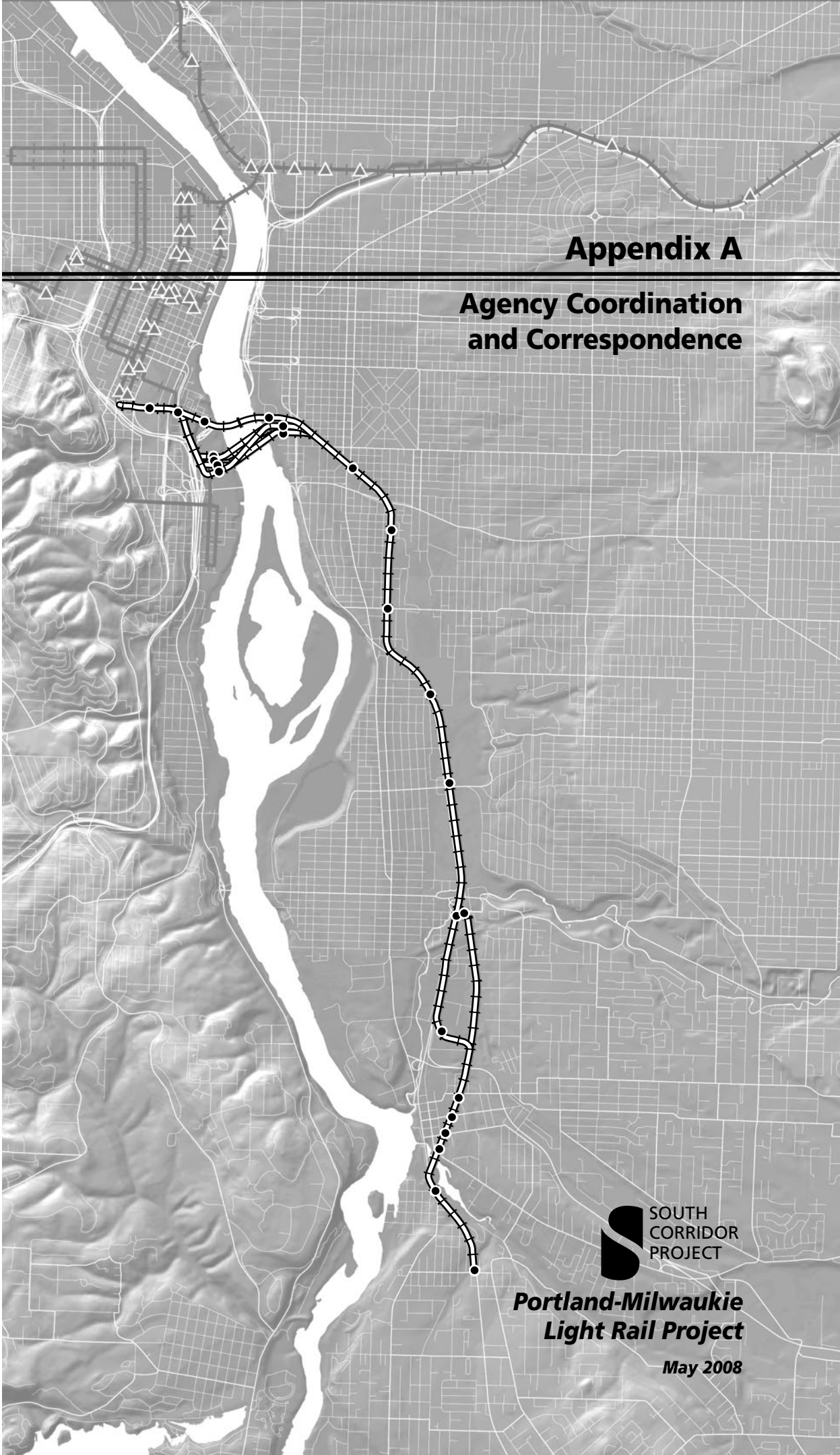


# Appendix A

## Agency Coordination and Correspondence



**Portland-Milwaukie  
Light Rail Project**

*May 2008*

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## APPENDIX A. AGENCY COORDINATION AND CORRESPONDENCE

This appendix lists correspondence from the current Portland-Milwaukie Light Rail Project. Chapter 6 of the SDEIS provides a list of community participation, agency coordination, and associated outreach efforts. Records of correspondence regarding the South/North Corridor Project (DEIS, February 1998) and the South Corridor Project (SDEIS, December 2002) can be found in those documents.

The attachments to this appendix include:

- U.S. Fish and Wildlife Service lists of threatened and endangered species known to occur in Clackamas and Multnomah Counties
- Oregon Natural Heritage Information Center correspondence regarding rare, threatened and endangered plant and animals within two miles of the project area

### April 17, 2007 – Re-Initiating the Supplemental Draft Environmental Impact Statement

#### Federal Agencies Invited:

Federal Emergency Management Agency	U.S. Department of Agriculture
Federal Highway Administration	U.S. Department of Commerce
NOAA National Marine Fisheries Service	U.S. Department of Homeland Security
Federal Railroad Administration	U.S. Department of the Interior
U.S. Coast Guard	U.S. Department of Energy: Bonneville
U.S. Army Corps of Engineers	Power Administration
U.S. Bureau of Indian Affairs	U.S. Environmental Protection Agency

(In addition, the Chinook, Cowlitz, Grand Ronde, Siletz and Warm Springs Tribes were invited to send a representative if they could not attend a meeting scheduled for the Tribes and FTA)

**Agencies In Attendance:** Oregon Department of Environmental Quality, City of Portland Department of Transportation, Portland Police Bureau, Clackamas County Water Environment Services, Clackamas County Public & Government Relations, Confederated Tribes of Grand Ronde, Portland Water Bureau, City of Portland Bureau of Parks & Recreation, City of Portland Bureau of Environmental Services, Portland Development Commission, Oregon State Historic Preservation Officer, Oregon Emergency Management

This meeting was a re-initiation of the South Corridor Phase II: Portland-Milwaukie Light Rail Project. At the meeting Metro staff reviewed the history of the South Corridor, the refinement phase, the process and schedule for the Supplemental Draft Environmental Impact Statement (SDEIS) for the project. Comments and concerns that were heard at the meeting are as follows: the Oregon Department of Environmental Quality was interested in the methodology concerning hazardous materials; the Portland Police Bureau wants to see transit police at park and rides and SEPTA principals implemented; the City of Portland Bureau of Environmental Services expressed concern of endangered species during construction of the light rail and the bridge; the Portland

Water Bureau concerned about the impacts to the water main lines; Clackamas County commented on the impact to the N. Clackamas Trolley Trail; and the Portland Development Commission stated that the project needs to maximize economic development opportunities.

Agencies were solicited for their areas of interest in the SDEIS. Oregon Department of Environmental Quality, Oregon State Historic Preservation Office, City of Portland Department of Transportation, Portland Parks and Recreation and the Confederated tribes of Grand Ronde submitted an “Area of Interest” form.

### **June 28, 2007 – Additional Re-Initiating the Supplemental Draft Environmental Impact Statement Coordination Meeting**

#### **Agencies In Attendance:**

U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers

For federal agencies unable to attend the April 17 meeting, staff held an additional meeting for the natural resource agencies. The meeting included a review of the project history and the latest design options for both the southern terminus and the Willamette River crossing location and alignment. A highlight of the comments, questions and concerns of the agencies are as follows: was a tunnel considered as an alternative to the bridge; how would this new bridge compare with the Marquam Bridge in terms of height; why is Park Place proposed as a southern terminus; that a park and ride facility in combination with a bus stop and station needs to be explored to reduce the development footprint; any project mitigation around Johnson Creek needs to be coordinated with other creek improvements to maximize effectiveness; can the project fund the dam removal at Kellogg Creek to reduce the amount of water to be spanned; wildlife passages, especially at water bodies, that cross the alignment need to be explored; and would the new bridge have enough capacity for future traffic if another bridge was unable to be used.

### **July 11, 2007 – Second Additional Re-Initiating the Supplemental Draft Environmental Impact Statement Coordination Meeting**

#### **Agencies In Attendance:**

NOAA National Marine Fisheries Service, Federal Transit Administration, Region 10 (via phone)

As the NOAA Fisheries were unable to participate in the April 17 or June 28 meetings, this meeting was held to discuss the project and their concerns regarding endangered species and ecosystem resources managed by NOAA Fisheries along the alignment. The meeting began with a presentation on the history and the alignment for the project. Some key concerns that were identified by NOAA Fisheries are as follows: is there an actual need for this project given the existing transit network; the present conditions of the Willamette River are such that additional human development will degrade the situation; why not use an existing bridge; bank work that replaces or impairs or prevents shoreline habitat preservation or restoration is a concern; will the project coordinate with the current plans to remove the Kellogg Lake dam; and will the project coordinate with the Johnson Creek restoration.

## **January 24, 2008 – Coordination meeting with the U.S. Coast Guard**

**Agencies in Attendance:** U.S. Coast Guard, Riverwise, Michael Eaton of Multnomah County

Metro and TriMet project staff met with the U.S. Coast Guard (USCG) to discuss a draft of the river user survey and data. The USCG noted the number of commercial users whose use would be restricted at higher water levels with a 65' bridge vertical clearance, less USCG concern was apparent at 72' vertical clearance. Project staff advised the USCG that further outreach would be performed with the river users.

## **January 29, 2008 – Second Invitation to Tribes Concerning Project Coordination**

This letter extended an invitation to the Chinook, Cowlitz, Grand Ronde, Siletz and Warm Springs Tribes to meet and review the project. The letter noted that a letter had gone out in March 2007 inviting these tribes to a meeting with the Federal Transit Administration concerning the project. The letter also noted that if there was any project information that was needed it would be provided.

## **January 30, 2008 – Letter of Participation or Coordination Request**

**Letters sent to:** U.S. Fish and Wildlife, Federal Highway Administration, U.S. Coast Guard, NOAA National Marine Fisheries Service, U.S. Army Corps of Engineers, Federal Railroad Administration

Letters were sent to the above agencies inviting them to be a participating or coordinating agency as part of the environmental review process for the project. The U.S. Coast Guard, U.S. Army Corps of Engineers and the Federal Highway Administration have agreed to become a coordinating agency while NOAA National Marine Fisheries Service agreed to be a participating agency.

## **March 5, 2008 – Federal Railroad Administration Tour**

**Agencies in Attendance:**  
Federal Railroad Administration

On March 5, 2008, a project tour was provided to a representative of the Federal Railroad Administration, with special attention to areas of the proposed alignment or alignment options in proximity to private rail lines. The FRA representative noted that where grade separated crossings were proposed, this design solution satisfied FRA safety and operational concerns. TriMet representatives suggested that they would continue to work with the FRA as well as the private railroad interests as the project proceeded with more detailed design and engineering.

## **March 11, 2008 – Second Coordination Meeting with NOAA's National Marine Fisheries Service**

**Agencies Attended:**  
NOAA National Marine Fisheries Service, Federal Transit Administration, Region 10

Information about the project and alternative modes and alignments studied and not advanced were presented. NOAA issues included a) coordination of three potential projects that concern nearby

properties including the Portland Park Bureau South Waterfront Willamette Greenway project, a hazardous materials remediation project being negotiated between Ziddell International and the Oregon Department of Environmental Quality and the Portland-Milwaukie Light Rail Project, b) methods to minimize the hardscape along the river and maintaining native landscape materials, especially tall trees, along the river bank.

#### **April 15, 2008 Agency Coordination Meeting/Comments on Advance Draft of SDEIS**

##### **Agencies Attended:**

Federal Transit Administration (via telephone), Oregon State Office of Historic Preservation, Federal Rail Administration, Bonneville Power Administration, Oregon Department of Transportation, Parametrix, TriMet and Metro.

A project overview was provided and then agency comments solicited. Issues identified included the need to contact the archeological expert at the State Historic Preservation Office about a memorandum of understanding concerning inadvertent discoveries of any below ground resources. Further, the Federal Railroad Administration (FRA) indicated that the State of Oregon would need to review any rail crossings and that the FRA would want to continue to be involved with any proposed spur changes and that they would want a final design to reflect sufficient space separation between any LRT and railroad tracks for railroad worker safety. ODOT indicated that they had concerns with the proposed traffic signal at Powell and Eighth as well as any at grade crossing of McLoughlin Boulevard.

#### **April 21, 2008 Agency Coordination Meeting/Comments on Advance Draft of SDEIS**

##### **Agencies Attended:**

Federal Transit Administration, Confederated Tribes of the Grand Ronde, US Environmental Protection Agency, US Army Corps of Engineers, National Marine Fisheries Service, Federal Highway Administration, Oregon Department of Fish and Wildlife, Oregon Department of State Lands, City of Portland Bureau of Environmental Services, Parametrix, TriMet and Metro.

The Confederated Tribes of the Grand Ronde indicated interest avoiding impacts to and improvement of lamprey and salmonid habitat, providing a list of replanting species for restoration projects and providing monitors for exploratory and construction efforts that include excavation. They further indicated interest in any draft memorandum of understanding concerning inadvertent discoveries.

Other comments included information about the extent of Green Sturgeon, inclusion of Oregon Conservation Strategy Habitats, taking account of potential indirect impacts (in addition to direct impacts), mitigation of each river or stream crossing, construction window times, removal of the dam blocking Kellogg Creek, coordinating the Portland to Milwaukie LRT and Columbia River Crossing projects to share construction equipment and production of common elements (such as concrete segments for bridges), treatment of stormwater runoff, wildlife passage under any bridges, removal or improvement of existing culverts or fish blockages that would be crossed by LRT and continuing coordination between the project and resource agencies.

**FEDERALLY LISTED, PROPOSED, CANDIDATE SPECIES  
AND SPECIES OF CONCERN WHICH MAY OCCUR WITHIN  
MULTNOMAH COUNTY, OREGON**

**LISTED SPECIES**

**Mammals**

***Terrestrial:***

Columbian white-tailed deer (Columbia River distinct population segment)	<i>Odocoileus virginianus leucurus</i>	E
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**Birds**

Northern spotted owl	<i>Strix occidentalis caurina</i>	CH T
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**Fish**

***Anadromous:***

Columbia River chum salmon	<i>Oncorhynchus keta</i>	T*
Southern Oregon/Northern California coasts coho salmon	<i>Oncorhynchus kisutch</i>	CH T*
Lower Columbia River/Southwest Washington coho salmon	<i>Oncorhynchus kisutch</i>	T*
Upper Willamette River steelhead	<i>Oncorhynchus mykiss spp</i>	T*
Middle Columbia River steelhead	<i>Oncorhynchus mykiss ssp.</i>	T*
Snake River Basin steelhead	<i>Oncorhynchus mykiss ssp.</i>	T*
Lower Columbia River steelhead	<i>Oncorhynchus mykiss ssp.</i>	T*
Lower Columbia River chinook salmon	<i>Oncorhynchus tshawytscha</i>	T*
Upper Willamette River chinook salmon	<i>Oncorhynchus tshawytscha</i>	T*
Snake River chinook (Spring/Summer/Fall Runs) salmon	<i>Oncorhynchus tshawytscha</i>	T*

**PROPOSED SPECIES**

**None**

No Proposed Endangered Species	PE
No Proposed Threatened Species	PT

**CANDIDATE SPECIES**

**Birds**

Streaked horned lark	<i>Eremophila alpestris strigata</i>
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**SPECIES OF CONCERN**

**Mammals**

Pallid bat	<i>Antrozous pallidus pacificus</i>
Red tree vole	<i>Arborimus longicaudus</i>
Townsend's western big-eared bat	<i>Corynorhinus townsendii townsendii</i>
Silver-haired bat	<i>Lasionycteris noctivagans</i>
Long-eared myotis bat	<i>Myotis evotis</i>
Long-legged myotis bat	<i>Myotis volans</i>
Yuma myotis bat	<i>Myotis yumanensis</i>
Camas pocket gopher	<i>Thomomys bulbivorus</i>

**Birds**

**FEDERALLY LISTED, PROPOSED, CANDIDATE SPECIES  
AND SPECIES OF CONCERN WHICH MAY OCCUR WITHIN  
MULTNOMAH COUNTY, OREGON**

Northern goshawk  
Tricolored blackbird  
Western burrowing owl  
Olive-sided flycatcher  
Harlequin duck  
Yellow-breasted chat  
Lewis' woodpecker  
Mountain quail  
Band-tailed pigeon  
Oregon vesper sparrow  
Purple martin

*Accipiter gentilis*  
*Agelaius tricolor*  
*Athene cunicularia hypugaea*  
*Contopus cooperi*  
*Histrionicus histrionicus*  
*Icteria virens*  
*Melanerpes lewis*  
*Oreortyx pictus*  
*Patagioenas fasciata*  
*Pooecetes gramineus affinis*  
*Progne subis*

**Reptiles and Amphibians**

Northern Pacific pond turtle  
Coastal tailed frog  
Oregon slender salamander  
Larch Mountain salamander  
Northern red-legged frog  
Cascades frog

*Actinemys marmorata marmorata*  
*Ascaphus truei*  
*Batrachoseps wrighti*  
*Plethodon larselli*  
*Rana aurora aurora*  
*Rana cascadae*

**Fish**

Green sturgeon  
Pacific lamprey  
Coastal cutthroat trout

*Acipenser medirostris*  
*Lampetra tridentata*  
*Oncorhynchus clarki ssp*

**Invertebrates**

**Snails:**

Columbia pebblesnail

*Fluminicola fuscus (= columbianus)*

**Insects:**

Mt. Hood primitive brachycentrid caddisfly  
Mt. Hood farulan caddisfly  
Columbia Gorge neothremman caddisfly  
Wahkeena Falls flightless stonefly

*Eobrachycentrus gelidae*  
*Farula jewetti*  
*Neothremma andersoni*  
*Zapada wahkeena*

**Clams:**

California floater mussel

*Anodonta californiensis*

**Plants**

Howell's bentgrass  
Cliff paintbrush  
Cold-water corydalis  
Pale larkspur  
Peacock larkspur  
Howell's daisy  
Oregon fleabane  
Barrett's penstemon  
Snake River goldenweed  
Whitetop aster  
Oregon sullivantia

*Agrostis howellii*  
*Castilleja rupicola*  
*Corydalis aquae-gelidae*  
*Delphinium leucophaeum*  
*Delphinium pavonaceum*  
*Erigeron howellii*  
*Erigeron oregonus*  
*Penstemon barrettiae*  
*Pyrrocoma radiata*  
*Sericocarpus rigidus*  
*Sullivantia oregana*

**Definitions:**



**FEDERALLY LISTED, PROPOSED, CANDIDATE SPECIES  
AND SPECIES OF CONCERN WHICH MAY OCCUR WITHIN  
MULTNOMAH COUNTY, OREGON**

Listed Species: An endangered species is one that is in danger of extinction throughout all or a significant portion of its range. A threatened species is one that is likely to become endangered in the foreseeable future.

Proposed Species: Taxa for which the Fish and Wildlife Service or National Marine Fisheries Service has published a proposal to list as endangered or threatened in the Federal Register.

Candidate Species: Taxa for which the Fish and Wildlife Service has sufficient biological information to support a proposal to list as endangered or threatened.

Species of Concern: Taxa whose conservation status is of concern to the U.S. Fish and Wildlife Service (many previously known as Category 2 candidates), but for which further information is still needed. Such species receive no legal protection and use of the term does not necessarily imply that a species will eventually be proposed for listing.

**Key:**

- E Endangered
  - T Threatened
  - CH Critical Habitat has been designated for this species
  - PE Proposed Endangered
  - PT Proposed Threatened
  - PCH Critical Habitat has been proposed for this species
- \* Consultation with National Marine Fisheries Service may be required.

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**FEDERALLY LISTED, PROPOSED, CANDIDATE SPECIES  
AND SPECIES OF CONCERN WHICH MAY OCCUR WITHIN  
CLACKAMAS COUNTY, OREGON**

**LISTED SPECIES**

**Birds**

Northern spotted owl	<i>Strix occidentalis caurina</i>	CH T
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**Fish**

***Anadromous:***

Southern Oregon/Northern California coasts coho salmon	<i>Oncorhynchus kisutch</i>	CH T*
Lower Columbia River/Southwest Washington coho salmon	<i>Oncorhynchus kisutch</i>	T*
Upper Willamette River steelhead	<i>Oncorhynchus mykiss spp</i>	T*
Lower Columbia River steelhead	<i>Oncorhynchus mykiss ssp.</i>	T*
Lower Columbia River chinook salmon	<i>Oncorhynchus tshawytscha</i>	T*
Upper Willamette River chinook salmon	<i>Oncorhynchus tshawytscha</i>	T*

**Plants**

Nelson's checker-mallow	<i>Sidalcea nelsoniana</i>	T
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**PROPOSED SPECIES**

**None**

No Proposed Endangered Species	PE
No Proposed Threatened Species	PT

**CANDIDATE SPECIES**

**Birds**

Streaked horned lark	<i>Eremophila alpestris strigata</i>
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**SPECIES OF CONCERN**

**Mammals**

Red tree vole	<i>Arborimus longicaudus</i>
Townsend's western big-eared bat	<i>Corynorhinus townsendii townsendii</i>
California wolverine	<i>Gulo gulo luteus</i>
Silver-haired bat	<i>Lasionycteris noctivagans</i>
Long-eared myotis bat	<i>Myotis evotis</i>
Fringed myotis bat	<i>Myotis thysanodes</i>
Long-legged myotis bat	<i>Myotis volans</i>
Yuma myotis bat	<i>Myotis yumanensis</i>
Camas pocket gopher	<i>Thomomys bulbivorus</i>

**Birds**

Northern goshawk	<i>Accipiter gentilis</i>
Olive-sided flycatcher	<i>Contopus cooperi</i>
Harlequin duck	<i>Histrionicus histrionicus</i>
Yellow-breasted chat	<i>Icteria virens</i>
Acorn woodpecker	<i>Melanerpes formicivorus</i>

**FEDERALLY LISTED, PROPOSED, CANDIDATE SPECIES  
AND SPECIES OF CONCERN WHICH MAY OCCUR WITHIN  
CLACKAMAS COUNTY, OREGON**

Lewis' woodpecker  
Mountain quail  
Band-tailed pigeon  
Oregon vesper sparrow  
Purple martin

*Melanerpes lewis*  
*Oreortyx pictus*  
*Patagioenas fasciata*  
*Pooecetes gramineus affinis*  
*Progne subis*

**Reptiles and Amphibians**

Northern Pacific pond turtle  
Coastal tailed frog  
Oregon slender salamander  
Larch Mountain salamander  
Northern red-legged frog  
Cascades frog

*Actinemys marmorata marmorata*  
*Ascaphus truei*  
*Batrachoseps wrighti*  
*Plethodon larselli*  
*Rana aurora aurora*  
*Rana cascadae*

**Fish**

Pacific lamprey  
Coastal cutthroat trout

*Lampetra tridentata*  
*Oncorhynchus clarki ssp*

**Invertebrates**

***Insects:***

Beller's ground beetle  
Scott's apatanian caddisfly  
Cascades apatanian caddisfly  
Mt. Hood primitive brachycentrid caddisfly  
Mt. Hood farulan caddisfly

*Agonum belleri*  
*Allomyia scotti*  
*Apatania tavala*  
*Eobrachycentrus gelidae*  
*Farula jewetti*

***Annelid Worms:***

Oregon giant earthworm

*Megascolides macelfreshi*

**Plants**

Cliff paintbrush  
Cold-water corydalis  
Pale larkspur  
Willamette Valley larkspur  
Peacock larkspur  
Howell's daisy  
Thin leaved peavine  
Snake River goldenweed  
Whitetop aster  
Henderson's checker-mallow  
Pale blue-eyed grass  
Oregon sullivania

*Castilleja rupicola*  
*Corydalis aquae-gelidae*  
*Delphinium leucophaeum*  
*Delphinium oreganum*  
*Delphinium pavonaceum*  
*Erigeron howellii*  
*Lathyrus holochlorus*  
*Pyrrocoma radiata*  
*Sericocarpus rigidus*  
*Sidalcea hendersonii*  
*Sisyrinchium sarmentosum*  
*Sullivantia oregana*

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**FEDERALLY LISTED, PROPOSED, CANDIDATE SPECIES  
AND SPECIES OF CONCERN WHICH MAY OCCUR WITHIN  
CLACKAMAS COUNTY, OREGON**

Species of Concern: Taxa whose conservation status is of concern to the U.S. Fish and Wildlife Service (many previously known as Category 2 candidates), but for which further information is still needed. Such species receive no legal protection and use of the term does not necessarily imply that a species will eventually be proposed for listing.

**Key:**

- E      Endangered
- T      Threatened
- CH     Critical Habitat has been designated for this species
- PE     Proposed Endangered
- PT     Proposed Threatened
- PCH    Critical Habitat has been proposed for this species
  
- \*      Consultation with National Marine Fisheries Service may be required.



# OREGON NATURAL HERITAGE INFORMATION CENTER

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*Institute for Natural Resources*  
1322 SE Morrison Street  
Portland, Oregon 97214-2423  
503.731.3070  
<http://oregonstate.edu/ornhic>

September 26, 2007

Christopher Collins  
Parametrix, Inc.  
700 NE Multnomah Boulevard, Suite 1160  
Portland, OR 97232

Dear Mr. Collins:

Thank you for requesting information from the Oregon Natural Heritage Information Center (ORNHC). We have conducted a data system search for rare, threatened and endangered plant and animal records for your Milwaukie Light Rail EIS Project in Township 1 South, Range 1 East, Sections 2-4, 10, 11, 13, 14, 24-26, 35, and 36, and Township 2 South, Range 1 East, Section 1, W.M.

Twenty-five (25) records were noted within a two-mile radius of your project and are included on the enclosed computer printout. A key to the fields is also included.

Please remember that the lack of rare element information from a given area does not mean that there are no significant elements there, only that there is no information known to us from the site. To assure that there are no important elements present, you should inventory the site, at the appropriate season.

This data is confidential and for the specific purposes of your project and is **not to be distributed**.

If you need additional information or have any questions, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Cliff Alton", with a long horizontal flourish extending to the right.

Cliff Alton  
Conservation Information Assistant

encl.: invoice (H-092607-CWA3)  
computer printout and data key







# Oregon

Theodore R. Kulongoski, Governor

## Parks and Recreation Department

State Historic Preservation Office

725 Summer St. NE, Suite C

Salem, OR 97301-1266

(503) 986-0707

FAX (503) 986-0798

www.hcd.state.or.us



Nature  
History  
Discovery

April 25, 2008

Ms. Bridget Wieghart  
Portland Metro  
600 NE Grand Avenue  
Portland, OR 97232-2736

RE: SHPO Concurrence  
South Corridor Portland-Milwaukie Light Rail Project  
Multiple Sites, Portland/Milwaukie, Multnomah/Clackamas

Dear Ms. Wieghart,

The State Historic Preservation Office (SHPO) has reviewed the materials submitted on the project referenced above. SHPO conditionally approves the survey project contingent upon successful resolution of any adverse effects noted on the 17 National Register eligible properties listed below and on the attached Cover Sheet. Also, we concur with the effect determinations of the following properties, also listed below and on the attached Cover Sheet:

- 2300 SE Harrison, Milwaukie Middle School, No Adverse Effect
- 2405 SE Harrison, Residence, No Adverse Effect
- 2326 SE Monroe St., Spanish Revival Residence, No Adverse Effect
- 2001 SE Holgate, Brooklyn Yard, No Adverse Effect
- 11205 SE McLoughlin Blvd., Kellogg Lake Outlet, No Effect
- 12006 SE McLoughlin Blvd., Birkemeier-Sweetland Home, No Effect
- 2505 SE 11th Ave., Ford Motor Assembly Plant, No Effect
- 4784 SE 17th Ave., Iron Fireman Building, No Effect
- 2425 SE Bybee Blvd., Eastmoreland Golf Course, No Effect
- 7605 SE McLoughlin Blvd., Westmoreland Park, No Effect
- 1200 Naito Parkway, Hawthorne Bridge, No Effect
- 600 SE Powell Blvd., Ross Island Bridge, No Effect
- 9002 SE McLoughlin Blvd., ODOT Region Office, Adverse Effect with possible design refinements or mitigation options to reduce effect
- 2206 SE Washington, R. Derwey House, Adverse Effect with possible design refinements or mitigation options to reduce effect
- 2425 SE 8th Ave., Royal Foods, Adverse Effect, with possible design refinements or mitigation options to reduce effect
- 11200 SE McLoughlin Blvd., Oregon Pacific & Union Pacific Railroad/Trestle, No Adverse Effect to Railroad track/grade; Adverse Effect to Trestle with possible design refinements or mitigation options to reduce effect
- 2000 SW 5th Ave., Portland State School Building, No Adverse Effect (NP, however, due to acquisition of property, included for review)

Our response here is to assist you with your responsibilities under Section 106 of the National Historic Preservation Act (36 CFR Part 800). Please feel free to contact me if you have questions.

Sincerely,

Stephen P. Poyser, PhD  
Sec. 106 Review & Compliance/Preservation Planner  
503.986.0686 or [stephen.poyser@state.or.us](mailto:stephen.poyser@state.or.us)



# Oregon Cover Sheet

Parks and Recreation Department

State Historic Preservation Office

725 Summer St. NE, Suite C

Salem, OR 97301-1266

(503) 986-0707

(503) 986-0793

www.hcd.state.or.us

Theodore R. Kulongoski, Governor  
Reconnaissance Level Surveys and 106 Compliance

**Submit this Cover Sheet to SHPO along with all survey materials (see checklist below).**

Survey Project Name **Portland - Milwaukie LRT**  
City **Portland** County **Multnomah**  
Survey Type **Selective Baseline**  
Survey Sponsor **Parametrix**  
Surveyor Name **Julie Osborne/Kimberli Fitzgerald**

Survey Start Date **10/14/2007**  
Survey End Date **12/15/2007**  
Year Completed **2007**  
Date Submitted to SHPO

# Contributing Properties **17** Acreage Surveyed **110**  
(estimate using USGS quad)  
# Non-contributing Properties **64**



Survey Boundaries **The area surveyed is bounded on the west by SW 5th Ave and spans southeastward to Milwaukie along either side (north/south) of McLoughlin Blvd.**

Survey Summary **The selection of inventoried properties within the APE (one-half block within the Portland grid system, and 150 on either side of the alignment outside the grid system) was based on several factors: (1) It was to build on the information prepared for the 2002 SDEIS; (2) it included all properties along the transit line that will be affected to provide context for the resources that are potentially eligible; (3) and it included assessing properties built between 1957 and 1967 that may become eligible when they reach the 50-year age criterion.**

- 106 Effect: **The effects to eligible historic resources are included in the database comments. Summarized they are:**
- 2300 SE Harrison, Milwaukie Middle School, No Adverse Effect
  - 2405 SE Harrison, Residence, No Adverse Effect
  - 2326 SE Monroe St., Spanish Revival Residence, No Adverse Effect
  - 2001 SE Holgate, Brooklyn Yard, No Adverse Effect
  - 711205 SE McLoughlin Blvd., Kellogg Lake Outlet, No Effect
  - 12006 SE McLoughlin Blvd., Birkemeier-Sweetland Home, No Effect
  - 2505 SE 11th Ave., Ford Motor Assembly Plant, No Effect
  - 4784 SE 17th Ave., Iron Fireman Building, No Effect
  - 2425 SE Bybee Blvd., Eastmoreland Golf Course, No Effect
  - 7605 SE McLoughlin Blvd., Westmoreland Park, No Effect
  - 1200 Naito Parkway, Hawthorne Bridge, No Effect
  - 600 SE Powell Blvd., Ross Island Bridge, No Effect
  - 9002 SE McLoughlin Blvd., ODOT Region Office, Adverse Effect with possible design refinements or mitigation options to reduce effect
  - 2206 SE Washington, R. Derwey House, Adverse Effect with possible design refinements or mitigation options to reduce effect
  - 2425 SE 8th Ave., Royal Foods, Adverse Effect, with possible design refinements or mitigation options to reduce effect
  - 711200 SE McLoughlin Blvd., Oregon Pacific & Union Pacific Railroad/Trestle, No Adverse Effect to Railroad track/grade; Adverse Effect to Trestle with possible design refinements or mitigation options to reduce effect
  - 2000 SW 5th Ave., Portland State School Building, No Adverse Effect (NP, however, due to acquisition of property, included for review)

To Be Completed by SHPO Staff

### SHPO Evaluation of Survey Project

- Approved
- Conditionally Approved
- Returned for Corrections

### SHPO Comment on Effect Determinations

- Concur
- Do Not Concur
- Return for Additional Data

### Checklist of Required Items:

- \*Research Design Completed Prior to Survey
- Properly Marked Survey Map
- Copy of USGS Map Showing Location of Surveyed Area
- Completed Survey Forms (Field Forms)
- Survey Data Submitted in Electronic Format
- Properly Labeled Photos
- \*Final Report, including outline of historic contexts and recommendations for future action
- Completed "Cover Sheet"
- Duplicates of everything: one for SHPO and one for the contracting community or agency.

SHPO Staff Signature

Date

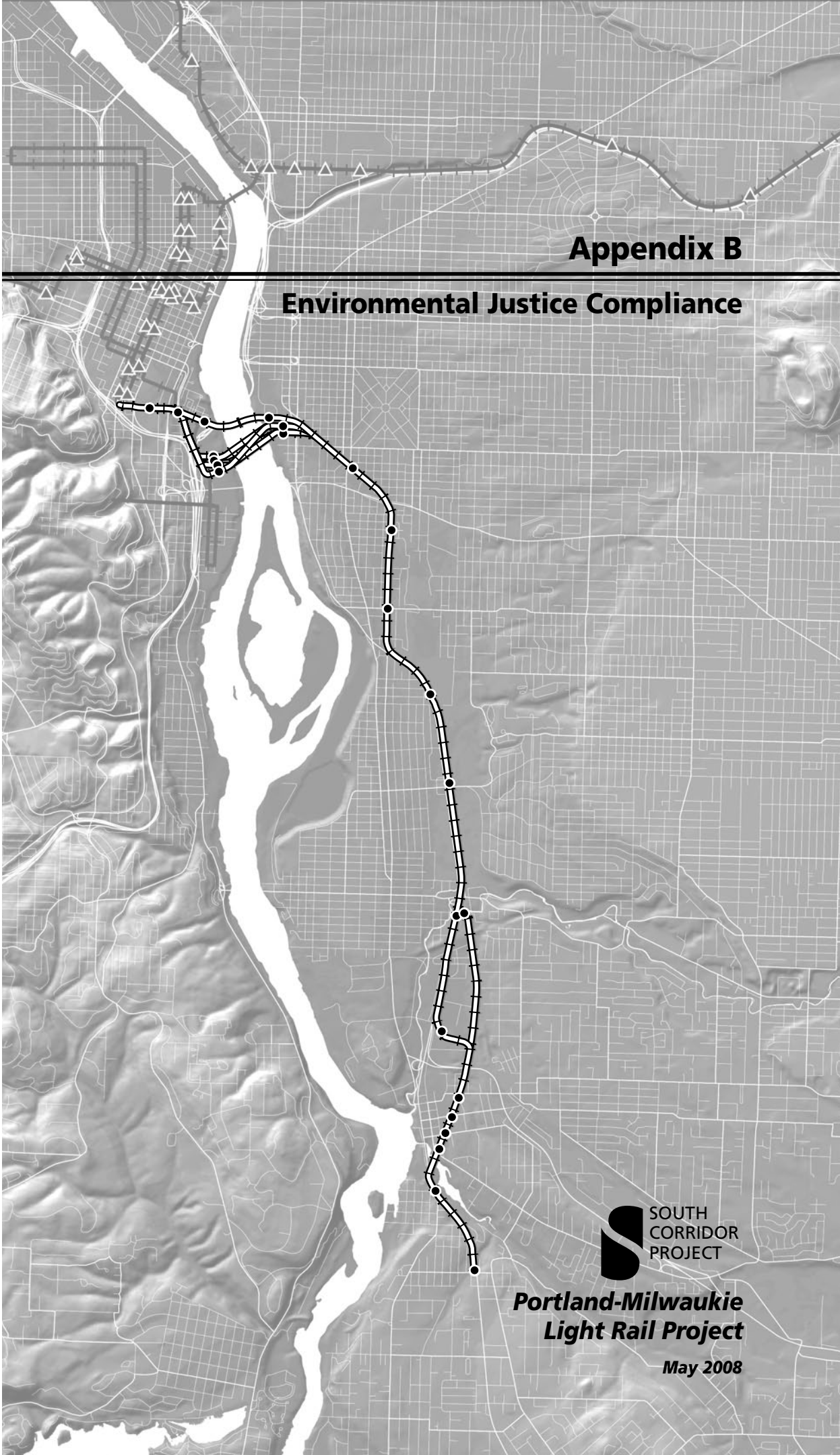
4/22/08

Oregon State Historic Preservation Office, 725 Summer Street NE, Suite C, Salem OR 97301



# Appendix B

## Environmental Justice Compliance



**Portland-Milwaukie  
Light Rail Project**

May 2008

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## APPENDIX B. ENVIRONMENTAL JUSTICE COMPLIANCE

### 1. INTRODUCTION

This appendix describes the Portland-Milwaukie Light Rail project's compliance with Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations* and the U.S. Department of Transportation (DOT), *Order to Address Environmental Justice in Minority Populations and Low-Income Populations*. The U.S. DOT offers the following definition of Environmental Justice:

*The term environmental justice was created by people concerned that everyone within the United States deserves equal protection under the country's laws. Executive Order 12898, issued in 1994, responded to this concern by organizing and explaining in detail the Federal government's commitment to promote environmental justice. Each Federal agency was directed to review its procedures and to make environmental justice part of its mission by identifying and addressing the impacts of all programs, policies, and activities on minority populations and low-income populations. The U.S. Department of Transportation (DOT) issued its DOT Order to Address Environmental Justice in Minority Populations and Low-Income Populations in 1997. The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have been working with their State and local transportation partners to make sure that the principles of environmental justice are integrated into every aspect of their transportation mission.*

*Principles of Environmental Justice are to:*

- *Ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.*
- *Avoid, mitigate, or minimize disproportionately high and adverse human health and environmental impacts, including social and economic impacts, on minority and low-income populations.*
- *Prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.*

### 1.1 PUBLIC INVOLVEMENT AND DECISION-MAKING PROCESSES

This section summarizes the Portland-Milwaukie Light Rail project's Public Involvement and decision-making processes addressing the project's efforts to ensure "full and fair participation by all potentially affected communities." For additional information, refer to *Chapter 6, Public Participation*.

#### 1.1.1 Public Involvement and Outreach Program

Metro and TriMet have been including potentially-impacted minority and low-income populations in their public involvement activities has been an important consideration throughout the evolution of the South/North, South Corridor and Portland-Milwaukie Light Rail projects. Identifying and

involving minority and low-income populations will continue through the selection of a Locally Preferred Alternative, the preparation of the Final Environmental Impact Statement, Preliminary Engineering and construction.

Early in the project, staff evaluated 2000 U.S. Census data and reviewed past documentation of the study area to identify concentrations of low-income, Hispanic, or minority residents. No significant concentrations of these groups were identified. However, since some limited low-income, Hispanic or minority populations were identified, areas with potential concentrations of these groups were targeted for door-to-door canvassing. Public involvement staff used these door-to-door visits to explain the project, discuss concerns, invite further involvement and note concentrations of people who would require further specialized outreach such as non-English speakers. These visits were also used as an opportunity to expand the project mailing list to ensure that residents would continue to be informed. Newsletters or information about upcoming meetings as well as staff contact information were left for residents who were not at home.

Outreach efforts to the public and to potentially-protected populations were conducted as part of the South/North DEIS in 1996 to 1998, for the South Corridor SDEIS effort in 2000-2002, and again when the Portland-Milwaukie SDEIS was re-initiated in late 2006 and early 2007. Potentially-affected communities have been included in the project's additional outreach and communications since the process. For the Portland-Milwaukie Light Rail project SDEIS, U.S. Census 2000 and ACS 2005 poverty data were used to help identify changes to demographics, including low-income and minority communities. Project staff also consulted with local jurisdictions to help identify any potentially affected parties that should be invited to participate.

### **1.1.2 Decision-Making Process**

Policy recommendations related to the South Corridor Project will continue to be provided by the South Corridor Policy Committee that is comprised of elected officials and executive staff from affected jurisdictions and agencies. The public involvement activities described in Section B.1.1 will support community involvement in the decision-making process.

After the SDEIS publication, a public comment period will be held in compliance with NEPA regulations and Metro public involvement standards. During the public comment period, staff will continue to meet with community groups, distribute project information and use other methods for encouraging community participation.

After the public comment period concludes, the Citizen Advisory Committee (CAC) will make a recommendation to the Policy Committee. The Policy Committee will review public comments, the CAC recommendation, and technical information before recommending a Locally Preferred Alternative (LPA). Each partner jurisdiction and agency will have an opportunity to make a recommendation related to the proposed LPA. The Metro Council, after hearing public comment on the LPA, will adopt the final LPA.

## **1.2 ANALYSIS OF PROJECT IMPACTS ON LOW-INCOME AND MINORITY POPULATIONS**

This section summarizes the analysis of impacts on low-income and minority populations that could occur with the Portland-Milwaukie Light Rail project alternatives. The discussion begins with

definition of terms and thresholds used for the analysis, followed by findings of impacts and benefits of the alternatives. This section concludes by identifying potential mitigation measures that could minimize impacts to low-income and minority populations.

### **1.2.1 Analysis Methods**

The analysis methods used in this environmental justice analysis follow. These are based on guidelines for effective practices outlined by the U.S. DOT through the Federal Highway Administration and Federal Transit Administration. These guidelines do not specify the thresholds that should be used to determine the location of minority, Hispanic, or low-income populations or communities, but do recommend using census data especially if it represents the most up-to-date data available. In terms of size of population or community, the following guidance is given:

*While the minority or low-income population in an area may be small, this does not eliminate the possibility of a disproportionately high and adverse effect of a proposed action. Environmental Justice determinations are made based on effects, not population size. It is important to consider the comparative impact of an action among different population groups.*

*The threshold of disproportionately high and adverse impacts requires impacts to be greater in magnitude or appreciably more severe for a low-income or minority community than those suffered by non-low-income or non-minority populations/communities.*

Potential minority and Hispanic populations or communities for this project were identified by comparing the U.S. Census 2000 minority or Hispanic proportion of the population of each census block group with the minority or Hispanic proportion of the population for all census tracts within the Metro Urban Growth Boundary (UGB). Similarly, potential low-income populations or communities were identified by comparing the U.S. Census proportion of households below poverty level of each census block group with proportion of households below the poverty level within the Metro UGB.

In addition, the same U.S. Census data were used to estimate the probable number of minority, Hispanic, and low-income displacements and the characteristics of potential rider populations receiving improved transit service.

The above analysis was initially conducted for the 2002 South Corridor SDEIS, which included a light rail alignment very similar to the 2003 LPA and covering essentially the same census geographies. The analysis for this Portland-Milwaukie SDEIS looked at 2005 American Community Survey data for changes in overall trends of population growth, poverty, and minority status at the county level. The ACS data was generally consistent with earlier U.S. Census data but as sample data it has a wider margin of error.

### **1.2.2 Findings**

According to the U.S. Census 2000, 18.7 percent of residents within the Metro UGB were members of a minority group compared to 17.1 percent within the Tri-County area and 10.5 percent in the Portland-Milwaukie Light Rail project corridor (represented by block groups adjacent to the LRT Alignment). Residents of Hispanic origin comprise only 8.3 percent of the population within the Metro UGB population, 8.0 percent in the Tri-County area and 4.3 percent in the census block

groups of the Portland-Milwaukie Light Rail project corridor. A higher proportion of households within the Portland-Milwaukie corridor block groups (10.0 percent) had incomes below the Federally-defined poverty level<sup>1</sup> in 1999 than the proportion in either the Metro UGB (9.4 percent) or the Tri-County area (8.7 percent).

**Table B.2-1  
Comparison of EJ Population Ratios**

Area	Population	% Minority	% Hispanic	% Poverty
Portland-Milwaukie Project Corridor Census Block Groups (2005)	23,404	10.6%	4.3%	10.0%
Metro UGB (2000)	1,190,993	18.7%	8.3%	9.4%
Tri-County area	1,444,219	17.1%	8.0%	8.7%

Source: Metro, U.S. Census 2000.

Note: Percent minority and percent Hispanic refer to proportion of populations, whereas percent poverty indicates the proportion of households below the poverty level.

Downtown Portland was the only neighborhood with a higher proportion of minority residents than average for the Metro UGB. None of the neighborhoods had a higher concentration of Hispanic residents than the average for the Metro UGB. Downtown Portland, Brooklyn, Hosford-Abernethy, Sellwood-Moreland and Ardenwald had higher proportions of low-income residents than the Metro UGB average.

The one to two residential displacements expected to result from any of the alternatives or options in the corridor would occur in areas that have relatively low levels of minority, Hispanic or low-income populations. One to two residential displacements are also a very low level of impact overall, considering the length of new light rail corridor to be provided and the fact that displacement would be mitigated by relocation assistance. Therefore, no disproportionate impacts are anticipated for the project.

The Land Use and Economic Results Report discusses the number of displaced businesses and other buildings by the Portland-Milwaukie Light Rail project. Determination of minority or Hispanic business ownership is not easily quantified or estimated. As a result, no quantitative estimate has been made. However, no predominantly minority or Hispanic business districts are known to be among those impacted by the LRT alignment alternative or design options. The affected properties and resulting displacements are also distributed throughout the corridor, with only one area (SE 17<sup>th</sup> Avenue) affecting multiple properties. Compared to other linear projects, including highways or other major public works facilities, this represents a low number of property and business impacts.

### 1.2.2.1 Neighborhood Impacts and Benefits

The Community Impacts Assessment Results Report above identifies cohesion and livability impacts of the Portland-Milwaukie Light Rail project alternatives by neighborhood. None of the neighborhoods, including those few with more minority or low income populations than the regional norm, were found to have adverse affects that significantly impacted quality of life.

<sup>1</sup> The census compares household income to federal standards based on household size and composition in developing statistics to describe poverty rates by census tract (U.S. Census Bureau: 2000, Summary File 3 Technical Documentation).



An analysis of probable racial, ethnic origin and income characteristics of individuals living within a quarter-mile radius of stations was performed for the South Corridor Alternatives in 2002 to identify characteristics of potential riders. Since this information was based on the U.S. Census 2000, the latest available detailed information on socioeconomic characteristics by area, it remains a good indication of the likely benefits anticipated for the project. These characteristics of potential riders were evaluated to determine who would benefit from each of the South Corridor alternatives. Although transit riders could live anywhere, those residing within walking distance (one-quarter mile of stations) are commonly considered to receive improved access to transit services.

The LRT Alignment (2003 LPA with Extension to Park) is very similar to the Milwaukie Light Rail alignment analyzed in 2002. Because census data would be the same, any new analysis of populations near the LRT alignment, including the design options, would be unlikely to alter the results in a statistically significant way. Therefore, the results from the 2002 South Corridor analysis for the Milwaukie LRT are presented in Table D.2-2 to illustrate the benefit of light rail to potential Environmental Justice populations in the Portland-Milwaukie Light Rail project corridor.

**Table D.2-2  
Characteristics of Potential Rider Populations by Alternative**

<b>Alternative</b>	<b>Population within ¼-Mile Radius of Stations</b>	<b>Probable Percent Minority</b>	<b>Probable Percent Hispanic</b>	<b>Probable Percent Low-Income</b>
Milwaukie Light Rail	13,959	10.6%	5.8%	9.6%
Metro UGB	1,190,993	18.7%	8.3%	9.4%

Source: Metro, U.S. Census 2000, and E.D. Hovee & Company.

Note: In order to determine the exact proportion of minority, Hispanic, or persons below poverty level a survey of all residents within the station areas would be necessary. In lieu of a survey, an estimate of the probable proportion of residents within a quarter mile radius of alternative stations has been made. This has been done by taking a weighted average of representation of these groups within the census block groups that intersect the quarter mile radius, applying it to the estimated population within the radius, summing results for stations by alternative, and dividing it by total population within alternative station radii.

The Light Rail Alternative, as represented by the 2003 LPA and any of the options, would provide a direct transit benefit to low-income populations. The proportion of low-income households within one-quarter mile of a station area for each of these alternatives is slightly higher than the average within the Metro UGB, likely because the project uses rights-of-way along several major existing transportation facilities, including the UPRR. While each of these alternatives would serve many minority and Hispanic people, none of the alternatives under consideration would provide a direct transit benefit to areas with a higher concentration of minority or Hispanic residents than the average concentration within the Metro UGB.

### **1.2.3 Conclusion**

In evaluating if the Portland-Milwaukie Light Rail project would result in high and adverse environmental or health impacts being borne disproportionately by low-income, minority and Hispanic populations, guidelines indicate that offsetting benefits, mitigation and enhancement measures, design, comparative impacts, and the number of similar existing system elements in non-minority and non-low-income areas may be taken into account. The LRT alignment would provide the offsetting benefit of direct transit service to those station areas<sup>2</sup> within neighborhoods containing

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<sup>2</sup> Station area is defined as ¼ mile radius of stations.

concentrations of minority and low-income households that exceed the average concentration of low-income households in the corridor.

Adverse impacts such as unmitigated noise impacts, traffic impacts, visual impacts and displacements do not fall disproportionately on minority or Hispanic populations because most of the affected neighborhoods have ratios of minorities below the ratios at the county, Metro UGB and/or Tri-County level. Three of 11 neighborhoods have ratios of higher than the Multnomah County level but still lower than the Tri-County area. Only Downtown is higher than the Multnomah County level, Metro UGB and Tri-County levels. All but one neighborhood (Historic Milwaukie) have lower ratios of Hispanic populations than all three larger geographies.

Adverse impacts such as unmitigated noise impacts, traffic impact, visual impacts and displacements do not fall disproportionately on low-income communities. The light rail alignment would affect three out of 11 neighborhoods having slightly higher ratios of low-income populations than Multnomah County. The Portland Downtown neighborhood has a noticeably higher proportion of low-income people than any of the three larger geographies. However, the area of Downtown near the alignment does not appear to contain low-income housing or areas and the project would provide offsetting benefits.

The exception to these conclusions is at the Ruby Junction maintenance base where there could be disproportional impacts to low-income and minority persons, although the number of affected parties remains low compared to the total population in Gresham. In addition, with compensation and relocation assistance, impacts are expected to remain low.

Therefore, according to the definition established in Executive Order 12898, the Light Rail Alternative would, in general, not result in high and adverse human health, environmental, social and/or economic impacts.

A final evaluation of the impacts of the Portland-Milwaukie Light Rail project on minority, Hispanic, and/or low-income populations will be made after a Preferred Alternative is identified in the FEIS.

### **1.3 MITIGATION AND ENHANCEMENTS**

Potential impact-specific mitigation measures for the alternatives and design options are reviewed in Chapters 3 and 4 of this SDEIS and discussed in detail in other environmental topics that would be likely to affect minority or low income people. This includes the Displacement and Acquisitions Results Report, Community Impacts Assessment Results Report, Visual and Aesthetics Resources Impacts Results Report, Noise and Vibration Impacts Results Report, and the Traffic Impacts Results Report. A Safety and Security Impacts analysis is also included in the Portland-Milwaukie SDEIS.

A topographic map showing the proposed light rail corridor from Portland to Milwaukie. The map features a grid, contour lines, and a river. A thick black line with circular markers indicates the rail route, which starts in the north near the river, curves west, then south, and finally east towards the bottom right. Numerous small triangles are scattered across the map, likely representing specific project points or stations.

## Appendix C

## Supporting Documents



**Portland-Milwaukie  
Light Rail Project**

*May 2008*

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## Appendix C. Supporting Documents

The following Portland-Milwaukie Light Rail Project supporting documents are available for review at Metro and FTA offices.

1. Portland-Milwaukie Light Rail Project, Detailed Definition of Alternatives, October 2007

2. Methodology and Results Reports for each of the following topics. The methodology reports include detailed reference information for information provided in the SDEIS.

- Acquisitions, Displacements and Relocations Results Report
- Land Use and Economic Analysis Results Report
- Community Impact Assessment Results Report (Social and Neighborhood impacts, and Environmental Justice/Title VI )
- Visual and Aesthetic Qualities Results Report (with Visual Simulations)
- Historic, Archaeological and Cultural Resources Analysis Results Report
- Parklands, Recreation Areas Wildlife and Waterfowl Refuge Impacts, Section 4(f) Results Report
- Geology, Soils and Earthquake Risks Results Report
- Ecosystems and Endangered Species Results Report
- Water Quality and Hydrology Impacts Analysis Results Report
- Noise and Vibration Results Report
- Air Quality Results Report
- Energy Results Report
- Hazardous Materials Results Report
- Transit Impacts and Travel Demand Forecasting Results Report
- Local and Systemwide Traffic Impacts Results Report

3. Interstate 5 Columbia River Crossing Draft Environmental Impact Statement and Draft Section 4(f) Evaluation, May 2008.

In addition, the following supporting documents were prepared for previous studies and are available for review at Metro.

1. South Corridor Project Supplemental Draft Environmental Impact Statement, Executive Summary, December 2002

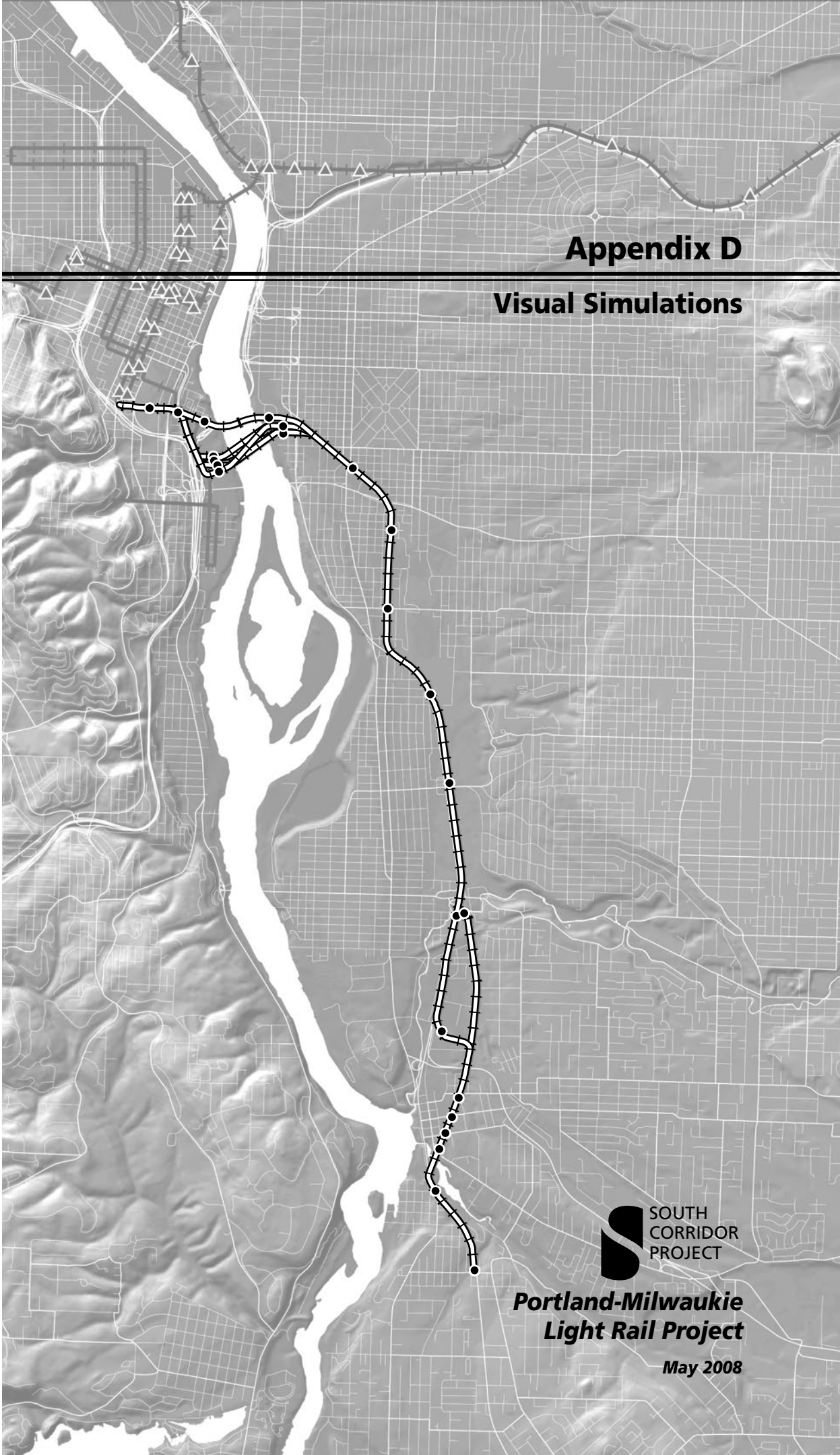
2. South Corridor Project Results Reports, November 2002

- Air Quality Analysis Results Report
- Capital Costs Analysis Results Report
- Community Impact Assessment Results Report
- Downtown Light Rail Systems Analysis
- Ecosystems Impacts Results Report
- Appendix C to the Ecosystem Results Report, Wetland Determination Report
- Energy Impacts Results Report

- Financial Analysis Results Report
  - Geology, Soils and Seismic Impacts Results Report
  - Historic, Archaeological and Cultural Impacts Results Report
  - Hazardous Materials Impacts Results Report
  - Land Use and Economic Activity Results Report
  - Noise and Vibration Results Report
  - Operations and Maintenance Costs Results Report
  - Parklands, Recreation Areas, Wildlife and Waterfowl Refuges (Section 4(f)) Results Report
  - Local Traffic Impacts Results Report
  - Travel Forecasting and Transit Analysis Results Report
  - Visual Quality and Aesthetics Results Report
  - Water Quality and Hydrology Results Report
3. South Corridor Project Methods Reports, November 2002
    - Evaluation and Financial Methods Report, April 2002
    - Transportation Analysis Methods Report, February 15, 2002
    - Social, Economic and Environmental Methods Report, February 15, 2002
    - Historic, Archaeological and Cultural Impact Analysis Methods Report
    - Capital Cost Methods Report, April 2002
    - Operating and Maintenance Cost Methods Report, February 15, 2002
    - Approach to Threatened and Endangered Species
  4. South Corridor Project Detailed Definition of Alternatives Report, April 2002
    - Light Rail Plan and Profile Drawings
    - BRT and Busway Plan and Profile Drawings
    - Detailed Definition of Alternatives Report
  5. South Corridor Transportation Alternatives Study, October 2002
    - Capital Cost Report Refinement Study
    - Public Comments Report
    - South Corridor Evaluation Report, October 16, 2000
    - South Corridor Evaluation Summary, October 16, 2000
    - Wide Range of Alternatives Report
    - South Corridor Background Report, January 2000
  6. North Corridor Final Environmental Impact Statement, October 1999
    - North Corridor Public Comment Report
  7. North Corridor Supplemental Draft Environmental Impact Statement, April 1999
  8. South/North Draft Environmental Impact Statement, February 1998
    - Results Reports
    - Methods Reports
    - Definition of Alternatives

# Appendix D

## Visual Simulations



**Portland-Milwaukie  
Light Rail Project**

*May 2008*



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# Portland-Milwaukie Light Rail Project

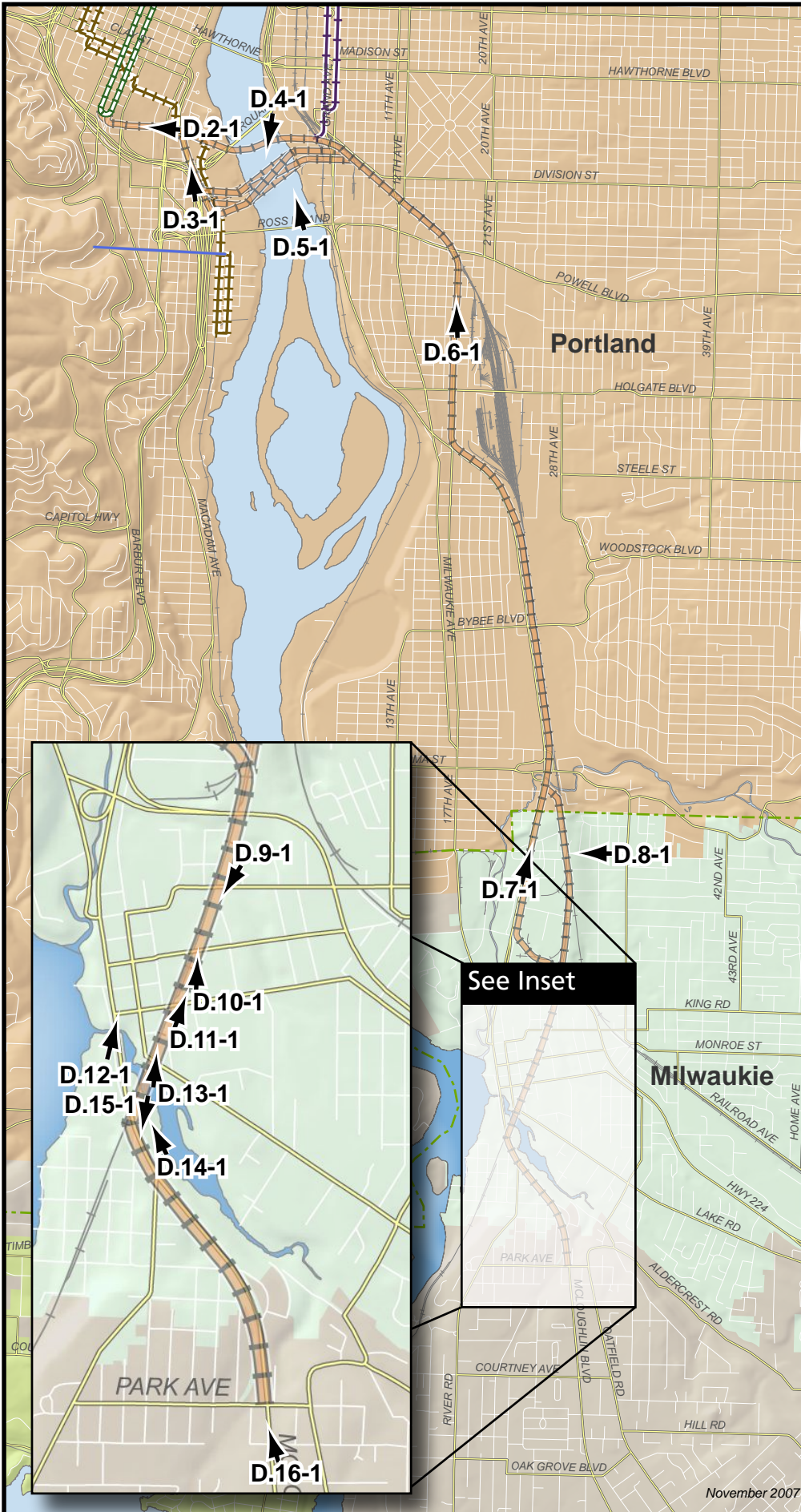
## Visual Simulation Locations

Figure D.1-1

-  Light Rail alternative
-  Simulation location and direction

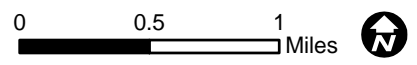
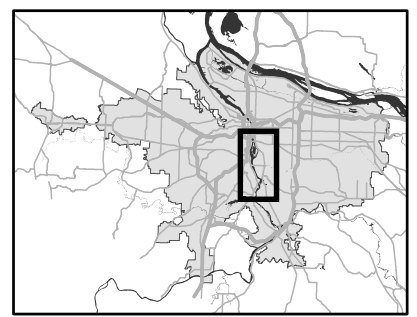
### Figure Location

- D.2-1 Lincoln Street
- D.3-1 Harbor Drive
- D.4-1 Willamette River/OMSI
- D.5-1 Willamette River/Ross Island Bridge
- D.6-1 Rhine Street
- D.7-1 ODOT Building
- D.8-1 Roswell Street
- D.9-1 Harrison Street
- D.10-1 Monroe Street
- D.11-1 Washington Street
- D.12-1 McLoughlin/Lake Road
- D.13-1 21st /Lake Road
- D.14-1 Kronberg Park
- D.15-1 McLoughlin/Bluebird St.
- D.16-1 McLoughlin/Park Avenue



 Portland - Milwaukie  
LIGHT RAIL PROJECT

 METRO



November 2007

## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.2-1  
Existing Condition - Lincoln Avenue  
View to the west



Figure D.2-1a  
Lincoln Avenue: with station  
View to west

 Portland-Milwaukie  
LIGHT RAIL PROJECT

 METRO

## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.

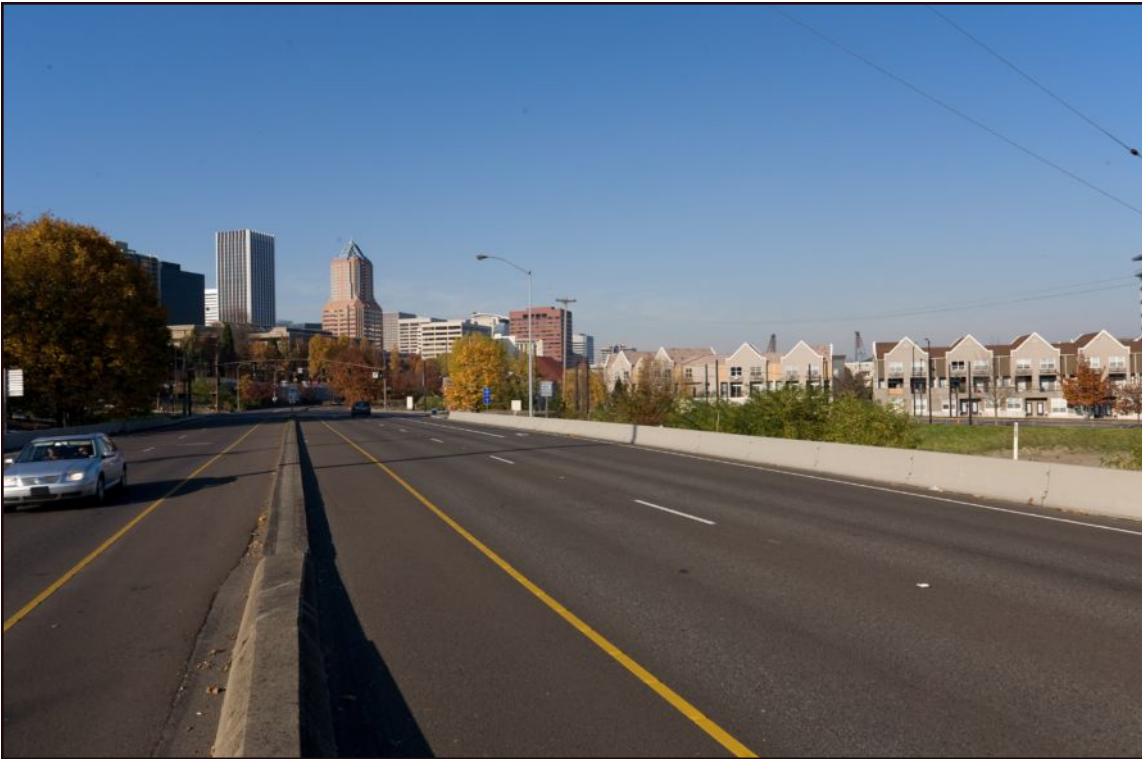


Figure D.3-1  
Existing Condition - Harbor Drive  
View to the north



Figure D.3-1a  
Harbor Drive: 2003 Locally Preferred Alternative  
View to the north

 Portland-Milwaukie  
LIGHT RAIL PROJECT

 METRO

## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.

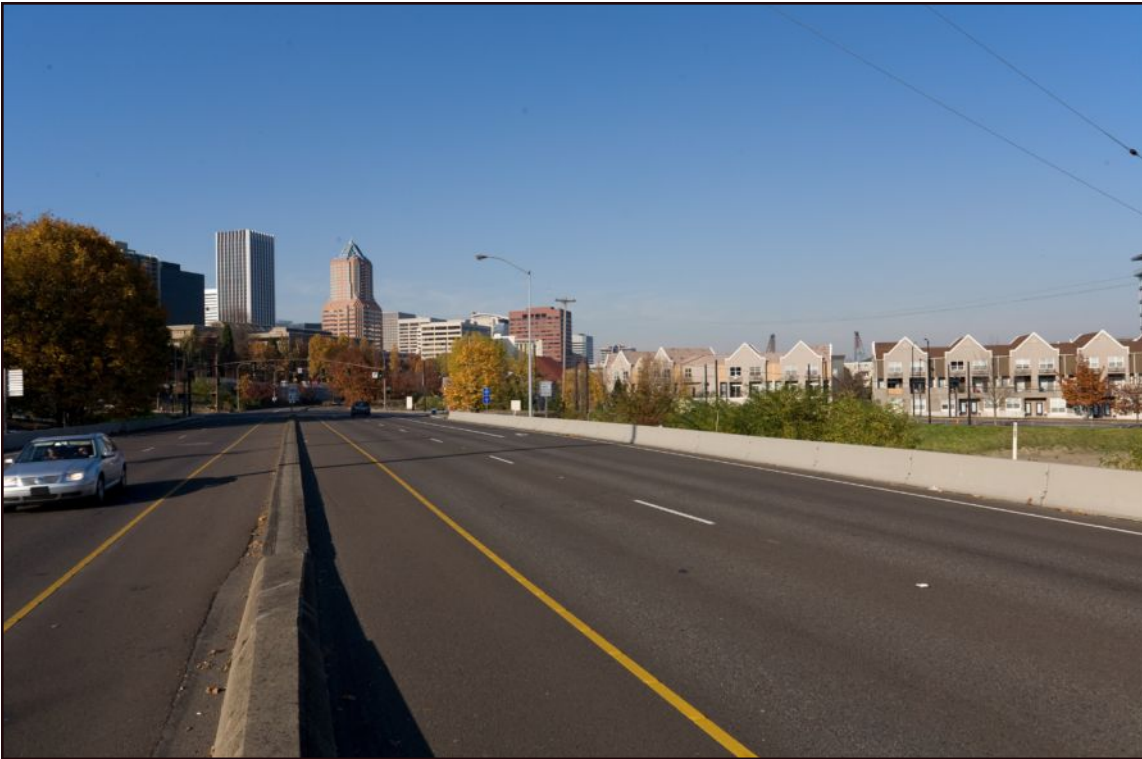


Figure D.3-1  
Existing Condition - Harbor Drive  
View to the north



Figure D.3-1b  
Harbor Drive: connection to river crossing options in South Waterfront  
View to the north

 Portland-Milwaukie  
LIGHT RAIL PROJECT

 METRO

## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.4-1  
Existing Condition - Willamette River/OMSI  
View to the southwest



Figure D.4-1a  
Willamette River/OMSI: 2003 Locally Preferred Alternative  
View to the southwest

 Portland-Milwaukie  
LIGHT RAIL PROJECT

 METRO

## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.4-1  
Existing Condition - Willamette River/OMSI  
View to the southwest



Figure D.4-1b  
Willamette River/OMSI: Meade-Caruthers - cable-stayed bridge  
View to the southwest

## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.4-1  
Existing Condition - Willamette River/OMSI  
View to the southwest



Figure D.4-1c  
Willamette River/OMSI: Meade-Caruthers - concrete segmental bridge  
View to the southwest

## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.4-1  
Existing Condition - Willamette River/OMSI  
View to the southwest



Figure D.4-1d  
Willamette River/OMSI: Meade-Sherman - cable-stayed bridge  
View to the southwest

 Portland - Milwaukie  
LIGHT RAIL PROJECT

 METRO



## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.4-1  
Existing Condition - Willamette River/OMSI  
View to the southwest



Figure D.4-1e  
Willamette River/OMSI: Meade-Sherman - concrete segmental bridge  
View to the southwest

## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.4-1  
Existing Condition - Willamette River/OMSI  
View to the southwest



Figure D.4-1f  
Willamette River/OMSI: Porter-Caruthers - cable-stayed bridge  
View to the southwest

 Portland - Milwaukie  
LIGHT RAIL PROJECT

 METRO

## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.4-1  
Existing Condition - Willamette River/OMSI  
View to the southwest



Figure D.4-1g  
Willamette River/OMSI: Porter-Caruthers - concrete segmental bridge  
View to the southwest

## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.4-1  
Existing Condition - Willamette River/OMSI  
View to the southwest



Figure D.4-1h  
Willamette River/OMSI: Porter-Sherman - cable-stayed bridge  
View to the southwest

 Portland - Milwaukie  
LIGHT RAIL PROJECT

 METRO

## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.4-1  
Existing Condition - Willamette River/OMSI  
View to the southwest



Figure D.4-1i  
Willamette River/OMSI : Porter-Sherman concrete segmental bridge  
View to the southwest

## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.5-1  
**Existing Condition - Willamette River/Ross Island Bridge**  
View to the north



Figure D.5-1a  
**Willamette River/Ross Island Bridge: 2003 Locally Preferred Alternative**  
View to the north

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## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.5-1  
Existing Condition - Willamette River/Ross Island Bridge  
View to the north



Figure D.5-1b  
Willamette River/Ross Island Bridge: Porter-Caruthers - cable-stayed bridge  
View to the north

## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.5-1  
Existing Condition - Willamette River/Ross Island Bridge  
View to the north

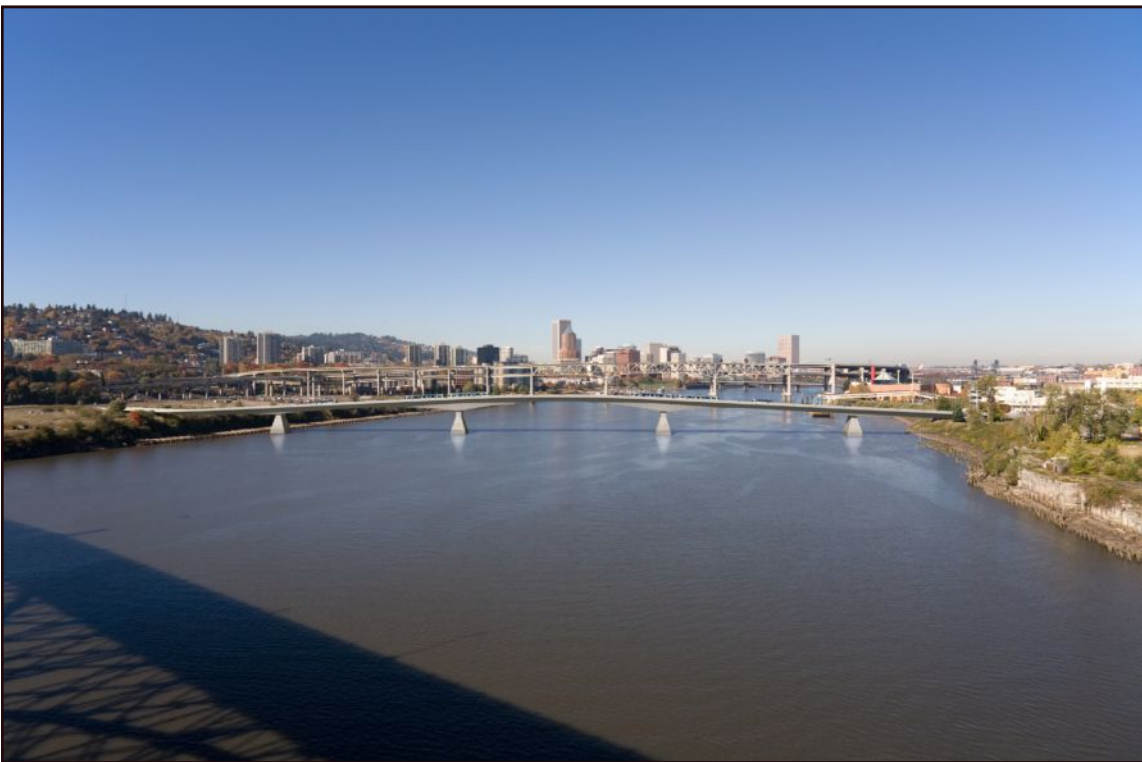


Figure D.5-1c  
Willamette River/Ross Island Bridge: Porter-Caruthers - concrete segmental bridge  
View to the north

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## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Photo taken in 2002  
for previous SDEIS

Figure D.6-1  
**Existing Condition - Rhine Street**  
View to the northwest from 17th Avenue



Photo developed in  
2002 for previous SDEIS

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Figure D.6-1a  
**Rhine Street: with station**  
View to the northwest from 17th Avenue

## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.7-1  
**Existing Condition - McLoughlin Boulevard/ODOT building**  
View to the north



Figure D.7-1a  
**McLoughlin Boulevard/ODOT building: 2003 LPA**  
View to the north

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## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.8-1  
Existing Condition - Roswell Street  
View to the west



Figure D.8-1a  
Roswell Street: Tillamook Branch alignment  
View to the west

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## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.9-1  
Existing Condition - Harrison Street  
View to the west



Figure D.9-1a  
Harrison Street: with station  
View to the west

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## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.

Figure D.9-1  
**Existing Condition - Harrison Street**  
 View to the west



Figure D.9-1b  
**Harrison Street: without station**  
 View to the west



## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.10-1  
**Existing Condition - Monroe Street**  
View to the north



Figure D.10-1a  
**Monroe Street: with station**  
View to the north

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## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.10-1  
**Existing Condition - Monroe Street**  
View to the north



Figure D.10-1b  
**Monroe Street: without station**  
View to the north



## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.11-1  
**Existing Condition - Washington Street**  
View to the north



Figure D.11-1a  
**Washington Street: with station**  
View to the north

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## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.11-1  
**Existing Condition - Washington Street**  
View to the north



Figure D.11-1b  
**Washington Street: without station**  
View to the north

## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.12-1  
Existing Condition - McLoughlin/Lake Road  
View to the north



Figure D.12-1a  
McLoughlin/Lake Road: Lake Road Park and Ride  
View to the north

## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.13-1  
**Existing Condition - 21st Avenue/Lake Road**  
View to the north



Figure D.13-1a  
**21st Avenue/Lake Road: Lake Road station**  
View to the north

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## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.14-1  
Existing Condition - Kronberg Park  
View to the north



Figure D.14-1a  
Kronberg Park: at-grade design option  
View to the north



## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.14-1  
**Existing Condition - Kronberg Park**  
View to the north



Figure D.14-1b  
**Kronberg Park: grade-separated design option**  
View to the north



## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.15-1  
**Existing Condition - McLoughlin/Bluebird Street**  
View to the south



Figure D.15-1a  
**McLoughlin/Bluebird Street: at-grade design option**  
View to the south

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## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.15-1  
Existing Condition - McLoughlin/Bluebird Street  
View to the south



Figure D.15-1b  
McLoughlin/Bluebird Street: grade-separated design option  
View to the south

## Visual Simulations

Note: These simulations have been prepared to illustrate alignment alternatives for the Supplemental Draft Environmental Impact Statement (SDEIS). These illustrations are based on a preliminary level of design (approximately 5%) and are subject to change. See Chapter 2 of this SDEIS for a description of the proposed alternatives illustrated in these simulations.



Figure D.16-1  
Existing Condition - McLoughlin/Park Avenue  
View to the north



Figure D.16-1a  
McLoughlin/Park Avenue: Park Avenue Park and Ride  
View to the north

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**Appendix E**

**List of Preparers**



**Portland-Milwaukie  
Light Rail Project**

*May 2008*

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## APPENDIX E. LIST OF PREPARERS

### A. Public Agencies

#### **Federal Transit Administration (FTA), Region 10 (Federal lead agency) Seattle, Washington.**

R.F. Krochalis, Regional Administrator  
Linda Gehrke, Deputy Regional Administrator  
Theodore Uyeno, Legal Counsel  
Daniel Drais, Environmental Manager  
Joseph Ossi, Environmental Planner  
Thomas Radmilovich, Community Planner

#### **Metro, (Local lead agency) Portland, Oregon.**

Matt Bihn, Senior Transportation Planner

B.A., Economics, Georgetown University, 1992

Richard Brandman, Deputy Planning Director

B.A., Economics, University of Maryland, 1972

Andy Cotugno, Planning Director

B.S., City and Regional Planning, California Polytechnic State University, 1974

Tim Collins, Senior Transportation Planner

B.S., Economics, Portland State University

Joyce Felton, Associate Transportation Planner

B.A., Planning, Public Policy and Management, University of Oregon 1995

Master of Urban and Regional Planning, Portland State University, 1998

Crista Gardner, Senior Transportation Planner

B.A, Urban Studies and Geography, Macalester College, 1999

Alan Gunn, Associate Transportation Planner

B.S., Geography, University of North Texas, 2004

Kyle Hauger, Senior Transportation Planner

B.A., Economics, Willamette University, 1992

Master of Urban and Regional Planning., Portland State University 1998

Scott Higgins, Principal Transportation Planner

BA, University of Oregon, 1979

Dana Lucero, Associate Public Affairs Specialist  
B.A., Environmental Studies and B.A. Communication, University of California,  
Santa Barbara, 1998  
M.S., Urban and Regional Planning, University of Wisconsin-Madison, 2002

Tony Mendoza, Transit Project Analysis Manager  
B.A., Public Administration, San Diego State University, 1990

Brian Monberg, Associate Transportation Planner  
B.A., Philosophy and Computer Applications, University of Notre Dame, 1999  
Master of Urban and Regional Planning, Portland State University, 2008

Kelsey Newell, Administrative Specialist  
B.A., Mathematics, Linfield College, 2006

Ross Roberts, Transit Program Director  
B.S. Environmental Science, Willamette University, 1980  
Master of Urban Planner, Portland State University, 1985

Bill Stein, Senior Transportation Modeler  
B.A., Sociology, Clemson University, 1990  
M.S., Civil Engineering, Georgia Institute of Technology, 1996  
Master of City Planning, Transportation, Georgia Institute of Technology, 1996

Jamie Snook, Senior Transportation Planner  
B.S., Geography and Regional Planning, Westfield State College, 1994

Jennifer Tuerk, Administrative Specialist  
B.A., Political Science, Lewis and Clark College, 2001

Mark Turpel, AICP, Principal Planner  
B.A., Economics, University of California, 1971  
Master of City Planning, San Diego State University, 1975

Bridget Wiegart, Transit Project Manager  
B.A., History, Reed College  
M.A., Urban Policy, Graduate School of Management and Urban Professions,  
New School for Social Research

Karen Withrow, Senior Public Affairs Specialist  
B.A., Business, Western Washington University, 1998

**Tri-County Metropolitan Transportation District of Oregon (TriMet), Portland, Oregon.**

Sean Batty, ASLA, Corridor Design Manager, TriMet

Bachelor of Landscape Architecture, cum laude, University of Washington, 1996

Bachelor of Arts in Psychology, University of Washington, 1994

David Chiara, LRT Conceptual Design and Cost Estimation

American Society of Professional Estimators, Past-President

John Griffiths, Manager of Rail Operations and Planning

B.S., Transportation Engineering and Planning, Worcester Polytechnic, 1976.

M.A., Civil Engineering, University of Virginia, 1979.

Alan Lehto, Manger Transit Corridor Planning (Transit Analysis)

B.A., Psychology, Cornell University, Ithaca NY 1991

Master of Urban and Regional Planning., Portland State University, 1997

M.S., Psychology, University of Wisconsin – Madison, 1992

Claire Potter (Financial Analysis)

B.A., Political Science, Lewis and Clark College, 1978.

Joseph Recker, Planner II

Dave Unsworth, Project Development Manager

B.A., Urban Studies, College of Wooster, 1982

Ric Vrana, Planning Technician

B.A., History, University of Akron, 1975.

M.A., Geography, University of Washington, 1985

Ph.D., Geography, University of Washington, 1997

Alonzo Wertz, Permits Coordinator (Environmental Review)

B.S., Urban Planning, University of Washington, 1970.

M.U.P., Urban Planning, University of Washington, 1972.

**City of Portland, Oregon**

Tom Armstrong, Planner

B.S., Environmental Science, University of California, Berkeley

M.A., Land Resources, University of Wisconsin, Madison

Steve Iwata, Centers and Corridors Section Manager

B.A., Geography, UCLA

Master's Regional and City Planning-Ohio State University

Paul Smith, Transportation Planning Division Manager

B.A., College of Charleston

Master of City Planning, University of California, Berkeley

### **City of Milwaukie, Oregon**

Kenny Asher, Director, Community Development and Public Works  
B.S., Telecommunication, University of Florida  
M.A., Architecture, University of Oregon

## **B. Consultant Staff**

### **Air Sciences, Inc**

Kent Norville, Air Quality  
B.S., Physics, California Polytechnic State University, San Luis Obispo  
Ph.D., Geophysics, University of Washington

### **Archaeological Investigations Northwest**

Michael J. Boynton, M.A.  
B.A., Anthropology, Chico State University  
M.A., Anthropology, California State University

John L. Fagan, Ph.D., R.P.A.  
Register of Professional Archaeologists (R.P.A.)  
A.A., Anthropology, Central Oregon Community College  
B.A., Anthropology, University of Oregon  
M.A., Anthropology, University of Oregon  
Ph.D., Anthropology, University of Oregon

Jo Reese, M.A., R.P.A.  
Register of Professional Archaeologists (R.P.A.)  
B.S., Anthropology, Portland State University  
M.A., Anthropology, Washington State University

### **CH2M Hill**

Kristin Hull, Public Involvement Team Leader  
B.S., Politics, Willamette University, 1999  
M.P.A., University of Texas at Austin, 2001

### **David Evans and Associates**

David Knowles, Consultant Team Leader, Station Area Planning Task Leader  
B.A., Economics, Lewis and Clark College  
J.D., Law, Northwestern School of Law

Suzanne Carey, Visual  
B.A., Community Design and Planning (Dean's List), University of Washington, 1994  
M.L.A., Landscape Architecture (with honors), University of Washington, 2002

Michael Christy, GIS

Field Surveying, North Idaho College, 1996  
AutoCAD Level I, Spokane Community College, 2001

Melissa Foltz, Graphics

B.S., Horticulture Science/Landscape Design, Montana State University, 2000

Tina Osterink, Land Use and Economic Development

B.S., Biology/Ecology, University of California, 1997  
M.C.R.P., Community and Regional Planning, University of Oregon, 2004

Brynn Reimann, Visual

B.L.A., Landscape Architecture, University of Oregon, 2006

Ethan Rosenthal, Wetland and Plant Community

B.S., Agricultural Economics, Cornell University, 1992  
M.S., Environmental Science (Water Resources Emphasis), Indiana University, 1998

Anneke Van der Mast, Administrative

B.A., History, University of Oregon  
B.A., Sociology, University of Oregon

Christina Weber, Displacement, Acquisitions, and Replacements

B.A., Video Production/Communication, 1991, George Fox College  
IRWA Member since 1996, Additional IRWA coursework, 1996-1997

Mary Weber, Land Use and Economic Development

B.S., Sociology, Portland State University, 1983  
M.U.P., Urban Planning, Portland State University, 1988

John Wiebke, Energy

B.S., Business Administration, Oregon State University, 1986  
M.U.P., Urban Planning, State University of New York, 1994

Gillian Zacharias, Neighborhoods and Communities, Environmental Justice

B.A. History, University of Colorado, 1982  
M.A., International Relations and Business, John Hopkins University, 1986

### **DKS Associates**

Ransford McCourt, Transportation Analysis Project Manager

B.S., Civil Engineering, Oregon State University, 1978  
M.S., Transportation Engineering, University of California at Berkeley, 1979

Allan Snook, Transportation Analysis

B.A., Urban Planning, University of Washington  
B.A., Facilities Management, University of Washington

**IBI Group**

Gary Hartnett, Urban Land, Facilities, Transportation, and Systems  
Bachelor of Architecture, Boston Architectural Center

**Jeanne Lawson Associates, Inc.**

Jamie Damon, Public Involvement  
Master of Conflict Resolution, Candidate, School for International Training (VT)  
179 hours toward a B.A. (incomplete), Speech Communication, Portland State University

**Michael Minor and Associates**

Michael Minor, Noise and Vibration  
B.A., Physics, Whitman College  
B.A., Math, Whitman College

**Parametrix**

Daryl Wendle, EIS Task Leader  
B.A., English, University of Oregon  
M.A., English, New York University

Christopher Collins, Water Resources Lead  
Master of Environmental Management, Duke University  
B.S. Biology, The Citadel

William Hall, Ecosystems Lead  
B.S., Biology, Michigan State University  
M.S., Candidate, Portland State University

Julie Osborne, Historic Resources  
B.S., Architectural Studies, University of Utah  
M.S., Architectural Studies, University of Utah

Eric Roth, Environmental Health  
B.S., Geology, Rider University  
M.S., Geology, Michigan State University

**SERA/Urbsworks**

Marcy McInelly, Urban Design  
Bachelor of Architecture, University of Oregon

Ben Nielsen, Urban Design  
B.S., Architecture, Washington University (St. Louis)  
Master of Architecture, University of Oregon

**Zenn and Associates**

Doug Zenn, Public Involvement  
B.A., Journalism, Ohio University



## **C. Advisory Groups**

### **Technical Advisory Committee**

Tom Armstrong, Planner, Portland Planning Bureau  
Kenny Asher, Director, Community Development & Public Works, City of Milwaukie  
Ralph Drewfs, Engineer, Oregon Department of Transportation  
Mauricio Leclerc, Transportation Planner, Portland Department of Transportation  
Denyse McGriff, Project Coordinator, Portland Development Commission  
Geraldene Moyle, Senior Project Coordinator, Portland Development Commission  
Karen Schilling, Planning Director, Land Use & Transportation Planning, Multnomah County  
Dave Unsworth, Project Manager, TriMet  
Ron Weinman, Principal Transportation Planner, Clackamas County  
Bridget Wieghart, Corridor Planning Manager, Metro

### **Project Management Group**

Ed Abrahamson, Ken Born, Multnomah County  
Richard Brandman, Metro  
Elissa Gertler, Clackamas County  
Nancy Kraushaar, City of Oregon City  
Neil Mcfarlane, TriMet  
Ross Roberts, Metro  
Paul Smith, PDOT  
Mike Swanson, City Of Milwaukie  
Cheryl Twete, Patrick Quinton, Portland Development Commission  
Bridget Wieghart, Metro  
Rian Windsheimer, ODOT, Region 1

### **Steering Committee**

Sam Adams, Commissioner, City of Portland  
Jim Bernard, Mayor, City of Milwaukie  
Richard Brandman, Deputy Planning Director, Metro  
Carlotta Collette, Councilor, Metro  
Fred Hansen, General Manager, TriMet  
Sue Keil, Director, PDOT  
Robert Liberty, Councilor, Metro  
Alice Norris, Mayor, City of Oregon City  
Lynn Ann Peterson, Vice Chair, Clackamas County Board of Commissioners  
Maria Rojo de Steffey, Commissioner, Multnomah County Board of Commissioners  
Jason A Tell, Region 1 Manager, ODOT  
Rick Williams, Chair of Citizen Advisory Committee, Lloyd District TMA/BPM Development LLC

**Citizens Advisory Committee**

David Aschenbrenner

Mike Bolliger

Valerie Chapman

Barbara Dimick

David Edwards

Lisa Ferguson

Michael Gebhardt

Susan Hartnett

Christopher Heaps

Gregory Hemer

Joanna Jenkins

Michole N Jensen

Theresa Langdon

Lance Lindahl

Rod Mcdowell

Susan Pearce

Nicole Peterson

Valeria Ramirez

Joe Traverso

Rick Williams

Dan Zalkow