

Appendix F

JTA Project Environmental Baseline Report

Environmental Baseline Report
SHUTE ROAD INTERCHANGE IMPROVEMENT PROJECT
Key Number K16842 Washington County, Oregon
Township 1 North, Range 2 West Sections 15, 16, 22, and 23
Hillsboro USGS Quad

Prepared for:



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MB&G Project No. 1581

**Environmental Baseline Report
Shute Road Interchange Improvement Project
Washington County, Oregon
Key Number 16842**

March 2010

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TABLE OF CONTENTS

1.0	INTRODUCTION	1
1.1	PURPOSE	1
1.2	PROJECT DESCRIPTION	1
1.3	AREA OF POTENTIAL IMPACT (API)	1
2.0	EXISTING ENVIRONMENTAL CONDITION	4
2.1	AIR QUALITY	4
2.2	ARCHAEOLOGY	4
2.3	BIOLOGY	7
2.3.1	<i>Botanical Resources</i>	7
2.3.2	<i>Terrestrial Wildlife Resources</i>	10
2.3.3	<i>Fish and Aquatic Resources</i>	11
2.4	FLOODPLAIN / FLOODWAY	13
2.5	LAND USE	13
2.6	HAZARDOUS MATERIALS	17
2.7	HISTORIC.....	17
2.8	SECTION 4(F)/6(F)	18
2.9	NOISE.....	19
2.10	SOCIOECONOMIC	19
2.10.1	<i>Population and Housing</i>	19
2.10.2	<i>Economic Resources</i>	20
2.10.3	<i>Protected Populations and Environmental Justice</i>	20
2.10.4	<i>Social and Recreational Resources</i>	21
2.11	VISUAL.....	22
2.12	WETLANDS AND WATERS OF THE U.S. AND STATE	22
2.13	WATER QUALITY / STORMWATER MANAGEMENT.....	23
3.0	CONCLUSIONS.....	26
3.1	AIR QUALITY	26
3.2	ARCHAEOLOGY	26
3.3	BIOLOGY	26
3.3.1	<i>Botanical Resources</i>	26
3.3.2	<i>Terrestrial Wildlife Resources</i>	27
3.3.3	<i>Fish and Aquatic Resources</i>	27
3.4	FLOODPLAIN / FLOODWAY	28
3.5	LAND USE	28
3.6	HAZARDOUS MATERIALS	28
3.7	HISTORIC.....	29
3.8	PARKS - 4(F) 6(F).....	29
3.9	NOISE.....	29
3.10	SOCIOECONOMIC	29
3.11	VISUAL.....	30
3.12	WETLANDS AND WATERS OF THE U.S. AND STATE	30
3.13	WATER QUALITY / STORMWATER MANAGEMENT.....	31
3.14	SUMMARY	31
4.0	REFERENCES	38

TABLES

Table 1.	Rare Botanical Species with the Potential to Inhabit the API	9
Table 2.	ODA-listed Noxious Weed Populations within API	10
Table 3.	Terrestrial Wildlife Species with the Potential to Inhabit the API	11
Table 4.	Known Hazardous Material Sites within the Shute Road Interchange API	17
Table 5.	Historic properties identified within the Shute Road Interchange API	18
Table 6.	Population and Housing Characteristics	20
Table 7.	Census Tract Demographic Information	21
Table 8.	Wetland/Waters Identified within the API	23
Table 9.	Requirements for Further Study for the Shute Road Interchange Improvement Project .	32
Table 10.	Summary of Applicable Permits, Approvals, and Clearances Needed for the Shute Road Interchange Improvement Project	35
Table 11.	Summary of Recommendations for Resource Avoidance, Minimization and Mitigation for the Shute Road Interchange Improvement Project	37

FIGURES

Figure 1	Project Location and Vicinity Map.....	3
Figure 2	US 26 and Shute Road Interchange – Comprehensive Plan Map.....	5
Figure 3	Approximate Location of Previous Archaeological Resource Studies and Reported and Recorded Cultural Resources in the Project Vicinity	6
Figure 4	Approximate Location of Historic Period Activity in the Project Vicinity.	8
Figure 5	Aquatic Resources Map.....	12
Figure 6	Water Quality and Flood Plain Map.....	14
Figure 7	Wetland and Waters Map	24

APPENDICES

Appendix A	Area of Potential Impact Photographs
Appendix B	Technical Reports

1.0 INTRODUCTION

This Environmental Baseline Report (EBR) summarizes available baseline data and describes environmental permits and clearances that may be necessary for the Shute Road Interchange Improvement Project (Project) along Highway 26 in Washington County, Oregon. While additional data collection may be necessary, existing baseline data will be used to thoroughly characterize environmental features for this project and to help the design team develop alternatives that avoid and/or minimize environmental impacts associated with the interchange improvement project. This EBR will also be used to determine the appropriate level of environmental review for the proposed project.

1.1 Purpose

The Oregon Department of Transportation (ODOT) proposes to improve the interchange at Shute Road located between Mile Post (MP) 60.6 and MP 62.8 on Highway 26 (Figure 1). The growing population in Washington County has begun to strain the existing transportation infrastructure in the county. The purpose of this project is to alleviate congestion by increasing the traffic capacity at this interchange and consequently, improve access to and from Highway 26.

1.2 Project Description

The proposed project would reconstruct the Shute Road/Helvetia Road Interchange. The project would include the addition of a westbound-to-southbound loop ramp, reconstructing the westbound exit and entrance loop ramps, and adding a second right turn lane to the eastbound entrance ramp.

1.3 Area of Potential Impact (API)

The Area of Potential Impact (API) is located along Highway 26 at the Shute Road Interchange in Washington County, Oregon. From the center of the interchange, the API extends approximately 2,000 feet to the north, south and west. This area encompasses proposed interchange access improvements. In addition, the API extends approximately 1.25 miles east towards the NW Cornelius Pass Road Interchange. This area encompasses proposed improvements to the pavement along Highway 26. The eastern portion of the API is located within the City of Hillsboro, while the western portion of the API is located in unincorporated Washington County. Figure 1 shows the general location of the API.

Topography within the API is generally flat with an approximate elevation of 200 feet above mean sea level (msl) (USGS 1986). The majority of the API has experienced alterations to the natural landscape as the result of the construction of Highway 26, construction of the elevated Shute Road overcrossing, construction of multiple secondary roadways, agriculture, and residential/commercial development. The majority of the native vegetation has been removed within the API. There are two creeks within the API, both unnamed tributaries of McKay Creek, that have been channelized and now receive greater volumes of water due to the increase in impervious surface within the API.

Right-of-way (ROW) acquisition from adjacent properties would be needed for the proposed project. Approximately 40 parcels are within the API and up to 30 parcels may be affected by

ROW needs with most of the impacts related to partial acquisitions of property from these parcels.

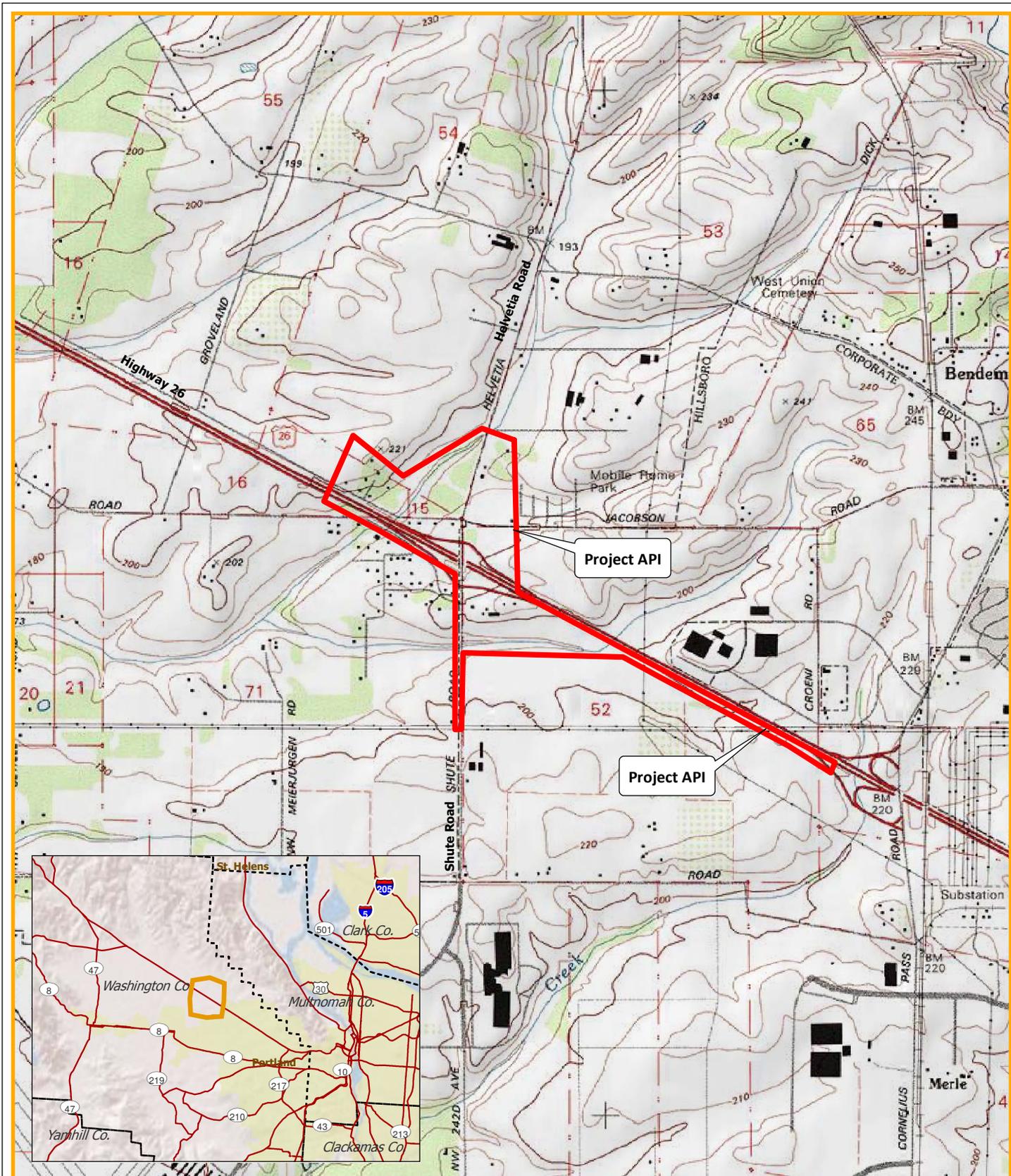


Figure 1.

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**Project Location and Vicinity Map
Shute Road Interchange Improvement Project
Washington County, Oregon**

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2.0 EXISTING ENVIRONMENTAL CONDITION

The following sections of this environmental baseline report summarize the major environmental resources and issues identified in existing database information, during discussions with staff at the regulatory agencies and local jurisdictions, and during site investigations conducted by ODOT and Mason, Bruce, and Girard, Inc. (MB&G). During the site investigation, the API was examined and photographed (Appendix A). Individual technical reports for each of the disciplines are included in Appendix B.

2.1 Air Quality

The API is located in part within an air quality attainment area and a maintenance area for carbon monoxide. The division between the two areas is Metro's Urban Growth Boundary (UGB) (Figure 2). In general, areas within the API east of the interchange are within the UGB and areas west are outside the UGB.

The proposed project involves adding lanes and increasing capacity on the overcrossing, channelization at on/off ramps, and/or alignment changes. The inclusion of any of these elements into the proposed project may impact air quality and necessitate the preparation of an Air Quality Technical Report.

The project is listed in the 2010-2013 State Transportation Improvement Program (STIP) and the 2004 Regional Transportation Plan (RTP) project list (#3149). In addition, the project is identified on Metro's Air Quality Conformity Determination Report (2008) list of projects.

2.2 Archaeology

The archaeological resources and issues discussed in this report were identified based upon a review of maps of previous cultural resources studies on file at the Oregon State Historic Preservation Office (SHPO), a field investigation conducted by ODOT on February 11, 2010, ODOT consultation with local tribes, and historic maps and aerial photographs. These resources identified both precontact and historic sites within close proximity to the API.

SHPO maps were reviewed for the purpose of determining whether previous cultural resources studies have been conducted in the vicinity of the API and if archaeological resources have been recorded in the vicinity of the API. Ten previous cultural resources studies have been conducted in the vicinity of the API; however, most of the API has not been examined for archaeological resources and no archaeological resources were identified in these reports documenting resource studies within the API (Armitage 1988; CH₂M Hill Northwest, Inc. 1996; Clark 1984; Ellis 2003, 2004; Ellis and O'Brien 2003; Hart et al. 2008; Helzer 2004; Hibbs 1988; Pettigrew 1984) (Figure 3).

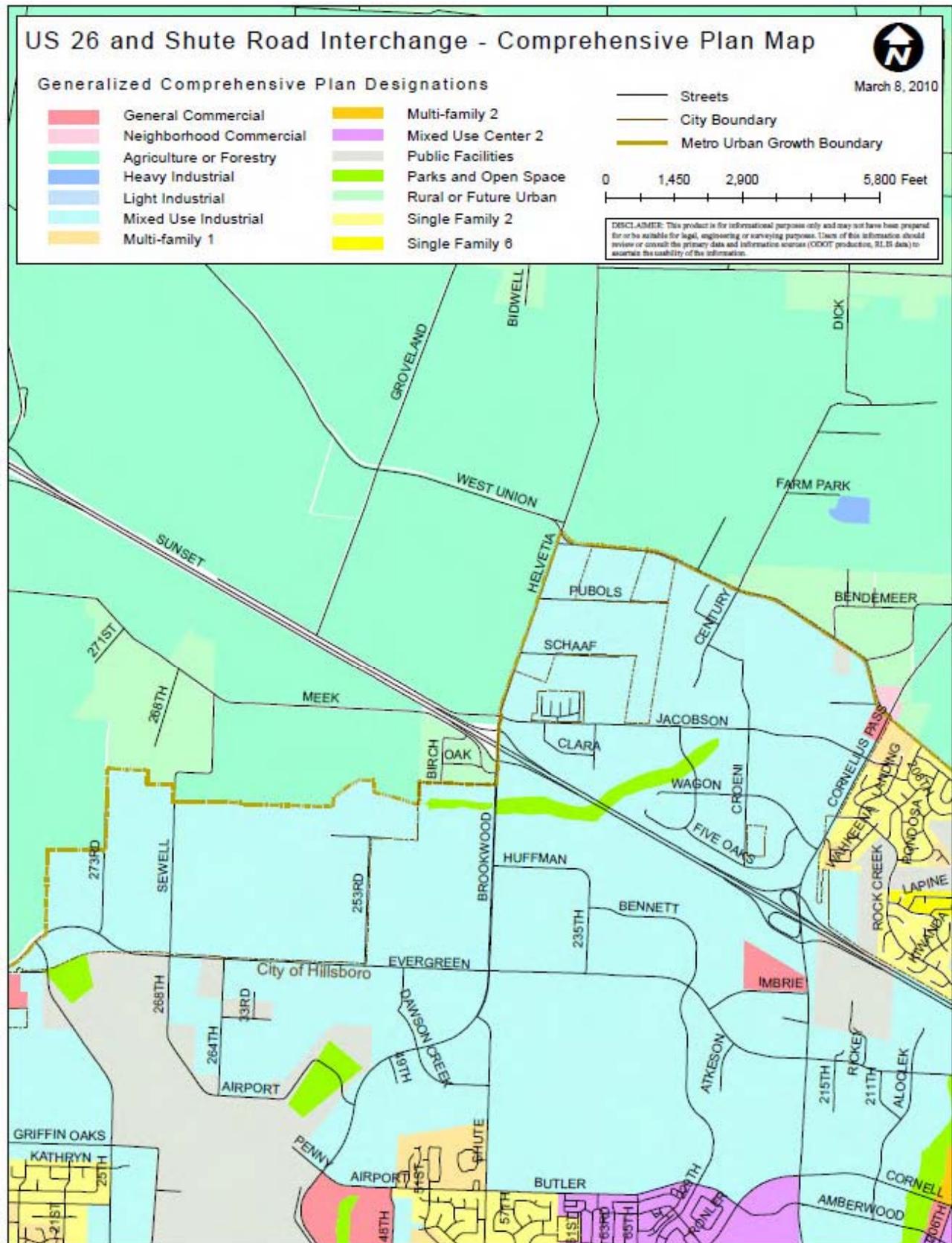


Figure 2. US26 and Shute Road Interchange – Comprehensive Plan Map.

The ODOT field investigation conducted on February 11, 2010 identified no archaeological resources within the API.

ODOT consulted local representatives from the Confederated Tribes of the Warm Springs, the Confederated Tribes of the Siletz Indians, and the Confederated Tribes of the Grand Ronde regarding the proposed project. The representative from the Grand Ronde tribes informed ODOT that there is a known archaeological site located on private property in the northern portion of the API, although the exact location is unknown (Thorsgard pers. comm. 2010) (Figure 3). Historic maps and aerial photographs suggest additional archaeological resources may be present near the interchange (two buildings and/or structures, the Edward Constable homestead, and an unnamed wagon road) and near the east end of the API (Alexander Zachary stable) (Figure 4).

2.3 Biology

The biological resources and issues within the API were identified based upon a review of existing database information, discussions with regulatory agency staff, and a field investigation conducted by MB&G on February 3, 2010. At the time of the field investigation, ODOT did not have right-of-entry for areas outside of public rights-of-way. As such, areas outside of public rights-of-way were visually inspected from the road or highway.

The field investigation was conducted to evaluate the baseline conditions for natural resources (i.e., aquatic/riparian conditions, presence of wetlands, habitat conditions, and noxious weed presence) within the project API. During the field investigation, the API was examined and photographed (Appendix A).

Prior to conducting the field investigation on February 3, 2010, MB&G obtained data regarding threatened and endangered species within the API from U.S. Fish and Wildlife Service (USFWS), StreamNet, and the Oregon Natural Heritage Information Center (ORNHIC). MB&G also contacted the Oregon Department of Fish and Wildlife (ODFW) to confirm current or historical native migratory fish presence within the API (Brick pers. comm. 2010).

2.3.1 Botanical Resources

The API addressed in this EBR contains three general vegetation communities: riparian forest/wetland fringe, oak woodland, and disturbed/maintained grassland/highway ROW. The riparian forest/wetland vegetation community is located adjacent to both unnamed tributaries to McKay Creek within the API. The oak woodland vegetation community is located adjacent to NW Helvetia Road in the northern part of API. The disturbed/maintained grassland/highway ROW vegetation community is located on both sides of Highway 26 and in the vicinity of the highway on- and off-ramps.

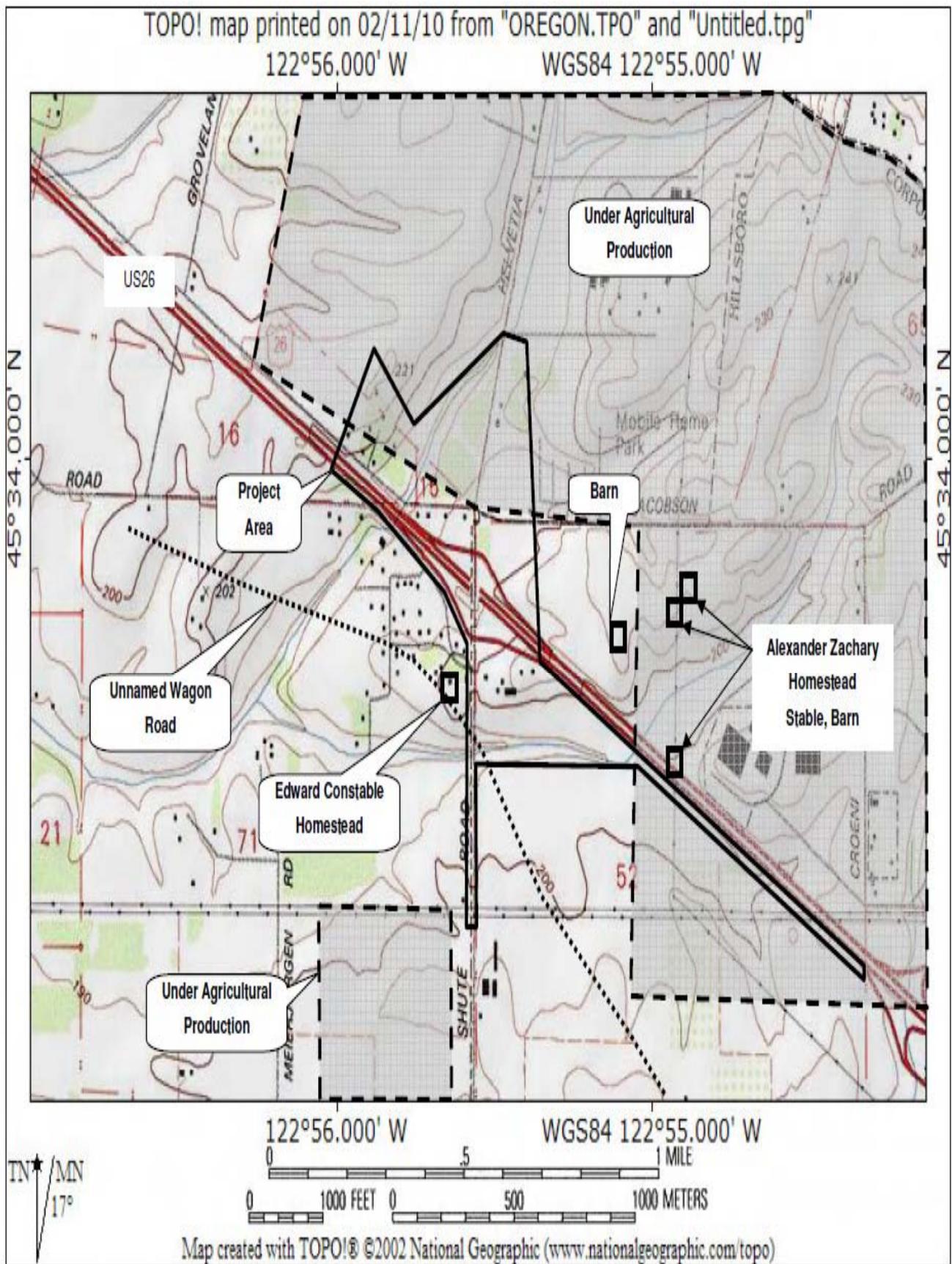


Figure 4. Approximate Location of Historic Period Activity (United States Surveyor General 1852, 1862) in the Project Vicinity.

Threatened and Endangered Species

Data from the USFWS and ORNHIC within a 2-mile radius of the proposed API indicates that several federal and state listed threatened and endangered plant species have the potential to occur within the API (USFWS 2010a, ORNHIC 2010). A listing of these species including their federal and state listing status, whether critical habitat is designated, blooming period, and habitat requirements is shown in Table 1.

Table 1. Rare Botanical Species with the Potential to Inhabit the API

Scientific Name	Common Name	Federal Status	State Status	Critical Habitat (Y/N)	Blooming Period	Habitat
<i>Lupinus sulphureus</i> ssp. <i>kincaidii</i>	Kincaid’s lupine	T	T	Yes*	April-July	Upland prairie grasslands, oak savanna, and woodland edges
<i>Sidalcea nelsoniana</i>	Nelson’s sidalcea	T	T	No	May-September	Open areas on damp soil, in meadows, wet prairie remnants, fencerows, roadsides, deciduous forest edges, and occasionally Oregon ash wetlands
<i>Aster curtus</i>	White-topped aster	SOC	T	No	July – August	Low elevation, moist native prairies, on well-drained upland soils in oak savannas
<i>Castilleja levisecta</i>	Golden Indian paintbrush	T	E	No	May-June	Moist or wet meadows and native prairies at low elevations
<i>Delphinium leucophaeum</i>	White rock larkspur	SOC	E	No	May - August	Dry roadside ditches, cliffs, rocky slopes and lowland meadows, at cliff bases, and basaltic ledges
<i>Delphinium pavonaceum</i>	Peacock larkspur	SOC	E	No	April – mid July	Well drained areas of native prairie, roadsides with no development
<i>Erigeron decumbens</i> var. <i>decumbens</i>	Willamette daisy	E	E	No	May-mid August	Native wetland and upland prairie, oak savanna, heavier soils, restricted to native prairie grassland

E= Endangered; T=Threatened; SOC=Species of Concern

*The designated Critical Habitat for Kincaid’s lupine is not located within the vicinity of the API.

The API contains potentially suitable habitat for all the species listed in Table 1. In particular, suitable habitat is located within the open grass fields, fencerows, and oak groves of the API.

Noxious Weeds

During the February 3, 2010 field investigation, MB&G biologists also observed Oregon Department of Agriculture (ODA)-listed noxious weed species throughout the API (ODA 2009). Due to the timing of the field investigation outside the optimal blooming period for noxious weeds, not all weed populations may have been recorded. Table 2 provides a listing of the identified weed populations, the ODA rating of the species observed, and the location of the infestations within the API.

Table 2. ODA-listed Noxious Weed Populations within API

Scientific Name	Common Name	ODA Rating ¹	Quadrant of API	Location Description
<i>Rubus armeniacus</i>	Himalayan blackberry	B	NE	Open field west of Five Oaks Business Park
<i>Rubus armeniacus</i>	Himalayan blackberry	B	NE	North side of NW Jacobson Road
<i>Rubus armeniacus</i>	Himalayan blackberry	B	NE	Understory of oak grove located between westbound highway off-ramp and NW Jacobson Road
<i>Rubus armeniacus</i>	Himalayan blackberry	B	NE	Riparian area adjacent to northern unnamed tributary to McKay Creek at crossing with NW Helvetia Road
<i>Rubus armeniacus</i>	Himalayan blackberry	B	NW	Understory of oak grove located west of NW Helvetia Road
<i>Rubus armeniacus</i> <i>Phalaris arundinacea</i>	Himalayan blackberry Reed canarygrass	B N/A	NW	Wetland fringe along northern unnamed tributary to McKay Creek, north of NW Groveland Road
<i>Rubus armeniacus</i> <i>Cytisus scoparius</i>	Himalayan blackberry Scotch broom	B B	NW	Understory of forested area located north of NW Groveland Road at the west end of API
<i>Rubus armeniacus</i>	Himalayan blackberry	B	SW	Understory of oak grove located south of Highway 26 at the west end of API
<i>Rubus armeniacus</i>	Himalayan blackberry	B	SW	Fill slope located south of eastbound highway off-ramp

¹ Source ODA Noxious Weed List (ODA 2009)

2.3.2 Terrestrial Wildlife Resources

Review of data available from the USFWS and ORNHIC data within a 2-mile radius of the proposed API indicates that three federal and state listed terrestrial wildlife species have the potential to occur within the API (USFWS 2010a, ORNHIC 2010). A listing of these species, as well as their federal and state listing status, whether critical habitat is designated, and habitat requirements is shown in Table 3.

Table 3. Terrestrial Wildlife Species with the Potential to Inhabit the API

Scientific Name	Common Name	Federal Status	State Status	Critical Habitat (Y/N)	Habitat
<i>Strix occidentalis caurina</i>	Northern spotted owl	T	T	Yes	Inhabits forests characterized by dense canopy closure of mature and old-growth trees, abundant logs, standing snags, and live trees with broken tops
<i>Brachyramphus marmoratus</i>	Marbled murrelet	T	T	Yes	Nests in forest stands with old growth forest characteristics; forests are generally characterized by large trees with large branches or deformities for use as nest platforms
<i>Eremophila alpestris strigata</i>	Streaked horned lark	C	N/A	No	Associated with bare ground or sparsely vegetated habitats; nests in grass seed fields, pastures, fallow fields and wetland mudflats

E= Endangered; T=Threatened; C=Candidate

The forested areas within the API, which predominantly consist of small oak groves, do not have the habitat characteristics required by either the northern spotted owl or the marbled murrelet. Although critical habitat has been designated for both species, the closest occurrence of critical habitat for both species is located in the Coast Range more than 5 miles to the west of the API. Similarly, the API does not contain suitable habitat for the streaked horned lark which utilizes bare ground or sparsely vegetated habitats. No such habitats are present within the API.

The API does contain potential habitat for nesting migratory birds since they may utilize trees and shrubs located throughout the API.

2.3.3 Fish and Aquatic Resources

The API is located within the Lower McKay Creek (170900100107) 6th Field Hydrologic Unit Code (HUC). Two unnamed tributaries to McKay Creek are located within the proposed API; the northern unnamed tributary and the southern unnamed tributary. The unnamed tributaries' confluence with the mainstem of McKay Creek is located approximately 1.5 miles downstream (southwest) of the API. Approximately 5 miles downstream from this confluence, McKay Creek flows into Dairy Creek which then flows into the Tualatin River within 2 miles of the McKay/Dairy Creek confluence.

Review of data available from StreamNet and ORNHIC within a 2-mile radius of the proposed API indicates that steelhead of the Upper Willamette River (UWR) Distinct Population Segment (DPS) has the potential to occur within the proposed API (StreamNet 2010, ORNHIC 2010). This species is federally listed as Threatened and state listed as Sensitive Vulnerable.

UWR DPS steelhead utilize McKay Creek for rearing and migration (StreamNet 2010). The upstream extent of steelhead distribution is located approximately 1 mile downstream (southwest) of the proposed API (Figure 5). The unnamed tributaries to McKay Creek do not currently provide rearing and migration habitat for UWR steelhead. The habitat within these unnamed tributaries is considered low quality because of the following factors: the streambed is

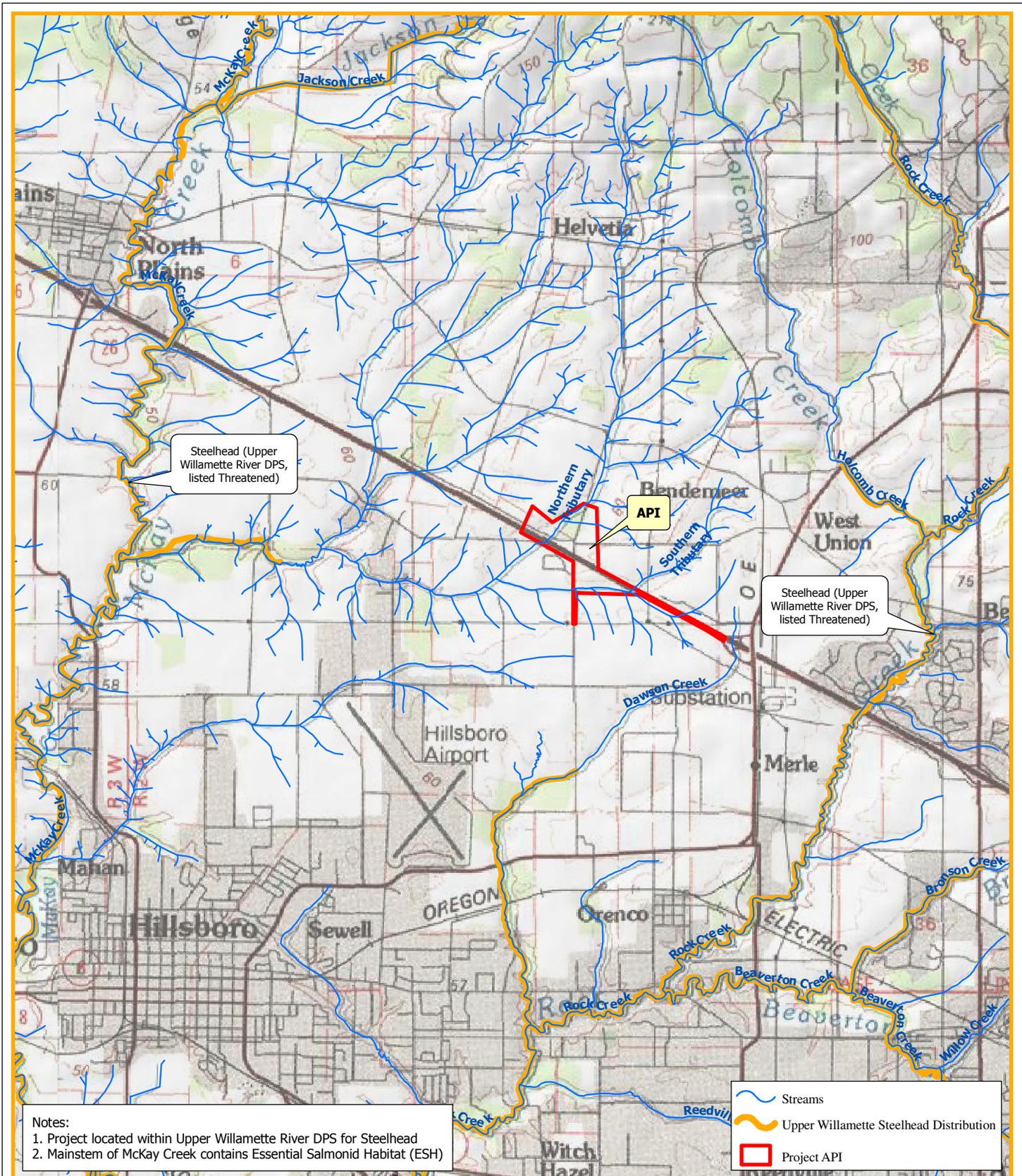
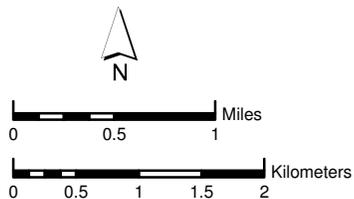


Figure 5.

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Aquatic Resources Map
Shute Road Interchange Improvement Project
Washington County, Oregon

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largely comprised of silt and sand, there is minimal riparian vegetation, and there is a general lack of channel complexity. McKay Creek is mapped as Essential Salmonid Habitat (ESH) according to the Oregon Department of State Lands (DSL). However, the ESH designation does not extend into the two unnamed tributaries of McKay Creek located within the API (DSL 2001).

Although steelhead and other native migratory fish do not currently utilize the tributaries within the API, it is likely that steelhead and native migratory fish used these tributaries historically. This determination is based on an investigation of accessible portions of the two unnamed tributaries to McKay Creek within the API on February 3, 2010 and a review of U.S. Geological Survey topographic maps (USGS 1986) for the area. In particular, the size of each unnamed tributary suggests that this system historically supported fish in its upper reaches. Although man-made barriers (i.e., culverts) to fish passage may have been constructed recently, there are no natural barriers to upstream fish passage within McKay Creek or its tributaries. Lack of current use by native migratory fish is likely due to degradation of stream habitat as a result of development of the surrounding areas.

The ODFW has determined that there was historical use of these streams by native migratory fish. This determination was based upon the physical attributes of the tributaries, the lack of natural barriers downstream, and the size of the drainage basins (J. Brick pers. comm. 2010).

2.4 Floodplain / Floodway

MB&G obtained information from the Federal Emergency Management Agency (FEMA) and Washington County in regard to floodplain designations within the API. Areas within the API have been designated within the 100-year floodplain area for the unnamed tributaries to McKay Creek (Figure 6). The API does not contain areas that have been designated within the 500-year floodplain area (FEMA 2010, S. Roberts pers. comm. 2010).

2.5 Land Use

The area surrounding the API is on the edge of the Metro UGB. The northeast, southeast and the majority of the southwest quadrants are currently in the UGB; the northwest quadrant is outside of the UGB (Figure 2). The area to the north of the interchange is primarily rural in character, but has also seen growth in industrial properties.

This project will not require a goal exception to statewide planning goals. The recently adopted Urban-Rural Reserves solidified the future of this area as a major industrial cluster in the region with significant planned growth in industrial land uses. The area to the NW of the interchange, with the exception of the area in the API, is planned to remain EFU (Exclusive Farm Use) land and should be protected as rural.

The NW quadrant of the API is currently primarily undeveloped with the exception of three single family houses and an auto repair shop immediately to the north of the westbound entrance ramp in the API. NW Groveland Drive continues westbound within the API, and turns northbound outside the API after providing access to an additional four homes. NW Groveland Drive currently intersects with NW Helvetia Road approximately 250 to 300 feet north of the ramp terminals. Areas outside the API include a large area to the north of NW Groveland Drive which is currently in agricultural use.

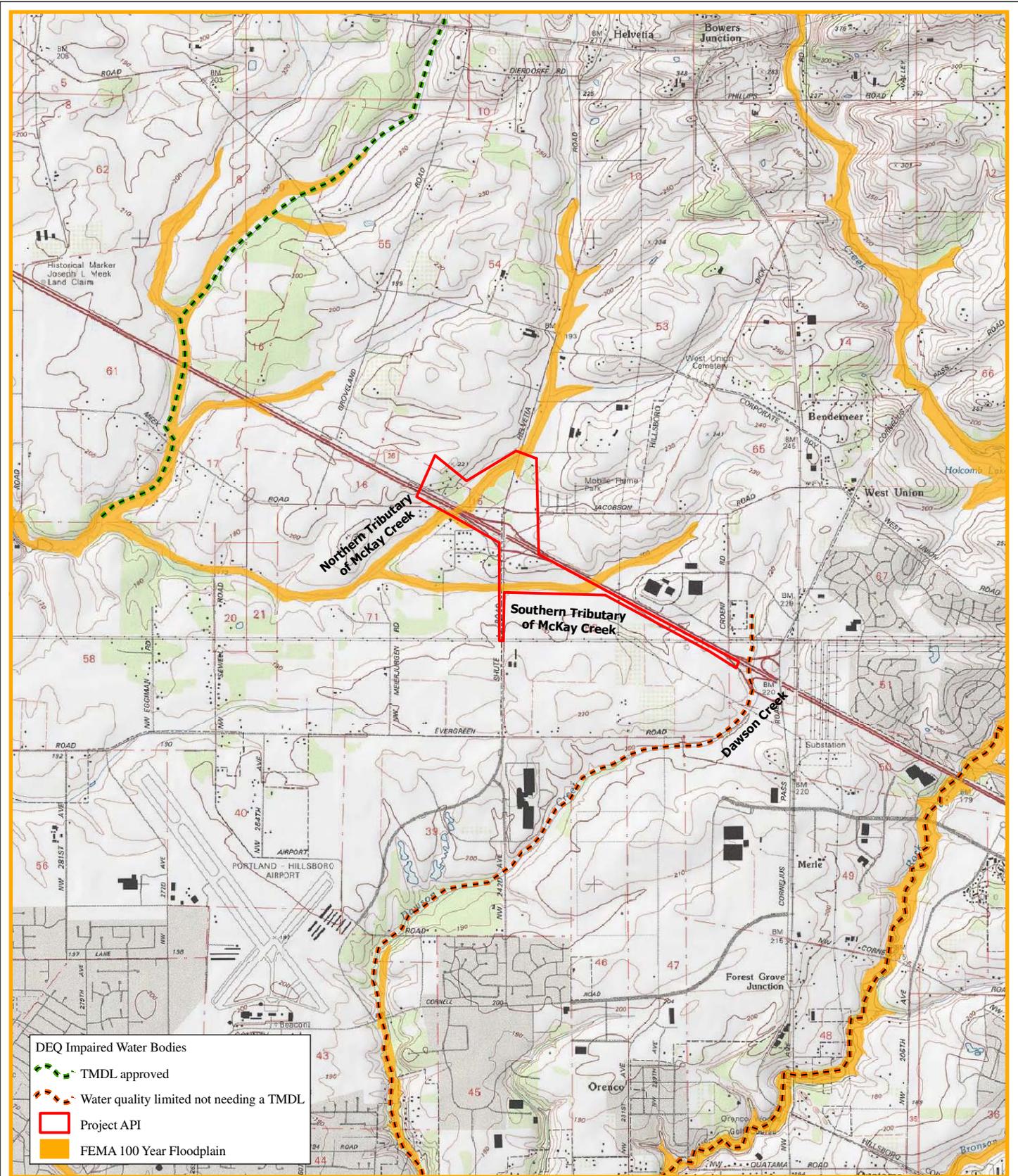


Figure 6.

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**Water Quality and Flood Plain Map
Shute Road Interchange Improvement Project
Washington County, Oregon**

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0 0.25 0.5 Miles

0 0.25 0.5 0.75 1 Kilometers

The NW quadrant of the interchange, with the exception of the area in the API, is currently under Washington County planning and zoning authority and is planned to remain zoned as EFU (Exclusive Farm Use) land. A statewide goal exception is needed for removal of agricultural use from EFU land. The area within the API in the NW quadrant is planned for Urban Reserve, which would include transportation facilities; therefore a statewide goal exception would not be required for the proposed project.

The NE quadrant of the API is currently developed as light industrial land and the area north of NW Jacobson Road is currently vacant. Areas outside the API include several new industrial developments currently accessing NW Clara Lane, as well as multiple commercial businesses and the Country Haven Mobile Home Park. NW Jacobson Road currently intersects NW Helvetia Road 250 to 300 feet from the intersection ramp terminals. The NE quadrant of the interchange is planned for industrial use. Land use in the area from NW Jacobsen Road to West Union Road is addressed in the Helvetia Concept Plan, which created a special district, the Helvetia Area Special Industrial District (HSID). This zoning designation limits use to certain industrial categories and has large minimum lot sizes (10 acres). The intent is to develop this area primarily as industrial land aimed at creating jobs. Some of this concept plan area has not yet been re-zoned and is still classified as FD-20 (Future Development) under the County Zoning Code. The FD-20 classification is intended to hold land until such time UGB expansions are requested and urban zoning is applied for from the affected City.

The area to the SE of the interchange in the API is currently a farm in operation and an agricultural field. Outside of the API, additional fields exist, in addition to several recent industrial developments. The large field to the south of the operating farm is a Nike Foundation site that is a certified industrial site. The area to the SE of the interchange is planned and zoned as Industrial by the City of Hillsboro.

The API is tight to the existing Highway 26 and NW Meek Road ROWs in the SW quadrant. The area outside of the API southwest of the interchange includes a small, residential area consisting of approximately 20 single family houses on large lots immediately south of NW Meek Road. The area to the south of this small residential area is a large field in agricultural use. NW Meek Road currently intersects NE Brookwood Parkway approximately 200 feet south of the ramp terminals. The area immediately to the SW of the interchange is planned and zoned as AF-5 (Agriculture or Forestry) and is under Washington County jurisdiction. This area is identified as Urban Reserve through Metro's recent Urban-Rural Reserves process. The area to the south of the AF-5 land, east of 253rd Avenue, and West of Brookwood Parkway is all planned as Industrial under the City of Hillsboro Comprehensive Plan. The City of Hillsboro zoning is Shute Road Special Industrial District Overlay which requires large lots for industrial use. Land use in the area to the west of 253rd Avenue is addressed in the *Evergreen Concept Plan*. This plan applies Evergreen Special Industrial District Zoning to properties that are annexed into the City of Hillsboro. The provisions are similar to the other Special Industrial Districts that require large lot sizes for industrial and employment use. This *Evergreen Concept Plan* area is currently under county zoning of FD-20.

Contact with the local agencies (Washington County and the City of Hillsboro) indicates Washington County will require a Type III (public hearing) development review process for the

proposed project. The City of Hillsboro will not require a development review process for the proposed project.

2.6 Hazardous Materials

The review of available information revealed that hazardous materials are known to be present within project API (DEQ 2010). Table 4 includes information about the known hazardous material sites within the API. No evidence of environmental impacts from hazardous materials was observed during the initial site investigation. The site consists of rural or agricultural land with limited residential and undeveloped land usage.

Note: No Registered Geologist or other Hazardous Materials professional participated in the preparation or review of this baseline overview of Hazardous Materials for the proposed project. It is for internal ODOT use only and may not be relied upon by any other entity without written permission from an authorized ODOT representative. No environmental assessment can wholly eliminate uncertainty regarding the potential for environmental conditions in connection with a Project.

Table 4. Known Hazardous Material Sites within the Shute Road Interchange API

Facility	Address	General Location	DEQ Program
Berger Farms	5888 NW Shute Road Hillsboro, 97124	Southeast of Shute Road Interchange on Hwy 26	Leaking Underground Storage Tank
Berger Farms Hot	5870 NW 242 nd Avenue Hillsboro, 97124	South side of Hwy 26 on NW Shute Road near the on- ramp	Leaking Underground Storage Tank
Baxter, B Hot	27700 NW Meek Road Hillsboro, 97124	West of Shute Road Interchange on Hwy 26	Leaking Underground Storage Tank
Genentech Inc.	4625 NW Shute Road Hillsboro, 97124-9332	At corner of NW Shute Road and Huffman Road	Air Discharge Permit Hazardous Waste
Five Oaks Lot 7	NW Casper At NW Clara Lane Hillsboro, 97124	Northeast of the eastbound off-ramp to NW Shute Road	Water Discharge Permit

Source: DEQ Hazardous Materials Database (2010).

In addition, mercury vapor lamps and treated timbers may be present within the API and would require special handling if they require removal or replacement.

2.7 Historic

Identification of newly-discovered and previously-documented historic resources within the API was based on a review of SHPO databases for historic sites and for National Register properties, a review of the Washington County Cultural Resource Inventory, and a February 27 and March 1, 2010 reconnaissance level (windshield) survey of the API by ODOT.

Review of the SHPO statewide inventory resulted in the identification of one previously-recorded historic resource in the API: the James and Mary Chambers House. The Washington

County Cultural Resources Survey and Inventory also noted several “inventoried properties” in the API including the James and Mary Chambers House and Five Oaks Meeting Place.

The API was surveyed on February 27 and March 1, 2010 by ODOT to identify any properties that were 45 years old or older. Thirteen historic properties were photographed and the addresses noted (Table 5). The built properties span over a century, from an 1865 farmhouse to a 1963 ranch-style house. In addition, a historic site in the API, the Five Oaks Meeting Place, has strong association with local Indians and Oregon pioneers. The majority of the properties listed in Table 5 are located within the API. However, several additional properties outside of the API were included due to their close proximity to the API.

Table 5. Historic properties identified within the Shute Road Interchange API

Map ID	Property Name	National Register Status
A	House 24250 NW Groveland Dr., Hillsboro, OR	Not eligible.
B	House 24380 NW Groveland Dr., Hillsboro, OR	Not eligible.
C	House 24500 NW Groveland Dr., Hillsboro, OR	Not eligible.
D	James and Mary Chambers House 24665 NW Groveland Dr. Hillsboro, OR	Likely eligible. Listed in Washington County Cultural Resources Inventory
E	House 5830 NW Shute Rd. Hillsboro, OR	Possibly eligible. Additional research is needed.
F	House 5870 NW Shute Rd. Hillsboro, OR	Possibly eligible. Additional research is needed.
G	Five Oaks Meeting Place Corner of NW Caspar Pl. & NW Clara Pl. Hillsboro, OR	Likely eligible. Listed in Washington County Cultural Resources Inventory.
H	House 24215 NW Meek Rd. Hillsboro, OR	Not eligible.
I	House 24640 NW Meek Rd. Hillsboro, OR	Not eligible.
J	House 24680 NW Meek Rd. Hillsboro, OR	Not eligible.
K	Lin Tara Sunset Kennel 24810 NW Meek Rd. Hillsboro, OR	Not eligible.
L	House 6160 NW Birch Ave. Hillsboro, OR	Possibly eligible. Additional research is needed.
M	House 24385 NW Oak Dr. Hillsboro, OR	Not eligible.

2.8 Section 4(f)/6(f)

U.S. Geological Survey topographic maps (USGS 1986), city maps, and county maps were reviewed to identify potential Section 4(f) or Section 6(f) resources. No wildlife and waterfowl refuges are located within the API. In addition, contact with local planning representatives at Washington County and City of Hillsboro indicated that there are no parks or recreation areas within the project API. There are also no properties encumbered with Section 6(f) Land and Water Funds (Lippincott pers. comm. 2010) within the API.

Cultural Resources Baseline Technical Reports (historic and archaeology) prepared for the proposed project indicate that historic resources may be present within the API. If the presence of an historical resource is verified, Section 4(f) documentation may be needed to address potential impacts on historic properties/structures.

2.9 Noise

A Sensitive Noise Receptor (SNR) is defined as a use that may be impacted by increased noise and/or vibration caused by increased traffic volumes or speeds, or by a reconfigured existing roadway directing traffic in a manner that increases noise or vibration. ODOT identified one type of SNR within the API: single-family homes and mobile homes that constitute a residential use. Other types of SNRs that were not identified within the API include senior/care residential facilities, motels/hotels, hospitals, schools or play grounds, libraries, places of worship, parks, campgrounds, and recreational facilities. Within 200 feet of the proposed ROW, there are approximately 12 single family residential homes, three agricultural out-buildings, and four commercial/office buildings. In addition, a mobile home park is also adjacent to the API.

Although the proposed project would likely not include an increase in the number of through travel lanes, shifts in the horizontal and vertical alignment are proposed for the Highway 26 on- and off-ramps. This shift in the alignment has the potential to result in noise impacts which should be addressed in a Noise Study for the future project. In addition, potential noise impacts may occur as a result of the roadway being proposed on a new alignment as part of access management in the northeast quadrant of the interchange. However, the proposed project will not remove topographical features which currently shield receptors. Additionally, there are no known noise issues that have been raised within the API or for the proposed project (Gordon and Craig pers. comm. 2010).

2.10 Socioeconomic

The proposed project is located at the western edge of Hillsboro and adjacent land is in both the City of Hillsboro and unincorporated Washington County. The Shute Road Interchange is near the western boundary of the *West Union Community Plan* area of Washington County, and immediately south of the *Helvetia Plan* area in the City of Hillsboro. The API includes low-density, rural residential uses, and agricultural land. Adjacent land uses are a mix of low-density residential uses, industrial uses, and commercial land uses east of the interchange near both sides of Highway 26. Much of the property adjacent to the northern and western sides of the API is undeveloped farmland. Adjacent property to the south includes rural residential uses and agricultural land (City of Hillsboro 2008, Washington County 2008).

2.10.1 Population and Housing

The portion of the City of Hillsboro and Washington County within the API is lightly populated and primarily composed of rural residences. However, the population in the City of Hillsboro has been growing, as has that of Washington County. Increasing numbers of housing units in the city and county also reflect these recent growth rates. Table 6 provides population and housing data for the City of Hillsboro and Washington County.

Table 6. Population and Housing Characteristics

	2000	2008	Percent Change
<i>City of Hillsboro</i>			
Population	70,186	85,453	+ 21.75%
Total Housing Units	27,211	32,448	+ 19.24.13%
<i>Washington County</i>			
Population	445,342	519,979	+ 16.75%
Total Housing Units	178,913	204,328	+ 14.20%

Source: US Census 2000, Census Fact Sheet 2006-2008

2.10.2 Economic Resources

The City of Hillsboro and Washington County are part of the greater Portland metropolitan area. Because of the proximity to this metropolitan area, the City of Hillsboro and Washington County contain some of the largest Portland metropolitan area employers. Core economic industries in the City of Hillsboro area include high-tech electronics companies, solar companies, and biotechnology companies that represent emergent industries. Nearly 66% of the state's employment in computer and electronic manufacturing is located in Washington County (Johnson Reid 2009). Other retail, commercial, and industrial businesses are also present in the region.

Washington County also includes large areas of rural farm and forest land. In 2009, Washington County ranked sixth among state counties in total agricultural production, with over \$230 million in gross farm and ranch sales. Overall, due to the recent economic downturn, total agricultural sales have declined by approximately 15% statewide in 2009 (OSU 2010a).

2.10.3 Protected Populations and Environmental Justice

Census data (U. S. Census Bureau 2000) was reviewed for the presence of minority and low income groups in the API. Block data for the twelve blocks adjacent to the API was also reviewed for racial characteristics and block group data was reviewed for information on low income populations. For nearly all racial groups, percentages of minority groups reflected by block groups in the API are lower than City of Hillsboro and Washington County percentages. American Indian/Alaskan Native, Native Hawaiian/Pacific Islander, and White ethnicities were the only groups where API averages were higher than City and County averages.

The Census block group data indicates that approximately 6.3% of the population within these groups was below the 1999 poverty level. City and County percentages for low income individuals range between 7.3% and 9.0%, thus census block groups near the API have a lower percentage of low income individuals than the percentages reported for the local jurisdictions. Block group data covers a larger area than the API and field observations have confirmed that most residential properties are located at a distance from the highway. Census information is provided in Table 7.

Table 7. Census Tract Demographic Information

Race/Ethnicity	Local Census Blocks ¹	City of Hillsboro ²	Washington County ²	State of Oregon ²
Total Population	382	70,186	445,342	3,421,399
White	88.2%	77.4%	82.1%	86.5%
Black or African American	0.5%	1.2%	1.1%	1.6%
American Indian and Alaskan Native	1.5%	0.8%	0.6%	1.3%
Asian	0.5%	6.5%	6.6%	2.9%
Native Hawaiian and Other Pacific Islander	0.5%	0.2%	0.2%	0.2%
Some Other Race	4.9%	10.3%	5.8%	4.2%
Two or More Races	3.1%	3.2%	3.1%	3.0%
Hispanic Origin	11.2%	18.8%	11.1%	8.0%
Individuals below poverty level*	6.3%	9.0%	7.3%	11.6%

¹U.S. Census Block and Block Group Data, 2000

²Census Bureau, 2006-2008 Fact Sheets

*Note: Based on Census Tract Block Groups (Block data unavailable)

Although not within the proposed project’s API, the Country Haven Mobile Home Park is located immediately adjacent to the northeast boundary of the API with access from NW Jacobson Road. Mobile home parks are frequently considered sources of affordable housing and may contain minority or low income population group members.

2.10.4 Social and Recreational Resources

Local services available to residents within the API are primarily located in the City of Hillsboro. Hillsboro Fire and Rescue provides firefighting and Emergency Medical Services for the API. Station 3 is located approximately 0.75 miles east of the Shute Road Interchange at NW 229th Avenue. The Hillsboro Police Department precinct office is located approximately 1.25 miles east of the API near NE Cornell Road. Unincorporated areas are served by the Washington County Sheriff’s Office and Tualatin Valley Fire and Rescue. TriMet Transit provides bus service in the City of Hillsboro; however, public transit service is not available within the *West Union Plan* area (Washington County 2008).

The schools closest to the API are Hillsboro Elementary and Liberty High School. These facilities are located at NW West Union Road approximately 1 mile north of the API and on NW Wagon Way approximately 2.25 miles northeast of the API, respectively. The nearest churches are the Chinese Evangelical Church and the Community of Christ Church which are both located on NW Five Oaks Drive approximately 2.25 miles east of the API. In addition, the West Union Baptist Church is located on West Union Road approximately 2 miles north of the API.

The API consists primarily of rural farm land and associated residences, as well as a few nearby commercial and industrial buildings. A small residential area is clustered adjacent to the southwest boundary of the API, and a mobile home park is located near the northeast boundary of the API. For both of these residential areas, the Shute Road Interchange is the primary access point for east-west travel on Highway 26. The intersection is also a key access point for travel to locations north and south of the highway, both for local residents and emergency service

vehicles. Additionally, it provides a primary access point from Highway 26 for travel to Hillsboro Elementary School and the West Union Baptist Church.

There are no parks, recreational areas or wildlife refuges in or adjacent to the API. The closest City of Hillsboro park facility to the API is the Gordon Faber Recreation Complex and Hillsboro Stadium at the NW Cornelius Pass Road/Highway 26 intersection which is approximately 1.25 miles east of the API. These facilities provide outdoor recreation opportunities for softball, soccer, football, baseball, and lacrosse. The stadium also provides a state-of-the-art facility for these events.

2.11 Visual

The visual resources and associated permits for the project were identified during a review of existing maps and relevant regulations, as well as discussions with ODOT and local jurisdiction staff. USGS Quad maps, city maps, and county maps were reviewed to identify Federal Scenic Highways or Tour Routes. Review of these resources indicated that none of the following designations apply within the API: National Scenic Byway, All-American Road, Oregon Scenic Byway, Oregon Tour Route, Oregon Memorial Drive, Oregon Scenic Waterways, National Wild and Scenic Rivers, Federal, State or local parks and recreation, and conservation lands (including National Historic and Scenic Trails, wildlife sanctuaries, refuges and preserves, and 'beach land'). There are also no U.S. Forest Service (USFS) or Bureau of Land Management (BLM) properties within the API.

Consideration of visual resource impacts may occur for forest properties under the Oregon Forest Practices Act. The Oregon Forest Practices Act would not apply to the proposed project because there are no forest properties located within the API. The proposed project includes major cuts and fills in order to reconstruct the on- and off-ramps of Highway 26 which may impact visual components of the landscape. In addition, the proposed project will likely include the construction of a bridge over an unnamed tributary of McKay Creek. As a result of the bridge construction, large retaining walls would be anticipated in order to avoid and/or minimize impacts to wetlands associated with the unnamed tributary and may impact visual components of the landscape.

2.12 Wetlands and Waters of the U.S. and State

The wetland/waters resources and permit requirements for the proposed project were identified during a pre-field review of available information and a field investigation of the API conducted by MB&G wetland biologists on February 3, 2010. Potential wetlands and waters were identified prior to the field investigation using aerial photographs (NAIP 2009), USGS topographic maps (USGS 1986), USFWS National Wetlands Inventory (NWI) mapping (USFWS 2010b), Local Wetland Inventory (LWI) mapping records for the City of Hillsboro [east of the Shute Road/Highway 26 intersection only] (Fishman Environmental Services 2001), Oregon Wetland Assessment Protocol (ORWAP) mapping (OSU 2010b), Oregon Department of Forestry (ODF) stream mapping (ODF 2003), and the Soil Survey of Washington County, Oregon (Green 1982, NRCS 1999).

The field investigation was conducted to evaluate the environmental baseline conditions of the API, including the potential presence of jurisdictional wetlands and waters. During the field

investigation, the API was examined and photographed from public roadways because access onto private property was not permitted (Appendix A). Accordingly, biologists conducted a visual inspection of private properties from public roadways. Therefore, the boundaries of wetland/waters features are approximate and subject to change after an on-site wetland/waters delineation has been conducted. Based on available access, all potential wetlands and waters features identified during the pre-field review were inspected during the field investigation.

Twelve jurisdictional wetlands and waters features were identified during the field investigation on February 3, 2010 (Figure 7). The approximate acreage of each feature within the API is provided in Table 8.

Note: As access was not provided beyond public ROW, feature presence, location, boundaries, and acreage are approximate and should be used for preliminary planning purposes only.

Table 8. Wetland/Waters Identified within the API.

Feature	Approximate Acreage
Wetland A	6.9
Wetland B	1.8
Wetland C	0.1
Wetland D	0.6
Wetland E	0.3
Wetland F	4.5
Total Wetland Acreage	14.2
Northern Unnamed Tributary of McKay Creek	0.2
Southern Unnamed Tributary of McKay Creek	0.8
Ditch 1	0.1
Ditch 2	0.1
Ditch 3	0.1
Ditch 4	0.1
Total Waters Acreage	1.4

2.13 Water Quality / Stormwater Management

The water quality resources and permit requirements for the proposed project were identified during a review of existing database information, discussions with regulatory agency staff, and a field investigation conducted by MB&G on February 3, 2010. At the time of the field investigation, ODOT did not have right-of-entry for areas outside of public rights-of-way.

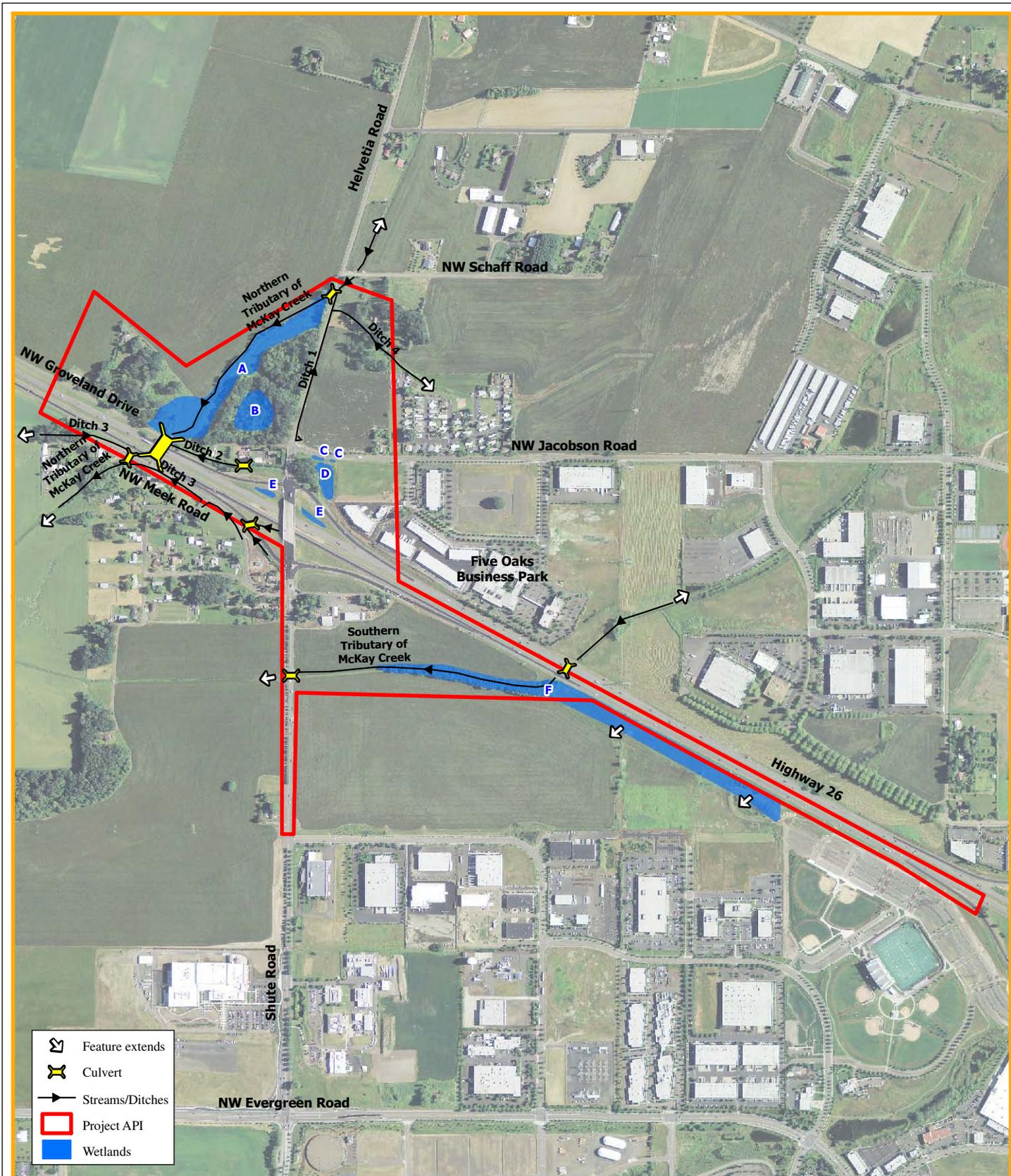


Figure 7.

MB&G

Mason, Bruce & Girard, Inc.
Natural Resource Consultants since 1921

Wetlands and Waters Map
Shute Road Interchange Improvement Project
Washington County, Oregon

Data Source: NAIP 2009 imagery. 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.



0 500 1,000 Feet

0 100 200 300 Meters

As such, areas outside of public ROW were visually inspected from the adjacent roadway. The field investigation was conducted to evaluate the baseline water quality conditions of aquatic resources (i.e., aquatic/riparian conditions, presence of wetlands, aquatic habitat conditions) within the Project API.

The Oregon Department of Environmental Quality (DEQ) has listed the mainstem of McKay Creek, located west of the API, as having water quality impairments that may warrant special protection measures (Figure 6). In 1998, DEQ added the mainstem of McKay Creek to the Section 303(d) list for water quality violations including ammonia and phosphorus. Since 1998, water quality in the mainstem of McKay Creek has further degraded and in 2002, DEQ added *E. coli* and temperature violations to the creek's water quality impairments (DEQ 2006). A Total Maximum Daily Load (TMDL) plan has been approved for this creek. The northern and southern unnamed tributaries of McKay Creek located within the API are not specifically identified by DEQ as having water quality impairments.

Dawson Creek is located approximately 700 feet east of the southeastern corner of the API (Figure 5). DEQ has identified Dawson Creek as water quality limited (biological criteria), although a TMDL is not currently warranted. Due to its proximity to the API, stormwater from the API may flow into this creek. The amount of existing impervious surface area within the API is approximately 30 acres (20%).

The City of Hillsboro does not use the northern or southern unnamed tributaries of McKay Creek for drinking water (Steele pers. comm. 2010). It is unknown if the unincorporated portions of Washington County use the northern or southern unnamed tributaries of McKay Creek for drinking water.

3.0 CONCLUSIONS

3.1 Air Quality

The proposed project involves adding lanes at the Shute Road over-crossing and is partly within the Air Quality Management Area. As a result, air quality conformance will be required as part of the proposed project. However, the proposed project will likely reduce congestion in the area which is anticipated to improve local air quality.

3.2 Archaeology

Based on a literature review, a field investigation on February 11, 2010, and discussions with tribal representatives, ODOT has identified multiple archaeological resources near the Shute Road Interchange.

To avoid impacts to archaeological resources, a pedestrian survey should be conducted in the API. Surveys should be focused in areas that may include the Tribe-reported archaeological site, two buildings and/or structures, the Edward Constable homestead, an unnamed wagon road, and the Alexander Zachary stable. If an archaeological site is identified that may be eligible for listing in the National Register of Historic Places (NRHP) and cannot be avoided, subsurface exploration and/or testing/evaluation of the site would be required and efforts should be made to minimize impacts to the resource.

In order to document the results of additional background research and field investigations, an Archeology Technical Report meeting SHPO guidelines should be prepared. In addition, Determinations of Eligibility (DOE) and Findings of Effect (FOE) would be required for all archaeological sites identified and all archeological sites that may be affected, respectively. All DOE's and FOE's should be submitted to SHPO for approval.

Water quality facilities, staging areas, disposal areas, and material sources should be identified during the design phase, if possible, and cleared for archaeological resources early in the planning process to avoid impacts to archeological resources. If ODOT does not provide the contractor with the location of archeological resources prior to bid let, the contractor would be responsible for hiring an archaeological consultant to examine these areas after bid let and prior to construction. A qualified archaeological monitor and/or Tribal monitor may be retained to monitor ground disturbing activities during construction. In the event that archaeological resources or human remains are inadvertently discovered during ground disturbing activities, these activities shall be halted immediately and an ODOT archaeologist shall be contacted immediately for further instructions.

3.3 Biology

3.3.1 Botanical Resources

Based on the February 3, 2010 field investigation and the review of available information, there is suitable habitat for listed botanical species within the API. As a result, botanical clearance surveys will need to be conducted during the appropriate blooming period for the species listed in Table 1. The API also contains noxious weed species (Table 2). A follow-up weed survey

should also be conducted during the blooming period to ensure all noxious weed populations are documented.

In order to capture both early and late blooming botanical species as well as noxious weeds, two site visits are recommended. The results of the botanical clearance and noxious weed surveys should be documented in a Botanical Clearance Report. If listed plant species are observed within the API, the ODOT Biologist should coordinate with the Project Team to avoid impacting these species. If listed species cannot be avoided by the project, a Biological Assessment (BA) should be prepared and submitted to USFWS and/or ODA.

All noxious weed control efforts will follow ODOT standards. Noxious weed populations located within the API should be included on project plans and be removed prior to construction of the proposed project. In addition, inspection and cleaning of construction equipment prior to entry into the construction site should be required. Weed seeds can easily become trapped in the tread of tires or within the crevices of heavy machinery, and spread across the API during the construction phase of the project. Weed control should also be required during the one year post-construction maintenance period to prevent the spread of noxious weeds.

3.3.2 Terrestrial Wildlife Resources

The API does not contain suitable habitat for any state or federally-listed terrestrial wildlife species. A No Effect Memorandum should be prepared to document these findings.

Nesting migratory birds have the potential to occupy a significant portion of the API due to the suitable habitat afforded by the trees and shrubs that were observed during the February 3, 2010 field investigation. The Migratory Bird Treaty Act (MBTA) prevents the take of adult migratory birds, their young, eggs, and all body parts. Take permits are not widely available so preventative measures are recommended to avoid violations of the law. Under this law, adult migratory birds can be deterred from nesting and empty nests can be removed or disturbed, but active nests and attending adults are not to be harassed. Incidental take of migratory birds is generally avoided by activity timing restrictions as well as preventive measures. The only proposed project activity that has the potential to conflict with the MBTA is the clearing of trees that may provide nesting habitat for migratory birds. The timing of vegetation removal (clearing and grubbing) should occur between September 1 and March 1 so as to occur outside the nesting period for migratory birds.

3.3.3 Fish and Aquatic Resources

The API does not contain suitable habitat for any state or federally-listed fish or aquatic species. However, the upstream extent of steelhead distribution is located approximately 1 mile downstream (southwest) of the API. Although direct impacts to listed salmonids are not expected as a result of the proposed project, indirect impacts are possible. If the project includes work in, over, or adjacent to the two unnamed tributaries to McKay Creek, indirect impacts may include temporary increases in turbidity as a result of construction. In addition, the proposed project will include increases in impervious surface which may cause indirect stormwater impacts to steelhead downstream.

Due to these anticipated indirect effects to listed species, a BA or Standard Local Operating Procedure for Endangered Species (SLOPES IV) Compliance Report must be prepared to provide Endangered Species Act (ESA) clearance. Upon submittal of this document to the regulatory agencies, ODOT can expect a maximum review timeline of 135 business days for a BA with a Likely to Adversely Affect (LAA) effect determination. Minimizing or avoiding impacts on the natural resources described within the API may shorten the review timeline.

There is evidence that native migratory fish historically utilized the two unnamed tributaries to McKay Creek within the API. As such, all new or improved stream crossings would need to be designed to provide fish passage in accordance with the Oregon Fish Passage Law. As the proposed project design is refined, the ODOT Biologist will need to ensure that any activities within these tributaries (i.e., culvert extensions or replacements) meet ODFW's requirements. In addition, an ODFW Fish Passage Plan may need to be prepared depending on the scope of the proposed project.

If the proposed project does include activities within the two unnamed tributaries to McKay Creek, these activities should be scheduled during ODFW-approved In-Water Work Window for the Tualatin River and its tributaries (July 15 through September 30) (ODFW 2008).

3.4 Floodplain / Floodway

Areas within the API are located within the 100-year floodplain. Activities located within the FEMA Floodplain/floodway are regulated by Washington County. Project activities within the floodplain need to be authorized by Washington County via the Washington County Land Use Application process (Brown pers. comm. 2010). In addition, a Washington County Flood Plain/Drainage Hazard Determination form will be required.

3.5 Land Use

The area surrounding the project is planned for industrial and employment uses in three of the four quadrants. This project is not likely to result in significant changes to the planned land uses and is consistent with planned uses. No statewide goal exceptions are anticipated for the proposed project.

3.6 Hazardous Materials

There are multiple listings for hazardous materials located within the API. These listings include, but are not limited to, leaking underground storage tanks, solid (hazardous) waste, and air and water discharge permits. In particular, three leaking underground storage tanks that could have contaminated soil and groundwater were identified within to the API. In addition, mercury vapor lamps and treated timbers may be present within the API and would require special handling if they require removal or replacement. Air and water discharge permits may also have ultimately resulted in contaminated soil and groundwater within the proposed API.

A Hazardous Materials Level 1 Analysis is recommended for the proposed project. In addition, depending on the results of the Level 1 Hazardous Materials Analysis, a Level 2 Hazardous Materials Analysis may also be required for the proposed project.

If the proposed project requires the acquisition of adjacent ROW, it appears that these acquisition(s) will not include gas stations, repair facilities, industrial sites, landfills or any other

non-residential facilities that may have used or stored hazardous materials. Agriculture fields are located within and adjacent to the API and may have high levels of pesticides. Agriculture fields affected by the proposed project should be tested to determine if the soil can be handled as clean fill (Schwarz pers. comm. 2010).

3.7 Historic

ODOT identified 13 properties within the API that were 45 years old or older during a February 27 and March 1, 2010 field investigation (Table 5). ODOT concluded that eight properties lacked original integrity of one or more of the following aspects: design, materials, workmanship, or feeling. ODOT concluded that these eight properties were not eligible for the National Register of Historic Places. A Programmatic Agreement (PA) memo should be prepared that documents these conclusions.

Five properties were identified that will require additional evaluation. A house on NW Birch Avenue (Property L) requires additional evaluation for integrity and significance. The two houses and associated outbuildings on NW Shute Road (Properties E and F), the James and Mary Chambers house on NW Groveland Drive (Property D), and the Five Oaks Meeting Place (Property G) are all likely eligible for the National Register of Historic Places.

Depending on the results of additional research into Properties D, E, F, G, and L, the proposed project may have an effect on significant historic resources within the API. In addition, Determinations of Eligibility (DOE) and Findings of Effect (FOE) would be required for all historic sites identified and all historic sites that may be affected, respectively. All DOE's and FOE's should be submitted to SHPO for approval.

3.8 Parks - 4(f) 6(f)

Based on a review of available data, it appears that Section 4(f) resources (historic) may be present within the API. If additional research confirms the presence of historic resources, the project will require Section 4(f) documentation. There are no properties encumbered with Section 6(f) Land and Water Funds within the API. As a result, no Section 6(f) impacts are anticipated.

3.9 Noise

Based on review of available data, it is anticipated that a Noise Study will need to be prepared to address potential noise impacts as a result of the proposed project. In particular, new lanes and/or shifts in alignment of on- and off-ramps have the potential to result in noise impacts and therefore, warrant a project Noise Study per ODOT's Noise Manual. In addition, if work occurs outside of normal working hours, a noise variance from Washington County and/or the City of Hillsboro will also be necessary. Because threatened or endangered birds are not nesting in or within one mile of the API, ambient noise studies or construction noise monitoring will not be required to address ESA compliance.

3.10 Socioeconomic

Based on review of available data, the proposed project is not anticipated to have socioeconomic impacts. In addition, the proposed project is not expected to result in disproportionate adverse impacts on environmental justice population groups. Because Census data was the primary

source of information used to consider local population groups, it is recommended that interaction and communication with minority and low income population groups be documented as part of future public involvement and community outreach efforts for the proposed project.

Local businesses, residences and farmland are located in the vicinity of API and are accessible via the existing roadway network. ROW acquisition from adjacent properties would be needed for the proposed project. Approximately 40 parcels are within the API and up to 30 parcels could be affected by ROW needs with most of the impacts related to partial acquisitions of property from these parcels. In addition, there are approximately 10 residences that could be affected with the potential that four homes could be displaced by ROW acquisition.

3.11 Visual

Based on review of available data, the proposed project is not anticipated to result in negative impacts to visual resources. Care should be taken to minimize impacts to adjacent wetlands, waterways and farmland which constitute visual components of this rural interchange.

3.12 Wetlands and Waters of the U.S. and State

As impacts to wetlands and waters are likely for the proposed Project, Section 404 of the Clean Water Act, administered by the U.S. Army Corps of Engineers (ACOE); the Removal Fill Law, administered by the DSL; and Water Quality Sensitive Areas and Vegetated Corridors, administered by Washington County Clean Water Services (CWS) will apply to the proposed Project. If proposed impacts are less than 0.5 acre, then the Project may qualify for the ACOE Nationwide Permit (NWP) #14, Linear Transportation Projects and the DSL General Authorization (GA) for Certain Transportation-Related Structures. If the project requires greater than 0.5 acre of impacts, an Individual Permit (IP) will be required from the ACOE and DSL. A wetland/waters delineation and report will be required for the proposed project to determine accurate wetland/waters locations and dimensions.

Impacts to wetlands/waters of the U.S. and State will require compensatory mitigation for both the ACOE and DSL. Currently, the wetland mitigation banks within the service area of the API (Fernhill and Tualatin Valley) do not have credits available. However, as credits become available at these banks in the future, mitigation at these banks may be an option for compensatory wetland mitigation for this Project. If bank credits are unavailable during the permitting process, alternative forms of mitigation will need to be considered, including payment-in-lieu (for DSL-jurisdictional impacts only), fee-in-lieu (if fee-in-lieu sites have been approved for release of credits by the DSL and ACOE in the Project area), or on- or off-site wetland creation, enhancement, or restoration. Minimal on-site locations for wetland creation are available within the API, as areas adjacent to the ROW are privately owned and would require property acquisition. If on- or off-site mitigation is proposed, the DSL and ACOE will require a compensatory wetland mitigation plan.

A vegetated corridor analysis and Natural Resource Assessment report will be required for the Project in order to receive a Service Provider Letter (project approval) from CWS. Impacts to parcels that contain vegetated corridors will require vegetated corridor enhancement by CWS. In addition, impacts to vegetated corridors will require mitigation. CWS enhancement consists of

removing noxious weeds and planting native trees and shrubs within the vegetated corridor. Enhancement and/or mitigation plans will be required if impacts are proposed for the Project.

3.13 Water Quality / Stormwater Management

DEQ's 401 Water Quality Certification (WQC) process will be triggered if a 404 permit is required from the ACOE. If this process is triggered, a stormwater management plan (SWMP) will be required and need to be approved by DEQ.

The SWMP will need to quantify the Project's Contributing Impervious Area (CIA) in order to calculate treatment requirements. The CIA will have to be treated to meet ODOT, National Marine Fisheries Service (NMFS), and DEQ requirements. These requirements, as outlined in SLOPES IV, mandate that all stormwater quality treatment practices and facilities must be designed to treat stormwater originating from 50% of the cumulative rainfall from the 2-year, 24-hour storm for that site.

Treatment facilities for the proposed project may be located within the existing interchange in the vicinity of the on- and off-ramp loops. Treatment options could include vegetated swales, ditches, and planting within the ROW. If onsite areas do not offer sufficient space for proposed treatment facilities, additional ROW may need to be acquired.

Project construction activities are anticipated to disturb more than one acre of land which will trigger Section 402 of the CWA and will require a National Pollutant Discharge (NPDES) 1200-C permit. This permit requires that the holder prepare an Erosion and Sediment Control Plan (ESCP) which utilizes approved Best Management Practices (BMPs) to prevent erosion and control sediment runoff from the construction site. In addition, the permit requires the applicant to inspect and maintain erosion controls to ensure they are working properly. ODOT Region 1 currently holds a NPDES 1200-C permit.

There are no 303(d) listed waters located within the API. However, Dawson Creek, which is located approximately 700 feet east of the southeastern corner of the API, is water quality limited, but not needing a TMDL. Due to its proximity to the API, stormwater from within the API may flow into Dawson Creek. Consequently, Project engineers should develop plans to prevent untreated stormwater from within the API from being discharged into Dawson Creek. Additionally, in order to minimize potential direct water resource impacts during Project construction, the Project would require the preparation and implementation of an ESCP and associated BMPs for erosion and sediment control.

3.14 Summary

Table 9 provides information regarding requirements for further study for the proposed project. Table 10 provides details regarding the applicable permits, approvals, and clearances needed for the proposed Shute Road Interchange Improvement Project. Table 11 provides details regarding recommendations for resource avoidance, minimization and mitigation for the Shute Road Interchange Improvement Project.

Table 9. Requirements for Further Study for the Shute Road Interchange Improvement Project

Resource	Requires Further Study		Explanation
	Yes	No	
Air Quality	X		<ul style="list-style-type: none"> The proposed project involves adding lanes and increasing capacity on the over-crossing, channelization at on/off ramps, and/or alignment changes. The inclusion of any of these elements may require an Air Quality Technical Report. This project involves adding lanes (NW Shute Rd. over-crossing) and is partly within the Air Quality Management Area. Air Quality Conformance will be needed as part of the project.
Archaeology	X		<ul style="list-style-type: none"> A pedestrian survey should be conducted in the project area. If an archaeological site is identified that may be eligible for NHRP-listing and cannot be avoided, subsurface exploration and/or testing/evaluation of the site would be required. If an archaeological site eligible for NRHP-listing cannot be avoided, efforts should be made to minimize impacts. Results of background research and fieldwork should be documented in a technical report meeting SHPO guidelines. A DOE would be required for all archaeological sites identified. An ODOT archaeologist should complete Tribal consultation, draft an FOE, and submit final reports to SHPO.
Biology	X		<p>Botanical Resources</p> <ul style="list-style-type: none"> Botanical clearance surveys will be needed during the appropriate blooming period for the species listed in Table 1. Suggest two visits to capture early and late season blooming periods. If listed plant species are observed within the API, the ODOT Biologist should coordinate with the Project Team to avoid impacting these species. If listed species cannot be avoided, a BA should be prepared and submitted to USFWS and/or ODA. If no impacts to listed botanical species are anticipated, a No Effect Memorandum should be prepared. A follow-up noxious weed survey should also be conducted during the blooming period. The results of the botanical clearance and noxious weed surveys should be documented in a Botanical Clearance Report. Noxious weeds will need to be removed as part of the proposed project according to State law. Best Management Practices will need to be implemented to prevent the spread of noxious weeds. <p>Terrestrial Resources</p> <ul style="list-style-type: none"> Nesting migratory birds have the potential to occupy the API (shrubs and trees). Clearing and grubbing within the API may conflict with the MBTA. The timing of vegetation removal should occur between September 1 and March 1 so as to occur outside the nesting period for migratory birds. If no impacts to listed terrestrial species are anticipated, a No Effect Memorandum should be prepared

Table 9. Requirements for Further Study for the Shute Road Interchange Improvement Project (Continued)

Resource	Requires Further Study		Explanation
	Yes	No	
			<p>Fish and Aquatic Resources</p> <ul style="list-style-type: none"> • Although direct impacts to listed steelhead are not expected, indirect impacts are possible (construction related turbidity and increases in stormwater runoff). Due to these anticipated indirect effects to listed species, a BA or SLOPES IV Compliance Report must be prepared to provide ESA clearance. • ODFW has confirmed historic native migratory fish presence within the northern and southern unnamed tributaries to McKay Creek. All new or improved crossings of these streams would need to be designed to provide fish passage. An ODFW Fish Passage Plan may need to be prepared. • All in-water work should be scheduled during the ODFW In-Water-Work-Window: July 15 through September 30.
Floodplain/Floodway	X		<ul style="list-style-type: none"> • Areas within the API reside within the 100-year floodplain areas associated with the northern and southern unnamed tributaries to McKay Creek. • Project activities within the floodplain need to be authorized by Washington County via the Washington County Land Use Application process.
Land Use		X	<ul style="list-style-type: none"> • This project will not require a goal exception. This project is not likely to result in significant changes to the planned land uses and is consistent with planned uses.
Hazardous Materials	X		<ul style="list-style-type: none"> • A Level 1 Hazardous Materials Analysis is recommended for the proposed project. Depending on the results of the Level 1 Hazardous Materials Analysis, a Level 2 Hazardous Materials Analysis may also be required for the proposed project. • Agriculture fields are located within and adjacent to the API and may contain pesticides. Agriculture fields affected by the proposed project should be tested to determine if the soil can be handled as clean fill.
Historic	X		<ul style="list-style-type: none"> • There are five potentially historically significant properties within the API: a house on NW Birch Avenue (Property L), two houses and associated outbuildings on NW Shute Road (Properties E and F), the Classic Revival house on NW Groveland Drive (Property D), and the Five Oaks Meeting Place (Property G) are all likely eligible for the National Register. Additional research is required on all of these properties. • If additional research reveals that the properties are eligible for the National Register, impacts to these properties will need to be avoided if feasible, per State and Federal Historic Laws. • DOE and FOE would be required for all historic sites identified and all historic sites that may be affected, respectively. All DOE's and FOE's should be submitted to SHPO for approval.

Table 9. Requirements for Further Study for the Shute Road Interchange Improvement Project (Continued)

Resource	Requires Further Study		Explanation
	Yes	No	
Section 4(f)/6(f)	X		<ul style="list-style-type: none"> Based on a review of available data, it appears that Section 4(f) resources (historic) may be present within the API. If additional research confirms the presence of historic resources and these resources may be affected, the project will require Section 4(f) documentation. There are no properties encumbered with Section 6(f) Land and Water Funds within the API. As a result, no Section 6(f) impacts are anticipated.
Noise	X		<ul style="list-style-type: none"> A Noise Study will need to be prepared to address potential noise impacts as a result of the proposed project (new lanes and/or shifts in alignment of on- or off-ramps).
Socioeconomic	X		<ul style="list-style-type: none"> Recommend outreach with minority and low income population groups within the API. Results of outreach within the API should be documented as part of future public involvement and community outreach efforts for the proposed project.
Visual		X	<ul style="list-style-type: none"> No negative visual impacts are anticipated as a result of the proposed project. Care should be taken to minimize impacts to adjacent wetlands, waterways and farmland which constitute visual components of this rural interchange.
Water Quality / Stormwater	X		<ul style="list-style-type: none"> Due to the addition of impervious surface, a stormwater management plan will be required. Stormwater from the proposed project will need to be treated to meet ODOT, NMFS and DEQ standards. The CIA should be determined for the proposed project. A CIA determination will be used to calculate the amount of stormwater treatment needed for the proposed project.
Wetlands	X		<ul style="list-style-type: none"> Eight jurisdictional wetlands were identified within the API during the field investigation (Figure 6). The wetlands occupy approximately 14.2 acres within the API. A formal wetland delineation should be conducted when right-of-entry has been obtained throughout the API. A compensatory mitigation strategy for the ACOE will be required if impacts to wetlands and waters cannot be avoided. A CWS vegetated corridor assessment will be required.
Waters of U.S. and State	X		<ul style="list-style-type: none"> Four ditches and two tributaries to McKay Creek were identified during the field investigation. These water features occupy 1.4 acres within the API. A CWS vegetated corridor assessment will be required.

Table 10. Summary of Applicable Permits, Approvals, and Clearances Needed for the Shute Road Interchange Improvement Project

Resource	Type of Permit / Approval/ Clearance	Issuing Agency	Permit / Approval / Clearance	Estimated Timeline (after submittal)
Archaeology	SHPO Clearance for Archaeological Resources	SHPO	Determination of Eligibility (DOE) Finding of Effect (FOE) – Section 106	30 days
Historic	SHPO Clearance for Historic Resources	SHPO	Programmatic Agreement (Section 106)	N/A
Hazardous Materials	Level 1/Level 2 Hazardous Materials Clearance	ODOT	Letter to File	N/A
Biology	ESA Consultation for listed fish species: SLOPES IV Compliance Report or Biological Assessment	NMFS	SLOPES Approval or Biological Opinion	30 days (SLOPES) 45 days (NLAA) 135 days (LAA)
Biology	Botanical Clearance	ODOT	Botanical Clearance Report	N/A
Biology	Noxious Weed Clearance	ODOT	Botanical Clearance Report	N/A
Biology	ESA Clearance for listed plants and wildlife	ODOT	No Effect Memorandum	N/A
Biology	ODFW Fish Passage Plan	ODFW	Fish Passage Plan Approval	30 days
Biology	Migratory Bird Treaty Act Compliance for tree clearing	ODOT / APHIS	None (if trees and shrubs are removed outside MBTA nesting window March 1 – September 1) MBTA Clearance	N/A N/A
Water Quality	Section 401 Water Quality Certification	DEQ	SWMP	Concurrent with JPA
Water Quality	Section 404 Clean Water Act permit	ACOE	Joint Permit Application approval	NWP: 45-75 days IP: 120 days
Wetlands / Waters	Letter of Concurrence	DSL	Wetland/Waters Delineation Report approval	120 days
Wetlands / Waters	Jurisdictional Determination	ACOE	Wetland/Waters Delineation Report approval	60 days
Wetlands / Waters	Removal/Fill Permit	DSL	Joint Permit Application approval	GA: 40 days after Wetland/Waters Delineation Report concurrence IP: 120 days

Table 10. Summary of Applicable Permits, Approvals, and Clearances Needed for the Shute Road Interchange Improvement Project (continued)

Resource	Type of Permit / Approval/ Clearance	Issuing Agency	Permit / Approval / Clearance	Estimated Timeline (after submittal)
Wetlands / Waters	Vegetation Corridor Assessment Report and Enhancement/Mitigation Plan Approval	CWS	Service Provider Letter	15 days
Noise	Noise Clearance (if construction occurs outside of normal working hours)	Washington County / City of Hillsboro	Noise Variance	Project dependent
Local Permits	Washington County Land Use Application-Community Development	Washington County Land Use and Transportation	Public Notice, Public Hearing, Application Review	Project dependent
Local Permits	Washington County Right-of-Way Permit	Washington County Land Use and Transportation	Washington County Right-of-Way Permit	Project dependent
Local Permits	Washington County Land Use Permits	Washington County	No Rise Certificate	Project dependent
Floodplain/Floodway	Washington County Floodplain Permit	Washington County Land Use and Transportation	Flood Plain/Drainage Hazard Determination form	Project dependent

Table 11. Summary of Recommendations for Resource Avoidance, Minimization and Mitigation for the Shute Road Interchange Improvement Project

Resource	Resource Avoidance, Minimization and Mitigation Required		
	Yes	No	Recommendations
Air Quality		X	n/a
Archaeology	X		<ul style="list-style-type: none"> Establish No Work Zones based on the outcome of archaeological surveys. Ground disturbing activities should be identified during the design phase, if possible, and cleared for archaeological resources early. If ODOT does not provide the contractor with these locations prior to bid let, the contractor would be responsible for hiring an archaeological consultant to examine these areas after bid let. A qualified archaeological monitor and/or Tribal monitor may be retained to monitor ground disturbing activities. If archaeological resources or human remains are discovered during ground disturbing activities, these activities shall be halted and an ODOT archaeologist shall be contacted for further instructions.
Biology	X		<ul style="list-style-type: none"> The timing of vegetation removal should occur between September 1 and March 1 so as to occur outside the nesting period for migratory birds.
Floodplain/Floodway	X		<ul style="list-style-type: none"> Avoid impacts to the floodway/floodplain surrounding the northern and southern unnamed tributaries to McKay Creek.
Land Use		X	n/a
Hazardous Materials		X	n/a
Historic	X		<ul style="list-style-type: none"> Avoid impacts to five potentially historically significant properties (D, E, F, G, and L).
Section 4(f)/6(f)	X		<ul style="list-style-type: none"> Avoid impacts to five potentially historically significant properties (D, E, F, G, and L).
Noise		X	n/a
Socioeconomic		X	n/a
Visual	X		<ul style="list-style-type: none"> Avoid impacts to wetlands, waterways, and farmland as these constitute visual components of this rural interchange.
Water Quality / Stormwater	X		<ul style="list-style-type: none"> Stormwater treatment will be required due to increases in impervious surface area within the API.
Wetlands	X		<ul style="list-style-type: none"> Impacts to wetlands/waters of the U.S. and State will require compensatory mitigation for both the ACOE and DSL. Currently, the wetland mitigation banks within the service area of the API (Fernhill and Tualatin Valley) do not have credits available. However, as credits become available at these banks, mitigation at these banks may be an option for compensatory wetland mitigation for this Project. If bank credits are unavailable during the permitting process, alternative forms of mitigation will need to be considered, including payment-in-lieu (for DSL-jurisdictional impacts only), fee-in-lieu (if fee-in-lieu sites have been approved for release of credits by the DSL and ACOE in the Project area), or on- or off-site wetland creation, enhancement, or restoration. If on- or off-site mitigation is proposed, the DSL and ACOE will require a compensatory wetland mitigation plan.
Waterways and other waters of the U.S. and State	X		<ul style="list-style-type: none"> Impacts to the southern and northern unnamed tributary to McKay Creek and jurisdictional ditches should be avoided.

4.0 REFERENCES

- Armitage, Charles L. 1988 Archaeological Survey and Test of the Helvetia Road/Sunset Highway Interchange, Washington County, Oregon. Oregon State Museum of Anthropology, University of Oregon, Eugene. Submitted to Oregon Department of Transportation, Salem.
- Brick, Jim. 2010. Personal communication with Alexis Casey (MB&G Biologist) via email. ODFW / ODOT Liaison. Clackamas, Oregon.
- Brown, Rocky. 2010. February 22, 2010. Personal communication with Jonathon Belmont (MB&G Scientist) via phone. Washington County Engineering. Hillsboro, Washington
- CH₂M Hill Northwest, Inc. 1996 A Cultural Resource Survey Of The Tualatin Valley Water District's North Transmission Line, Washington County. CH2M Hill Northwest, Inc.
- City of Hillsboro, 2008. *Helvetia Concept Plan*. Prepared by City of Hillsboro, Angelo Planning Group, CH₂M Hill, Inc., Leland Consulting Group, DKS Associates, Jeanne Lawson Associates, and Pam Baker Consulting. February 2008. Hillsboro, OR.
- Clark, Rosalind L. 1984. *Helvetia Road Interchange – Sunset Highway*. Oregon Department of Transportation. Salem, Oregon.
- Ellis, David V. 2003a *Shute Road Cultural Resources*. Archaeological Investigations Northwest, Inc., Portland, Oregon. Prepared for City of Hillsboro, Hillsboro, Oregon.
- Ellis, David V. 2004b. *A Cultural Resources Survey of the Shute Road Industrial Site, Hillsboro, Oregon*. Archaeological Investigations Northwest, Inc. Portland, Oregon. Prepared for Group McKenzie.
- Ellis, David V. and Elizabeth J. O'Brien. 2003 *Shute Road UGB Addition Concept Plan*. Archaeological Investigations Northwest, Inc., Portland, Oregon. Prepared for Group McKenzie.
- Federal Emergency Management Agency (FEMA). 2010. Flood Zone Designations. <http://map1.msc.fema.gov/idms/IntraView.cgi?KEY=13747495&IFIT=1>. Accessed February 11, 2010.
- Fishman Environmental Services. 2001. City of Hillsboro Natural Resource Inventory. <http://siletz.dsl.state.or.us/lwi/hillsboro.pdf>. Accessed February 2, 2010.
- Gordon, Lilli and Elizabeth Craig. 2010. Personal communication with Melissa Hogan. ODOT Community Affairs Representatives. Portland, Oregon.
- Green, G. L. 1982. Soil Survey of Washington County, Oregon. U.S. Department of Agriculture, Soil Conservation Service. 90 p.

- Hart, Linda P., Kendra Carlisle, and Robert R. Musil. 2008 Archaeological Survey along US26, Sunset Highway, North Plains to 185th, Washington County, Oregon (Key Number 13707). Heritage Research Associates, Inc., Eugene, Oregon. Submitted to Oregon Department of Transportation, Salem. 3 June.
- Hezler, Margaret. 2004 Exploratory Probing of ATMS Communications Infrastructure (US26 and Hwy217), Washington County, Oregon (ODOT Key #10870). State Museum of Anthropology, Museum of Natural History, University of Oregon, Eugene. Submitted to Oregon Department of Transportation, Salem. 22 July.
- Hibbs Jr., Charles and David V. Ellis. 1988. An Inventory of Cultural Resources and Evaluation of the Effects of the Proposed South Mist Feeder Gas Pipeline, Located between the Upper Nehalem River Valley and the Tualatin Valley in Northwestern Oregon, Part 1 of 2. Charles Hibbs and Associates. Prepared for Northwest Natural Gas Company.
- Johnson Reid. 2009. Draft Economic Opportunities Analysis. Prepared for the City of Hillsboro, March 10, 2009. Johnson Reid Land Use Economics, Portland, OR.
- Lippincott, Marilyn. 2010. Personal communication with Melissa Hogan. State Parks Planning and Grants Project Officer.
- Metro. 2008. Air Quality Conformity Determination Report for the 2035 Regional Transportation Plan and the 2008-2011 Metropolitan Transportation Improvement Program. Joint Policy Advisory Committee on Transportation. Portland, Oregon.
- National Agriculture Imagery Program (NAIP). 2009. MrSID Raster Dataset. "Washington County Mosaic." U.S. Department of Agriculture, Farm Service Agency. Washington, D.C.
- Natural Resources Conservation Service (NRCS). 1999. Hydric Soils List: Washington County, Oregon.
- Oregon Department of Agriculture (ODA). 2009. Noxious Weed Policy and Classification System. Salem, Oregon.
- Oregon Department of Environmental Quality (DEQ). 2006. Oregon's 2004/2006 Integrated Report. www.deq.state.or.us/wq/assessment/rpt0406/results.asp Accessed February 11, 2010
- Oregon Department of Environmental Quality (DEQ). 2010. DEQ Hazardous Materials Database.
- Oregon Department of Fish and Wildlife (ODFW). 2008. Oregon Guidelines for Timing of In Water Work to Protect Fish and Wildlife Resources. June, 2008. Salem, Oregon.
- Oregon Department of Forestry (ODF). 2003. ODF Fish Presence and Stream Size Data. <http://www.odf.state.or.us/GIS/fishpres/default.asp?stat=cs>. Accessed February 1, 2010.

- Oregon Department of State Lands (DSL). 2001. Essential Salmon Habitat for Washington County, Oregon. Available at URL: <http://www.oregon.gov/DSL/PERMITS/esshabitat.shtml>
- Oregon Department of State Lands (DSL). 2010. Local Wetland Inventories. <http://www.oregonstatelands.us/DSL/WETLAND/lwi.shtml>. Accessed February 1, 2010.
- Oregon Natural Heritage Information Center (ORNHIC). 2010. Query of ORNHIC database within a 2-mile radius of API.
- Oregon State University (OSU) 2010a. 2009 Oregon County and State Agricultural Estimates. Special Report 790-09, February 2010. Oregon State University Extension Service, Corvallis, OR.
- Oregon State University (OSU). 2010b. Oregon Explorer: Oregon Rapid Wetland Assessment Protocol (ORWAP). <http://www.oregonexplorer.info/wetlands/orwap/>. Accessed February 1, 2010.
- Pettigrew, Richard M. 1984 Report on the Archeological Survey of the Proposed Helvetia Road Interchange, Sunset Highway, Washington County, Oregon. Oregon State Museum of Anthropology, University of Oregon, Eugene. Submitted to Oregon Department of Transportation, Salem.
- Roberts, Stephen. February 18, 2010. Personal communication with Jonathon Belmont (MB&G Scientist) via phone. Washington County Roads. Hillsboro, Washington
- Schwarz, Charles. 2010. Personal communication with Melissa Hogan (ODOT R1 REC). ODOT Hazardous Materials Coordinator. Salem, Oregon
- Steele, Tacy. February 18, 2010. Personal communication with Jonathon Belmont (MB&G Scientist) via phone. Washington County Roads. Hillsboro, Washington
- StreamNet. 2010. Fish Data for the Northwest. Available at URL: <http://www.streamnet.org/>
- Thorsgard, Eirik. 2010. Personal communication with Kurt Roedel (ODOT Archaeologist) via email and telephone. Cultural Resources Coordinator, Confederated Tribes of the Grand Ronde Community of Oregon.
- U. S. Census Bureau. 2000. 2000 Census Detailed Data Sets. Washington County Census Block and Block Groups, Department of the Census, Washington, D.C.
- U. S. Census Bureau. 2008. 2006-2008 Fact Sheets. Fact sheets for the City of Hillsboro, Washington County, and State of Oregon. Department of the Census, Washington, D.C.
- U.S. Fish and Wildlife Service (USFWS). 2010a. Federally listed, proposed, candidate species and species of concern under the jurisdiction of the fish and wildlife service which may occur within Washington County, Oregon. Portland, Oregon.

U.S. Fish and Wildlife Service (USFWS). 2010b. National Wetlands Inventory. <http://www.fws.gov/wetlands/data/Mapper.html>. Accessed February 1, 2010.

U.S. Geological Survey (USGS). 1986. Hillsboro, Oregon, 7.5-minute quadrangle, 1:24000.

Washington County. 2008. West Union Community Plan. Updated July 2008. Washington County Department of Land Use and Transportation, Planning Division, Hillsboro, OR.

Washington County. Community Development Code. <http://washtech.co.washington.or.us/LDS/index.cfm?id=7>. Accessed February 18, 2010.

Appendix A

Area of Potential Impact Photographs

1



2



<p>MB&G</p>	<p>1. View to the northeast from NW Groveland Drive of the northern unnamed tributary of McKay Creek.</p>
<p>Mason, Bruce & Girard, Inc.</p>	<p>2. View to the southwest of the northern unnamed tributary of McKay Creek from NW Schaff Road. NW Helvetia Road is visible in the photo background.</p>
<p>February 3, 2010</p>	

3



4



<p>MB&G</p>	<p>3. View to the southeast of the Shute Road Interchange. The westbound on-ramp from Shute Road to Highway 26 is visible at photo left, Shute Road is visible in the background, and Highway 26 is visible at photo right.</p>
<p>Mason, Bruce & Girard, Inc. February 3, 2010</p>	<p>4. View to the southwest showing the eastern portion of the API. Highway 26 is located behind the photographer.</p>

5



6



<p>MB&G</p>	<p>5. View to the southeast of the Shute Road Interchange. 6. View to the northwest of a roadside drainage ditch and the eastbound off-ramp from Highway 26 to Shute Road</p>
<p>Mason, Bruce & Girard, Inc. February 3, 2010</p>	

7



8



<p>MB&G</p>	<p>7. View to the west of the southern unnamed tributary of McKay Creek at the western extent of the API. Upland agricultural fields are shown in the background of the photo.</p>
<p>Mason, Bruce & Girard, Inc. February 3, 2010</p>	<p>8. Typical upland grass seed production field within the northern portion of the API with a view to the south. The northern unnamed tributary of McKay Creek is visible at the bottom of the photo. Note the numerous stands of Oregon white oak (<i>Quercus garryana</i>) (red arrows) within the API. NW Helvetia Road is visible at photo right.</p>

Appendix B

Technical Reports

- **Air Quality Resources**
- **Archaeology Resources**
 - **Biology Resources**
- **Hazardous Materials Resources**
 - **Land Use Resources**
 - **Noise Resources**
 - **Historic Resources**
 - **Section 4(f)/6(f)**
- **Socioeconomic Resources**
- **Water Quality Resources**
 - **Wetlands Resources**
 - **Visual Resources**



ODOT Region 1 Environmental Unit Air Quality Baseline Report

Date: February 23, 2010

Project Name: US26: Shute Road Interchange

Location: U.S. 26 at Shute Road Intersection in Washington County

Project Description Summary: The proposed project would reconstruct the Shute Road/Helvetia Road interchange. The project would include the addition of a Westbound to Southbound loop ramp, reconstructing the Westbound exit and entrance loop ramps, and adding a second right turn lane to the Eastbound entrance ramp.

Air Quality

ODOT Region 1 Environmental Coordinator, Melissa Hogan performed basic scoping for Air Quality as normally documented in a Part 3 document in order to determine the classification of the project under NEPA.

- The project API is located in part within an air quality attainment area and a maintenance area for carbon monoxide. The division between the two areas is Metro's Urban Growth Boundary (UGB) which is Helvetia/Shute Rd. Basically, East of the interchange is within the UGB and West of the interchange is outside the UGB.
- The project involves adding lanes and increasing capacity on the over-crossing, channelization at on/off ramps, and/or alignment changes. The inclusion of any of these elements may require an Air Quality Technical Report.

The project is listed in the 2010-2013 State Transportation Improvement Program (STIP).

- The project is also listed on the 2004 Regional Transportation Plan (RTP) project list (#3149).

The project is identified on Metro's Air Quality Conformity Determination Report (February 2008) list of projects.

Air Quality Summary

This project involves adding lanes (Shute Rd. over-crossing) and is partly within the AQMA. Air Quality Conformance will be needed as part of the project. Air quality is anticipated to improve since a goal of the project is to reduce congestion.

Prepared by: _____

Date: March 2010

Melissa Hogan

ODOT Regional Environmental Coordinator, Region 1, West

Reviewed by: _____

Date: March 2010

Jeff Buckland

ODOT Senior Environmental Project Manager, Region 1

ENVIRONMENTAL BASELINE REPORT FOR ARCHAEOLOGICAL RESOURCES

Project: US26 @ Shute Road Interchange Project

Key Number: Not provided

Federal Aid Number: Not provided

EA: 10PS120-610-G22

Location: Township 1 North, Range 2 West, Sections 15, 16, 22, 23
Hillsboro Quadrangle, Washington County

Environmental Baseline Report Due Date: February 22, 2010

Environmental Baseline Report Date: February 18, 2010

Let Date: Not provided

Author: Kurt Roedel, ODOT Archaeologist

PROJECT DESCRIPTION: The proposed project would reconstruct the US26/Shute Road/Helvetia Road interchange, add a westbound to southbound loop ramp, reconstruct the westbound exit and entrance loop ramps, and add a second right turn lane to the eastbound entrance ramp (Figures 1 and 2). The proposed project would also widen a portion of NW Helvetia Road, relocating NW Jacobson Road, NW Groveland Drive, NW Meek Road, and a local farm access road. A new, wider five lane over-crossing would also be constructed.

ARCHAEOLOGICAL RESOURCES STUDIES:

ODOT archaeologist Kurt Roedel reviewed maps on file at the Oregon SHPO to determine if previous cultural resources studies have been conducted in the project area vicinity and if archaeological resources are recorded in the project area vicinity.

Ten previous cultural resources studies have been conducted in the project area; however, most of the project area has not been examined for archaeological resources (Armitage 1988; CH2M Hill Northwest, Inc. 1996; Clark 1984; Ellis 2003a, 2003b; Ellis and O'Brien 2003; Hart et al. 2008; Helzer 2004; Hibbs 1988; Pettigrew 1984). Nearly all of the surveys relate to highway improvements along US26 or development west of Shute Road and south of US26. No archaeological sites are recorded in the project area; however, multiple sites and isolates are recorded less than 0.5 miles of the project area (Figure 3). A reported archaeological site is in the northern portion of the project area, north of the US26/Shute Road/Helvetia Road interchange (Figure 3). The site boundaries shown on Figure 3 are approximate.

Historic General Land Office maps (United States Surveyor General 1852, 1862) indicate that most of the project area vicinity was under agricultural production by the early 1850s (Figure 4). Several homesteads had been established near the project area, including Alexander Zachary and Edward Constable (Figure 4). Alexander Zachary's stable was in close proximity to the project area (Figure 4). Early settlers took advantage of the gently rolling prairie with first rate clay loam soil, noted by the surveyor (United States Surveyor General 1852). Travel in the project area vicinity was expedited with the construction of an unnamed wagon road which extends across present Shute Road (Figure 4).

Historic and contemporary aerial photographs dated between 1963 and 1991 (Oregon State Highway Department 1963, 1965, 1966; Oregon Department of Transportation 1972, 1981, 1991) show the expansion of the US26/Shute Road/Helvetia Road interchange from a two-lane highway with a frontage road to a four-lane highway with a wide median and an overcrossing for Shute and Helvetia Roads. The 1966 aerial shows much of the project area remained in agricultural production since the 1850s (Oregon State Highway Department 1966; Figure 5). Two buildings and/or structures are shown near the present interchange (Figure 5). Most development through 1966 was southwest of the project area; however, by 2009, increased development has occurred along the north edge of US26 and south of the project area, along NW Huffman Street (Figure 6).

TRIBAL CONSULTATION:

Mr. Roedel contacted Roberta Kirk (personal communication 2010), Review and Compliance Coordinator, Geo Visions, Confederated Tribes of Warm Springs, Robert Kentta (personal communication 2010), Cultural Resources Director, Confederated Tribes of Siletz Indians, and Eirik Thorsgard (personal communication 2010), Cultural Resources Coordinator, and Don Day (personal communication 2010), Cultural Resources Site Protection Monitor, Confederated Tribes of the Grand Ronde Community of Oregon.

On January 25, 2010, Mr. Thorsgard stated that a landowner north of US26, near Helvetia Road, has an archaeological site on the property. The exact location is unknown; however, an approximate location is shown on Figure 3.

Additional comments may be provided as project development continues.

FIELD VISIT:

Mr. Roedel conducted a field visit on February 11, 2010. Mr. Roedel walked along portions of US26, Shute Road, and Helvetia Road to take photographs and provide notes for this report (Figures 7 through 14). Mr. Roedel did not identify any archaeological resources during the field visit.

Recent construction north of US26 and east of Helvetia Road obscured most of the ground surface in this area (Figures 2 and 6). Fill is immediately north of the new construction (Figure 7). The remaining ground surfaces contained standing water. A small stand of oak trees and Himalayan blackberry and an artificial wetland are between Helvetia Road and the new construction (Figures 7 and 8). Many songbirds were present in the wetland.

An agricultural field north of NW Jacobson Road contained grasses and should provide decent ground visibility for future archaeological examination (Figure 9).

A large stand of oak trees is north of US26 and west of Helvetia Road (Figure 9). McKay creek is east of the oak stand. Reed canary grass is present along the creek banks and provides zero ground visibility (Figure 10). A historic two-story home is north of NW Groveland Drive within the project area. The home was obscured by mature trees (Figure 6).

Ground surfaces in the vicinity of the interchange have been heavily disturbed from construction of the four-lane highway with median and of the Shute Road/Helvetia Road overpass (Figure 11). US26 has been constructed on fill west of the interchange and both cut and filled east of the interchange (Figures 11 and 12).

Areas south of US26 and along Shute Road appear to be in grass production or fallow with limited ground visibility (Figure 13). Figure 14 shows that US26 eastbound is on a cut/fill slope above possible wetlands along the south edge of US26.

CONCLUSIONS AND RECOMMENDATIONS:

Mr. Roedel conducted a literature review and field visit and contacted the Confederated Tribes of Warm Springs, Confederated Tribes of Siletz Indians, Confederated Tribes of the Grand Ronde Community of Oregon, to determine the probability of archaeological resources in the project area.

Both precontact and historic sites are recorded within close proximity of the project area. In addition, a reported site is likely within the project area (Figure 3). Historic maps and aerial photographs suggest additional archaeological resources may be present near the interchange (two buildings and/or structures, the Edward Constable homestead, and an unnamed wagon road) and near the east end of the project area (Alexander Zachary stable) (Figures 4 and 5).

Although a large portion of the project area has been under agricultural production since the 1850s (Figures 4, 5, and 6), the small oak stand and large oak stand along Helvetia Road may have the most intact ground surfaces within the project area. Landforms higher in elevation and northwest of McKay Creek, near the historic house, also have a higher probability for archaeological resources.

Mr. Roedel did not identify any archaeological resources during his field visit. The following recommendations are extended:

- A pedestrian survey should be conducted in the project area. Shovel probes should be placed in areas with a high probability for archaeological resources or with low ground visibility. Special emphasis should occur in areas that may include the reported archaeological site, two buildings and/or structures, the Edward Constable homestead, an unnamed wagon road, and the Alexander Zachary stable.
- If an archaeological site is identified that may be eligible for listing in the National Register of Historic Places and cannot be avoided, subsurface exploration and/or testing/evaluation of the site would be required.
- If an archaeological site eligible for listing in the National Register of Historic Places cannot be avoided, efforts should be made to minimize impacts. Data recovery may be needed if the site cannot be avoided.

- ODOT Determinations of Eligibility would be required for all archaeological sites identified.
- Results of background research and fieldwork should be documented in a technical report meeting SHPO guidelines.
- An ODOT archaeologist would complete Tribal consultation, draft a Finding of Effect and submit final reports to SHPO.
- Water quality facilities, staging areas, disposal areas, and material sources should be identified during the design phase, if possible, and cleared for archaeological resources early in the planning process. If ODOT does not provide the contractor with these locations prior to bid let, the contractor would be responsible for hiring an archaeological consultant to examine these areas after bid let.
- A qualified archaeological monitor and/or Tribal monitor may be retained to monitor ground disturbing activities.
- In the event that archaeological resources or human remains are inadvertently discovered during ground disturbing activities, these activities shall be halted immediately and an ODOT archaeologist shall be contacted immediately for further instructions.

REFERENCES CITED:

Armitage, Charles L.

1988 *Archaeological Survey and Test of the Helvetia Road/Sunset Highway Interchange, Washington County, Oregon*. Oregon State Museum of Anthropology, University of Oregon, Eugene. Submitted to Oregon Department of Transportation, Salem.

CH2M Hill Northwest, Inc.

1996 *A Cultural Resource Survey Of The Tualatin Valley Water District's North Transmission Line, Washington County*. CH2M Hill Northwest, Inc.

Clark, Rosalind L.

1984 *Helvetia Road Interchange - Sunset Highway*. Oregon Department of Transportation, Salem.

Day, Don

2010 Don Day, Cultural Resources Site Protection Monitor, Confederated Tribes of the Grand Ronde Community of Oregon, personal communication, e-mail, February 11, 2010.

Ellis, David V.

2003a *Shute Road Cultural Resources*. Archaeological Investigations Northwest, Inc., Portland, Oregon. Prepared for City of Hillsboro, Hillsboro, Oregon.

2004b *A Cultural Resources Survey of the Shute Road Industrial Site, Hillsboro, Oregon*. Archaeological Investigations Northwest, Inc., Portland, Oregon. Prepared for Group McKenzie.

Ellis, David V. and Elizabeth J. O'Brien

2003 *Shute Road UGB Addition Concept Plan*. Archaeological Investigations Northwest, Inc., Portland, Oregon. Prepared for Group McKenzie.

Hart, Linda P., Kendra Carlisle, and Robert R. Musil

2008 *Archaeological Survey along US26, Sunset Highway, North Plains to 185th, Washington County, Oregon (Key Number 13707)*. Heritage Research Associates, Inc., Eugene, Oregon. Submitted to Oregon Department of Transportation, Salem. 3 June.

Hezler, Margaret

2004 *Exploratory Probing of ATMS Communications Infrastructure (US26 and Hwy217), Washington County, Oregon (ODOT Key #10870)*. State Museum of Anthropology, Museum of Natural History, University of Oregon, Eugene. Submitted to Oregon Department of Transportation, Salem. 22 July.

Hibbs Jr., Charles and David V. Ellis

1988 *An Inventory of Cultural Resources and Evaluation of the Effects of the Proposed South Mist Feeder Gas Pipeline, Located between the Upper Nehalem River Valley and the Tualatin Valley in Northwestern Oregon, Part 1 of 2.* Charles Hibbs and Associates. Prepared for Northwest Natural Gas Company.

Kentta, Robert

2010 Robert Kentta, Cultural Resources Director, Confederated Tribes of Siletz Indians, personal communication, e-mail, February 11, 2010.

Kirk, Roberta

2010 Roberta Kirk, Review and Compliance Coordinator, Geo Visions, Confederated Tribes of Warm Springs, personal communication, e-mail, February 11, 2010.

Oregon State Highway Department

1963 *Aerial Photograph of US26 and Shute Road, MP 61.06.* 178-10. Oregon State Highway Department, Salem. 10 January.

1965 *Aerial Photograph of US26 and Shute Road Xing.* 231.65. Oregon State Highway Department, Salem. 12 July.

1966 *Aerial Photograph of US26 and Shute Road.* WGB-8, L1-52. Oregon State Highway Department, Salem. 15 August.

Oregon Department of Transportation

1972 *Aerial Photograph of US26 and Shute Road Xing.* 482-34. Oregon Department of Transportation, Salem. March.

1981 *Aerial Photograph of Sunset Highway @ Helvetia Road.* A777-91. Oregon Department of Transportation, Salem. 14 April.

1981 *Aerial Photograph of US26 and Shute Road/Helvetia Road.* A91-013, 1-19, 124254. Oregon Department of Transportation, Salem. 15 September.

2009 *Aerial Photograph of US26 and Shute Road/Helvetia Road.* Oregon Department of Transportation, Salem. Accessed 18 February.

Pettigrew, Richard M.

1984 *Report on the Archeological Survey of the Proposed Helvetia Road Interchange, Sunset Highway, Washington County, Oregon.* Oregon State Museum of Anthropology, University of Oregon, Eugene. Submitted to Oregon Department of Transportation, Salem.

Thorsgard, Eirik

2010 Eirik Thorsgard, Cultural Resources Coordinator, Confederated Tribes of the Grand Ronde Community of Oregon, personal communication, telephone, January 25, 2010; e-mail, February 11, 2010.

United States Surveyor General

1852 General Land Office Map, Township 5 South, Range 4 West, Willamette Meridian. University of Oregon Libraries, Eugene. URL: http://libweb.uoregon.edu/map/GIS/Data/Oregon/glo_home.htm. Accessed 8 July 2009.

1864 General Land Office Map, Township 5 South, Range 4 West, Willamette Meridian. University of Oregon Libraries, Eugene. URL: http://libweb.uoregon.edu/map/GIS/Data/Oregon/glo_home.htm. Accessed 8 July 2009.

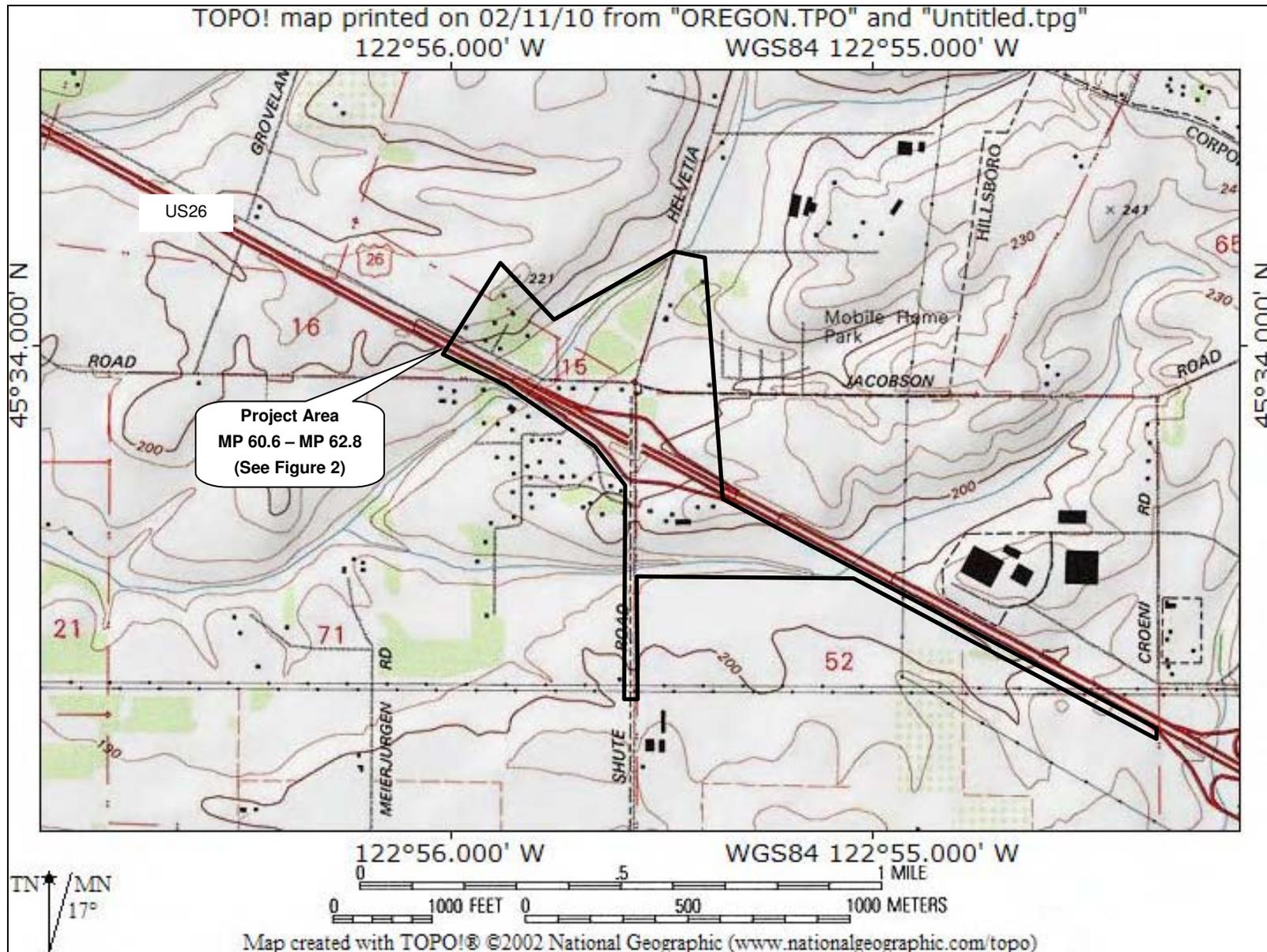


Figure 1. Approximate location of the US26 @ Shute Road Interchange Project, No Key Number.

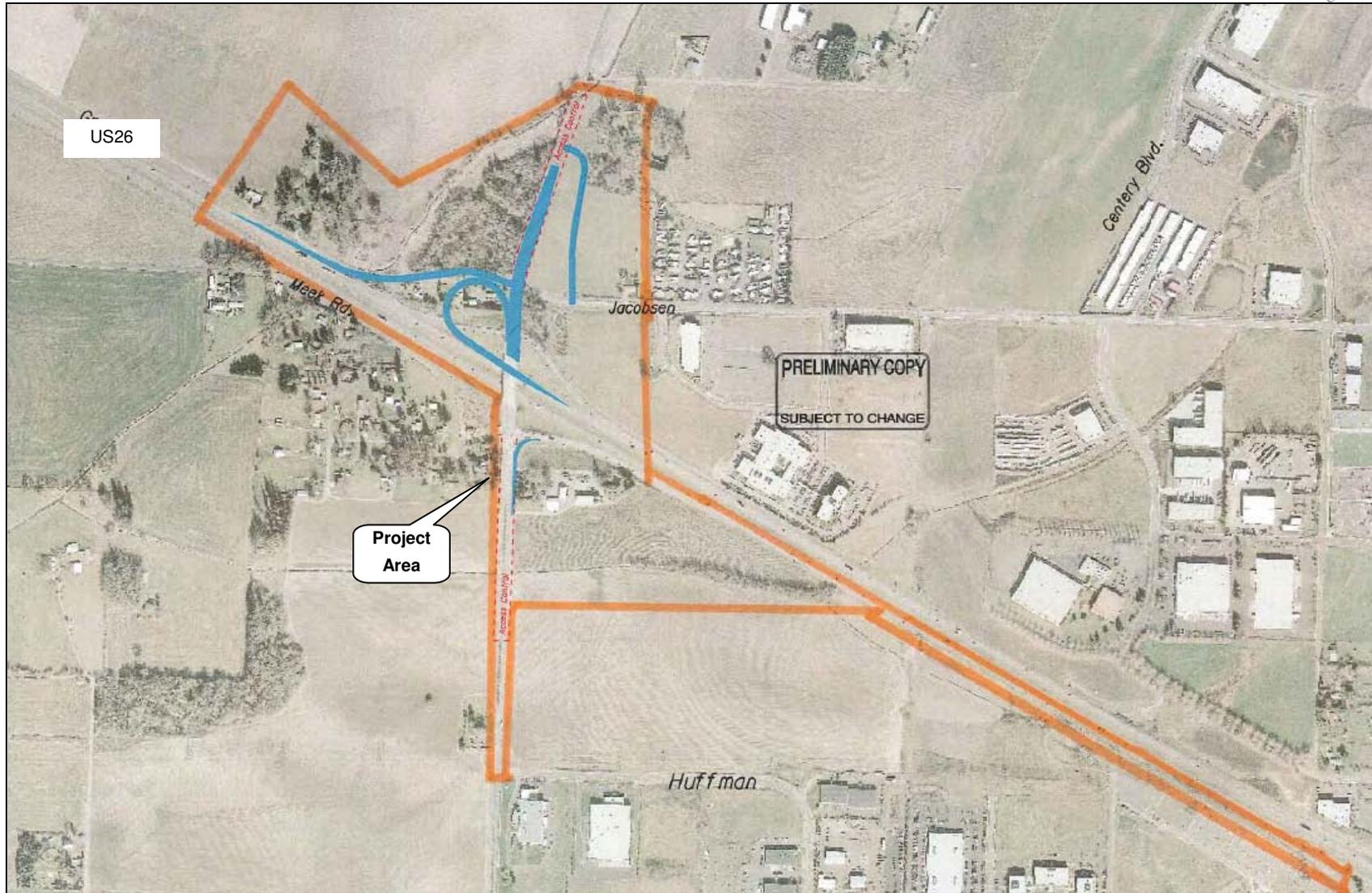


Figure 2. Aerial showing the approximate project area.

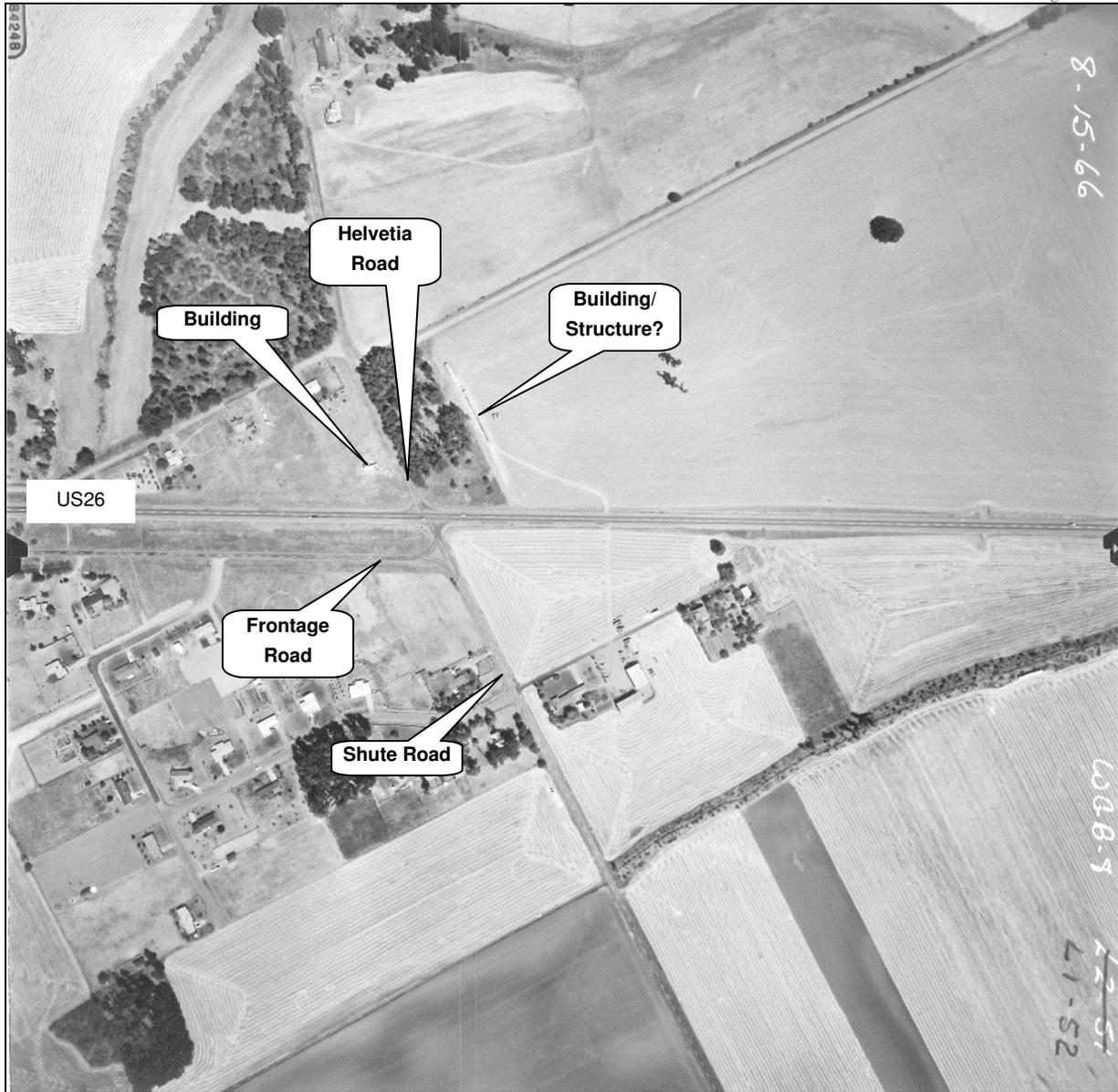


Figure 5. View of the west portion of the project area in 1966 (Oregon State Highway Department 1966).

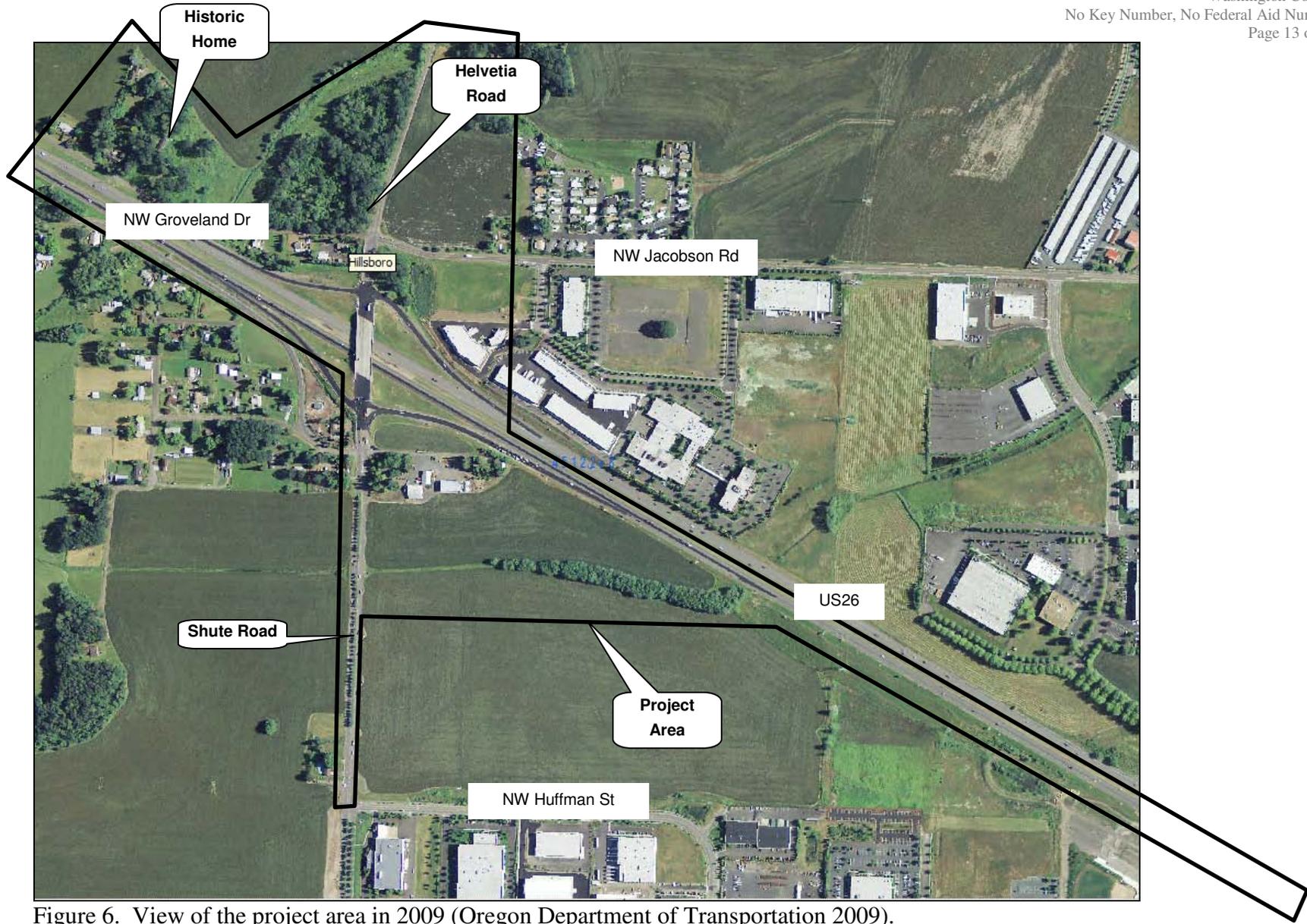


Figure 6. View of the project area in 2009 (Oregon Department of Transportation 2009).

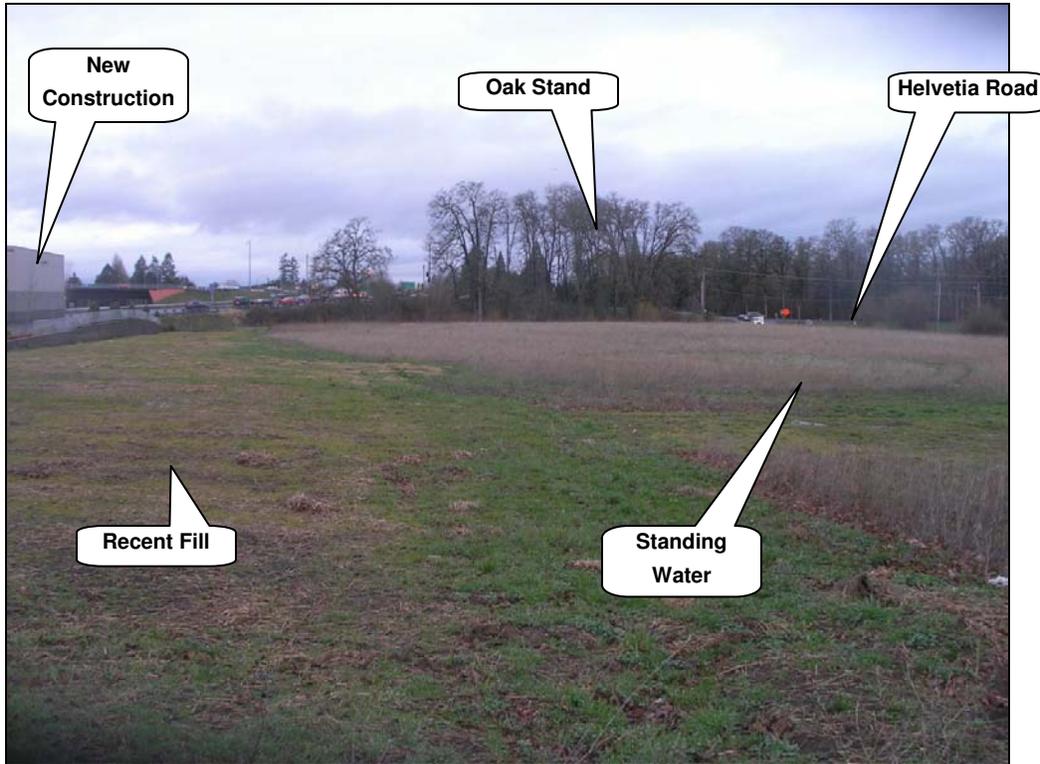


Figure 7. View of new construction and small oak stand north of US26 and east of Helvetia Road, facing west.

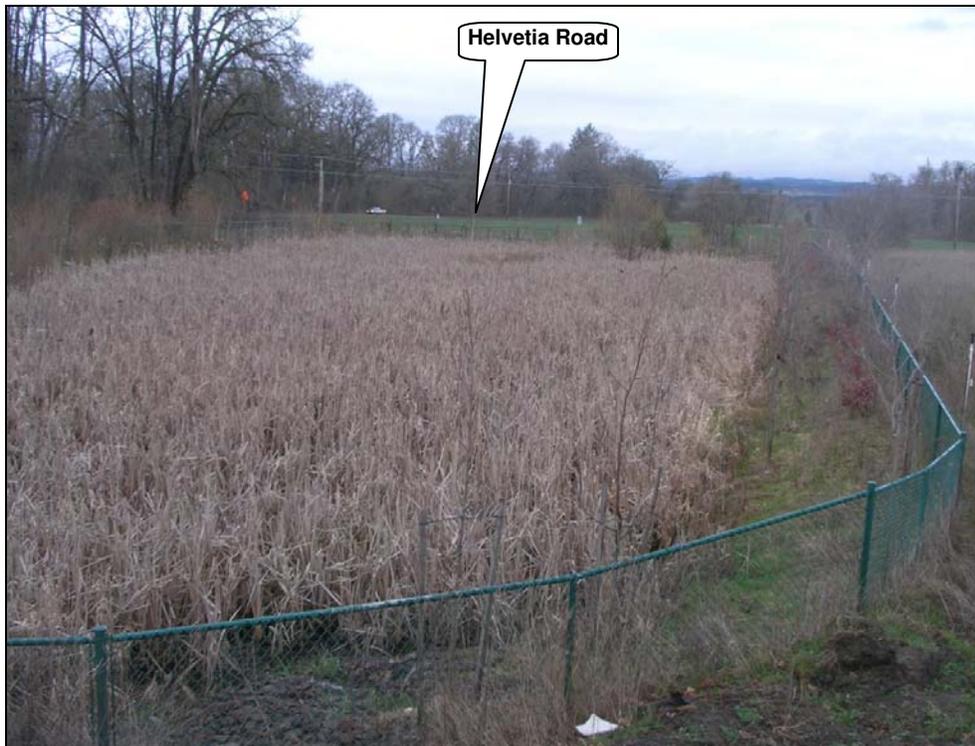


Figure 8. View of artificial wetland and small oak stand north of US26 and east of Helvetia Road, facing north.



Figure 9. View of the grass field east of Helvetia Road and the large oak stand west of Helvetia Road, facing west.



Figure 10. View of McKay Creek and the large oak stand west of Helvetia Road, facing east.



Figure 11. View of the west end of the project area towards the US26/Shute Road/
Helvetia Road interchange, facing southeast.



Figure 12. View of the north edge of US26, east the US26/Shute Road/
Helvetia Road interchange, facing southeast.



Figure 13. View of the south portion of the project area, east of Shute Road, facing northeast.



Figure 14. View of US26 eastbound, in the east portion of the project area, facing southeast.

Biology Environmental Baseline Report
SHUTE ROAD INTERCHANGE IMPROVEMENT PROJECT
Key Number K16842
Washington County, Oregon

Prepared for:



ODOT Region 1
123 Flanders Street
Portland, Oregon 97213

Prepared by:

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February 22, 2010

MB&G Project No. 1581

TABLE OF CONTENTS

I.	SITE DATA SUMMARY	III
1.0	INTRODUCTION.....	4
1.1	Purpose.....	4
1.2	Project Description.....	4
1.3	Area of Potential Impact (API)	4
2.0	METHODS	6
3.0	EXISTING ENVIRONMENTAL RESOURCES	6
3.1	Botanical Resources	6
3.2	Terrestrial Wildlife Resources	9
3.3	Fish and Aquatic Resources	10
4.0	CONCLUSIONS.....	12
4.1	Botanical Resources	12
4.2	Terrestrial Wildlife Resources	12
4.3	Fish and Aquatic Resources	12
4.4	Summary	15
5.0	REFERENCES	16

TABLES

Table 1	Typical Vegetation within the Riparian Forest / Wetland Fringe Vegetation Community.....	6
Table 2	Typical Vegetation within the Oak Woodland Vegetation Community.....	7
Table 3	Typical Vegetation within the Disturbed / Maintained Grassland / Highway Right-of-Way Vegetation Community	7
Table 4	Rare Botanical Species with the Potential to Inhabit the API.....	8
Table 5	ODA-listed Noxious Weed Infestations within API.....	9
Table 6	Terrestrial Wildlife Species with the Potential to Inhabit the API	10
Table 7	Fish and Aquatic Species with the Potential to Inhabit the API.....	10
Table 8	Summary of Applicable Permits, Approvals, and Clearances Needed for the Shute Road Interchange Improvement Project	14

FIGURES

Table 1	Project Location and Vicinity Map.....	5
Table 2	Aquatic Resources Map.....	13

APPENDICES

Appendix A	Area of Potential Impact Photographs	
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I. SITE DATA SUMMARY

Data Summary	
Project Name:	Shute Road Interchange Improvement Project
ODOT Key #:	K16842
Location of Project:	Mile Posts (MP) 60.6 to 62.8 on Highway 26 Township 1N, Range 2W, Sections 15, 16, 22, and 23
Size Area of Potential Impact (API):	150 acres
City:	Hillsboro
County:	Washington County, OR
Project Staff:	Kristen Currens Alexis Casey
Site Visit:	February 3, 2010
Current Land Use(s):	Highway right-of-way, residential, commercial, and agricultural
Waterways on Site:	Two tributaries to McKay Creek
6th Field HUC:	170900100107 (McKay Creek)
ODFW In Water Work Window:	July 15 – September 30

1.0 INTRODUCTION

This Biology Environmental Baseline Report (EBR) summarizes available baseline biological data and describes environmental permits and clearances that may be necessary for the Shute Road Interchange Improvement Project (Project) along Highway 26 in Washington County, Oregon. While additional data collection may be necessary, existing baseline biological data will be used to thoroughly characterize environmental features for this project, and to help the design team develop alternatives that avoid and/or minimize environmental impacts associated with the interchange improvement project.

1.1 Purpose

The Oregon Department of Transportation (ODOT) proposes to improve the interchange at Shute Road located between Mile Post (MP) 60.6 and MP 62.8 on Highway 26 (Figure 1). The increasing population in Washington County has begun to strain the existing transportation infrastructure. The purpose of this project is to alleviate congestion by increasing the capacity at this interchange.

1.2 Project Description

The proposed project would reconstruct the Shute Road/Helvetia Road Interchange. The project would include the addition of a westbound-to-southbound loop ramp, reconstructing the westbound exit and entrance loop ramps, and adding a second right turn lane to the eastbound entrance ramp.

1.3 Area of Potential Impact (API)

The Area of Potential Impact (API) is located along Highway 26 at the Shute Road Interchange in Washington County, Oregon. From the center of the interchange, the API extends approximately 2,000 feet to the north, south and west. In addition, the API extends approximately 1.25 miles east towards the NW Cornelius Pass Road Interchange. The eastern portion of the API is located within the City of Hillsboro. Figure 1 shows the general location of the API.

Topography within the API is generally flat with an approximate elevation of 200 feet above mean sea level (msl) (USGS 1986). The majority of the API has experienced alterations to the natural landscape as the result of the construction of Highway 26, road fill for construction of the elevated Shute Road overcrossing, construction of multiple secondary roadways, agriculture, and residential and commercial development. The majority of the native vegetation has been removed within the API. There are two creeks within the API, both unnamed tributaries of McKay Creek, that have been channelized and now receive greater volumes of water due to the increase in impervious surface within the API.

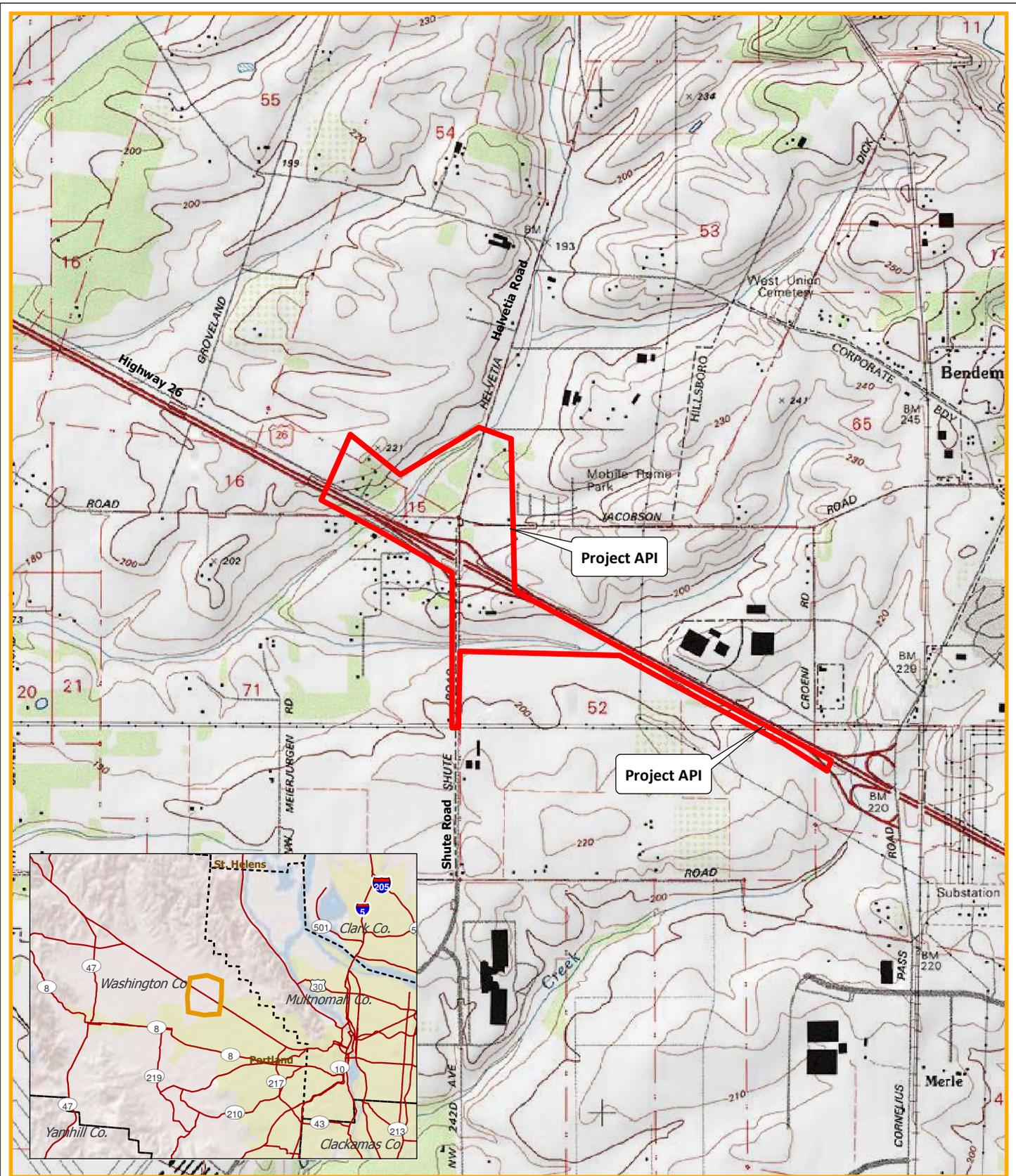


Figure 1.

MB&G

Mason, Bruce & Girard, Inc.
Natural Resource Consultants since 1921

**Project Location and Vicinity Map
Shute Road Interchange Improvement Project
Washington County, Oregon**

Data Source: TOPO! USGS 7.5 min., 24K Digital Topographic Data, Oregon. 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.



0 0.25 0.5 Miles

0 0.25 0.5 0.75 Kilometers

2.0 METHODS

The following sections of this report summarize the major biological resources and issues identified based upon a review of existing database information, discussions with regulatory agency staff, and a site investigation conducted by Mason, Bruce, and Girard, Inc. (MB&G) on February 3, 2010. At the time of the site investigation, ODOT did not have right-of-entry for areas outside of public rights-of-way. As such, areas outside of public rights-of-way were visually inspected from the road or highway.

The site investigation was conducted to evaluate the baseline conditions for natural resources (i.e., aquatic/riparian conditions, presence of wetlands, habitat conditions, and noxious weed presence) within the project API. During the field visit, the API was examined and photographed (Appendix A). Data gaps and/or discrepancies in the baseline information have been noted for each of the sections discussed below and, if needed, additional data gathering tasks have been identified.

Prior to conducting the site investigation on February 3, 2010, MB&G obtained data regarding threatened and endangered species within the API from U.S. Fish and Wildlife Service (USFWS), StreamNet, and the Oregon Natural Heritage Information Center (ORNHIC). MB&G also contacted Oregon Department of Fish and Wildlife (ODFW) to confirm current or historical native migratory fish presence within the API (Brick, J. pers. comm. 2010).

3.0 EXISTING ENVIRONMENTAL RESOURCES

3.1 Botanical Resources

3.1.1 Vegetation Communities

The API addressed in this EBR contains three general vegetation communities: riparian forest/wetland fringe, oak woodland, and disturbed/maintained grassland/highway right-of-way. Typical plant species within these communities are summarized below (Tables 1, 2 and 3). Each plant species' status as either a native, introduced, or noxious weed species is also listed. These tables do not constitute a complete inventory of plant species within the site, but are presented to convey the general vegetation communities identified during the site investigation.

Table 1. Typical Vegetation within the Riparian Forest / Wetland Fringe Vegetation Community

Scientific Name	Common Name	Native Status ^{1,2}
<i>Acer macrophyllum</i>	Bigleaf maple	Native
<i>Alnus rubra</i>	Red alder	Native
<i>Pseudotsuga menziesii</i>	Douglas fir	Native
<i>Polystichum munitum</i>	Western swordfern	Native
<i>Pteridium aquilinum</i>	Western brackenfern	Native
<i>Fraxinus latifolia</i>	Oregon ash	Native
<i>Rubus armeniacus</i>	Himalayan blackberry	Introduced/Noxious
<i>Corylus cornuta</i>	Beaked hazelnut	Native
<i>Phalaris arundinacea</i>	Reed canarygrass	Native

¹ Source Natural Resource Conservation Service Plants National Database (<http://plants.usda.gov/index.html>)

² Source ODA Noxious Weed List (ODA 2009)

Table 2. Typical Vegetation within the Oak Woodland Vegetation Community

Scientific Name	Common Name	Native Status ^{1,2}
<i>Quercus garryana</i>	Oregon white oak	Native
<i>Alnus rubra</i>	Red alder	Native
<i>Pseudotsuga menziesii</i>	Douglas fir	Native
<i>Polystichum munitum</i>	Western swordfern	Native
<i>Pteridium aquilinum</i>	Western brackenfern	Native
<i>Rubus armeniacus</i>	Himalayan blackberry	Introduced/Noxious
<i>Hedera helix</i>	English ivy	Introduced/Noxious
<i>Symphoricarpos albus</i>	Common snowberry	Native
<i>Oemleria cerasiformis</i>	Indian plum	Native
<i>Prunus</i> sp.	Cherry	Native
<i>Corylus cornuta</i>	Beaked hazelnut	Native
<i>Rubus spectabilis</i>	Salmonberry	Native

¹ Source Natural Resource Conservation Service Plants National Database (<http://plants.usda.gov/index.html>)

² Source ODA Noxious Weed List (ODA 2009)

Table 3. Typical Vegetation within the Disturbed/Maintained Grassland/Highway Right-of-Way Vegetation Community

Scientific Name	Common Name	Native Status ^{1,2}
<i>Schedonorus phoenix</i>	Tall fescue	Introduced
<i>Poa</i> sp.	Kentucky bluegrass	Native and introduced
<i>Agrostis</i> sp.	Bentgrass	Native and introduced
<i>Trifolium repens</i>	White clover	Introduced
<i>Rumex acetosella</i>	Common sheep sorrel	Introduced
<i>Taraxacum officinale</i>	Common dandelion	Native and introduced
<i>Hypochaeris radicata</i>	Hairy cat's ear	Introduced

¹ Source Natural Resource Conservation Service Plants National Database (<http://plants.usda.gov/index.html>)

² Source ODA Noxious Weed List (ODA 2009)

The riparian forest/wetland vegetation community is located adjacent to both unnamed tributaries to McKay Creek within the API. The oak woodlands located adjacent to Helvetia Road in the northern part of API comprise the oak woodland vegetation community. In addition, the disturbed/maintained grassland/highway right-of-way vegetation community is located on either side of Highway 26 and in the vicinity of the highway on- and off-ramps.

3.1.2 Threatened and Endangered Species

Data from the USFWS and ORNHIC within a 2-mile radius of the proposed API indicates that several federal and state listed threatened and endangered plant species have the potential to occur within the API (USFWS 2010, ORNHIC 2010). A listing of these species including their federal and state listing status, whether critical habitat is designated, blooming period, and habitat requirements is shown in Table 4.

Table 4. Rare Botanical Species with the Potential to Inhabit the API

Scientific Name	Common Name	Federal Status	State Status	Critical Habitat (Y/N)	Blooming Period	Habitat
<i>Lupinus sulphureus</i> ssp. <i>kincaidii</i>	Kincaid's lupine	T	T	Yes*	April-July	Upland prairie grasslands, oak savanna, and woodland edges
<i>Sidalcea nelsoniana</i>	Nelson's sidalcea	T	T	No	May-September	Open areas on damp soil, in meadows, wet prairie remnants, fencerows, roadsides, deciduous forest edges, and occasionally Oregon ash wetlands
<i>Aster curtus</i>	White-topped aster	SOC	T	No	July – August	Low elevation, moist native prairies, on well-drained upland soils in oak savannas
<i>Castilleja levisecta</i>	Golden Indian paintbrush	T	E	No	May-June	Moist or wet meadows and native prairies at low elevations
<i>Delphinium leucophaeum</i>	White rock larkspur	SOC	E	No	May - August	Dry roadside ditches, cliffs, rocky slopes and lowland meadows, at cliff bases, and basaltic ledges
<i>Delphinium pavonaceum</i>	Peacock larkspur	SOC	E	No	April – mid July	Well drained areas of native prairie, roadsides with no development
<i>Erigeron decumbens</i> var. <i>decumbens</i>	Willamette daisy	E	E	No	May-mid August	Native wetland and upland prairie, oak savanna, heavier soils, restricted to native prairie grassland

E= Endangered; T=Threatened; SOC=Species of Concern

**The designated Critical Habitat for Kincaid's lupine is not located within the vicinity of the API.*

The API contains potentially suitable habitat for all the species listed in Table 4. In particular, suitable habitat is located within the open grass fields, fencerows, and oak groves of the API.

3.1.3 Noxious Weeds

During the February 3, 2009 site investigation, MB&G biologists also observed Oregon Department of Agriculture (ODA)-listed noxious weed species throughout the API (ODA 2009). Due to the timing of the site investigation outside the optimal blooming period for noxious weeds, not all weed infestations may have been recorded. Table 5 provides a listing of the identified weed infestations, the ODA rating of the species observed, and the location of the infestations within the API.

Table 5. ODA-listed Noxious Weed Infestations within API

Scientific Name	Common Name	ODA Rating ¹	Quadrant of API	Location Description
<i>Rubus armeniacus</i>	Himalayan blackberry	B	NE	Open field west of Five Oaks Business Park
<i>Rubus armeniacus</i>	Himalayan blackberry	B	NE	North side of NW Jacobson Road
<i>Rubus armeniacus</i>	Himalayan blackberry	B	NE	Understory of oak grove located between westbound highway off-ramp and NW Jacobson Road
<i>Rubus armeniacus</i>	Himalayan blackberry	B	NE	Riparian area adjacent to northern unnamed tributary to McKay Creek at crossing with NW Helvetia Road
<i>Rubus armeniacus</i>	Himalayan blackberry	B	NW	Understory of oak grove located west of NW Helvetia Road
<i>Rubus armeniacus</i> <i>Phalaris arundinacea</i>	Himalayan blackberry Reed canarygrass	B N/A	NW	Wetland fringe along northern unnamed tributary to McKay Creek, north of NW Groveland Road
<i>Rubus armeniacus</i> <i>Cytisus scoparius</i>	Himalayan blackberry Scotch broom	B B	NW	Understory of forested area located north of NW Groveland Road at the west end of API
<i>Rubus armeniacus</i>	Himalayan blackberry	B	SW	Understory of oak grove located south of Highway 26 at the west end of API
<i>Rubus armeniacus</i>	Himalayan blackberry	B	SW	Fill slope located south of eastbound highway off-ramp

¹ Source ODA Noxious Weed List (ODA 2009)

3.2 Terrestrial Wildlife Resources

Review of data available from the USFWS and ORNHIC data within a 2-mile radius of the proposed API indicates that several federal and state listed terrestrial wildlife species have the potential to occur within the API (USFWS 2010, ORNHIC 2010). A listing of these species, as well as their federal and state listing status, whether critical habitat is designated, and habitat requirements is shown in Table 6.

Table 6. Terrestrial Wildlife Species with the Potential to Inhabit the API

Scientific Name	Common Name	Federal Status	State Status	Critical Habitat (Y/N)	Habitat
<i>Strix occidentalis caurina</i>	Northern spotted owl	T	T	Yes	Inhabits forests characterized by dense canopy closure of mature and old-growth trees, abundant logs, standing snags, and live trees with broken tops
<i>Brachyramphus marmoratus</i>	Marbled murrelet	T	T	Yes	Nests in forest stands with old growth forest characteristics; forests are generally characterized by large trees with large branches or deformities for use as nest platforms
<i>Eremophila alpestris strigata</i>	Streaked horned lark	C	N/A	No	Associated with bare ground or sparsely vegetated habitats; nests in grass seed fields, pastures, fallow fields and wetland mudflats

E= Endangered; *T*=Threatened; *C*=Candidate

The forested areas within the API, which predominantly consist of small oak groves, do not have the habitat characteristics required by either the northern spotted owl or the marbled murrelet. Although critical habitat has been designated for both species, the closest occurrence of critical habitat for both species is located in the Coast Range more than 5 miles to the west of the API. Similarly, the API does not contain suitable habitat for the streaked horned lark which utilizes bare ground or sparsely vegetated habitats. No such habitats are present within the API.

The API does contain potential habitat for nesting migratory birds since they may utilize trees and shrubs located throughout the API.

3.3 Fish and Aquatic Resources

Review of data available from StreamNet and ORNHIC within a 2-mile radius of the proposed API indicates that steelhead of the Upper Willamette River (UWR) Distinct Population Segment (DPS) has the potential to occur within the proposed API (StreamNet 2010, ORNHIC 2010). This species is federally listed as Threatened (T) and state listed as Sensitive Vulnerable (SV). Table 7 summarizes this species federal and state listing status, designated critical habitat, and distribution within the vicinity of the API. .

Table 7. Fish and Aquatic Species with the Potential to Inhabit the API

Scientific Name	Common Name	Federal Status	State Status	Critical Habitat (Y/N)	Distribution
<i>Oncorhynchus mykiss</i>	Steelhead Upper Willamette River DPS	T	SV	No	Tualatin River and tributaries (Rearing and migration)

T = Threatened; *SV* = Sensitive Vulnerable

Two unnamed tributaries to McKay Creek are located within the proposed API (170900100107 6th Field Hydrologic Unit Code [HUC]): the northern unnamed tributary and the southern unnamed tributary. The northern unnamed tributary flows southwest across the API and underneath Highway 26 through an approximately 8-foot by 8-foot diameter concrete box culvert. Within the API, this tributary is approximately 10 feet wide and 5 feet deep. North of Highway 26, this tributary is bordered on either side by a wetland dominated by reed canarygrass. South of Highway 26, the riparian area consists of reed canarygrass in the understory with red alder and Oregon ash in the overstory.

The southern unnamed tributary to McKay Creek flows west across the southern portion of the API. Within the API, this tributary has been channelized, is approximately 8 feet wide and 2 to 3 feet deep, and is largely devoid of a riparian area.

The unnamed tributaries' confluence with the mainstem of McKay Creek is located approximately 1.5 miles downstream (southwest) of the API. Approximately 5 miles downstream from this confluence, McKay Creek flows into Dairy Creek which then flows into the Tualatin River within 2 miles of the McKay/Dairy Creek confluence.

UWR DPS steelhead utilize McKay Creek for rearing and migration (StreamNet 2010). The upstream extent of steelhead distribution is located approximately 1 mile downstream (southwest) of the proposed API (Figure 2). The unnamed tributaries to McKay Creek do not currently provide rearing and migration habitat for UWR steelhead. The habitat within these unnamed tributaries is considered low quality because of the following factors: the streambed is largely comprised of silt and sand, there is minimal riparian vegetation, and there is a general lack of channel complexity.

McKay Creek is mapped as Essential Salmonid Habitat (ESH) according to the Oregon Department of State Lands. However, the ESH designation does not extend into the two unnamed tributaries of McKay Creek located within the API (DSL 2001).

Although steelhead and other native migratory fish do not currently utilize the tributaries within the API, it is likely that steelhead and native migratory fish used these tributaries historically. This determination is based on an investigation of accessible portions of the two unnamed tributaries to McKay Creek within the API on February 3, 2010 and a review U.S. Geological Survey topographic maps (Hillsboro, Oregon Quadrangle, USGS 1986) for the area. In particular, the size of each unnamed tributary suggests that this system likely supported fish in its upper reaches. Additionally, although man-made barriers (i.e. culverts) to fish passage may have been constructed recently, there are no natural barriers to upstream fish passage within McKay Creek or its tributaries. Lack of current use by native migratory fish is likely due to degradation of stream habitat as a result of development of the surrounding areas.

The Oregon Department of Fish and Wildlife (ODFW) has determined that there was historical use of these streams by native migratory fish. This determination was based upon the physical attributes of the tributaries, the lack of natural barriers downstream, and the size of the drainage basins (J. Brick pers. comm. 2010).

4.0 CONCLUSIONS

4.1 Botanical Resources

Based on the February 3, 2010 site investigation and the review of available information, there is suitable habitat for listed botanical species within the API. As a result, botanical clearance surveys will need to be conducted during the appropriate blooming period for the species listed in Table 4. The API also contains noxious weed species (Table 5). A follow-up weed survey should also be conducted during the blooming period to ensure all noxious weed populations are documented.

In order to capture both early and late blooming botanical species as well as noxious weeds, two site visits are recommended. The results of the botanical clearance and noxious weed surveys should be documented in a Botanical Clearance Report. If listed plant species are observed within the API, the ODOT Biologist should coordinate with the Project Team to avoid impacting these species. If listed species cannot be avoided by the project, a Biological Assessment (BA) should be prepared and submitted to USFWS and/or ODA.

All noxious weed control efforts will follow ODOT standards. Noxious weed infestations located within the API should be included on project plans and be removed prior to construction of the proposed project. In addition, inspection and cleaning of construction equipment prior to entry into the construction site should be required. Weed seeds can easily become trapped in the tread of tires or within the crevices of heavy machinery, and spread across the API during the construction phase of the project. Weed control should also be required during the one year post-construction maintenance period to prevent the spread of noxious weeds.

4.2 Terrestrial Wildlife Resources

The API does not contain suitable habitat for any state or federally-listed terrestrial wildlife species. A No Effect Memorandum should be prepared to document these results.

Nesting migratory birds have the potential to occupy a significant portion of the API due to the suitable habitat afforded by the trees and shrubs that were observed during the February 3, 2010 site investigation. The Migratory Bird Treaty Act (MBTA) prevents the take of adult migratory birds, their young, eggs, and all body parts. Take permits are not widely available so preventative measures are recommended to avoid violations of the law. Under this law, adult migratory birds can be deterred from nesting and empty nests can be removed or disturbed, but active nests and attending adults are not to be harassed. Incidental take of migratory birds is generally avoided by activity timing restrictions as well as preventive measures. The only proposed project activity that has the potential to conflict with the MBTA is the clearing of trees that may provide nesting habitat for migratory birds. At the Shute Road Interchange Improvement Project, the timing of vegetation removal (clearing and grubbing) should occur between September 1 and March 1 so as to occur outside the nesting period for migratory birds.

4.3 Fish and Aquatic Resources

The API does not contain suitable habitat for any state or federally-listed fish or aquatic species. However, the upstream extent of steelhead distribution is located approximately 1 mile downstream (southwest) of the API. Although direct impacts to listed salmonids are not expected

as a result of the proposed project, indirect impacts are possible. If the project includes work in, over, or adjacent to the two unnamed tributaries to McKay Creek, indirect impacts may include temporary increases in turbidity as a result of construction. In addition, the proposed project will include increases in impervious surface which may cause indirect stormwater impacts to steelhead downstream.

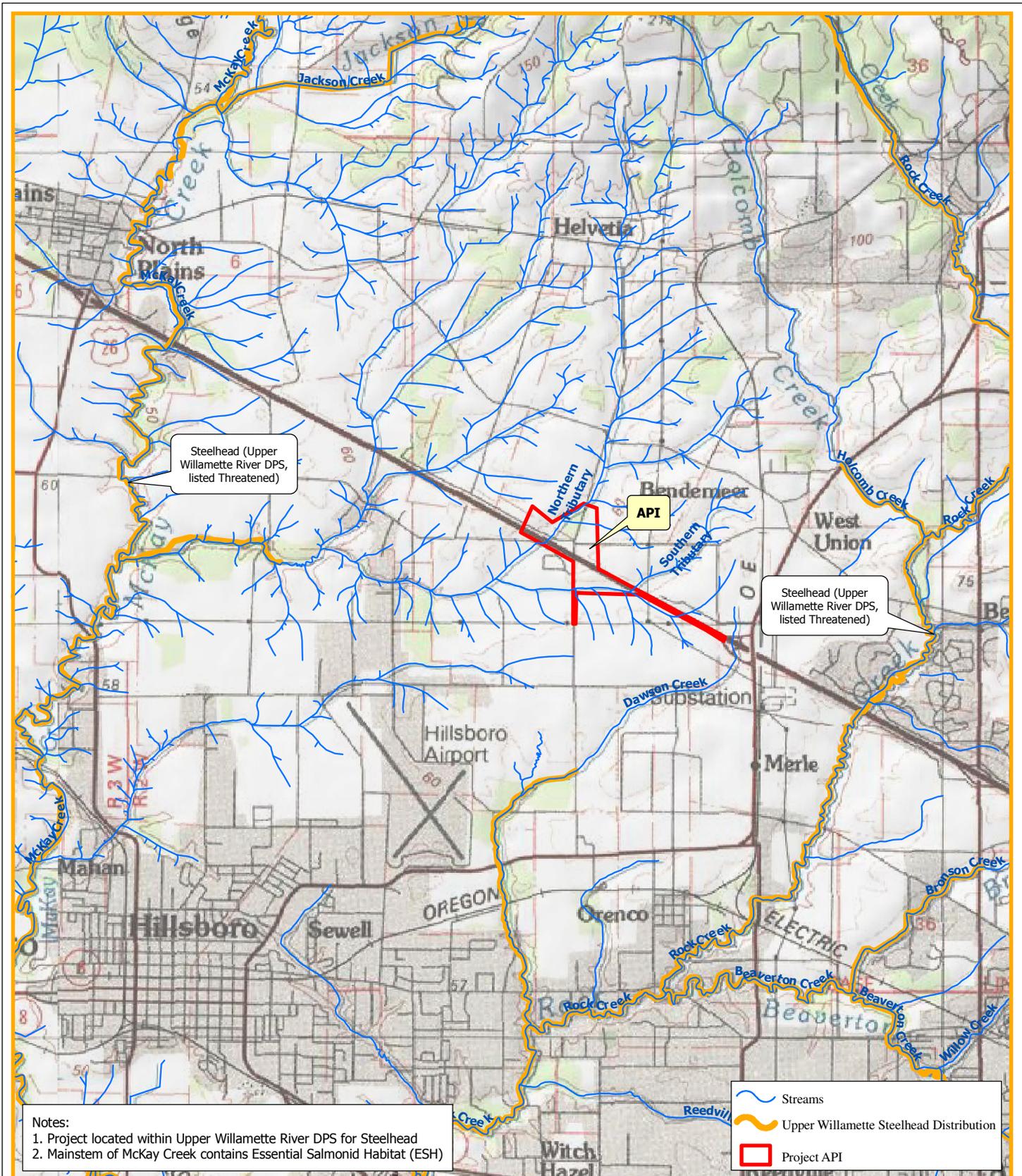
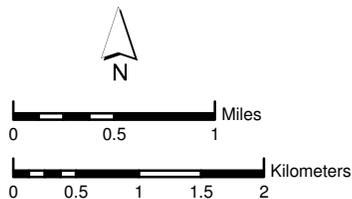


Figure 2.

MB&G

Mason, Bruce & Girard, Inc.
Natural Resource Consultants since 1921



Aquatic Resources Map
Shute Road Interchange Improvement Project
Washington County, Oregon

Data Source: TOPO! USGS 7.5 min., 24K Digital Topographic Data, Oregon. Streams data from ODF. 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.

Due to these anticipated indirect effects to listed species, a BA or Standard Local Operating Procedure for Endangered Species (SLOPES IV) Compliance Report must be prepared to provide Endangered Species Act (ESA) clearance. Upon submittal of this document to the regulatory agencies, ODOT can expect a maximum review timeline of 135 business days for a BA with a Likely to Adversely Affect (LAA) effect determination. Minimizing or avoiding impacts on the natural resources described within the API may shorten the review timeline.

There is evidence that native migratory fish historically utilized the two unnamed tributaries to McKay Creek within the API. As such, all new or improved stream crossings would need to be designed to provide fish passage in accordance with the Oregon Fish Passage Law. As the proposed project design is refined, the ODOT Biologist will need to ensure that any activities within these tributaries (i.e., culvert extensions or replacements) meet ODFW’s requirements. In addition, an ODFW Fish Passage Plan may need to be prepared depending on the scope of the proposed project.

If the proposed project does include activities within the two unnamed tributaries to McKay Creek, these activities should be scheduled during ODFW-approved In-Water Work Window for the Tualatin River and its tributaries (July 15 through September 30) (ODFW 2008).

4.4 Summary

Table 8 provides details regarding the applicable permits, approvals, and clearances needed for the proposed Shute Road Interchange Improvement Project.

Table 8. Summary of Applicable Permits, Approvals, and Clearances Needed for the Shute Road Interchange Improvement Project

Type of Permit / Approval/ Clearance	Issuing Agency	Permit / Approval / Clearance	Estimated Timeline (after submittal)
ESA Consultation for listed fish species: SLOPES IV Compliance Report or Biological Assessment	NMFS	SLOPES Approval or Biological Opinion	30 days (SLOPES) 45 days (NLAA) 135 days (LAA)
Botanical Clearance	ODOT	Botanical Clearance Report	N/A
Noxious Weed Clearance	ODOT	Botanical Clearance Report	N/A
ESA Clearance for listed plants and wildlife	ODOT	No Effect Memorandum	N/A
ODFW Fish Passage Plan	ODFW	Fish Passage Approval	30 days
Migratory Bird Treaty Act Compliance for tree clearing	ODOT / APHIS	None (if trees and shrubs are removed outside MBTA nesting window March 1 – September 1) MBTA Clearance	N/A N/A

NLAA – Not Likely to Adversely Affect; LAA – Likely to Adversely Affect; APHIS – Animal and Plant Health Inspection Service; SLOPES – Standard Local Operating Procedures for Endangered Species.

5.0 REFERENCES

- Brick, Jim. 2010. Personal communication with Alexis Casey (MB&G Biologist) via email. ODFW / ODOT Liaison. Clackamas, Oregon.
- Natural Resource Conservation Service (NRCS). 2010. Plants National Database. Available at URL: <http://plants.usda.gov/index.html>
- Oregon Department of Agriculture (ODA). 2009. Noxious Weed Policy and Classification System. Salem, Oregon.
- Oregon Department of Fish and Wildlife (ODFW). 2008. Oregon Guidelines for Timing of In Water Work to Protect Fish and Wildlife Resources. June, 2008. Salem, Oregon.
- Oregon Natural Heritage Information Center (ORNHIC). 2010. Query of ORHNIC database within a 2-mile radius of API.
- Oregon Department of State Lands (DSL). 2001. Essential Salmon Habitat for Washington County, Oregon. Available at URL: <http://www.oregon.gov/DSL/PERMITS/esshabitat.shtml>
- StreamNet. 2010. Fish Data for the Northwest. Available at URL: <http://www.streamnet.org/>
- U.S. Fish and Wildlife Service (USFWS). 2010. Federally listed, proposed, candidate species and species of concern under the jurisdiction of the fish and wildlife service which may occur within Washington County, Oregon. Portland, Oregon.
- U.S. Geological Survey (USGS). 1986. Hillsboro, Oregon., 7.5-minute quadrangle, 1:24000.

Appendix A

Area of Potential Impact Photographs

1



2



<p>MB&G</p>	<p>1. View to the northeast from NW Groveland Drive of the northern unnamed tributary of McKay Creek.</p>
<p>Mason, Bruce & Girard, Inc.</p>	<p>2. View to the southwest of the northern unnamed tributary of McKay Creek from NW Schaff Road. NW Helvetia Road is visible in the photo background.</p>
<p>February 3, 2010</p>	

3



4



<p>MB&G</p>	<p>3. View to the southeast of the Shute Road Interchange. The westbound on-ramp from Shute Road to Highway 26 is visible at photo left, Shute Road is visible in the background, and Highway 26 is visible at photo right.</p>
<p>Mason, Bruce & Girard, Inc. February 3, 2010</p>	<p>4. View to the southwest showing the eastern portion of the API. Highway 26 is located behind the photographer.</p>

5



6



<p>MB&G</p>	<p>5. View to the southeast of the Shute Road Interchange. 6. View to the northwest of a roadside drainage ditch and the eastbound off-ramp from Highway 26 to Shute Road</p>
<p>Mason, Bruce & Girard, Inc. February 3, 2010</p>	

7



8



<p>MB&G</p>	<p>7. View to the west of the southern unnamed tributary of McKay Creek at the western extent of the API. Upland agricultural fields are shown in the background of the photo.</p>
<p>Mason, Bruce & Girard, Inc.</p> <p>February 3, 2010</p>	<p>8. Typical upland grass seed production field within the northern portion of the API with a view to the south. The northern unnamed tributary of McKay Creek is visible at the bottom of the photo. Note the numerous stands of Oregon white oak (<i>Quercus garryana</i>) (red arrows) within the API. NW Helvetia Road is visible at photo right.</p>



ODOT Region 1 Environmental Unit Hazardous Materials Baseline Report

Date: February 24, 2010

Project Name: US26: Shute Road Interchange

Location: U.S. 26 at Shute Road Intersection in Washington County

Project Description Summary: The proposed project would reconstruct the Shute Road/Helvetia Road interchange. The project would include the addition of a Westbound to Southbound loop ramp, reconstructing the Westbound exit and entrance loop ramps, and adding a second right turn lane to the Eastbound entrance ramp.

Hazardous Materials

ODOT Region 1 Environmental Coordinator, Melissa Hogan performed basic scoping for hazardous materials as normally documented in a Part 3 document in order to determine the classification of the project under NEPA. The purpose of the assessment was to identify potential environmental conditions (sources of hazardous materials) that could impact project construction. This report does not negate the need for additional Hazardous Materials studies that are routinely performed as part of ODOT projects that include ground disturbance.

No Registered Geologist or other Hazardous Materials professional participated with the preparation or review of this baseline overview of Hazardous Materials. It is for internal use only and may not be relied upon by any other entity without written permission from an authorized ODOT representative. No environmental assessment can wholly eliminate uncertainty regarding the potential for environmental conditions in connection with a Project.

The site consists of rural or agricultural land with limited residential and undeveloped land usage. No evidence of environmental impacts was observed.

Hazardous materials are known to be present within project API and include the following:

- Search of the DEQ's hazmat databases indicates sites at the following locations within the API:

DEQ Facility Profiler	2/23/2010
Facility / Site Information:	DEQ Program:
BERGER FARMS 5888 NW SHUTE RD HILLSBORO , 97124	Leaking UST
BERGER FARMS HOT 5870 NW 242ND AVE HILLSBORO , 97124	Leaking UST
BAXTER, B HOT 27700 NW MEEK ROAD HILLSBORO , 97124	Leaking UST
GENENTECH INC 4625 NW SHUTE RD HILLSBORO , 97124-9332	Air Discharge Permit, Haz Waste
FIVE OAKS LOT 7 NW CASPER AT NW CLARA LANE HILLSBORO , 97124	Water Discharge Permit

- Berger Farms is located on US26 just East of the NW Shute Rd over-crossing.
- Berger Farms Hot site is located near the on ramps on the South side of US26 on NW Shute Rd.
- Baxter B Hot is located on US26 just West of the NW Shute Rd over-crossing.
- Genentech Inc is located at the corner of NW Shute Rd and Huffman.
- Five Oaks Lot 7 is located just North and East of the Eastbound off-ramp to NW Shute Rd.

R/W Acquisition(s) do not include gas stations, repair facilities, industrial sites, landfills or any other non-residential facilities that may have used or stored hazardous materials. Ag fields may have high levels of pesticides and should be tested to determine if the soil can be handled as clean fill according to Charles Schwarz, ODOT Hazmat Coordinator.

Hazardous Materials Summary

There are multiple listings for hazardous materials in this project location including but not limited to leaking Underground Storage Tanks (UST's), Solid (Hazardous) Waste, Air and Water Discharge Permits. A Hazardous Materials Level 1, and potentially Level 2, Analysis (depending on Level 1 findings) are recommended.

List of Potential Environmental Conditions Identified:

The Corridor Study identified the following potential environmental conditions that could impact the proposed construction or right of way acquisitions:

- Three LUST sites adjacent to the Project Corridor could have contaminated soil and groundwater within the proposed construction areas.*

- *Mercury vapor lamps and treated timbers may be present and would require special handling if they require removal or replacement.*
- *Air and Water Discharge permits may have ultimately resulted in have contaminated soil and groundwater within the proposed construction areas.*

Prepared by: _____

Date: February 2010

Melissa Hogan

ODOT Regional Environmental Coordinator, Region 1, West

Reviewed by: _____

Date: February 2010

Jeff Buckland

ODOT Senior Environmental Project Manager, Region 1



ODOT Region 1 Environmental Unit Land Use Baseline Report

Date: February 23, 2010

Project Name: US26: Shute Road Interchange

Location: U.S. 26 at Shute Road Intersection in Washington County

Project Description Summary: The proposed project would reconstruct the Shute Road/Helvetia Road interchange. The project would include the addition of a Westbound to Southbound loop ramp, reconstructing the Westbound exit and entrance loop ramps, and adding a second right turn lane to the Eastbound entrance ramp.

Overview/summary

The area surrounding the proposed project is on the edge of the Urban Growth Boundary. The NE, SE and SW quadrants are all currently in the UGB, the NW quadrant is outside of the UGB. This area of the region is predominately industrial and has seen significant development in industrial areas over the last 10 years. Major employers, many oriented to the green industry sector, have located in this area to the south of the interchange resulting in a strong industry cluster. The area to the north of the interchange is primarily rural in character, but has also seen growth in industrial properties. This project will not require a goal exception.

Existing Uses

NW quadrant

The NW quadrant of the interchange is currently primarily undeveloped, except for three single family houses immediately to the north of the WB entrance ramp in the API. Areas outside the API include a large area to the North of Groveland is currently in agricultural use. Groveland Dr continues WB and turns NB after providing access to 4 homes, and an auto repair shop. Groveland currently connects to Helvetia Rd approximately 250-300 feet north of the ramp terminals.

NE quadrant

The NE quadrant of the interchange is currently developed as light industrial land, and the area north of Jacobson Rd is currently vacant in the API. Areas outside the API include several new industrial developments currently accessing NW Clara Ln as well as a few commercial businesses and the Country Haven Mobile Home Park. Jacobson Rd currently connects 250-300 feet from the ramp terminals.

SE quadrant

The area to the Southeast of the interchange in the API is currently a farm in operation and a farming field. Outside of the API, additional fields exist, in addition to several recent industrial developments. The large field to the South of the farm in operation is a Nike Foundation site that is a certified industrial site listed on the Business Oregon website.

SW quadrant

The API is tight to the existing roadway in the SW quadrant. The area outside of the API to the SW of the interchange includes a small, residential area consisting of approximately 20 single family houses on large lots to the immediate south of Meek Rd. The area to the south of this small residential area is a large field in agricultural use. Meek Rd currently connects to Brookwood Parkway approximately 200 feet south of the ramp terminals.

Planned Uses

Summary of planned uses

The area surrounding the project is planned for industrial and employment uses in three of the four quadrants. The recently adopted Urban-Rural Reserves work solidified the future of this area as a major industrial cluster in the region, with significant planned growth in industrial land uses. The area to the NW of the interchange, with the exception of the area in the API, is planned to remain EFU (Exclusive Farm Use) land and should be protected as rural. This project is not likely to result in significant changes to the planned land uses and is consistent with planned uses.

NW quadrant

The NW quadrant of the interchange is currently under Washington County planning and zoning authority. A small area, including the API, to the NW of the interchange is planned for Urban reserve, for transportation purposes. The remainder of the area is planned to remain undesignated, EFU land. A statewide goal exception is needed for any removal of agricultural use of this land, but is not required for the interchange improvement project.

NE quadrant

The NE quadrant of the interchange is planned for industrial use. The area from Jacobsen Rd to West Union Rd is covered in the Helvetia Concept Plan, which created a special district, the Helvetia Area Special Industrial District (HSID). This zoning designation limits use to certain industrial categories and has large minimum lot sizes (10 acres). The intent is to develop this area primarily as industrial land aimed at jobs creation. Some of this concept plan area has not yet been rezoned, is still classified as FD-20 under the County Zoning Code. The FD (Future Development) -20 classification of the County is meant to hold land until which time UGB expansions are applied for and urban zoning is applied from the affected City.

SE quadrant

The area to the Southeast of the interchange is planned and zoned as Industrial by the City of Hillsboro.

SW quadrant

The area immediately to the Southwest of the interchange is planned and zoned as AF-5 and is under County jurisdiction. This area is identified as Urban Reserve through Metro's recent Urban-Rural Reserves process. The area to the south of the AF-5 land, east of 253rd Ave, and West of Brookwood Parkway is all planned as Industrial under the City of Hillsboro comprehensive plan. The City of Hillsboro zoning is Shute RD Special Industrial District Overlay which requires large lots for industrial use. The area to the West of 253rd is covered under the Evergreen Concept Plan, which placed special Evergreen Special Industrial District Zoning that will be applied as properties are annexed into the City. The provisions are similar to the other Special Industrial Districts that require large lot sizes for industrial and employment use. This Evergreen Concept Plan area is currently under county zoning of FD-20.

Part 2: Land Use Plan inventory

Several applicable plans exist that address the project area. No conflicts with existing adopted plans were identified through this analysis.

List of applicable plans reviewed for this report:

City Plans

City Planning Inventory

- Evergreen Concept Plan
- Helvetia Concept Plan
- Shute Rd Industrial Concept Plan
- Hillsboro TSP
- Hillsboro Comprehensive Plan

County Plans

County Planning Inventory

- Washington County Comprehensive Plan
- Washington County TSP

Regional Plans

Regional Plan Inventory

- Metro RTP
- 2040

- Urban Rural Reserves

State Plans

State Plan Inventory

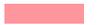
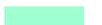
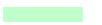
- Sunset Highway Interchange Study (DKS and Associates, November 1999)
- US 26 Corridor Plan (Adopted May 1999)– The US 26 Corridor Plan identified a modernization investment at the Shute Rd interchange in the strategic list.
- Oregon Highway Plan

US 26 and Shute Road Interchange - Comprehensive Plan Map

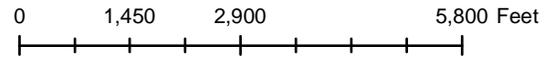


March 8, 2010

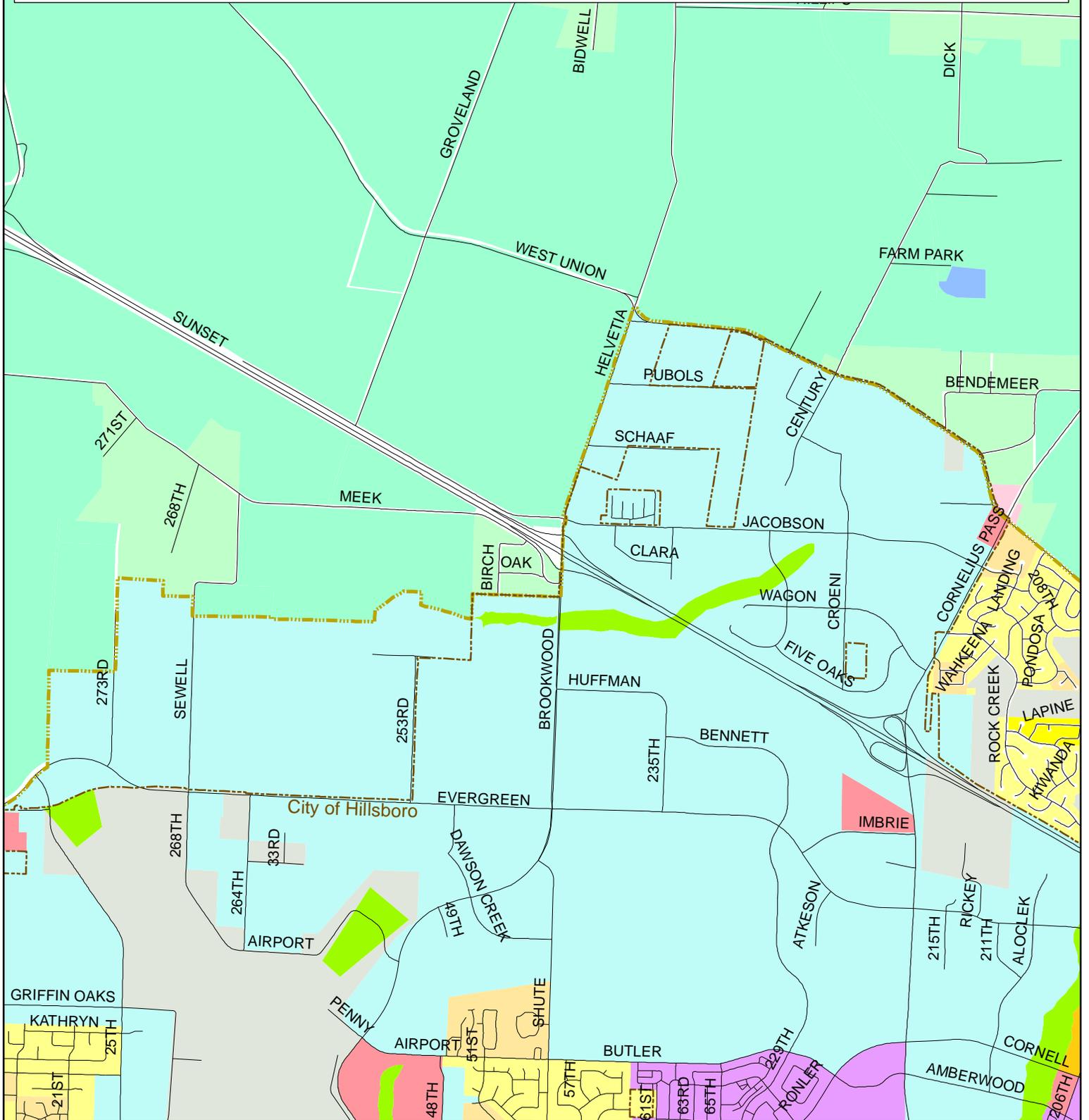
Generalized Comprehensive Plan Designations

- | | | | |
|---|-------------------------|---|-----------------------|
|  | General Commercial |  | Multi-family 2 |
|  | Neighborhood Commercial |  | Mixed Use Center 2 |
|  | Agriculture or Forestry |  | Public Facilities |
|  | Heavy Industrial |  | Parks and Open Space |
|  | Light Industrial |  | Rural or Future Urban |
|  | Mixed Use Industrial |  | Single Family 2 |
|  | Multi-family 1 |  | Single Family 6 |

-  Streets
-  City Boundary
-  Metro Urban Growth Boundary



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US 26 and Shute Road Interchange - Zoning Map

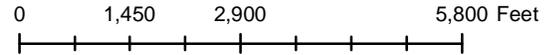


March 8, 2010

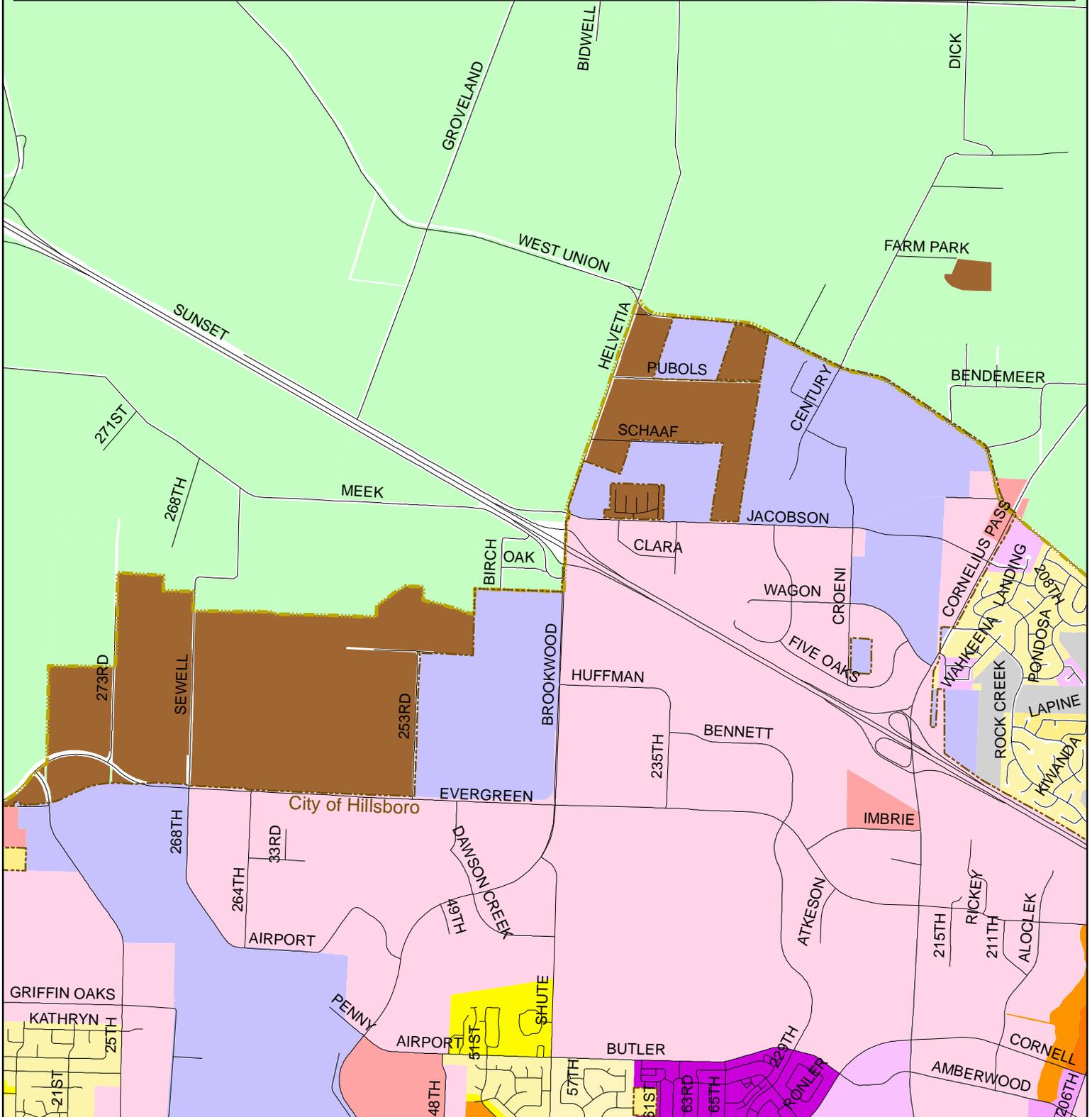
Generalized Zoning Sub Classes

- | | |
|---|---|
| General Commercial | Mixed Use Residential 8 |
| Agriculture or Forestry | Public Facilities |
| Light Industrial | Rural Residential or Future Urban |
| Multi Family 3 | Single Family 4 |
| Multi Family 4 | Single Family 5 |
| Mixed Use Employment | Single Family 6 |
| Mixed Use Residential 2 | Single Family 9 |
| Mixed Use Residential 4 | Single Family 15 |

- Streets
- City Boundary
- Metro Urban Growth Boundary



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ODOT Region 1 Environmental Unit Noise Baseline Report

Date: February 23, 2010

Project Name: US26: Shute Road Interchange

Location: U.S. 26 at Shute Road Intersection in Washington County

Project Description Summary: The proposed project would reconstruct the Shute Road/Helvetia Road interchange. The project would include the addition of a Westbound to Southbound loop ramp, reconstructing the Westbound exit and entrance loop ramps, and adding a second right turn lane to the Eastbound entrance ramp.

Noise

ODOT Region 1 Environmental Coordinator, Melissa Hogan performed basic scoping for Noise as normally documented in a Part 3 document in order to determine the classification of the project under NEPA.

Traffic noise has the potential to affect the project design if noise mitigation is necessary or, if avoidance is desirable through grade changes or the wasting of excess cut materials in berm construction. The construction of berms or sound walls can require additional easements or right-of-way acquisition. The construction of noise walls along shoulders may mean a change in the project typical sections for the area where the walls would be constructed.

A Noise Study would be required for this particular project because the following conditions may apply to this project:

- Construction may result in an acoustically significant increase in noise due to a shift in the horizontal and/or vertical alignment of the roadway.
- Construction will create a new roadway on a new alignment. (This also applies to on or off ramps.)
- Construction may remove acoustic shielding (i.e. embankments on on/off ramps) that currently significantly reduce noise to a receptor.

If any of the conditions above occur a noise study is required. The question that must then be answered is, are there noise sensitive developments close enough to the roadway to have potential for noise impact? Noise sensitive developments consist of homes, businesses, parks, schools, churches or playgrounds that currently exist, or that are

planned, designed or programmed. Planned designed or programmed generally refers to building permits issued. If such development is present some basic questions as to the nature of the development must then be answered. For example, is the development a residential subdivision or mobile home park? Does the development have direct access to the roadway, through driveways or streets which would limit or eliminate potential noise mitigation?

At this early stage in project design it might be reasonable to assume that a nearby development has potential for noise impact. If that is the case, a quick estimate of the potential cost of providing noise mitigation can be made by estimating the cost for a wall the length of the development. The cost of such mitigation can then be estimated by multiplying the length of the wall in feet times the height of the wall (use 16 feet) and multiplying that square footage by \$20. This is only an estimate for rough dollar value consideration. The final design will require a traffic noise study, complete with a wall design. By no means are these rough considerations to be made public. No implied promise of noise mitigation is to be made until a comprehensive noise study is accomplished that includes an in depth mitigation analysis.

Existing Conditions

A Sensitive Noise Receptor (SNR) is defined as a use that may be impacted by increased noise and/or vibration caused by increased traffic volumes or speeds or by a reconfigured existing roadway directing traffic in a manner that increases noise or vibration.

- Identification of Sensitive Noise Receptors (SNRs) within the API:

There are residential (single-family homes and mobile homes) uses present..

There are no Senior /care residential facilities, motels/hotels, hospitals, schools or play grounds, libraries, places of worship, parks, campgrounds, and recreational facilities within the API.

- There are shifts in horizontal and vertical alignment proposed on US26 on/off ramps. At this time the amount of shift is unknown.
- The project does not propose to increase the number of through travel lanes.
- There is a new roadway being proposed on a new alignment as part of access management in the NE quadrant of the intersection.
- Per communication with Community Affairs Representatives Lili Gordon and Elizabeth Craig, no known noise issues have been raised for this location or project.
- This project will not result in the removal of topographical features which currently shield receptors.
- Approximate number of buildings /activity areas within 200 feet of the proposed right-of-way line includes: approximately 12 single family residential homes, 3

agricultural outbuildings, and 4 commercial/office buildings. A mobile home park is also adjacent to the API.

Noise Report Summary:

New lanes and/or shifts in alignment of on/off ramps would both warrant a project Noise Study per ODOT's Noise Manual. If work occurs outside of normal working hours, a noise variance from Washington County and/or City of Hillsboro will also be necessary. No threatened or endangered birds are nesting in or within one mile of the project API, therefore no ambient noise studies or construction noise monitoring is required for ESA compliance.

Prepared by: _____

Date: February 2010

Melissa Hogan

ODOT Regional Environmental Coordinator, Region 1, West

Reviewed by: _____

Date: February 2010

Jeff Buckland

ODOT Senior Environmental Project Manager, Region 1

Photo attached:



Note close proximity of homes to Groveland Road in NW area of project



ODOT Region 1 Environmental Unit Historic Resources Baseline Report

Date: February 25, 2010

Project Name: US26: Shute Road Interchange, ODOT Key No. 16842

Location: U.S. 26 at Shute Road Intersection in Washington County

Project Description Summary: The proposed project would reconstruct the Shute Road/Helvetia Road interchange. The project would include the addition of a Westbound to Southbound loop ramp, reconstructing the Westbound exit and entrance loop ramps, and adding a second right turn lane to the Eastbound entrance ramp.

Area of Potential Impact: The API extends approximately 2,000 feet in either direction from the Shute Road Interchange with the exception of the eastern portion of the API along US 26, where the API extends approximately 1.25 miles towards the NW Cornelius Pass Road Interchange. Figure 1 shows the general location of the API.

Historic Resources

Robert W. Hadlow, Ph.D., ODOT Region 1 senior historian, performed basic scoping for historic resources in February and March 2010.

Existing Conditions

The methodology used to identify newly-discovered and previously-documented historic resources in the potential API included several techniques: 1) a review of the Oregon State Historic Preservation Office (SHPO) statewide databases for historic sites and for National Register properties; 2) a review of the Washington County Cultural Resource Inventory; and 3) a reconnaissance level (windshield) survey of the potential API.

Literature Search

Review of the State Historic Preservation Office (SHPO) statewide inventory resulted in the identification of one previously-recorded historic resources in the API—the James and Mary Chambers House. The Washington County Cultural Resources Survey and Inventory noted several “inventoried properties” in the project area.

Field Survey/Inventory

The project area was surveyed on February 27 and March 1, 2010, to identify any properties that were 45 years old or older. Thirteen properties were photographed and the addresses noted. The results of the on-site survey are shown in Table 1: Historic

Resource Analysis. The built properties span over a century, from an 1865 farmhouse to a 1963 ranch-style house. In addition, a historic site in the API—Five Oaks Meeting Place—has strong association with local Indians and Oregon pioneers. Most properties were within the marked API. However, a few other properties outside of the API were included because of their close proximity to the project area.

Conclusion

The ODOT historic resources staff reviewed the properties noted in this report. They concluded that several lacked original integrity of one or more of the following aspects: design, materials, workmanship, or feeling. The staff concluded that these properties were not eligible for the National Register and will complete a Programmatic Agreement memo to file that states these conclusions.

A house on NW Birch Avenue requires additional evaluation for integrity and significance. The two houses and associated outbuildings on NW Shute Road, the Classic Revival house on NW Groveland Drive, and the Five Oaks Meeting Place are all likely eligible for the National Register. Additional research is required on all of these properties.

As the project development phase progresses, the proposed interchange project on US 26 at Shute Road may have an effect on significant historic resources within the API.

References

Oregon State Historic Preservation Office. Database of National Register Properties.

Oregon State Historic Preservation Office. Oregon Historic Sites Database.

“Programmatic Agreement among the Federal Highway Administration, the Oregon Department of Transportation, the Oregon State Historic Preservation Office, and the Advisory Council on Historic Preservation,” 2001.

Washington County Museum. “Washington County Cultural Resources Survey and Inventory,” 1983.

Table 1: Historic Resource Analysis

Map ID	Property Name/Address	Map/Tax Lot	Construction Date/Resource Type	National Register Status	Photograph of Resource
A	House 24250 NW Groveland Dr., Hillsboro, OR	1N21500 01400	1950. Early ranch house. Has been remodeled. Lacks integrity.	Not eligible.	
B	House 24380 NW Groveland Dr., Hillsboro, OR	1N21500 01200	1948. Minimal traditional house. Has been remodeled. Lacks integrity.	Not eligible.	
C	House 24500 NW Groveland Dr., Hillsboro, OR	1N221AA 00100	1945. Minimal traditional house. Windows replaced/added. Lacks integrity.	Not eligible.	
D	James and Mary Chambers House 24665 NW Groveland Dr. Hillsboro, OR	1N21500 00900	1865. One-1/2-story Classic Revival house associated with Oregon pioneers. Vegetation prevents a close-up view of the house and outbuildings.	Likely eligible. Listed in Washington County Cultural Resources Inventory	

<p>E</p>	<p>House 5830 NW Shute Rd. Hillsboro, OR</p>	<p>1N22200 02800</p>	<p>1948. One-story ranch-style house associated with house at 5870 NW Shute Rd. Appears intact.</p>	<p>Possibly eligible. Additional research is needed.</p>	
<p>F</p>	<p>House 5870 NW Shute Rd. Hillsboro, OR</p>	<p>1N22200 02900</p>	<p>1922. Craftsman bungalow and period agricultural outbuildings. Appears intact.</p>	<p>Possibly eligible. Additional research is needed.</p>	

					
G	Five Oaks Meeting Place Corner of NW Caspar Pl. & NW Clara Pl. Hillsboro, OR	1N214CC	c.1500. A circle of five oak trees had cultural significance to local Indians and local pioneers. Two original 500-year-old trees remain. Three others were planted in recent decades.	Likely eligible. Listed in Washington County Cultural Resources Inventory.	
H	House 24215 NW Meek Rd. Hillsboro, OR	1N221AA 01200	1955. Ranch-style house. Lacks integrity.	Not eligible.	
I	House 24640 NW Meek Rd. Hillsboro, OR	1N221AA 00300	1950. Early simple ranch-style house. Lacks integrity.	Not eligible.	

J	House 24680 NW Meek Rd. Hillsboro, OR	1N221AA 00400	1950. Early ranch-style house. Lacks integrity.	Not eligible.	
K	Lin Tara Sunset Kennel 24810 NW Meek Rd.	1N221AA 00400 or 1N22100 01400	c. 1950. Vernacular commercial building. Lacks integrity.	Not eligible.	
L	House 6160 NW Birch Ave. Hillsboro, OR	1N221AA 01305	1959. Simple ranch-style house. Appears intact.	Possibly eligible. Additional research is needed.	
M	House 24385 NW Oak Dr. Hillsboro, OR	1N221AA 01308	1963. "California Ranch"-style house. Windows replaced. Lacks integrity.	Not eligible.	

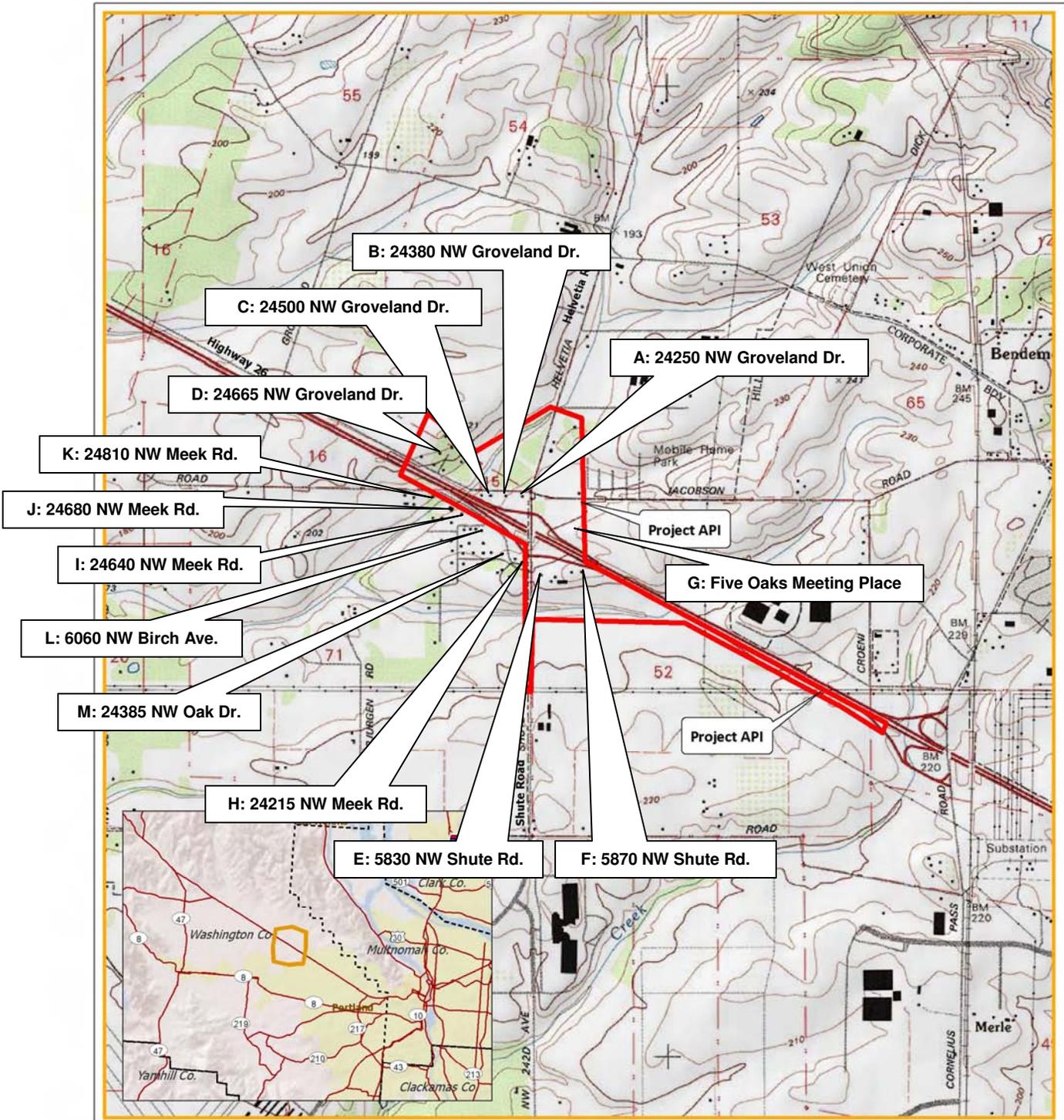
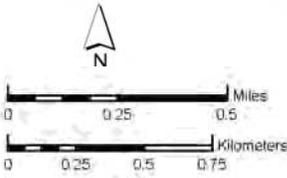


Figure 1.

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Natural Resource Consultants since 1921



**Project Location and Vicinity Map
Shute Road Interchange Improvement Project
Washington County, Oregon**

Data Source: DDFG 1:50,000 7.5 min., 24K Digital Topographic Data, Oregon. This product is for informational purposes only and may not be suitable for legal, engineering or surveying purposes. The information or data is provided with the understanding that conclusions drawn from such information are the responsibility of the user.

Historic Resources Summary

There are several potential properties within or nearby the API. Further study is recommended.

Prepared by: _____

Robert W. Hadlow, Ph.D.
ODOT Senior Historian, Region 1

Date: March 2010

Reviewed by: _____

Jeff Buckland
ODOT Senior Environmental Project Manager, Region 1

Date: March 2010



ODOT Region 1 Environmental Unit Section 4(f)/6(f) Baseline Report

Date: February 24, 2010

Project Name: US26: Shute Road Interchange

Location: U.S. 26 at Shute Road Intersection in Washington County

Project Description Summary: The proposed project would reconstruct the Shute Road/Helvetia Road interchange. The project would include the addition of a Westbound to Southbound loop ramp, reconstructing the Westbound exit and entrance loop ramps, and adding a second right turn lane to the Eastbound entrance ramp.

Section 4(f)/6(f)

ODOT Region 1 Environmental Coordinator, Melissa Hogan performed basic scoping for Section 4(f) and 6(f) as normally documented in a Part 3 document in order to determine the classification of the project under NEPA.

Existing Conditions

- Research of quad maps, city and county maps to indicate there are no public parks, recreation lands, or wildlife and waterfowl refuges located within the project API.
- Contact with local planning representatives at Washington County and City of Hillsboro indicates there are no parks and recreation areas within the project API.
- Marilyn Lippincott at State Parks Planning and Grants Project Officer stated there are no properties encumbered with Section 6(f), Land and Water Funds.
- Cultural Resources Technical Reports prepared by Senior Historian Bob Hadlow and Archaeologist Kurt Roedel indicate that historic resources may be present within the API. If the presence of an historical resource is verified, Section 4(f) documentation may be needed to address potential impacts on historic properties/structures.
- Existing conditions include rural residential land, farmland and fallow land.

Section 4(f)/6(f) Summary

Section 4(f) resources may be present within the API. If additional research confirms the presence of historic resources, the project will require Section 4(f) documentation. No 6(f) impacts anticipated since there are no properties encumbered with Section 6(f), Land and Water Funds.

Prepared by: _____

Date: February 2010

Melissa Hogan

ODOT Regional Environmental Coordinator, Region 1, West

Reviewed by: _____

Date: February 2010

Jeff Buckland

ODOT Senior Environmental Project Manager, Region 1



ODOT Region 1 Environmental Unit Social, Economics and Environmental Justice Baseline Report

Date: February 23, 2010

Project Name: US26: Shute Road Interchange

Location: U.S. 26 at Shute Road Intersection in Washington County

Project Description Summary: The proposed project would reconstruct the Shute Road/Helvetia Road interchange. The project would include the addition of a Westbound to Southbound loop ramp, reconstructing the Westbound exit and entrance loop ramps, and adding a second right turn lane to the Eastbound entrance ramp.

Social/Economics and Environmental Justice

Existing Conditions

The project is located at the western edge of Hillsboro and adjacent land is in both the City of Hillsboro and unincorporated Washington County. The Shute Road intersection is near the western boundary of the West Union Community Plan area of Washington County, and immediately south of the Helvetia Plan Area in the City of Hillsboro. The area of potential impact includes low-density, rural residential uses and agricultural land. Adjacent land uses are a mix of low-density residential uses, industrial and commercial land uses east of the interchange near both sides of US 26. Much of the property adjacent to the northern and western sides of the area of potential impact is undeveloped farmland. Adjacent property to the south includes rural residential uses and agricultural land (Hillsboro, 2008 and Washington County, 2008).

Population and Housing

This portion of Hillsboro and Washington County is lightly populated and primarily composed of rural residences. Overall, however, the population in the city of Hillsboro has been growing, as has that of Washington County. Housing units in the city and county also reflect these recent growth rates. Table 1 below provides population and housing data for the city and county.

Economy

The City of Hillsboro and Washington County are part of the greater Portland metropolitan area. Because of the proximity to this area, Hillsboro and the County contain some of the largest Portland metropolitan area employers. Core economic

Table 1. Population and Housing Characteristics

	<i>2000</i>	<i>2008</i>	<i>Percent Change</i>
<i>Hillsboro</i>			
Population	70,186	85,453	21.75%
Total Housing Units	27,211	32,448	19.24%
<i>Washington County</i>			
Population	445,342	519,979	16.75%
Total Housing Units	178,913	204,328	14.20%

Source: US Census 2000, Census Fact Sheet 2006-2008

industries in the Hillsboro area include high-tech electronic and solar companies and biotechnology companies represent an emergent industry. Nearly 66% of the state's employment in computer and electronic manufacturing is located in Washington County (Johnson Reid, 2009). Other retail, commercial and industrial businesses are also present in the region.

The county also includes large areas of rural farm and forest land. In 2009, Washington county ranked sixth among state counties in total agricultural production, with over \$230 million in gross farm and ranch sales. Overall, due to the recent economic downturn, total agricultural sales declined by approximately 15% statewide in 2009 (OSU, 2010).

Relocation and Right-of-Way

Local businesses, residences and farmland are located in the area and are accessible via the existing roadway network. Right of way acquisition from adjacent properties would be needed for the proposed project. Approximately forty parcels are within the area of potential impact, and up to thirty parcels could be affected by right-of way needs. It is expected that most of these impacts would be related to partial acquisitions of property from these parcels. There are approximately ten residences that could be affected with potentially four homes that could be displaced by right-of-way acquisition.

Protected Populations and Environmental Justice

Census data (U. S. Census Bureau 2000) was reviewed for the presence of minority and low income groups in the project area. Block data for twelve blocks adjacent to the project area were reviewed for racial characteristics and block group data was reviewed for information on low income populations. For nearly all racial groups, percentages reflected by block groups in the project area are lower than City of Hillsboro and Washington County percentages. For only two groups, American Indian/Alaskan Native and Native Hawaiian/Pacific Islander, were project area averages higher than City and County averages.

The Census block group data indicates that approximately 6.3% of the population within these groups was below the 1999 poverty level. City and County percentages for low income individuals range between 7.3% to 9.0% , thus census block groups near the project area have lower percentages than the percentages reported for the local jurisdictions. Block group data covers a larger area than the immediate project vicinity

and field observations have confirmed that most residential properties are located at a distance from the highway. Census information is provided in Table 2 below.

Table 2. Census Tract Demographic Information

Race/Ethnicity	Local Census Blocks ¹	City of Hillsboro ²	Washington County ²	State of Oregon ²
Total Population	382	70,186	445,342	3,421,399
White	88.2%	77.4%	82.1%	86.5%
Black or African American	0.5%	1.2%	1.1%	1.6%
American Indian and Alaskan Native	1.5%	0.8%	0.6%	1.3%
Asian	0.5%	6.5%	6.6%	2.9%
Native Hawaiian and Other Pacific Islander	0.5%	0.2%	0.2%	0.2%
Some Other Race	4.9%	10.3%	5.8%	4.2%
Two or More Races	3.1%	3.2%	3.1%	3.0%
Hispanic Origin	11.2%	18.8%	11.1%	8.0%
Individuals below poverty level*	6.3%	9.0%	7.3%	11.6%

Source: ¹U.S. Census Block and Block Group Data, 2000; ²Census Bureau, 2006-2008 Fact Sheets

*Note: Based on Census Tract Block Groups (Block data unavailable)

Although not within the proposed project’s potential impact area, the Country Haven Mobile Home park is located immediately adjacent to the northeast boundary of that area, with access from NW Jacobson Road. Mobile home parks are frequently considered sources of affordable housing and may contain minority or low income population group members.

Based on this information, the project area is not expected to result in disproportionate adverse impacts on environmental justice population groups. Because Census data was the primary source of information used to consider local population groups, it is recommended that interaction and communication with minority and low income population groups be documented as part of future public involvement and community outreach efforts for the proposed project.

Community Services and Neighborhood Cohesion

Local services are primarily available in the City of Hillsboro. Hillsboro Fire and Rescue provides firefighting and Emergency Medical Services. Station 3 is located at NW 229th Avenue, approximately 0.75 miles east of the Shute Road intersection. The Hillsboro Police Department has a precinct office near Cornell Road, approximately 1.25 miles east of the Shute Road intersection. Unincorporated areas are served by the Washington County Sheriff’s Office and Tualatin Valley Fire and Rescue. TriMet Transit provides bus service in the City of Hillsboro, however, public transit service is not available within the West Union Plan Area (Washington County, 2008).

The nearest schools to the project area are Hillsboro Elementary at NW West Union Road approximately 1 mile north of the Shute Road intersection, and Liberty High School on NW Wagon Way, approximately 2.25 miles northeast of the Shute Road intersection. The nearest churches are the Chinese Evangelical Church, and the Community of Christ Church, both on NW 5 Oaks Drive, approximately 2.25 miles east of the Shute Road intersection; and the West Union Baptist Church on West Union Road, approximately 2 miles north of the Shute Road intersection.

The project area consists primarily of rural farm land and associated residences, as well as a few nearby commercial and industrial buildings. A small residential area is clustered adjacent to the southwest boundary of the project area, and a mobile home park is located near the northeast boundary of the project area. For both of these residential areas the Shute Road intersection is the primary access point for east-west travel on Highway 26. The intersection is also a key access point for travel to locations north and south of the highway both for local residents and emergency service vehicles. Additionally, it provides a primary access point from Highway 26 for travel to Hillsboro Elementary School and the West Union Baptist Church.

Recreation

There are no parks, recreational areas or wildlife refuges in the project area vicinity. The nearest City of Hillsboro park facility is the Gordon Faber Recreation Complex and Hillsboro Stadium at the NW Cornelius Pass Road/US Highway 26 intersection, approximately 1.25 miles east of the NW Shute Road intersection. These facilities provide outdoor recreation opportunities for softball, soccer, football, baseball and lacrosse. The stadium also provides a state-of-the-art facility for these events.

Prepared by: _____

Jeff Buckland

ODOT Senior Environmental Project Manager, Region 1

Date: February 2010

Reviewed by: _____

Melissa Hogan

ODOT Regional Environmental Coordinator, Region 1, West

Date: February 2010

References

City of Hillsboro, 2008. *Helvetia Concept Plan*. Prepared by City of Hillsboro, Angelo Planning Group, CH2MHill, Inc., Leland Consulting Group, DKS Associates, Jeanne Lawson Associates, and Pam Baker Consulting. February 2008. Hillsboro, OR.

Johnson Reid, 2009. *Draft Economic Opportunities Analysis*. Prepared for the City of Hillsboro, March 10, 2009. Johnson Reid Land Use Economics, Portland, OR.

Oregon State University, 2010. *2009 Oregon County and State Agricultural Estimates*. Special Report 790-09, February 2010. Oregon State University Extension Service, Corvallis, OR.

U. S. Census Bureau, 2000. *2000 Census Detailed Data Sets*. Washington County Census Block and Block Groups, Department of the Census, Washington, D.C.

U. S. Census Bureau, 2008. *2006-2008 Fact Sheets*. Fact sheets for the City of Hillsboro, Washington County, and State of Oregon. Department of the Census, Washington, D.C.

Washington County, 2008. *West Union Community Plan*. Updated July 2008. Washington County Department of Land Use and Transportation, Planning Division, Hillsboro, OR.

Water Quality Environmental Baseline Report

SHUTE ROAD INTERCHANGE IMPROVEMENT PROJECT
Key Number K16842
Washington County, Oregon

Prepared for:



ODOT Region 1
123 Flanders Street
Portland, Oregon 97213

Prepared by:

MB&G

Mason, Bruce & Girard, Inc.
707 SW Washington Street, Suite 1300
Portland, Oregon 97205
(503) 224-3445

February 22, 2010

MB&G Project No. 1581

TABLE OF CONTENTS

I.	SITE DATA SUMMARY	III
1.0	INTRODUCTION.....	1
1.1	Purpose.....	1
1.2	Project Description.....	1
1.3	Area of Potential Impact (API)	1
2.0	METHODS	3
3.0	EXISTING ENVIRONMENTAL RESOURCES	3
3.1	Receiving Waters.....	3
3.2	Floodplain	8
3.3	Beneficial Uses	10
3.4	Soils.....	11
3.5	Watershed Land Use and Vegetation Cover.....	11
3.6	Existing Highway Facilities	12
3.7	Treatment Opportunities.....	12
3.8	Permits held by ODOT	12
4.0	CONCLUSIONS.....	13
4.1	Wetland and Waters Permitting.....	13
4.2	Water Quality Permits.....	13
4.3	Threatened and Endangered Aquatic Species.....	13
4.4	Floodplain/Floodway.....	14
4.5	Stormwater Management	14
4.6	Local Jurisdiction permits.....	14
4.7	Summary	14
5.0	REFERENCES.....	16

TABLES

Table 1	Wetland/Waters Identified within the API.	3
Table 2	ODEQ Designated Beneficial Uses	9
Table 3	Soils Mapped within the API.....	10
Table 4	Jurisdictional Drainage Facilities Identified within the API.....	11
Table 5	Summary of Applicable Permits, Approvals, and Clearances Needed for the Shute Road Interchange Improvement Project.	14

FIGURES

Figure 1	Area of Potential Impact (API).....	2
Figure 2	Wetlands and Waters Map.....	4
Figure 3	Water Quality and Flood Zone Map.....	8

APPENDICES

Appendix A	Area of Potential Impact Photographs	
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I. SITE DATA SUMMARY

Data Summary	
Project Name:	Shute Road Interchange Improvement Project
ODOT Key #:	K16842
Location of Project:	Mile Posts (MP) 60.6 to 62.8 on Highway 26 Township 1N, Range 2W, Sections 15, 16, 22, and 23
Size of Area of Potential Impact:	150 acres
City:	Hillsboro
County:	Washington County, OR
Project Staff:	Jonathon Belmont Kristen Currens Alexis Casey
Site Visit:	February 3, 2010
Current Land Use(s):	Highway right-of-way, residential, commercial, and agricultural
Waterways on Site:	Two tributaries to McKay Creek
6th Field HUC:	170900100107 (McKay Creek)
ODFW In Water Work Window:	July 15 – September 30

1.0 INTRODUCTION

This Water Quality Environmental Baseline Report (EBR) summarizes available water quality baseline data and describes environmental permits and clearances that may be necessary for the improvement of the Shute Road Interchange along Highway 26 in Washington County, Oregon. While additional data collection may be necessary, existing baseline data will be used to thoroughly characterize water quality for this project, and to help the design team develop alternatives that avoid and/or minimize impacts associated with the improvement project.

1.1 Purpose

The Oregon Department of Transportation (ODOT) proposes to improve the interchange at Shute Road located between Mile Post (MP) 60.6 and 62.8 on Highway 26 (Figure 1). The increasing population in Washington County has begun to strain the existing transportation infrastructure. The purpose of this project is to alleviate congestion by increasing the capacity at this interchange.

1.2 Project Description

The proposed project would reconstruct the Shute Road/Helvetia Road Interchange. The project would include the addition of a westbound-to-southbound loop ramp, reconstructing the westbound exit and entrance loop ramps, and adding a second right turn lane to the eastbound entrance ramp.

1.3 Area of Potential Impact (API)

The Area of Potential Impact (API) is located along Highway 26 at the Shute Road Interchange in Washington County, Oregon. From the center of the interchange, the API extends approximately 2,000 feet to the north, south and west. In addition, the API extends approximately 1.25 miles east towards the NW Cornelius Pass Road Interchange. The eastern portion of the API is located within the City of Hillsboro. Figure 1 shows the general location of the API.

Topography within the API is generally flat with an approximate elevation of 200 feet above mean sea level (msl) (USGS 1986). The majority of the API has experienced alterations to the natural landscape as the result of the construction of Highway 26, road fill for construction of the elevated Shute Road overcrossing, construction of multiple secondary roadways, agriculture, and residential and commercial development. The majority of the native vegetation has been removed within the API. There are two creeks within the API, both unnamed tributaries of McKay Creek, that have been channelized and now receive greater volumes of water due to the increase in impervious surface within the API.

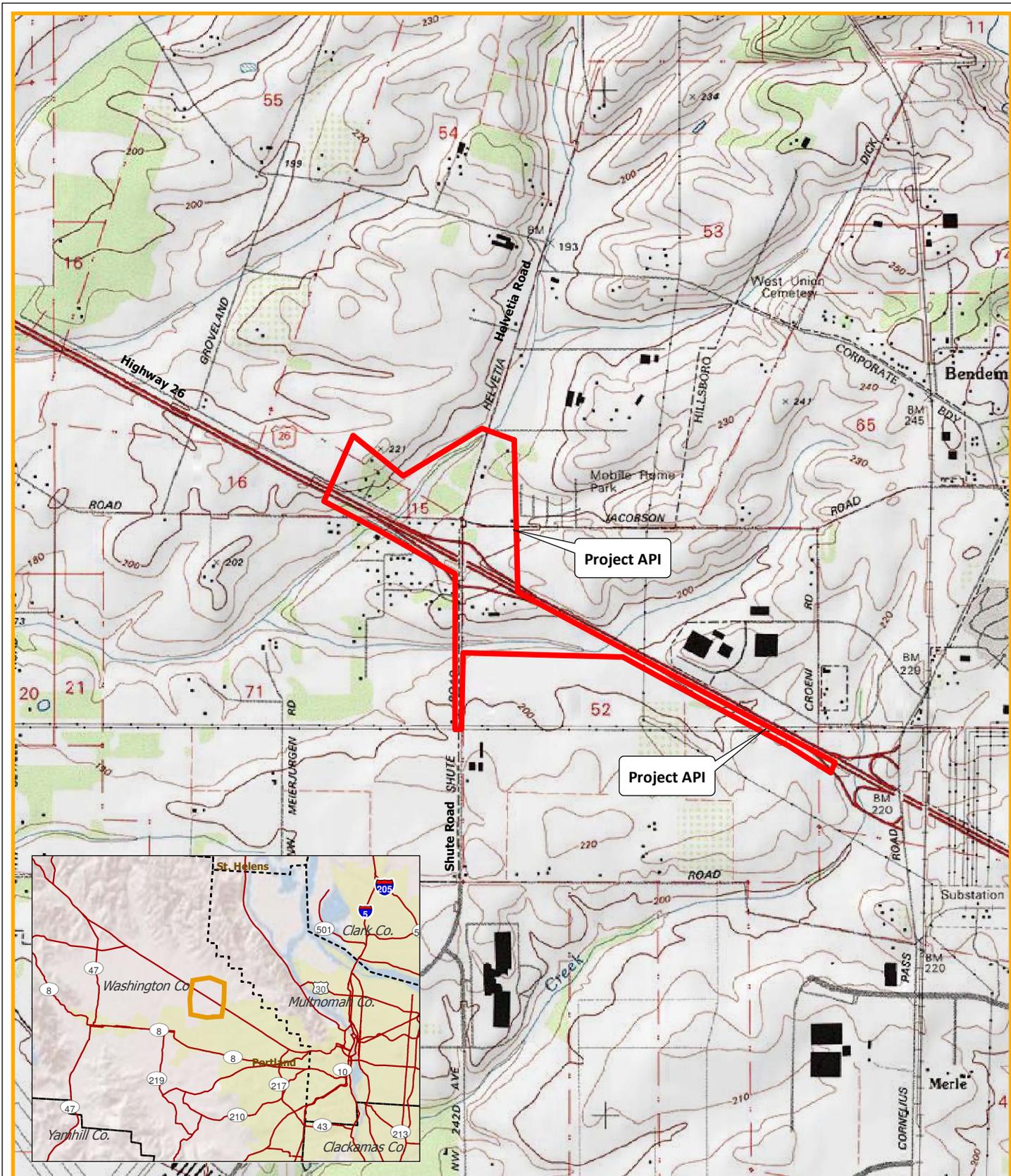


Figure 1.

MB&G

Mason, Bruce & Girard, Inc.
Natural Resource Consultants since 1921

**Project Location and Vicinity Map
Shute Road Interchange Improvement Project
Washington County, Oregon**

Data Source: TOPO! USGS 7.5 min., 24K Digital Topographic Data, Oregon. 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.



0 0.25 0.5 Miles

0 0.25 0.5 0.75 Kilometers

2.0 METHODS

The following sections of this memorandum summarize the water quality issues identified in existing database information, discussions with regulatory agency staff, and a site investigation conducted by Mason, Bruce, and Girard, Inc. (MB&G) on February 3, 2010. At the time of the site visit, ODOT did not have right-of-entry for areas outside of public rights-of-way (ROW). As such, areas outside of public ROW were visually inspected from the adjacent roadway.

The site investigation was conducted to evaluate the baseline water quality conditions of natural resources (i.e., aquatic/riparian conditions, presence of wetlands, habitat conditions) within the Project API. During the field visit, the API was examined and photographed (see Appendix A).

MB&G obtained data regarding threatened and endangered species within the API from U.S. Fish and Wildlife Service (USFWS 2010), StreamNet (StreamNet 2010), and the Oregon Natural Heritage Information Center (ORNHIC 2010). MB&G also contacted Oregon Department of Fish and Wildlife (ODFW) to confirm current or historical native migratory fish presence within the API (J. Brick pers. comm. 2010). MB&G contacted Washington County (S. Roberts pers. comm. 2010) and the City of Hillsboro (T. Steele pers. comm. 2010) for local permitting and water usage information. Lastly, MB&G obtained information from the Federal Emergency Management Agency (FEMA) and Washington County in regard to floodplain issues. Data gaps and/or discrepancies have been noted for each of the sections discussed below and, if needed, additional data gathering tasks have been identified.

3.0 EXISTING ENVIRONMENTAL RESOURCES

3.1 Receiving Waters

3.1.1 Types of Receiving Waters/Physical Condition/Riparian Condition/Hydrology

Twelve jurisdictional wetlands and waters features were identified during the site investigation on February 3, 2010 (Figure 2). The approximate acreage of each feature within the API is provided in Table 1 and further descriptions of these features follows. As access was not provided beyond public ROW, feature presence, location, boundaries, and acreage are approximate and should be used for preliminary planning purposes only.

Table 1. Wetland/Waters Identified within the API.

Feature	Approximate Acreage
Wetland A	6.9
Wetland B	1.8
Wetland C	0.1
Wetland D	0.6
Wetland E	0.3
Wetland F	4.5
<i>Total Wetland Acreage</i>	<i>14.1</i>
Northern Unnamed Tributary of McKay Creek	0.2
Southern Unnamed Tributary of McKay Creek	0.8
Ditch 1	0.1
Ditch 2	0.1
Ditch 3	0.1
Ditch 4	0.1
<i>Total Waters Acreage</i>	<i>1.3</i>

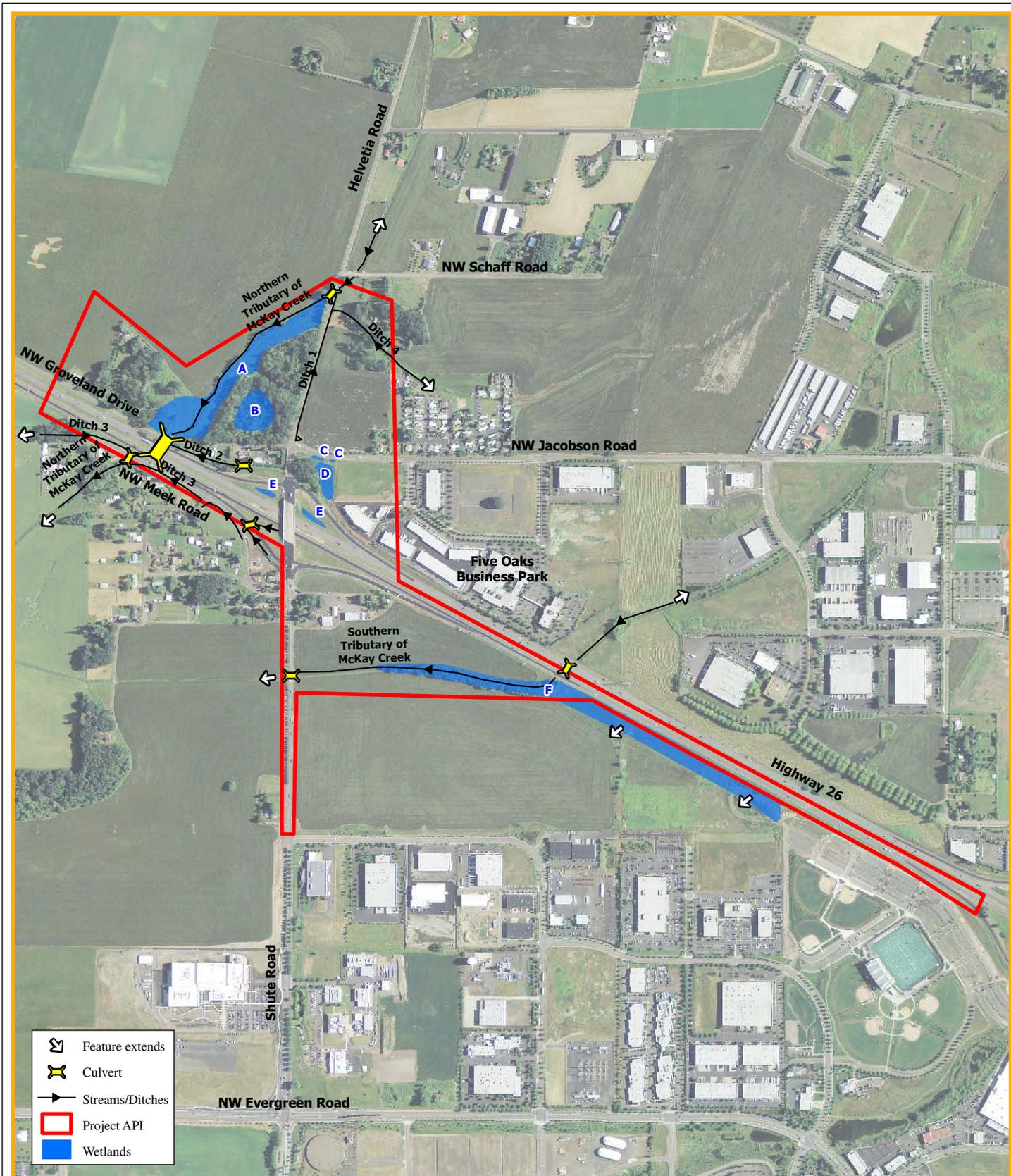


Figure 2.

MB&G

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Wetlands and Waters Map
Shute Road Interchange Improvement Project
Washington County, Oregon

Data Source: NAIP 2009 imagery. 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.



0 500 1,000 Feet

0 100 200 300 Meters

3.1.2 Wetlands

Wetland A

Wetland A is a low-quality, palustrine emergent (PEM) wetland that abuts the unnamed tributary of McKay Creek which is located to the north of Highway 26 and west of Helvetia Road. Vegetation within this feature is composed primarily of reed canarygrass (*Phalaris arundinacea* FACW). Hydrology for Wetland A is primarily supplied by overflow from the northern unnamed tributary of McKay Creek.

Wetland B

Due to the location of Wetland B on private property within a forested area, MB&G biologists were not able to visually inspect this feature and, therefore, could not rule out the presence of wetlands in this location. Aerial photos (NAIP 2009) show a potential palustrine forested (PFO) wetland signature pattern (trees are less dense in this area). Based on aerial photos, there is potential surface hydrologic connectivity from Wetland A to Wetland B.

Wetland C

Wetland C is comprised of two low-quality PEM swales located immediately south of NW Jacobson Road. These wetlands are located in man-made depressions and were created for the collection of stormwater runoff. Reed canarygrass and rushes (*Juncus* spp. FACW [est.]) characterized the vegetation in Wetland C.

Wetland D

Wetland D is a stormwater detention/treatment pond for the Five Oaks business development complex. This is a medium-quality PEM wetland that is dominated by broad-leaf cattail (*Typha latifolia* OBL). Although an outlet was not observed, this wetland likely has a direct connection to other waters features.

Wetland E

Wetland E is comprised of two small, low-quality PEM wetlands located on either side of the Shute Road overpass just north of Highway 26. Common roadside grass species, including tall fescue (*Schedonorus phoenix* FAC), were observed in Wetland E. Hydrology for Wetland E is supplied primarily by runoff from Highway 26. This feature does not appear to have a surface hydrology connection to other wetland/waters features.

Wetland F

Wetland F is a large, low to high-quality PEM/PFO wetland located south of Highway 26 and east of Shute Road. This wetland abuts the southern unnamed tributary of McKay Creek. The central, high-quality portion of this wetland is dominated by Oregon ash (*Fraxinus latifolia* FACW), and the western, low-quality portion of the wetland is comprised of unidentified herbaceous species. Hydrology for Wetland F is primarily supplied by overflow from the southern unnamed tributary of McKay Creek.

3.1.3 Waters

Northern Unnamed Tributary of McKay Creek

The northern unnamed tributary of McKay Creek is a small, perennial stream characterized by an altered vegetation community and a channelized morphology. This stream is approximately 10 feet wide, and flowing water was observed in the feature during the February 3, 2010 site investigation. The northern unnamed tributary of McKay Creek, also referred to as Warble Gulch, Waible Creek, and Storey Creek on mapping records, flows under Highway 26 through a 5-foot box culvert where it joins with Ditch 3. Ditches 1 and 2 also drain into this feature. This stream eventually flows into McKay Creek, which drains to Dairy Creek, a tributary of the Tualatin River. Based on Oregon Department of Forestry (ODF) stream mapping (ODF 2003), the northern unnamed tributary of McKay Creek's headwaters is located approximately 3 miles north of the API. This feature receives hydrology from multiple small creeks north of the API. Native riparian vegetation surrounding this feature has been eliminated within the API and substrate in the bed of the feature consists of silt.

Southern Unnamed Tributary of McKay Creek

The southern unnamed tributary of McKay Creek is also a small, perennial stream that has been channelized. The majority of the native vegetation has been removed from the eastern and western portions of this feature within the API. However, a forested wetland fringe comprised primarily of Oregon ash surrounds the central portion of this feature and provides high-quality riparian conditions in this area. This stream is approximately 8 feet wide and flowing water was observed during the February 3, 2010 site investigation; the substrate consists of silt. This perennial stream is also referred to as Waible Creek on some mapping records and it eventually drains into McKay Creek, which drains to Dairy Creek, a tributary of the Tualatin River. Based on Oregon Department of Forestry (ODF) stream mapping (ODF 2003), the southern unnamed tributary of McKay Creek's headwaters is located approximately 1 mile northeast of the API. This feature receives hydrology from multiple small creeks northeast of the API.

Ditch 1

Ditch 1 is an intermittent roadside ditch that is approximately 1-foot wide and has a substrate comprised of silt. Runoff from NW Jacobsen Road and NW Helvetia Road provides hydrology for this ditch. This feature drains directly into the northern unnamed tributary of McKay Creek. Weedy herbaceous vegetation was observed in and adjacent to Ditch 1.

Ditch 2

Ditch 2 is an approximately 5-foot wide man-made swale that drains directly into the northern unnamed tributary of McKay Creek. Substrate in the bed of Ditch 2 consists of silt. A culvert outlet provides the origin of this feature; the hydrology source is unknown. A moderate amount of flowing water was observed in this feature; therefore it may be considered a perennial waterbody. Moderate-quality riparian vegetation comprised of willow species (*Salix* spp. FACW [est.]) surrounds the eastern portion of this feature. The western portion of the ditch has a low quality riparian buffer dominated by reed canarygrass.

Ditch 3

Ditch 3 is an intermittent, 1-foot-wide roadside ditch that receives runoff from NW Meek Road and a small portion of Highway 26. Substrate in the bed of Ditch 3 consists of silt. This feature drains directly into the northern unnamed tributary of McKay Creek. Herbaceous vegetation, including weedy species and rushes, was observed in and adjacent to Ditch 3.

Ditch 4

Ditch 4 is swale that is approximately 2-feet wide that drains directly into the northern unnamed tributary of McKay Creek. This feature is identified on the ODF stream mapping and is located within a hydric soil mapping unit; therefore, this feature may be a historic stream that has been channelized. This feature flows through an agricultural field and vegetation surrounding the ditch is dominated by weedy herbaceous species; substrate consists of silt. Ditch 4 appears to be fed by multiple creeks and other tributaries to the north, and possibly from agricultural runoff. Herbaceous vegetation, including non-native grass species, was observed in and surrounding Ditch 4, the riparian quality surrounding this feature is poor.

3.1.4 Water quality condition and status

The Oregon Department of Environmental Quality (ODEQ) has listed the mainstem of McKay Creek, located west of the API and upstream of the confluence of McKay and the unnamed tributary of McKay, as having water quality impairments that may warrant special protection measures (Figure 3). In 1998, ODEQ added McKay Creek to the Section 303(d) list for violations including ammonia and phosphorus. Since 1998, the water quality in McKay Creek has further degraded and in 2002, ODEQ added *E. coli* and temperature violations to the creek's water quality impairments (ODEQ 2006). A Total Maximum Daily Load (TMDL) plan has been approved for this creek. The northern and southern unnamed tributaries of McKay Creek located within the API are not specifically identified by ODEQ as having water quality impairments.

Dawson Creek is located approximately 700 feet east of the southeastern corner of the API (Figure 3). ODEQ has identified Dawson Creek as water quality limited (biological criteria), although a TMDL is not currently warranted. Due to its proximity to the API, stormwater from the API may flow into this creek.

3.2 Floodplain

3.2.1 Floodway, 100-year and 500-year floodplain

Areas within the API have been designated within the 100-year floodplain area (Figure 3). The API does not contain areas that have been designated within the 500-year floodplain area (FEMA 2010, S. Roberts pers. comm. 2010).

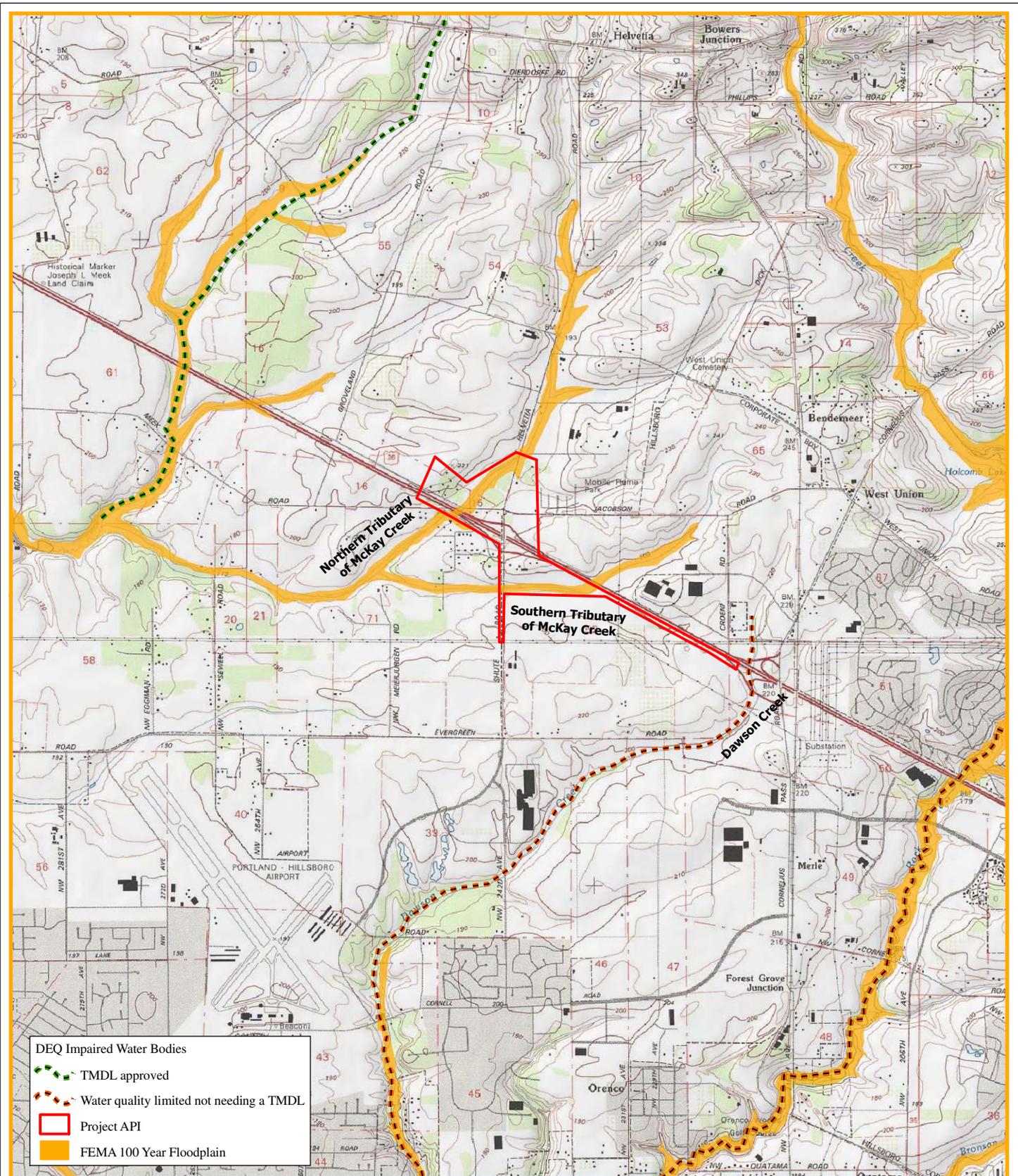


Figure 3.

MB&G

Mason, Bruce & Girard, Inc.
Natural Resource Consultants since 1921

**Water Quality and Flood Plain Map
Shute Road Interchange Improvement Project
Washington County, Oregon**

Data Source: TOPO! USGS 7.5 min., 24K Digital Topographic Data, Oregon. 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.



0 0.25 0.5 Miles

0 0.25 0.5 0.75 1 Kilometers

3.3 Beneficial Uses

3.3.1 ODEQ-Defined Beneficial Uses

Designated beneficial use data for the northern and southern unnamed tributaries of McKay Creek are not available. Consequently, the information below is based off the site investigation conducted by MB&G on February 3, 2010.

Table 2. ODEQ Designated Beneficial Uses

ODEQ Designated Beneficial Uses	Northern and Southern Tributaries of McKay Creek
Public Domestic Water Supply	
Private Domestic Water Supply	
Industrial Water Supply	
Irrigation	X
Livestock Watering	X
Fish & Aquatic Life	X
Wildlife & Hunting	
Fishing	
Boating	
Water Contact Recreation	
Aesthetic Quality	X
Hydro Power	
Commercial Navigation & Transportation	

3.3.2 Locally important uses

The City of Hillsboro does not use the northern or southern unnamed tributaries of McKay Creek for drinking water (T. Steele pers. comm. 2010). It is unknown if the unincorporated portions of Washington County use the northern or southern unnamed tributaries of McKay Creek for drinking water.

3.3.3 Threatened or endangered aquatic species

Upper Willamette River (UWR) Distinct Population Segment (DPS) steelhead (*Oncorhynchus mykiss*) utilize McKay Creek for rearing and migration (StreamNet 2010). The upstream extent of steelhead distribution is located approximately 1 mile downstream (southwest) of the proposed API. The unnamed tributaries of McKay Creek do not currently provide rearing and migration habitat for UWR steelhead.

3.4 Soils

3.4.1 Soils

The following table provides a description of the soil types found within the API based on U.S. Department of Agriculture (USDA) Soil Survey for Washington County (Greene 1976).

Table 3. Soils Mapped within the API.

Soil Name	Description	Permeability	Erosion Potential
Amity Silt Loam	Found on smooth terraces, somewhat poorly drained, formed in old alluvium on valley terraces	Moderately slow	Runoff is slow, hazard of erosion is slight
Cove Silty Clay Loam	Found on floodplains, along streams, poorly drained, formed in recent clayey alluvium	Very slow	Runoff is slow, hazard of erosion is slight
Dayton Silt Loam	Found on broad valley terraces, poorly drained, formed in old alluvium on old terraces	Very slow	Runoff is slow, hazard of erosion is slight
Verboort Silty Clay Loam	Found on bottom lands along drainage ways, poorly drained, formed in stratified, moderately fine textured and fine textured alluvium	Very slow	Runoff is slow, hazard of erosion is slight
Willamette Silt Loam (0-3% slopes)	Found on broad valley terraces, nearly level, well drained, formed in old alluvium	Moderate	Runoff is slow, hazard of erosion is slight
Willamette Silt Loam (3-7% slopes)	Found on broad valley terraces, gently sloping, well drained, formed in old alluvium	Moderate	Runoff is slow, hazard of erosion is slight
Woodburn Silt Loam (0-3% slopes)	Found on broad valley terraces, nearly level, moderately well drained, formed in old alluvium	Slow	Runoff is slow, hazard of erosion is slight
Woodburn Silt Loam (3-7% slopes)	Found on broad valley terraces, gently sloping, moderately well drained, formed in old alluvium	Slow	Runoff is slow, hazard of erosion is slight

3.5 Watershed Land Use and Vegetation Cover

3.5.1 Percentage developed, agriculture, undeveloped

The McKay Creek (170900100107) watershed is comprised of mostly agricultural lands (60%). The remaining areas are comprised of approximately 30% developed and 10% undeveloped lands.

The API encompasses roughly 150 acres, of which, approximately 40% (60 acres) is developed lands (residential, commercial, roadway development), 40% (60 acres) is agriculture areas, and 20% (30 acres) is undeveloped lands.

3.6 Existing Highway Facilities

3.6.1 Project existing impervious surface area

The amount of existing impervious surface area within the API is approximately 30 acres (20%).

3.6.2 Drainage facilities description

The following information is based upon the site investigation conducted by MB&G on February 3, 2010.

Table 4. Jurisdictional Drainage Facilities Identified within the API.

Feature	Drainage Facility Type	Approximate Extent (acres)
Wetland C	stormwater drainage swale(s)	0.1
Wetland D	stormwater detention/treatment pond	0.6
Wetland E	stormwater swale(s)	0.3
Ditch 1	roadside ditch	0.1
Ditch 3	roadside ditch	0.1

In addition to the jurisdictional features above, other non-jurisdictional ditches exist throughout the API that are smaller than those above and appear to convey smaller amounts of stormwater runoff.

3.7 Treatment Opportunities

3.7.1 Assessment of project area for treatment options

Due to existing restricted highway ROW, onsite treatment opportunities are limited. Treatment facilities for the proposed project may be located within the existing interchange in the vicinity of the on- and off-ramp loops. If onsite areas do not offer sufficient space for proposed treatment facilities, additional ROW may need to be acquired. The open agriculture field outside ODOT ROW in the southeast quadrant of the API may provide additional areas to provide treatment.

3.8 Permits held by ODOT

3.8.1 Indian Reservation

The API is not located on or near an Indian Reservation. As such, ODOT does not hold associated permits.

3.8.2 National Pollutant Discharge Elimination System 1200-C permit

ODOT Region 1 currently holds a National Pollutant Discharge Elimination System (NPDES) 1200-C permit.

3.8.3 UIC (Underground Injection Control system)

There are no UICs within the API (T. Steele pers. comm. 2010). As such, ODOT will not need to obtain UIC permits for discharge to groundwater.

4.0 CONCLUSIONS

4.1 Wetland and Waters Permitting

As impacts to wetlands and waters are likely for the proposed Project, Section 404 of the CWA, administered by the ACOE, and the Removal Fill Law, administered by the Department of State Lands (DSL) will apply to the proposed Project. If proposed impacts are less than 0.5 acre, then the Project may qualify for the ACOE Nationwide Permit (NWP) #14, Linear Transportation Projects and the DSL General Authorization (GA) for Certain Transportation-Related Structures. If the Project requires greater than 0.5 acre of impacts, an individual permit (IP) will be required from the ACOE and DSL. A wetland/waters delineation and report will be required for the proposed Project to determine accurate wetland/waters locations and dimensions.

4.2 Water Quality Permits

ODEQs 401 Water Quality Certification (WQC) process will be triggered if, as is anticipated, the ACOE makes a determination that the application for the activities described above will require a permit and results in a discharge. Once this occurs, a stormwater management plan (SWMP) will be required and need to be approved by ODEQ. Additional information on SWMP requirements are described below in section 4.5 Stormwater Management.

Project construction activities are anticipated to disturb more than one acre of land which will likely lead to discharge to surface waters or conveyance systems leading to surface waters of the state. Consequently, the NPDES permit program, administered under Section 402 of the CWA, will require an NPDES 1200-C permit be secured for the Project. This permit requires that the holder prepare an Erosion and Sediment Control Plan (ESCP) which utilizes approved Best Management Practices (BMPs) to prevent erosion and control sediment runoff from the construction site. In addition, the permit requires the applicant to inspect and maintain erosion controls to ensure they are working properly. ODOT Region 1 currently holds a NPDES 1200-C permit.

There are no 303(d) listed waters located within the API. However, Dawson Creek, which is located approximately 700 feet east of the southeastern corner of the API, is water quality limited, but not needing a TMDL. Due to its proximity to the API, stormwater from within the API may flow into Dawson Creek. Consequently, Project engineers should develop plans to prevent untreated stormwater from within the API from being discharged into Dawson Creek. Additionally, in order to minimize potential direct water resource impacts during Project construction, the Project would require the preparation and implementation of an ESCP and associated BMPs for erosion and sediment control.

4.3 Threatened and Endangered Aquatic Species

The API does not contain suitable habitat for any state or federally-listed fish or aquatic species. However, the upstream extent of steelhead distribution is located approximately 1 mile downstream (southwest) of the API. Although direct impacts to listed salmonids are not expected as a result of the proposed project, indirect impacts are possible. If the project includes work in, over, or adjacent to the two unnamed tributaries to McKay Creek, indirect impacts may include

temporary increases in turbidity as a result of construction. In addition, the proposed project will include increases in impervious surface which may cause indirect stormwater impacts to steelhead downstream.

Due to these anticipated indirect effects to listed species, a BA or Standard Local Operating Procedure for Endangered Species (SLOPES IV) Compliance Report must be prepared to provide Endangered Species Act (ESA) clearance. Upon submittal of this document to the regulatory agencies, ODOT can expect a maximum review timeline of 135 business days for a BA with a Likely to Adverse Affect (LAA) effect determination. Minimizing or avoiding impacts on the natural resources described within the API may shorten the review timeline.

If the proposed Project does include activities within the two unnamed tributaries of McKay Creek, these activities should be scheduled during ODFW-approved In-Water Work Window for the Tualatin River and its tributaries (July 15 through September 30) (ODFW 2008).

4.4 Floodplain/Floodway

Areas within the API reside within the 100-year floodplain areas. Activities located within the FEMA Floodplain/floodway are regulated by Washington County. Project activities within the floodplain need to be authorized by Washington County via the Washington County Land Use Application process (R. Brown pers. comm. 2010). In addition, a Washington County Flood Plain/Drainage Hazard Determination form will be required.

4.5 Stormwater Management

Due to the addition of impervious surface within the API, a SWMP will need to be developed by Project engineers. The SWMP will need to quantify the Project's Contributing Impervious Area (CIA) in order calculate treatment requirements. The CIA will have to be treated to meet ODOT, National Marine Fisheries Service (NMFS), and ODEQ requirements. These requirements, as outlined in SLOPES IV, mandate that all stormwater quality treatment practices and facilities must be designed to accept 50% of the cumulative rainfall from the 2-year, 24-hour storm for that site.

Treatment facilities for the proposed project may be located within the existing interchange in the vicinity of the on- and off-ramp loops. Treatment options could include vegetated swales, ditches, culverts and planting within the ROW. If onsite areas do not offer sufficient space for proposed treatment facilities, additional ROW may need to be acquired.

4.6 Local Jurisdiction permits

If Washington County ROW needs to be acquired by ODOT in order to construct the proposed project, a Washington County ROW permit could be required (J. Kuppler pers. comm. 2010). Additionally, a Washington County Land Use Application (Article VII of the Community Development Code) and review permits could be required (S. Roberts pers. comm. 2010) as a result of the project.

4.7 Summary

Table 5 provides details regarding the applicable permits, approvals, and clearances needed for the proposed Shute Road Interchange Improvement Project.

Table 5. Summary of Applicable Permits, Approvals, and Clearances Needed for the Shute Road Interchange Improvement Project

Type of Permit / Approval/ Clearance	Issuing Agency	Permit / Approval / Clearance	Estimated Timeline (after submittal)
ESA Consultation for listed fish species: SLOPES IV Compliance Report or Biological Assessment	NMFS	SLOPES Approval or Biological Opinion	30 days (SLOPES) 45 days (NLAA) 135 days (LAA)
Removal/Fill Permit	DSL	Joint Permit Application approval	GA: 40 days after Wetland/Waters Delineation Report concurrence IP: 120 days
Section 404 Clean Water Act permit	ACOE	Joint Permit Application approval	NWP: 45-75 days IP: 120 days
Section 401 Water Quality Certification	ODEQ	SWMP	Concurrent with JPA
Washington County Land Use Application- Community Development	Washington County Land Use and Transportation	Public Notice, Public Hearing, Application Review	Project dependent
Washington County Right-of-Way Permit	Washington County Land Use and Transportation	Washington County Right-of-Way Permit	Project dependent
Washington County Floodplain Permit	Washington County Land Use and Transportation	Flood Plain/Drainage Hazard Determination form	Project dependent

NLAA – Not Likely to Adversely Affect; LAA – Likely to Adversely Affect; SWMP – Stormwater Management Plan; SLOPES – Standard Local Operating Procedures for Endangered Species.

5.0 REFERENCES

- Brick, Jim. 2010. Personal communication with Alexis Casey (MB&G Biologist) via email. ODFW / ODOT Liaison. Clackamas, Oregon.
- Brown, Rocky. 2010. February 22, 2010. Personal communication with Jonathon Belmont (MB&G Scientist) via phone. Washington County Engineering. Hillsboro, Washington
- Federal Emergency Management Agency (FEMA). Flood Zone Designations. <http://map1.msc.fema.gov/idms/IntraView.cgi?KEY=13747495&IFIT=1>. Accessed February 11, 2010.
- Green, G. L. 1982. Soil Survey of Washington County, Oregon. US Department of Agriculture, Soil Conservation Service. 90 p.
- Kuppler, John. February 17, 2010. Personal communication with Jonathon Belmont (MB&G Scientist) via phone. Washington County Roads. Hillsboro, Washington
- Oregon Department of Environmental Quality (ODEQ). Oregon's 2004/2006 Integrated Report. www.deq.state.or.us/wq/assessment/rpt0406/results.asp Accessed February 11, 2010
- Oregon Department of Fish and Wildlife (ODFW). 2008. Oregon Guidelines for Timing of In Water Work to Protect Fish and Wildlife Resources. June, 2008. Salem, Oregon.
- Oregon Department of Forestry (ODF). 2003. ODF Fish Presence and Stream Size Data. <http://www.odf.state.or.us/GIS/fishpres/default.asp?stat=cs>. Accessed February 1, 2010.
- Oregon Department of State Lands (DSL). 2001. Essential Salmon Habitat for Washington County, Oregon. Available at URL: <http://www.oregon.gov/DSL/PERMITS/esshabitat.shtml>
- Oregon Natural Heritage Information Center (ORNHIC). 2010. Query of ORNHIC database within a 2-mile radius of API. Oregon Department of State Lands (DSL). 2001. Essential Salmon Habitat for Washington County, Oregon. Available at URL: <http://www.oregon.gov/DSL/PERMITS/esshabitat.shtml>
- Roberts, Stephen. February 18, 2010. Personal communication with Jonathon Belmont (MB&G Scientist) via phone. Washington County Roads. Hillsboro, Washington
- Steele, Tacy. February 18, 2010. Personal communication with Jonathon Belmont (MB&G Scientist) via phone. Washington County Roads. Hillsboro, Washington
- Streamnet. 2010. Fish Data for the Northwest. Available at URL: <http://www.streamnet.org/>
- U.S. Fish and Wildlife Service (USFWS). 2010. Federally listed, proposed, candidate species and species of concern under the jurisdiction of the fish and wildlife service which may occur within Washington County, Oregon. Portland, Oregon.

U.S. Geological Survey (USGS). 1986. Hillsboro, Oregon, 7.5-minute quadrangle, 1:24000.

Washington County. Community Development Code.
<http://washtech.co.washington.or.us/LDS/index.cfm?id=7>. Accessed February 18, 2010.

Appendix A

Area of Potential Impact Photographs

1



2



<p>MB&G</p>	<p>1. View to the northeast from NW Groveland Drive of the northern unnamed tributary of McKay Creek.</p>
<p>Mason, Bruce & Girard, Inc. February 3, 2010</p>	<p>2. View of southwest portion of API; stormwater ditch from Shute Road Interchange.</p>

3



4



MB&G	3. View to the west of the western portion of Wetland C. NW Jacobson Road is visible at photo right and Helvetia Road is visible in the background.
Mason, Bruce & Girard, Inc. February 3, 2010	4. View to the south of Wetland D, the stormwater pond. Note the potential Clean Water Services (CWS) mitigation plantings in the photo foreground. The westbound Shute Road off-ramp is visible in the photo background.

5



6



MB&G	5. View to the southeast of western portion of Wetland E. Note the standing water in the photo center. The westbound on-ramp from Shute Road to Highway 26 is visible at photo left, Shute Road is visible in the background, and Highway 26 is visible at photo right.
Mason, Bruce & Girard, Inc. February 3, 2010	6. View to the southwest showing Wetland F. Highway 26 is located behind the photographer.

7



8



<p>MB&G</p>	<p>7. View to the southeast of Ditch 2. The confluence of Ditch 2 and the northern unnamed tributary of McKay Creek is located immediately behind the photographer. NW Groveland Drive is located to the left of the photo.</p>
<p>Mason, Bruce & Girard, Inc. February 3, 2010</p>	<p>8. View to the southeast of the eastern extent of Ditch 2. Note the culvert outlet, as indicated by the red arrow. The west bound on-ramp from Shute Road to Highway 26 is located to the right of the photo.</p>

9



10



<p>MB&G</p>	<p>9. View to the southeast of a portion of Ditch 3. The ditch enters into a culvert at the red arrow and passes under the east bound off-ramp from Highway 26 to Shute Road.</p>
<p>Mason, Bruce & Girard, Inc. January 8, 2010</p>	<p>10. View to the northwest of a portion of Ditch 3. The east bound off-ramp from Highway 26 to Shute Road is visible at photo right.</p>

11



12



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Girard, Inc.

February 3, 2010

11. View to the west of the southern unnamed tributary of McKay Creek at the western extent of the API.
12. Typical upland grass seed production field within the northern portion of the API with a view to the south. The northern unnamed tributary of McKay Creek is visible at the bottom of the photo. Note the numerous stands of Oregon white oak (*Quercus garryana* FACU) (red arrows) within the API. Helvetia Road is visible at photo right.

Wetland Environmental Baseline Report

**SHUTE ROAD INTERCHANGE IMPROVEMENT PROJECT
Key Number K16842
Washington County, Oregon**

Prepared for:



ODOT Region 1
123 Flanders Street
Portland, Oregon 97213

Prepared by:

MB&G

Mason, Bruce & Girard, Inc.
707 SW Washington Street, Suite 1300
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(503) 224-3445

February 22, 2010

MB&G Project No. 1581

TABLE OF CONTENTS

I.	SITE DATA SUMMARY	I
1.0	INTRODUCTION.....	1
1.1	Purpose.....	1
1.2	Project Description.....	1
1.3	Area of Potential Impact (API)	1
1.4	Landscape Setting and Land Use.....	1
2.0	METHODS	3
3.0	PRE-FIELD REVIEW RESULTS.....	5
4.0	FIELD VISIT RESULTS.....	5
4.1	Wetlands.....	7
4.2	Waters	8
5.0	CONCLUSIONS.....	9
5.1	Summary	9
6.0	REFERENCES	11

TABLES

Table 1	Soil Types and Hydric Ratings Mapped within the API.....	5
Table 2	Wetland/Waters Identified within the API	7
Table 3	Summary of Applicable Permits, Approvals, and Clearances Needed for the Proposed Project.....	10

FIGURES

Figure 1	Project Location and Vicinity Map.....	2
Figure 2	LWI, NWI, NRCS Soils, and ODF Stream Map	4
Figure 3	Wetlands and Waters Map.....	6

APPENDICES

Appendix A. Area of Potential Impact Photographs

I. SITE DATA SUMMARY

Data Summary	
Project Name:	Shute Road Interchange Improvement Project
ODOT Key #:	K16842
Location of Project:	Mile Posts (MP) 60.60 to 62.25 on Highway 26 Township 1N, Range 2W, Sections 15, 16, 22, and 23
Size of Area of Potential Impact (API):	150 acres
City:	Hillsboro
County:	Washington County, Oregon
Project Staff:	Kristen Currens Alexis Casey
Site Visit:	February 3, 2010
Current Land Use(s):	Highway right-of-way, residential, commercial, agricultural
Waterways on Site:	Two unnamed tributaries to McKay Creek
6th Field HUC:	170900100107
ODFW In Water Work Window	July 15 – September 30

1.0 INTRODUCTION

This Environmental Baseline Report (EBR) summarizes available baseline data and describes environmental permits and clearances that may be necessary for the improvement of the Shute Road Interchange along Highway 26 in Washington County, Oregon. While additional data collection may be necessary, environmental baseline data described herein will inform project design and the development of alternatives that avoid and/or minimize impacts to sensitive features identified within the area of potential impact (API).

1.1 Purpose

The increasing population in Washington County has begun to strain the existing transportation infrastructure. The purpose of this project is to alleviate congestion by increasing the capacity at the Shute Road Interchange (Project). The Oregon Department of Transportation (ODOT) proposes to improve the interchange at Shute Road located between Mile Post (MP) 60.60 to 62.25 of Highway 26. The purpose of this EBR is to describe and document wetland and waters resources identified within the API for the Project (Figure 1).

1.2 Project Description

The proposed project would reconstruct the Shute Road/Helvetia Road Interchange. The project would include the addition of a westbound-to-southbound loop ramp, reconstructing the westbound exit and entrance loop ramps, and adding a second right turn lane to the eastbound entrance ramp.

1.3 Area of Potential Impact (API)

The API extends approximately 2,000 feet in either direction from the Shute Road Interchange with the exception of the eastern portion of the API along Highway 26, where the API extends approximately 1.25 miles towards the NW Cornelius Pass Road Interchange. Figure 1 shows the general location of the API.

1.4 Landscape Setting and Land Use

The API for the Shute Road Interchange Improvement Project is located on the outskirts of urbanized Washington County. The eastern portion of the API is located within the City of Hillsboro, and the western portion of the API is located within unincorporated Washington County. Topography within the API is generally flat with an approximate elevation of 200 feet above mean sea level (msl) (USGS 1986).

The majority of the API has experienced alterations to the natural landscape as the result of the construction of Highway 26, road fill for construction of the elevated Shute Road overcrossing, construction of multiple secondary roadways, agriculture, and residential and commercial development. The majority of the native vegetation has been removed within the API. The two creeks within the API, the northern and southern tributaries of McKay Creek, have been channelized and now receive greater volumes of water due to increases in impervious surface within the API.

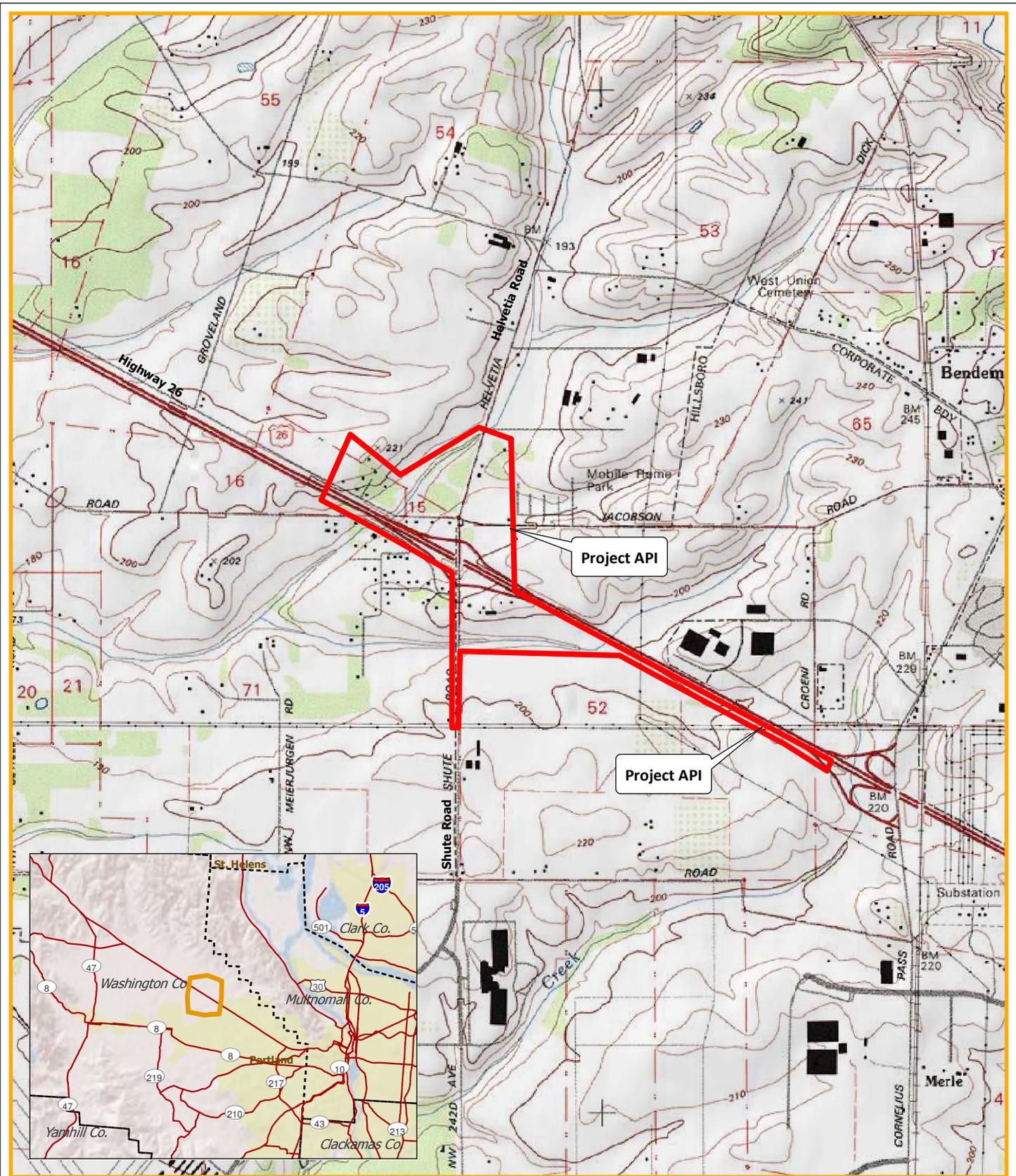


Figure 1.

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**Project Location and Vicinity Map
Shute Road Interchange Improvement Project
Washington County, Oregon**

Data Source: TOPO! USGS 7.5 min., 24K Digital Topographic Data, Oregon. 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.



0 0.25 0.5 Miles

0 0.25 0.5 0.75 Kilometers

2.0 METHODS

The following sections of this report summarize the major wetland/waters resources and permit requirements identified during a pre-field review of available information and a field visit conducted by Mason, Bruce, and Girard, Inc. (MB&G) wetland biologists on February 3, 2010. Potential wetlands and waters were identified prior to the field visit using aerial photographs (NAIP 2009), U.S. Geological Survey topographic maps (Hillsboro, Oregon Quadrangle, USGS 1986) (Figure 1), U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping (USFW 2010) (Figure 2), Local Wetland Inventory (LWI) mapping records for the City of Hillsboro (east of the Shute Road/Highway 26 intersection only) (Fishman Environmental Services 2001) (Figure 2), Oregon Wetland Assessment Protocol (ORWAP) mapping (OSU 2010), Oregon Department of Forestry (ODF) stream mapping (ODF 2003) (Figure 2), and the Soil Survey of Washington County, Oregon (Green 1982, NRCS 1999) (Figure 2).

The field visit was conducted to evaluate the environmental baseline conditions of the Project API, including potentially jurisdictional wetlands and waters. During the field visit, the API was examined and photographed from public roadways because access onto private property was not permitted (Appendix A). Accordingly, biologists conducted a visual inspection of private properties from public roadways. Therefore, the boundaries of wetland/waters features are approximate and subject to change after an on-site wetland/waters delineation has been conducted. Based on available access, all potential wetlands and waters features identified during the pre-field review were inspected during the field visit. The locations and extent of wetland features were determined by the predominance of hydrophytic plant communities and visual indicators of wetland hydrology, including surface water, drainage patterns, topographic depressions in the landscape, and signature patterns on aerial photography. Due to the scope of the field evaluation and restricted access for the majority of the API, biologists did not excavate soil pits or document the ordinary high water elevation (OHWE) of waters.

Previous wetland/waters delineations have been conducted within the eastern portion of the API, including WD2002-0001 (CWS 2002) and WD2004-0679 (DEA 2004). Although the Letter of Concurrence for Report WD2002-001 has expired, MB&G wetland biologists made an attempt to locate each previously delineated feature during the field visit.

All wetlands/waters identified in the field that may be jurisdictional to the Army Corps of Engineers (ACOE), Department of State Lands (DSL), or Clean Water Services (CWS) were hand-sketched onto aerial photos and then digitized using Geographic Information System (GIS) software. Additional waters features (ditches) were identified in the field; however, due to their small size (less than 10 feet wide), inaccessibility to food and game fish, lack of adjacency to wetlands, artificial creation in uplands, and/or flow for less than three months of the year; these ditches are not likely jurisdictional and are not discussed further in this report.

Data gaps and/or discrepancies have been noted for each of the sections discussed below and, if needed, additional data gathering tasks have been identified.

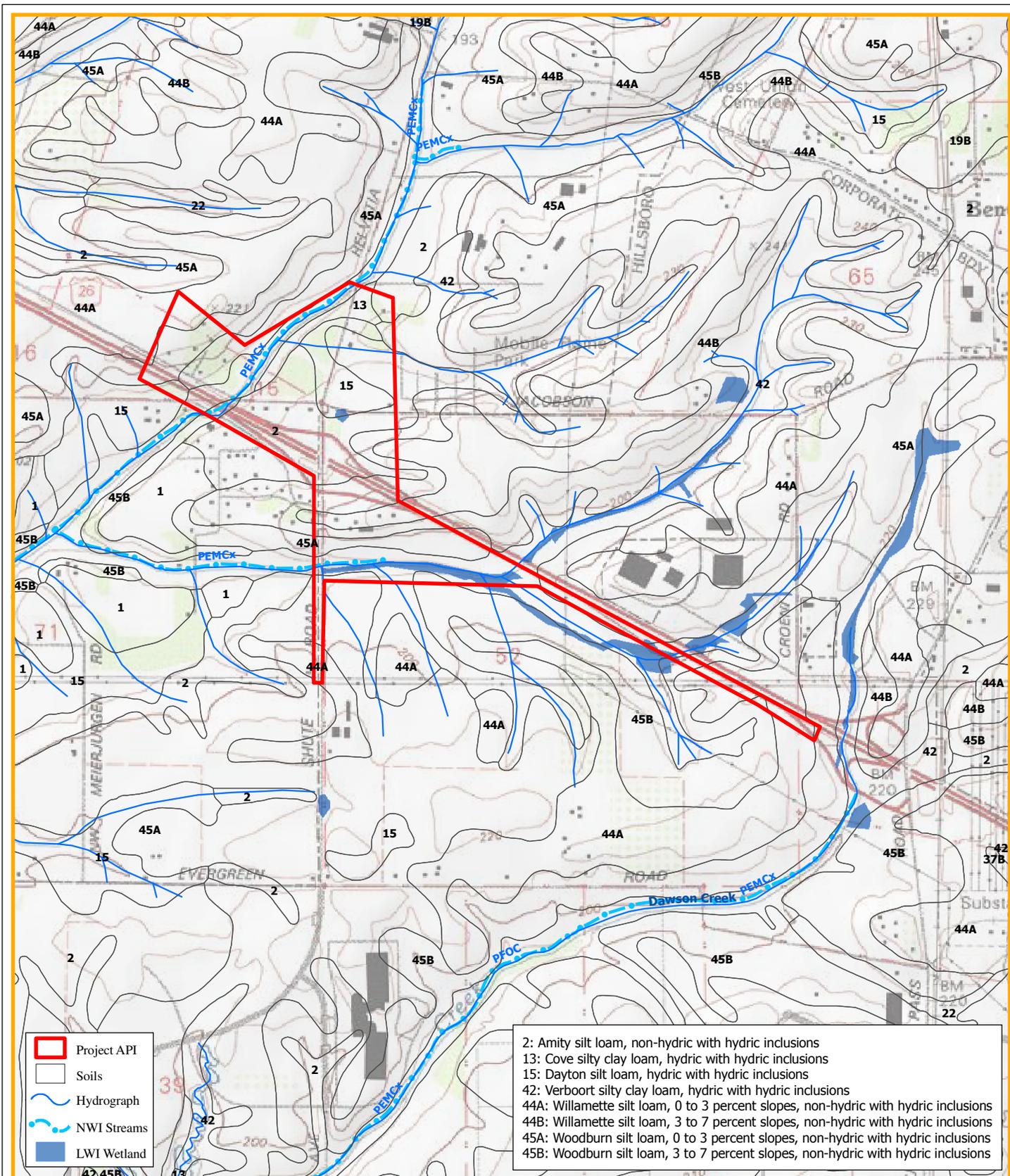


Figure 2.

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**LWI/NWI and NRCS Soils Map
Shute Road Interchange Improvement Project
Washington County, Oregon**

Data Source: TOPO! USGS 7.5 min., 24K Digital Topographic Data, Oregon. 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.

3.0 PRE-FIELD REVIEW RESULTS

Seven soil types are mapped within the API, three of which are considered hydric (Table 1) (Green 1982, NRCS 1999). The mapped hydric soils within the API are centered on Ditch 4, Wetland F, and the northern and southern unnamed tributaries of McKay Creek (Figure 2).

Table 1. Soil Types and Hydric Ratings Mapped within the API.

Map Unit Symbol	Map Unit Name	Hydric	Hydric Inclusions
2	Amity silt loam	N	Y
13	Cove silty clay loam	Y	Y
15	Dayton silt loam	Y	Y
42	Verboort silty clay loam	Y	Y
44A	Willamette silt loam, 0 to 3 percent slopes	N	Y
44B	Willamette silt loam, 3 to 7 percent slopes	N	Y
45A	Woodburn silt loam, 0 to 3 percent slopes	N	Y
45B	Woodburn silt loam, 3 to 7 percent slopes	N	Y

The Hillsboro NWI map shows three mapped features within the API that correspond to the northern and southern unnamed tributaries of McKay Creek and Wetland F (USFWS 2010) (Figure 2). The presence and approximate locations of all three of these features were confirmed in the field (Figure 3).

Two features are mapped on the LWI east of the Shute Road Interchange within the API (Fishman Environmental Services 2001) (Figure 2); these features were also identified during the field visit. The first feature, mapped south of Highway 26, corresponds to the southern unnamed tributary of McKay Creek and Wetland F. The second feature, a small wetland just northeast of the Shute Road Interchange, corresponds to Wetland D (Figure 3).

ORWAP mapping shows multiple wetlands that correspond to Wetlands A, B, and F, the northern and southern unnamed tributaries of McKay Creek, and Ditches 2 and 3.

The 2002-0001 wetland delineation report identified a stormwater detention pond, a wetland swale, and a stream identified as Waible Creek. MB&G wetland biologists observed these three features; Waible Creek is described below as the southern unnamed tributary of McKay Creek and the stormwater detention pond and wetland swale are described below as Wetland F. The 2004-0679 wetland delineation report identified a wetland south of Highway 26 and east of Shute Road that corresponds to a portion of Wetland F and the southern unnamed tributary of McKay Creek (Figure 3).

4.0 FIELD VISIT RESULTS

Twelve jurisdictional wetlands and waters features were identified during the field visit on February 3, 2010 (Figure 3). The approximate acreage of each feature within the API is provided in Table 2 and each feature is described below. As access was not provided beyond public right-of-way, feature presence, location, boundaries, and acreage are approximate and should be used for preliminary planning purposes only.

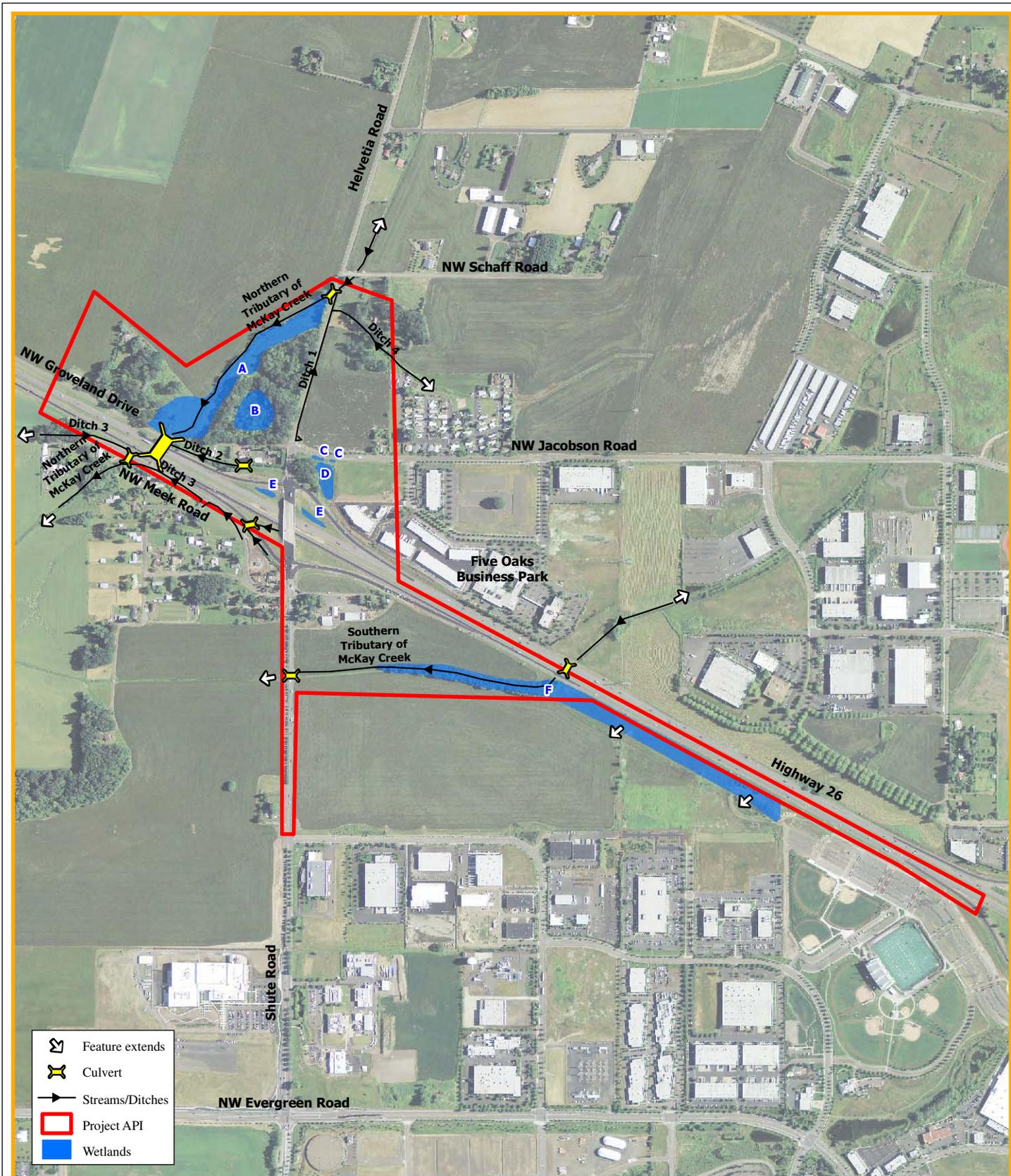


Figure 3.

MB&G

Mason, Bruce & Girard, Inc.
Natural Resource Consultants since 1921

Wetlands and Waters Map
Shute Road Interchange Improvement Project
Washington County, Oregon

Data Source: NAIP 2009 imagery. 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.



0 500 1,000 Feet

0 100 200 300 Meters

Table 2. Wetland/Waters Identified within the API.

Feature	Approximate Acreage
Wetland A	6.9
Wetland B	1.8
Wetland C	0.1
Wetland D	0.6
Wetland E	0.3
Wetland F	4.5
Total Wetland Acreage	14.1
Northern Unnamed Tributary of McKay Creek	0.2
Southern Unnamed Tributary of McKay Creek	0.8
Ditch 1	0.1
Ditch 2	0.1
Ditch 3	0.1
Ditch 4	0.1
Total Waters Acreage	1.3

4.1 Wetlands

Wetland A

Wetland A is a low-quality, palustrine emergent (PEM) wetland that abuts the northern unnamed tributary of McKay Creek which is located to the north of Highway 26 and west of Helvetia Road. Vegetation within this feature is composed primarily of reed canarygrass (*Phalaris arundinacea* FACW).

Wetland B

Due to the location of Wetland B on private property within a forested area, MB&G biologists were not able to visually inspect this feature and, therefore, could not rule out the presence of wetlands in this location. Aerial photos (NAIP 2009) show a potential palustrine forested (PFO) wetland signature pattern (trees are less dense in this area). Based on aerial photos, there is potential surface hydrologic connectivity from Wetland A to Wetland B. The quality of this wetland is likely high due to tree cover.

Wetland C

Wetland C is comprised of two low-quality PEM swales located immediately south of NW Jacobson Road. These wetlands are located in man-made depressions and were created for the collection of stormwater runoff. Reed canarygrass and rushes (*Juncus* spp. FACW [est.]) characterized the vegetation in Wetland C.

Wetland D

Wetland D is a stormwater detention/treatment pond for the Five Oaks business development complex and possible CWS vegetated corridor mitigation site. This is a medium-quality PEM wetland that is dominated by broad-leaf cattail (*Typha latifolia* OBL). Although an outlet was not observed, this wetland likely has a direct connection to other waters features.

Wetland E

Wetland E is comprised of two small, low-quality PEM wetlands located on either side of the Shute Road overpass just north of Highway 26. Common roadside grass species, including tall fescue (*Schedonorus phoenix* FAC), were observed in Wetland E. This feature did not appear to have a surface hydrology connection to other wetland/waters features.

Wetland F

Wetland F is a large, low to high-quality PEM/PFO wetland located south of Highway 26 and east of Shute Road. This wetland abuts the southern unnamed tributary of McKay Creek. The central, high-quality portion of this wetland is dominated by Oregon ash (*Fraxinus latifolia* FACW), and the western, low-quality portion of the wetland is comprised of unidentified herbaceous species.

4.2 Waters

Northern Unnamed Tributary of McKay Creek

The northern unnamed tributary of McKay Creek is a small, perennial stream characterized by an altered vegetation community and a channelized morphology. This stream is approximately 10 feet wide, and flowing water was observed in the feature during the February 3, 2010 field visit. The northern unnamed tributary of McKay Creek, also referred to as Warble Gulch, Waible Creek, and Storey Creek on mapping records, flows under Highway 26 through a 5-foot box culvert where it joins with Ditch 3. Ditches 1 and 2 also drain into this feature. This stream eventually flows into McKay Creek, which drains to Dairy Creek, a tributary of the Tualatin River.

Southern Unnamed Tributary of McKay Creek

The southern unnamed tributary of McKay Creek is also a small, perennial stream that has been channelized. The majority of the native vegetation has been removed from the eastern and western portions of this feature within the API; however, a forested wetland fringe comprised primarily of Oregon ash surrounds the central portion of this feature. This stream is approximately 8 feet wide and flowing water was observed during the February 3, 2010 field visit. This perennial stream is also referred to as Waible Creek on some mapping records and it eventually drains into McKay Creek, which drains to Dairy Creek, a tributary of the Tualatin River.

Ditch 1

Ditch 1 is an intermittent roadside ditch that is approximately 1-foot wide and likely carries a relatively permanent flow of water. This feature drains directly into the northern unnamed tributary of McKay Creek. Weedy herbaceous vegetation was observed in Ditch 1.

Ditch 2

Ditch 2 is an approximately 5-foot wide man-made swale that drains directly into the northern unnamed tributary of McKay Creek. A culvert outlet provides the origin of this feature; the hydrology source is unknown. A moderate amount of flowing water was observed in this feature; therefore it may be considered a perennial waterbody. Vegetation surrounding this feature is comprised of willow species (*Salix* spp. FACW [est.]).

Ditch 3

Ditch 3 is an intermittent, 1-foot-wide roadside ditch that likely carries a relatively permanent flow of water. This feature drains directly into the northern unnamed tributary of McKay Creek. Herbaceous vegetation, including weedy species and rushes, was observed in Ditch 3.

Ditch 4

Ditch 4 is swale that is approximately 2-feet wide that drains directly into the northern unnamed tributary of McKay Creek. This feature is identified on the ODF stream mapping and is located within a hydric soil mapping unit; therefore, this feature may be a historic stream that has been channelized. This feature flows through an agricultural field and vegetation surrounding the ditch is dominated by weedy herbaceous species.

5.0 CONCLUSIONS

As impacts to wetlands and waters are likely for the proposed Project, Section 404 of the Clean Water Act, administered by the ACOE; the Removal Fill Law, administered by the DSL; and Water Quality Sensitive Areas and Vegetated Corridors, administered by Clean Water Services (CWS) will apply to the proposed Project. If proposed impacts are less than 0.5 acre, then the Project may qualify for the ACOE Nationwide Permit (NWP) #14, Linear Transportation Projects and the DSL General Authorization (GA) for Certain Transportation-Related Structures. If the project requires greater than 0.5 acre of impacts, an individual permit (IP) will be required from the ACOE and DSL. A wetland/waters delineation and report will be required for the proposed project to determine accurate wetland/waters locations and dimensions.

Impacts to wetlands/waters of the U.S. and State will require compensatory mitigation for both the ACOE and DSL. Currently, the wetland mitigation banks within the service area of the API (Fernhill and Tualatin Valley) do not have credits available. However, as credits become available at these banks in the future, mitigation at these banks may be an option for compensatory wetland mitigation for this Project. If bank credits are unavailable during the permitting process, alternative forms of mitigation will need to be considered, including payment-in-lieu (for DSL-jurisdictional impacts only), fee-in-lieu (if fee-in-lieu sites have been approved for release of credits by the DSL and ACOE in the Project area), or on- or off-site wetland creation, enhancement, or restoration. Minimal on-site locations for wetland creation are available within the API, as areas adjacent to the right-of-way are privately owned and would require property acquisition. If on- or off-site mitigation is proposed, the DSL and ACOE will require a compensatory wetland mitigation plan.

A vegetated corridor analysis and Natural Resource Assessment report will be required for the Project in order to receive a Service Provider Letter from CWS. Impacts to parcels that contain vegetated corridors will require vegetated corridor enhancement by CWS. In addition, impacts to vegetated corridors will require mitigation. CWS enhancement consists of removing noxious weeds and planting native trees and shrubs within the vegetated corridor. Enhancement and/or mitigation plans will be required if impacts are proposed for the Project.

5.1 Summary

Table 3 provides details regarding the applicable permits, approvals, and clearances needed for the proposed Project.

Table 3. Summary of Applicable Permits, Approvals, and Clearances Needed for the Proposed Project.

Type of Permit / Approval / Clearance	Issuing Agency	Permit / Approval / Clearance	Estimated Timeline (after submittal)
Letter of Concurrence	DSL	Wetland/Waters Delineation Report approval	120 days
Jurisdictional Determination	ACOE	Wetland/Waters Delineation Report approval	60 days
Removal/Fill Permit	DSL	Joint Permit Application approval	GA: 40 days after Wetland/Waters Delineation Report concurrence IP: 120 days
Section 404 Clean Water Act Permit	ACOE	Joint Permit Application approval	NWP: 45-75 days IP: 120 days
Service Provider Letter	CWS	Vegetated Corridor Assessment Report and Enhancement/Mitigation Plan approval	15 days

6.0 REFERENCES

- Clean Water Services (CWS). 2002. Bendemeer Trunkline Wetland Delineation Report and Letter of Concurrence. WD 2002-0001. Issued by the DSL January 29, 2002.
- David Evans and Associates (DEA). 2004. Verification of Shute Road Wetland Delineation and Letter of Concurrence WD2004-0679. Issued by the DSL April 10, 2007.
- Fishman Environmental Services. 2001. City of Hillsboro Natural Resource Inventory. <http://siletz.dsl.state.or.us/lwi/hillsboro.pdf>. Accessed February 2, 2010.
- Green, G. L. 1982. Soil Survey of Washington County, Oregon. U.S. Department of Agriculture, Soil Conservation Service. 90 p.
- National Agriculture Imagery Program (NAIP). 2009. MrSID Raster Dataset. "Washington County Mosaic." U.S. Department of Agriculture, Farm Service Agency. Washington, D.C.
- Natural Resources Conservation Service (NRCS). 1999. Hydric Soils List: Washington County, Oregon.
- Oregon Department of Forestry (ODF). 2003. ODF Fish Presence and Stream Size Data. <http://www.odf.state.or.us/GIS/fishpres/default.asp?stat=cs>. Accessed February 1, 2010.
- Oregon Department of State Lands (DSL). 2010. Local Wetland Inventories. <http://www.oregonstatelands.us/DSL/WETLAND/lwi.shtml>. Accessed February 1, 2010.
- Oregon State University (OSU). 2010. Oregon Explorer: Oregon Rapid Wetland Assessment Protocol (ORWAP). <http://www.oregonexplorer.info/wetlands/orwap/>. Accessed February 1, 2010.
- U.S. Fish and Wildlife Service (USFWS). 2010. National Wetlands Inventory. <http://www.fws.gov/wetlands/data/Mapper.html>. Accessed February 1, 2010.
- U.S. Geological Survey (USGS). 1986. Hillsboro, Oregon, 7.5-minute quadrangle, 1:24000.

Appendix A

Area of Potential Impact Photographs

1



2



MB&G	1. View to the northeast from NW Groveland Drive of the northern unnamed tributary of McKay Creek and Wetland A.
Mason, Bruce & Girard, Inc.	2. View to the southwest of the northern unnamed tributary of McKay Creek from NW Schaff Road. NW Helvetia Road is visible in the photo background. Wetland B is located in the dense stand of trees in the photo background.
February 3, 2010	

3



4



<p>MB&G</p>	<p>3. View to the west of the western portion of Wetland C. NW Jacobson Road is visible at photo right and NW Helvetia Road is visible in the background.</p>
<p>Mason, Bruce & Girard, Inc. February 3, 2010</p>	<p>4. View to the south of Wetland D, a stormwater pond. Note the potential Clean Water Services (CWS) mitigation plantings in the photo foreground. The westbound Shute Road off-ramp is visible in the photo background.</p>

5



6



<p>MB&G</p>	<p>5. View to the southeast of western portion of Wetland E. Note the standing water in the photo center. The westbound on-ramp from Shute Road to Highway 26 is visible at photo left, Shute Road is visible in the background, and Highway 26 is visible at photo right.</p>
<p>Mason, Bruce & Girard, Inc. February 3, 2010</p>	<p>6. View to the southwest showing Wetland F. The low-quality, palustrine emergent portion of Wetland F is visible at photo left and center, and the high-quality palustrine forested portion is visible at photo right. Highway 26 is located behind the photographer.</p>

7



8



<p>MB&G</p>	<p>7. View to the southeast of Ditch 2. The confluence of Ditch 2 and the northern unnamed tributary of McKay Creek is located immediately behind the photographer. NW Groveland Drive is located to the left of the photo.</p>
<p>Mason, Bruce & Girard, Inc. February 3, 2010</p>	<p>8. View to the southeast of the eastern extent of Ditch 2. Note the culvert outlet, as indicated by the red arrow. The west bound on-ramp from Shute Road to Highway 26 is located to the right of the photo.</p>

9



10



<p>MB&G</p>	<p>9. View to the southeast of a portion of Ditch 3. The ditch enters into a culvert at the red arrow and passes under the east bound off-ramp from Highway 26 to Shute Road. Ditch 3 may display wetland characteristics in this reach.</p>
	<p>10. View to the northwest of a portion of Ditch 3. The east bound off-ramp from Highway 26 to Shute Road is visible at photo right.</p>
<p>Mason, Bruce & Girard, Inc. January 8, 2010</p>	

11



12



<p>MB&G</p>	<p>11. View to the west of the southern unnamed tributary of McKay Creek at the western extent of the API.</p>
<p>Mason, Bruce & Girard, Inc. February 3, 2010</p>	<p>12. A typical upland grass seed production field is located within the northern portion of the API with a view to the south. The northern unnamed tributary of McKay Creek is visible at the bottom of the photo. Note the numerous stands of Oregon white oak (<i>Quercus garryana</i> FACU) (red arrows) within the API. Helvetia Road is visible at photo right.</p>



ODOT Region 1 Environmental Unit Visual Resources Technical Report

Date: February 23, 2010

Project Name: US26: Shute Road Interchange

Location: U.S. 26 at Shute Road Intersection in Washington County

Project Description Summary: The proposed project would reconstruct the Shute Road/Helvetia Road interchange. The project would include the addition of a Westbound to Southbound loop ramp, reconstructing the Westbound exit and entrance loop ramps, and adding a second right turn lane to the Eastbound entrance ramp.

Visual Resources

ODOT Region 1 Environmental Coordinator, Melissa Hogan performed basic scoping for Visual Resources as normally documented in a Part 3 document in order to determine the classification of the project under NEPA.

Research of quad maps, city and county maps to identify Federal Scenic Highway or Tour Route and indicates that none of the following designations apply to this project: National Scenic Byway, All-American Road, Oregon Scenic Byway, Oregon Tour Route, or Oregon Memorial Drive; Oregon Scenic Waterways and National Wild and Scenic Rivers; Federal, State or Local parks and recreation or conservation lands (includes National Historic and Scenic Trails, wildlife sanctuaries, refuges and preserves, 'beach land'). There are also no USFS or BLM properties within the vicinity of the project.

Contact with ODOT's District Maintenance (Sylvan) Office determined that the vegetation management plan for the area is mowed grass that is sprayed occasionally to prevent noxious weeds.

The Oregon Forest Practices Act does not apply because there are no forest properties located within the API of this project.

Major cuts and fills would be associated with this project for the reconstruction of the on/off ramps to US26.

A bridge is anticipated over a tributary of Waible Gulch and large retaining walls would be anticipated in order to avoid and/or minimize impacts to wetlands associated with the tributary.

Contact with the local agencies (Washington County and City of Hillsboro) indicates the following design review requirements: Washington County will require a Type III (public hearing) development review process. City of Hillsboro does not require a development review process.

Existing conditions include gentle grassed slopes within ODOT Right of Way. There are no known Section 4(f)/6(f) resources – see Section 4(f)/6(f) technical report for more details.

Visual Resources Summary

Replacement of an existing grade separated interchange and widening to the recently zoned Industrial area South of US26 should not result in negative visual impacts to this rural residential/farmland area of Washington County. Care should be taken to minimize impacts to adjacent wetlands, waterways and farmland - all visual components to this rural interchange.

References

- Photos by ODOT Archaeologist Kurt Roedel.
- Verification of development review process ascertained from Steven Roberts, Washington County staff and Don Odermott, City of Hillsboro staff. No property owners were contacted for this assessment.

Prepared by: _____

Melissa Hogan

ODOT Regional Environmental Coordinator, Region 1, West

Date: February 2010

Reviewed by: _____

Jeff Buckland

ODOT Senior Environmental Project Manager, Region 1

Date: February 2010

Project Site Photos:



South side of US26 at the East end of the project



NW Area of Project



Existing guardrail and roadway over McKay Creek at location of box culvert