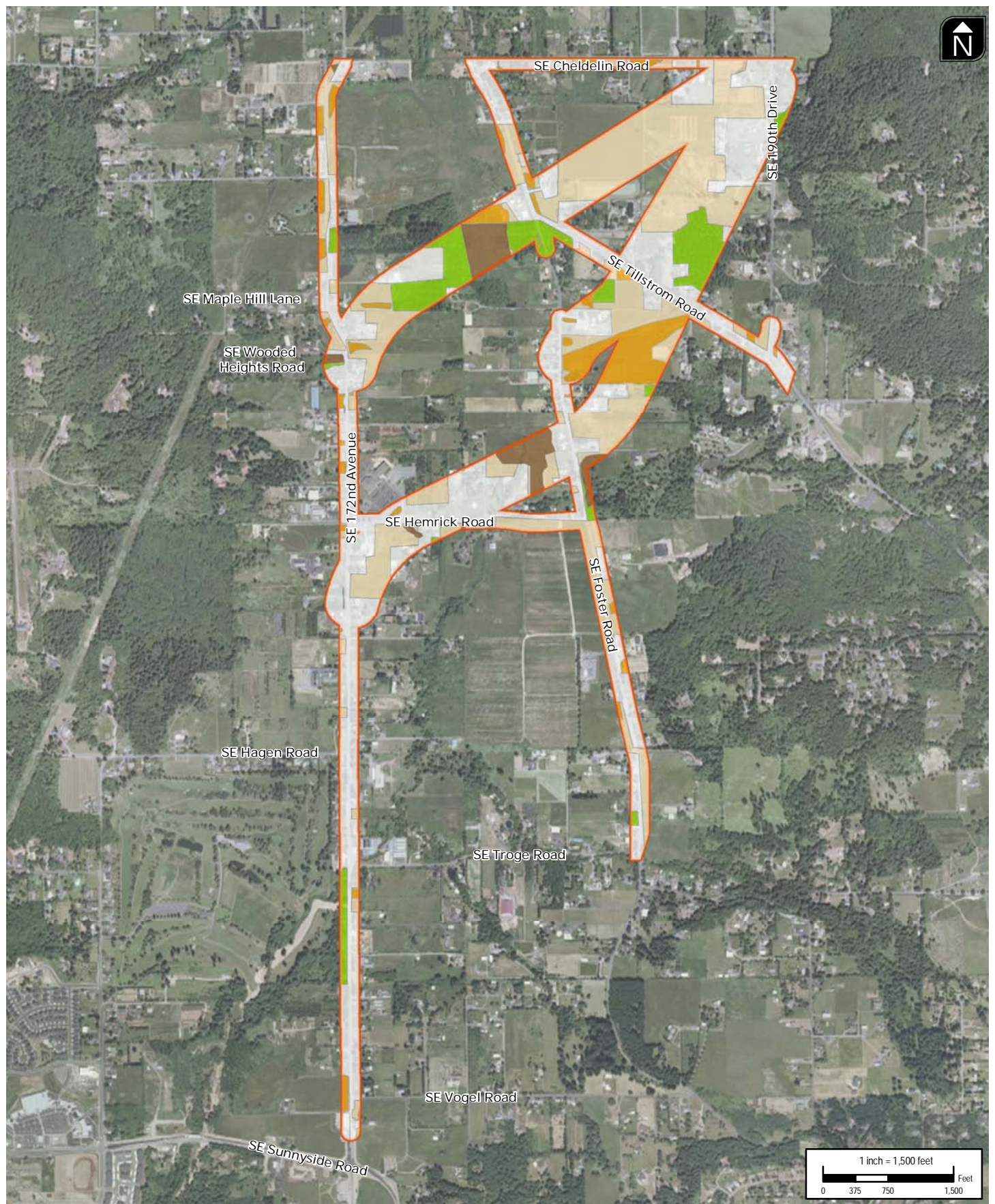
Several noxious weed species were identified throughout the PSA during the field reconnaissance. These include bull thistle (*Cirsium vulgare*), Canada thistle (*Cirsium arvense*), English holly (*Ilex aquifolium*), English ivy (*Hedera helix*), Himalayan blackberry (*Rubus armeniacus*), meadow knapweed (*Centaurea pratensis*), poison hemlock (*Conium maculatum*), Scotch broom (*Cytisus scoparius*), tansy ragwort (*Senecio jacobaea*), and yellow flag iris (*Iris pseudacorus*). Himalayan blackberry and English ivy were prevalent throughout the PSA.

### 3.2 WILDLIFE RESOURCES

The PSA contains five wildlife-habitat communities based on O'Neil and Johnson (2001) including (from most prevalent to least [percentages rounded to the nearest whole number]):

1. Urban and Mixed Environs, Low-Density Zone – 46%
2. Agriculture, Pastures, and Mixed Environs – 35%
3. Westside Lowlands Conifer-Hardwood Forest – 8%
4. Herbaceous Wetlands – 7%
5. Westside Riparian-Wetlands – 4%

The following is a description of each wildlife-habitat community based on O'Neil and Johnson (2001) (Figure 5.5-2), as well as the dominant vegetation present and wildlife species observed either directly or indirectly (e.g., tracks, scat, landowner anecdotal evidence, etc.) within the PSA. These descriptions do not list a complete inventory of plant or wildlife species within each wildlife-habitat community but are presented to convey the differences between the communities identified during the field reconnaissance.



Project Study Area (PSA) - 334.3 acres	Herbaceous Wetlands
Agriculture, Pasture and Mixed Environs	Westside Riparian Wetlands
Urban and Mixed Environs	Lakes, Rivers, Ponds/Reservoirs
Westside Lowlands Conifer Hardwood Forest	

Source: Aerial photo, NAIP 2009. Project Study Area from OTAK. Inset map from ESRI. Wildlife Habitat by MB&G

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Figure 5.5-2.  
Vegetation Communities Map  
172nd/190th Corridor Plan  
Clackamas County, Oregon

**The Urban and Mixed Environs, Low Density Zone** wildlife-habitat community encompasses approximately 47% of the PSA. It is located throughout the PSA; however, it is mainly concentrated adjacent to major roadways including SE 172<sup>nd</sup> Avenue and SE Foster Road. This wildlife-habitat community occurs at the “outer zone of the urban-rural continuum” (O’Neil and Johnson 2001). There is typically 10% to 20% impervious surface and low-density single-residence housing within this community and it includes roads, fences, houses, outbuildings. Low density urban areas are not considered high quality habitat for sensitive wildlife species due to the amount of human disturbance. Most native vegetation has been removed and little to no cover is available for migrating, foraging or nesting wildlife species. Dominant vegetation observed within this wildlife-habitat community consists of residential ornamental grass and shrub species. Common plants observed throughout this wildlife-habitat community include common dandelion (*Toraxacum officinale*), creeping buttercup (*Ranunculus repens*), meadow foxtail (*Alopecurus pratensis*) and tall fescue (*Schedonorus phoenix*). Wildlife species directly observed or that presented signs of use (e.g., scat and tracks) in this habitat community during the field reconnaissance include American crow (*Corvus brachyrhynchos*), American robin (*Turdus migratorius*), Anna’s hummingbird (*Calypte anna*), black-capped chickadee (*Poecile atricapillus*), European starling (*Sturnus vulgaris*), dark-eyed junco (*Junco hyemalis*), golden-crowned kinglet (*Regulus satrapa*), song sparrow (*Melospiza melodia*), western scrub jay (*Aphelocoma californica*), and white-crowned sparrow (*Zonotrichia leucophrys*). No direct or indirect observations of mammals, reptiles or amphibians were made within this wildlife-habitat community during the field reconnaissance.

**The Agriculture, Pastures and Mixed Environs** wildlife-habitat community encompasses approximately 35% of the PSA and includes a broad range of agricultural uses including mowed, hayed and grazed fields, row crops, orchards, vineyards, nurseries, and associated structures including fences, roadsides, field borders, barns, and silos. This wildlife-habitat community is not considered high quality habitat for sensitive wildlife species due to the amount of human disturbance. Although barns and other outbuildings potentially provide some roosting habitat for sensitive bat species, most native vegetation has been removed and little to no cover is available for other migrating, foraging or nesting wildlife species. In addition, there is potentially direct wildlife-human conflict (e.g., coyotes preying upon chickens) and competition for food resources with livestock. Dominate vegetation observed within this wildlife-habitat community includes bulbous bluegrass (*Poa bulbosa*), Canada thistle, common dandelion, common velvetgrass (*Holcus lanatus*), dovefoot geranium (*Geranium molle*), English hawthorn (*Crataegus monogyna*), hairy cat’s ear (*Hypochaeris radicata*), Himalayan blackberry, meadow foxtail, meadow knapweed, purple deadnettle (*Lamium purpureum*), tall fescue and tall tumbled mustard (*Sisymbrium altissimum*). Wildlife species directly observed or that presented signs of use (e.g., scat and tracks) in this habitat community during the field reconnaissance include American crow, American kestrel (*Falco sparverius*), American robin, Anna’s hummingbird, European starling, killdeer (*Charadrius vociferous*), red-tailed hawk (*Buteo jamaicensis*), turkey vulture (*Cathartes aura*), and sharp-shinned hawk (*Accipiter striatus*). No direct or indirect observations of mammals, reptiles or amphibians were made within this wildlife-habitat community during the field reconnaissance.

**The Westside Lowlands Conifer Hardwood Forest** wildlife-habitat community encompasses approximately 8% of the PSA and is characterized by Douglas-fir (*Pseudotsuga menziesii*)-dominated forest. In the vicinity of the PSA, timber harvest for lumber production is the primary forest disturbance. Within the PSA, this wildlife-habitat community is isolated and fragmented;

however, it provides habitat for forest-dwelling wildlife species and important cover for foraging, nesting and dispersal to surrounding forested areas outside the PSA. This wildlife-habitat community is considered valuable due to its high biodiversity and its rarity within the PSA. Dominant vegetation observed within this wildlife-habitat community includes black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), Douglas-fir, English holly, Himalayan blackberry, red alder (*Alnus rubra*), rose (*Rosa* sp.), salal (*Gaultheria shallon*), western brackenfern (*Pteridium aquilinum*) and western sword fern (*Polystichum munitum*). Wildlife species directly observed or that presented signs of use (e.g., scat and tracks) in this habitat community during the field reconnaissance include coyote (*Canis latrans*), deer (*Odocoileus* sp.), Northern flicker (*Colaptes auratus*), raccoon (*Procyon lotor*), red-tailed hawk and Steller's jay (*Cyanocitta stelleri*). No direct or indirect observations of reptiles or amphibians were made within this wildlife-habitat community during the field reconnaissance.

**The Herbaceous Wetlands** wildlife-habitat community encompasses approximately 7% of the PSA and includes emergent herbaceous plants that can be found in poorly-drained flats or depressions, often adjacent to stream channels or open water. Herbaceous wetlands are the second least common wildlife-habitat community within the PSA. Due to surrounding development, these wetlands provide important habitat for water-dependent wildlife species. Wetlands within the PSA are disturbed and contain weedy species; however, this wildlife-habitat community is considered valuable due to its rarity within the PSA and its overall ecological value. Dominant vegetation observed within this wildlife-habitat community includes colonial bentgrass (*Agrostis tenuis*), common rush (*Juncus effusus*), creeping buttercup, curly dock (*Rumex crispus*), meadow foxtail, reed canarygrass (*Phalaris arundinacea*) and water knotweed (*Polygonum amphibium*). Wildlife species and/or signs of their presence observed in this habitat community include beaver (*Castor canadensis*), Canada goose (*Branta canadensis*), mallard (*Anas platyrhynchos*), Pacific chorus frog (*Pseudacris regilla*), red-winged blackbird (*Agelaius phoeniceus*) and wood duck (*Aix sponsa*). No direct or indirect observations of reptiles were made within this wildlife-habitat community during the field reconnaissance.

**The Westside Riparian-Wetlands** wildlife-habitat community encompasses less than 4% of the PSA and can be characterized by tall, wet woodland or forest. For the purposes of this report, this wildlife-habitat community is synonymous with Palustrine Forested (PFO) wetland and is closely associated with Rock Creek and its tributaries. Westside riparian wetlands are the least common wildlife-habitat community within the PSA and provide important protection, foraging and nesting habitat for wildlife species. The occurrence of this wildlife-habitat community is considered valuable due to its rarity within the PSA and its overall ecological value. Dominant vegetation within this wildlife-habitat community includes black cottonwood, creeping buttercup, elderberry species (*Sambucus* sp.), Himalayan blackberry, western redcedar (*Thuja plicata*), Oregon ash (*Fraxinus latifolia*) reed canarygrass, sword fern, yellow-flag iris, and youth-on-age (*Tolmiea menziesii*). Wildlife species directly observed or that presented signs of use (e.g., scat and tracks) in this habitat community during the field reconnaissance includes Canada goose, dark-eyed junco, northern red-legged frog (*Rana aurora aurora*), Pacific chorus frog, red-winged blackbird, and song sparrow. No direct or indirect observations of mammals or reptiles were made within this wildlife-habitat community during the field reconnaissance.

Twenty-five sensitive wildlife species with the potential to occur within Clackamas County were identified during a records review of data sources discussed in Section 2.0. Twenty-four of these sensitive species have the potential to occur within the PSA. These 24 species are listed in Table

5.5-2 along with the presence of mapped critical habitat, the wildlife-habitat communities the species prefer that exist within the PSA (Figure 5.5-2) (O’Neil and Johnson 2001), and federal and state listing status.

**Table 5.5-2. Sensitive Wildlife Species Identified During Records Review of the 172<sup>nd</sup>/190<sup>th</sup> Corridor Plan PSA**

Common Name	Scientific Name	Mapped Critical Habitat (Yes or No)	Preferred Wildlife – Habitat Relationships Potentially Occurring within PSA <sup>1</sup>	Habitat Observed within PSA	Federal Listing Status	State Listing Status	Source
Acorn woodpecker	<i>Melanerpes formicivorus</i>	No	<ul style="list-style-type: none"> <li>•Urban and Mixed Environs</li> <li>•Requires park-like oak groves</li> </ul>	No	SOC	N/A	USFWS
Bald eagle	<i>Haliaeetus leucocephalus</i>	No	<ul style="list-style-type: none"> <li>•Westside Lowlands Conifer – Hardwood Forest</li> <li>•Open Water – Lakes, Rivers, and Streams</li> <li>•Agriculture, Pastures, and Mixed Environs</li> <li>•Urban and Mixed Environs</li> <li>•Herbaceous Wetlands</li> <li>•Westside Riparian – Wetlands</li> </ul>	Yes	Delisted	T	ORBIC
Camas pocket gopher	<i>Thomomys bulbivorus</i>	No	<ul style="list-style-type: none"> <li>•Agriculture, Pastures, and Mixed Environs</li> <li>•Urban and Mixed Environs</li> </ul>	Yes	SOC	N/A	USFWS
Cascades frog	<i>Rana cascadae</i>	No	<ul style="list-style-type: none"> <li>•Westside Lowlands Conifer – Hardwood Forest</li> <li>•Open Water – Lakes, Rivers, and Streams</li> <li>•Herbaceous Wetlands</li> <li>•Westside Riparian – Wetlands</li> <li>• Requires bogs or ponds with cold springs for breeding</li> </ul>	No	SOC	SV	USFWS
Coastal tailed frog	<i>Ascaphus truei</i>	No	<ul style="list-style-type: none"> <li>•Westside Riparian – Wetlands</li> <li>•Requires clear, old steep-gradient streams for breeding</li> </ul>	No	SOC	SV	USFWS
Fringed myotis bat	<i>Myotis thysanodes</i>	No	<ul style="list-style-type: none"> <li>•Westside Lowlands Conifer – Hardwood Forest</li> <li>•Open Water – Lakes, Rivers, and Streams</li> <li>•Agriculture, Pastures, and Mixed Environs</li> <li>•Urban and Mixed Environs</li> <li>•Herbaceous Wetlands</li> <li>•Westside Riparian – Wetlands</li> <li>•Requires outbuildings, caves, mines or rock crevices</li> </ul>	Yes	SOC	SV	USFWS ORBIC
Harlequin duck	<i>Histrionicus histrionicus</i>	No	<ul style="list-style-type: none"> <li>•Open Water – Lakes, Rivers, and Streams</li> <li>•Westside Riparian – Wetlands</li> </ul>	No	SOC	SU	USFWS

172<sup>nd</sup>/190<sup>th</sup> Corridor Plan  
 Technical Memorandum #5.5 Biological Resources Baseline Conditions

Common Name	Scientific Name	Mapped Critical Habitat (Yes or No)	Preferred Wildlife – Habitat Relationships Potentially Occurring within PSA <sup>1</sup>	Habitat Observed within PSA	Federal Listing Status	State Listing Status	Source
Larch Mountain salamander	<i>Plethodon larselli</i>	No	<ul style="list-style-type: none"> <li>•Westside Lowlands Conifer – Hardwood Forest</li> <li>•Requires mossy talus, logs, or woody debris</li> </ul>	No	SOC	SV	USFWS
Lewis' woodpecker	<i>Melanerpes lewis</i>	No	<ul style="list-style-type: none"> <li>•Agriculture, Pastures, and Mixed Environs</li> <li>•Urban and Mixed Environs</li> <li>•Westside Riparian – Wetlands</li> </ul>	Yes	SOC	SC	USFWS
Long-eared myotis bat	<i>Myotis evotis</i>	No	<ul style="list-style-type: none"> <li>•Westside Lowlands Conifer – Hardwood Forest</li> <li>•Open Water – Lakes, Rivers, and Streams</li> <li>•Agriculture, Pastures, and Mixed Environs</li> <li>•Urban and Mixed Environs</li> <li>•Herbaceous Wetlands</li> <li>•Westside Riparian – Wetlands</li> <li>•Uses caves, mines, hollow trees, loose bark or rock crevices</li> </ul>	Yes	SOC	N/A	USFWS ORBIC
Long-legged Myotis bat	<i>Myotis volans</i>	No	<ul style="list-style-type: none"> <li>•Westside Lowlands Conifer – Hardwood Forest</li> <li>•Open Water – Lakes, Rivers, and Streams</li> <li>•Agriculture, Pastures, and Mixed Environs</li> <li>•Urban and Mixed Environs</li> <li>•Herbaceous Wetlands</li> <li>•Westside Riparian – Wetlands</li> <li>•Uses caves or mines as hibernacula. Uses hollow trees, loose bark or rock crevices for maternity colonies</li> </ul>	No	SOC	SU	USFWS
Mountain quail	<i>Oreortyx pictus</i>	No	<ul style="list-style-type: none"> <li>•Westside Lowlands Conifer – Hardwood Forest</li> <li>•Agriculture, Pastures, and Mixed Environs</li> <li>•Urban and Mixed Environs</li> <li>•Westside Riparian – Wetlands</li> </ul>	Yes	SOC	SU	USFWS
Northern goshawk	<i>Accipiter gentilis</i>	No	<ul style="list-style-type: none"> <li>•Westside Lowlands Conifer – Hardwood Forest</li> <li>•Herbaceous Wetlands</li> <li>•Westside Riparian – Wetlands</li> </ul>	Yes	SOC	SC	USFWS

172<sup>nd</sup>/190<sup>th</sup> Corridor Plan  
 Technical Memorandum #5.5 Biological Resources Baseline Conditions

Common Name	Scientific Name	Mapped Critical Habitat (Yes or No)	Preferred Wildlife – Habitat Relationships Potentially Occurring within PSA <sup>1</sup>	Habitat Observed within PSA	Federal Listing Status	State Listing Status	Source
Northern Pacific pond turtle	<i>Actinemys marmorata marmorata</i>	No	<ul style="list-style-type: none"> <li>•Westside Lowlands Conifer – Hardwood Forest</li> <li>•Open Water – Lakes, Rivers, and Streams</li> <li>•Agriculture, Pastures, and Mixed Environs</li> <li>•Urban and Mixed Environs</li> <li>•Herbaceous Wetlands</li> <li>•Westside Riparian – Wetlands</li> </ul>	Yes	SOC	SC	USFWS
Northern red-legged frog	<i>Rana aurora aurora</i>	No	<ul style="list-style-type: none"> <li>•Westside Lowlands Conifer – Hardwood Forest</li> <li>•Open Water – Lakes, Rivers, and Streams</li> <li>•Agriculture, Pastures, and Mixed Environs</li> <li>•Urban and Mixed Environs</li> <li>•Herbaceous Wetlands</li> <li>•Westside Riparian – Wetlands</li> <li>•Requires cool-water ponds, lake edges or slow streams for breeding</li> </ul>	Yes	SOC	SV	USFWS ORBIC
Northern spotted owl	<i>Strix occidentalis caurina</i>	Yes (Outside of PSA)	<ul style="list-style-type: none"> <li>•Westside Lowlands Conifer – Hardwood Forest</li> </ul>	No	T	T	USFWS
Olive-sided flycatcher	<i>Contopus cooperi</i>	No	<ul style="list-style-type: none"> <li>•Westside Lowlands Conifer – Hardwood Forest</li> <li>•Westside Riparian – Wetlands</li> </ul>	Yes	SOC	SV	USFWS
Oregon slender salamander	<i>Batrachoseps wrighti</i>	No	<ul style="list-style-type: none"> <li>•Westside Lowlands Conifer – Hardwood Forest</li> <li>•Westside Riparian – Wetlands</li> <li>•Requires large logs, woody debris, or moist talus with woody debris</li> </ul>	No	SOC	SU	USFWS
Painted turtle	<i>Chrysemys picta</i>	No	<ul style="list-style-type: none"> <li>•Open Water – Lakes, Rivers, and Streams</li> <li>•Agriculture, Pastures, and Mixed Environs</li> <li>•Urban and Mixed Environs</li> <li>•Herbaceous Wetlands</li> <li>•Westside Riparian – Wetlands</li> </ul>	Yes	N/A	SC	ORBIC
Red tree vole	<i>Arborimus longicaudus</i>	No	<ul style="list-style-type: none"> <li>•Westside Lowlands Conifer – Hardwood Forest</li> <li>•Westside Riparian – Wetlands</li> </ul>	No	SOC	N/A	USFWS

172<sup>nd</sup>/190<sup>th</sup> Corridor Plan  
 Technical Memorandum #5.5 Biological Resources Baseline Conditions

Common Name	Scientific Name	Mapped Critical Habitat (Yes or No)	Preferred Wildlife – Habitat Relationships Potentially Occurring within PSA <sup>1</sup>	Habitat Observed within PSA	Federal Listing Status	State Listing Status	Source
Silver-haired bat	<i>Lasionycteris noctivagans</i>	No	<ul style="list-style-type: none"> <li>•Westside Lowlands Conifer – Hardwood Forest</li> <li>•Open Water – Lakes, Rivers, and Streams</li> <li>•Agriculture, Pastures, and Mixed Environs</li> <li>•Urban and Mixed Environs</li> <li>•Herbaceous Wetlands</li> <li>•Westside Riparian – Wetlands</li> <li>•Uses trees, bark crevices, and snags for summer roosts; if present in winter may use caves, mines or rock crevices for hibernacula</li> </ul>	Yes	SOC	SU	USFWS
Townsend’s western big-eared bat	<i>Corynorhinus townsendii townsendii</i>	No	<ul style="list-style-type: none"> <li>•Westside Lowlands Conifer – Hardwood Forest</li> <li>•Open Water – Lakes, Rivers, and Streams</li> <li>•Agriculture, Pastures, and Mixed Environs</li> <li>•Urban and Mixed Environs</li> <li>•Herbaceous Wetlands</li> <li>•Westside Riparian – Wetlands</li> <li>•Requires caves or mines for breeding</li> </ul>	No	SOC	SC	USFWS
Yellow-breasted chat	<i>Icteria virens</i>	No	<ul style="list-style-type: none"> <li>•Westside Lowlands Conifer – Hardwood Forest</li> <li>•Agriculture, Pastures, and Mixed Environs</li> <li>•Westside Riparian – Wetlands</li> </ul>	Yes	SOC	SC	USFWS
Yuma Myotis bat	<i>Myotis yumanensis</i>	No	<ul style="list-style-type: none"> <li>•Westside Lowlands Conifer – Hardwood Forest</li> <li>•Open Water – Lakes, Rivers, and Streams</li> <li>•Agriculture, Pastures, and Mixed Environs</li> <li>•Urban and Mixed Environs</li> <li>•Herbaceous Wetlands</li> <li>•Westside Riparian – Wetlands</li> <li>•More closely associated with water than other bats. Uses caves, mines, loose bark and bark crevices typically close to water</li> </ul>	Yes	SOC	N/A	USFWS

E= Listed Endangered; T= Listed Threatened SOC= Species of Concern SC= Sensitive critical; SV= Sensitive vulnerable; SU= undetermined status

<sup>1</sup> Unsure occurrences not included. Data provided by O’Neil and Johnson 2001

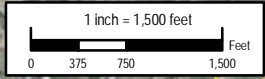
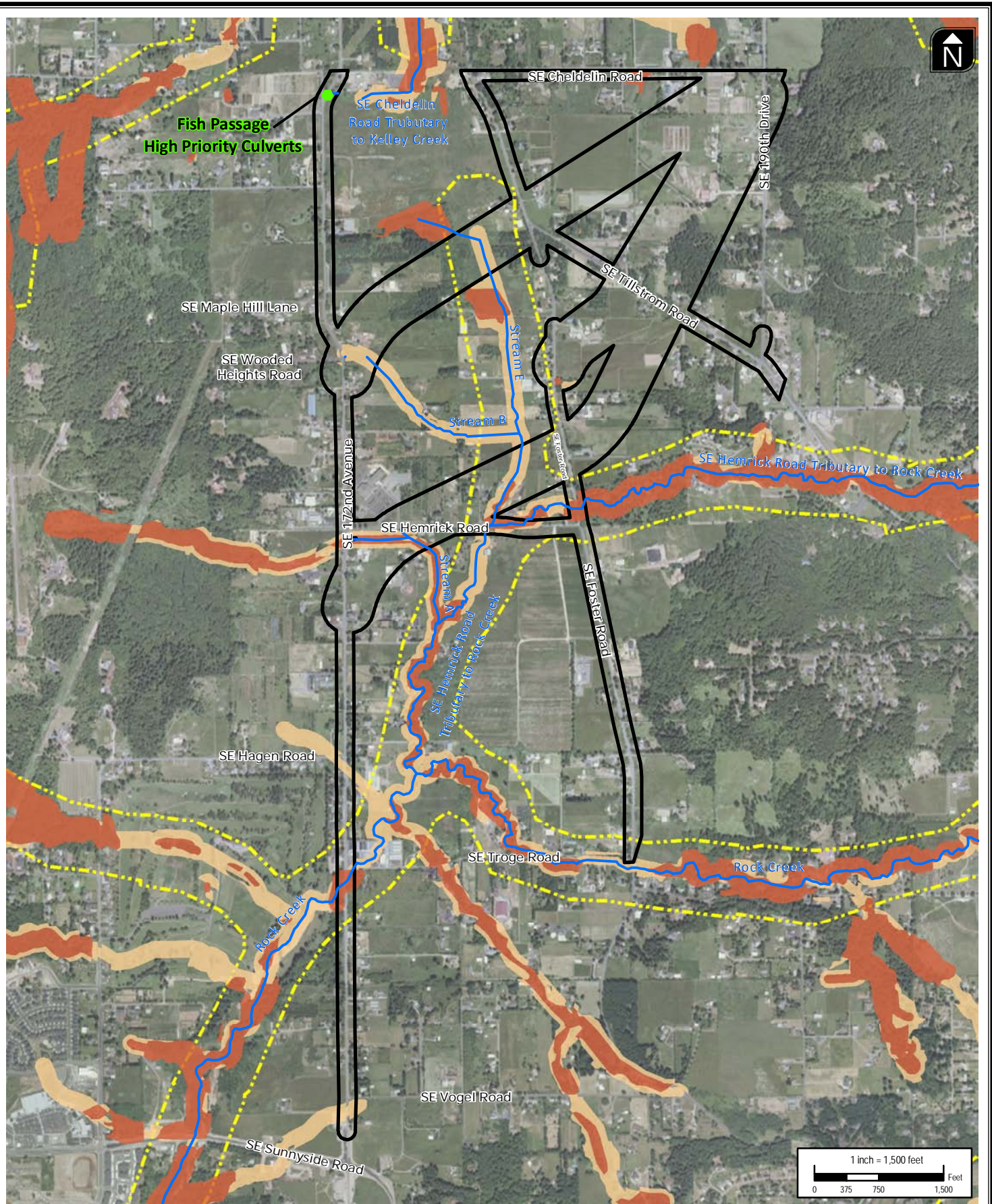
During the time of the field reconnaissance, no sensitive species were directly observed; however, anecdotal evidence from property owners has identified northern red-legged frogs being present in the SE Hemrick Road tributary to Rock Creek. The Westside Lowlands Conifer-Hardwood Forest wildlife-habitat community within the PSA is disturbed second-growth and highly fragmented. As such, it is unlikely red tree voles, northern spotted owls or Oregon slender salamanders are utilizing this area since they are more commonly associated with old growth forests. In addition, no caves are known to be present within the PSA; therefore, it is unlikely breeding populations of Townsend's western big-eared bat or hibernating populations of long-legged *Myotis* bat are present. Habitat for Cascades frogs, coastal tailed frogs, Larch Mountain salamanders, acorn woodpeckers and harlequin ducks was not observed during the field reconnaissance.

Wildlife corridors are also known to cross through all three alternatives. In particular, the most notable wildlife corridor is associated with the riparian areas for Rock Creek and its tributaries. This corridor is most likely utilized by wildlife for travel between undeveloped areas located east and west of the PSA (Hennings pers. comm. 2010) (Figure 5.5-3).

In addition, Metro has developed the Title 13: Nature in Neighborhoods Program to conserve important ecosystems throughout the urban environment. Title 13 protects Class I and II riparian habitats (Class A, B, and C upland habitats and Class III riparian habitats are not currently regulated). Class I and II riparian areas have been mapped throughout the PSA (Figure 5.5-3) and are generally located in the same areas as the wildlife corridors.

### 3.3 FISHERIES RESOURCES

Five sensitive fish species with the potential to occur within the PSA were identified during a records review of existing data sources discussed in Section 2.0. These species are listed in Table 5.5-3 along with their respective Evolutionarily Significant Units (ESU) and Distinct Population Units (DPS), and mapped critical habitat, if applicable. Table 5.5-3 also addresses the extent to which Essential Fish Habitat (EFH), as defined by the Magnuson-Steven Fisheries Conservation Act (MSA), and Essential Salmonid Habitat (ESH), as defined by the Oregon Department of State Lands (DSL), occur within the PSA. USFWS, StreamNet, and ORBIC identify five sensitive fish species that may occur within the vicinity of the PSA (USFWS 2010a, StreamNet 2010, ORBIC 2010). Pacific lamprey, rainbow trout, and coastal cutthroat trout are known to occur within the PSA and coho salmon, Chinook salmon, and steelhead are known to occur downstream of the PSA. Coastal cutthroat trout, rainbow trout, and Pacific lamprey are considered native migratory fish under the jurisdiction of Oregon's Fish Passage Law.



Project Study Area (PSA) - 334.3 acres	Riparian Wildlife Habitat Class I
Streams	Riparian Wildlife Habitat Class II
Wildlife Corridor	
High Priority Culvert I	

Source: Aerial photo, NAIP 2009. Project Study Area from OTAK. Inset map from ESRI. Wildlife Habitat by MB&G

172nd / 190th Corridor Plan

This product is for information purposes only and may not be suitable for legal, engineering or surveying purposes. This information or data is provided with the understanding that conclusions drawn from such information are the responsibility of the user.

**Figure 5.5-3**  
**Significant Fish & Wildlife Habitats**  
 172nd/190th Corridor Plan  
 Clackamas County, Oregon

**Table 5.5-3. Sensitive Fish Species and Habitat Identified During Records Review of the 172<sup>nd</sup>/190<sup>th</sup> Corridor Plan PSA**

Scientific Name	Common Name	Mapped Critical Habitat (Yes or No)	Essential Fish Habitat Within PSA <sup>1</sup>	Essential Salmonid Habitat Within PSA <sup>2</sup>	Known to occur within the upper reaches of Rock Creek	Federal Listing Status	State Listing Status
<i>Lampetra tridentata</i>	Pacific lamprey	No	N/A	No	Yes <sup>3,4</sup>	SOC	SC
<i>Oncorhynchus clarki</i>	Coastal cutthroat trout	No	N/A	No	Yes <sup>3</sup>	SOC	SV
<i>Oncorhynchus kisutch</i>	Coho salmon (Lower Columbia River ESU)	No	No	No	No <sup>3,4</sup>	T	E
<i>Oncorhynchus mykiss</i>	Steelhead (Lower Columbia River DPS, winter run)/ resident rainbow trout	Yes (Downstream of PSA)	N/A	No	Steelhead No <sup>3,4</sup> Rainbow Trout Yes <sup>3</sup>	T/SOC	SC/SC
<i>Oncorhynchus tshawytscha</i>	Chinook salmon (Lower Columbia River ESU, fall run)	Yes (Downstream of PSA)	No	No	No <sup>3,4</sup>	T	SC

E= Listed Endangered; T= Listed Threatened SOC= Species of Concern SC= Sensitive critical; SV= Sensitive vulnerable; SU= undetermined status

<sup>1</sup>NOAA 2010

<sup>2</sup>DSL 2010

<sup>3</sup>ODFW 1999

<sup>4</sup>StreamNet 2010

Unlike most fluvial systems west of the Cascade Range, the gradient of Rock Creek increases as the creek flows through its watershed. A large (approximately 22-foot tall) waterfall occurs in Rock Creek approximately 0.75 mile west and downstream of the PSA. This waterfall is considered a passage barrier for all anadromous salmonid fish species and is approximately 0.9 mile upstream of the creek's confluence with the Clackamas River (ODFW 1999, StreamNet 2010).

ODFW and Clackamas County Water Environment Services conducted a habitat and fish presence survey of northern Clackamas County streams between 1997 and 1999 and again in 2002 and 2003. The survey included all of Rock Creek and divided the stream into reaches. The PSA occurs within the upper reaches of the Rock Creek system. The 1997 to 1999 survey found that Rock Creek contains the highest percentage of native salmonids (25%) with regards to the total fish count per stream as compared to all other streams surveyed in northern Clackamas County (ODFW 1999). This is likely due to the basin's larger size and relatively intact habitat conditions in its lower and middle reaches; however, the PSA is located within the upper reaches, upstream of a fish passage barrier, and in an area of generally poor aquatic habitat conditions compared to the lower reaches. Rock Creek has one of the lowest percentiles of stream shading in northern Clackamas County streams. In addition, large woody debris is generally lacking from Rock Creek (ODFW 1999).

Native salmonids, including Chinook salmon (*Oncorhynchus tshawytscha*), coho salmon (*O. kisutch*), rainbow trout (*O. mykiss*), and coastal cutthroat trout (*O. clarki clarki*) were all

observed in the lower reach of Rock Creek downstream of the 22-foot waterfall during the 1997 to 1999 and 2002 to 2003 surveys. However, only cutthroat trout (1997-2003 surveys) and rainbow trout (1997-1999 surveys) (resident salmonid species) were observed in the upper reaches of Rock Creek upstream of the waterfall (i.e., within the PSA). These species occurred in relatively small numbers in the middle and upper reaches of the watershed (ODFW 1999, 2003).

The ODFW survey identified Pacific lamprey (*Lampetra tridentata*), western brook lamprey (*L. richardoni*), cutthroat trout, rainbow trout, and reticulate sculpin (*Cottus perplexus*) within the upper reaches of Rock Creek. Of these species, Pacific lamprey rainbow trout, and cutthroat trout are considered to be native migratory fish by ODFW per Oregon’s Fish Passage Law.

Clackamas County keeps records for all culverts the county maintains (Clackamas County 2010). These records include fish passage priority ratings for each culvert that is not currently fish passable. Two culverts within the PSA are listed as a high priority for providing future fish passage. These two culverts are located at the intersection of SE 172<sup>nd</sup> Avenue and SE 170<sup>th</sup> Avenue in the northwest corner of the PSA and drain into the SE Cheldelin Road Tributary to Kelley Creek (Figure 5.5-3). Additional culverts within the PSA are listed as moderate or low priority for providing future fish passage.

#### 4.0 BIOLOGICAL RESOURCES POTENTIAL IMPACTS

The following sections of this report summarize the potential impacts to biological resources for each alternative identified during an office-based review and subsequent field reconnaissance. Results from the GIS analysis for all alternatives for potential wildlife and fish habitat impacts are included in Table 5.5-4 below. Sensitive botanical resources potential impacts are not addressed in this table due to the field reconnaissance being conducted outside of the flowering period for all but one of the sensitive botanical species.

**Table 5.5-4 Summary of Biological Resources Potential Impacts for the SE 172<sup>nd</sup>/190<sup>th</sup> Corridor Alternatives<sup>1</sup>**

Wildlife-Habitat Community	AT-02	AT-06	AS-10a
Urban and Mixed Environs, Low-Density Zone (acres)	<b>106.68</b>	126.59	108.02
Agriculture, Pastures and Mixed Environs (acres)	70.92	61.57	<b>56.76</b>
Westside Lowlands Conifer-Hardwood Forest (acres)	17.35	14.53	<b>9.27</b>
Herbaceous Wetlands (acres)	<b>10.54</b>	17.37	11.24
Westside Riparian-Wetlands (acres)	7.28	6.74	<b>1.16</b>
Total Wildlife-Habitat Community Acres	212.77	226.82	<b>186.46</b>
Wildlife Corridor Crossings (# of crossings)	2	2	<b>1</b>
Streams (acres)	0.40	0.46	<b>0.28</b>
Noxious Weeds Present	Yes	Yes	Yes

<sup>1</sup>Bold acreages indicate lowest potential impact.

#### 4.1 ALTERNATIVE AT-02

##### 4.1.1 Botanical Resources

MB&G biologists observed six populations of *Sidalcea* sp. growing within the buffer zones for Alternative AT-02 (Figure 5.5-2). However, due to the timing of the field reconnaissance, as stated in Section 3.1 MB&G biologists were not able to positively identify this as Nelson's checkermallow (*Sidalcea nelsoniana*). No other sensitive botanical species were observed; however, it is not conclusive whether sensitive botanical species occur within AT-02 due to the timing of the field reconnaissance outside of the flowering period. As stated in Section 3.1, it is likely that the *Sidalcea* sp. observed is meadow checkerbloom (*Sidalcea campestris*), a relatively common species, and not the sensitive species Nelson's checkermallow.

##### 4.1.2 Wildlife Resources

Alternative AT-02 has the potential to impact a total of approximately 213 acres in five of the wildlife-habitat communities based on O'Neil and Johnson (2001). Overall, Alternative AT-02 has the potential to impact the second-most total acres of the three alternatives, including impacts to the following wildlife-habitat communities (listed from greatest potential impact to least potential impact):

1. Urban and Mixed Environs, Low-Density Zone (106.68 acres)
2. Agriculture, Pastures, and Mixed Environs (70.92 acres)
3. Westside Lowlands Conifer-Hardwood Forest (17.35 acres)
4. Herbaceous Wetlands (10.54 acres)
5. Westside Riparian-Wetlands (7.28 acres)

Alternative AT-02 has the potential to impact the highest quality wildlife-habitat communities of the three alternatives. This alternative crosses large contiguous sections of Westside Lowland Conifer-Hardwood Forest and Herbaceous Wetland wildlife-habitat communities that provide connectivity to one of the few remaining Westside Riparian Wetland wildlife-habitat communities left within the PSA (Figure 5.5-2). This alternative potentially impacts the most acres of Westside Riparian Wetlands of the three alternatives reviewed.

Alternative AT-02 crosses wildlife corridors twice. This alternative crosses wildlife corridors where Rock Creek intersects with SE 172<sup>nd</sup> Avenue; and between SE 172<sup>nd</sup> Avenue and SE Foster Road, west of the intersection between SE Foster Road and SE Tillstrom Road (Figure 5.5-3). The habitat quality at the location of the Rock Creek and SE 172<sup>nd</sup> Avenue wildlife corridor crossing is marginal due to surrounding development. Only a small, narrow strip of riparian forest is located within the PSA for this wildlife corridor. It provides little to no cover for dispersing wildlife species. The habitat quality at the wildlife corridor crossing between SE 172<sup>nd</sup> Avenue and SE Foster Road is high due to a large section of contiguous mixed conifer-deciduous forest and wetlands within the PSA. This wildlife corridor crossing has the largest concentration of forest and wetlands within the entire PSA.

##### 4.1.3 Fisheries Resources

Alternative AT-02 would potentially impact Rock Creek and five of its tributaries: the SE Hemrick Road Tributary to Rock Creek (Figure 5.5-3), and the SE Cheldelin Road Tributary to Kelley Creek (Figure 5.5-3), and three smaller streams that feed into the SE Hemrick Road Tributary to Rock Creek (identified as Stream A, Stream B, and Stream E on Figure 5.5-3).

Alternative AT-02 has the second highest impact potential to streams and stream buffers of the three alternatives. Three sensitive fish species (Pacific lamprey, coastal cutthroat trout and rainbow trout) are known to occur within the upper reaches of Rock Creek and therefore, potentially occur within the area affected by this alternative.

## 4.2 ALTERNATIVE AT-06

### 4.2.1 Botanical Resources

MB&G biologists observed four populations of *Sidalcea* sp. growing within the buffer zones for Alternative AT-06 (see Figure 5.5-2). Again, MB&G biologists were not able to positively identify these plants as Nelson's checkermallow. No other sensitive botanical species were observed; however, it is not conclusive whether sensitive botanical species occur within AT-06 due to the timing of the field reconnaissance outside the flowering period. As stated in Section 3.1, it is likely that the *Sidalcea* sp. observed is meadow checkerbloom, a relatively common species, and not the sensitive species Nelson's checkermallow.

### 4.2.2 Wildlife Resources

Alternative AT-06 has the potential to impact a total of approximately 227 acres in five of the wildlife-habitat communities based on O'Neil and Johnson (2001). Overall, Alternative AT-06 has the potential to impact the most total acres out of the three alternatives reviewed, including impacts to the following wildlife-habitat communities (listed from greatest potential impact to least potential impact):

1. Urban and Mixed Environs, Low-Density Zone (126.59 acres)
2. Agriculture, Pastures, and Mixed Environs (61.57 acres)
3. Westside Lowlands Conifer-Hardwood Forest (14.53 acres)
4. Herbaceous Wetlands (17.37 acres)
5. Westside Riparian-Wetlands (6.74 acres)

Alternative AT-06 would impact the largest number of total acres within the PSA (Figure 5.5-2). Within AT-06, the largest impacts would be to Urban and Mixed Environs, Low-Density Zone and Agriculture, Pastures, and Mixed Environs, which are considered to be lower-quality wildlife-habitat communities. High quality wildlife-habitat communities within AT-06 are highly fragmented and relatively isolated from one another. Alternative AT-06 could potentially impact the Westside Riparian Wetland wildlife-habitat community, although fewer acres would be impacted compared to AT-02. Alternative AT-06 potentially impacts the most Herbaceous Wetland wildlife-habitat community acres; however, the majority of these wetlands are relatively poor quality due to low plant diversity and non-native plant species.

Alternative AT-06 crosses wildlife corridors twice. This alternative crosses wildlife corridors where Rock Creek intersects with SE 172<sup>nd</sup> Avenue; and north and west of where SE Hemrick Road intersects with SE Foster Road (Figure 5.5-3). As stated above, the habitat quality at the location of the Rock Creek and SE 172<sup>nd</sup> Avenue wildlife corridor crossing is marginal due to surrounding development. The habitat quality at the location of SE Hemrick Road and SE Foster Road is moderate due to a small riparian corridor that expands into a wetland area. While providing foraging and resting habitat for migrating birds, it provides little to no cover for large wildlife species dispersal. This wildlife corridor continues east outside the PSA from the intersection with SE Hemrick and SE Foster Road. This portion of the corridor is high quality

due to a large contiguous section of palustrine-forested wetlands. This area provides foraging and nesting habitat for a multitude of species, as well as providing cover for dispersing large wildlife species.

### 4.2.3 Fisheries Resources

Alternative AT-06 would potentially impact Rock Creek and five of its tributaries: the SE Hemrick Road Tributary to Rock Creek (Figure 5.5-3); the SE Cheldelin Road Tributary to Kelley Creek (Figure 5.5-3); and three smaller streams that feed into the SE Hemrick Road Tributary to Rock Creek (identified as Stream A, Stream B and Stream E on Figure 5.5-3). Alternative AT-06 has the highest impact potential to streams and stream buffers of the three alternatives reviewed. Three sensitive fish species (Pacific lamprey, coastal cutthroat trout and rainbow trout) are known to occur within the upper reaches of Rock Creek and therefore, potentially occur within this alternative.

## 4.3 ALTERNATIVE AS-10A

### 4.3.1 Botanical Resources

MB&G biologists observed seven populations of *Sidalcea* sp. growing within the buffer zones for Alternative AS-10a (Figure 5.5-2). Again, MB&G biologists were not able to positively identify these plants as Nelson's checkermallow. No other sensitive botanical species were observed; however, it is not conclusive whether sensitive botanical species occur within AS-10a due to the timing of the field reconnaissance outside the flowering period. As stated in Section 3.1, it is likely that the *Sidalcea* sp. observed is meadow checkerbloom, a relatively common species, and not the sensitive species Nelson's checkermallow.

### 4.3.2 Wildlife Resources

Alternative AS-10a has the potential to impact a total of approximately 186 acres in five of the wildlife-habitat communities based on O'Neil and Johnson (2001). Overall, Alternative AS-10a has the potential to impact the fewest total acres of the three alternatives, including impacts to the following wildlife-habitat communities (listed from greatest potential impact to least potential impact):

1. Urban and Mixed Environs, Low-Density Zone (108.02 acres)
2. Agriculture, Pastures, and Mixed Environs (56.76 acres)
3. Westside Lowlands Conifer-Hardwood Forest (9.27 acres)
4. Herbaceous Wetlands (11.24 acres)
5. Westside Riparian-Wetlands (1.16 acres)

Alternative AS-10a potentially impacts the fewest high quality wildlife-habitat communities within the PSA. This alternative consists mostly of improving existing roadways which already have considerable disturbance (Figure 5.5-2). Alternative AS-10a would impact the fewest Westside Riparian Wetland wildlife-habitat community acres of the three alternatives. In addition, the majority of Herbaceous Wetlands found within AS-10a were observed to be of poor quality.

Alternative AS-10a crosses wildlife corridors once. Like the other two alternatives, AS-10a also crosses the wildlife corridor where Rock Creek intersects with SE 172<sup>nd</sup> Avenue. In addition, the 600 foot buffer for AS-10a clips a small portion of a wildlife corridor immediately west of SE Foster Road (Figure 5.5-3). As stated above, the habitat quality at the SE 172<sup>nd</sup> Avenue wildlife

corridor crossing location is marginal due to surrounding development. The habitat quality where the buffer for AS-10a overlaps the wildlife corridor west of SE Foster Road is poor due to residential development within the immediate vicinity. There is no cover for dispersing wildlife and foraging habitat is also relatively nonexistent.

### **4.3.3 Fisheries Resources**

Alternative AS-10a crosses Rock Creek and five of its tributaries: the SE Hemrick Road Tributary to Rock Creek (Figure 5.5-3); the SE Cheldelin Road Tributary to Kelley Creek (Figure 5.5-3); and three smaller streams that feed into the SE Hemrick Road Tributary to Rock Creek (identified as Stream A, Stream B and Stream E on Figure 5.5-3). Alternative AS-10a has the lowest impact potential to streams and stream buffers of the three alternatives. Three sensitive fish species (Pacific lamprey, coastal cutthroat trout and rainbow trout) are known to occur within the upper reaches of Rock Creek and therefore, potentially occur within this alternative.

## **4.4 AGENCY COORDINATION AND POTENTIAL PERMITTING REQUIREMENTS**

Impacts to listed fisheries species may result from implementation of any of the three alternatives. If impacts are anticipated, the project must comply with the federal Endangered Species Act through consultation with the National Marine Fisheries Service and/or the USFWS assuming a federal nexus exists (e.g., funding, federal permit). If a state-listed species may be affected by the project, a similar process would occur with ODFW and/or the Oregon Department of Agriculture (ODA).

There are known native resident migratory fish (e.g., rainbow trout) within the PSA. As such, all new or improved stream crossings in areas that support native migratory fish within each alternative would need to be designed to provide fish passage in accordance with Oregon's Fish Passage Law. In addition, an ODFW Fish Passage Plan may need to be prepared depending on the scope of the proposed project.

Oregon Department of Environmental Quality's (DEQ) 401 Water Quality Certification (WQC) process will be triggered if an ACOE permit is required for wetland/waters impacts. Stormwater generated by this project may negatively affect sensitive fish species present within the PSA as well as downstream of the PSA. If a 401 WQC is required, a Stormwater Management Plan should be prepared and will need to be approved by DEQ.

If the project includes activities within Rock Creek or any of the tributaries within the PSA, these activities should be scheduled during ODFW-preferred In-Water Work Window for the Clackamas River/Johnson Creek and their tributaries (July 15 through August 31) (ODFW 2008).

Vegetation clearing will be performed in compliance with the Migratory Bird Treaty Act (MBTA). The MBTA is a federal law enforced by the USFWS that prohibits "take" of adult migratory birds, their young, eggs, and all body parts. Take is defined in the MBTA to include any means (or in any manner), any attempt at hunting, pursuing, wounding, killing, possessing or transporting any migratory bird, (active) nest, egg or part thereof. Permits to remove active nests, eggs or young birds are referred to as "take permits" and are not widely available. As such, preventative measures are recommended to avoid incidental take resulting in violations of the law. These preventive measures include clearing of vegetation outside of the nesting season (September 1 to March 1 in the Portland area).

Wildlife corridors are known to occur within each alternative. Wildlife passage at corridor/road crossings should be reviewed during project design to ensure that wildlife movement impacts are minimized and safe conditions exist for wildlife and motorists.

Metro Class I and II riparian habitat also occurs within each alternative and should be avoided to the maximum extent practicable. Unavoidable development within Class I and II riparian habitat would require compliance with Metro's Title 13 through local land use approvals.

## 5.0 CONCLUSIONS

### 5.1 KEY FINDINGS

Multiple plant, wildlife, and fish species have the potential to occur or are known to occur within the PSA. Potential habitat may exist within the PSA for 10 sensitive botanical species, four of which are either state or federally-listed as Threatened or Endangered. MB&G biologists could not positively identify any sensitive botanical species due largely to the field reconnaissance being conducted outside the flowering period; however, widespread disturbances to potential habitat limit the likelihood of sensitive botanical species being present and do not present a fatal flaw in the alternative screening process at this time. Additional botanical surveys may be needed as refinement of the preferred Build Alternative occurs and more detailed potential impacts are realized. Potential habitat may also exist within the PSA for 24 sensitive wildlife species, two of which are either state or federally-listed as Threatened or Endangered. Only one sensitive wildlife species was observed directly or indirectly during the field reconnaissance: northern red-legged frog. Native fish species under the jurisdiction of Oregon's Fish Passage Law including Pacific lamprey, rainbow trout, and coastal cutthroat trout are known to occur within the PSA. In addition, federally-listed coho salmon, Chinook salmon, and steelhead are known to occur downstream of the PSA. No fish survey was conducted by MB&G during the field reconnaissance. Wildlife corridors and Metro Class I and II riparian habitat occur within the PSA.

Alternative AT-06 has the potential to impact the highest acreage of O'Neal and Johnson (2001) wildlife-habitat communities. Alternative AT-02 has the potential to impact the highest quality wildlife-habitat communities due to its connectivity between the least common habitat types within the PSA. Alternative AS-10a has the potential to impact the fewest overall acres of wildlife-habitat communities, as well as the fewest acres of high quality wildlife habitat.

Alternative AT-06 would have the highest potential impact to streams and buffers. Alternative AT-02 crosses the largest amount of high quality wildlife-habitat communities within the PSA. Alternative AS-10a would have the lowest potential impact to streams and buffers and wildlife-habitat communities.

### 5.2 NEXT STEPS

A rare plant field survey should be conducted within the PSA during the peak flowering period of the 10 sensitive botanical species identified in this report to determine if any sensitive botanical species are located within the PSA.

Wildlife and fish passage at corridor/stream road crossings should be reviewed during project design by project engineers and biologists to ensure that wildlife and fish passage impacts are minimized and safe conditions exist for wildlife and motorists. Mapped Metro Class I and II riparian habitat should be avoided to the maximum extent practicable. Unavoidable development

within Class I and II riparian habitat would require compliance with Metro's Title 13 through local land use approvals.

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