

## I. Environmental Considerations

### Federal Regulation

According to requirements of SAFETEA-LU, a long-range transportation plan shall include a discussion of types of potential environmental consideration activities and potential steps to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan. This requirement shall be met through the development of a discussion with Federal, State, and tribal wildlife, land management, and regulatory agencies.

The Act stipulates that metropolitan planning organization shall consult, as appropriate, with State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation concerning the development of a long-range transportation plan. The consultation shall involve the following, as appropriate:

1. Comparison of transportation plans with State conservation plans or maps, if available; or
2. Comparison of transportation plans to inventories of natural or historic resources, if available.

### Goal and Objectives

The goal of this effort is **to make the consideration of environmental issues an integral part of the MPO's transportation planning process**. The objectives of this effort are:

- To identify any potential conflict between the implementation of projects recommended in the Transportation Plan and the area's sensitive environmental features.
- To develop an inventory of all sensitive environmental issues related to the implementation of projects recommended in the Transportation Plan.
- To begin the consideration of environmental issues prior to the implementation phase and during the planning process.
- To provide an environmental reference and resource document for the implementation of projects in the Transportation Plan.

### Status

Privileged by the location of the Oregon State University (OSU), Benton County has a wealth of environmental studies and inventories of its floras and faunas. Additionally, the local governments in Benton County place a great deal of values on protecting the natural and built environments in implementing community projects. It is because of these traits that the Country Home Magazine designated the City of Corvallis as the "Third Best Green Places" in the United State<sup>1</sup>. Some notable work of local governments on the environmental issues is as follows:

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<sup>1</sup> Country Home Magazine, March 2007

In December 2004, the City of Corvallis adopted a document referred to as Phase III – Natural Features Project. This document was incorporated into the City’s Land Development Code. The Natural Features inventoried all environmentally sensitive features of the area and established procedures for their protection.

In 2005 the City of Corvallis updated its Erosion Prevention and Sediment Control Manual. It requires an Erosion Prevention and Sediment Control Permit for any groundbreaking affecting at least 2000 square feet of land.

The OSU Campus and particularly its College of Forestry is renowned as a scientific institution that takes pride in the protection of the natural environment.

The City of Corvallis and Benton County have established procedures for the protection of the natural environment and mitigation of the impact of their transportation projects.

### **Identification of Areas of Conflict**

As part of the Environmental Consideration, CAMPO identified the areas of potential conflict between the recommendations of the Transportation Plan and the protected environmental features of the Planning Area. Using Geographic Information System (GIS) mapping software, the sensitive natural features of the Planning Area were overlaid with the projects recommended in the Corvallis Area Metropolitan Transportation Plan. The following 21 maps demonstrate the areas of potential conflicts. In preparing these maps the MPO consulted with city, county, state and national resource agencies.

- Map I. 2005 Soil Survey (Benton County, Oregon)
- Map II.a. 303d List of Streams and Dams (based upon 2002 data)
- Map II.b. Total Daily Maximum Load for 303d List Streams and Rivers
- Map III. Brownfields and Hazardous Waste Sites
- Map IV.a. Critical, Endangered, or Threatened Fish Species Habitats
- Map IV.b. Critical, Endangered, or Threatened Wildlife Species Habitats
- Map IV.c. Sensitive Vegetation & Wildlife Habitat Connection Areas
- Map IV.d. Essential Fish Habitats
- Map V. Fish Passage Barriers
- Map VI. Flood Plains
- Map VII. Forest Lands and Zones
- Map VIII.a. Historic Sites, Buildings, and Districts
- Map VIII.b. Historic Sites Intersecting with RTP Projects
- Map VIII.c. Historic Sites Intersecting with RTP Projects
- Map IX.a. Natural Features Inventory
- Map IX.b. Greenbelts
- Map X. Natural Hazard Areas
- Map XI. Parks, Trails, and Recreational Sites
- Map XII. Protected Riparian Corridors, Creeks and Streams (within Corvallis UGB)
- Map XIII. Stormwater Drainage System and Basins
- Map XIV. Toxic Release Inventory Permitted Facilities

- Map XV.a. Wetland Inventory
- Map XV.b. Wetland Mitigation Banks
- Map XVI. Willamette River Greenway

Additionally the Environmental Consideration section includes demonstration of compliance with requirements of Environmental Justice, Consultation with Resource Agencies and Consultation with Indian Tribes.

## **I. Soil**

Soil types react differently under distress based upon a number of factors, including water solubility and grades of coarseness. For example, plastic soils such as clay and silt may be more susceptible to landslide than those that are not. Transportation projects that are built on these soils may require additional attention to mitigating potential hazards brought on by the composition of soils prone to natural disaster.

Soil erosion can be broken down into three types:

1. Mass movement erosion (soil loss and movement due to the effects of gravity, including; landslips, slumps and slides)
2. Water erosion
3. Wind erosion.

The soil map is based on the 2005 Benton County Soil Survey. It demonstrates soils that are dominant within the Planning Area. Areas mapped in light-gray are soils comprised of different types of clay and loam.

Refer to Map I-2005 Soil Survey (Benton County, Oregon)

Sources: Benton County GIS Department:  
[http://ww2.co.benton.or.us/irm/gis/gisdata/Natural\\_Features/](http://ww2.co.benton.or.us/irm/gis/gisdata/Natural_Features/)  
Oregon Department of Land Conservation and Development:  
<http://www.oregon.gov/LCD/HAZ/index.shtml>  
Natural Resources Conservation Service (NCRS):  
<http://www.nrcs.usda.gov/>

## **II. Waters (303d)**

Section 303(d) of the Clean Water Act (CWA) requires states to develop a list of waters not meeting water quality standards or which have impaired uses. Listed waters must be prioritized, and a management strategy or total maximum daily load (TMDL) must subsequently be developed for all listed waters.

As identified by the State of Oregon and Environmental Protection Agency, there are four primary waterways within or adjacent to the CAMPO Planning Area that require protection under the EPA rules. Those waterways are:

- The Willamette River
- The Mary's River
- The Muddy Creek
- Soap Creek

Refer to: Map II.a-303d List of Streams and Dams (based upon 2002 data)

Sources: Environmental Protection Agency:  
[http://www.epa.gov/region5/water/pdf/ecwa\\_t3.pdf](http://www.epa.gov/region5/water/pdf/ecwa_t3.pdf)

Oregon Geospatial Data Clearinghouse:  
<http://gis.oregon.gov/DAS/EISPD/GEO/alphalist.shtml>  
(2002 303d List GIS data)  
Oregon Department of Water Quality Willamette Basin TMDL Program:  
<http://www.deq.state.or.us/wq/tmdls/willamette.htm#w>

### **Total Maximum Daily Load(s) (TMDL)**

TMDL is the Total Maximum Daily Loads of pollutants that can be discharged into a body of water and still maintain water quality standards.

According to Chapter 340-042-0025 of the Oregon Administrative Rules it is:

*(1) The public policy of the State of Oregon is to protect, maintain and improve the quality of waters of the state for beneficial uses and to provide for prevention, abatement and control of water pollution. To achieve and maintain water quality standards, the Environmental Quality Commission may impose limitations and controls including Total Maximum Daily Loads (TMDLs), wasteload allocations for point sources and load allocations for nonpoint sources.*

Four 303d listed waters within or around the CAMPO planning area were identified in the September 2006 Upper Willamette Basin TMDL Project published by the Oregon Department of Water Quality:

- Muddy Creek (Listed for temperature)
- Soap Creek (Listed for dissolved oxygen)
- Mary's River (Listed for temperature and fecal coliform)
- Willamette River (Listed for temperature, fecal coliform, mercury, and dissolved oxygen)

According to the Environmental Protection Agency, there are four criteria for these waters. These criteria are water temperature (for fish spawning and migration); fecal coliform (public health safety); mercury (public health safety), and dissolved oxygen (for wildlife and vegetation).

**Temperature.** The water temperatures must not exceed 17.8 degrees Celsius (64 degrees Fahrenheit) for Summer Trout & Steelhead Salmon migration and rearing in designated temperature reaches.

**Fecal Coliform and other bacteria.** Bacteria load in Mary's River must not exceed the geometric mean of 200, no more than 10% > 400. The Bacteria load for the Willamette River must not exceed 406 MPN/100ml of water. According to the Oregon DEQ, there has been no reported violation in the entire river since summer 1996.

**Mercury.** Mercury can be present in various physical and chemical forms in the environment. The majority of the mercury found in the environment is in the form of inorganic or elemental mercury but these forms of mercury can be converted to organic or methyl mercury by sulfate reducing bacteria. Methyl mercury production is affected by a host of physical and chemical factors including temperature, redox (reduction oxidation reaction) potential, dissolved oxygen

levels, organic carbon, sediment particle size, alkalinity, sulfate concentration and PH levels. Methyl mercury, once formed, represents the most bioaccumulative form of mercury in fish tissue and the most toxic form of mercury for human consumers (USEPA, 2001a). The current freshwater ‘acute’ criterion for mercury is 2.4 micrograms/liter and the freshwater ‘chronic’ criterion is 0.012 micrograms/liter. It is important to note that the Willamette River currently attains the current numeric criteria for the protection of aquatic life. The average annual concentration of mercury in the mainstream Willamette is approximately 1.3 nano grams/l. A 2002 TMDL study for the Willamette River stated that the Corvallis Mercury Monitoring Site recorded .63 nano grams per liter, and .38 nano grams per liter of methyl mercury, both well below the acceptable criteria for meeting water quality standards.

**Dissolved Oxygen.** The level of oxygen desaturation is sensitive to both stream temperature and solar radiation. Therefore, shade improvements can result in improved dissolved oxygen levels. In addition to reductions in solar radiation, load modeling indicates that reductions in oxygen demanding pollutant loads are needed in order for water quality standards to be met. The lack of dissolved oxygen may be harmful to fish and other life forms of aquatic life. The Oregon DEQ in September of 2006 identified Soap Creek as having a dissolved oxygen issue between the months of October through May. However, the TMDL study did not specifically address Soap Creek dissolved oxygen levels.

Refer to Map II.b-Total Daily Maximum Load for 303d List Streams and Rivers

Sources:

Environmental Protection Agency:

[http://www.epa.gov/region5/water/pdf/ecwa\\_t3.pdf](http://www.epa.gov/region5/water/pdf/ecwa_t3.pdf)

Oregon Geospatial Data Clearinghouse:

<http://gis.oregon.gov/DAS/EISPD/GEO/alphalist.shtml>

(2002 303d List GIS data)

Oregon Department of Water Quality Willamette Basin TMDL Program:

<http://www.deq.state.or.us/wq/tmdls/willamette.htm#w>

### **III. Brownfields and Hazardous Waste Sites**

A Brownfield is a land that has been contaminated by pollution, hazardous chemicals, and/or waste. A Brownfield can be property which is abandoned, idled, or under-used commercially. In the CAMPO Planning Area there are 31 sites referenced that are either currently under investigation for unacceptable levels of hazardous waste, leakage, or collection; or are undergoing rehabilitation.

The Oregon Revised Statutes Chapter 465.006 states that:

*“ it is the policy of the State of Oregon to encourage reduction in the use of toxic substances and to reduce the generation of hazardous waste whenever technically and economically practicable, without shifting risks from one part of a process, environmental media or product to another. Priority shall be given to methods that reduce the amount of toxics used and, where that is not technically and economically practicable, methods that reduce the generation of hazardous waste.”*

The TRI Explorer database was queried to cover the extent of the planning area and was exported into a geo database within ArcGIS. The geo database was then transformed into a shape file to show the hazardous waste sites on the map.

Refer to Map III-Brownfields and Hazardous Waste Sites

Sources: The EPA TriExplorer: <http://www.epa.gov/tri/>  
Oregon Department of Environmental Quality Laws and Regulations:  
<http://www.deq.state.or.us/regulations/statutes.htm>

#### **IV. Critical, Threatened, Endangered, and Sensitive Fish and Wildlife Habitats**

Critical Fish and Wildlife Habitats are those habitats identified by the United States Department of Fish and Wildlife and the Oregon Department of Fish and Wildlife. Staff consulted with local ODFW staff on the mapping of sensitive, threatened, endangered, and critical habitat species within the Planning area.

The Oregon Administrative Rules, Chapter 635-415-0000 states that:

*It is the fish and wildlife habitat mitigation policy of the Oregon Department of Fish and Wildlife to require or recommend, depending upon the habitat protection and mitigation opportunities provided by specific statutes, mitigation for losses of fish and wildlife habitat resulting from development actions. Priority for mitigation actions shall be given to habitat for native fish and wildlife species. Mitigation actions for nonnative fish and wildlife species may not adversely affect habitat for native fish and wildlife.*

Endangered, Threatened, and Sensitive species of concern which have been identified in or around the CAMPO planning area are:

- Fender's Blue Butterfly
- Taylor's Checkerspot Butterfly
- Streaked Horned Lark
- Spotted Owl
- Marbled Murrelet
- Kincaid's Lupine
- Willamette Daisy
- Nelson's Checkermallow
- Bradshaw's Lomatium
- Peacock Larkspur
- Coho Salmon\*
- Chinook Salmon\*
- Steelhead Salmon

\*Identified as an Essential Fish Habitats specie

Species such as the Kincaid's Lupine and Fender's Blue Butterfly are found in specific sensitive habitat areas identified as wet prairies. Species such as the Spotted Owl are found specifically in forest areas containing old growth forest (stands that are 50+ years old). Aquatic, riparian,

grasslands, oak savannah, oak woodlands, wetlands, and wet prairies are critical habitats for the following species which may occur in the CAMPO planning area:

- Northern Red-Legged Frog
- Western Pond Turtle
- Common kingsnake
- Waterfowl (e.g Dusky Canada Goose)
- Shorebirds (e.g. Upland sandpiper)
- Common Nighthawk
- Streaked Horned Lark
- Yellow-breasted Chat
- Oregon Vesper Sparrow
- Western Bluebird
- Western Meadowlark
- Townsend's Big Eared Bat

Refer to Map:

IV.a-Critical, Endangered, or Threatened Fish Species Habitats

IV.b-Critical, Endangered, or Threatened Wildlife Species Habitats

IV.c-Sensitive Vegetation & Wildlife Habitat Connection Areas

IV.d Essential Fish Habitats.

Sources: USFW GIS webpage at <http://www.fws.gov/data/>  
State of Oregon's Natural Resources Information Management Program (NRIMP) Geospatial Database:  
<http://nrimp.dfw.state.or.us/nrimp/default.aspx?pn=dataresources>  
Oregon Department of Fish and Wildlife Habitat Mitigation Policy:  
<http://www.dfw.state.or.us/OARs/415.pdf>  
Benton County Habitat Conservation Plan  
<http://www.co.benton.or.us/parks/hcp/index.php>

## **V. Fish Passage Barriers**

Fish Passage Barriers can be man-made or natural blockages to the free movement of fish species through a waterway. Upstream blockages that prevent spawning of fish, especially those that are identified as threatened or endangered, are of significant importance. Fish barriers can come in the form of culvert blockages, dams, shallow water, or a combination of factors that prevent fish from reaching their spawning grounds. Transportation projects that may develop new barriers, or intersect existing barriers will require adequate fish passage as directed by State law.

Oregon Revised Statutes Chapter 509.585 states:

*(1) It is the policy of the State of Oregon to provide for upstream and downstream passage for native migratory fish and the Legislative Assembly finds that cooperation and collaboration between public and private entities is necessary to accomplish the policy goal of providing passage for native migratory fish and to achieve the enhancement and restoration of Oregon's native salmonid populations, as envisioned by the Oregon Plan.*

*Therefore, except as provided in ORS chapter 509, fish passage is required in all waters of this state in which native migratory fish are currently or have historically been present. and,*

*(3) The State Department of Fish and Wildlife shall complete and maintain a statewide inventory of artificial obstructions in order to prioritize enforcement actions based on the needs of native migratory fish. This prioritization shall include, but need not be limited to, the degree of impact of the artificial obstruction on the native migratory fish, the biological status of the native migratory fish stocks in question and any other factor established by the department by rule... ”*

Refer to Map V-Fish Passage Barriers

Sources: Oregon Department of Fish and Wildlife’s StreamNet:  
<http://www.streamnet.org/online-data/GISData.html>  
Benton County Fish Passage Maps:  
<http://ww2.co.benton.or.us/irm/gis/gisdata/FishPassageProgram/>  
Oregon Revised Statutes Chapter 509  
<http://www.leg.state.or.us/ors/509.html>

## **VI. Flood Plains**

A Flood Plain is an area designated either by the State or Federal Governments as being susceptible to flooding (the inundation of water in an otherwise dry area). Flood plains are usually flat areas near a prominent water feature such as a river, creek, or lake. Typically properties within a flood plain incur certain land use restrictions and higher insurance rates. Thus, identifying a flood plain is critical in land use designation and development.

The identification of flood plains is required under ORS Chapters 196.615, 196.668, 196.815, and 197.230; as well as Oregon’s Statewide Planning Goals and Guidelines Goal 7: Areas Subject to Natural Hazards in order to prevent and/or mitigate the potential negative impact on human life, wildlife, and vegetation.

Refer to Map VI-Flood Plains

Source: Benton County GIS Department:  
[http://ww2.co.benton.or.us/irm/gis/gisdata/Natural\\_Features/](http://ww2.co.benton.or.us/irm/gis/gisdata/Natural_Features/)  
Oregon Revised Statutes  
<http://www.leg.state.or.us/ors/196.html> and <http://www.leg.state.or.us/ors/197.html>  
Oregon’s Statewide Planning Goals and Guidelines, Goal 7: Areas Subject to Natural Hazards  
<http://www.lcd.state.or.us/LCD/docs/goals/goal7.pdf>

## **VII. Forest Lands and Zones**

Identification of forest lands within the planning area is important for the purposes of mitigating the impact that transportation projects have on the forest environment. Forests play an important role in the ecological diversity of a region. According to Oregon’s Statewide Planning Goal 4: Forest Lands OAR 660-015-0000(4) the purpose is to:

*Conserve forest lands by maintaining the forest land base and to protect the state's forest economy by making possible economically efficient forest practices that assure the continuous growing and harvesting of forest tree species as the leading use on forest land consistent with sound management of soil, air, water, and fish and wildlife resources and to provide for recreational opportunities and agriculture.*

Construction of new dwelling units on Forest Lands is regulated by the Forest Land Protection Program. The 1993 McDonald-Dunn Forest Plan recognized the following three geographic zones for the management of the Forest Lands:

- North--all forestland in Dunn Forest (4,030 acres)
- Central--south of the Dunn Forest and north of the Sulfur Springs Road (2,509 acres)
- South--all forestland south of the Sulfur Springs Road including the headwaters of Soap Creek (4,720 acres). Contained within the Southern zone is the Starker Forest Research Zone.

Refer to Map VII-Forest Lands and Zones

Sources: OSU Forestry GIS Department: <http://www.cof.orst.edu/cf/gis/>  
Oregon Geospatial Data Clearinghouse:  
<http://gis.oregon.gov/DAS/EISPD/GEO/alphalist.shtml>  
Oregon' Statewide Planning Goals and Guidelines, Goal 4: Forest Lands  
<http://www.lcd.state.or.us/LCD/docs/goals/goal4.pdf>

### **VIII. Historic Sites, Buildings, and Districts**

There are several state and federal laws and regulations that call for preservation and/or enhancement of cultural resources. Of specific relevance to transportation projects are Section 106 of the National Historic Preservation Act (NHPA) of 1966 and Section 4(f) of the Department of Transportation Act of 1966

NHPA Section106 states:

*The head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking shall, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register. The head of any such Federal agency shall afford the Advisory Council on Historic Preservation established under Title II of this Act a reasonable opportunity to comment with regard to such undertaking.*

Section 4(f) of the Department of Transportation Act states:

49 U.S.C. 303(c) *The Secretary may approve a transportation program or project (other than any project for a park road or parkway under section 204 of title 23) [of the United States Code, “Federal Lands Highways Program”] requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance (as determined by Federal, State, or local officials having jurisdiction over the park, area, refuge, or site) only if—*

- (1) *there is no prudent and feasible alternative to using that land; and*
- (2) *the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.*

The Historic properties are any historic district, site, building, structure or object included in, or eligible for inclusion in, the National Register of Historic Places. The following table identifies key historic sites, buildings, and districts within the CAMPO Planning Area that are listed in the National Register of Historic Places. A complete listing of all historic properties within the Corvallis Urban Growth Boundary is attached at the end of this chapter.

<b>Property Name</b>	<b>Address</b>	<b>City</b>
Avery--Helm Historic District	Roughly bounded by SW 2nd, 6th, and Jefferson Sts. and OR 20/34 By-Pass	Corvallis
Benton County Courthouse	NW 4th St. between Jackson and Monroe Sts.	Corvallis
Benton County State Bank Building	155 SW Madison Ave.	Corvallis
Benton Hotel	408 SW Monroe	Corvallis
Bethers, George W., House	225 N. 8th St.	Philomath
Bexell, John, House	3009 NW. Van Buren Ave.	Corvallis
Bosworth, Dr. Ralph Lyman, House	833 NW Buchanan Ave.	Corvallis
Bryson, J. R., House	242 NW 7th St.	Corvallis
Burnap-Rickard House	518 SW 3rd St.	Corvallis
Caton, Jesse H., House	602 NW 4th St.	Corvallis
College Hill West Historic District	Roughly bounded by NW Johnson, Polk, Arnold and 36th	Corvallis
Corvallis Hotel	201--211 S.W. Second St.	Corvallis
Crystal Lake Cemetery	1945 SE Crystal Lake Dr.	Corvallis
Episcopal Church of the Good Samaritan	700 SW Madison Ave.	Corvallis
Fairbanks, J. Leo, House	316 NW 32nd	Corvallis
Farra, Dr. George R., House	660 SW Madison Ave.	Corvallis
Fiechter, John, House	William L. Finley National Wildlife Refuge	Corvallis
First Congregational Church	8th and Madison Sts.	Corvallis
Gaylord, Charles, House	600 NW. Seventh St.	Corvallis
Hadley-Locke House	704 NW 9th St.	Corvallis

Helm-Hout House	844 SW 5th St.	Corvallis
Irwin, Richard S., Barn	26208 Finley Refuge Rd.	Corvallis
Julian Hotel	105 SW 2nd St.	Corvallis
Kline, Lewis G., Building	146 S.W. Second St.	Corvallis
Kline, Lewis G., House	308 NW 8th St.	Corvallis
Lewisburg Hall and Warehouse Company Building	6000 NE. Elliott Cir.	Corvallis
Pernot, Dr. Henry S., House	242 SW 5th St.	Corvallis
Philomath College	Main St.	Philomath
Pi Beta Phi Sorority House	3002 NW Harrison Blvd.	Corvallis
Poultry Building and Incubator House	800 SW Washington Ave.	Corvallis
Rickard, Peter, Farmstead	SW of Corvallis	Corvallis
Schuster, Charles L., House	228 N.W. Twenty-eighth	Corvallis
Soap Creek School	37465 Soap Creek Rd.	Corvallis
Taylor, George, House	504 SW 6th St.	Corvallis
Taylor, Jack, House	806 SW 5th St.	Corvallis
Willamette Valley and Coast Railroad Depot—Corvallis	500 S. W. 7th St.	Corvallis
Wilson, James O., House	340 SW 5th St.	Corvallis
Woodward, Elias, House	442 NW 4th St.	Corvallis

Refer to Maps:

VIII.a-Historic Sites, Buildings, and Districts

VIII.b-Historic Sites Intersecting with RTP Projects

Map VIII.c-Historic Sites Intersecting with RTP Projects (illustrating enlargement of key sections).

Sources: City of Corvallis’ GIS FTP website at:  
<ftp://ftp.ci.corvallis.or.us/pw/gis/Planning/HistoricInventory>  
National Register Information System (NRIS) at <http://www.nr.nps.gov/> .  
The National Historic Preservation Act of 1966, As Amended  
<http://www.achp.gov/nhpa.html>  
The Department of Transportation Act of 1966  
[http://www.cr.nps.gov/local-law/FHPL\\_DOTAct.pdf](http://www.cr.nps.gov/local-law/FHPL_DOTAct.pdf)

## IX. Natural Features and Greenbelts

The City of Corvallis has produced its Natural Features Inventories as part of a multi-year Natural Features Project. The project was developed in part to meet Oregon’s Statewide Planning Goals & Guidelines Goal 5: Natural Resources, Scenic and Historic Areas, and Open Spaces; OAR 660-015-0000(5) which states that:

*“Local governments shall adopt programs that will protect natural resources and conserve scenic, historic, and open space resources for present and future generations. These resources promote a healthy environment and natural landscape that contributes to Oregon’s livability.*

*The following resources shall be inventoried:*

- a. Riparian corridors, including water and riparian areas and fish habitat;*
- b. Wetlands;*
- c. Wildlife Habitat;*
- d. Federal Wild and Scenic Rivers;*
- e. State Scenic Waterways;*
- f. Groundwater Resources;*
- g. Approved Oregon Recreation Trails;*
- h. Natural Areas;*
- i. Wilderness Areas;*
- j. Mineral and Aggregate Resources;*
- k. Energy sources;*
- l. Cultural areas.”*

The Natural Features Project consists of inventories of streams, wetlands, riparian areas, flood plains, areas prone to landslides and wildfires, steep slopes, wildlife habitats, tree groves, scenic views, and archeological resources within the UGB. The Natural Features Inventories is being implemented as part of the City of Corvallis Land Development Code.

The Greenbelt Land Trust owns or has conservation easements on 3 properties within the Corvallis MPO planning area. Those properties are Owen’s Farm (95 acres), Bald Hill Park (177 Acres), and Newton Creek Wetlands (58 Acres).

Refer to Maps:

IX.a-Natural Features Inventory

IX.b-Greenbelts

Sources: City of Corvallis Natural Features Inventory Web Page:  
<http://www.ci.corvallis.or.us/index.php?option=content&task=view&id=289&Itemid=241>  
City of Corvallis GIS Department:  
<ftp://ftp.ci.corvallis.or.us/pw/gis/Planning/ComprehensivePlan>  
Oregon’s Statewide Planning Goals & Guidelines, Goal 5  
<http://www.lcd.state.or.us/LCD/docs/goals/goal5.pdf>  
Karlene McCabe, Executive Director, Green Belt Land Trust, Inc.  
[karlene@greenbeltlandtrust.org](mailto:karlene@greenbeltlandtrust.org)

## **X. Natural Hazard Areas**

The City of Corvallis has designated areas that are prone to a natural disaster such as flooding, earthquake, landslide, or fire. Areas that lie at or below river/creek level are susceptible to flooding, while areas on graded slope may be susceptible to landslide.

Refer to Map X-Natural Hazard Areas

Source: City of Corvallis GIS Department:  
<ftp://ftp.ci.corvallis.or.us/pw/gis/Planning/ComprehensivePlan>

## **XI. Parks, Recreational Sites, and Trails**

Trails, Parks, and other recreational sites were identified within the Planning area to meet State requirements under Oregon Administrative Rule 660-015-0000(5g).

Trails, Parks, and other recreational sites were located and mapped using the City of Corvallis GIS Department website, the Benton County GIS Department, and the OSU Forestry GIS Website.

Refer to Map XI-Parks, Trails, and Recreational Sites

Sources: OSU Forestry GIS website: <http://www.cof.orst.edu/cf/gis/>  
City of Corvallis GIS Department: <ftp://ftp.ci.corvallis.or.us/pw/gis/>  
Benton County GIS Department: <http://ww2.co.benton.or.us/irm/gis/gisdata/>

## **XII. Protected Riparian Corridors**

Protected riparian corridors were identified within the Corvallis Urban Growth Boundary to meet State requirements under Oregon Administrative Rule 660-015-0000(5a).

Protected riparian corridors are an integral part of the stability of the ecology surrounding a waterway. A Riparian zone or corridor may include tree canopies, grassland, wild shrubs, woodland, and sometimes natural rocky embankments essential to the stability of the soils around the waterway. Riparian zones or corridors may be natural or engineered for soil stabilization or restoration. These zones are important natural biofilters, protecting aquatic environments from excessive sedimentation, polluted surface runoff and erosion. They supply shelter and food for many aquatic animals and shade that is an important part of stream temperature regulation. When riparian zones are damaged by construction, agriculture or silviculture, biological restoration can take place, usually by human intervention in erosion control and revegetation.

Refer to Map XII-Protected Riparian Corridors, Creeks and Streams (within Corvallis UGB)

Sources: City of Corvallis Development Code:  
[http://www.ci.corvallis.or.us/downloads/cd/Land%20Development%20Code-%20Ordinance%20Exhibit%20A/CHAPTER%204\\_13.pdf](http://www.ci.corvallis.or.us/downloads/cd/Land%20Development%20Code-%20Ordinance%20Exhibit%20A/CHAPTER%204_13.pdf)  
City of Corvallis GIS Department:  
<ftp://ftp.ci.corvallis.or.us/pw/gis/Planning/ProtectedNaturalFeatures/NaturalResources/RiparianAndWetland>

## **XIII. Stormwater Basins and Drainage**

Stormwater runoff from land and impervious areas such as paved streets, parking lots, and building rooftops during rainfall and snow events often contain pollutants that could adversely affect water quality. Having a separate stormwater drainage system alleviates some of the residual affects of stormwater runoff. This excerpt taken from the Oregon Department of Environmental Quality's Fact Sheet titled Oregon's Phase II Municipal Stormwater Program found at <http://www.deq.state.or.us/wq/pubs/factsheets/stormwater/ph2munistmprg.pdf>:

*“In December 1999, EPA adopted rules to implement “Phase II” of the stormwater program. Phase II expanded the stormwater permitting program to include smaller communities located in U.S. census-defined urban areas. Phase II rules require communities to develop, implement and enforce stormwater management programs that address six minimum control measures,*

***Public Education and Outreach*** *Distributing educational materials to inform citizens about the impacts polluted stormwater runoff discharges can have on water quality.*

• ***Public Participation/Involvement*** *Providing opportunities for citizens to participate in program development and implementation.*

• ***Unlawful Discharge Detection and Elimination***

*Implementing a plan to detect and eliminate unlawful discharges to the storm sewer system (includes developing a system map and informing the community about unlawful discharges and improper disposal of waste).*

• ***Construction Site Runoff Control*** *Implementing an erosion and sediment control program for construction activities that disturb one or more acres of land.*

• ***Post-Construction Runoff Control*** *Implementing a program to address stormwater discharges from new development and redevelopment areas. Applicable controls could include preventive actions such as protecting sensitive areas or the use of structural controls such as grassed swales or porous pavement.*

• ***Pollution Prevention/Good Housekeeping*** *Implementing a program aimed at preventing or reducing pollutant runoff from municipal operations. The program must include municipal staff”*

The City of Corvallis is permitted as a Municipal Stormwater 4 Phase II and has a stormwater system independent from its sewer system. There are a total of 20 basins within the Corvallis UGB. Each Basin is named after the primary water feature which impacts the area. For example, the Mary’s River Basin is defined by the Mary’s River that runs through it. The City of Philomath also has a separate stormwater drainage system independent from its sewer system. The City of Adair Village applied for and received a waiver for obtaining a MS4 Phase II permit and is currently exempt from EPA Stormwater requirements.

*Note: Due to the lack of GIS data for Philomath and Adair Village, stormwater basins and drainage systems were not mapped for these cities.*

Refer to Map XIII-Stormwater Drainage System and Basins

Sources: City of Corvallis GIS Department:  
<ftp://ftp.ci.corvallis.or.us/pw/gis/Utilities>  
Oregon Department of Environmental Quality Fact Sheet  
<http://www.deq.state.or.us/wq/pubs/factsheets/stormwater/ph2munistmprg.pdf>

#### **XIV. Toxic Release Inventory Facilities**

Identification of permitted toxic release facilities is required under the Environmental Protection Agency Act as well as Oregon's Statewide Planning Goals and Guidelines, Goal 6, OAR 660-015-0000(6) which states:

*"All waste and process discharges from future development, when combined with such discharges from existing developments shall not threaten to violate, or violate applicable state or federal environmental quality statutes, rules and standards. With respect to the air, water and land resources of the applicable air sheds and river basins described or included in state environmental quality statutes, rules, standards and implementation plans, such discharges shall not (1) exceed the carrying capacity of such resources, considering long range needs; (2) degrade such resources; or (3) threaten the availability of such resources."*

Refer to Map XIV-Toxic Release Inventory Permitted Facilities

Source: EPA Tri-Explorer:  
<http://www.epa.gov/tri/>  
Oregon Statewide Planning Goals and Guidelines Goal 6  
<http://www.lcd.state.or.us/LCD/docs/goals/goal6.pdf>

#### **XV. Wetlands**

The Code of Federal Regulations Title 23, Part 777.7 (23 CFR Part 777.7) requires mitigation of transportation impacts on wetlands and natural habitats. Specifically:

- (1) The importance of the impacted wetlands and natural habitats;
- (2) The extent of highway impacts on the wetlands and natural habitats, as determined through an appropriate, interdisciplinary, impact assessment; and
- (3) *Actions necessary to comply with the Clean Water Act, Section 404, the Endangered Species Act of 1973, and other relevant Federal statutes.*
  - (b) *Evaluation of the importance of the impacted wetlands and natural habitats shall consider:*
    - (1) *Wetland and natural habitat functional capacity;*
    - (2) *Relative importance of these functions to the total wetland or natural habitat resource of the area;*
    - (3) *Other factors such as uniqueness, esthetics, or cultural values; and*
    - (4) *Input from the appropriate resource management agencies through interagency coordination.*
  - (c) *A determination of the highway impact should focus on both the short-and long-term affects of the project on wetland or natural habitat functional capacity, consistent with 40 CFR part 1500, 40 CFR 1502.16, 33 CFR 320.4, and the FHWA's environmental compliance regulations, found at 23 CFR part 771.*

A wetland can be thought of as the integration of terrestrial and aquatic areas, for which both are interdependent yet separate from one another. A wetland is typically defined first and foremost by the natural water features which serve host to biodiversity. In the CAMPO Planning Area,

two major wetlands dominate the area: The Jackson-Frazier Wetland and the Squaw Creek Wetland. With the designation of wetland, these areas enjoy a higher level of environmental protection and conservation, as both are integral to the stability of the native vegetation and wildlife habitats.

### **Wetland Mitigation Banks**

A mitigation bank is a wetland, stream, or other aquatic resource area that has been restored, established, enhanced, or (in certain circumstances) preserved for the purpose of providing compensation for unavoidable impacts to aquatic resources permitted under Section 404 or a similar state or local wetland regulation. A mitigation bank may be created when a government agency, corporation, nonprofit organization, or other entity undertakes these activities under a formal agreement with a regulatory agency.

In the Corvallis MPO planning area, there are two mitigation banks identified by the Oregon Department of State Lands and the United States Army Corps. Of Engineers. They are:

- **Bank Name** - Frazier Creek  
**Nearest City** - Corvallis  
**Approval Status** - Approved Spring 2003  
**Approximate Size** - 26 acres  
**Maximum credits to be developed** - 13 credits first phase
  
- **Bank Name** - Evergreen  
**Nearest City** - Philomath  
**Approval Status** - Approved December 2006  
**Approximate Size** - 175 acres

A possible future mitigation bank may lie within the Newton Creek Wetlands conservation easement currently held by the Greenbelt Land Trust Inc. The property is 58 acres in size. The Greenbelt Land Trust is currently working with the City of Philomath on mitigating this property for banking purposes.

Refer to Maps:

XV.a-Wetland Inventory, and

Map XV.b-Wetland Mitigation Banks

Sources: City of Corvallis GIS Department:  
<ftp://ftp.ci.corvallis.or.us/pw/gis/Planning/NaturalFeaturesInventory/FinalReport/LWIGISFiles/GISFiles>  
Benton County GIS Department: <http://ww2.co.benton.or.us/irm/gis/gisdata/>  
Code of Federal Regulations, Title 23, Volume 1:  
<http://www.gpoaccess.gov/cfr/index.html>  
Oregon Department of State Lands  
[http://www.oregon.gov/DSL/PERMITS/mitbank\\_status.shtml](http://www.oregon.gov/DSL/PERMITS/mitbank_status.shtml)  
US Army Corps. Of Engineers  
<https://www.nwp.usace.army.mil/op/g/docs.asp?id=1127168714936&lvl=groups>  
EPA Wetland Mitigation Fact sheet  
<http://www.epa.gov/owow/wetlands/facts/fact16.html>

## **XVI. Willamette River Greenway**

The Willamette River Greenway was originally established by the 1967 Oregon Legislature as a grant program to State Parks for land acquisition along the Willamette River. The Greenway evolved from a state parks and recreation program in 1970 to a corridor program in 1972. In 1973 it developed into a land use program under the joint administration by State Parks & Recreation Division, Land Conservation and Development Department and local jurisdictions. The protection of the Willamette River Greenway is Goal 15 in the Benton County Comprehensive Plan as well as Goal 15 in the Statewide Planning Goals. The Greenway designation restricts or prevents certain land use activities from taking place along the Willamette River for the purpose of protecting the integrity of the river and its riparian zone.

Refer to Map XVI-Willamette River Greenway

Source: Benton County Comprehensive Plan, Goal 15

[http://www.co.benton.or.us/cd/planning/documents/CP\\_goal\\_15.pdf](http://www.co.benton.or.us/cd/planning/documents/CP_goal_15.pdf) ;  
<ftp://ftp.ci.corvallis.or.us/pw/gis/Planning/>

## **XVII. Environmental Justice**

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations (1994)* was enacted to reinforce Title VI of the Civil Rights Act of 1964. In the Civil Rights Act it is stated that “No person in the United States shall, on the grounds of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance” (*U.S. Code 1964*). Executive Order 12898 states, “Each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations” (*Federal Register 1994*).

As an entity utilizing federal funds, the Corvallis Area Metropolitan Planning Organization is responsible to successfully integrate environmental justice standards into its transportation program and planning activities. Any program or activity receiving federal financial assistance cannot discriminate against people based on race, color, national origin, age, sex, disability, religion or income status. Title VI and environmental justice laws require recipients of federal funds to

1. Avoid, minimize, or mitigate disproportionately high and adverse effects of its activities on minority populations and low-income populations,
2. Ensure involvement of low-income and minority groups in the decision making process, and
3. Ensure low income and minority groups receive their fair share of benefits CAMPO produced the following maps to identify the population of the Planning Area that is subject to the requirements of EJ by producing the following maps:

### **A. Percent of Minorities by Census Block Group**

Census GIS data was obtained through the Oregon Geospatial Data Clearinghouse. The raw 2000 Census data was obtained through the Census Bureau: [www.census.gov](http://www.census.gov). Percentages were calculated by totaling the number of minorities within each census block group and dividing that number by the total population within each block group. A new geo database was then created for the Minority percentages and joined with the existing 2000 Census block GIS shape file obtained through the Oregon Geospatial Data Clearinghouse.

### **B. Percent Below Poverty Level by Census Block Group:**

Census GIS data was obtained through the Oregon Geospatial Data Clearinghouse at <http://gis.oregon.gov/DAS/EISPD/GEO/alphalist.shtml>. The raw 2000 Census data was obtained through the Census Bureau at [www.census.gov](http://www.census.gov). Percentages were calculated by totaling the number of individuals (of all age group classifications) at or below the Federal poverty level. This total was then divided by the total population within each of those block groups. A new geo database was then created for the Poverty percentages and joined with the existing 2000 Census block GIS shape file obtained through the Oregon Geospatial Data Clearinghouse.

Refer to Maps:

XVII.a-Environmental Justice: Minorities, and

XVII.b-Environmental Justice: Poverty

## Consultation

CAMPO has engaged in consultation activities with responsible resource agencies and stakeholders.

### 1. Fish and Wildlife

Consultation was made with officials of the Oregon Department of Fish and Wild Life, South Willamette Watershed District on the maps of the Critical Fish Species Habitats and Critical Wildlife Species Habitats. The agency reviewed the maps and provided the following comments:

*Although Coho and Fall Chinook do occur in the subject area, they are not ESA-listed above Willamette Falls and should therefore be removed from the map. Spring Chinook (ESA Threatened) (juvenile rearing) do occur in portions of the Mary's River Basin. Therefore, they should be added to:*

- *Mary's River mainstream (mouth to Philomath UGB)*
- *Oak Creek (mouth to UGB)*
- *Muddy Creek (mouth to map edge)*

*Oregon Chub (ESA Endangered) occur in Bull Run Creek just above the confluence with Muddy Creek.*

The comments above were added to Map IV.a

Additionally, CAMPO consulted with the Corvallis ODFW Wildlife Division and was encouraged by staff to add a new map displaying sensitive habitat areas within the planning area. The new map is labeled as Map IV.c. It should be noted that due to the lack of data for many sensitive or threatened species within the planning area, these species cannot be spatially mapped to appropriately reflect location. Wildlife species, such as the Nelson's checkermallow (flowering plant), occur specifically within areas classified as "Wet Prairies" which are essential wetlands or open meadows surrounded by water or have a water feature running through it. A listing of species and their probable habitat was provided by ODFW Wildlife Division staff and can be found as an appendix to the chapter.

### 2. Consultation with the Collaborative Environmental and Transportation Agreement for Streamlining (CETAS)

On April 17, 2007 the MPO presented the work on Environmental Considerations to CETAS for their review and comments. Several comments were received from the members that were incorporated into the work. Overall the group expressed their satisfaction with this work.

CETAS is made up of representative of the following environmental and transportation related agencies:

- Federal Highway Administration (FHWA);
- National Marine Fisheries Service (NMFS);
- Oregon Department of Land Conservation and Development (DLCD);
- Oregon Department of Environmental Quality (DEQ);

- Oregon Department of Fish and Wildlife (ODFW);
- Oregon Division of State Lands (DSL);
- Oregon Parks and Recreation Department, State Historic Preservation Office (SHPO);
- Oregon Department of Transportation (ODOT);
- US Army Corps of Engineers (USACE);
- US Environmental Protection Agency (EPA); and
- US Fish and Wildlife Service (USFWS).

The goal of the CETAS is to identify and implement collaborative opportunities to help each participating agency realize its mission through sound environmental stewardship, while providing for a safe and efficient transportation system.

### **3. Indian Tribes**

There is no Indian reservation within or adjacent to the CAMPO Area. Of all the federally recognized Indian Tribes in Oregon, the Confederate Tribes of Siletz Indians is the nearest one to the MPO boundaries. The Siletz Tribes is located approximately 60 miles west of the MPO area in Lincoln County. The MPO contacted the Tribes and inquired about any tribal interest within the MPO boundaries. The preliminary response indicates that there might be some cemetery or relics within the area. Additional communication with the Tribal officials will be pursued.

The site of the City of Corvallis, however, had been occupied by the Calapooia (also spelled Kalapooia, or Kalapuya) Indian Tribes prior to the settlement of the Euro-Americans in the late 1700s. There were 8 separate groups within the Calapooia Tribe, two of whom were living in or nearby the current MPO Planning Area. These were Mary's River (Chepenefa) and the Muddy Creek (Chemapho) people. Between 1782 and 1883, all but a handful of Calapooians remained in the Willamette Valley, as disease wiped out nearly 90% of the tribe. The very few remaining tribe members merged with the federally recognized Confederated Tribes of Grand Rhonde in January of 1855 under the Dayton Oregon Treaty. Under this treaty, the Tribes ceded the entirety of the Willamette River drainage area to the United States. Today, Calapooia is not officially recognized by the federal government as a tribe.