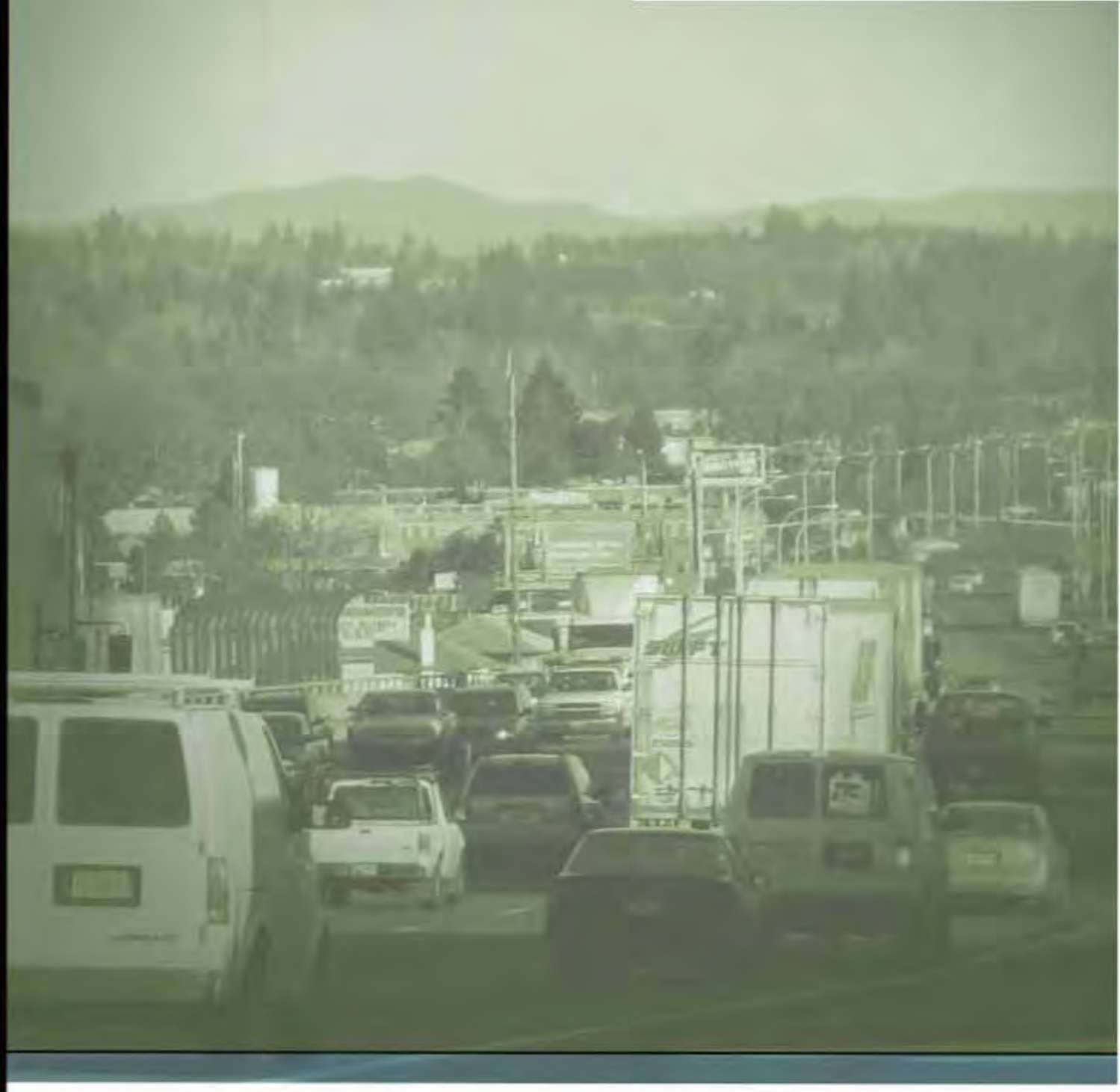


Sunrise Project, I-205 to Rock Creek Junction

Supplemental Draft Environmental Impact Statement and Section 4(f) Evaluation

October 2008

Oregon Department of Transportation

Clackamas County

U.S. Department of Transportation
Federal Highway Administration

Alternative format availability: In compliance with the Americans with Disabilities Act, alternative forms of this document will be made available on request. Contact Emily Moshofsky at ODOT (503-731-8535).

FHWA-OR-EIS-08-01-DS

Sunrise Project: I-205 to Rock Creek Junction
Clackamas County, Oregon

Supplemental Draft Environmental Impact Statement and Section 4(f) Evaluation

Submitted Pursuant to 42 U.S.C. 4332 (2) (c) and where applicable, 49 U.S.C. 303
by U.S. Department of Transportation, Federal Highway Administration (FHWA)
Oregon Department of Transportation (ODOT)

Jason Tell, ODOT Region 1 Manager — Date of Approval: 9/22/08

Phillip A. Ditzler, Division Administrator, FHWA — Date of Approval: 9/22/08

The following persons may be contacted for additional information concerning this document:

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ODOT Region 1
123 NW Flanders Street
Portland, OR 97209-4012
503-731-8535

Michelle Eraut
Federal Highway Administration
530 Center Street NE, Suite 100
Salem, OR 97301
503-587-4716

The Oregon Department of Transportation (ODOT) and Clackamas County propose to build a new, east-west oriented, limited-access highway—called the Sunrise Project—from Interstate 205 (I-205) to the Rock Creek Junction in Clackamas County. The proposed Sunrise Project would be part of the state highway network (as defined in the Oregon Highway Plan), connecting I-205, the Milwaukie Expressway, and OR 212/224. The proposed highway would have six through-lanes plus two auxiliary lanes. The proposed Sunrise Project would become the designated OR 212/224, with the existing OR 212/224 potentially becoming a county arterial. The estimated costs depend on the alternative and design option chosen. Total costs consist of right-of-way acquisition and actual construction costs. Total project costs are estimated to range from $1,306 to $1,605 million (in 2013 dollars). Construction is planned to begin in 2013. The project may be phased, but no plans for phasing are proposed at this time. Key issues in building the project are protecting a significant wildlife corridor and addressing noise impacts to a large residential area to the north.

The major beneficial impacts from the project would be significantly slowing the growth of congestion and improving safety on I-205 and OR 212/224. Building the project would support planned growth in this area of Clackamas County. Major expected impacts on the environment include the conversion of approximately 500 acres of land to highway use; the relocation of about 60 to 70 businesses and 70 residences; the creation of 175 noise-impacted residential properties; the decline of the rural visual quality around Rock Creek; the removal of about 100 acres of wildlife habitat, 32 acres of wetland, and up to three historic resources; and the creation of over 100 acres of new impervious surface.

Minor impacts would involve the risk of encountering hazardous materials during construction, difficulties in managing soil and embankments due to nearby landslides and wet and loose soils, the costs and disruption from moving utility facilities, a decline in visual quality around I-205 to SE 142nd Avenue, and the acquisition of 0.18 acre of the recreation field at Clackamas Elementary School.

October 2008

TO THOSE WHO HAVE EXPRESSED INTEREST IN THE

Sunrise Project, I-205 to Rock Creek Junction

Supplemental Draft Environmental Impact Statement and Section 4(f) Evaluation

Clackamas County, Oregon

Key No. 12454

Thank you for your interest in the proposed Sunrise Project. The Federal Highway Administration, Oregon Department of Transportation, and Clackamas County have completed **the Supplemental Draft Environmental Impact Statement and Section 4(f) Evaluation (SDEIS)** for the proposed project, which is attached for your review and comment. This document supplements the original Draft Environmental Impact Statement for the Sunrise Corridor issued in 1993. State and federal regulations require agencies to solicit comments in a timely manner, so we request your reply **within 45 days** of the date of this letter. If comments are not received by **November 28, 2008,** it will be assumed you do not wish to comment on the EIS for the proposed project.

Please mail or email your comments to:

Emily Moshofsky, Environmental Project Manager
Oregon Department of Transportation
ODOT Region 1
123 NW Flanders St.
Portland, OR 97209-4012

emily.a.moshofsky@odot.state.or.us

Public hearings will be held in mid-November in Clackamas County (locations on cover). The hearing will be facilitated in an Open House format, displaying maps and pertinent project information to answer your questions about the SDEIS and/or the project. Formal testimony (oral and/or written, or dictated) will be taken as well.

If you have questions or need additional information concerning the proposed project, please contact **Thomas Picco (ODOT Project Leader) at: (503) 731-8230**.

Thank you for your participation,

Jason Tell
ODOT Region 1 Manager

Comments Due By November 28, 2008

NOTICE OF AVAILABILITY

This Supplemental Draft EIS and supporting technical documents are available for review at the following locations:

Clackamas County Planning Department
Until November 6, 2008:
Sunnybrook Service Center
9101 SE Sunnybrook Boulevard
Clackamas, OR 97015
Starting November 10, 2008:
Development Services Building
150 Beavercreek Road
Oregon City, OR 97045

City of Happy Valley
12915 SE King Road
Happy Valley, OR 97236

City of Damascus
19920 SE OR 212
Damascus, OR 97015

Clackamas Corner Library
(near Clackamas Town Center)
11750 SE 82nd Avenue, Suite D
Portland, OR 97266

Federal Highway Administration (FHWA) Oregon Division
530 Center Street, NE, Suite 100
Salem, OR 97301

Oregon Department of Transportation (ODOT)
Region 1
123 NW Flanders Street
Portland, OR 97209

Metro Regional Center
600 NE Grand Avenue
Portland, OR 97232

ODOT Maintenance Building
9200 SE Lawnfield Road
Clackamas, OR 97015

Camp Withycombe
10101 SE Clackamas Road
Clackamas, OR 97015

North Clackamas Chamber of Commerce
7740 SE Harmony Road
Milwaukie, Oregon 97222

Multnomah County Library
801 SW 10th Avenue
Portland, Oregon 97205

Oregon State Library
250 Winter St. NE
Salem, Oregon 97301-3950

ODOT Geo-Environmental Section
355 Capitol Street NE
Salem, OR 97301

The documents are also available on the project website: http://www.sunrise-project.org/

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ACRONYMS AND ABBREVIATIONS

AADT	Annual Average Daily Traffic
ACHP	Advisory Council on Historic Preservation
ADT	Average Daily Traffic
API	Area of Potential Impact
BG	Block Group (Census)
BP	Business Park
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CETAS	Collaborative Environmental and Transportation Agreement for Streamlining
CFR	Code of Federal Regulations
CIA	Clackamas Industrial Area
CO	Carbon monoxide
CT	Census Tract
dBA	A-weighted decibels
DEIS	Draft Environmental Impact Statement
DSL	Department of State Lands
ECSI	Environmental Cleanup Site Information System
EFU	Exclusive Farm Use zoning designation
EIS	Environmental Impact Statement
EJ	Environmental Justice
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAR	floor to area ratio
FEIS	Final Environmental Impact Statement
FHWA	Federal Highway Administration
gsf	gross square feet
GHG	Greenhouse gases
GIS	Geographic Information System
HCT	High Capacity Transit
HPA	High-probability area
I-205	Interstate 205
L_{eq}	Hourly Equivalent Noise Level
LOS	Level of Service
LUST	Leaking Underground Storage Tank
Metro	Metropolitan Service District (Portland)
MP	mile point
mph	miles per hour
MSATs	mobile source air toxics
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act

NFA	No Further Action
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NO_x	nitrogen oxides
NPL	National Priority List
NRHP	National Register of Historic Places
O_3	Ozone
OAR	Oregon Administrative Rule
ODEQ	Oregon Department of Environmental Quality
ODOT	Oregon Department of Transportation
PATA	Portland Air Toxics Assessment
PCBs	Polychlorinated Biphenyls
PEM	palustrine emergent wetland
PFO	palustrine forested wetland
PSS	palustrine scrub-shrub wetland
ROD	Record of Decision
RCRA	Resource Conservation and Recovery Act
RTP	Regional Transportation Plan (Metro)
RI	Remedial Investigation
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SDEIS	Supplemental Draft Environmental Impact Statement
SHPO	State Historic Preservation Office
SPIS	Safety Priority Index System
SPUI	Single Point Urban Interchange
STIP	Statewide Transportation Improvement Program
T&E	Threatened and Endangered
TDM	Transit/Transportation Demand Management
TSM	Transit/Transportation System Management
UGB	Urban Growth Boundary
UPRR	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
UST	Underground Storage Tank
v/c	Volume/capacity ratio
VHD	Vehicle Hours of Delay
VMT	vehicle miles traveled
vpd	vehicles per day
VOC	Volatile Organic Compound

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The Sunrise Project Technical Reports are on the DVD attached to the back cover of this document. The Transportation Technical Report Appendixes are available on request due to the large file size.

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How to Use This Document

This SDEIS has three main parts: an Executive Summary, the SDEIS document (with Section 4(f) Evaluation), and the technical reports.

Executive Summary

The Executive Summary presents the problem to be solved, the proposed action, its history, and the public involvement program. In addition, this part of the SDEIS summarizes the alternatives (with figures), their expected impacts and mitigation measures, and the required permits and approvals.

SDEIS Document

The SDEIS consists of the Executive Summary and four chapters as follows:

Chapter 1—Purpose and Need

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Chapter 3—Affected Environment, Environmental Consequences, and Potential Mitigation

Chapter 4—Additional Impacts (Construction, Cumulative, and Unavoidable) and Applicable Laws

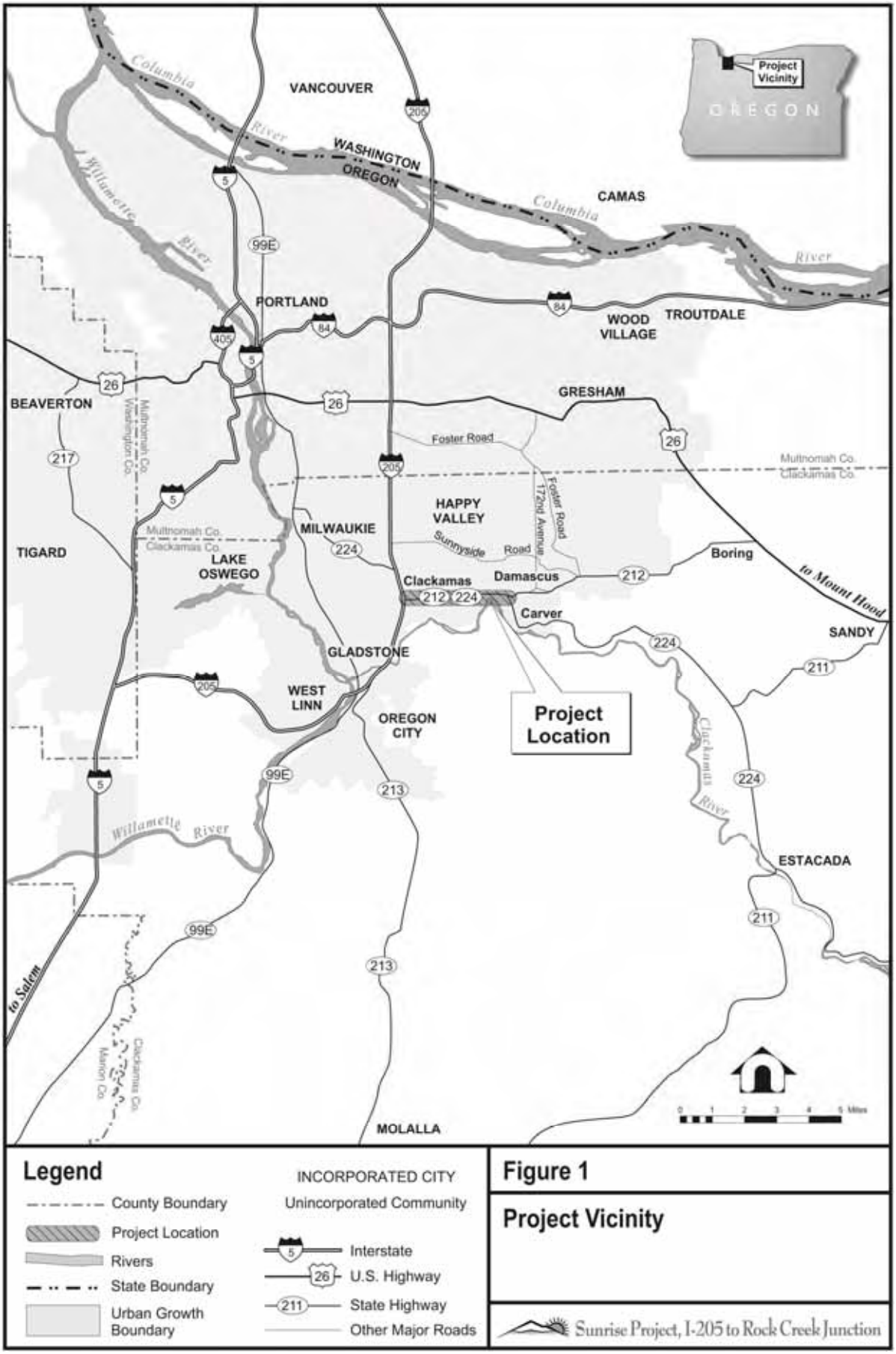
The SDEIS presents the project's Purpose and Need as required by NEPA, describes the details of the alternatives evaluated, and summarizes the analysis of the alternatives contained in the supporting technical reports. This SDEIS combines a discussion of the affected environment and direct environmental consequences rather than discussing those sections separately. The SDEIS focuses on the conclusions of the analysis of alternatives and leaves a lot of technical data and analysis in the technical reports. To aid in finding where impacts are discussed by individual **alternative** and **design option, the alternative and design option** are in bold face.

The beginning of each section of Chapter 3 lists the information contained in the related technical report. Colored text boxes present additional information or terminologies.

Figures in Chapter 3 are at the end of each section.

Technical Reports

Technical studies on 15 topics were produced and are contained on the DVD attached to the inside back cover of the SDEIS. The technical reports support the SDEIS with detailed information about the methodology, existing conditions, and results of the analysis. The technical reports are important for determining whether sufficient analyses of the alternatives have been conducted.


Project Vicinity
OREGON
VANCOUVER
WASHINGTON
OREGON
Columbia River
Willamette River
CAMAS
PORTLAND
WOOD VILLAGE
TROUTDALE
GRESHAM
BEAVERTON
TIGARD
LAKE OSWEGO
MILWAUKIE
HAPPY VALLEY
Foster Road
172nd Avenue
Sunnyside Road
Clackamas
Damascus
Boring
Carver
SANDY
to Mount Hood
GLADSTONE
WEST LINN
OREGON CITY
Project Location
Clackamas River
ESTACADA
Willamette River
to Salem
MOLALLA
Multnomah Co.
Washington Co.
Clackamas Co.
Marion Co.
99E
5
205
26
84
405
217
224
212
213
211
0 1 2 3 4 5 Miles
Legend
County Boundary
Project Location
Rivers
State Boundary
Urban Growth Boundary
INCORPORATED CITY
Unincorporated Community
Interstate
U.S. Highway
State Highway
Other Major Roads
Figure 1
Project Vicinity
Sunrise Project, I-205 to Rock Creek Junction



Sunrise Project, I-205 to Rock Creek Junction

Supplemental Draft Environmental Impact Statement and Section 4(f) Evaluation

Executive Summary

October 2008

Oregon Department of Transportation

Clackamas County

U.S. Department of Transportation
Federal Highway Administration

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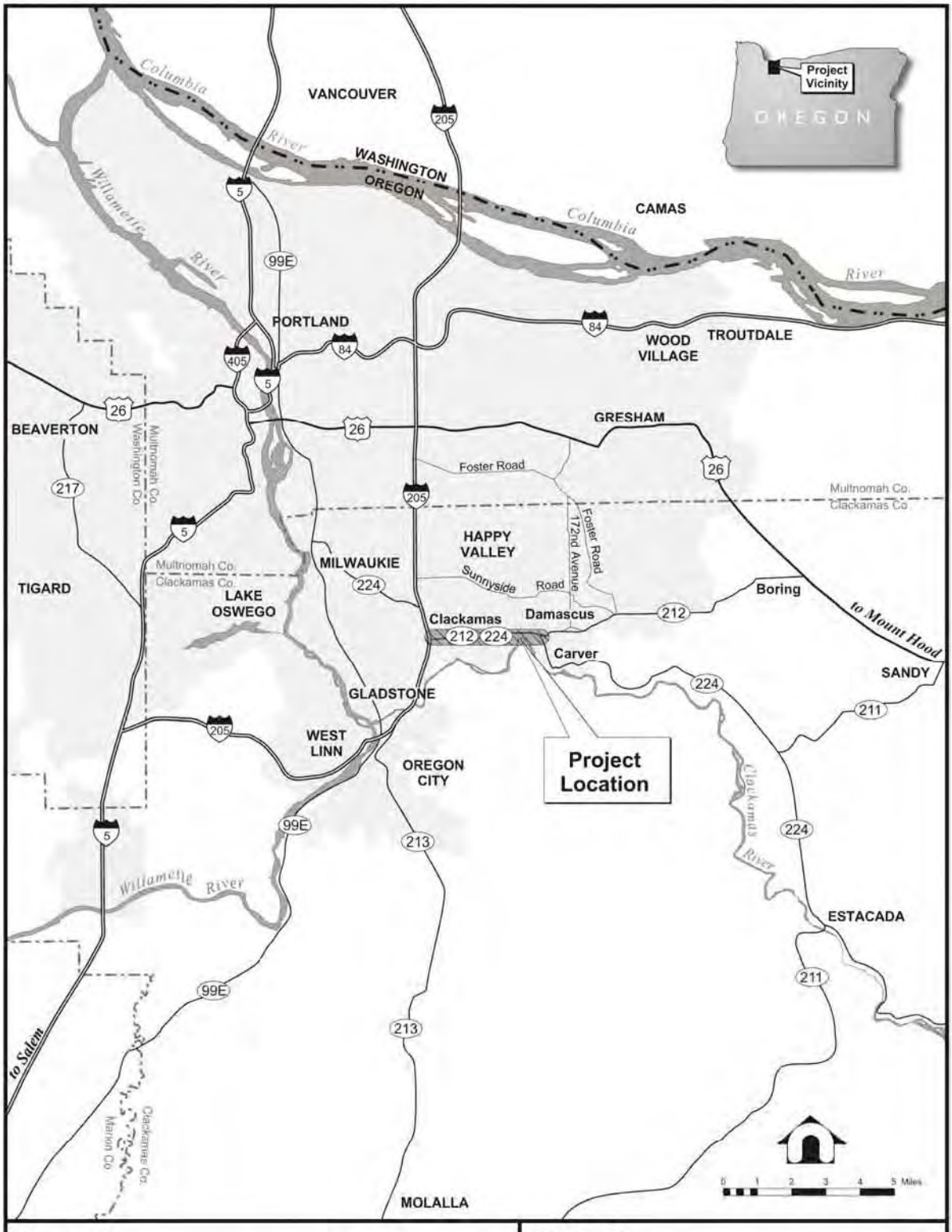
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Figures in Chapter 3 are at the end of each section.

Technical Reports

Technical studies on 15 topics were produced and are contained on the DVD attached to the inside back cover of the SDEIS. The technical reports support the SDEIS with detailed information about the methodology, existing conditions, and results of the analysis. The technical reports are important for determining whether sufficient analyses of the alternatives have been conducted.



Legend

- County Boundary
- Project Location
- Rivers
- State Boundary
- Urban Growth Boundary
- INCORPORATED CITY
- Unincorporated Community
- 5 Interstate
- 26 U.S. Highway
- 211 State Highway
- Other Major Roads

Figure 1

Project Vicinity

Sunrise Project, I-205 to Rock Creek Junction

EXECUTIVE SUMMARY

The Problem

The existing OR 212/224 corridor, which forms the main east-west travel route between I-205 and Rock Creek Junction, has serious congestion and safety problems. Residential and business traffic is severely delayed during peak periods, with travel speeds as low as four miles per hour at several locations along OR 212/224. (The amount of congestion is discussed in more detail in the Transportation Section.)

Between 2005 and 2030, the region is expected to accommodate about 50 percent more households and nearly 70 percent more new jobs, while the proposed Sunrise Project would serve an area that is expected to accommodate almost double the current number of households and jobs. The transportation study area is forecasted to grow from 16,000 to 32,000 households and from 48,000 to 89,000 jobs.[1]

The planned population and employment growth will worsen existing problems. The duration of congestion and the extent of queuing is expected to more than double. By 2030 the resulting traffic demand would far exceed the capacity that the current four lanes can be expected to handle safely and efficiently.

Proposed Action

The Oregon Department of Transportation (ODOT) and Clackamas County propose to build a new, east-west oriented, limited-access highway between Interstate 205 (I-205) and the Rock Creek Junction (where OR 212 and 224 diverge to the east and south). See Figure 1, Project Vicinity (p. x) and Figure 2, Project Area (p. ES-2).

Project Location and Study Area

The general location of the new facility, named the proposed Sunrise Project, is depicted in Figure 1, Project Vicinity (p. x). The proposed Sunrise Project would extend approximately five miles between SE Johnson Road on the west end and SE 172nd Avenue on the east end (Figure 2, Project Area, p. ES-2). I-205 and Rock Creek Junction are the limits of the project, but extending it to SE Johnson Road and SE 172nd Avenue will allow the project to transition to the Milwaukie Expressway and OR 212. The project is often discussed by subarea. Three subareas are outlined on Figure 2 (p.ES-2) and cover the following geographic areas:

- The I-205 Interchange area extends from west of I-205 to Camp Withycombe.
- The Midpoint area extends from Camp Withycombe to SE 152nd Avenue.
- The Rock Creek Junction area stretches from SE 152nd Avenue to SE 172nd Avenue.

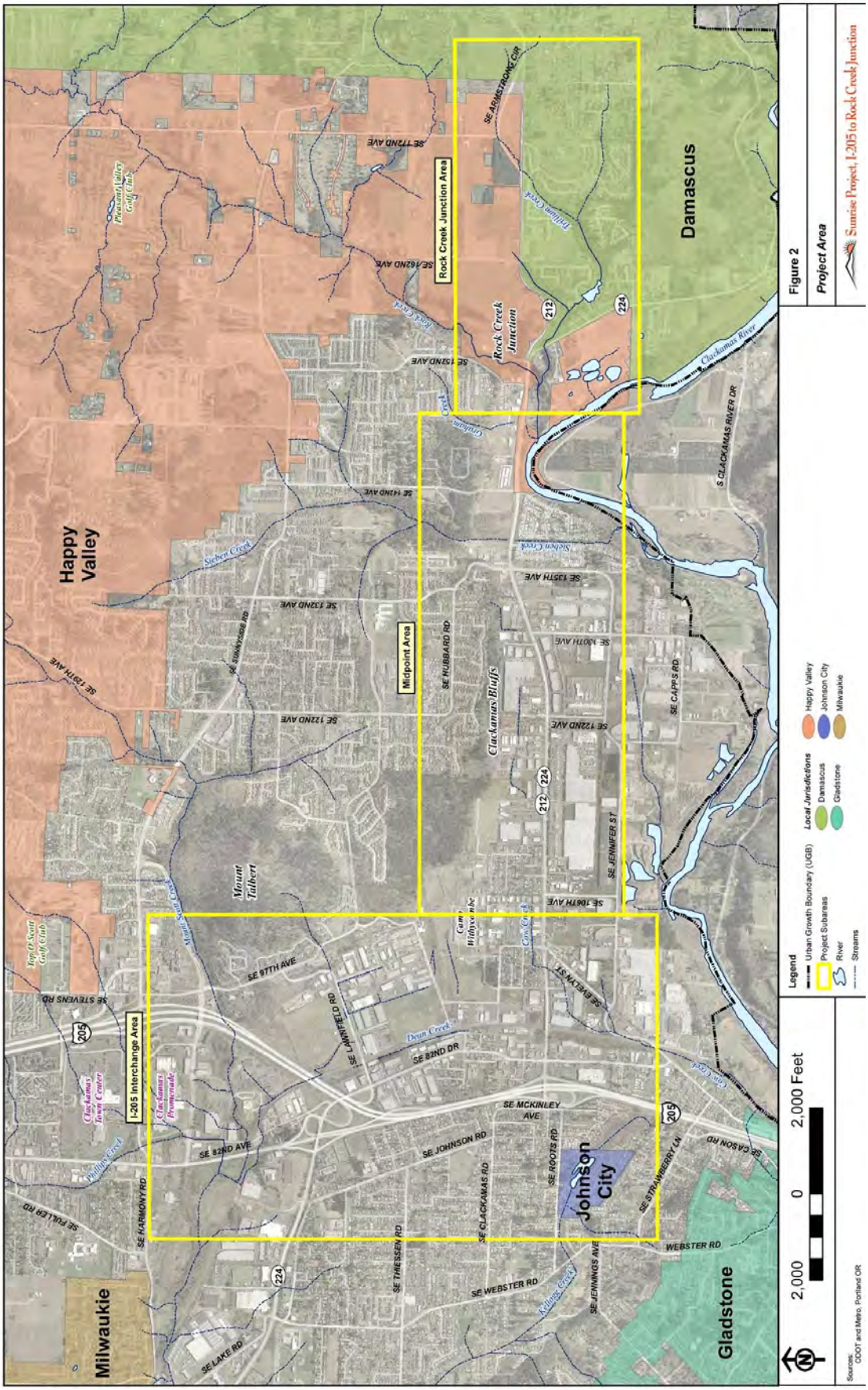
The proposed Sunrise Project would connect I-205, the Milwaukie Expressway (OR 224), SE 82nd Avenue/Drive, and OR 212/224. It would have six through-lanes plus two auxiliary lanes, so it would be as wide as eight lanes across in some locations. The I-205/Clackamas Interchange would be reconfigured with new ramps and access points, and a new interchange would be built at Rock Creek Junction. There would be no direct property access or local street access to the proposed Sunrise Project.

Project Purpose and Need

Project Purpose

The purpose of the proposed Sunrise Project is to effectively address the existing congestion and safety problems in the OR 212/224 corridor between its interchange with I-205 and Rock Creek Junction, and to serve the growing demand for regional travel and access to the state highway system.

[1] *Data in this paragraph derive from Metro's regional traffic demand model and are discussed in the Sunrise Project Transportation Technical Report, Section 6.4.1.*


Happy Valley
Damascus
Milwaukie
Gladstone
Johnson City
Clackamas Bluffs
Mount Talbert
Rock Creek Junction Area
Midpoint Area
I-205 Interchange Area
Rock Creek Junction
SE 172ND AVE
SE 162ND AVE
SE 152ND AVE
SE 142ND AVE
SE 132ND AVE
SE 122ND AVE
SE 135TH AVE
SE 100TH AVE
SE 106TH AVE
SE 97TH AVE
SE 82ND DR
SE 82ND AVE
SE MCKINLEY AVE
SE JOHNSON RD
SE WEBSTER RD
WEBSTER RD
SE LAKE RD
SE ARMSTRONG CIR
SE HUBBARD RD
SE CAPPS RD
SE JENNIFER ST
SE 122ND AVE
SE 130TH AVE
SE SUNNYSIDE RD
SE STEVENS RD
SE HARMONY RD
SE FULLER RD
SE LINWOOD RD
SE THIESSEN RD
SE CLACKAMAS RD
SE ROOTS RD
SE JENNINGS AVE
SE STRAWBERRY LN
SE CASON RD
S CLACKAMAS RIVER DR
Clackamas River
Mount Scott Creek
Sieben Creek
Deer Creek
Phillips Creek
Kellogg Creek
Rock Creek
Pleasant Valley Golf Club
Top O' Scott Golf Club
Clackamas Town Center
Clackamas Promenade
Figure 2
Project Area
Sunrise Project, I-205 to Rock Creek Junction
Legend
Urban Growth Boundary (UGB)
Project Subareas
River
Streams
Local Jurisdictions
Happy Valley
Johnson City
Milwaukie
Damascus
Gladstone
2,000
0
2,000 Feet
Sources:
ODOT and Metro, Portland OR

Project Need

The project purpose is demonstrated with the following Statement of Need:

- OR 212/224 between I-205 and Rock Creek Junction is currently experiencing unacceptable levels of congestion and delay during the peak travel periods. In 2030, the projected traffic volume will far exceed the volume that the existing four-lane arterial can be expected to handle at an acceptable level of service.[2]
- By 2030, the numbers of households and jobs in the area served by this section of OR 212/224 are expected to increase by 136 percent and 85 percent, respectively.[3]
- Both the northbound and southbound weave sections of I-205 between 82nd Avenue and OR 212/224 are approaching capacity, resulting in frequent stop-and-go movements, difficulty in changing lanes, and long queues forming because of minor incidents. By the year 2015, this section of I-205 will exceed its design capacity and the length of these stop-and-go movements will continue to grow if no action is taken. Traffic traveling on the Milwaukie Expressway (OR 224) heading east on OR 212/224, as well as the reverse direction, must either use the above section of I-205 or the currently congested 82nd Drive.[4]
- OR 212/224 near I-205 is ranked in the top 10 percent of state routes for vehicle crash rate. Over 500 hundred vehicle collisions were reported for this area during the five-year period of 1998 through 2002. The high crash rate is attributed to severe congestion and roadway deficiencies. Inadequate bicycle and pedestrian facilities reduce the safety and connectivity for these modes of travel in the project area.[5]
- OR 212/224 is designated as a statewide and regional freight route with 12 percent of the traffic on the project section of this highway being trucks. OR 212/224 serves the Clackamas Industrial Area, which is a major freight distribution center for the Northwest. This area is expected to nearly double its employment by the year 2015. Long delays are currently reported for trucks accessing I-205 from the distribution center.[6]

The Transportation Technical Report on the attached DVD contains data on and an extensive discussion of safety and the impacts of projected growth on traffic on I-205 and OR 212/224. The Transportation section of the SDEIS also discusses the key issues of planned growth, congestion, and safety.

[2] *Based on field observations in 2004/5, segments of OR 212/224 within the Sunrise project area experienced approximately four hours of daily congestion. There are two intersections that are currently operating above the volume/capacity ratio standard of 0.90 established in the 1999 Oregon Highway Plan for this type of facility. In 2030, based on regionally adopted land use and employment projections and Metro's regional travel demand projections, without the proposed Sunrise Project, the same roadway is expected to experience about nine hours of congestion. See Chapter 6 of Sunrise Project Transportation Technical Report.*

[3] *Based on initial growth projections developed by Metro in 2005. The predicted increase in jobs and population in the Transportation Technical Report and in the Transportation section is different from this forecast from 2004. Subsequent refinement of the study area, use of 2005 as the base year, and Metro's model numbers in 2005 resulted in predicted jobs and household growth by 2030 of 85 and 100 percent, respectively.*

[4] *Based on existing field observations in 2004/5 and analysis of forecast future year travel demand associated with the range of alternatives studied. See Sections 5.6.3 and 6.7.3 of Sunrise Project Transportation Technical Report.*

[5] *Based on analysis summarized in Section 5.9 of Sunrise Project Transportation Technical Report.*

[6] *Based on existing truck counts from 2004/5 at specific locations within the OR 212/224 corridor. See Section 5.7 of Sunrise Project Transportation Technical Report.*

Project Alternatives

Three alternatives and six design options are under consideration. **Alternative 1–No Build** (Figures 3 and 4, Alternative 1–No Build on pp. ES-7 and -8) is required by National Environmental Policy Act (NEPA), ODOT, and FHWA guidelines. **Alternatives 2 and 3** (Figure 5, p. ES-9) would incorporate the construction of a new multi-lane, limited-access highway north of and parallel to the existing OR 212/224 between I-205 and Rock Creek Junction. Within each of the build alternatives there are additional design options which provide modifications or variations on different segments of the build alignments.

Alternative 1–No Build. Alternative 1 maintains the existing roadway including committed improvements scheduled in ODOT's four-year Statewide Transportation Improvement Program (STIP) and the Metropolitan Service District's (Metro) Financially Constrained Projects listed in the 2035 Regional Transportation Plan (RTP). The programmed projects in the project vicinity assumed to be included are as follows (planned year of operation):

- Widen SE 82nd Drive, from existing three lanes to five lanes between Lawnfield Road and OR 212/224 (2025);
- Improve OR 212 connection to Mather Road via SE 102nd Avenue, Clackamas Road, and Industrial Way as a three-lane collector with wider shoulders and more truck-accommodating intersection turn conditions (2010);
- Construct a new, four- and five-lane arterial, extending north and east from Rock Creek Junction Interchange to connect to SE 162nd and SE 172nd Avenues (2020);
- Widen SE 172nd Avenue from existing two lanes to four and five lanes between Foster Road and OR 212 (Phase 1, OR 212 to Sunnyside Road–2011; Phase 2, Sunnyside Road to Foster Road–2015);
- Widen OR 224 from existing two lanes to five lanes between Rock Creek Junction and Carver Bridge (2018); and
- Replace existing two-lane Carver Bridge and widen to five lanes (Phase 1, replace two-lane bridge–2010; Phase 2, widen bridge to 5 lanes–2025).

Transit improvements included under Alternative 1 are limited to those identified in Metro's RTP and include primarily modest increases in service hours. Bicycle and pedestrian improvements would be those already planned for the area, as shown on Figure 4, Alternative 1–No Build, Pedestrian and Bicycle Systems (p. ES-8).

Alternative 2–Build with Midpoint Interchange. Alternative 2 would construct a multi-lane, limited-access highway north of and parallel to the existing OR 212/224 between I-205 and Rock Creek Junction. A midpoint interchange would connect the highway to the existing OR 212/224, ensuring access to businesses along that corridor. From I-205 to Rock Creek Junction (where OR 212/224 splits into OR 212 to the east and OR 224 to the south), the highway would have six lanes plus auxiliary lanes. East of Rock Creek Junction, the highway would narrow to six lanes with no auxiliary lanes until SE 172nd Avenue, where it would narrow to five lanes.

Alternative 3–Build with No Midpoint Interchange. Alternative 3 is the same design as Alternative 2, but with no midpoint interchange.

Design Options. Figures 6 through 9 (p. ES-10 through p. ES-13) illustrate the design options. Each design option was developed to address different constraints, or avoid or minimize specific natural or built environmental impacts. Most of the design options can be substituted for a comparable segment alignment (such as C-2 or C-3 instead of Alternative 2 in that segment). Most are available under each build alternative. All design options except B-2 and C-3 can be incorporated into either of the build alternatives. A more detailed description of each design option in relation to each build alternative follows.

- **Design Option A-2** would provide access to/from SE 82nd Drive and the Lawnfield industrial area via an overcrossing of UPRR tracks to Tolbert Road. It would not extend Lawnfield to the north. This design option is available under both build alternatives. It is intended to provide local access to/from the Lawnfield industrial area and I -205 without the adverse impacts that would result from extending Lawnfield to the north.
- **Design Option B-2** applies only to **Alternative 2** and would incorporate a modified split interchange involving both SE 122nd Avenue and SE 130th Avenue. It is a substitute for the single diamond interchange included in **Alternative 2**. **Design Option B-2** could be considered with **Design Options A-2** and/or **Design Option C-2**. However, it would not be compatible with the design of the curves in **Design Option C-3**, so those two options could not be combined.
- **Design Option C-2** has the Sunrise Project alignment farther south than the **Alternative 2 or 3** alignment and may be substituted for the comparable segment in **Alternative 2 or 3**, and for **Design Option C-3**.
- **Design Option C-3** has the Sunrise Project alignment farther north than the Alternative 2/3 alignment and may be substituted for the comparable segment in **Alternative 2 or 3**, and for **Design Option C-2**. However, **Design Option B-2** and **Design Option C-3** are incompatible due to the curves in **Design Option C-3**.
- **Design Option D-2** proposes a different type of interchange design than under Alternatives 2/3 at the OR 212/224 split, reducing the interchange footprint slightly on the north side. It may be substituted for the comparable segment in **Alternative 2 or 3**, and for **Design Option D-3**.
- **Design Option D-3** proposes a different type of interchange design at the Rock Creek Junction than under **Alternative 2 or 3** and **Design Option D-2**, reducing the interchange footprint further and moving it slightly south. It may be substituted for the comparable segment in **Alternative 2 or 3**, and for **Design Option D-2**.

Transit and Pedestrian Network. New and more frequent local transit service would be provided under the build alternatives, along with new express bus service along the proposed Sunrise Project.

The build alternatives propose new multi-use path improvements that would connect to the existing I-205 trail system, filling in gaps in that system. Choice of a design option would not affect provision of the multi-use path improvements. Figures 5 through 7 (p. ES-9 through p. ES-11) show the planned location of the multi-use path and its connections.

Preliminary Project Costs

Preliminary construction and right-of-way cost estimates for the build alternatives are summarized in Table 1. Actual construction costs would depend upon labor and materials costs, competitive market conditions, final project requirements, and other variables at the time of the construction contract. Construction cost estimates are based on unit costs as derived from recent large construction projects in the region. Both cost estimates for current year (2008) and expected year of construction (2013) are provided. Estimated 2013 costs are derived using inflation factors of 4.3 percent (2009 – 2011) and 4.0 percent (2012 – 2013).

Depending on the alternatives and design options selected, the total cost of the proposed project would range from $1.31 billion to $1.61 billion (2013 dollars). Currently, ODOT has estimated $270 million will become available for the project over the next 20 years, leaving a funding gap of between $1 billion and $1.3 billion. As such, the project will likely be constructed in phases, with funding anticipated from multiple sources.

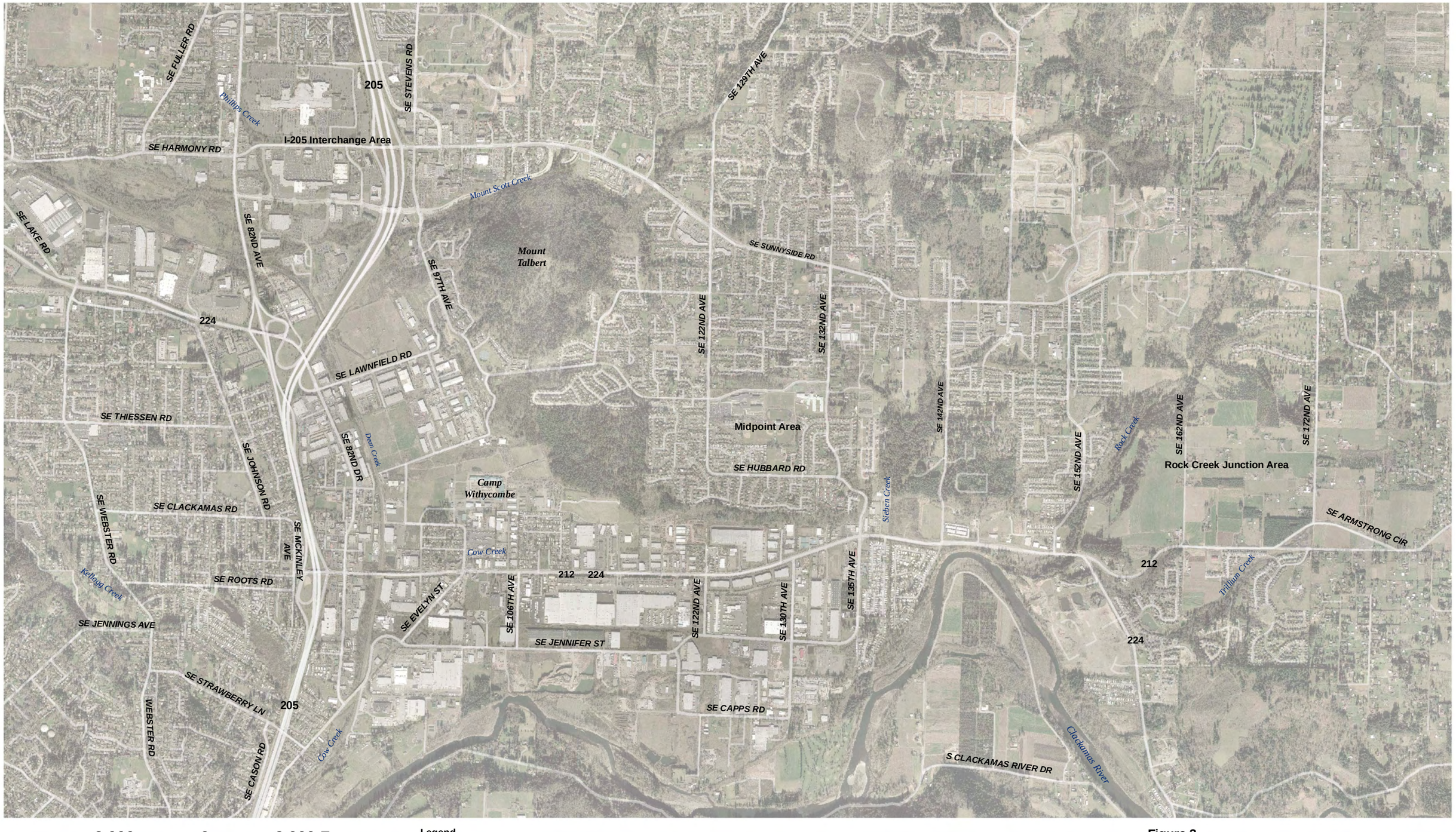
The commitment of $270 million is included in the Metro 2035 RTP financially constrained list of projects. Funding currently committed to the project totals $60.9 million. This funding derives from the following sources: SAFETEA-LU federal reauthorization earmark ($18 million); ODOT OTIA III ($20 million); Clackamas County Development Agency ($20 million); Surface Transportation Program federal appropriations earmarks ($1.1 million); ODOT contributions ($909,000); and Clackamas County contributions ($860,000).

The type and source of likely future funding would include the following: annual ODOT Region 1 Modernization fund allocations; 2009/2015/2021/2027 federal reauthorization program funds; 2009/2011 state legislative program for Projects of Statewide Significance; and possible tolling revenue. The Oregon Transportation Commission has stated its intention not to initiate project-specific tolling analyses until it has had an opportunity to address wider policy issues associated with tolling (anticipated by winter-spring 2009).

Table 1. Preliminary Construction and Right-of-Way Cost Estimates for Build Alternatives

	Project Costs in 2008 (millions)			Project Costs in 2013[1] (millions)
Alternative/Design Option	**Construction**	**Right-of-Way**	**Total Project**	**Total Project**
Alternative 1-No Build	n/a	n/a	n/a	n/a
Alternative 2 – Build with Midpoint Interchange	$1,039	$170	$1,209	$1,484
w/Design Option A-2	$1,026	$170	$1,196	$1,468
w/Design Option B-2	$1,136	$172	$1,308	$1,605
w/Design Option C-2	$921	$173	$1,094	$1,343
w/Design Option C-3	$1,048	$177	$1,225	$1,503
w/Design Option D-2	$1,034	$170	$1,204	$1,478
w/Design Option D-3 Modified	$1,052	$172	$1,224	$1,502
Alternative 3 – Build without Midpoint Interchange	$984	$163	$1,147	$1,408
w/Design Option A-2	$971	$163	$1,134	$1,392
w/Design Option C-2	$988	$165	$1,153	$1,415
w/Design Option C-3	$993	$163	$1,156	$1,419
w/Design Option D-2	$900	$164	$1,064	$1,306
w/Design Option D-3 Modified	$997	$157	$1,154	$1,416

[1]Dollars are inflated to anticipated year of construction costs.



2,000 0 2,000 Feet

Legend

Urban Growth Boundary (UGB)

Project Subareas

Future Funded Projects

Widen to 5 Lanes

Widen to 5 Lanes

Widen to 3 Lanes

Upgrade Roadway

OR 212 Widening

OR 224 Widening

New Arterial

Sources:
ODOT and Metro, Portland OR

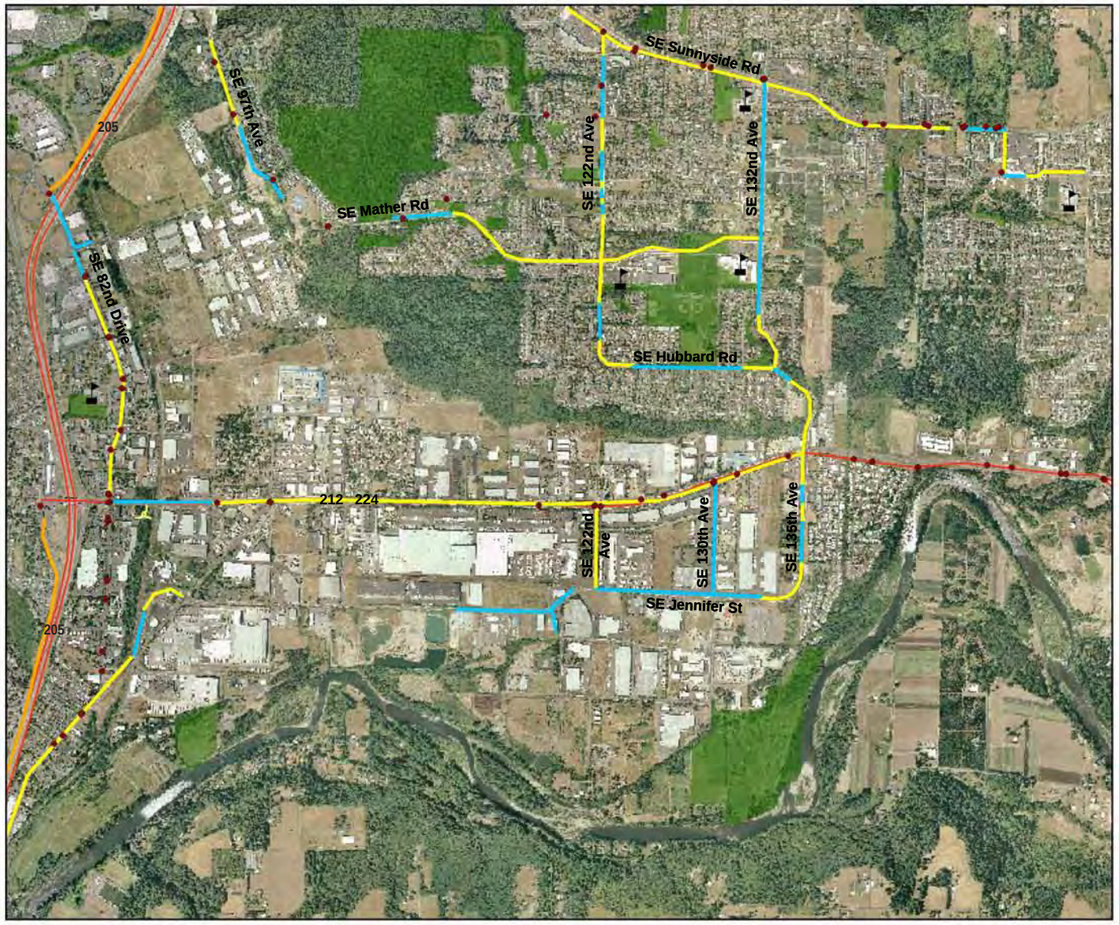
Figure 3

Alternative 1 - No Build

Sunrise Project, I-205 to Rock Creek Junction

Map 2: Sunrise Corridor Unit 1: Existing Pedestrian Conditions

Existing Pedestrian Facilities



0 **Legend:** 0.5 1 Miles

I-205 Multi-Use Path
Sidewalks
One Side Sidewalk
Demand Paths

Bus Stop
Highway

School
Park

Map 1: Sunrise Corridor Unit 1: Existing Bicycle Conditions

Existing and Planned Bicycle Facilities



0 **Legend:** 0.5 1 Miles

Bike Lanes
I-205 Multi-Use Path
Planned Bike Lanes
Low/Medium Traffic Volumes

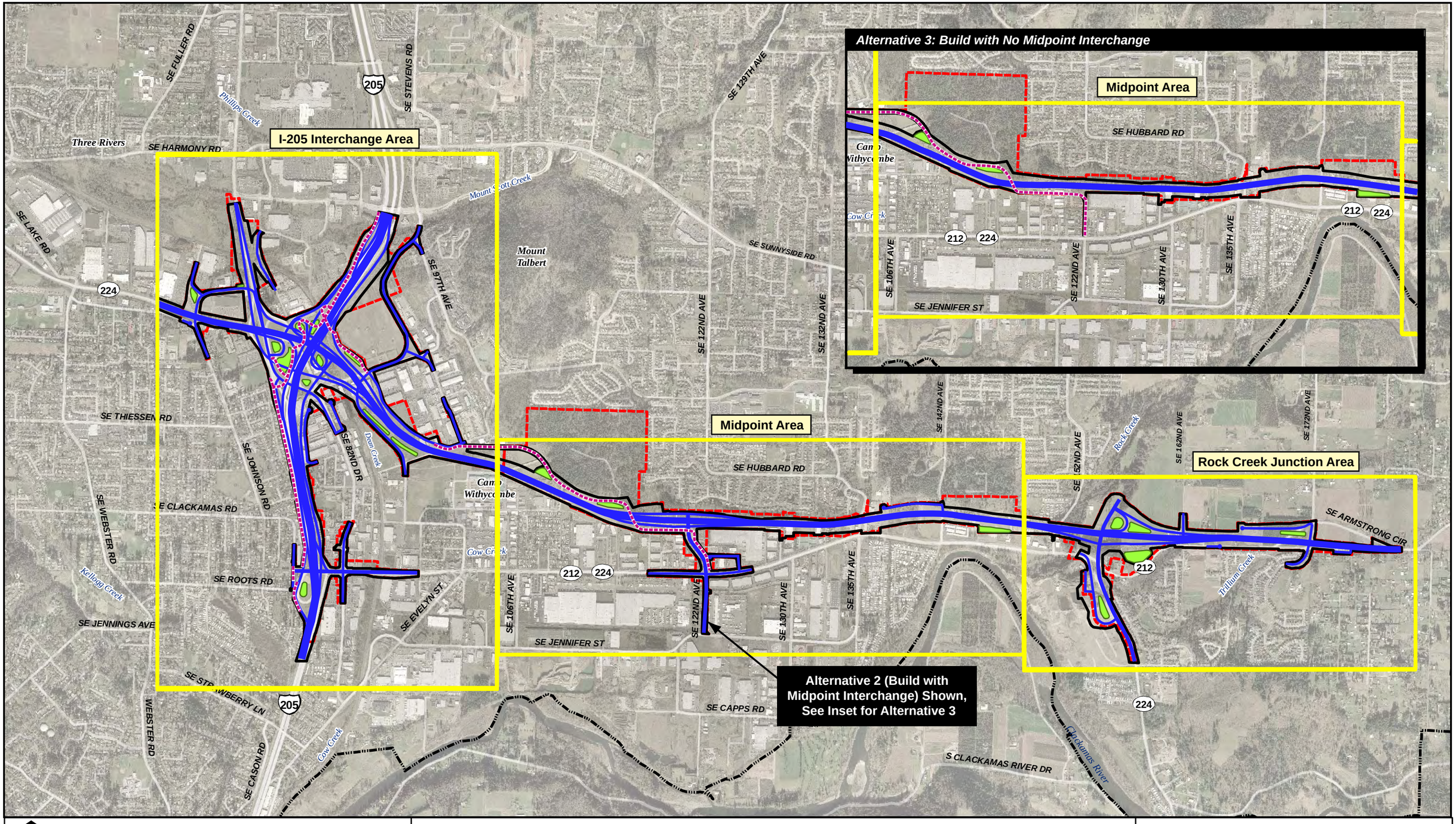
Highway
School
Park

0 0.5 1

Miles

Figure 4

Alternative 1 - No Build
Pedestrian and Bicycle Systems



2,000 0 2,000 Feet

Sources:
ODOT and Metro, Portland OR

Legend

- Urban Growth Boundary (UGB)
- Project Subareas
- Construction Impact Line
- Right-of-Way
- Potential Stormwater Facilities
- Proposed Roadway
- Proposed Multi-Use Path

Figure 5

Alternatives 2 and 3

Sunrise Project, I-205 to Rock Creek Junction





1,500 0 1,500 Feet

Legend

Area of Potential Impact

Right-of-Way

Potential Stormwater Facilities

Proposed Roadway

Proposed Multi-Use Path

I-205 Interchange Area

Midpoint Area

Rock Creek Junction

Sources:
ODOT and Metro, Portland OR

Figure 5

Comparison of Options for I-205 Interchange Area

Sunrise Project, I-205 to Rock Creek Junction





1,200 0 1,200 Feet

Legend

Area of Potential Impact
Right-of-Way
Potential Stormwater Facilities
Proposed Roadway
Proposed Bikeway

I-205 Interchange Area
Midpoint Area
Rock Creek Junction

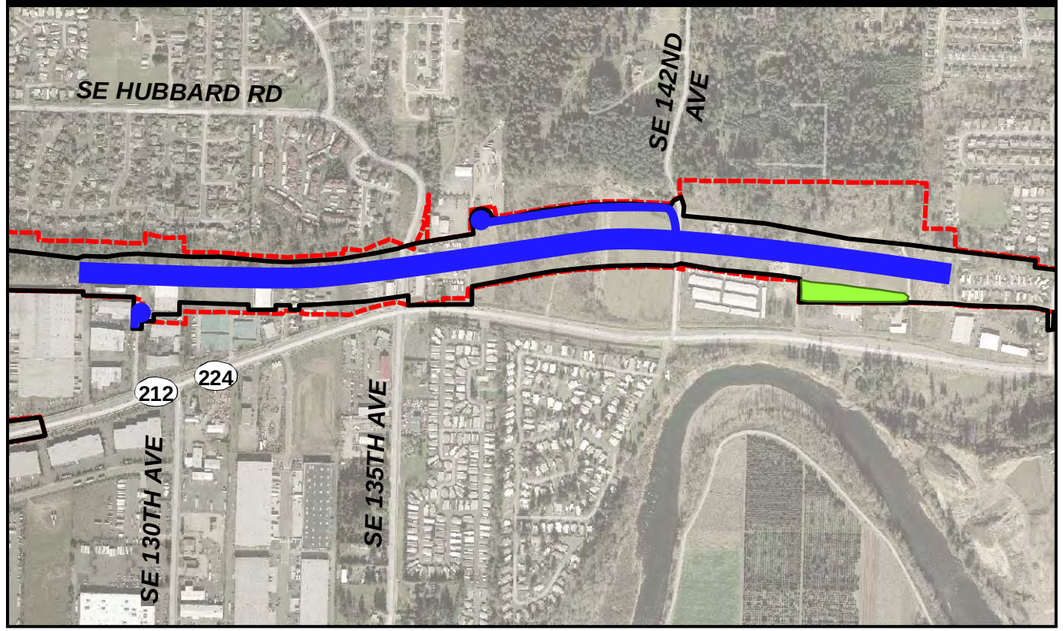
Sources:
ODOT and Metro, Portland OR

Figure 7

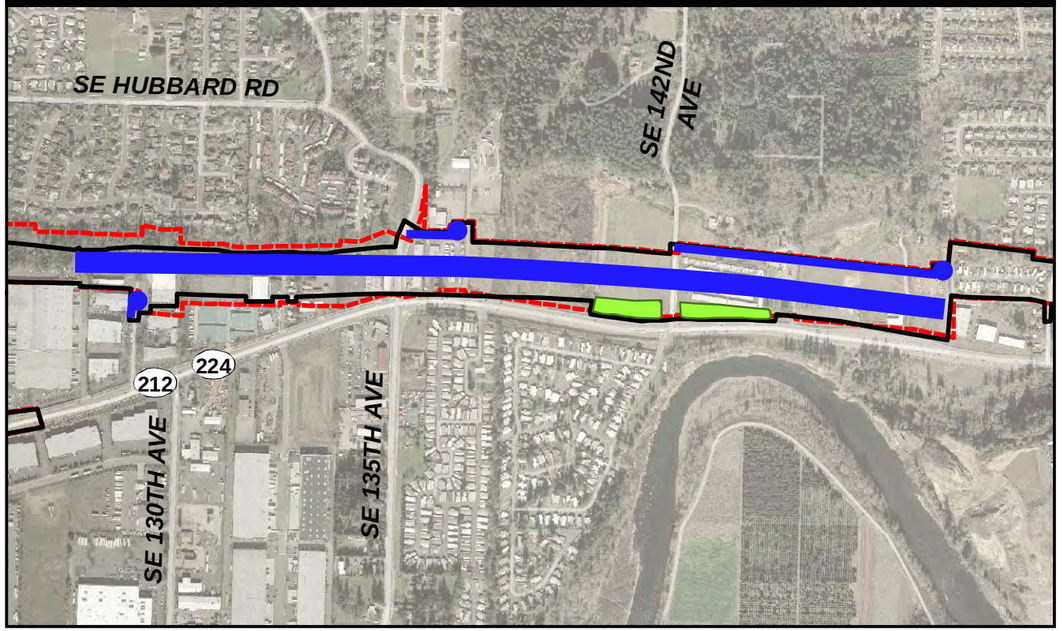
Comparison of Options for Midpoint Area

Sunrise Project, I-205 to Rock Creek Junction

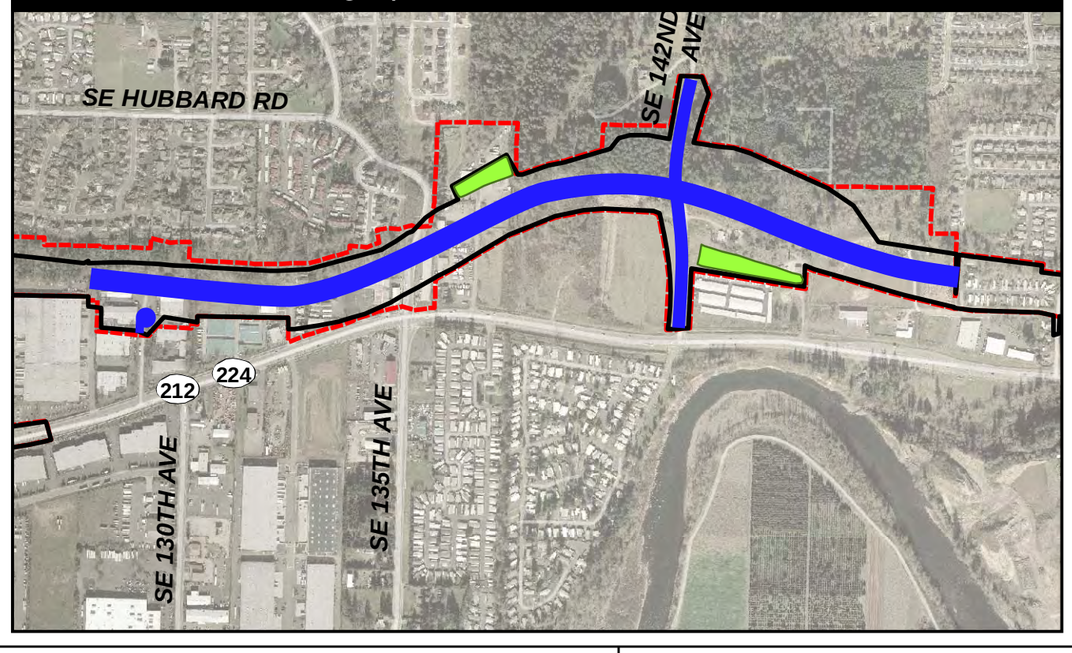
Alternatives 2 and 3



Alternatives 2 and 3 with Design Option C-2



Alternatives 2 and 3 with Design Option C-3



1,200 0 1,200 Feet

Sources:
ODOT and Metro, Portland OR

Legend

- Area of Potential Impact
- Right-of-Way
- Potential Stormwater Facilities
- Proposed Roadway

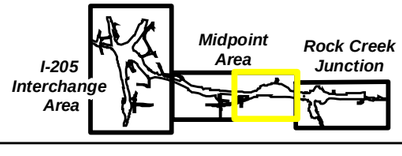


Figure 8

Comparison of Options for Midpoint Area (East End)

Sunrise Project, I-205 to Rock Creek Junction







1,500 0 1,500 Feet

Legend

Area of Potential Impact

Right-of-Way

Potential Stormwater Facilities

Proposed Roadway

Proposed Multi-Use Path

I-205 Interchange Area

Midpoint Area

Rock Creek Junction

Sources:
ODOT and Metro, Portland OR

Figure 8

Comparison of Options for Rock Creek Junction Area

Sunrise Project, I-205 to Rock Creek Junction

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Without the Sunrise Project

By 2030, multiple transportation system improvements planned by Metro, ODOT, and Clackamas County would be built as identified in Metro's 2035 RTP and local transportation and capital improvement plans. However, planned improvements alone (shown on Figure 3, Alternative 1-No Build, p. ES-7) would not adequately address existing and predicted transportation deficiencies because the transportation needs far outstrip available and reasonably forecast revenues.

The year 2030 transportation analysis performed for the proposed Sunrise Project reveals that congestion would increase substantially, with westbound traffic at I-205 lining up on OR 212/224 as far east as Carver Bridge. Traffic westbound on the Milwaukie Expressway would likely back up on SE 82nd Drive to OR 212/224. Travel time reliability would diminish throughout the OR 212/224 corridor compared with existing levels due to an increasing duration of typical weekday congestion growing from about four hours currently up to nine hours—five hours in the morning and four in the afternoon. Despite increased congestion, demand for travel in the corridor would increase and range from approximately 28,000 vehicles per day (vpd) east of Rock Creek to nearly 53,000 vpd near SE 102nd Avenue. Congestion would remain most severe where volumes are highest.

Traffic on almost all side streets would have increasing difficulty entering and exiting OR 212/224 and SE 82nd Drive.

Previous and Related Work

The proposed Sunrise Project has been the subject of studies since the late 1980s. In the mid-1980s, ODOT conducted a reconnaissance study of the general project area or "corridor" that revealed a need for a new facility and evaluated options for different alternatives, including widening OR 212/224. The original 13-mile-long proposed Sunrise Corridor project included two segments called "units" between I- 205 and U.S. 26. Unit 1 extended from I-205 to Rock Creek Junction and Unit 2 from Rock Creek Junction to Highway 26. In the late 1980s, Clackamas County, ODOT, and other public stakeholders began a process to identify the best location for the proposed highway. A Draft Environmental Impact Statement (DEIS)—*Sunrise Corridor OR 212/224 (I-205 to US 26)*—was published on July 15, 1993. It described and analyzed the environmental impacts associated with two highway construction alternatives and a no build alternative.

In 1996, the Clackamas County Board of Commissioners approved a conceptual alignment for Unit 1. Due to the lack of foreseeable funding, a Final Environmental Impact Statement (FEIS) was not completed and the project was put on hold. However, the DEIS did identify a basic corridor alignment and excluded widening the existing OR 212/224 as not sufficient to meet the project purpose and need.

Need for an SDEIS

This SDEIS builds on the 1993 DEIS. The basis for supplementing the 1993 DEIS rather than creating a new DEIS is that the alignment for the Sunrise Project is similar to the previous alternative for the Sunrise Corridor Unit 1, and some of the existing conditions and potential impacts information collected for the 1993 DEIS, such as for cultural resources, hydrology, hazardous materials, soils and geology, and views, is still relevant. A Notice of Intent to prepare the SDEIS was published in the Federal Register in 2004. Environmental Impact Statements do not expire, but they may be supplemented when changes to a proposed project would result in significant environmental impacts not evaluated in the DEIS or if new information or circumstances would result in significant environmental impacts not evaluated in the DEIS. In this case, an SDEIS is needed because existing conditions have changed substantially since 1993; ODOT's approach to the problems of the Sunrise Corridor have changed

since 1993; and the current proposed Sunrise Project is different from the Sunrise Corridor project of 1993.

All federal-aid highway projects with a Notice of Intent issued after August 10, 2005 are subject to the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) Section 6002 requirements. SAFETEA-LU authorizes the federal surface transportation programs for highways, highway safety, and transit for the five-year period 2005-2009. Because the Notice of Intent for the SDEIS was published in 2004, the project is not subject to the provision of SAFETEA-LU 6002's environmental review process, which specifically requires the development of a coordination plan and invitations to potential participating agencies.

Purpose and Need in 1993 and 2005

In 1993, the purpose of the project was "to increase the capacity of OR 212/224 which would allow the Corridor's transportation system to safely and efficiently accommodate existing and future traffic volumes. The project would: improve the transportation route to eliminate safety problems; reduce conflicts between through and local traffic; and accommodate planned growth in the area." The need for the project was based on existing and projected traffic volumes in the project area.

The project was intended to meet the goal and objectives of the Access Oregon Highway program by connecting economic centers in the state, improving travel time, and improving capacity, safety conditions, and the local street network.

By the time the work on a revised Sunrise Project began, ODOT's approach to environmental review for transportation projects had changed. A new ODOT group—CETAS—had been formed to support environmental stewardship and streamline the environmental review process for ODOT's major transportation projects. (The name CETAS comes from the agreement signed by the agencies involved: Collaborative Environmental and Transportation Agreement for Streamlining. A list of CETAS members from the participating state and federal resource agencies can be found in Appendix A.)

The project's partner agencies and CETAS adopted a new Purpose and Need for the proposed Sunrise Project in 2005. The approach to the project in 2005 is different than in 1993. Previously, the project was responding to the Access Oregon Highway program, which did not account for regional system needs, and the planning pre-dated a regional land use framework and transportation plan. In addition, the urban growth boundary had expanded by 12,000 acres within the Sunrise Corridor to the east, with the incorporation of the City of Damascus. The new Purpose and Need (see page ES-1) focuses not only on effectively addressing congestion and safety problems but also on serving a regional demand for travel.

Purpose of the SDEIS

The purpose of this SDEIS is to help decision-makers and the public decide whether the project should be built and how adverse impacts should be mitigated.

This SDEIS discloses the potential impacts of the proposed action by ODOT and Clackamas County and presents information to help answer the following questions:

- Should the Sunrise Project be built?
- Should it include a midpoint interchange near SE 122nd Avenue?
- Which design options, if any, should be selected?
- Is proposed mitigation appropriate?

Members of the public, affected agencies, and other interested groups are being provided copies of this SDEIS to review and are offered opportunities to comment on its content and analysis.

Summary of Potential Impacts and Proposed Mitigation

The tables which follow summarize the potential impacts and proposed mitigation. Table 2 summarizes the anticipated impacts from the Sunrise Project, beginning on page ES-18, and Table 3 summarizes proposed mitigation measures, beginning on page ES-27. The columns summarizing the alternatives exclude impacts from the design options, which are listed separately.

Table 2. Summary of Impacts

	Alternative 1—No Build	Alternative 2	Alternative 3	Design Options
Transportation	OR 212/224 would accommodate 4,380 vehicles during the PM peak hour	Proposed Sunrise Project would accommodate 12,400 vehicles during PM peak hour	Proposed Sunrise Project would accommodate 11,600 vehicles during PM peak hour	Design options would not measurably change capacity
	9-hour continuous peak period congestion	4 hours of total congestion in AM and PM	5.5 hours of total congestion in AM and PM	Design options would not measurably affect hours of congestion
		With midpoint interchange, faster travel times to midpoint area from the east and the west of the midpoint area	With no midpoint interchange, slower aggregate travel times to midpoint area from the east and the west of the midpoint area	Design option B-2 would not measurably change travel time under Alternative 2
	Inconsistent with state, regional, and local transportation plans identifying a need for improved freight movement	Consistent with state, regional, and local transportation plans identifying a need for improved freight movement	Consistent with state, regional and local transportation plans identifying a need for improved freight movement	Design options would not affect consistency of Alternatives 2 and 3 with plans and policies
	Bike and pedestrian system unchanged except for planned improvements	Bike and pedestrian system improved by new multi-use path improvements connecting to existing I-205 trail system	Bike and pedestrian system improved by new multi-use path improvements connecting to existing I-205 trail system	Design options would not be measurably different from Alternatives 2 and 3
Land Use	No conversion of existing land uses to highway use	514 acres of various uses/zoning designations converted to highway use	495 acres of various uses/zoning designations converted to highway use	C-3 with Alternative 2 would convert the most land (524 acres) A-2 with Alternative 3 would convert the least land (477 acres) Less conversion impacts from A-2 (-18 acres), C-2 (-13 acres), D-2 (6 acres), D-3 (-14 acres) compared to Alternatives 2 and 3 Greater conversion impacts from B-2 (+7 acres), C-3 (+14 acres)
	No residential displacements	72 dwelling units displaced	72 dwelling units displaced	C-2 would have fewest residential displacements (43) All other design options would result in displacement of 72 to 74 dwelling units

Table 2. Summary of Impacts

	Alternative 1—No Build	Alternative 2	Alternative 3	Design Options
Land Use, continued	No industrial or commercial land converted to highway use	133 acres of commercial / industrial land converted to highway use	117 acres of commercial / industrial land converted to highway use, 16 fewer than Alternative 2	Five to eight more acres of commercial / industrial land converted to highway use by B-2, C-2, and C-3 (others differ by one acre)
	No buildings or employees displaced	62 commercial or industrial buildings displaced 923 employees displaced	57 commercial or industrial buildings displaced 920 employees displaced	A-2: 2 fewer buildings (60 buildings and 923 employees with Alternative 2 and 55 buildings and 920 employees with Alternative 3) B-2: 4 more buildings (66 buildings and 1,072 employees with Alternative 2) C-2: 8 more buildings (70 buildings and 946 employees with Alternative 2 and 65 buildings and 943 employees with Alternative 3) C-3: 2 more buildings (64 buildings and 947 employees with Alternative 2 and 59 buildings and 944 employees with Alternative 3) D-2: 2 more buildings (64 buildings and 923 employees with Alternative 2 and 59 buildings and 920 employees with Alternative 3) D-3: 2 more buildings (64 buildings and 954 employees with Alternative 2 and 59 buildings and 951 employees with Alternative 3)
	No changes to property accesses	132 property accesses affected	91 property accesses affected	A-2 (33 fewer), B-2 (45 fewer), C-2 (62 fewer), C-3 (47 fewer), D-2 (57 fewer), and D-3 (54 fewer)
	No right-of-way acquisition costs	Right-of-way acquisition $170 million (estimated)	Right-of-way acquisition $160 million (estimated)	Right-of-way acquisition slightly more ($3 to $7 million more), except for D-3 ($5 million less)
	Would not meet local, regional, and state policies requiring through-route for freight & congestion Congestion could reduce rate of development of future land uses	Would implement local, regional, and state policies for a through-route for freight Generally consistent with planned land uses by supporting future development	Same as Alternative 2	Same as Alternatives 2 and 3

Table 2. Summary of Impacts

	Alternative 1—No Build	Alternative 2	Alternative 3	Design Options
Businesses and Communities	No changes to community cohesion or character	No isolation of neighborhoods but encroachment or removal: Old Clackamas neighborhood affected by loss of several multifamily units, convenience commercial, and changes to access to SE 82nd Drive Six-unit manufactured home park community affected by removal of 4 units, remaining 2 units isolated Sunrise Village manufactured home community removed	Same as Alternative 2	A-2 impacts same as Alternatives 2 and 3 B-2 would remove entire 6-unit manufactured home community C-2 would not remove Sunrise Village community (C-3 would) D-2 and D-3 impacts same as Alternatives 2 and 3
	No change to schools, parks or emergency service delivery	0.18 acres of right-of-way acquisition of recreation field at Clackamas Elementary School Project would add road capacity that could benefit delivery of emergency services by having less congestion than Alternative 1 Would add 10 new bridges and 19 new ramps*	Same as Alternative 2 Would add 9 new bridges and 17 new ramps* **Seismic evacuation routes place the highest importance on roadways with the least number of bridges as they will be the easiest routes to make operational after an earthquake. OR 224 and OR 212/224 are top priorities for the lifeline system.*	Same impacts as Alternative 2 for schools, parks or emergency service delivery for all design options A-2 would add same number of new bridges and ramps as Alternative 2* B-2 with Alternative 2 would add 8 new bridges, 19 new ramps* C-2 would not change the number of new bridges and ramps under Alternatives 2 and 3; C-3 would be the same as C-2 but would add 1 new overpass* D-2 and D-3 would not change the number of new bridges and ramps under Alternatives 2 and 3*
	No change to businesses except indirect impacts from congestion could slow employment growth	About 60 businesses affected Conversion of employment land would reduce new job potential by 5,100 employees	Would displace 2-3 fewer businesses than Alternative 2 Other impacts similar to Alternative 2	C-2 would displace 11 additional businesses compared to Alternatives 2 and 3 and design options No major differences between other design options and alternatives D-3 would best meet needs for proposed medical care complex near Rock Creek Junction

Table 2. Summary of Impacts

	Alternative 1—No Build	Alternative 2	Alternative 3	Design Options
Businesses and Communities, continued	No travel circulation patterns changed; however, congestion is expected to be more than double the hours than for the build alternatives (see Transportation row above), affecting mobility and access to and from businesses	Changes to local street circulation would require more out-of-direction travel near I-205 Interchange; SE 82nd Drive; and between SE 97th Avenue, OR 212/224, and accesses to/from subdivisions near Rock Creek Junction; not expected to change community character or cohesion Would be balanced by benefit of increased mobility through the area	Qualitatively the same impacts as Alternative 2, except that industrial access would be concentrated at the ends of the project without the midpoint interchange	A-2 would not change travel patterns as much in Lawnfield area Westbound trips to midpoint area via OR 212/224 would exit at Rock Creek Interchange, turn left to OR 224, and access OR 212/224 via the new "jug handle" Differences of other design options to alternatives are minimal
	No changes to property tax revenues	Property tax revenues lost by conversion of land to non-taxable use estimated at about $40 million	Effectively the same as Alternative 2	B-2 would have greatest impact A-2 and D-3 would have least impact
Environmental Justice	No change	I-205 is an area of concern due to higher ratios of poverty in two US Census block groups and the removal of more affordable housing (manufactured homes and multifamily residences); likely that more adverse impacts would be borne disproportionately by low-income residents Benefits of improved mobility for all travel modes would accrue to all users	Same as Alternative 2	C-2 would remove fewer manufactured home units
Visual Character and Resources	Little to no change in current visual quality	Current corridor visual quality score of 4 (average) would decline to 2-3 (low–moderately low) due to removal of vegetation; changes to utilities; more pavement, ramps, bridges, and walls; new signals and lights; more headlight glare	Same as Alternative 2, except somewhat lower impact in midpoint area without the elevated interchange and ramps, and with less mass in the landscape	Change from current visual quality score to proposed visual quality score: A-2: from 3 to 2 B-2: from 4 to 2.5 (average for midpoint) C-2: from 4-3 C-3: from 4 to 2 D-2: from 5 to 2 D-3: from 5 to 2

Table 2. Summary of Impacts

	Alternative 1—No Build	Alternative 2	Alternative 3	Design Options
Noise	Noise levels predicted to increase by 1 to 2 dBA over existing levels next to roads with no planned improvements Noise levels predicted to increase between 3 and 4 dBA next to areas with planned improvements (such as widening) 246 total noise impacts (i.e., where noise levels would exceed ODOT criteria for impacts)	Noise levels next to the proposed alignment predicted to increase overall by up to 20 dBA *more* than under Alternative 1 Areas of greatest impacts would be next to and east of I-205 and adjacent to and north of Sunrise Project; some sites west of I-205 and south of existing OR 212/224 would have decreased impacts compared to Alternative 1 352 / 175* total noise impacts *Before / after noise abatement	Overall the same impacts as Alternative 2; some differences in specific locations due to design Differences due primarily to changes in road alignments of the road rather than from changes to traffic volumes	A-2: 182/67* total impacts compared to 174/59* for Alternatives 2/3 in same segment B-2: 134/111* total impacts compared to 144/121* for Alternative 2 and 141/118* for Alternative 3 in same segment C-2: 81/68* total impacts compared to 97/84* under Alternatives 2/3 in same segment C-3: 83/70* total impacts; fewer due to removal of residences nearest highway D-2: 31/17* total impacts compared to 25/19* under Alternatives 2/3 D-3: 24 /8* total impacts *Before / after abatement
Air Quality	Analysis of emissions is based on the number of vehicle miles traveled (VMT), vehicle types, and vehicle speeds Increased traffic and slower travel speeds would create more emissions	VMT increases by nearly 20 percent for Alternative 2 compared to Alternative 1 due to more capacity for traffic growth on proposed highway No exceedance of National Ambient Air Quality Standards Volumes of 93,500-97,500 indicate a low potential for mobile source air toxics impacts according to FHWA guidance	Same 20 percent increase over Alternative 1 as Alternative 2 No exceedance of National Ambient Air Quality Standards Volumes of 93,500-97,500 indicate a low potential for air toxics mobile source air toxics impacts according to FHWA guidance	Design options do not change VMT levels enough to cause a noticeable change in type, amount, or concentration of emissions
Energy	Annual fuel use for operations only: 10.5 million gallons of fuel	Annual fuel use for operations: 13.1 million gallons of fuel Construction energy: 59.1 million gallons of fuel	Annual fuel use for operations: 14.3 million gallons of fuel Construction energy 56.3 million gallons of fuel	All options under Alternative 2 would increase fuel use in the range of 0.8 to 2.7 million gallons; under Alternative 3, only C-3 would increase fuel use, by 0.07 million gallons Construction energy with Alternative 2 (Alternative 3): A-2: -0.7 (-0.7) million gallons B-2: +6.3 million gallons C-2: +0.1 (+0.2) million gallons C-3: +0.9 (+0.9) million gallons D-2: +2.0 (+2.1) million gallons D-3: +2.5 (+2.5) million gallons

Table 2. Summary of Impacts

	Alternative 1—No Build	Alternative 2	Alternative 3	Design Options
Biology	No direct impacts on wildlife habitat	101 acres of wildlife habitat affected	98 acres of wildlife habitat affected	A-2 would reduce impacts by 3 acres to 98 acres, less impact on wildlife corridor B-2 would be 101 acres, same as Alternative 2 C-2 would reduce impacts by 8 acres to 93 acres (Alternative 2) and 90 acres (Alternative 3) C-3 would increase impacts by 10 acres to 111 acres (Alternative 2) and 108 acres (Alternative 3), and wildlife corridor would be narrower D-2 impacts same as Alternatives 2 and 3 D-3 would reduce impacts by 1 acre to 100 acres (Alternative 2) and 97 acres (Alternative 3)
	Minor impacts on fish habitat due to planned projects with new impervious surface	122 acres new impervious surface Beneficial impacts would be new culverts for fish passage in significant habitat areas; at a minimum, structures over Dean, Mt. Scott, Sieben, and Rock Creeks would be built to provide fish passage	103 acres new impervious surface Beneficial impacts would be new culverts for fish passage in significant habitat areas; at a minimum, structures over Dean, Mt. Scott, Sieben, and Rock Creeks would be built to provide fish passage	A-2: 33 acres (5 acres fewer than Alternatives 2/3) B-2: 31 acres (4 acres more than Alternative 2) C-2: 20 acres (<1 acre more than Alternatives 2/3) C-3: 22 acres (2 acres more than Alternatives 2/3) D-2: 37 acres (<1 acre more than Alternatives 2/3) D-3 38 acres (<1 acre more than Alternatives 2/3)
	No change to water quality	More impacts on water quality from stormwater runoff and more watershed effects from new impervious surface compared to Alternative 3	Less runoff and watershed effects from new impervious surface compared to Alternative 3	A-2 and C-2 would have less impervious surface B-2, C-3, and D-3 would result in most impervious surface
	No direct impacts to Threatened or Endangered fish, terrestrial wildlife and plants: projects with federal nexus and indirect effects from runoff in critical fish habitat could require agency consultation	No impacts to Threatened or Endangered terrestrial wildlife or plants Indirect effects from runoff from additional impervious surface in critical fish habitat likely to require formal or informal agency consultation	No impacts to Threatened or Endangered terrestrial wildlife or plants Indirect effects from runoff from additional impervious surface in critical fish habitat likely to require formal or informal agency consultation	No impacts to Threatened or Endangered terrestrial wildlife or plants Indirect effects from runoff from additional impervious surface in critical fish habitat likely to require informal or formal agency consultation

Table 2. Summary of Impacts

	Alternative 1—No Build	Alternative 2	Alternative 3	Design Options
Wetlands	Possible minor impacts on roadside ditches from planned projects	32.3 total acres of wetland removed, resulting in a loss of 80 percent of wetland functions in Sunrise Project 20 acres of palustrine emergent (PEM) wetland (see glossary for wetland definitions) 10 acres palustrine forested/ palustrine scrub-shrub (PFO/PSS) wetland 0.5 acre of PFO wetland 0.5 acre of PSS wetland 1.5 acres of PSS/PEM wetland	Same as Alternative 2	A-2 would impact about 5 fewer acres of PES wetland; least impact on function B-2 would impact 2 acres more PFO/PSS than alternatives; highest function loss C-2 and C-3 would result in 3 fewer acres of PFO/PSS wetland affected and C-3 would affect 3 fewer acres of PEM wetland with slightly less function loss compared to Alternatives 2 and 3 D-2 and D-3 would have very minor differences to Alternatives 2 and 3
Geology and Soils	No impacts	More cut into hillside near landslide area; dewatering would be required, potentially changing adjacent underground hydrology	Less impact on slope stability compared to Alternative 2; otherwise similar impacts	No major advantage to choosing A-2, C-2, or D-2 compared to alternatives B-2 would have similar impacts to Alternative 3 C-3 would have deeper cuts than C-2 D-3 would have less excavation into basalt
Cultural Resources	No effects on archaeological resources	Four identified archaeological resources affected, sites require further research and field investigations Five out of six high-probability areas for resources would be impacted	Same as Alternative 2	A-2 would affect two resources but no high-probability areas B-2 would affect two resources C-2 would affect one resource and one high-probability area C-3 would affect two resources but no high-probability area D-2 and D-3 would affect three high-probability areas
	No effects on historic resources	Two resources would be directly affected	Same as Alternative 2	A-2, C-2, D-2, and D-3 would not directly affect any resources B-2 would directly affect one resource

Table 2. Summary of Impacts

	Alternative 1—No Build	Alternative 2	Alternative 3	Design Options
Hazardous Materials	Less risk of exposure due to no displacements	Nine sites with confirmed or suspected releases within proposed right-of-way Six sites adjacent to right-of-way Previous agricultural uses and older buildings could pose hazards to workers	Seven fewer adjacent sites	A-2 would not avoid impacting contaminated sites compared to Alternatives 2 and 3 Otherwise no particular advantage to other design options
Utilities	No impacts	Numerous utilities would be affected and require relocation Costs to project currently estimated to be a minimum of $7.7 million	Same impacts as Alternative 2	No important differences between design options or between design options and Alternatives 2 and 3
Construction	No construction impacts	Potential lane closures and detour routes would delay some travel movements, and affect accesses for local residences and businesses Additional localized construction related traffic, noise, dust, and visual effects	Similar to Alternative 2	No important differences between design options or between design options and Alternatives 2 and 3
Project Costs (2013 dollars)	N/A	$1.48 billion	$1.41 billion	Cost of Alternative 2 with: A-2, C-3, D-2, D-3: $1.2 billion B-2: $1.3 billion C-2: $1.1 billion Cost of Alternative 3 with: A-2, D-2: $1.1 billion C-2, C-3, D-2: $1.2 billion

Anticipated Permits, Approvals, and Licenses

U.S. Army Corps of Engineers

- Federal Clean Water Act Section 404 (individual permit)
- Pre-Construction Assessment for in-water work (with Oregon Department of State Lands)

Clackamas County

- Noise variance if construction activities were to occur between 10 PM and 6 AM
- Clackamas County Planning Department: conditional use permit for new cell towers or co-locations of additional antennas
- Clackamas County Engineering Department: utility placement permits for relocation of utility lines outside of a county road right-of-way
- Water Environment Services: Sewer and stormwater permits required only for state (not county) projects
- National Pollutant Discharge Elimination System (1200-C)

Federal Highway Administration

- Section 106 determination with Memorandum of Agreement
- Section 4(f)

U.S. Fish and Wildlife Service

- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

National Marine Fisheries Service

- Endangered Species Act of 1973 (Public Law 93-205) Section 7 Consultation
- Magnuson-Stevens Fishery Conservation and Management Act

Oregon Department of Fish and Wildlife

- Oregon Fish Passage Rule
- Fish and Wildlife Habitat Mitigation Policy
- Oregon Endangered Species Act

Oregon Department of State Lands

- Removal/Fill Permit
- Pre-Construction Assessment Permit for in-water work (with U.S. Army Corps of Engineers)
- Wetland Delineation Concurrence

Oregon Department of Transportation

- Permit for relocation of utility lines in a state road right-of-way

Oregon Department of Environmental Quality

- Federal Clean Water Act, Section 401
- Oversight of hazardous materials issues
- Site preparation permits for grading, erosion, blasting, and air and noise emissions

Table 3. Summary of Potential Mitigation Measures

Element of the Environment	Description of Mitigation
Transportation	The demand on the transportation network is expected to exceed the capacity of certain roads in the study area by 2030 even with the construction of the proposed Sunrise Project. To avoid or minimize the need for design exceptions or acceptance of lower mobility standards, other measures for managing travel demand or mitigating impacts could be explored, such as congestion pricing and tolls.
Land Use	Compensation to displaced residents and businesses is provided through the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970. To reduce the loss of developable vacant land, Clackamas County could evaluate the intensity of uses allowed on remaining land with a view to promoting more efficient use of that land. KEX officials have been consulted throughout the process (see Appendix B) and would continue to be consulted to ensure that mitigation measures are implemented, or revised as necessary.
Businesses and Communities	In addition to compensation to displaced residents and businesses provided through the provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Clackamas County Business and Development would work with businesses to help them relocate. Clackamas County could identify and apply community development tools to encourage public/private partnerships to revitalize the Clackamas Business District and Old Clackamas neighborhood after the proposed Sunrise Project has been built. Because several manufactured homes can be difficult to relocate, the county could work with manufactured home owners and the park owners to find suitable new locations within the land use study area.
Environmental Justice	The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 is the chief mitigation measure for displacements. During the comment period, additional outreach would be conducted to communicate impacts of special importance to known and potential environmental justice populations. The outreach would be used to identify the specific needs of the protected populations and to develop additional mitigation.
Visual Character and Resources	Potential mitigation measures consist mainly of retaining the existing vegetation at specific view locations as described in the mitigation section, planting native coniferous and deciduous trees to screen elements of the project, and designing aesthetic treatments for the walls and structures.
Noise	Noise walls analyzed in the I-205 Interchange area were found to be effective at reducing noise levels and generally met the ODOT reasonable and feasible criteria, and noise impacts in that area can be expected to be well mitigated. Noise abatement analyzed in the Midpoint area was generally found to be either ineffective at reducing sound levels or had costs too high to meet the ODOT reasonable and feasible criteria. The exceptions are the manufactured home park east of SE 106th Avenue and an area north of the proposed Sunrise Project east of SE 142nd Avenue for which abatement appears reasonable and feasible. Impacts in the Rock Creek Junction area could be partially mitigated. Final determination of noise abatement measures would not be made until final design, based on meeting ODOT's reasonable and feasible criteria and consultation with affected property owners.
Air Quality	Permits for stationary sources such as concrete and asphalt mix plants during construction would require mitigation to control dust and other pollutant emissions. Construction contractors are required to comply with state laws that place limits on fugitive dust that causes a nuisance or violates other regulations. Best management practices or reasonable precautions can be taken to avoid dust emissions, such as using enclosures, water, or chemicals to control dust; covering truck beds; and removing materials that could become airborne from streets. In addition, contractors are required to comply with ODOT standard specifications. The control measures would be documented in the pollution control plan that a contractor is required to submit prior to construction. Mitigation is not required for long-term impacts.
Energy	Vehicle use may be minimized by Transportation Demand Management measures to help people reduce the number of trips they need to take and by providing alternatives to single-occupancy vehicles. Energy use for maintenance activities may be reduced through conservation-oriented design and construction practices. Consideration should be given to reducing the energy required to operate and maintain the project, such as lighting, water collection and treatment, roadway materials, landscape maintenance, and structural maintenance.
Biology	Following the selection of the preferred alternative the project team would begin consultation on required mitigation with the permitting agencies. ESA mitigation will require stormwater treatment and detention, replacing lost critical habitat or restoring critical habitat that is temporarily impacted during

Table 3. Summary of Potential Mitigation Measures

Element of the Environment	Description of Mitigation
	construction. The terms and conditions of the agency consultation as well as mitigation measures would be incorporated into the record of decision. Mitigation could include building bridges to span creeks, limiting the number of piers in stream crossings and crossing areas, limiting the removal of mature vegetation, densely planting all exposed slopes, preserving the existing widths of corridors wherever feasible by using retaining walls or narrowing the right-of-way, removing Himalayan blackberry, directing lights to paved surfaces only and shielding lights from the wildlife corridor along the bluff, reducing traffic speeds and posting warnings at the wildlife crossings at SE 135th, SE 142nd, and SE 152nd Avenues. Possible mitigation measures may include replacing the existing Mt. Scott Creek culvert with new structures that allow both fish and wildlife passage or adding a terrestrial culvert above fish culvert, or enhancing current wildlife passage route along I-205 to Dean Creek undercrossing. All new culverts should be designed to meet state fish passage requirements in effect at the time of construction. Existing culverts could be replaced to comply with state fish passage requirements. The most effective mitigation measures to reduce unavoidable impacts to fish would be to build facilities to collect, detain, and treat runoff from new and existing impervious surfaces, particularly roadways. The water quality permits would likely require water quality treatment as mitigation for water quality impacts. Detention would also be required as mitigation for hydrologic impacts and/or mitigation for downstream hydraulic deficiencies. Water quality treatment and detention would need to meet both the Clackamas County Water Environment Services requirements and the National Marine Fisheries Service guidelines for stormwater management.
Wetlands	Mitigation measures could consist of using retaining walls to limit fill encroachment into wetlands and other waters, installing wildlife and fish passable culverts, and placing stormwater facilities outside of wetlands. Project impacts would likely trigger wetland mitigation ranging from 26.23 acres to 103.17 acres of created and/or enhanced wetlands since opportunities for restoration are very limited. The total project cost estimates include wetland mitigation.
Geology and Soils	Excavating in short segments and installing retaining structures or rock buttresses would be used to stabilize the Eastern Landslide and slope areas where dewatering would be required. Benching in landslide debris or colluvium should be limited to temporary, low vertical cuts. Site preparation should stabilize the subgrade to reduce the construction traffic disturbance of soft and wet soils. Erosion could be reduced by cultivating vegetation on slopes as soon as possible after grading and by constructing surface runoff collection systems to prevent the flow of water over the slopes. The liquefaction issues would need to be evaluated on a site-specific basis during design.
Cultural Resources	If the investigations determine that the project area contains significant archaeological deposits that would be unavoidably and adversely impacted by the Sunrise Project, then appropriate mitigation measures would be developed in consultation with State Historic Preservation Office, agencies, tribes and other interested parties. Mitigation measures may include preserving the resource in place or excavating it if the resource is significant primarily for its scientific values. Mitigation measures would be needed for any resource determined to be eligible for listing in the National Register of Historic Places and for which a Section 106 Finding of Effect determined that the project would have an adverse effect. Mitigation measures may include, but are not necessarily limited to, documenting the affected resources with photographs, and this work must be negotiated in consultation with State Historic Preservation Office. A Memorandum of Agreement would be prepared and signed by the participating parties, outlining the measures agreed upon to reduce, avoid, or mitigate the adverse effects.
Hazardous Materials	Mitigating potential hazardous materials issues during construction is typically helped or accomplished through spill prevention plans or other types of remedial measures typical for the construction and remediation industry.
Utilities	The utility providers did not propose any potential mitigation measures.
Construction	Public outreach would inform residents and businesses of potential traffic detours, delays and impacts. A construction management plan and best management practices would be used to minimize impacts from traffic, erosion, dust, odor, lighting, and hazardous materials. Obtaining construction permits would mitigate for air impacts. Higher fuel prices will encourage fuel conservation. Standard ODOT specifications for control of noise would minimize construction impacts.

Characteristics of a Good Solution

There are and will continue to be more serious congestion and safety issues in the project area. The process of developing alternatives showed the variety of ways that the transportation problems could be addressed. But addressing transportation issues is likely to have spillover impacts of some kind. For example, one solution might call for a bigger road, but a larger footprint would generate greater impacts on adjacent land uses and the natural features. Studying the variety of proposed solutions at the same time reveals key constraints to building the proposed Sunrise Project, such as the potential displacements of residents and businesses or impacting habitat for threatened or endangered species. Other issues are raised during meetings with the public.

The project area constraints and project-related issues raised by the public have been reflected in goals and objectives that were developed from the Purpose and Need for the project. In other words, the goals and objectives derive from the Purpose and Need but reflect the environmental context specific to the Sunrise Project area. The decision-making bodies adopted the goals and objectives through the project development process. The goals and objectives are used to compare the pros and cons of each potential solution, thereby highlighting the trade-offs inherent in choosing one alternative or design option over another.

In short, a good solution has to be one that meets the purpose and need for the project and that is most consistent with the goals and objectives.

The project has the following four goals:

Goal 1. Provide east-west transportation improvements from I-205 at the Milwaukie Expressway to the Rock Creek Junction to meet existing and future safety, connectivity, and capacity needs for statewide and regional travel within the OR 212/224 corridor.

Goal 2. Provide transportation improvements that support the viability of the Clackamas area for industrial uses.

Goal 3. Support community livability and protect the quality and integrity of residential uses within and adjacent to the corridor.

Goal 4. Provide a facility that minimizes and effectively mitigates adverse impacts to natural and cultural resources within the project corridor.

For each goal, there are objectives and evaluation measures. Table 4 presents the objectives under each goal and the measures proposed to evaluate the success of an alternative in meeting each objective. Next to each objective is the location where the SDEIS discusses the evaluation measure in relation to the alternatives and design options. References to sections of the technical reports (on the attached DVD) are provided where more detail on the topic may be desired.

Table 4. Adopted Goals, Objectives, and Evaluation Measures

Goal 1

Provide east-west transportation improvements from I-205 at the Milwaukie Expressway to the Rock Creek Junction to meet existing and future safety, connectivity, and capacity needs for statewide and regional travel within the OR 212/224 Corridor.

Objectives	Evaluation Measures	Where the Measure is Evaluated for the Alternatives in the SDEIS
1. Relieve congestion and provide for efficient traffic flow.	a) Volume/capacity ratio of select roadways by project area screenlines	Transportation section: Table 7, page 35
	b) Average travel time between common origin and destination points	Transportation section: The 2030 Transportation System, pages 33-36; Table 8, page 35; Technical Report, Section 6.4.3, page 171
	c) Vehicle hours of delay (VHD) for project area	Transportation section: The 2030 Transportation System, pages 33-36; Technical Report, section 6.4.3, page 162
	d) Number of congested lane miles within project area	Transportation section: The 2030 Transportation System, pages 33-36; Table 6, page 33
2. Provide facility improvements and access that are consistent with the Oregon Highway Plan.	Comparative description of how well alternatives and options meet Oregon Highway Plan operational and access-spacing standards for a new facility	Transportation section: Consistency with Transportation Plans and Policies, page 37; Technical Report, Section 3.2.2, page 44
3. Reduce congestion and improve safety on I-205 between the Milwaukie Expressway Interchange and the OR 212 Interchange.	a) Level of Service/number of vehicles served along identified section of I-205	Transportation section: The 2030 Transportation System, pages 33-36; Figures 20-25; Technical Report, Section 6.7, page 213
	b) Speed of travel along identified section of I-205	Transportation section: The 2030 Transportation System, pages 33-36; Figures 20-25; Technical Report, Section 6.7, page 236
	c) Estimated duration of queuing along this section of I-205	Transportation section: The 2030 Transportation System, pages 33-36; Technical Report, Section 6.5, page 180
	d) Description of design features and resulting safety effect of the project along this identified section of I-205	Transportation section: The 2030 Transportation System, pages 33-36; Technical Report, Section 6.12, page 289
4. Improve safety and connectivity for motorists, pedestrians, and bicyclists within the project corridor.	a) Comparison of new or improved connections with regional bicycle/pedestrian facilities	Transportation section: Bicycle and pedestrian system, page 34; Technical Report, section 6.13, page 292
	b) Description of new or altered highway facility features and resulting effect on modal connectivity and safety	Transportation section: The 2030 Transportation System, pages 33-36; Technical Report, section 6.13, page 292

Volume/capacity ratio: the number of vehicles that use the roadway compared to the room available for them

Screenlines: imaginary lines drawn across a series of parallel roadways that are used to evaluate traffic demand changes

Level of Service (LOS): a qualitative measure to describe how a road is operating, e.g., well or poorly

Table 4. Adopted Goals, Objectives, and Evaluation Measures (continued)

Goal 1, continued		
5. Support access and operational needs for improved transit service in the project corridor.	Description of project features that improve transit operation and service	Transportation section: Transit system, page 34; Technical Report, section 6.14, page 306
6. Provide flexibility in the design to accommodate the future possibility of high capacity transit (HCT) within both the OR 212/224 and the I-205 corridors.	Description of HCT features included in each alternative that support this objective	**Subsequent to developing this evaluation measure, the regional public transit agency, TriMet, concluded that the appropriate corridor for HCT would be Sunnyside Road to the north.**
7. Serve freight travel in a safe and efficient manner.	Projected travel times for trucks (freight) traveling through the project corridor and to/from the Clackamas Industrial Area along OR 212 to the regional centers of Damascus, Clackamas Town Center, Portland Central Business District, Oregon City, Milwaukie, and Portland International Airport	Transportation section: Table 8, page 35; Communities and Businesses section, Changes to Travel Patterns, page 85-89; Transportation Technical Report, section 6.9, page 246
8. Develop a project that is consistent with land use and transportation planning in the region.	Description of comparative differences between alternatives and options in meeting the requirements and intent of local and regional plans	Land Use section: Compatibility with Land Use Plans and Policies, page 61
9. Provide a safe and efficient evacuation route for the metropolitan area that supports regional emergency management plans.	Description of project features that contribute to meeting this objective	Businesses and Communities section: Schools, Parks, and Emergency Services, page 85

High capacity transit (HCT): fixed rail light rapid transit or high-speed rapid bus

Goal 2

Provide transportation improvements that support the viability of the Clackamas area for industrial uses.

Objectives	Evaluation Measures	Where the measurement is evaluated for the alternatives in the SDEIS
1. Provide local circulation and access that support the transportation needs of area industrial uses.	Projected travel times for trucks (freight) traveling to/from the industrial subareas to the regional centers of Damascus, Clackamas Town Center, Portland Central Business District, Oregon City, Milwaukie, and Portland International Airport	Transportation section: Table 8, page 35; Business and Communities section: Businesses and the Economy, page 81, and Changes to Travel Patterns, pages 85-89; Transportation Technical Report, Section 6.9, page 246
2. Minimize construction impacts on local businesses.	a) Number of businesses displaced (wholly and partially)	Land Use section: Table 10, page 58; Table 2, page ES-18
3. Minimize displacements of businesses and retain as much viable industrial land as possible.	b) Number of employees (Full-Time-Equivalents) potentially displaced	Socioeconomics Technical Report:: Table 2, page 8; Land Use Summary (SDEIS): Table 2, page ES-18
	c) Acres of industrial/employment zoned land converted to the new highway use	Land Use section: Right-of-way Impacts, pages 47-60 and Table 10, page 58

Table 4. Adopted Goals, Objectives, and Evaluation Measures (continued)

Goal 3

Support community livability and protect the quality and integrity of residential uses within and adjacent to the corridor.

Objectives	Evaluation Measures	Where the measurement is evaluated for the alternatives in the SDEIS
1. Provide adequate access to the state highway system (I-205 and OR 212/224).	Level of service at major signalized intersections that access existing OR 212/224 and the Sunrise Project	Transportation section: Figures 20-25; Technical Report, Section 6.10, page 246
2. Maintain local roadway connectivity.	How long does it take to get to key points in the corridor to determine changes in connectivity	Transportation section: The 2030 Transportation System; pages 33-36, Table 8, page 35, and Figures 20-25; Technical Report, Section 6.4.3, page 171
3. Minimize residential displacements.	Number of residential displacements	Land Use section: Right-of-way Impacts, pages 47-60, and Table 10, page 58
4. Minimize and mitigate, where practicable, project-related noise impacts to residential areas.	Number of noise-affected residences after proposed mitigation has been applied	Noise section: Table 14, page 128; Potential Abatement Measures, page 130; and Figure 50, Noise Walls
5. Minimize the visual impacts of a new facility.	High/Medium/Low effect to identified sensitive viewer areas and visual resources	Visual Character and Resources section: pages 109-114; Tables 12, 13, pages 109-110
6. Minimize and/or mitigate the effects of highway-related light pollution on residential areas.	High/Medium/Low adverse effect to residential areas after proposed mitigation is applied	Visual Character and Resources section: Visual Quality and Viewer Sensitivity, pages 109-115
7. Minimize loss of affordable housing.	Amount of affordable housing removed by the project	Business and Communities section: Affordable Housing, page 83; Figure 41, Community Features; and Environmental Justice section, pages 95-105

Goal 4

Provide a facility that minimizes and effectively mitigates adverse impacts to natural and cultural resources within the project corridor.

Objectives	Evaluation Measures	Where the measurement is evaluated for the alternatives in the SDEIS
1. Protect and, if practicable, enhance terrestrial wildlife corridors that are associated with building the proposed facility.	a) Effect on the functional continuity of the wildlife corridor	Biology section: Wildlife Habitat, pages 143-146; Table 17, page 145
	b) Acres of directly affected wildlife corridor	Biology section: Table 16, page 144, and Figures 51-59
2. Protect existing stream courses and riparian zones and effectively mitigate unavoidable impacts.	a) Acres of High/Medium/Low quality riparian area affected (based on Metro criteria)	Biology section: Wildlife Habitat, pages 143-146; Table 16, page 144, and Table 17, page 145
3. Avoid impacting wetlands and aquatic resources where practicable. Where impacts are unavoidable, provide effective mitigation.	a) Acres of adversely affected wetlands by function	Wetlands section: Amount of Wetlands Affected, page 166, Table 20, page 167
	b) Affected acres of riparian zone with aquatic T&E in the construction footprint	Biology section: Threatened or Endangered Fish, Terrestrial Wildlife and Plants, pages 149-150
	c) Affected acres of riparian zone without aquatic T&E in the construction footprint	Biology section: Wildlife Habitat, pages 143-146; Table 16, page 144, and Table 17, page 145

T&E: federally listed Threatened and Endangered species

Table 4. Adopted Goals, Objectives, and Evaluation Measures (continued)

Goal 4 (continued)

Objectives	Evaluation Measures	Where the measurement is evaluated for the alternatives in the SDEIS
4. Avoid impacting cultural sites and resources where practicable. Where impacts are unavoidable, provide recordation, salvage, and/or mitigation as appropriate.	a) Number of National Register historic sites affected	Cultural Resources section: Historic Resources, pages 185-187; Table 25, page 186
	b) Number of National Register eligible sites affected	
	c) Number of Goal 5 historic sites or areas affected	
	d) Number of archaeological sites affected	
	e) Number of archaeological sites affected that could not be recovered, such as burials, traditional cultural property	Cultural Resources section: Archaeological resources, page 183-184; Tables 23 and 24, page 184
5. Look for and consider opportunities to incorporate enhancements to existing natural and cultural resources within the project area.	A qualitative description of potential enhancements for each build alternative	Potential Mitigation Measures sections for Biology, pages 150-153, Wetlands, pages 170-171, and Cultural Resources, page 187
6. Protect habitat for Threatened and Endangered Species.	Acres of Essential Fish Habitat/Critical Habitat affected	Biology section: Fish Habitat, pages 146-149, Threatened or Endangered Fish, Terrestrial Wildlife and Plants, pages 149-150
7. Protect water quality.	Net amount of impervious surface created	Biology section: Water Quality, page 149; Table 19, page 149
8. Minimize negative impacts to air quality.	a) Comparison of the three worst performing intersections (LOS D, E, or F) per alternative for CO in parts per million (using CAL3QHC model)	Air Quality section: Project Area Impacts, pages 133-134
	b) Comparison of regional pollutant emissions for CO, NO_x, and VOCs for each alternative (using EPA MOBILE 6.2 model)	Air Quality section: Project Area Impacts, pages 133-134; Mobile Source Air Toxics Impact Analysis, pages 134-137

National Register of Historic Places (NRHP): a federal listing of historic resources protected under the National Historic Preservation Act of 1966

CO – carbon monoxide

CAL3QHC – computer model for estimating concentrations of CO adjacent to intersections

NOx – nitrogen oxides

VOC – volatile organic compounds

MOBILE 6.2 – computer model used to estimate vehicle emissions; takes into account expected future changes due to improvements in vehicle emission control technology

Public and Agency Involvement

The Federal Highway Administration (FHWA) is the lead federal agency and ODOT is acting as an agent for FHWA in preparing the document. Both ODOT and Clackamas County are the two main public agencies managing the project. A Project Management Team includes staff from Clackamas County, Metro, ODOT, FHWA, Happy Valley, Damascus, and the technical team.

A Project Advisory Committee with 18 stakeholders from neighborhoods, businesses, the cities of Happy Valley and Damascus, TriMet, Metro, environmental groups, FHWA (a non-voting member), and service providers met ten times between 2004 and 2006. Their next task will be to review the SDEIS and forward their comments to the Policy Review Committee.



Working out design alternatives at an open house

The Policy Review Committee has senior representatives from Clackamas County, ODOT, Metro, and FHWA (which has a non-voting, advisory role) and elected officials from affected cities and Clackamas County. The Policy Review Committee's final task will be to recommend a Preferred Alternative to the official decision-making bodies.

Appendix A of the SDEIS contains member lists of the Project Advisory and Policy Review committees and CETAS.

Public and agency involvement initially started in connection with the Sunrise Corridor project in the late 1980s and early 1990s. For more information on the public involvement program prior to 2004, contact ODOT at the address provided at the beginning of this document.

Public Involvement Activities since 2004

The Project Advisory Committee, composed of citizens representing neighborhoods, business and civic advocacy groups, emergency services, and other stakeholder agencies throughout the corridor area, is the central focus of the public involvement effort. Its meetings are open to the public and an average of 30 people regularly attend its meetings.

Public involvement efforts for the proposed Sunrise Project SDEIS began in 2004. Open houses in June 2004, October 2005, and September 2006 have attracted 100 to 200 attendees. More than 100 people also attended the two-day design workshop held in December 2004. Several focused community meetings have been held in different locations in the project area. Newsletters and postcards have been distributed to approximately 5,000 addresses (in 2004) and more than 9,000 addresses (March 2008). Other outreach included flyers, community meetings, and presentations at the Board of County Commissioners' meetings. Newspaper coverage, a website, and e-mail distribution lists have rounded out the public involvement effort.

ODOT has also targeted outreach to affected tribes. A discussion of outreach is contained in Appendix B of the SDEIS.

Project Schedule

The Sunrise Project began in 2004 with defining the scope of analysis for this SDEIS. From 2005 through mid-2007, the project activities were:

- Establishing the purpose and need;
- Establishing goals and objectives;
- Developing and refining the project alternatives;

- Selecting alternatives to be studied for the SDEIS;
- Studying the alternatives and completing the technical reports; and
- Writing the SDEIS.

The anticipated schedule for the remainder of the Sunrise Project is as follows:

Public review of SDEIS	Fall 2008
Public hearing on SDEIS	Fall 2008
Study Preferred Alternative, respond to comments on the SDEIS for the FEIS	Winter 2008/2009
Select Preferred Alternative	Winter 2008/2009
Local jurisdictions adopt Preferred Alternative	Winter/Spring 2009
Complete the FEIS	Spring/Summer 2009
FHWA Record of Decision	Fall 2009
Complete final design, permitting, right-of-way acquisition	2010-2012
Begin construction (pending approval and funding)	2013 at the earliest

Next Steps

After reviewing the SDEIS and the comments received, the Project Management Team, together with input from the Project Advisory Committee and Policy Review Committee, will develop a Preferred Alternative to be documented in an FEIS. The group of environmental regulatory agency representatives will be requested to concur on a Preferred Alternative. (See Appendix A for a list of CETAS membership.) The recommendation for a Preferred Alternative will be forwarded to the official decision-making bodies: the Clackamas County Board of Commissioners, Metro, Happy Valley City Council, Damascus City Council, ODOT, and FHWA. The FEIS will assess any additional impacts from the Preferred Alternative not covered already by the technical studies and will contain the comments on the SDEIS and responses to the comments. If any significant new environmental impacts are found, a supplement to the SDEIS may be needed.

Once the lead agency, FHWA, has determined that no further environmental review work is required, the FEIS will be approved by FHWA. A Record of Decision may be published no earlier than 30 days following the publication of the Notice of Availability for the FEIS. The Record of Decision will contain the committed mitigation measures required for the project's implementation. FHWA will independently sign the Record of Decision, which formally concludes the NEPA process for the proposed Sunrise Project.

The Oregon Transportation Commission will need to approve Interchange Area Management Plans for the interchanges on the new highway, which are intended to be adopted prior to the Record of Decision. In addition, FHWA will need to approve an Interchange Modification Request for revised access to I-205.

One of the challenges on the project has been finding sufficient funds to build the project. Strategies for phasing as a way to build the project in affordable stages are being considered.

How to Use This Document

This SDEIS has three main parts: an Executive Summary, the SDEIS document (with 4(f) Evaluation), and the technical reports.

Executive Summary

This Executive Summary presents the problem to be solved, the proposed action, its history, and the public involvement program. In addition, this part of the SDEIS summarizes the alternatives (with figures) their expected impacts and mitigation measures, and the required permits and approvals.

SDEIS Document

The SDEIS consists of the Executive Summary and four chapters as follows:

Chapter 1—Purpose and Need

Chapter 2—Alternatives and Alternatives Development

Chapter 3—Affected Environment, Environmental Consequences, and Potential Mitigation

Chapter 4—Additional Impacts (Construction, Cumulative, and Unavoidable) and Applicable Laws

The SDEIS presents the project's Purpose and Need as required by NEPA, describes the details of the alternatives evaluated and summarizes the analysis of the alternatives contained in the supporting technical reports. This SDEIS combines a discussion of the affected environment and environmental consequences rather than discussing those sections separately. The SDEIS focuses on the conclusions of the analysis of alternatives. Additional technical information and analysis are included in the technical reports. To aid in finding where impacts are discussed by individual **alternative** and **design option, the alternative and design option** are in bold face.

The beginning of each section of Chapter 3 lists the information contained in the related technical report. Colored text boxes present additional information or terminologies.

Figures related to the environmental resources are presented at the end of each section on elements of the environment in Chapter 3.

Technical Reports

Technical studies on 15 topics were produced and are contained on the DVD attached to the inside back cover of the SDEIS. The technical reports support the SDEIS with detailed information about the methodology, existing conditions, and results of the analysis. The technical reports are important for determining whether sufficient analyses of the alternatives have been conducted. Below is a list of the 15 technical reports and the corresponding SDEIS sections they support.

Technical Report		Corresponding SDEIS Section
Transportation	—	Transportation
Land Use	—	Land Use
Right-of-Way	—	Land Use
Socioeconomics	—	Business and Communities
	—	Environmental Justice
Visual	—	Visual Character and Resources
Noise	—	Noise
Air Quality	—	Air Quality
Energy	—	Energy
Biology	—	Biology: Wildlife and Fish habitat, Threatened and Endangered Species subsections
Wetlands	—	Biology: Wetlands subsection
Water Quality	—	Biology: Water quality subsection
Geology and Soils	—	Geology and Soils
Cultural Resources	—	Cultural Resources
Hazardous Materials	—	Hazardous Materials
Utilities	—	Utilities

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CHAPTER 1. PURPOSE AND NEED

The Problem

The existing OR 212/224 corridor, which forms the main east-west travel route between I-205 and Rock Creek Junction, has serious congestion, safety, and traffic flow problems. Residential and business traffic is unacceptably delayed during peak periods, with travel speeds as low as four miles per hour at several locations along OR 212/224. The planned population and employment growth will worsen existing problems. The duration of congestion and the extent of the queuing is expected to more than double. By 2030 the resulting traffic demand would far exceed the capacity that the current four lanes can be expected to handle safely and efficiently.

Project Purpose

The purpose of the proposed Sunrise Project is to effectively address the existing congestion and safety problems in the OR 212/224 corridor between its interchange with I-205 and Rock Creek Junction, and to serve the growing demand for regional travel and access to the state highway system.

Project Need

The project purpose is demonstrated with the following Statement of Need:

- OR 212/224 between I-205 and Rock Creek Junction is currently experiencing unacceptable levels of congestion and delay during the peak travel periods. In 2030, the projected traffic volume will far exceed the volume that the existing four-lane arterial can be expected to handle at an acceptable level of service.[7]

Project Location and Study Area

The general location of the new facility, named the proposed Sunrise Project, is depicted in Figure 1, Project Vicinity (p. x). The proposed Sunrise Project would extend approximately five miles between SE Johnson Road on the west end and SE 172nd Avenue on the east end (Figure 2, p. ES-2).

Figure 3 (Alternative 1—No Build, p. ES-7) shows an aerial view of the Sunrise Project area. The project is often discussed by subarea. Three subareas are outlined on Figure 2 (p. ES-2) and cover the following geographic areas:

- The I-205 Interchange area extends from west of I-205 to Camp Withycombe.
- The Midpoint area extends from Camp Withycombe to SE 152nd Avenue.
- The Rock Creek Junction area stretches from SE 152nd Avenue to SE 172nd Avenue.

- By 2030, the numbers of households and jobs in the area served by this section of OR 212/224 are expected to increase by 136 percent and 85 percent, respectively.[8]
- Both the northbound and southbound weave sections of I-205 between 82nd Avenue and OR 212/224 are approaching capacity, resulting in frequent stop-and-go movements, difficulty in changing lanes, and long queues forming because of minor

[7] Based on existing field observations in 2004/5, segments of OR 212/224 within the Sunrise project area experienced approximately four hours of daily congestion. In 2030, based on regionally adopted land use and employment projections and Metro's regional travel demand projections, without the proposed Sunrise Project, the same roadway is expected to experience about nine hours of congestion. See Chapter 6 of Sunrise Project Transportation Technical Report.

[8] Based on initial growth projections developed by Metro in 2005. The predicted increase in jobs and population in the Transportation Technical Report and in the Transportation section is different from this forecast from 2004. Subsequent refinement of the study area, use of 2005 as the base year, and Metro's model numbers in 2005 resulted in predicted jobs and household growth by 2030 of 85 and 100 percent, respectively.

incidents. By the year 2015, this section of I-205 will exceed its design capacity, and the length of these stop-and-go movements will continue to grow if no action is taken. Traffic traveling on the Milwaukie Expressway (OR 224) heading east on OR 212/224, as well as the reverse direction, must either use the above section of I-205 or the currently congested 82nd Drive.[9]

- OR 212/224 near I-205 is ranked in the top 10 percent of state routes for vehicle crash rate. Over 500 hundred vehicle collisions were reported for this area during the five-year period of 1998 through 2002. The high crash rate is attributed to severe congestion and roadway deficiencies. Inadequate bicycle and pedestrian facilities reduce the safety and connectivity for these modes of travel in the project area.[10]
- OR 212/224 is designated as a statewide and regional freight route, with 12 percent of the traffic on the project section of this highway being trucks. OR 212/224 serves the Clackamas Industrial Area, which is a major freight distribution center for the Northwest. This area is expected to nearly double its employment by the year 2015. Long delays are currently reported for trucks accessing I-205 from the distribution center.[11]

Proposed Action

The Oregon Department of Transportation (ODOT) and Clackamas County propose to build a new, east-west oriented, limited-access highway between Interstate 205 (I-205) and Rock Creek Junction (where OR 212 and 224 diverge to the east and south).



Industrial uses along OR 212/224 near the Clackamas River

The proposed Sunrise Project would connect I-205, the Milwaukie Expressway, SE 82nd Avenue/Drive, and OR 212/224. It would have six through-lanes plus two auxiliary lanes, so it would be as wide as eight lanes across in some locations. The I-205/Clackamas Interchange would be reconfigured with new ramps and access points, and a new interchange would be built at Rock Creek Junction. There would be no direct property or local street access to the proposed Sunrise Project.

Project Background and Setting

The northwest urban area of Clackamas County has developed rapidly over the last 30 years, particularly following construction of three major transportation facilities—I-205, Milwaukie Expressway, and OR 212/224. The regional and local land use and transportation plans supported development and the new transportation network. In 1977, the Metro Urban Growth Boundary (UGB) committed most of the land in and near the Sunrise Project area to future urban development. The subsequent adoption of the Clackamas County Comprehensive Plan identified land around I-205, the Milwaukie Expressway, and OR 212/224 for future development as a regional commercial center, an employment/

[9] *Based on existing field observations in 2004/5 and analysis of forecast future year travel demand associated with the range of alternatives studied. See Sections 5.6.3 and 6.7.3 of Sunrise Project Transportation Technical Report.*

[10] *Based on analysis summarized in Section 5.9 of Sunrise Project Transportation Technical Report.*

[11] *Based on existing truck counts from 2004/5 at specific locations within the OR 212/224 corridor. See Section 5.7 of Sunrise Project Transportation Technical Report.*

manufacturing center, and one of the largest truck distribution centers in the region.

Constructed in the 1970s to serve the planned land uses, I-205 and the Milwaukie Expressway are two key transportation corridors serving this area of Clackamas County. I-205 is one of the most heavily traveled portions of the state highway system and is a major truck route for the region. Milwaukie Expressway (OR 224) is a four-lane expressway that links OR 99E in Milwaukie to I-205 south of the Clackamas Regional Center. OR 224 then joins I-205 and is coincident with I-205 until it travels east from the Clackamas Interchange as OR 212/224. At the Rock Creek Junction, OR 224 turns south to Carver and then travels through rural Clackamas County to Estacada. OR 212 continues east. These highways are the transportation and freight backbone of the regional transportation system in the southeastern portion of the metropolitan area.

In the late 1990s, two small expansions of the Metro UGB to the northeast of the proposed Sunrise Project and a major expansion in 2002 of 12,000 acres in the Damascus/ Boring area further increased the demand for transportation facilities in this area.



North side of OR 212/224 looking west

The Problem in Detail

As stated at the beginning of this chapter, the problem with the functioning of OR 212/224 has three components: congestion, safety, and traffic flow. Evidence of the severity of the problem components and their existing and future potential impacts are described in more detail in the following paragraphs.

Congestion

Transportation professionals have established various operating standards for measuring traffic congestion and roadway capacity. Each standard is associated with a particular level of service (LOS). The LOS concept considers factors such as travel speed, delay, frequency of interruptions in traffic flow, relative freedom for traffic maneuvers, driving comfort, convenience, and operating cost. Six standards have been established, ranging from LOS A (where traffic is relatively free flowing) to LOS F (where the street system is totally saturated with traffic and movement is very difficult).

In 2004, LOS at 20 intersections along the Milwaukie Expressway, OR 212/224, and the I-205 ramps were measured during the period between 4:30 and 5:30 PM. Six of those intersections were operating at LOS E and two at LOS F. By 2030, 18 of 20 intersections are predicted to be operating at LOS F for the same period of day.[12]

The quality of travel on major roadways follows a predictable weekday cycle building toward, enduring, and recovering from system failure. In the morning, travel that generally flows freely at 6:00 AM changes with increased traffic volumes to isolated system breakdowns by 6:30 AM. This, in turn, triggers a rapid system response in the form of congestion and delay from 7:00 to 9:00 AM Recovery begins between 8:30 and 9:00 AM, offering fairly reliable midday travel until the afternoon/evening peak congestion cycle begins around 3:30 and lasts until 5:30 PM Several segments of the OR 212/224 corridor in the study area operate under congested stop-and-go travel for approximately four hours per day. The corridor serves from 16,000 vehicles per day (vpd) east of Rock Creek to nearly 60,000 vpd

[12] *Forecasted congestion is documented in detail in the Transportation Technical Report, for both existing and future conditions.*

near SE 82nd Drive. Congestion is most severe where volumes are highest.

In addition, other parts of the road network in the project vicinity are reaching or exceeding capacity. Northbound and southbound traffic on I-205 between SE 82nd Avenue and OR 212/224 must slow down in order to "weave" across lanes to reach the right exit lane, thereby bunching up traffic and creating long queues in all travel lanes when minor incidents occur. By 2015, this section of I-205 will exceed its design capacity, and the length, duration, and frequency of these stop-and-go movements will continue to grow if no action is taken.

Safety

ODOT recorded 560 crashes between 1998 and 2002 along OR 212/224 from I-205 to Rock Creek Junction, a rate that ranks in the top 10 percent of Oregon state highways for vehicle crashes. The high crash rate is primarily attributed to severe congestion and roadway deficiencies. Over 40 percent of crashes involved injuries, including two fatalities. Beyond the obvious human health impact, each crash involves an interruption in transportation system reliability to respond to and clear the crash scene and get traffic moving again. Over 80 percent of crashes involved a turning or rear-end maneuver consistent with high-volume, multi-lane, signalized roadways. The only intersection with a notably high crash rate is SE 82nd Drive at OR 212/224.[13]

Bicycle facilities in the study area are generally rated from "fair" to "good" in terms of condition and availability. Notable exceptions occur along McKinley Avenue, Mather Road, Jennifer Street, and SE 82nd Drive due to difficult intersection navigation, incomplete or narrow bike lanes, or some combination of the two. Pedestrian facilities also generally rate from "fair" to "good." Poor ratings are due to difficult intersections, incomplete sidewalk segments, sidewalks on alternating sides of the street, or a combination of effects along Hubbard Road, SE 135th Avenue, Jennifer Street, Mather Road, and Webster Road.

Traffic Flow

Business representatives and commuters participating in the public outreach efforts have expressed frustration with the unpredictability of travel times and conditions within the corridor. Drivers claim that travel times vary widely, causing interruption of freight movement and dispatch times. For example, travel times for commuters along westbound OR 212/224 between the Fred Meyer Distribution Center and I-205 during peak periods can take 3 minutes on a good day and over 15 minutes on a bad day.[14] Many factors probably contribute to reduced reliability: the high volume of traffic, the high proportion of large trucks, steep grades near I-205 and Rock Creek Junction that slow large trucks, an imbalance in the use of available travel lanes based on specific origins and destinations of drivers, and the presence of signalized intersections.

Projected Demand for an Expanded Transportation System

While the region as a whole is expected to accommodate approximately 50 percent more households and nearly 70 percent more new jobs between 2005 and 2030, the proposed Sunrise Project would serve an area that is expected to accommodate almost double the number of households and jobs in the same time period. The transportation study area is forecasted to grow from 16,000 to 32,000 households and from 48,000 to 89,000 jobs. Damascus is forecasted to undergo the largest growth of any of the districts that make up the Sunrise Project area, with a greater than 600 percent increase in households and a 1,700 percent increase in employment.[15]

[13] *Section 5.6 of the Transportation Technical Report documents the safety research for this SDEIS.*

[14] *See Chapter 5 of the Transportation Technical Report, sections 5.5 and 5.6, for a discussion of existing conditions on selected roadways.*

[15] *See Figures 6-6 and 6-7 of the Transportation Technical Report.*

As an example of near-term growth, a large parcel of land in the Rock Creek Industrial Area of Happy Valley is being considered for development of a large medical care complex with the potential to create 6,000 jobs by 2030 (as estimated by the health care provider).

The Clackamas Industrial Area is also expected to add a substantial number of new jobs. This growth drives a strong demand for east-west travel and connection to the surrounding regional transportation system—principally including I-205, SE 82nd Avenue, Milwaukie Expressway, and OR 212/224. Additionally, parallel roadways, such as Sunnyside Road, Sunnybrook Road, and Jennifer Street, are not intended to accommodate the amount of traffic and generally long-distance nature of trips created by future growth. Because those parallel roads are fully built out per the adopted regional plan, a new facility is needed.

Public and Agency Involvement

The Federal Highway Administration (FHWA) is the lead federal agency and ODOT is acting as an agent for FHWA in preparing the document. ODOT and Clackamas County are the two main public agencies managing the project. At the beginning of the project in 2004, a Project Management Team was formed to include staff from Clackamas County, Metro, ODOT, FHWA, and the technical team. The Project Management Team meets approximately once a month.

A stakeholder Project Advisory Committee was also formed. It comprises 18 representatives of neighborhoods and Citizen Participation Organizations, businesses and business groups, the cities of Happy Valley and Damascus, TriMet, Metro, environmental groups, service providers such as the Clackamas County Fire District and Water Environment Services, the Army National Guard Camp Withycombe, and FHWA (as a non-voting, advisory member). The Project Advisory Committee reviews the work completed by the Project Management Team and provides input on key decision milestones. The Project Advisory Committee met ten times between August 2004 and June 2006. Their next task will be to review the SDEIS and forward their comments to the Policy Review Committee.

The Policy Review Committee is made up of senior representatives of each of the four partner agencies (Clackamas County, ODOT, Metro, and FHWA [as a non-voting, advisory member]) and elected officials from affected cities and Clackamas County. The Policy Review Committee has participated in the development of evaluation criteria for the alternatives, considered public comments, and considered Project Advisory Committee recommendations. The Policy Review Committee's final task will be to recommend a Preferred Alternative to the official decision-making bodies: the Board of County Commissioners for Clackamas County, Metro, Damascus City Council, Happy Valley City Council, ODOT, and the FHWA. (See Appendix A for a list of the committee memberships.)

Public Involvement before 2004

Prior to 2004, public and agency involvement started with the first work conducted in connection with the Sunrise Corridor project in the late 1980s and early 1990s. For more information on the public involvement program prior to 2004, contact ODOT at the address provided at the beginning of this document.

Public Involvement Activities since 2004

The Project Advisory Committee, composed of citizens representing neighborhoods, business and civic advocacy groups, emergency services, and other stakeholder agencies throughout the corridor area, is the central focus of the public involvement effort. (See Appendix A for a list of the membership.) Its meetings are open to the public, and an average of 30 people regularly attend its meetings.

Public involvement efforts for the proposed Sunrise Project SDEIS began in 2004. In addition, public forums have been held for determining the scope of the SDEIS, developing alternatives, and

reviewing the range of alternatives. In June 2004, more than 100 people attended the first public open house for the proposed Sunrise Project. Over 100 people also attended the two-day design workshop held in December 2004. An open house to review the range of alternatives was held in October 2005 and attracted nearly 200 people. Combined, the public meetings have involved hundreds of area stakeholders. Focused community meetings have been held in the Lawnfield area at the west end of the project, at the east end of the project, as well as specifically around each of the potential interchange areas. An open house held in September 2006 at Sunnyside Community Church drew 200 attendees.

Four newsletters and two postcards have been distributed to a project mailing list. The original list had approximately 5,000 addresses in 2004 and has grown to more than 9,000 addresses in 2008. The project public involvement program distributes public information and meeting invitations via site addresses as well as tax record addresses to ensure that people and businesses in the area receive information. Distributing flyers door-to-door has also been selectively used to share project information. Project presentations at over 15 community meetings have occurred, including at the North Clackamas, Sunnyside United Neighbors, and other Clackamas Citizens' Participation Organizations, Clackamas County Community Action Board, and the Rotary. The Project Management Team regularly presents at Clackamas County Board of County Commissioners' meetings, regional Joint Policy Advisory Committee Transportation meetings, and other standing groups that are open to the public.

In addition, the project has been featured in The Oregonian, Clackamas Review, Damascus Observer, Daily Journal of Commerce, and Portland Business Journal. A website and e-mail distribution lists have kept neighbors and stakeholders informed electronically.

Public outreach for environmental justice

The Environmental Baseline Report for the Sunrise Project identified potential environmental justice populations prior to the development of project alternatives. This information was used to develop alternatives that avoided areas with potential environmental justice (EJ) populations to the greatest extent practicable. This preliminary assessment of the location of environmental justice populations was based on the 2000 U.S. Census tract information, county assessor records, and Housing Authority data on the location of Section 8 housing units. This analysis was refined during the analysis of the socioeconomic conditions (see Socioeconomics Technical Report).

Generally the impacts of the proposed Sunrise Project are similar for the population of the study area and for the environmental justice populations that are located in that study area. There are two clusters of housing that will be relocated by build alternatives which appear to be populated by low-income persons. One of these clusters is in the Old Clackamas area. Several residents in this area have attended the open houses at Clackamas Elementary School. The other cluster is a small mobile home park just to the east of 152nd Avenue.

Since individual household income information is unknown for residents of the area's many manufactured home communities, the county has and will continue to provide opportunities for manufactured home park residents to get information and provide input on the project, since displacement issues are more complex for manufactured home owners. Early in the project, county staff met with or offered to meet with the manufactured home park managers during stakeholder interviews. County staff met with three managers and collected some issues and concerns about the manufactured home parks. Multiple times during the project, county staff distributed project flyers and meeting invitations door-to-door within manufactured home parks. Small group meetings at the individual manufactured home communities should be held

just prior to or upon release of this SDEIS document.

There is only one census tract with a high percentage of minority residents, which is predominantly Asian American, Hawaiians and Pacific Islanders, and mixed race individuals. However, this census tract is also higher income. The county has no information indicating that there are language barriers for this census tract. Given the age of the data from the 2000 U.S. Census, the project will be flexible if translation or interpretation service needs become known during public outreach efforts.

The goals and objectives are generated from issues raised by the project development team, advisory groups, and the public. They can be conflicting and the project alternatives may not meet all of them.

At the beginning of the project, a committee seat was specifically designated to help the project consider EJ issues and concerns during scoping and alternatives development and later selection of a preferred alternative. Additional outreach will be conducted to communicate impacts of special importance to EJ and potential EJ populations. Until specific impacts were known, it has been difficult to communicate impacts. With the release of the SDEIS document, additional door-to-door outreach and small group meetings, where applicable, should be completed in areas identified by potential impacts. Some of these residential or business areas may have EJ issues. As potential project benefits and adverse impacts are shared, the project will strive to keep information accessible and understandable.

Because no specific EJ populations have been identified, the project has shared project information with the Housing Authority and given updates to the Clackamas County Community Action Board, a group that advises on programs and services for low-income persons. The project team should continue to work with agency providers to gather issues and find opportunities to share information with any EJ populations that may be scattered within the project area.

Targeted outreach to convey potential impacts

With the release of the SDEIS document, additional door-to-door outreach and small group meetings, where applicable, should be completed in areas identified by potential impacts. This will help the public to better prepare for sharing their concerns during the public comment period for the SDEIS.

From January 2008 to April 2008, a large group meeting and five small group meetings were held with neighbors in the Bluff Drive, Hubbard Terrace/Myra Lane, and Diamond Drive/ Diamond Court areas. The purpose of the meetings was to brief neighbors on the proposed Sunrise Project, discuss potential noise impacts related to the build alternatives, discuss the mitigation that had been examined, and discuss other “outside the box” ideas for mitigation. Approximately 50 people attended the large group meeting in January, and 31 neighbors attended the small group meetings. The noise increases for the homes in this area directly above the proposed Sunrise project alignment range from about 8 to 20 dBA, depending on the location of the home. Because of the topography of the area and the relation of the homes to the project alignment, ODOT and the County are finding it difficult to find a solution that would cost-effectively mitigate noise. The meetings helped to convey these issues and initiate discussion with neighbors about other types of mitigation that might exist outside of traditional measures prior to the release of the SDEIS.

Other issues and potential impacts, such as access and displacement, are being shared with stakeholders on a property-by-property basis prior to and upon the release of the SDEIS.

How People Can Make their Views Known to the Decision-Makers

An important element of the National Environmental Policy Act (NEPA) is the opportunity for citizens and other agencies to review and comment on proposals. Such comments help the process by clarifying information, identifying missing information, or suggesting ideas for different or additional mitigation. The SDEIS document is available online at www.sunrise-project.org.

This SDEIS has been distributed to public agencies, tribes, other interested parties, and the public at large. The public comment period for the proposed Sunrise Project, I-205 to Rock Creek Junction SDEIS, extends 45 days from its release. Comments will be shared with the consensus committees for this project and decision-makers and will become part of the public record. Written comments can be submitted online at the website (see previous paragraph) or sent to the ODOT Environmental Project Manager for the project at the following addresses:

- Emily Moshofsky, ODOT, 123 NW Flanders Street, Portland OR 97209
- emily.a.moshofsky@odot.state.or.us
- Emily Moshofsky, ODOT fax number: 503-731-8259

Oral comments will only be accepted and recorded at the public hearings, which are scheduled on the dates noted on the SDEIS cover sticker. All comments on the SDEIS will be collected and distributed to and reviewed by the Project Management Team and technical team. Depending on the volume of comments received, individual comments may not be responded to, but will be grouped with similar comments and addressed in the FEIS.

CHAPTER 2. ALTERNATIVES AND ALTERNATIVES DEVELOPMENT

Alternative Solutions

How a Range of Alternatives Was Developed

Alternatives were developed in a collaborative, step-by-step process involving the affected communities, regulatory agencies, jurisdictional stakeholders, and the public. Developing alternatives began with defining the project purpose and need, and identifying goals and objectives. The goals and objectives are listed in detail in Table 4 (p. ES-30). The environmental constraints and opportunities came from the 2004 Environmental Baseline Report, which provided a current inventory of environmental conditions in the corridor.

The Project Advisory Committee assisted the Project Management Team in developing screening criteria. The screening criteria were developed to screen the many alternatives and ideas received at the public workshops held during the alternatives development process. The criteria were not rated but were used as discussion points with the project teams and the Public Advisory Committee in winnowing down or combining alternatives toward a recommended range of alternatives. (Evaluation criteria were later developed to provide metrics for comparatively evaluating the range of alternatives in the SDEIS.) Below is a list of the screening criteria. The alternatives were measured against the screening criteria to determine which ones should be carried forward for further refinement.



North from project alignment at west end of Camp Withycombe

Screening Criteria for Goal 1: Transportation/Operations

1. Optimize performance of regional transportation system.
2. Provide additional vehicular capacity for regional travel at least equivalent to a four-lane, limited access highway between I-205 and Rock Creek Junction as indicated by the 1998 Sunrise Major Investment Study conclusion and the 2000 RTP amendment.
3. Provide connectivity and access for bicycles and pedestrians along any new highway facility as well as improve the connectivity of the I-205 multi-use path.
4. Provide flexibility for high capacity transit (HCT) within or in association with any new regional highway facility.[16]
5. The projected service levels of new intersections and interchange movements should be in balance with the projected operational levels of connecting roadway facilities.
6. Provide appropriate access for emergency vehicles in any new highway improvements.
7. Provide a facility that addresses the goals and policies of the Oregon Highway Plan, including mobility standards, access

[16] *Subsequent to developing this evaluation measure, the regional public transit agency, TriMet, concluded that the appropriate corridor for HCT would be Sunnyside Road to the north.*

management, and rail and highway compatibility.

8. Improve travel safety on state highways and associated interchanges/intersections within the corridor.

9. Provide a cost-effective solution.

Screening Criteria for Goal 2: Industrial and Commercial Vitality

1. Improve the efficiency and safety of truck access to the interstate and regional highway system for freight distribution centers in the corridor.

2. Maintain or improve local circulation needs of affected industrial uses.

3. Minimize construction impacts to local businesses.

4. Provide I-205 access for the Lawnfield business area at least as direct as shown in the adopted 1996 interchange design and endorsed by the Lawnfield Area Business Organization group in 1996.

5. Minimize displacements of businesses and retain as much viable industrial land as possible.

Screening Criteria for Goal 3: Community Livability

1. Provide connectivity to the regional highway system for the residential collector and minor arterial streets of 135th, 142nd, and 152nd Avenues.

2. Provide local roadway connectivity.

3. Minimize residential displacements.

4. Minimize, where practicable, project-related noise impacts to established residential uses.

5. Minimize, where practicable, project-related visual impacts.

6. Avoid disproportionate adverse impacts on low-income and minority communities.

7. Avoid dividing established residential areas.

Screening Criteria for Goal 4: Natural and Cultural Resources

1. Avoid impacting as much as practicable the existing terrestrial and riparian wildlife corridors.

2. Consider opportunities for enhancing terrestrial and aquatic corridors and habitat in the project area.

3. Protect streams/mitigate impacts to riparian areas.

4. Avoid/minimize/mitigate impacts to protected wetlands.

5. Protect habitat/mitigate impacts to T&E species.

6. Protect ground and surface water quality.

7. Avoid impacting National Register eligible historic sites in the project corridor.

8. Avoid/minimize/mitigate impacts to known archaeological sites.

9. Minimize impacts to air quality.

Alternatives Considered but Dismissed

The Project Management Team hosted a two-day public design workshop in December 2004 to work on evaluating or developing alternatives for the full length of the project area as well as options for specific locations or features. Twenty-one alternatives were identified and screened: 19 build alternatives, one no build alternative, and one Transit/ Transportation Demand Management (TDM)/Transportation System Management (TSM) alternative (see Table 5, p. 11). Five of the 21 alternatives had been originally developed but were eliminated during the 1993 DEIS. Those five were re-evaluated in terms of the screening criteria for this SDEIS.

Table 5. Summary of Alternatives Considered		
	Alternatives	**Recommend Forward to SDEIS**
1	No Build (includes planned street/highway improvements in Financially Constrained RTP, as well as TDM/TSM/Transit elements)	Yes
	Alternatives Eliminated in 1993 DEIS and Revisited in Current SDEIS	
2	Widen Existing OR 212/224	No
3	Alignment across Mount Talbert	No
4	More Westerly Crossing of Camp Withycombe	No
5	Enhanced Transit/TSM/TDM [Elements of each would be included in final alternative.]	No
	Alternatives Considered in Current SDEIS: New 6-lane Highway	
I-205 Interchange Area		
6	1996 Design (Modified)	No
7	New Design	Yes
Lawnfield Area		
8	1996 Design (Modified)	Yes
9	Maintain Lawnfield Road Area Access	No
10	SE 98th Avenue/Sunnybrook Connection	Yes
Midpoint Area		
11	1996 Split Interchange	Yes
12	Single Interchange	Yes
13	Half Interchange	No
14	No Mid-Point Interchange	Yes
SE 135th Avenue to Rock Creek Junction Area		
15	Follow Tree-line Alignment	Yes
16	Central Alignment	Yes
17	Move Existing OR 212 to the North	No
18	Southern Alignment	No
19	On Top of Bluff Alignment	No
East End Area		
20	Alignment through Knoll	Yes
21	Alignment North of Knoll	Yes

In addition, new alternatives were developed either by the technical team or through the public design workshop. The alternatives were reviewed in light of the screening criteria to determine which ones should be carried forward for further refinement. The following is a brief description of and rationale for alternatives and options (old and new) considered but not recommended for further design or study.

Alternatives Proposed in 1993 DEIS

Four conceptual design alignments proposed in the 1993 DEIS were re-evaluated for the current SDEIS and not advanced for further consideration. These alternatives were dismissed primarily because they did not meet the purpose and need of the proposed Sunrise Project (p. 1), or conflicted with the project's goals and objectives as reflected in the screening criteria.

The principal factors why each design concept did not meet the project screening criteria are noted below.

1. Widen or double-deck existing OR 212/224

Existing OR 212/224 currently functions primarily as an arterial, rather than a highway, due to the high number of driveway accesses and intersecting streets prevalent along this facility. Arterial roads have about half the capacity of an access-controlled highway. Accommodating forecasted 2030 traffic volumes and providing for all of the necessary local commercial and industrial traffic movements at multiple at-grade intersections on this highway would require either expansion of the existing 5-lane highway to approximately 14 lanes, or construction of a double-decked highway over OR 212/224. Significant revisions to the existing Clackamas Highway Interchange would be required to accommodate both alternatives on OR 212/224.

Either highway design would create significant business displacements, and access issues, along OR 212/224 and the adjacent Clackamas Industrial Area, as well as create adverse visual and noise impacts. Although the widening of OR 212/224 alternative would require a larger footprint throughout the corridor than the double-decked highway alternative, construction of a midpoint interchange as part of the double-decked alternative would require significant right-of-way acquisition in the mid-section of the corridor in order to provide adequate ramp connections from elevated highway double-deck to ground-level businesses. Both alternatives would impact approximately 350 properties (access and displacements) and 243 acres for right-of-way. Approximately 285 business properties would be impacted, of which about half would result in business displacements. Approximately 180 residential units would also be impacted.

The historic Frank A. Haberlach House (13002 SE OR 212/224) would be displaced under both of these alternatives, with minor impacts to the nearby historic Silverthread Kraut and Pickle Works Building. This alignment would still impact a portion of the Clackamas Elementary School recreation field (*de minimis*), but avoid impacting Camp Withycombe. The widening of OR 212/224 is estimated to cost approximately $760 to $820 million to construct (2013). The double-deck alternative is estimated to cost approximately $1.3 to $1.5 billion to construct (2013).

This alternative did not meet the project's purpose and need and conflicted with a number of its goals and objectives intended to support the viability of the Clackamas area for industrial uses and to avoid impacting historic properties.

2. Alignment across Mount Talbert

This alignment presents numerous topographic and neighborhood constraints. It would require excavating up to 130 feet along a historically unstable slope. The resulting roadway would have long, steep grades at each end, causing lower travel speeds, difficulties for truck usage, and higher maintenance costs due to more frequent sanding for icy conditions. This alignment was initially considered as one means of minimizing impacts to commercial/industrial properties north of the Clackamas Highway (OR 212/224). However, while this area was largely undeveloped in the early 1990s, by 2004 it had developed into the Sunnyside community with hundreds of new residences. It is estimated that up to 577 properties would be impacted by this alignment, including approximately 727 residential units and 238 businesses.

There would also likely be *de minimis* impacts to the recreation fields of two schools in the Sunnyside neighborhood: Clackamas High School, and Clackamas Elementary School. The crossing of Mount Talbert by the Sunrise Project would impact a portion of this 183 acres greenspace/ habitat area, the largest undeveloped butte in northern Clackamas County, and sever critical wildlife corridors connecting Mount Talbert, Camp Withycombe/ODOT forested slope parcel, and Rock Creek habitats. This alignment would still impact a portion of the KEX Towers site, but avoid impacting Camp Withycombe. It is estimated to cost approximately $1.0 to $1.1 billion to construct (2013). This alignment conflicts with goals and objectives dealing with

minimizing impacts to wildlife habitat and its connectivity, visual and noise impacts, neighborhood cohesion, and residential displacement.

3. More westerly crossing of Camp Withycombe

A crossing of Camp Withycombe beginning farther to the west than the proposed build alternatives (Alternatives 2 and 3) presents design difficulties in connecting to the Sunrise/Milwaukie/I-205 interchange. A more westerly crossing would follow a route along the west side of the UPRR tracks at a highly-skewed angle, and then traverse the northern portion of Camp Withycombe before matching up at the eastern border of the camp to the proposed alignments for the two build alternatives. Although not directly impacting any other structures within Camp Withycombe than the firing range facilities impacted in the proposed build alternatives, the Oregon Military Department has stated that this more westerly alignment would require additional right-of-way acquisition from the camp's already limited (77+ acres) base property needed for base redevelopment and further reduce their base perimeter security buffer.

Problems with the western route include the cost and complexity of the crossing over the railroad; the need for relatively high (35 to 40 feet) and costly retaining walls along the section that parallels the railroad; substandard design speeds for two major curves; and the complexity of the I-205 interchange resulting from the approach angle of the Sunrise and I-205 alignments. It is estimated to cost approximately $1.2 to $1.3 billion to construct (2013). This alternative would not meet the project's purpose and need due to substandard design speed, poor angle of approach to the I-205 interchange, and substandard curves.

4. Alignment south of Camp Withycombe

This alignment alternative would completely avoid any impacts to Camp Withycombe by traversing to the south of the camp and then east along Jennifer Road, parallel and south of OR 212/224, before resuming the proposed alignments (Alternatives 2 and 3) near SE 142nd Avenue. However, this alignment alternative does not adequately meet the project's purpose and need to address congestion and safety conditions in the OR 212/224 corridor between its interchange with I-205 and Rock Creek Junction and to serve growing demand for access to the state highway system. By connecting to the state highway system (I-205) south of the OR 212/224 corridor at the Gladstone Interchange, it provides limited benefit to relief of the OR 212/224 corridor and connections to Milwaukie Expressway and I-205 northbound.

This more southerly alignment along lower 82nd Drive and Jennifer Road would impact numerous businesses and residences located along these roadways traversing the southern portion of the Clackamas Industrial Area. A large grouping of three lower-income manufactured home parks (440 units) to the south of OR 212/224, between SE 135th and SE 142nd Avenues, and a 30-unit home park near SE 152nd Avenue would also be adversely impacted by this alignment alternative, with approximately 90 units displaced. It is estimated that up to 300 properties (access and displacements) would be impacted by this alignment, including approximately 210 residential units and 55 to 60 businesses. While not requiring as expansive an interchange on I-205 as under the two build alternatives, to accommodate connections to/from the proposed Sunrise Project/I-205/Milwaukie Expressway/82nd Avenue (OR 2123N), this longer alignment is estimated to cost $1.1 to $1.2 billion to construct (2013).

Alternatives from the Public Design Workshops

Six alternatives developed at the workshops were not recommended for study in the SDEIS based on the ratings generated by applying the screening criteria. The main reasons for their low ratings are described for each alternative below.

1. 1996 Design (Modified) for the I-205 Interchange Area

This 1996 design concept was reviewed and modified in 2004 to assess whether it could accommodate the projected higher 2030 traffic volumes. It did not accommodate traffic movements as well, or as safely, as the new design put forward under **Alternatives 2 and 3**.

2. Maintain Lawnfield Road area access

This alternative would maintain access to the Lawnfield Business Area via Lawnfield Road and an at-grade rail crossing at the Union Pacific Railroad main line. State statutes direct ODOT to eliminate at-grade railroad crossings wherever possible and particularly along designated High Speed Passenger Rail corridors, which includes the Union Pacific Railroad main line through the project area. If the grade crossing were separated at the Union Pacific Railroad main line crossing, this design option would add more vertical height to the adjacent interchange and add unreasonable costs and complexity to the design of the interchange. Further study indicated that local circulation improvements in the Lawnfield Business Area proposed under **Alternatives 2 and 3**, including construction of a grade-separated crossing of the Union Pacific Railroad main line at Tolbert Street or an extension of SE 98th Avenue to Sunnybrook Road, would provide acceptable access from the Lawnfield Business Area to the regional highway system with lower costs and complexity.

3. Half Interchange at the Midpoint area

Half interchanges are inconsistent with ODOT policies on access and highway standards because they tend to create motorist confusion and unsafe driving conditions. In addition, alternative would provide access to the regional highway system to/from the Clackamas Industrial Area in only one direction.

4. Move Existing OR 212/224 to the North from SE 135th Avenue to the Rock Creek Junction Area

This alternative would have potentially adverse impacts to the Rock Creek riparian area, particularly the lower segment of Rock Creek designated as Essential Salmonid Habitat. The crossing approach for the new facility of Rock Creek in this area would be at an angle, instead of perpendicular, requiring a larger structure and footings in this sensitive section of the creek. It also would displace a moderate number of businesses and create adverse impacts to remaining businesses currently oriented to the existing OR 212/224 by requiring reconnection of driveways to a new alignment.

5. Southern Alignment from SE 135th Avenue to the Rock Creek Junction Area

This alternative would have similarly adverse impacts to the Rock Creek riparian area as the previous option, with visual impacts to residential areas to the south and east. The interchange design and connections to/from existing OR 212 and 224 would be difficult and extremely costly.

6. Top of the Bluff Alignment from SE 135th Avenue to the Rock Creek Junction Area

This alternative would have similarly adverse impacts to the Rock Creek riparian area as the previous two options with a crossing higher upstream, and it would have potentially adverse impacts to the passage of wildlife in the Rock Creek riparian reaches and east-west corridor. In addition, it would divide an established residential area, create higher noise levels, and cause more adverse visual impacts to residential areas.

Alternatives Carried Forward

After ten of the alignments or design alternatives were eliminated, 11 were selected to be carried forward for evaluation in the SDEIS (see Table 5, p. 11). These 11 alternatives were refined into the three alternatives and the six design options considered in this SDEIS as potential ways of meeting the purpose and need for the proposed Sunrise Project.

Alternatives

Three alternatives are under consideration. **Alternative 1–No Build** is required by NEPA, ODOT, and FHWA guidelines. **Alternatives 2 and 3** would incorporate the construction of a new multi-lane, limited-access highway north of and parallel to the existing OR 212/224 between I-205 and Rock Creek Junction.

Alternative 1 – No Build

The conventional FHWA definition of a no build condition for a transportation project is the ongoing maintenance of existing facilities plus the addition of planned transportation project improvements that are already funded and programmed for implementation as described in the Financially Constrained Project List of the Metro RTP (see Figure 3, Alternative 1–No Build, p. ES-7). The planned transportation project improvements are assumed to have independent utility and are part of the regional transportation modeling assumptions that are used to evaluate the SDEIS No Build and the SDEIS build alternatives. The impacts of each project will need to be analyzed independently when a project undergoes detailed analysis, and as such this analysis is not undertaken as part of the SDEIS evaluation.

In the case of the proposed Sunrise Project, some deviation from this convention was necessary to develop a more accurate No Build alternative that would reflect anticipated future conditions that would result from recent UGB expansions and assumed additional UGB expansions. The proposed Sunrise Project is intended to serve two large areas of planned future urbanization—the Damascus/Boring UGB expansion area and the Metro-identified "provisional urban expansion area" south of the Clackamas River.

When the work on this SDEIS began, the existing 2025 RTP did not include all the roads necessary to serve those areas and the planning horizon for the proposed Sunrise Project is 2030, not 2025. For those reasons, the project team assumed that some additional roads would be built, even if they were not then planned in the RTP. Otherwise, the regional transportation model would show an unrealistic amount of traffic on the proposed Sunrise Project in the expansion areas. To correct for this issue, the project team created a list of reasonably foreseeable improvements that would likely be in place by 2030.

Subsequent to the analysis on this SDEIS, Metro adopted an updated RTP in 2008 with a 2035 Financially Constrained Project List which includes all of the assumed major road facilities in the Damascus/Boring UGB expansion area. The cities of Happy Valley and Damascus are currently developing comprehensive land use plans and transportation system plans for the area included in this addition to the regional UGB.

The "provisional urban expansion area" south of the Clackamas River area is still outside of the UGB, and as such the Metro RTP 2035 Financially Constrained Project List does not contain the assumed projects in this area. Consultations with local jurisdictions in the corridor, as well as the professional engineering judgment of agency and consultant staff, were utilized to estimate needed transportation improvements, pending completion of local land use and transportation planning efforts. The projects include:

- Gronlund Road (5 lanes/35 mph);
- Bradley Road (3 lanes/35 mph);
- Forsythe Road (5 lanes/35 mph);
- Holcomb Boulevard (3 lanes/35 mph);
- Clackamas River Drive (3 lanes/35 mph);
- OR 213 (south of I-205) (4 lanes); and
- A new crossing of the Clackamas River connecting the I-205/Gladstone interchange with Clackamas River Drive (5 lane/35 mph).

In addition to the projects south of the Clackamas river area, a project that is not currently in the 2035 RTP is:

- Create a climbing lane on OR 212 between Rock Creek Junction and SE 172nd Avenue.

In addition to normal maintenance of the existing OR 212/224, several programmed larger transportation projects in the project vicinity are assumed to be included.

Following are those larger, programmed projects with the years of construction in parentheses as updated in the recent Metro RTP 2035 Financially Constrained Project List:

- Widen SE 82nd Drive, from existing three lanes to five lanes between Lawnfield Road and OR 212/224 (2026-2035).
- Improve existing two-lane OR 212 connection to Mather Road via SE 102nd Avenue, Clackamas Road, and Industrial Way for improved truck access, with better intersection/roadbed conditions for trucks turning ,and wider shoulders (2008-2017).
- Construct a new, four- and five-lane arterial, extending north and east from Rock Creek Junction Interchange to connect to SE 162nd and SE 172nd Avenues (partial construction in 2008 – completed 2020).
- Construct the Sunnybrook West Extension, a three-lane facility extending from 82nd Avenue (OR 213N) to Harmony Road near Fuller Road (2008-2017).
- Widen SE 172nd Avenue from existing two lanes to four and five lanes between Foster Road and OR 212 (Phase 1, OR 212 to Sunnyside Road – 20082009; Phase 2, Sunnyside Road to Foster Road – 2017).
- Widen OR 224 from existing two lanes to five lanes between Rock Creek Junction and Carver Bridge (2018).
- Replace existing two-lane Carver Bridge and widen to five lanes (Phase 1 – replace two lane bridge – 2010; Phase 2 – widen bridge to five lanes – 2025).

Alternative 1 would implement the planned bicycle and pedestrian improvements, as shown on Figure 4 (p. ES-8). Higher levels of TDM and TSM are assumed as part of Alternative 1 and the build alternatives.

Transit improvements included under **Alternative 1–No Build** are limited to those identified in Metro's 2035 RTP and include primarily modest increases in service hours. These assumed transit improvements include the following:

- I-205 LRT to Clackamas Regional Center in 2009;
- Frequent Bus: Line 31 - Milwaukie to Clackamas Regional Center via OR 224;
- Frequent Bus: Line 31 - Clackamas Regional Center to 152nd Avenue via OR 212/224; and
- Frequent Bus: Line 79 - Clackamas Town Center to Oregon City via Webster Road and 82nd Drive.

In order to incorporate the baseline information of the TSM/TDM, the Sunrise Project build alternatives assumed all of the transit improvements assumed by **Alternative 1** and adds two additional transit improvements:

- A new local transit service from Happy Valley to the Springwater Area via Butler Road; and
- New express bus service on the Sunrise Project between the Clackamas Transit Center and Damascus Town Center.

Alternative 2 – Limited-Access Highway with Midpoint Access

The proposed highway alignment generally would be north of and parallel to the existing OR 212/224. The project begins with changes to the local road network in the area of SE Johnson Road and ends by tapering into OR 212 just east of SE 172nd Avenue (see Figure 5, Alternatives 2 and 3, p. ES-9). From I-205 to Rock Creek Junction (where OR 212/224 splits into OR 212 to the east and OR 224 to the south), the highway would have six lanes plus auxiliary lanes. Auxiliary lanes would be between:

- Southbound I-205 on-ramp to Midpoint off-ramp;
- Midpoint off-ramp to northbound I-205 off-ramp;

- Midpoint on-ramp to Rock Creek off-ramp; and
- Rock Creek on-ramp to Midpoint off-ramp.

East of Rock Creek Junction, the highway would narrow to six lanes with no auxiliary lanes until SE 172nd Avenue, where it would narrow to five lanes.

This alternative is distinguished from **Alternative 3** by a midpoint, (conventional) diamond interchange in the vicinity of SE 122nd Avenue, which would have on- and off-ramps connecting the highway to the existing OR 212/224 via SE 122nd Avenue. The purpose of the midpoint interchange is to meet the objective of ensuring access to OR 212/224 for businesses along that corridor. Travelers would use this connection to access OR 212/224 from either direction on the proposed Sunrise Project, and, conversely, residents and businesses in the area would use SE 122nd Avenue to go eastbound or westbound on the proposed Sunrise Project.

At the Rock Creek Junction area, the proposed Sunrise Project would incorporate a folded diamond interchange aligned north of a prominent knoll. The connection between OR 224 and OR 212 would be reconfigured 1,300 feet south with a signalized T-intersection. The new access road would turn north and connect to the existing OR 212/224 at another signalized T-intersection. Figures 10 through 17 (p. 23 through p. 30) illustrate the connections that would be made via ramps and auxiliary lanes for all of the alternatives and design options.

This alternative with a midpoint interchange can be modified with different roadway alignments and interchange designs, as discussed under the heading Design Options.

Alternative 3 – Limited-Access Highway with No Midpoint Access

In contrast to **Alternative 2**, this alternative would not have a midpoint interchange, resulting in no access to or from the proposed Sunrise Project between I-205 and Rock Creek Junction (see inset, Figure 5, p. ES-9). This alternative can be modified with different roadway alignments and interchange designs at Rock Creek Junction, as discussed in the Design Options section.

Transit, Bikeway, and Pedestrian Improvements

The two build alternatives would allow for new local transit service from Happy Valley to the Gresham area, more frequent service between Damascus and Gresham, more frequent service between Airport Way and Damascus, more frequent service on Sunnyside Road between Clackamas Regional Center and Damascus Town Center, and new express bus service along the proposed Sunrise Project between the Clackamas Transit Center and Damascus Town Center. Current regional plans identify Sunnyside Road as the primary east-west, high capacity transit route within the Sunrise Project.

Alternatives 2 and 3 would improve the bicycle and pedestrian system. They would add multi-use path improvements with connections to the existing I-205 trail system, filling gaps in that system between SE 82nd Drive and SE Roots Road as well as between I-205 and the existing on-street facilities at SE 122nd Avenue. Figures 5 through 9 (p. ES-9 through p. ES-13) show the proposed multi-use path.

Design Options

Six design options are proposed as variations on certain aspects of the build alternatives. Each design option was developed to address different constraints or to avoid or minimize specific natural or built environmental impacts. Most of the design options can be substituted for a comparable segment alignment (such as **Design Option C-2 or C-3** instead of **Alternative 2** in that segment) and most are available under each build alternative. A more detailed description of each design option in relation to each build alternative follows.

The options are depicted on figures that correspond to three geographic subareas

referred to in the Project Location and Study Area (text box, p. ES-1). Many design options were considered, but only a few were carried forward for study. The design options retain their original numbering system.

The 15 technical reports used geographical areas designated Zones A, B, C, and D to reference the location of the design options, although the impact analysis within each technical report was not necessarily meant to be based on those zone boundaries. In the SDEIS, the narrative is intended to be less focused on the zone boundaries and more focused on features in the proposed Sunrise Project area. For reviewers of both the technical reports and the SDEIS, the I-205 Interchange area corresponds to Zone A, the Midpoint area corresponds to Zones B and C, and the Rock Creek Junction area corresponds to Zone D.

Design Option A-2: Modified 1996 design

Design Option A-2 is in the I-205 Interchange area and could be implemented with either build alternative. This design option would differ from **Alternatives 2 and 3** by not extending Lawnfield to the north (see Figure 6, Comparison of Options for I-205 Interchange Area, p. ES-10) and replacing it with a smaller local connection to/from SE 82nd Drive and the Lawnfield industrial area. The connection would be from SE Industrial Way over the Union Pacific Railroad tracks via SE Tolbert Street. This option was developed to address business community concerns about connectivity in the area. This design option is available under both build alternatives. It may be substituted for the North Lawnfield Extension.

Design Option B-2: 1996 Split interchange (modified)

Design Option B-2 is in the SE 122nd Avenue area and is an option for **Alternative 2** only, because Alternative 3 does not have an interchange in the Midpoint area. **Design Option B-2** would have a modified split-diamond interchange involving both SE 122nd Avenue and SE 130th Avenue (see Figure 7, Comparison of Options for Midpoint Area, p. ES-11) instead of single diamond interchange only at SE 122nd Avenue. Travelers on the proposed Sunrise Project would have two choices of exits, a feature that is intended to reduce potential congestion on OR 212/224 at the off- and on-ramps at the midpoint under **Alternative 2**. **Design Option B-2** could be considered with **Design Option A-2** and/or **Design Option C-2**. However, it would not be compatible with the design of the curves in **Design Option C-3**, so those two options could not be combined.

Design Option C-2: Central alignment

Design Option C-2 is located in the SE 135th Avenue area and may be substituted for the comparable segment in **Alternatives 2 and 3**, and for **Design Option C-3**. **Design Option C-2** would alter the road alignment in the vicinity of Rock Creek, moving it closer to the existing OR 212/224 alignment (see Figure 8, Comparison of Options for Midpoint Area [East End], p. ES-12). Its purpose is to reduce impacts to the wildlife corridor by moving the alignment farther from the base of the bluff.

Design Option C-3: Modified follow tree-line alignment

Design Option C-3 would more closely follow the existing tree line to the north to reduce impacts to a residential development (see Figure 8, p. ES-12). It may be substituted for the comparable segment in **Alternatives 2 and 3**, and for **Design Option C-2**. However, **Design Option B-2** and **Design Option C-3** are incompatible due to the curves in **Design Option C-3**.

Design Option D-2: Alignment through knoll (folded diamond interchange)

Design Option D-2 is in the Rock Creek Junction area and could be used with either build alternative or **Design Option D-3**. This option would move the folded diamond interchange south from its location mostly north of a natural knoll under **Alternatives 2 and 3**. **Design Option D-2** would place the alignment through the knoll but would have lower right-of-way impacts on a narrow wildlife corridor and the site of the

proposed medical care complex (see Figure 9, Comparison of Options for Rock Creek Junction Area, p. ES-13).

Design Option D-3: Single-point diamond interchange

Design Option D-3 in the Rock Creek segment is an option to **Alternatives 2 and 3** and to **Design Option D-2**. This design option replaces the folded diamond interchange with a single-point diamond design interchange that would require less right-of-way (see Figure 9, p. ES-13) and reduce impacts on the site of the proposed medical care complex.

Preliminary Project Costs

Preliminary construction and right-of-way cost estimates for the build alternatives and design options are presented in Table 1 (p. ES-6). Actual construction costs would depend upon labor and materials costs, competitive market conditions, final project requirements, and other variables at the time of the construction contract. Construction cost estimates are based on unit costs as derived from recent large construction projects in the region. Both cost estimates for current year (2008) and expected year of construction (2013) are provided. Estimated 2013 costs are derived using inflation factors of 4.3 percent (2009 – 2011) and 4.0 percent (2012 – 2013).

The total cost of the proposed project depends on the alternative and design option selected. Table 1 (p. ES-6) shows that in 2008 dollars, Alternative 2 is estimated to cost $1,209 million, while Alternative 3 is estimated at $1,147 million. Alternative 2 with Design Option B-2 has the highest estimated cost—$1,308 million—while Alternative 3 with Design Option D-2 has the lowest estimated cost—$1,064 million.

FHWA has guidance for major projects that imposes requirements on recipients of federal financial assistance for projects with an estimated cost of $500 million or more. The proposed Sunrise Project will need to comply with those requirements by developing a Project Management Plan and Financial Plan, mechanisms for managing such large projects.

How New Connections Would Be Made

This section describes and depicts how travelers would get from point to point on the new highway. Figures 10 through 17 (pp. 23 through 30) depict the changes to connections that would occur.

Changes to connections between I-205, Milwaukie Expressway, and SE 82nd Avenue/Drive

The proposed alignment would cross SE 82nd Avenue and I-205 with a long overpass, then turn southeast (Figures 10 and 11, pp. 23 and 24). Travelers could make the following connections:

- From eastbound on the Milwaukie Expressway to I-205 northbound via a looped on-ramp;
- From eastbound on the Milwaukie Expressway to I-205 southbound by turning right onto the on-ramp at the western end of the overpass;
- From westbound on the proposed Sunrise Project to I-205 northbound via an auxiliary lane and off-ramp;
- From westbound on the proposed Sunrise Project to I-205 southbound by a loop to I-205 on-ramp;
- From I-205 traveling north or south, access to the proposed Sunrise Project at signals at end of off-ramps or, in the case of southbound I-205 to eastbound Sunrise, via a direct fly-over ramp;
- From northbound on I-205 to SE 82nd Avenue/Drive via a dedicated off-ramp; and
- From southbound on I-205 to westbound Milwaukie Expressway (OR 224) by turning right only at a signal at the west end of the proposed Sunrise Project overpass.

On I-205, the on- and off-ramps would be "braided," or channeled, between interchanges at SE Sunnyside Road, the proposed Sunrise Project, and OR 212/224. Braided ramps mean traffic will be separated according to its destination; the braided ramps are what give the I-205/Sunrise Interchange its spaghetti-like look. For example, traffic on I-205 southbound will have a ramp dedicated to the eastbound direction on the proposed Sunrise Project. By separating traffic, the braided ramps avoid the "weaving" that currently happens when traffic from one highway has to cross lanes to access another highway or exit. Braided ramps address the safety needs of the project by reducing potential collision points and they also improve traffic flow. By preventing certain connections, they help to eliminate dangerous movements that tend to happen today on I-205. For example, the braided ramps will eliminate the movements between Sunnyside Road and SE 82nd Avenue and the movements between OR 212/224 and SE 82nd Avenue. The movements would be possible on local streets but not on I-205.

The Lawnfield area network would change by the addition of a street connection from SE Lawnfield Road to SE Mather Road through an extended SE 98th Avenue. SE Lawnfield Road would be extended west and south under the proposed Sunrise Project to connect with SE Clackamas Road.

SE 82nd Avenue (west of I-205) would be directly connected to SE 82nd Drive (east of I-205) over I-205. Travelers on SE 82nd Avenue/Drive wanting to go south on I-205 would have a signalized on-ramp just south of the Milwaukie Expressway.

Travelers on I-205 northbound would connect directly to SE 82nd Avenue/Drive through a signalized off-ramp. Travelers from SE 82nd Avenue at the north end of the project area wanting to go either north or south on I-205 could use SE Sunnyside Road.

The new interchange configuration does not affect the connection between the Sunnyside/Sunnybrook Interchange and the OR 212/224 Interchange. The braided ramps still allow drivers to use I-205 between the two interchanges.

Connections at the Midpoint Area

Travelers would use the Midpoint connection to access OR 212/224 from either direction on the proposed Sunrise Project (Figures 12 through 15, pp. 25 through 28). Conversely, residents and business traffic traveling from OR 212/224 would use SE 122nd Avenue to go eastbound or westbound on the proposed Sunrise Project.

Under **Design Option B-2**, travelers on the proposed Sunrise Project or on OR 212/224 could exit either at SE 122nd Avenue or at SE 130th Avenue.

Connections at Rock Creek Junction

Under **Alternatives 2 and 3** and **Design Option D-2**, the proposed Sunrise Project would incorporate a folded diamond interchange aligned north of a prominent knoll. Figures 16 and 17 (pp. 29 and 30) depict schematic drawings of the connections in the Rock Creek Junction area. Travelers eastbound on the proposed Sunrise Project wanting to connect to OR 224 eastbound would use an exit ramp and turn right at the signalized intersection. Travelers westbound on the proposed Sunrise Project wanting to connect to OR 212 eastbound would exit via an off-ramp and turn left to a connecting road to OR 212/224. The same connecting road to OR 212/224 would be used by travelers wanting to go east or west on the highway. Westbound travel would connect to a loop ramp at the same location as the westbound off-ramp. Eastbound travel would be via an on-ramp from the connecting road just south of the highway.

Under **Design Option D-3**, the interchange ramps would lead to a signal underneath the highway and travelers would use the connecting road under the highway the same as described above for **Design Option D-2**.

The connection between OR 224 and OR 212 would be reconfigured 1,300 feet farther south with a signalized T-intersection. The new access road would turn north and connect to the

existing OR 212/224 at another signalized T-intersection.

How the Preferred Alternative Will Be Developed

Ultimately, the Preferred Alternative will be the one that best meets the project purpose and need and minimizes unavoidable negative environmental and community impacts.

The Project Management Team and technical team will evaluate the results of the SDEIS analysis, looking for the alternative and design options that best meet the purpose, need, goals, and objectives for the project. The Project Management Team has developed specific evaluation criteria to measure how well each alternative and design option would meet the stated goals and objectives and, therefore, the purpose of and need for the proposed Sunrise Project.



Aerial view of Rock Creek Junction

The goals, together with the criteria, are presented in the section titled "The Characteristics of a Good Solution." Table 4 (p. ES-30) lists the goals, criteria, and sections of the SDEIS that discuss the impact evaluation corresponding to the criteria. Reviewers can use this table to guide their own comments on what the Preferred Alternative, including recommended mitigation, should be.

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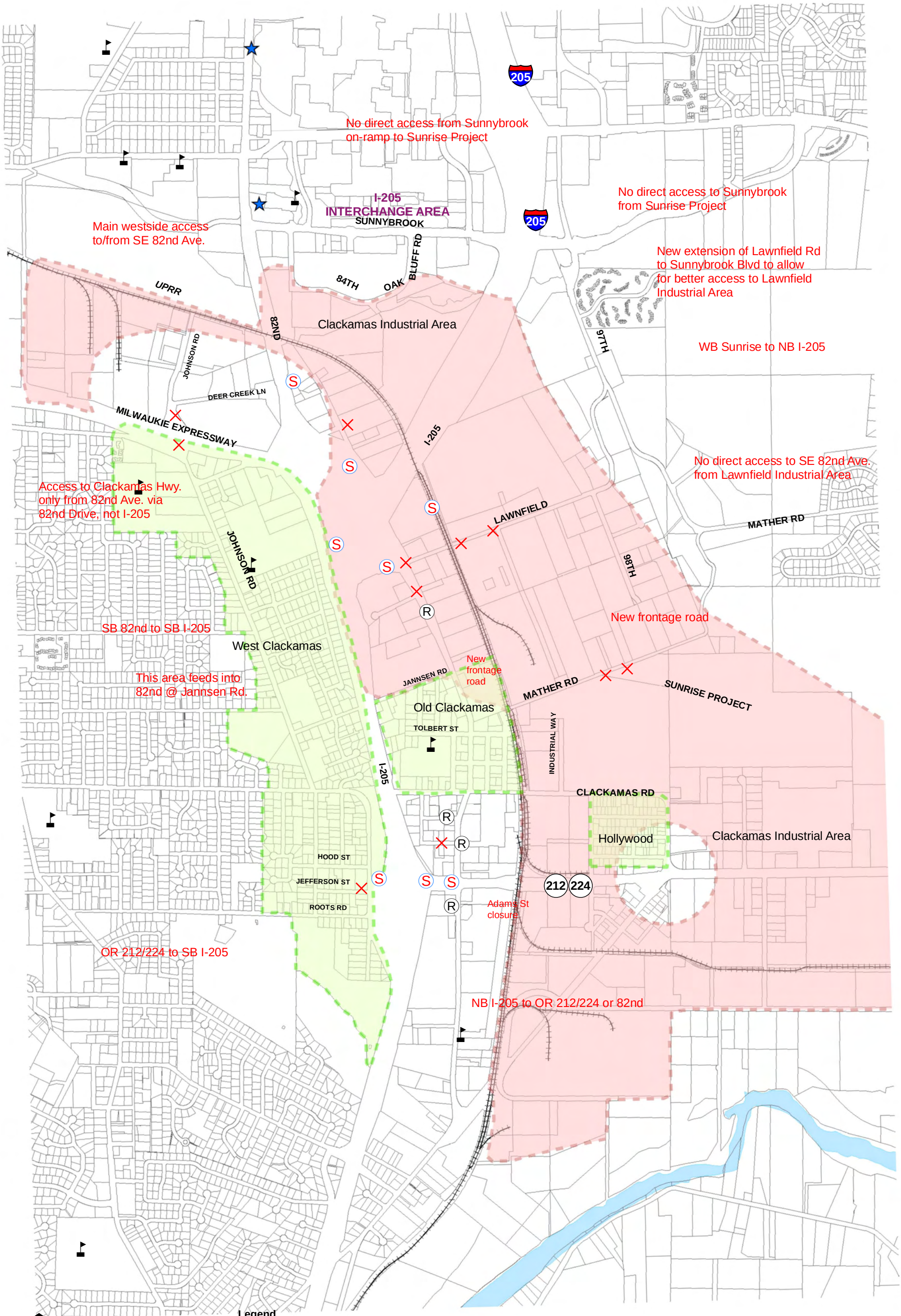


Figure 10

Alternatives 2 and 3 Travel Patterns, I-205 Interchange Area

Sunrise Project, I-205 to Rock Creek Junction

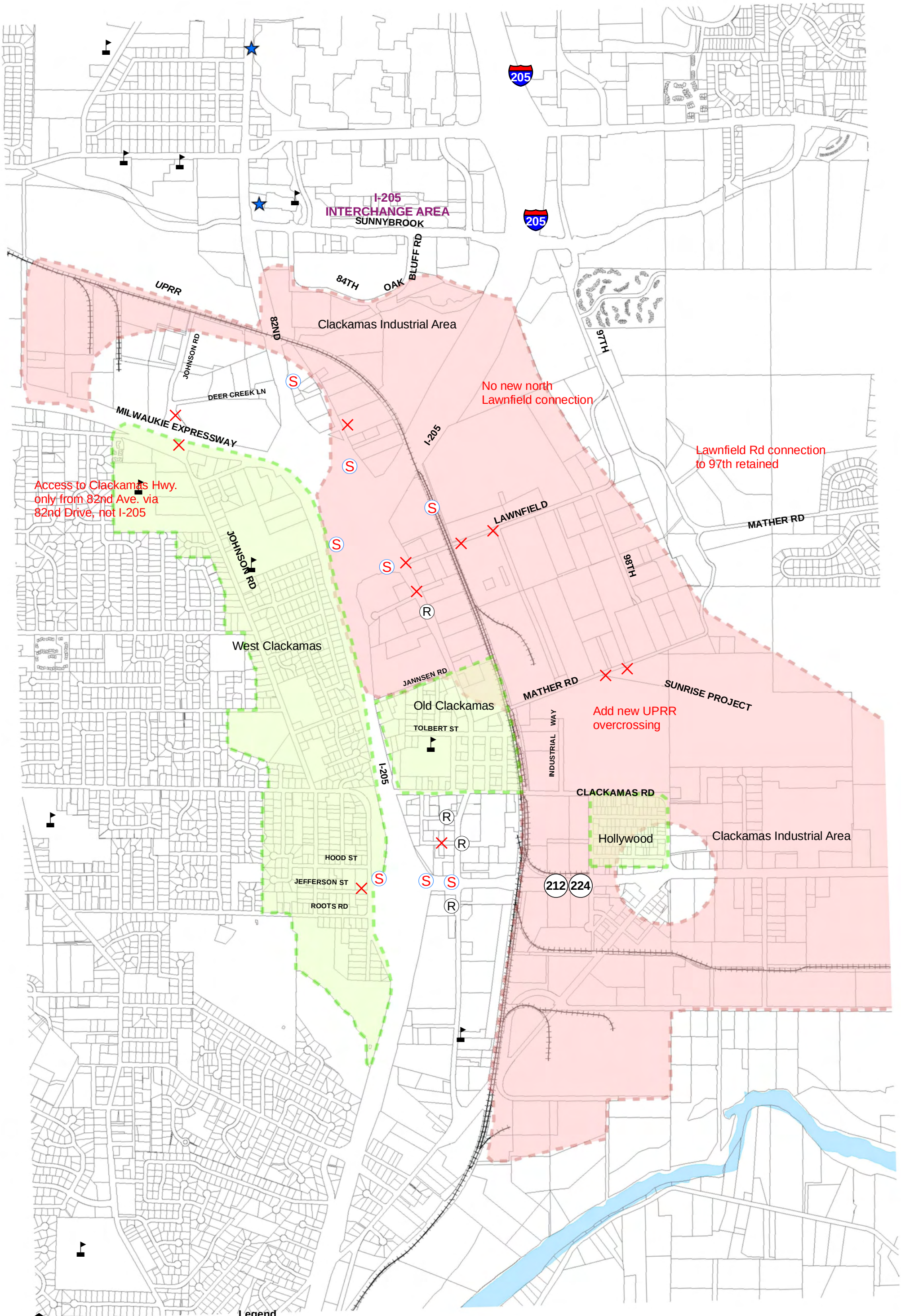
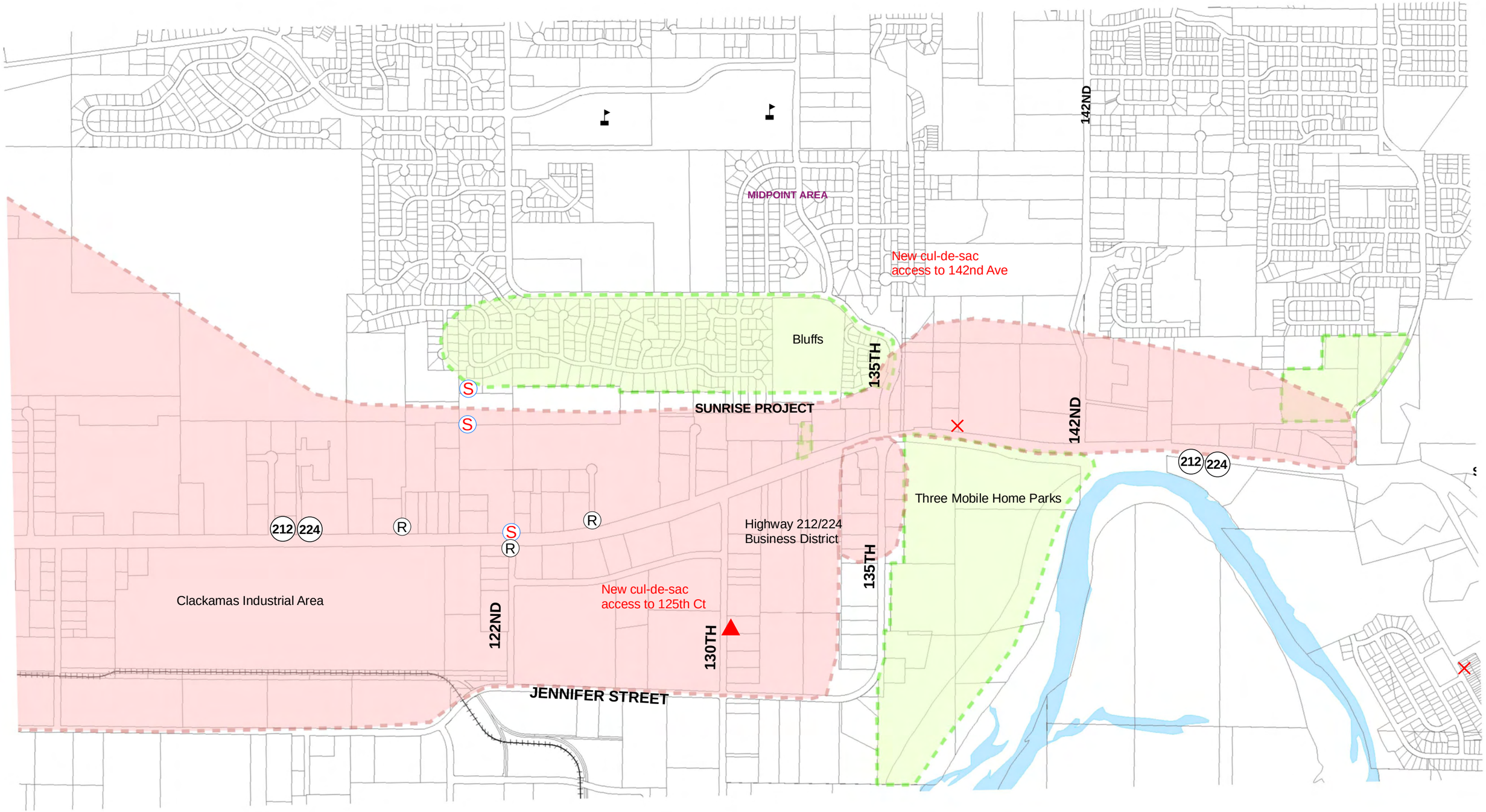


Figure 11

Design Option A-2 Travel Patterns

Sunrise Project, I-205 to Rock Creek Junction

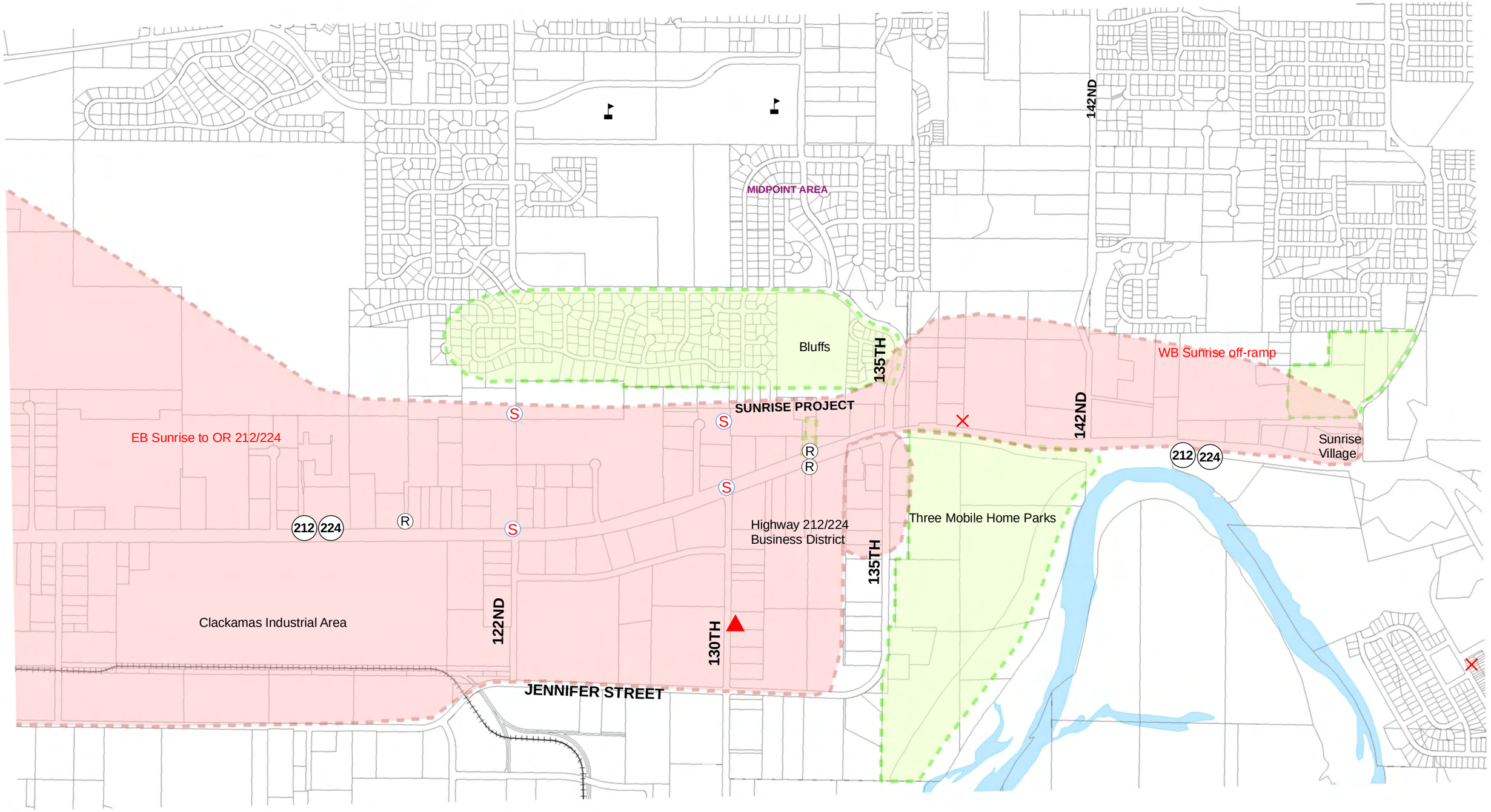


Sources:
ODOT and Metro, Portland OR

Figure 12

Alternative 2 Travel Patterns, Midpoint Area

Sunrise Project, I-205 to Rock Creek Junction

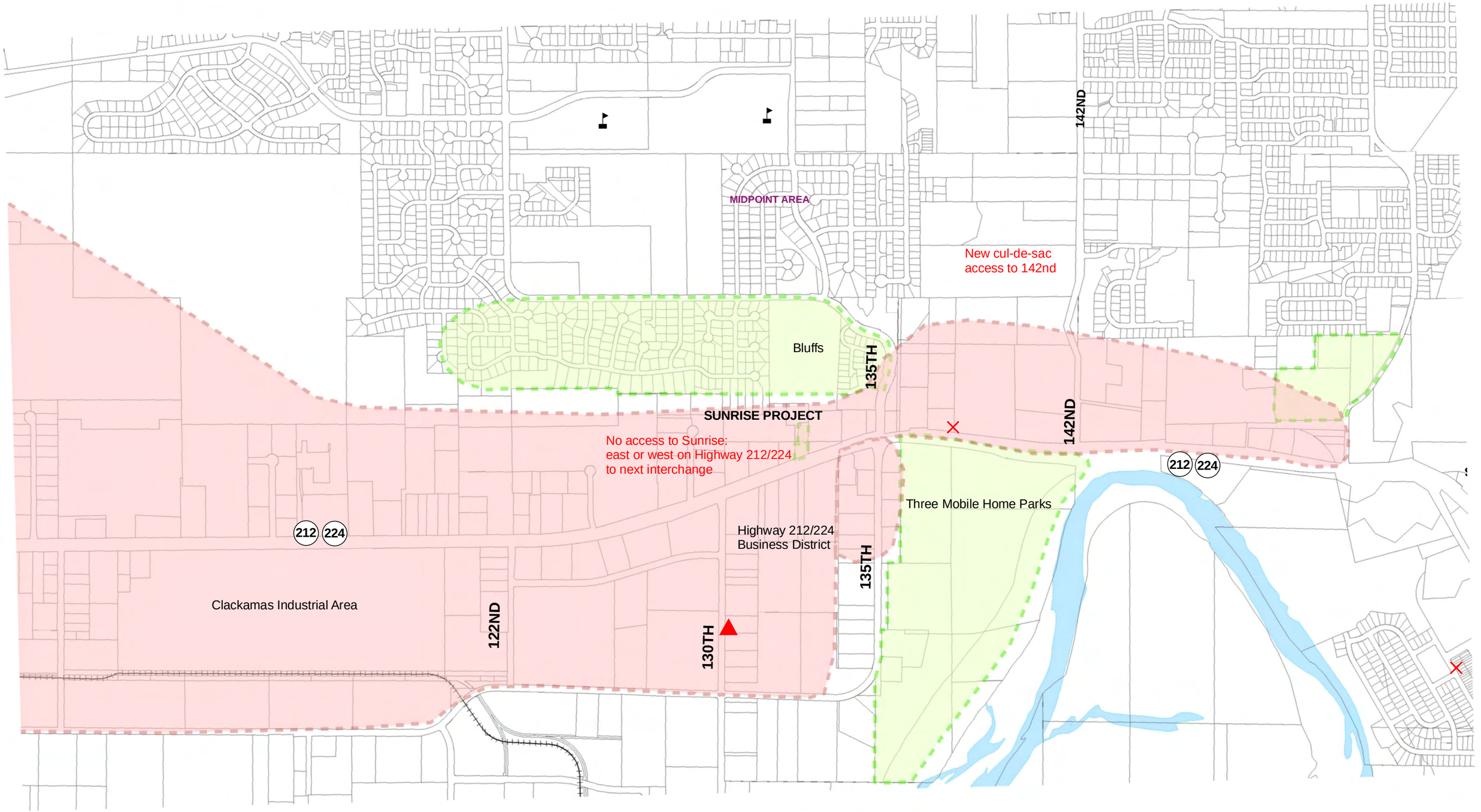


Sources:
ODOT and Metro, Portland OR

Figure 13

Design Option B-2 Travel Patterns

Sunrise Project, I-205 to Rock Creek Junction



1,000 0 1,000 Feet

Sources:
ODOT and Metro, Portland OR

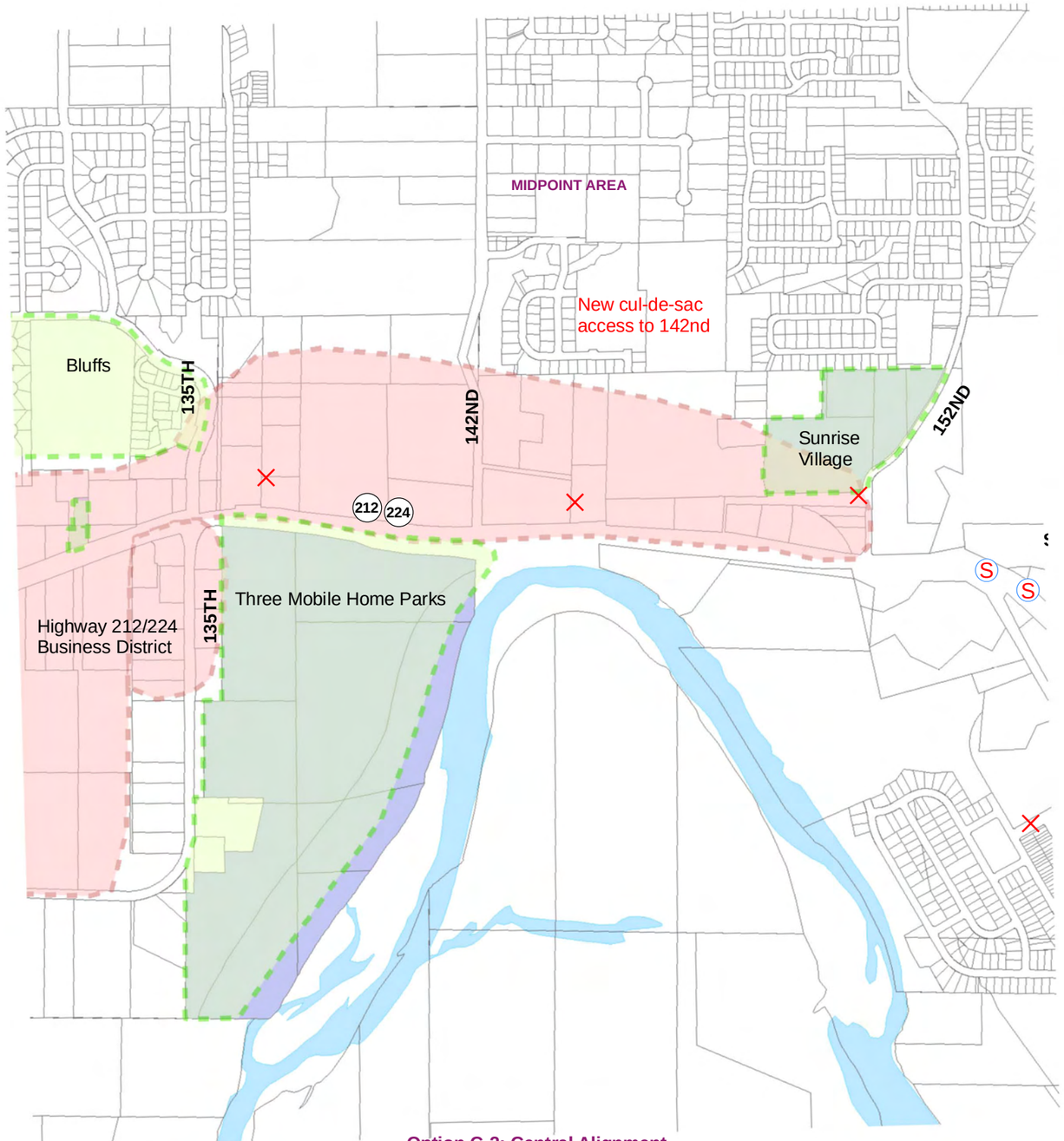
Legend

- Close Existing Access
- Directional Traffic Flow
- Existing Street
- Fire Stations
- Business Districts
- Multi-use Path
- Neighborhoods
- Right-in, Right-out
- Proposed Project
- Schools
- Signal
- Midpoint Area Boundary

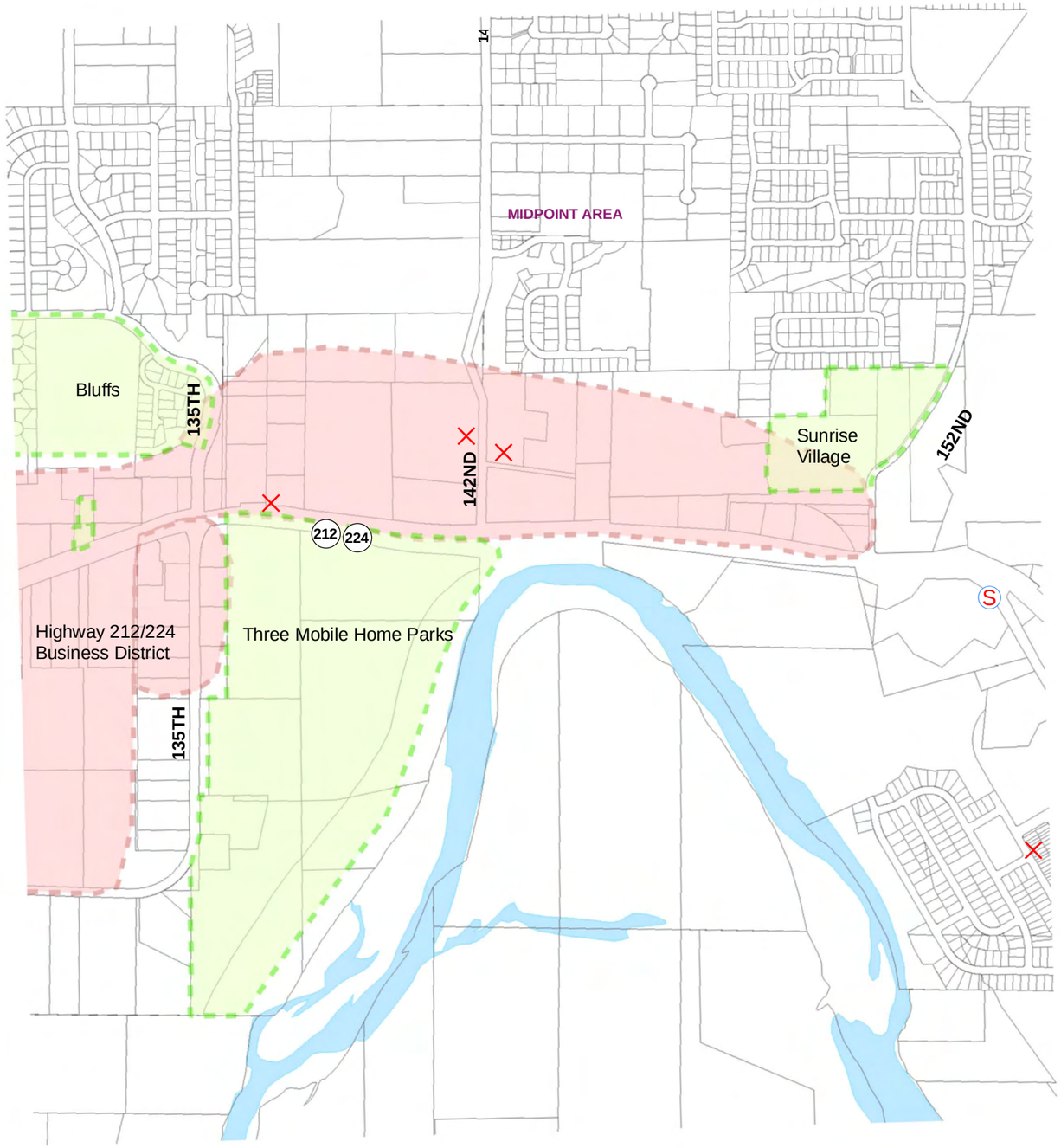
Figure 14

Alternative 3 Travel Patterns, Midpoint Area

Sunrise Project, I-205 to Rock Creek Junction



Option C-2: Central Alignment



Option C-3: Modified Follow Tree-line Alignment

1,000 0 1,000 Feet

Sources:
ODOT and Metro, Portland OR

Legend

- Close Existing Access
- Directional Traffic Flow
- Existing Street
- Fire Station
- Business Districts
- Neighborhoods
- Proposed Project
- Signal
- Midpoint Area Boundary

Figure 15

Design Options C-2 and C-3 Travel Patterns

Sunrise Project, I-205 to Rock Creek Junction

ROCK CREEK JUNCTION AREA

Rock Creek Industrial Area

Medical Center

New road by others

WB Sunrise from south of OR 212 via OR 224

Sunrise Village

162ND

172ND

New cul-de-sac

End Armstrong Circle

Clackamas Industrial Area

SUNRISE PROJECT

212

212

Sunnyside Community Church

ANDEREGG

End OR 212

BELAIR

GOOSE HOLLOW

Orchard Lake

ORCHARD VIEW

224

Anderegg Park

Bel Air Estates

ECKERT

Orchard Lake residents would have up to 3,200 feet of out-of-direction travel

Bel Air Subdivision residents may have their only access to the subdivision changed to a right-in / right-out depending upon the final design of the transition from the proposed Sunrise Project to existing OR 212.

1,000 0 1,000 Feet

Legend

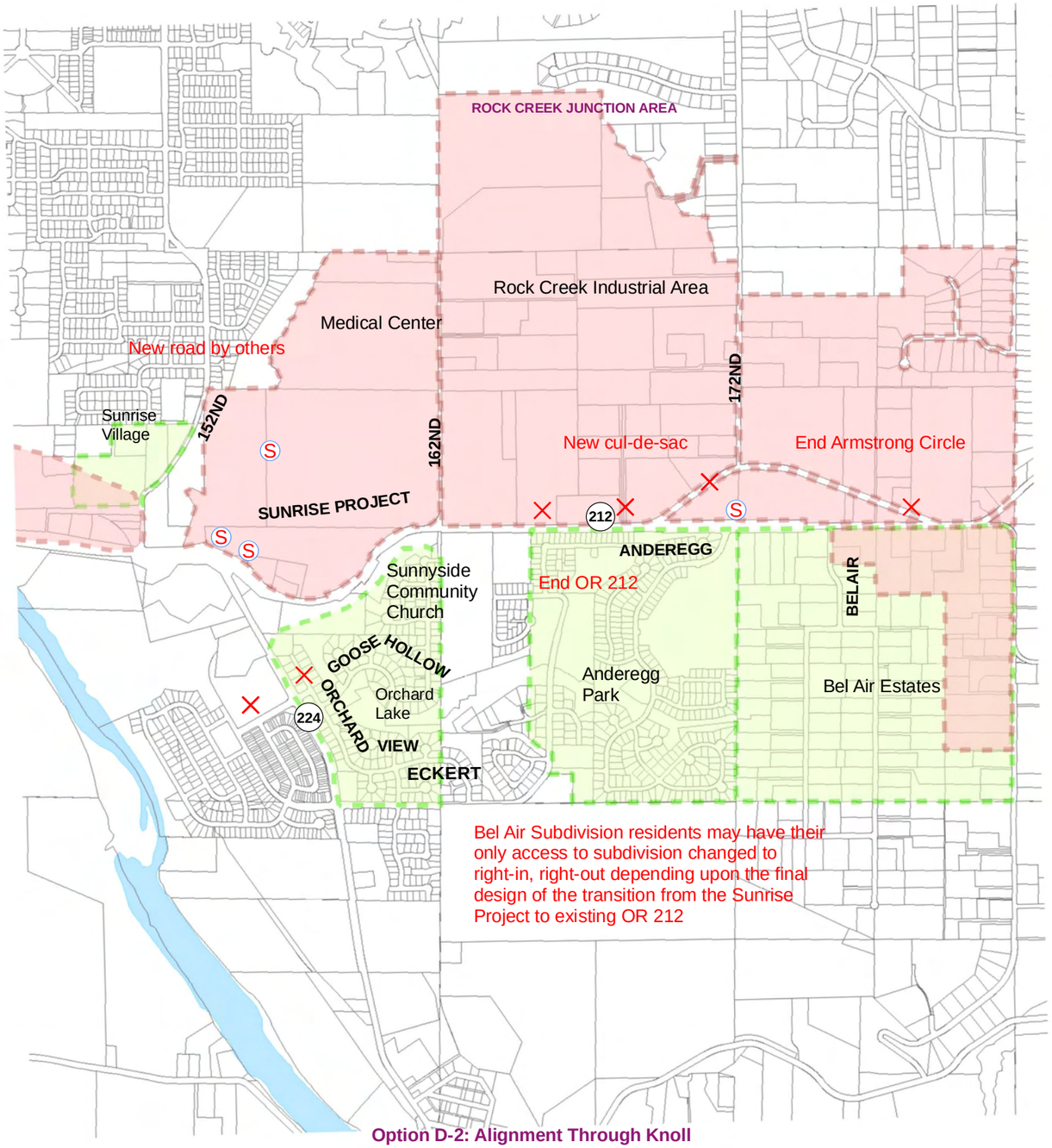
- Close Existing Access
- Directional Traffic Flow
- Existing Street
- Business Districts
- Neighborhoods
- Proposed Project
- Signal
- Rock Creek Junction Area Boundary

Sources:
ODOT and Metro, Portland OR

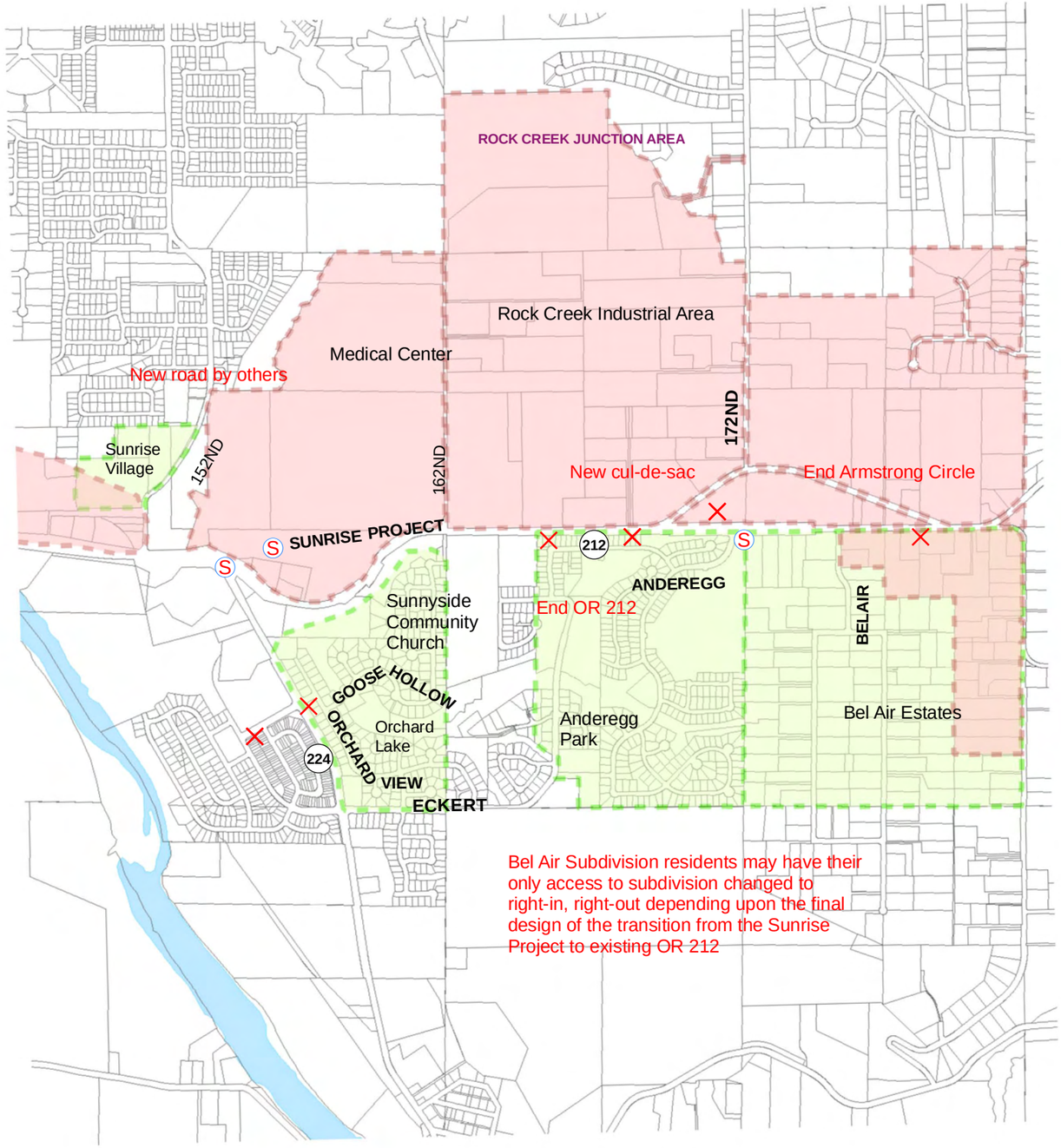
Figure 16

Alternatives 2 and 3 Travel Patterns, Rock Creek Junction Area

Sunrise Project, I-205 to Rock Creek Junction



Option D-2: Alignment Through Knoll (Folded Diamond Interchange)



Option D-3: Single-Point Diamond Interchange

1,500 0 1,500 Feet

Sources:
ODOT and Metro, Portland OR

Legend

- Close Existing Access
- Directional Traffic Flow
- Existing Street
- Business Districts
- Neighborhoods
- Proposed Project
- Signal
- Rock Creek Junction Area Boundary

Figure 17

Design Options D-2 and D-3 Travel Patterns

Sunrise Project, I-205 to Rock Creek Junction

CHAPTER 3. AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND POTENTIAL MITIGATION

Transportation

The current traffic conditions and projected growth are driving the need for the proposed Sunrise Project. Key study area roadways experience multiple hours of congestion and delay each weekday, which adversely affect system reliability, efficiency, and safety.

Planned Growth

Growth predicted for the Portland metropolitan region will exacerbate the problems of congestion, reliability, and safety. The study area is forecasted to grow from 16,000 to 32,000 households and from 48,000 to 89,000 jobs, close to 100 percent growth.[17] While only a part of Damascus is within the transportation study area, as a whole the city is forecast to undergo the largest growth of any of the districts contributing traffic to OR 212/224, growing from 3,500 to almost 25,000 households and from 1,100 jobs to 20,000 new jobs. A large parcel of land in the Rock Creek Industrial Area is currently proposed for development as a medical care complex with the potential to create 6,000 new jobs by 2030.

Happy Valley, Milwaukie, the Clackamas Industrial Area, and the Clackamas Regional Center represent the other high growth areas near the study area. The planned growth will create a strong demand for east-west travel and for connection to the surrounding regional transportation system, principally I-205, SE 82nd Avenue, Milwaukie Expressway (OR 224), and OR 212 and 224. OR 224 and OR 212/224 are the primary arterials within the proposed Sunrise Project area. Commuters and truck traffic use the highways for local and regional trips. SE 82nd Drive is also heavily used, but the majority of traffic is more local.

The Transportation Technical Report on the attached DVD provides details on the following:

- Transportation study area boundary (Figure 5-1)
- Review of Transportation Plans
- Current travel demand, traffic operations, transportation system performance, congestion, safety, bicycle and pedestrian systems, transit routes, emergency services
- Planned 2030 transportation system
- Effect of the proposed Sunrise Project on the regional and local transportation systems, bicycle and pedestrian systems, transit service
- Transportation demand/system management

OR 212/224 and the parallel roadways such as Sunnyside Road, Sunnybrook Road, and Jennifer Street cannot and are not intended to accommodate the amount of traffic and generally long-distance nature of trips that will be created by the planned growth.

Congestion

Traffic operations within the study area follow a predictable pattern. Figures 18 and 19 (pp. 39 and 40) illustrate the traffic congestion in 2004 during the peak travel periods, one hour in the morning and one hour in the evening. Early morning periods of free-flowing traffic are followed by growing morning congestion, recovery from congestion during the late morning, growing congestion in later afternoon through evening, recovery from evening congestion during the late evening, back to free-flowing operations during the night. During a typical weekday, the congestion develops at four primary locations:

[17] *Data in this Transportation section derive from Metro's regional traffic demand model and are discussed in the Sunrise Project Transportation Technical Report, Sections 5 and 6. See especially Figures 6-6 and 6-7 of the report.*

- OR 224 at the I-205 ramp terminals (affects evening commute);
- OR 212/224 at SE 82nd Drive (affects morning and evening commute);
- OR 212/224 at SE 135th Avenue (affects morning commute); and
- OR 212 near Armstrong Circle (affects morning and evening commute).

I-205 carries more daily and peak hour traffic than any other roadway in the study area. It serves as the primary regional, commuter, and truck route through the project area. Congestion on I-205 affects traffic patterns throughout the area, especially near the interchanges. During the afternoon peak traffic period, congestion on OR 212/224 backs up onto the additional lane ("add-lane") feeding into southbound I-205, causing stop-and-go traffic operations on the add-lane. Congestion in the add-lane creates slowing in the through-lanes particularly the right-most through-lane. The congestion is caused by a lack of capacity on OR 212/224 between McKinley Avenue and SE 82nd Drive.

The project area currently serves high volumes of freight traffic. Five percent of traffic on I-205 is made up of heavy truck vehicles, largely during the middle of the day. Arterial roads in the project area carry approximately 5 percent truck traffic, a relatively high percentage that is indicative of the industrial nature of the area.

Safety

Along OR 212/224 from I-205 to Rock Creek Junction, nearly 560 crashes were reported from 1998 to 2002. Over 40 percent of crashes involved injuries, of which two were fatal. Over 80 percent of crashes involved a turning or rear-end maneuver consistent with high-volume, multi-lane, signalized roadways. The only intersection with an unduly high crash rate is SE 82nd Drive at OR 224.

A safety analysis was performed for the study area bounded by the Sunnyside Road I-205 ramp terminals to the north, OR 212 at Anderegg Parkway to the east, SE Jennifer Street at SE 82nd Drive to the south, and OR 224 at Johnson Road to the west. The safety analysis was conducted to identify existing transportation characteristics and deficiencies.

The Safety Priority Index System (SPIS) is a scoring system developed by ODOT for prioritizing locations where funding for safety improvements can be spent most efficiently and effectively. The SPIS score is based on crash frequency, rate, and severity. Clackamas County also maintains SPIS data for its roadways. The Clackamas Road intersection at SE 82nd Drive was a top 10 percent SPIS location for Clackamas County.

Adams Street at SE 82nd Drive was also a top 10 percent SPIS location for Clackamas County. Data showed that a large number of vehicles accessed Adams Street from SE 82nd Drive in order to reach the U.S. Post Office on Adams Street.

The intersection of SE 82nd Drive at OR 212/224 had 160 reported crashes during the five-year period from 1998 to 2002. Rear-end crashes were the most common type, with the majority occurring along OR 212/224. Just over 100 of the 160 crashes caused property damage only; the remaining 58 crashes caused personal injuries. The conditions are typical of a high-volume, congested, signalized intersection.

The presence and riding condition of bicycle facilities in the study area are generally rated from "fair" to "good." McKinley Avenue, Mather Road, Jennifer Street, and SE 82nd Drive have worse conditions due to intersections that are difficult to navigate, sections that are incomplete, or bike lanes that are too narrow. The presence and condition of pedestrian facilities in this area of Clackamas County are generally rated from "fair" to "good" (see Figure 4, p. ES-8). Hubbard Road, SE 135th Avenue, Jennifer Street, Mather Road, and Webster Road are not conducive to walking due to difficult intersections, incomplete sidewalk segments, and sidewalks on alternating sides of the street. Currently, six TriMet bus routes serve the project area; all are wheelchair-accessible.

The 2030 Transportation System

Figures 20 through 25 (pp. 41 through 46) illustrate the traffic congestion that the transportation model predicted would occur from growth by 2030. The congestion levels are shown during the peak travel periods, one hour in the morning and one hour in the evening for **Alternatives 1, 2, and 3**. Table 6 compares the differences in transportation impacts for Alternatives 1, 2, and 3 using different measurements, such as travel speed, delays, and hours and lane miles of congestion.

Alternative 1–No Build would implement the improvements planned by Metro, ODOT, and Clackamas County. Based on the traffic modeling results, the planned transportation system improvements would not be sufficient to handle predicted growth. System reliability and efficiency would diminish substantially given the expected levels of population and employment growth and the resulting increased demand for travel. Figures 20 and 21 (pp. 41 and 42) illustrate the traffic congestion predicted for 2030 during the peak travel periods, one hour in the morning and one hour in the evening.

Figures 22 through 25 (pp. 43 through 46) illustrate the traffic congestion predicted for 2030 during the peak travel periods, one hour in the morning and one hour in the evening for **Alternatives 2 and 3**.

Table 7 (p. 35) lists the volume-to-capacity (v/c) ratios for north-south and east-west roadways. Under **Alternatives 2 and 3,** v/c ratios for alternative routes drop under capacity, but latent demand causes alternate routes to be over capacity in the AM and PM peak hours even with the proposed Sunrise Project. On the north-south roadways, v/c ratios for roads north of the proposed Sunrise Project drop, while v/c ratios at the end points of the proposed Sunrise Project increase—the additional volume of traffic within the study area has to blend back into the existing network on either side of the study area. Table 8 (p. 35) provides travel times for all trips between selected destinations. Travel under **Alternatives 2 and 3** would be faster between some locations (principally for trips that use the entire Sunrise Project). Other travel becomes slightly slower (principally where trips do not use the Sunrise Project but are affected by congestion near the west and east ends of the proposed Sunrise Project corridor).

Table 6. Transportation Effects, 2030

Transportation Measure	Alternative 1–No Build	Alternative 2	Alternative 3
Average Travel Speed	7-8 mph slower than existing	3 mph faster than Alternative 1	3 mph faster than Alternative 1
Vehicles in Peak Hour	4,440	12,400	11,600
Vehicle Hours Delay, AM Peak	+ 130% AM peak compared to existing	- 2% compared to Alternative 1	- 2% compared to Alternative 1
Vehicle Hours Delay, PM Peak	+ 70% am peak compared to existing	- 35% compared to Alternative 1	- 33% compared to Alternative 1
Congested Hours on Roadway	9	4	5.5
Intersections Meeting Oregon Highway Standards	17%	41%	33%
Percent Lane Miles Congested in PM Peak	11%	9%	10%

Changes in travel patterns

Alternative 1 would not change travel patterns, except indirectly, as people would try to avoid congested roads. Traffic eastbound on the Milwaukie Expressway heading to the Clackamas Industrial Area would continue to take I-205 southbound to the next exit at OR 212/224.

Both **Alternatives 2 and 3** address one of the needs for this project by eliminating the high volume and high-speed lane changes on I-205.

Under **Alternative 2**, the traffic from west of I-205 to the Clackamas Industrial Area would use the proposed Sunrise Project and its new connection via a midpoint interchange near SE 122nd Avenue, instead of OR 224 to OR 212/224. The midpoint connection would reduce the travel time from Johnson Road to SE 122nd Avenue by three minutes.

Under **Alternative 3**, OR 224 and southbound I-205 traffic patterns would be similar to those under **Alternative 1** to reach the industrial area along OR 212/224; however, weaving maneuvers would be eliminated by ramps that separate certain traffic routes. Therefore, a major distinction between the build alternatives is that **Alternative 3** would not provide access to the industrial area.

Building the proposed Sunrise Project would change travel patterns on local roads, as discussed in the description of the alternatives in this SDEIS under the heading "How New Connections Would Be Made" (p. 19). Figures 10 through 17 (pp. 23 through 30) illustrate the changes to travel patterns. Rerouting trips from parallel roads could also create localized congestion where the proposed Sunrise Project would link to the existing system, particularly at the end points near Johnson Road and Rock Creek Junction.

Transit system

Transit improvements under **Alternative 1–No Build** would consist mostly of modest increases in service hours identified in the 2025 financially constrained RTP. Current regional plans identify Sunnyside Road as the primary east-west, high capacity transit route within the Sunrise Project area.

Alternatives 2 and 3 would provide additional transit service out to 2030 beyond what was contained in the 2025 financially constrained RTP. Identified enhancements include adding new local service from Happy Valley to the Springwater area, more frequent service between Damascus and Gresham, more frequent transit service between Clackamas Regional Center and Damascus via Sunnyside Road, more frequent service between Airport Way and Damascus, and new express bus service along the proposed Sunrise Project between the Clackamas Transit Center and Damascus Town Center.

Bicycle and pedestrian system

The bicycle and pedestrian system would maintain the existing roadway system except for the planned roadway improvements by ODOT and Metro under **Alternative 1**. Although none of the projects is directly related to the bicycle and pedestrian networks, it is likely that the roadway widening projects for SE 82nd Drive and SE 172nd Avenue would incorporate bicycle and pedestrian improvements for the benefit of cyclists and pedestrians.

Alternatives 2 and 3 have the same impact on bicyclists and pedestrians, improving walking and bicycling conditions over the existing and no build conditions. **Alternatives 2 and 3** provide better bicycle and pedestrian accommodation by improving connections to the existing I-205 trail system. These improvements include:

- Filling in the missing section of the I-205 multi-use path between SE 82nd Drive and SE Roots Road;
- Providing new multi-use path improvements that parallel the proposed Sunrise Project to the existing on-street facilities at SE 122nd Avenue; and
- Providing potential connections to the neighborhood directly to the west of I-205.

Table 7. Volume-to-Capacity Ratios for Select Roadways (by North/South and East/West Parallel Roadways, 2030)

			PM		AM	
	Roadway		EB	WB	EB	WB
East/ West	Jennifer	Alt. 1	0.82	0.57	0.56	0.87
		Alt. 2	0.33	0.50	0.52	0.44
		Alt. 3	0.40	0.52	0.53	0.49
	OR 212/224	Alt. 1	1.27	0.87	0.87	1.24
		Alt. 2	0.87	0.77	0.54	0.87
		Alt. 3	0.91	0.82	0.63	0.89
	Sunnyside	Alt. 1	1.34	0.65	0.49	1.37
		Alt. 2	1.02	0.52	0.67	1.05
		Alt. 3	1.04	0.52	0.37	1.06
	Otty	Alt. 1	1.11	0.35	0.20	0.94
		Alt. 2	0.86	0.32	0.22	0.77
		Alt. 3	0.88	0.32	0.22	0.78
			SB	NB	SB	NB
North/ South	82nd Avenue	Alt. 1	0.85	0.86	0.80	0.79
		Alt. 2	0.88	0.85	0.81	0.87
		Alt. 3	0.88	0.85	0.81	0.86
	Interstate 205	Alt. 1	0.96	0.77	0.73	0.96
		Alt. 2	1.04	0.85	0.76	1.02
		Alt. 3	1.04	0.85	0.76	1.02
	129th Avenue	Alt. 1	0.89	0.91	0.84	0.74
		Alt. 2	0.66	0.65	0.56	0.56
		Alt. 3	0.66	0.66	0.57	0.55
	145th Avenue	Alt. 1	1.54	0.65	0.23	1.92
		Alt. 2	1.34	0.60	0.27	1.67
		Alt. 3	1.35	0.59	0.28	1.70
	172nd Avenue	Alt. 1	1.10	0.86	0.75	1.19
		Alt. 2	1.03	0.95	0.85	1.09
		Alt. 3	1.04	0.95	0.85	1.10

Table 8. Travel Times Between Select Districts (Minutes, 2030)

	AM 2-hour Period			PM 2-hour Period		
	Alt. 1	Alt. 2	Alt. 3	Alt. 1	Alt. 2	Alt. 3
Damascus to Milwaukie	36.1	29.7	29.8	25.4	21.6	21.2
Damascus to Rock Creek Interchange Area	9.8	11.3	11.3	8.1	8.7	8.6
Mid-Clackamas Industrial Area to Milwaukie	22.3	19.8	21.5	16.1	14.5	15.2
Milwaukie to Damascus	22.8	18.8	18.7	35.1	28.1	28.3
Milwaukie to Mid-Clackamas Industrial Area	14.2	13.0	14.7	21.6	18.5	21.2
Rock Creek Interchange Area to Damascus	7.6	7.7	7.6	9.2	10.1	10.0

Note: Numbers highlighted in Table 7 are v/c ratios that exceed 1.0, indicating a failing condition. Numbers in Table 8 are from the Metro travel demand model and are not directly comparable to the congestion influence diagrams on Figures 20 through 25 (pp. 41 through 46).

I-205 Interchange Design Option

Under **Alternatives 2 and 3**, the alignment of the proposed Sunrise Project would sever the connection of Lawnfield Road to SE 82nd Drive and eliminate the existing northbound on-ramp to I-205 at Lawnfield Road. To replace the loss of this on-ramp, a new North Lawnfield Alignment is proposed to accommodate long-load trucks and help redirect Lawnfield area traffic away from the congested SE 82nd Drive corridor to the underutilized Sunnybrook Interchange area. **Design Option A-2** would replace the North Lawnfield Alignment with a connection over the Union Pacific Railroad tracks between SE Industrial Way and SE 82nd Drive via SE Tolbert Street. This design option would also accommodate long-load trucks and enhance local access and circulation.

Impacts of the Midpoint Interchange

Under **Alternative 2**, the midpoint interchange near SE 122nd Avenue would connect the proposed Sunrise Project to existing OR 212/224. The transportation impacts would be different between **Alternatives 2 and 3**.

A midpoint interchange would provide an important third point of access to and from the Clackamas Industrial Area. Approximately 1,600 trips per hour during peak times would be able to remain on the faster-moving proposed Sunrise Project and exit at the midpoint interchange. Under **Alternative 3**, traffic would have to use the I-205 and Rock Creek Junction interchanges and travel at lower speeds on OR 212/224 to reach destinations in the Midpoint area.

The aggregate travel time without a midpoint interchange would be slower for all trips. However, PM peak-hour travel times along specific routes show a pronounced benefit. For example, eastbound trips along Milwaukie Expressway at Johnson Road destined to SE 122nd Avenue at OR 212/224 would take seven minutes to the midpoint interchange under **Alternative 2**. The same trips under **Alternative 3** would take about ten minutes via Johnson Road, SE 82nd Drive (through several traffic signals) before reaching OR 212/224 to SE 122nd Avenue.

Another example is comparing PM peak hour trips along southbound I-205 at Sunnyside Road destined to SE 122nd Avenue at OR 212/224. Under **Alternative 2**, these trips would exit I-205 directly onto a fly-over ramp onto the proposed Sunrise Project and exit at the midpoint interchange in six minutes. Under **Alternative 3**, these trips would follow the current route along I-205 to OR 212/224, traveling to SE 122nd Avenue in nine minutes.

A third example relates to trips westbound from SE 172nd Avenue to SE 122nd Avenue at OR 212/224. Under **Alternative 2**, travel along the proposed Sunrise Project would exit at the midpoint interchange in six minutes. Under **Alternative 3**, the trips would exit at the Rock Creek Interchange, travel south to Goose Hollow Drive, turn left onto a frontage road and double back to OR 212/224, turn left onto OR 212/224, and proceed to SE 122nd Avenue in 40 minutes.

The midpoint interchange would be a single diamond at SE 122nd Avenue (**Alternative 2**) or a split diamond that would disperse traffic on frontage roads between SE 122nd Avenue and SE 130th Avenue intersections to OR 212/224 (**Design Option B-2**). Traffic operations under both designs would be comparable, with little advantage from either interchange design in terms of traffic operations.

Rock Creek Junction Design Options

Design options for either **Alternative 2 or 3** at Rock Creek Junction are folded diamond interchanges. **Design Option D-2** is a folded diamond. **Design Option D-3** is a single-point urban interchange (SPUI). The different interchange design would affect movements—left turns versus right turns—but not traffic demand. **Design Options D-2** and **D-3** would not create important negative or positive impacts to intersection operations. The SPUI would require less right-of-way than a folded diamond but would cost more to construct.

Consistency with Transportation Plans and Policies

Alternative 1–No Build conflicts with the Metro 2035 RTP and the Clackamas County Comprehensive Plan, which identify the need for the proposed Sunrise Project as a regional highway facility and freight route. **Alternative 1** would not meet the freight movement goals for OR 212/224 in the Oregon Transportation Plan.

Alternatives 2 and 3 would meet the Oregon Transportation Plan's goals for freight movement. **Alternatives 2 and 3** also comply with the RTP and the Clackamas County Comprehensive Plan, which identify the need for the proposed Sunrise Project as a regional highway facility and freight route.

Alternatives 2 and 3 would comply with the adopted Happy Valley Comprehensive Plan and Transportation System Plan. The East Happy Valley Comprehensive Plan process currently under way would change the Happy Valley Comprehensive Plan based on the Damascus/Boring Concept Plan, which assumes that a highway similar to **Alternative 2** would be built.

Potential Mitigation Measures

To address congestion pinch points not already part of the proposed Sunrise Project, the Land Use Technical Report suggests additional mitigation measures in the form of additional traffic signals—for example, at SE 82nd Drive/SE Tolbert Street, SE 82nd Drive/SE Jannsen Road, and SE 82nd Drive/SE Clackamas Street. Retaining existing or building new bicycle and pedestrian connections is also recommended to maintain connectivity to land uses.

Even with the build alternatives, the demand on the transportation network is expected to exceed the capacity of certain roads by 2030. To minimize the need for design exceptions or lower mobility standards, other mitigation measures could be explored.

Additional traffic mitigation measures would be needed at the following locations:

- OR 212/224, I-205 to SE 122nd Avenue
- Northbound I-205 exit to OR 212/224
- OR 224 between Webster Road and I-205

FHWA and ODOT would need to approve any proposed deviations from their standards for highways, known as design exceptions.

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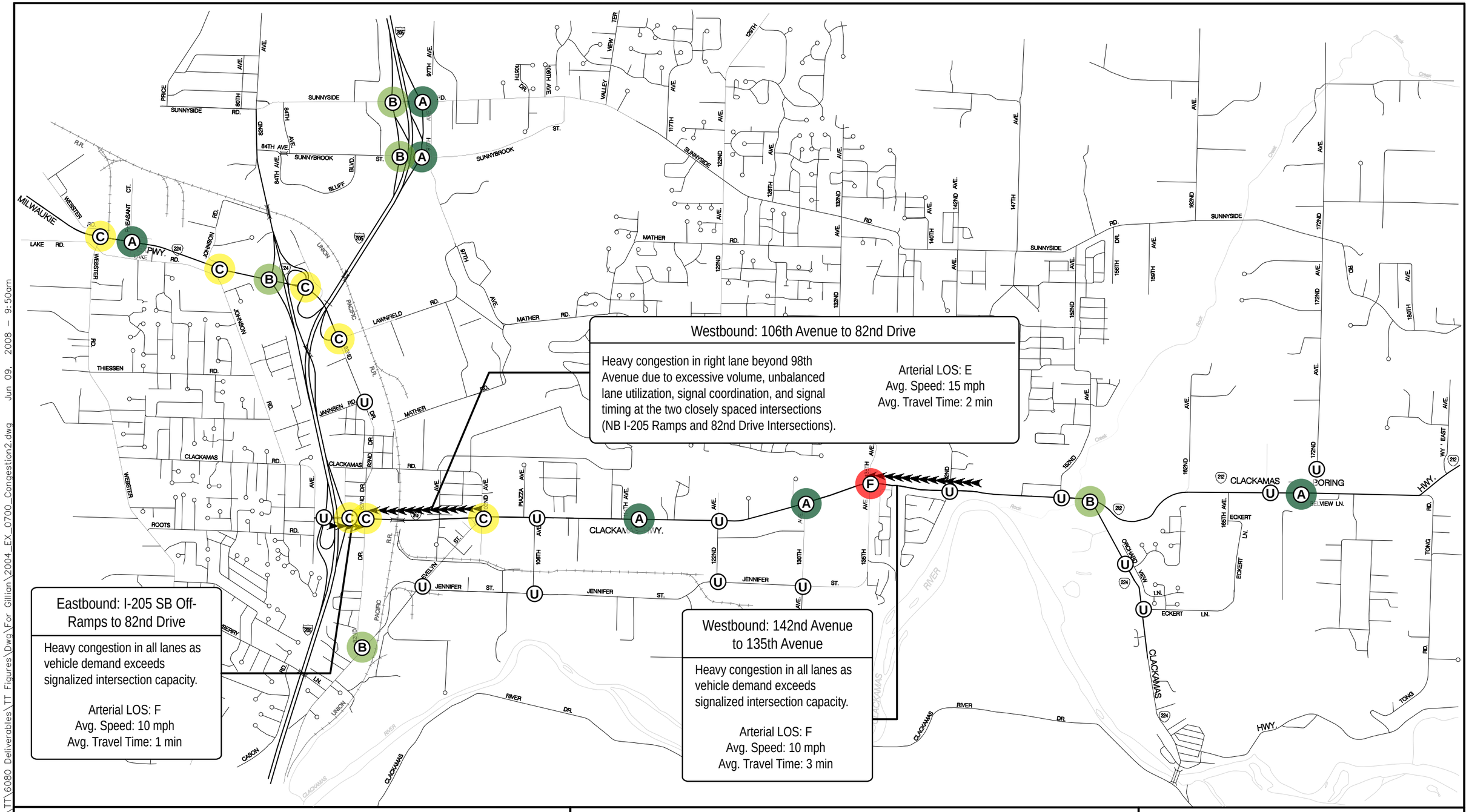


Figure 18

Existing Congestion (2004)
7:00 - 8:00 AM

Sunrise Project, I-205 to Rock Creek Junction

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Northbound: Jannsen Road to I-205 Off-Ramps

Heavy congestion in all lanes due to near-capacity operations at the I-205 off-ramps.

Arterial LOS: F
Avg. Speed: 13 mph
Avg. Travel Time: 3 min

Southbound: Jannsen Road to OR 212/224

Heavy congestion in all lanes due to over-capacity operation of SB left turn from 82nd Drive to OR 212/224. Left-turn queue spills into through-lane, causing queuing to extend beyond Tolbert Street.

Arterial LOS: F
Avg. Speed: 12 mph
Avg. Travel Time: 6 min

Westbound: 106th Avenue to 82nd Drive

Heavy congestion in all lanes to 106th Avenue due to excessive volume, unbalanced lane utilization, signal coordination, and signal timing at the two closely spaced intersections (NB I-205 ramps and 82nd Drive intersections).

Arterial LOS: F
Avg. Speed: 5 mph
Avg. Travel Time: 9 min

Eastbound: Webster Road to Lawnfield Road

Heavy congestion in all lanes due to heavy main line volume, closely spaced signalized intersections, and heavy side-street volumes at Webster Road, Johnson Road, and I-205 off-ramps.

Arterial LOS: E
Avg. Speed: 17 mph
Avg. Travel Time: 5 min

Eastbound: I-205 SB Off-Ramps to 82nd Drive

Heavy congestion in all lanes as vehicle demand exceeds signalized intersection capacity. Queuing extends onto SB I-205.

Arterial LOS: F
Avg. Speed: 6 mph
Avg. Travel Time: 2 min

Eastbound: Clackamas Highway split to Armstrong Circle

Heavy congestion in the right lane due to steep uphill grade and long delays caused by unprotected EB left turn onto Armstrong Circle. Unsignalized EB left turn from OR 212 to Armstrong Circle operates at LOS E.

Arterial LOS: D
Avg. Speed: 24 mph
Avg. Travel Time: 2 min

LEGEND:

- Congested Travel Direction
- Secondary Congestion
- Unsignalized Intersection

Signalized Intersection Level of Service (LOS): A B C D E F

Figure 19

Existing Congestion (2004)
4:30 - 5:30 PM

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Westbound: I-205 Off-Ramps to Webster Road

Heavy congestion occurs in all lanes, beyond the I-205 ramps, due to over-capacity operations at Pheasant Court and Webster Road. Congestion impacts traffic flow on the southbound I-205 off-ramps and the auxiliary lane.

Arterial LOS: F
Avg. Speed: 7 mph
Avg. Travel Time: 15 min

Southbound: Jannsen Road to OR 212/224

Heavy congestion in all lanes to Jannsen Road due to the over-capacity operations at the intersection with OR 212/224. The southbound left turn queue at OR 212/224 spills into and blocks all through-lanes.

Arterial LOS: E
Avg. Speed: 11 mph
Avg. Travel Time: 3 min

Westbound: 122nd Avenue to 82nd Drive

Heavy congestion in all lanes beyond the OR 212/224 split due to over-capacity operations at 82nd Drive and 102nd Avenue.

Arterial LOS: F
Avg. Speed: 5 mph
Avg. Travel Time: 40 min

Westbound: 172nd Avenue to OR 212/224 Split

Heavy congestion in all lanes beyond 172nd Avenue due to over-capacity operations at OR 212/224.

Arterial LOS: F
Avg. Speed: 3 mph
Avg. Travel Time: 23 min

Eastbound: Webster Road to I-205 SB On-Ramp

Light congestion in the left lane due to over-capacity left turn onto 82nd Avenue northbound.

Arterial LOS: D
Avg. Speed: 23 mph
Avg. Travel Time: 2 min

Eastbound: I-205 SB Off-Ramps to 82nd Drive

Heavy congestion in all lanes as vehicle demand exceeds signalized intersection capacity. Queuing extends onto the I-205 off-ramp.

Arterial LOS: F
Avg. Speed: 5 mph
Avg. Travel Time: 4 min

Eastbound: 122nd Avenue to OR 212/224 Split

Moderate congestion in all lanes due to over-capacity left turns at 135th Avenue and 142nd Avenue spilling into adjacent lanes.

Arterial LOS: C
Avg. Speed: 22 mph
Avg. Travel Time: 5 min

Northbound: Eckert Lane to OR 212/224 Split

Heavy congestion in all lanes beyond Eckert Lane due to over-capacity northbound left turns at the OR 212/224 split.

Arterial LOS: F
Avg. Speed: 10 mph
Avg. Travel Time: 5 min

LEGEND:

- Congested Travel Direction
- Secondary Congestion
- Unsignalized Intersection

Signalized Intersection Level of Service (LOS)

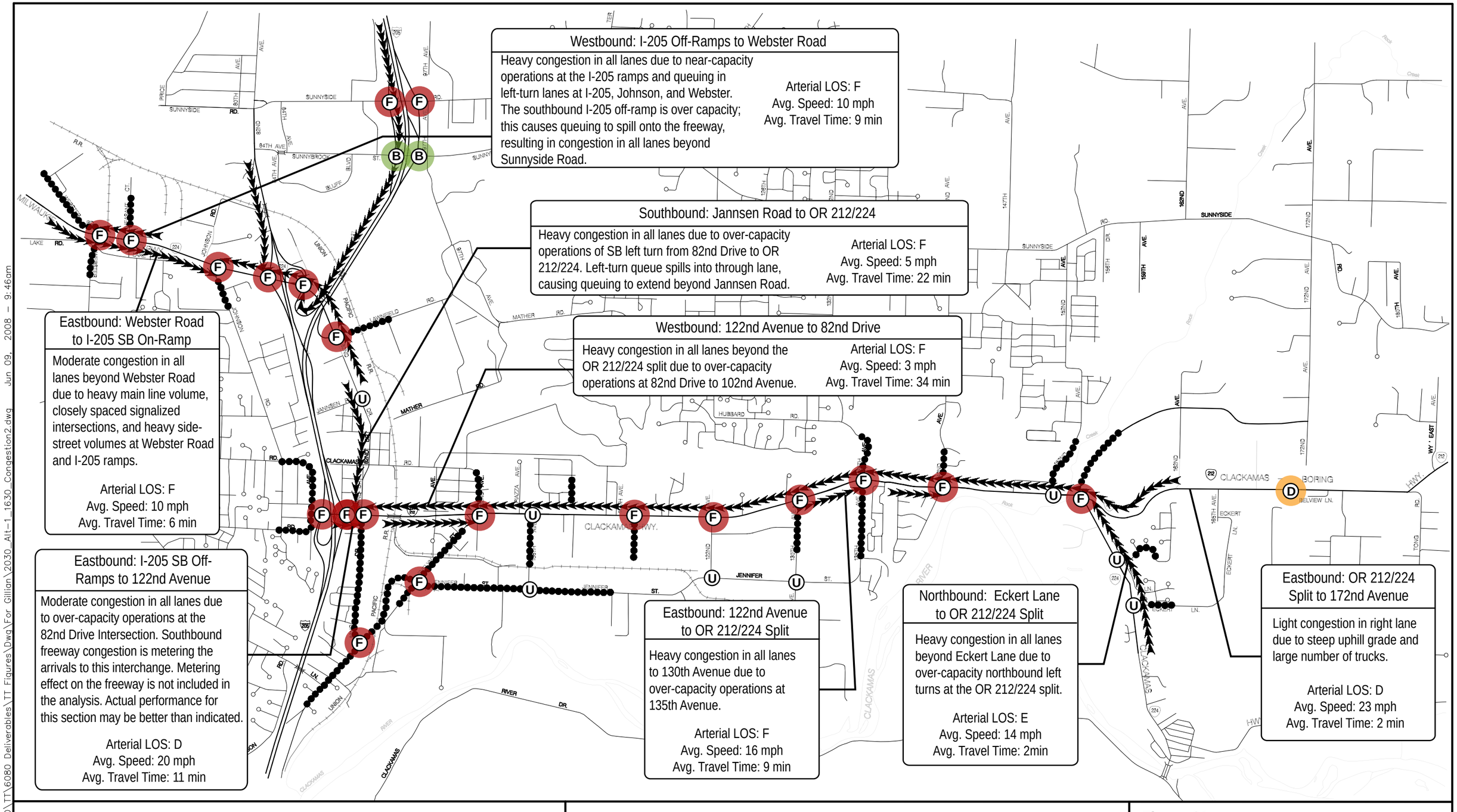
A B C D E F

Figure 20

Alternative 1
Projected Congestion (2030)
7:00 - 8:00 AM

Sunrise Project, I-205 to Rock Creek Junction

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Note:
Average speed rounded to the nearest mile per hour.
Travel time rounded to the nearest 15 seconds.

LEGEND:

- Congested Travel Direction
- Secondary Congestion
- (U) Unsignalized Intersection

Signalized Intersection Level of Service (LOS)

(A) (B) (C) (D) (E) (F)

Figure 21

Alternative 1
Projected Congestion (2030)
4:30 - 5:30 PM

Sunrise Project, I-205 to Rock Creek Junction

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Eastbound: Webster Road to I-205 SB On-Ramp

Light congestion due to near-capacity operations at Johnson Road.

Arterial LOS: B
Avg. Speed: 38 mph
Avg. Travel Time: 5 min

Westbound: I-205 Northbound Off-Ramp to Webster Road

Heavy congestion occurs in all lanes, beyond the I-205 ramps, due to over-capacity operations at Webster Road and Pheasant Court. Congestion influences the I-205 off-ramps, but does not influence the I-205 main line.

Arterial LOS: F
Avg. Speed: 6 mph
Avg. Travel Time: 20 min

Northbound: I-205 Ramp Meter

Heavy congestion in auxiliary lane. The westbound Sunrise to northbound I-205 volume is greater than the I-205 ramp meter rate.

Westbound: 122nd Avenue to 82nd Drive

Heavy congestion in right lane near 82nd Drive due to near-capacity conditions, and the high volume of right-turning vehicles at 82nd Drive and the I-205 on-ramp. Congestion spills into all lanes beyond 102nd Avenue and continues back through the OR 212/224 split.

Arterial LOS: F
Avg. Speed: 4 mph
Avg. Travel Time: 35 min

Southbound: I-205 Ramp Meter

Heavy congestion in right lane. The southbound 82nd Avenue to I-205 southbound volume is greater than the I-205 ramp meter rate.

Eastbound: I-205 SB Off-Ramps to 82nd Drive

Heavy congestion in all lanes due to over-capacity operations at 82nd Drive.

Arterial LOS: F
Avg. Speed: 7 mph
Avg. Travel Time: 3 min

Northbound I-205

Heavy congestion in the right lane due to high exiting volumes to closely spaced exits at OR 212/224 and Sunrise. The off-ramp influence is felt in the adjacent lane, causing light to moderate congestion.

Eastbound: 122nd Avenue to OR 212/224 Split

Light congestion in left-lane due to over-capacity eastbound left turns at 135th Avenue and 142nd Avenue; the resulting queues spill back onto the main line.

Arterial LOS: E
Avg. Speed: 17 mph
Avg. Travel Time: 8 min

Northbound: Eckert Lane to Sunrise Westbound On-Ramp

No congestion.

Arterial LOS: C
Avg. Speed: 25 mph
Avg. Travel Time: 2 min

LEGEND:

- Congested Travel Direction
- Secondary Congestion
- Unsignalized Intersection

Signalized Intersection Level of Service (LOS)

A B C D E F

Figure 22

Alternative 2
Project Congestion (2030)
7:00 - 8:00 AM

Sunrise Project, I-205 to Rock Creek Junction

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Westbound: I-205 Northbound Off-Ramp to Webster Road

Heavy congestion in all lanes due to over-capacity operations at Webster Road. The four-lane cross section is not capable of handling the predicted demand.

Arterial LOS: F
Avg. Speed: 6 mph
Avg. Travel Time: 12 min

Northbound: I-205 Ramp Meter

Heavy congestion in auxiliary lane due to the westbound Sunrise to northbound I-205 ramp meter rate.

Westbound: 122nd Avenue to 82nd Drive

Heavy congestion beyond the OR 212/224 split due to over-capacity conditions at 82nd Drive.

Arterial LOS: F
Avg. Speed: 3 mph
Avg. Travel Time: 48 min

Eastbound: Webster Road to I-205 SB On-Ramp

Light congestion due to near-capacity operations at Johnson Road.

Arterial LOS: E
Avg. Speed: 16 mph
Avg. Travel Time: 3 min

Eastbound: I-205 SB Off-Ramps to 82nd Drive

Heavy congestion due to over-capacity operations at 82nd Drive.

Arterial LOS: F
Avg. Speed: 5 mph
Avg. Travel Time: 5 min

Northbound I-205

Heavy congestion in the right lane due to high exiting volumes to closely spaced exits at OR 212/224 and Sunrise. The off-ramp influence is felt in the adjacent lane, causing light to moderate congestion.

Eastbound: 122nd Avenue to OR 212/224 Split

Light congestion due to over-capacity eastbound left turns at 135th Avenue and 142nd Avenue.

Arterial LOS: C
Avg. Speed: 27 mph
Avg. Travel Time: 3 min

Northbound: Eckert Lane to Sunrise Westbound On-Ramp

No congestion.

Arterial LOS: D
Avg. Speed: 20 mph
Avg. Travel Time: 2 min

LEGEND:

- Congested Travel Direction
- Secondary Congestion
- Unsignalized Intersection

Signalized Intersection Level of Service (LOS): A B C D E F

Figure 23

Alternative 3
Projected Congestion (2030)
7:00 - 8:00 AM

Sunrise Project, I-205 to Rock Creek Junction

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Eastbound: Webster Road to I-205 SB On-Ramp

Light congestion due to near-capacity operations at Johnson Road.

Arterial LOS: C
Avg. Speed: 31 mph
Avg. Travel Time: 2 min

Westbound: I-205 Northbound Off-Ramp to Webster Road

Light congestion in all lanes due to over-capacity operations at Webster Road.

Arterial LOS: D
Avg. Speed: 26 mph
Avg. Travel Time: 3 min

Southbound: I-205 Ramp Meter

Heavy congestion in right lane. The southbound 82nd Avenue to I-205 southbound volume is greater than the I-205 ramp meter rate.

Westbound: 122nd Avenue to 82nd Drive

Heavy congestion beyond 130th Avenue due to over-capacity operations at 82nd Drive.

Arterial LOS: F
Avg. Speed: 5 mph
Avg. Travel Time: 22 min

Eastbound: I-205 SB Off-Ramps to 82nd Drive

Heavy congestion due to over-capacity operations at 82nd Drive.

Arterial LOS: F
Avg. Speed: 6 mph
Avg. Travel Time: 2 min

Southbound I-205 at OR 212/224 On-Ramp

Heavy congestion in slow lane due to high volume of merging traffic.

Eastbound: 122nd Avenue to OR 212/224 Split

Light congestion due to over-capacity eastbound left turns at 135th Avenue and 142nd Avenue.

Arterial LOS: C
Avg. Speed: 23 mph
Avg. Travel Time: 4 min

Northbound: Eckert Lane to Sunrise Westbound On-Ramp

No congestion.

Arterial LOS: C
Avg. Speed: 21 mph
Avg. Travel Time: 2 min

Note:
Average speed rounded to the nearest mile per hour.
Travel time rounded to the nearest 15 seconds.

LEGEND:

- Congested Travel Direction
- Secondary Congestion
- Unsignalized Intersection

Signalized Intersection Level of Service (LOS): A B C D E F

Figure 24

Alternative 2
Projected Congestion (2030)
4:30 - 5:30 PM

Sunrise Project, I-205 to Rock Creek Junction

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Eastbound: Webster Road to I-205 SB On-Ramp

Light congestion due to near-capacity operations at Johnson Road.

Arterial LOS: D
Avg. Speed: 22 mph
Avg. Travel Time: 2 min

Westbound: I-205 Northbound Off-Ramp to Webster Road

Moderate congestion in all lanes due to over-capacity operations at Webster Road.

Arterial LOS: F
Avg. Speed: 14 mph
Avg. Travel Time: 9 min

Westbound: 122nd Avenue to 82nd Drive

Heavy congestion beyond 135th Avenue due to over-capacity operations at 82nd Drive.

Arterial LOS: F
Avg. Speed: 4 mph
Avg. Travel Time: 36 min

Southbound: I-205 Ramp Meter

Heavy congestion in right lane. The southbound 82nd Avenue to I-205 southbound volume is greater than the I-205 ramp meter rate.

Eastbound: I-205 SB Off-Ramps to 82nd Drive

Heavy congestion due to over-capacity operations at 82nd Drive.

Arterial LOS: F
Avg. Speed: 4 mph
Avg. Travel Time: 3 min

Southbound I-205 at OR 212/224 On-Ramp

Heavy congestion in slow lane due to high volume of merging traffic.

Eastbound: 122nd Avenue to OR 212/224 Split

Light congestion due to over-capacity eastbound left turns at 135th Avenue and 142nd Avenue.

Arterial LOS: C
Avg. Speed: 28 mph
Avg. Travel Time: 4 min

Northbound: Eckert Lane to the Sunrise Westbound On-Ramp

No congestion.

Arterial LOS: D
Avg. Speed: 20 mph
Avg. Travel Time: 2 min

Note:
Average speed rounded to the nearest mile per hour.
Travel time rounded to the nearest 15 seconds.

LEGEND:

- Congested Travel Direction
- Secondary Congestion
- Ⓤ Unsignalized Intersection

Signalized Intersection Level of Service (LOS): Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ

Figure 25

Alternative 3
Projected Congestion (2030)
4:30 - 5:30 PM

Sunrise Project, I-205 to Rock Creek Junction

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Land Use

Constructing the proposed Sunrise Project would affect existing and planned land uses. Acquiring land for right-of-way would displace some businesses and residences, affect property access to many lots, and convert land currently planned for certain uses to a transportation use, thereby affecting planned growth.

The Land Use and Right-of-Way Technical reports on the attached DVD contain more details about the following:

- Land use study area (Figure 13 of the Land Use report)
- Existing land uses and conditions
- Existing and planned parks and trails
- Planned development
- Past major projects and policy decisions
- Compatibility with state, regional, and local land use plans and policies
- Number of lots and structures affected by right-of-way acquisition, amount of land converted to transportation use by zoning designation, impacts on unique uses, community facilities, and individual access impacts
- Mitigation measures

Existing land uses are shown on Figure 26 (p. 65) and the zoning designations on Figure 27 (p. 66). An inventory of existing land uses in and adjacent to the project area revealed that employment uses dominate, with 36 percent of the land area in industrial, office, warehouse, military, and agricultural uses, primarily in the I-205 Interchange and Midpoint areas.[18] Dispersed throughout the corridor, multifamily and single-family residential developments take up about 33 percent of land area, though urban and rural residential uses dominate in the Rock Creek Junction area. About 22 percent, or 811 acres, is vacant land. Parks, public utilities, community uses such as churches and schools, and rights-of-way occupy the remaining land area.

The technical team studied land use and community impacts within a study area much larger than the proposed right-of-way for the Sunrise Project. There are about 4,500 acres in the land use study area, compared to approximately 480 to 550 acres of proposed right-of-way (depending on alternative and design option).

Generally, the existing land uses in the proposed project area correspond to the adopted planning and zone designations. The land use study area includes areas that have been undergoing suburban development for more than 30 years, areas that have been developed very recently, and areas that were planned for rural uses until they were brought into the region's UGB in 2002. Based on Geographic Information System (GIS) data, land zoned for industrial uses is about 1,600 acres of the project area (198 acres vacant) and commercial retail zones are about 300 acres (20 acres vacant). Urban residential zones cover about 1,400 acres (211 acres vacant) and range from urban to rural densities across several neighborhoods. This does not include rural residential uses, which cover close to 500 acres. The zoning map designates about 100 acres of open space (all in the I-205 Interchange area) and nearly 300 acres of agricultural land (primarily south of the Clackamas River and outside the UGB).

Right-of-Way Impacts

Table 9 (pp. 48 – 57) shows estimates of the potential acquisition of tax lots needed for right-of-way. The specific amount of right-of-way will be determined in final design. The acquisition estimates represent the best information available at the current stage of design, and the actual amounts are expected to change based on final design. The property ID# corresponds to the property ID# on Figures 28 to 39 (pp. 67 through 78. Table 10 (p. 58) summarizes land use impacts. Estimated residential displacements would range from 43 to 75 dwelling units. From 57 to 71 businesses would be displaced (see Communities and Businesses section).

[18] *Data on land uses in this section can be found in the Land Use Technical Report. The Methodology and Data Sources section details the source materials and methods used in the analysis.*

Table 9. Estimated Impacts on Tax Lots by Partial or Full Acquisition for Right-of-Way
(Impacts are the same for both build alternatives unless otherwise noted.)

Property ID# (on map)	Address	Primary Use	Estimated Property Area (acres)	Estimated Right-of-Way Impact (Partial or Full Acquisition)*
1	No address	Industrial	1.04	Partial
2	No address	Industrial	7.62	Partial
3	No address	Industrial	3.31	Alt 2 & 3: C-1: Full, C-2: Partial, C-3: Full
4	No address	Industrial	0.87	Partial
5	8225 SE Deer Creek Lane	Industrial	2.43	Partial
6	No address	Industrial	0.47	Partial
7	8155 SE Deer Creek Lane	Industrial	1.92	Partial
8	8085 SE Deer Creek Lane	Commercial	2.20	Partial
9	No address	Industrial	3.35	Partial
10	8277 SE Deer Creek Lane	Commercial	2.05	Full
11	13750 SE Johnson Road	Commercial	14.10	Partial
12	7700 SE Lake Road	Multifamily	1.90	Partial
13	14000 SE Johnson Road	Commercial	0.75	Full
14	7800 SE Lake Road	Commercial	0.29	Full
15	No address	Public Service	4.19	Partial
16	No address	Industrial	3.40	Partial
17	No address	Industrial	0.41	Full
18	13350 SE Johnson Road	Industrial	8.58	Partial
19	No address	Industrial	1.28	Partial
20	13377 SE Johnson Road	Industrial	1.13	Partial
21	7924 SE Lake Road	Multifamily	3.36	Partial
22	14090 SE Johnson Road	Multifamily	0.24	Partial
23	14100 SE Johnson Road	Multifamily	0.19	Partial
24	7200 SE Harmony Road	Industrial	60.29	Partial
25	13011 SE 84th Avenue	Commercial	1.39	Partial
26	9300 SE Sunnybrook	Commercial	6.63	Partial
27	13035 SE 84th Avenue	Commercial	1.24	Partial
28	13435 SE 97th Avenue	Commercial	4.22	Partial
29	No address	Open Space	2.74	Partial
30	13101 SE 84th Avenue	Industrial	4.92	Partial
31	No address	Open Space	3.07	Partial
32	13455 SE 97th Avenue	Commercial	14.94	Partial
33	13340 SE 84th Avenue	Industrial	24.34	Partial
34	No address	Open Space	2.34	Partial
35	13309 SE 84th Avenue	Commercial	7.35	Partial
36	No address	Commercial	12.21	Full
37	13517 SE Ambler Road	Industrial	2.60	Full

* The acquisition estimates represent the best information available at the current stage of design and the actual amounts are expected to change based on final design.

Table 9. Estimated Impacts on Tax Lots by Partial or Full Acquisition for Right-of-Way
(Impacts are the same for both build alternatives unless otherwise noted.)

Property ID# (on map)	Address	Primary Use	Estimated Property Area (acres)	Estimated Right-of-Way Impact (Partial or Full Acquisition)*
38	No address	Industrial	2.86	Partial
39	No address	Industrial	0.28	Partial
40	13621 SE Ambler Road	Industrial	0.22	Partial
41	13651 SE Ambler Road	Industrial	0.24	Partial
42	9415 SE Lawnfield Road	Industrial	42.41	Partial
43	No address	Commercial	1.33	Full
44	13850 SE Ambler Road	Commercial	0.48	Full
45	No address	Commercial	0.49	Full
46	No address	Open Space	2.22	Full
47	No address	Open Space	2.13	Full
48	No address	Railroad	0.50	Full
49	No address	Industrial	0.04	Full
50	14242 SE 82nd Drive	Industrial	6.73	Full
51	No address	Industrial	0.00	Full
52	No address	Industrial	2.85	Partial
53	No address	Industrial	1.23	Partial
54	No address	Industrial	4.10	Partial
55	14235 SE 98th Court	Industrial	1.00	Partial
56	14434 SE Industrial Way	Industrial	8.76	Partial
57	No address	Industrial	1.50	Full
58	9200 SE Lawnfield Road	Commercial	10.15	Full
59	9001 SE Lawnfield Road	Industrial	1.07	Full
60	No address	Railroad	0.45	Full
61	9180 SE Lawnfield Road	Industrial	1.09	Full
62	9160 SE Lawnfield Road	Industrial	1.17	Full
63	14600 SE 82nd Drive	Industrial	0.72	Partial
64	14450 SE 98th Court	Industrial	1.92	Partial
65	9200 SE Lawnfield Road	Commercial	0.29	Full
66	14600 SE 82nd Drive	Industrial	0.89	Partial
67	14646 SE 82nd Drive	Industrial	2.31	Partial
68	9200 SE Lawnfield Road	Commercial	0.34	Full
69	14570 SE 82nd Drive	Industrial	0.43	Partial
70	14510 SE 98th Court	Industrial	2.00	Partial
71	No address	Industrial	0.06	Partial
72	No address	Open Space	4.85	Full
73	No address	Industrial	1.61	Full
74	8811 SE Herbert Court	Industrial	5.37	Full
75	8921 SE Herbert Court	Commercial	0.84	Full
76	9200 SE Lawnfield Road	Industrial	2.83	Full
77	14692 SE 82nd Drive	Industrial	2.88	Partial
78	No address	Industrial	1.64	Full

Table 9. Estimated Impacts on Tax Lots by Partial or Full Acquisition for Right-of-Way
(Impacts are the same for both build alternatives unless otherwise noted.)

Property ID# (on map)	Address	Primary Use	Estimated Property Area (acres)	Estimated Right-of-Way Impact (Partial or Full Acquisition)*
79	9200 SE Lawnfield Road	Industrial	17.67	Partial
80	14625 SE 82nd Drive	Commercial	1.41	Partial
81	8830 SE Herbert Court	Industrial	2.38	Partial
82	14726 SE 82nd Drive	Industrial	1.99	Partial
83	8810 SE Herbert Court	Industrial	0.90	Full
84	14721 SE 82nd Drive	Commercial	0.95	Partial
85	14735 SE 82nd Drive	Industrial	2.44	Partial
86	9039 SE Jannsen Road	Industrial	10.61	Partial
87	9651 SE Mather Road	Industrial	0.50	Full
88	9801 SE Clackamas Road	Industrial	44.94	Partial
89	8856 SE Jannsen Road	Multifamily	0.88	Full
90	8810 SE Jannsen Road	Multifamily	0.20	Full
91	8909 SE Tolbert Street	Residential	0.98	Full
92	8850 SE Tolbert Street	Residential	0.52	Full
93	No address		0.38	Partial
94	No address		0.29	Partial
95	No address		2.45	Partial
96	8880 SE Tolbert Street	Residential	0.30	Full
97	15301 SE 92nd Avenue	Public Service	6.66	Partial
98	No address	Industrial	1.09	Full
99	No address	Industrial	0.24	Full
100	8905 SE Clackamas Road	Multifamily	0.75	Full
101	15700 SE McKinley Avenue	Industrial	4.32	Partial
102	No address	Commercial	0.70	Full
103	15536 SE 82nd Drive	Commercial	0.47	Partial
104	9350 SE Clackamas Road	Commercial	5.13	Partial
105	15525 SE 82nd Drive	Commercial	0.16	Full
106	15547 SE 90th Avenue	Commercial	0.18	Full
107	15601 SE 90th Avenue	Commercial	0.07	Full
108	No address	Commercial	0.09	Full
109	15551 SE 90th Avenue	Commercial	0.50	Full
110	15571 SE 82nd Drive	Commercial	0.15	Full
111	15630 SE 82nd Drive	Industrial	0.57	Partial
112	15599 SE 82nd Drive	Commercial	0.17	Full
113	15625 SE 90th Avenue	Commercial	0.58	Full
114	15700 SE 82nd Drive	Commercial	1.93	Partial
115	15661 SE 82nd Drive	Commercial	0.20	Full
116	15711 SE 90th Avenue	Public Service	0.30	Full
117	15675 SE 82nd Drive	Commercial	0.20	Full
118	No address	Public Service	0.20	Partial
119	15775 SE 82nd Drive	Commercial	0.40	Full

Table 9. Estimated Impacts on Tax Lots by Partial or Full Acquisition for Right-of-Way
(Impacts are the same for both build alternatives unless otherwise noted.)

Property ID# (on map)	Address	Primary Use	Estimated Property Area (acres)	Estimated Right-of-Way Impact (Partial or Full Acquisition)*
120	15791 SE 90th Avenue	Commercial	0.39	Full
121	15765 SE McKinley Avenue	Residential	0.20	Partial
122	15805 SE McKinley Avenue	Residential	0.24	Partial
123	9040 SE Adams Street	Commercial	1.08	Partial
124	No address	Commercial	0.91	Partial
125	No address	Commercial	0.40	Partial
126	9040 SE Adams Street	Commercial	0.26	Full
127	15950 SE 82nd Drive	Commercial	1.06	Partial
128	15815 SE McKinley Avenue	Residential	0.20	Partial
129	8725 SE Hood Street	Residential	0.19	Partial
130	No address	Railroad	1.11	Partial
131	No address	Railroad	0.72	Partial
132	No address	Commercial	0.55	Full
133	15966 SE 82nd Drive	Commercial	1.67	Full
134	15960 SE 82nd Drive	Commercial	0.70	Full
135	15929 SE McKinley Avenue	Commercial	0.91	Partial
136	15970 SE 82nd Drive	Commercial	0.23	Full
137	15960 SE 82nd Drive	Commercial	0.41	Full
138	16016 SE 82nd Drive	Commercial	2.47	Partial
139	16010 SE 82nd Drive	Commercial	0.52	Partial
140	15997 SE 82nd Drive	Public Service	0.20	Full
141	8734 SE Jefferson Street	Residential	0.24	Partial
142	16087 SE 82nd Drive	Commercial	1.56	Partial
143	16002 SE 82nd Drive	Commercial	0.46	Full
144	16035 SE McKinley Avenue	Residential	0.24	Partial
145	16050 SE 82nd Drive	Commercial	6.79	Partial
146	16040 SE 82nd Drive	Commercial	0.56	Partial
147	16301 SE 82nd Drive	Commercial	12.39	Partial
148	16115 SE 82nd Drive	Commercial	0.57	Full
149	14421 SE 98th Court	Industrial	7.12	Partial
150	9200 SE Mather Road	Industrial	9.63	Full
151	10105 SE Mather Road	Industrial	2.90	Partial
152	10037 SE Mather Road	Industrial	4.55	Partial
153	No address	Industrial	2.76	Partial
154	9885 SE Mather Road	Industrial	1.71	Full
155	No address	Industrial	0.47	Full
156	No address	Industrial	1.84	Full
157	No address	Industrial	4.42	Full
158	No address	Industrial	121.09	Full
159	No address	Industrial	30.96	Full
160	No address	Industrial	5.27	Partial

Table 9. Estimated Impacts on Tax Lots by Partial or Full Acquisition for Right-of-Way
(Impacts are the same for both build alternatives unless otherwise noted.)

Property ID# (on map)	Address	Primary Use	Estimated Property Area (acres)	Estimated Right-of-Way Impact (Partial or Full Acquisition)*
161	No address	Industrial	9.92	Partial
162	No address	Industrial	1.15	Partial
163	No address	Industrial	0.80	Partial
164	No address	Industrial	3.20	Full
165	11811 SE Hwy 212	Industrial	2.26	Full
166	15648 SE 114th Avenue	Industrial	1.50	Partial
167	No address	Industrial	5.61	Partial
168	11811 SE Hwy 212	Industrial	1.18	Partial
169	11805 SE Hwy 212	Industrial	4.14	Partial
170	No address	Industrial	4.64	Alt 2: Full, Alt 3: Partial
171	11811 SE Hwy 212	Industrial	2.00	Partial
172	12441 SE Hwy 212	Industrial	4.52	Alt 2: Full, Alt 3: Partial
173	11857 SE Hwy 212	Commercial	1.00	Partial
174	No address	Commercial	0.68	Partial
175	11901 SE Hwy 212	Commercial	0.91	Partial
176	11951 SE Hwy 212	Commercial	0.85	Partial
177	11985 SE Hwy 212	Commercial	0.85	Partial
178	11767 SE Hwy 212	Commercial	1.93	Partial
179	12441 SE Hwy 212	Commercial	1.22	Partial
180	11500 SE Hwy 212	Industrial	74.90	Partial
181	12000 SE Hwy 212	Industrial	4.70	Partial
182	12128 SE Hwy 212	Commercial	0.56	Full
183	15927 SE 122nd Avenue	Commercial	0.63	Partial
184	15981 SE 122nd Avenue	Commercial	0.61	Partial
185	16007 SE 122nd Avenue	Industrial	0.59	Partial
186	16121 SE 122nd Avenue	Industrial	2.18	Partial
187	14917 SE 142nd Avenue	Industrial	15.52	Partial
188	13300 SE Hubbard Road	Multifamily	14.20	Partial
189	13601 SE Hwy 212	Industrial	1.73	Full
190	13605 SE Hwy 212	Industrial	2.37	Full
191	No address	Industrial	5.59	Partial
192	14917 SE 142nd Avenue	Industrial	0.00	Full
193	No address	Industrial	4.64	Full
194	No address	Industrial	0.40	Full
195	No address	Industrial	0.72	Full
196	No address	Residential	1.49	Partial
197	13601 SE Hwy 212	Industrial	0.54	Full
198	13605 SE Hwy 212	Industrial	0.51	Full
199	No address	Industrial	10.73	Partial
200	15251 SE 142nd Avenue	Industrial	7.79	Partial
201	15251 SE 142nd Avenue	Industrial	0.00	Full

Table 9. Estimated Impacts on Tax Lots by Partial or Full Acquisition for Right-of-Way
(Impacts are the same for both build alternatives unless otherwise noted.)

Property ID# (on map)	Address	Primary Use	Estimated Property Area (acres)	Estimated Right-of-Way Impact (Partial or Full Acquisition)*
202	15312 SE Hubbard Road	Commercial	0.65	Full
203	No address	Commercial	0.34	Alt 2 & 3: C-1 & C-2 Partial, C-3: Full
204	13585 SE Hwy 212	Industrial	1.80	Alt 2 & 3: C-1 & C-2 Partial, C-3: Full
205	13611 SE Hwy 212	Industrial	1.01	Alt 2 & 3: C-1 Partial, C-2: No Impact, C-3: Full
206	13052 SE Bluff Drive	Residential	0.56	Partial
207	12988 SE Bluff Drive	Residential	0.53	Partial
208	No address	Industrial	1.83	Alt 2 & 3: C-1 Full, C-2 & C-3: Partial
209	12996 SE Bluff Drive	Residential	0.53	Partial
210	13008 SE Bluff Drive	Residential	0.53	Partial
211	13026 SE Bluff Drive	Residential	0.53	Partial
212	13042 SE Bluff Drive	Residential	0.61	Partial
213	No address	Industrial	7.82	Full
214	No address	Public Service	0.27	Full
215	15319 SE Hubbard Road	Residential	1.39	Full
216	12601 SE Hwy 212	Industrial	20.90	Partial
217	13565 SE Hwy 212	Industrial	2.24	Alt 2 & 3: C-1 & C-2 Full, C-3: Partial
218	15351 SE For Mor Court	Industrial	1.37	Full
219	15450 SE For Mor Court	Industrial	1.30	Full
220	13141 SE Hwy 212	Industrial	3.94	Full
221	13171 SE Hwy 212	Residential	0.99	Full
222	13489 SE Hwy 212	Commercial	1.30	Full
223	No address	Industrial	2.00	Full
224	15401 SE For Mor Court	Industrial	0.21	Full
225	13499 SE Hwy 212	Industrial	0.43	Full
226	No address	Industrial	1.12	Alt 2 & 3: C-1 Partial, C-2: Full, C-3: No Impact
227	15450 SE For Mor Court	Industrial	2.06	Full
228	15350 SE Hubbard Road	Commercial	0.50	Full
229	No address	Commercial	0.12	Full
230	15451 SE For Mor Court	Residential	0.94	Full
231	13163 SE Hwy 212	Industrial	0.37	Full
232	13003 SE Hwy 212	Residential	1.79	Partial
233	13003 SE Hwy 212	Industrial	1.67	Partial
234	13111 SE Hwy 212	Industrial	0.64	Partial
235	13163 SE Hwy 212	Residential	0.38	Full
236	13273 SE Hwy 212	Industrial	0.43	Full
237	15580 SE For Mor Court	Commercial	1.32	Partial
238	15525 SE For Mor Court	Industrial	2.81	Partial
239	No address	Industrial	5.14	Partial
240	12209 SE Hwy 212	Industrial	0.83	Partial
241	No address	Industrial	0.38	Partial
242	No address	Industrial	1.17	Partial

Table 9. Estimated Impacts on Tax Lots by Partial or Full Acquisition for Right-of-Way
(Impacts are the same for both build alternatives unless otherwise noted.)

Property ID# (on map)	Address	Primary Use	Estimated Property Area (acres)	Estimated Right-of-Way Impact (Partial or Full Acquisition)*
243	15651 SE 125th Court	Industrial	0.85	Partial
244	15600 SE For Mor Court	Industrial	1.17	Partial
245	13019 SE Jennifer Street	Industrial	6.00	Partial
246	13150 SE Hwy 212	Industrial	2.43	Partial
247	13012 SE Hwy 212	Industrial	1.58	Partial
248	13013 SE Jennifer Street	Industrial	6.60	Partial
249	15730 SE 130th Avenue	Industrial	2.62	Partial
250	12211 SE Hwy 212	Commercial	0.67	Full
251	12301 SE Hwy 212	Industrial	1.68	Partial
252	No address	Industrial	1.84	Partial
253	12275 SE Hwy 212	Commercial	0.84	Partial
254	12900 SE Hwy 212	Industrial	3.92	Partial
255	12249 SE Hwy 212	Commercial	0.60	Full
256	12710 SE Hwy 212	Industrial	3.03	Partial
257	12500 SE Hwy 212	Industrial	1.68	Partial
258	12500 SE Hwy 212	Industrial	2.24	Partial
259	12300 SE Hwy 212	Industrial	2.02	Partial
260	12300 SE Hwy 212	Industrial	1.69	Partial
261	12250 SE Ford Street	Industrial	19.60	Partial
262	No address	Residential	3.52	Partial
263	No address	Public Service	19.56	Partial
264	16163 SE Hwy 212	Public Service	49.76	Partial
265	15037 SE Aspen Way	Residential	0.15	Full
266	14983 SE Glenbrook Road	Residential	0.18	Full
267	14988 SE Glenbrook Road	Residential	0.17	Full
268	15059 SE Aspen Way	Residential	0.15	Full
269	15062 SE Aspen Way	Residential	0.14	Full
270	14991 SE Glenbrook Road	Residential	0.18	Full
271	14999 SE Glenbrook Road	Residential	0.20	Full
272	15017 SE Glenbrook Road	Residential	0.24	Full
273	15017 SE Glenbrook Road	Residential	0.13	Full
274	15025 SE Glenbrook Road	Residential	0.12	Full
275	15033 SE Glenbrook Road	Residential	0.12	Full
276	15041 SE Glenbrook Road	Residential	0.12	Full
277	15049 SE Glenbrook Road	Residential	0.12	Full
278	15057 SE Glenbrook Road	Residential	0.12	Full
279	15065 SE Glenbrook Road	Residential	0.12	Full
280	15073 SE Glenbrook Road	Residential	0.12	Full
281	15081 SE Glenbrook Road	Residential	0.11	Full
282	15089 SE Glenbrook Road	Residential	0.12	Full
283	No address	Residential	0.03	Full

Table 9. Estimated Impacts on Tax Lots by Partial or Full Acquisition for Right-of-Way
(Impacts are the same for both build alternatives unless otherwise noted.)

Property ID# (on map)	Address	Primary Use	Estimated Property Area (acres)	Estimated Right-of-Way Impact (Partial or Full Acquisition)*
284	15202 SE 142nd Avenue	Residential	3.81	Alt 2 & 3: C-1 Full, C-2: Partial, C-3: Full
285	15270 SE 142nd Avenue	Residential	4.09	Alt 2 & 3: C-1 Full, C-2: Partial, C-3: Full
286	14489 SE Hwy 212	Industrial	2.95	Alt 2 & 3: C-1 Full, C-2: Partial, C-3: Full
287	14801 SE Morning Way	Industrial	15.73	Alt 2 & 3: C-1 Full, C-2: Partial, C-3: Full
288	15119 SE Dayspring Lane	Residential	7.51	Partial
289	No address	Commercial	5.17	Partial
290	14801 SE Morning Way	Residential	1.22	Full
291	15221 SE Hwy 212	Commercial	3.75	Partial
292	No address	Industrial	1.85	Alt 2 & 3: C-1 Full, C-2: Full, C-3: Partial
293	15434 SE 142nd Avenue	Industrial	4.05	Alt 2 & 3: C-1 No Impact, C-2: Full, C-3: Partial
294	14505 SE Hwy 212	Industrial	1.83	Full
295	14763 SE Morning Way	Industrial	1.50	Alt 2 & 3: Full, D-2: No Impact, D-3: Full
296	No address	Industrial	0.93	Alt 2 & 3: Full, D-2: No Impact, D-3: Full
297	14850 SE Morning Way	Industrial	1.04	Full
298	15000 SE Morning Way	Industrial	1.59	Full
299	15431 SE 152nd Drive	Industrial	0.48	Full
300	15481 SE 152nd Drive	Industrial	0.39	Full
301	15501 SE 152nd Drive	Industrial	0.48	Full
302	15951 SE Hwy 212	Industrial	14.95	Full
303	No address	Industrial	0.14	Full
304	15583 SE Hwy 212	Residential	1.23	Full
305	15252 SE Hwy 224	Commercial	6.89	Partial
306	No address	Industrial	2.25	Full
307	15278 SE Hwy 224	Industrial	4.19	Partial
308	15302 SE Hwy 224	Residential	0.94	Partial
309	No address	Residential	7.46	Partial
310	15576 SE Hwy 224	Residential	3.74	Partial
311	No address	Residential	1.11	Partial
312	No address	Residential	6.55	Partial
313	No address	Residential	0.50	Full
314	16298 SE Scoria Lane	Residential	0.11	Partial
315	16292 SE Scoria Lane	Residential	0.05	Partial
316	16286 SE Scoria Lane	Residential	0.05	Partial
317	16304 SE Scoria Lane	Residential	0.10	Partial
318	16280 SE Scoria Lane	Residential	0.08	Partial
319	16310 SE Scoria Lane	Residential	0.05	Full
320	16316 SE Scoria Lane	Residential	0.06	Full
321	16274 SE Scoria Lane	Residential	0.06	Partial
322	16322 SE Scoria Lane	Residential	0.09	Full
323	16268 SE Scoria Lane	Residential	0.04	Partial
324	16328 SE Scoria Lane	Residential	0.07	Full

Table 9. Estimated Impacts on Tax Lots by Partial or Full Acquisition for Right-of-Way
(Impacts are the same for both build alternatives unless otherwise noted.)

Property ID# (on map)	Address	Primary Use	Estimated Property Area (acres)	Estimated Right-of-Way Impact (Partial or Full Acquisition)*
325	16334 SE Scoria Lane	Residential	0.04	Full
326	16340 SE Scoria Lane	Residential	0.04	Full
327	16346 SE Scoria Lane	Residential	0.06	Full
328	16352 SE Scoria Lane	Residential	0.06	Full
329	16358 SE Scoria Lane	Residential	0.04	Full
330	16364 SE Scoria Lane	Residential	0.04	Full
331	16370 SE Scoria Lane	Residential	0.06	Full
332	16376 SE Scoria Lane	Residential	0.06	Full
333	16382 SE Scoria Lane	Residential	0.04	Full
334	16388 SE Scoria Lane	Residential	0.04	Full
335	16394 SE Scoria Lane	Residential	0.04	Full
336	16400 SE Scoria Lane	Residential	0.06	Full
337	16406 SE Scoria Lane	Residential	0.06	Full
338	16412 SE Scoria Lane	Residential	0.04	Full
339	16418 SE Scoria Lane	Residential	0.04	Full
340	16424 SE Scoria Lane	Residential	0.04	Full
341	16430 SE Scoria Lane	Residential	0.07	Full
342	16436 SE Scoria Lane	Residential	0.07	Full
343	16442 SE Scoria Lane	Residential	0.04	Full
344	16448 SE Scoria Lane	Residential	0.04	Full
345	16454 SE Scoria Lane	Residential	0.04	Full
346	15601 SE Hwy 224	Residential	1.15	Partial
347	16460 SE Scoria Lane	Residential	0.06	Full
348	16466 SE Scoria Lane	Residential	0.06	Full
349	16472 SE Scoria Lane	Residential	0.04	Full
350	16478 SE Scoria Lane	Residential	0.04	Full
351	16484 SE Scoria Lane	Residential	0.04	Full
352	16490 SE Scoria Lane	Residential	0.07	Full
353	No address	Residential	0.08	Full
354	15798 SE GEM Court	Residential	0.12	Partial
355	16409 SE Hwy 212	Residential	18.92	Partial
356	No address	Residential	16.22	Partial
357	17981 SE Hwy 212	Residential	16.75	Partial
358	16725 SE Hwy 212	Residential	2.31	Partial
359	No address	Residential	0.38	Partial
360	No address	Residential	2.39	Partial
361	16711 SE Hwy 212	Residential	3.21	Partial
362	No address	Residential	6.84	Partial
363	No address	Residential	2.59	Partial
364	No address	Residential	9.96	Partial
365	17141 SE Hwy 212	Residential	4.09	Full

Table 9. Estimated Impacts on Tax Lots by Partial or Full Acquisition for Right-of-Way (Impacts are the same for both build alternatives unless otherwise noted.)

Property ID# (on map)	Address	Primary Use	Estimated Property Area (acres)	Estimated Right-of-Way Impact (Partial or Full Acquisition)*
366	16631 SE Hwy 212	Residential	3.79	Full
367	17691 SE Hwy 212	Public Service	0.51	Partial
368	No address	Public Service	1.02	Partial
369	17717 SE Hwy 212	Public Service	0.87	Full
370	15601 SE Bel Air Drive	Residential	1.69	Partial
371	15600 SE Bel Air Drive	Residential	2.23	Partial
372	17746 SE Hwy 212	Residential	3.60	Partial
373	17780 SE Hwy 212	Residential	1.17	Partial
374	15514 SE Anderegg Parkway	Residential	19.09	Partial
375	17900 SE Hwy 212	Residential	1.67	Partial
376	17310 SE Belview Lane	Residential	1.79	Partial
377	17370 SE Belview Lane	Residential	1.70	Partial
378	17424 SE Belview Lane	Residential	1.50	Partial
379	17458 SE Belview Lane	Residential	1.31	Partial
380	13488 SE Hwy 212	Residential	0.77	Partial
381	13470 SE Hwy 212	Residential	0.96	Partial

Summary of Right-of-Way Impacts on Land Use

The Sunrise Project build alternatives were designed to minimize impacts on the communities and the business to the project area in keeping with the project goals and objectives. Every effort was made during the project development process to avoid existing residential land use and to locate the build alternatives on vacant lands. The potential for future development would be affected by the loss of both developable vacant land and developed land converted to the highway use.

Accordingly, the land use impacts of the proposed Sunrise Project, as described in detail in the following sections and depicted in Table 10, are relatively modest when compared to the Land Use Study Area as a whole, which has a total of 3,667.3 acres of land and 5,345 residential units. The overall impacts are as follows:

- Most of the build alternatives displace approximately the same number of housing units, 72 to 75 units or about 1.4 percent of the total housing units in the study area.
- **Design Option C-2** is the only alternative that displaces few residential units, 43 units or about 0.8 percent of the total housing units in the study area.
- **Alternative 2** converts more land to right-of-way (514 Acres) than **Alternative 3** (495 acres) because of the midpoint interchange. The other design options convert similar amounts of land to right-of-way.
- **Design Option B-2** converts the most land for right-of-way (522 Acres).
- The total amount of land converted to right-of-way is between 15 percent and 13 percent of the land in the land use study area.

Table 10. Estimated Right-of-Way Impacts to Existing Land Uses

	Alt. 2	Alt. 3	A-2 Diff to Alt. 2	A-2, Diff to Alt. 3	B-2, Diff to Alt. 2	C-2, Diff to Alt. 2	C-2, Diff to Alt. 3	C-3, Diff to Alt. 2	C-3, Diff to Alt. 3	D-2, Diff to Alt. 2	D-2, Diff to Alt. 3	D-3, Diff to Alt. 2	D-3 , Diff to Alt. 3
Total Acres Removed for Right-of-Way	514	495	18 fewer acres		8 more acres	13 fewer acres		11 more acres		6 fewer acres		14 fewer acres	
Total Number of Dwelling Units Displaced	72	72	No difference		3 more units	29 fewer units		2 more units		1 more unit			
Number of Single-Family Units Displaced	14	14	No difference		1 more unit			2 more units		1 more unit			
Number of Multifamily Units Displaced	24	24	No difference										
Number of Mobile Home Units Displaced	34	34	No difference		2 more units	30 fewer units		No difference					
Number of Acres of Residential Land Converted to Right-of-Way	39	39	No difference			8 fewer acres		5 more acres		No difference			
Number of Acres of Employment Land Converted to Right-of-Way	133	117	1 less acre		5 more acres	8 more acres		5 more acres		1 more acre		1 less acre	
Number of Acres of Other Land Converted to Right-of-Way	26	26	6 fewer acres		No difference			1 more acre		No difference		95 more acres	
Number of Employment Buildings Displaced	62	57	2 fewer buildings		4 more bldgs	8 more buildings		2 more buildings		2 more buildings			
Accesses Affected	132	91	33 fewer	6 fewer	45 fewer	62 fewer	2 fewer	47 fewer	16 fewer	57 fewer	21 fewer	54 fewer	12 fewer
Right-of-Way Costs ($millions)	170	160	No diff	+3 m	+2 m	+3 m	+5m	+7 m	+3 m	No diff	+4 m	No diff	-5 m

No difference Fewer acres / units / buildings More acres / units / buildings

Comparison of Impacts by Alternative

Alternative 1–No Build would not have any impacts.

The only difference between **Alternative 2** and **Alternative 3** is the interchange in the Midpoint area under **Alternative 2**; therefore, that is the only location where right-of-way impacts are different. **Alternatives 2 and 3** would convert similar amounts of existing land uses to highway use—514 acres for **Alternative 2** compared to 495 acres for **Alternative 3**.

Both build alternatives would displace 72 dwelling units—14 single-family, 24 multifamily, and 34 manufactured home units. Table 10 (p. 58) compares right-of-way impacts. **Design Option C-2** with either build alternative would result in the least number of residential property displacements (43) because it would avoid displacing 30 manufactured home units. **Alternatives 2 and 3** combined with any of the other design options would displace 72 to 74 dwelling units.

The main difference in change of existing land uses between the two build alternatives is that **Alternative 3** would convert 16 fewer acres of commercial and industrial land to highway use. **Alternative 2** with **Design Options C-2** (141 acres) and **C-3** (138 acres) would result in the highest amount of industrial/commercial land converted to highway use.

Under both build alternatives, most of the land that would be acquired is currently vacant and undeveloped. Of the 514 acres required for the **Alternative 2** right-of-way, 379 acres are vacant.

The greatest impacts are to land in the employment land use zones, including categories of industrial, office, and retail zoning. Of 4,454 acres in the land use study area, 1,864 acres (42 percent) are zoned for employment use.

- Most of the employment land is in the I-205 Interchange area, as are most of the impacts from **Alternatives 2 and 3**.
- Approximately 68 percent of land in the I-205 Interchange area (1,318 of 1,934 acres) is employment land. In the Midpoint area, about 37 percent (546 of 1,480 acres) is zoned for employment.
- Overall, **Alternative 2** would remove 280 acres of employment zoned land (14.9 percent) for right-of-way and **Alternative 3** would remove 239 acres (12.7 percent) of right-of-way.
- The differences in the impacts between **Alternatives 2 and 3** are in the Midpoint area, where **Alternative 2** would remove 110 of 546 acres (20 percent) of employment land and **Alternative 3** would remove 95 of 546 acres (17 percent).
- **Design Option A-2** would reduce the impact on employment land in the I-205 Interchange area by 15 acres for both **Alternatives 2 and 3**.

Of 4,453 acres of land in the I-205 Interchange area and the Midpoint area, 1,415 acres (31 percent) are zoned for urban residential use.

- **Alternatives 2 and 3** would both require slightly less than 9 percent of the urban residential zoned land for right-of-way.
- **Design Option C-2** would avoid 5 acres zoned mobile home park (MR1).

The zoning designations in the Rock Creek Junction area are not meaningful for calculating loss of potential use because they are in the process of being converted to urban designations by the cities of Happy Valley and Damascus.

- Of the land in the Rock Creek Junction area, 75 percent is currently zoned for open space, rural, and future urban use. This land would be rezoned to urban uses, including a mixture of employment, residential, and community use zoned land.

Design Option D-3 has the least impact in the Rock Creek Junction area, especially on the land planned for the medical care complex. Of the 495 acres required for the **Alternative 3** right-of-way,

375 acres are vacant. The zoning categories most affected are as follows:

- 26 percent of the Business Park (BP) zone and 13 percent of industrial (I2 and I3) zones in the I-205 Interchange area (**Design Option A-2** would have less impact on BP zone).
- Over 90 percent of suburban residential land (R20) and over 80 percent of I3 land in the Midpoint area (**Design Option C-2** would not convert R20 land; **Design Option C-3** would increase impacts on R15 zoned land and convert the same amount of R20 land as **Alternatives 2 and 3**).
- 34 percent of EFU-zoned land in the Rock Creek Junction area (**Design Options D-2 and D-3** would convert less EFU land).

In comparing **Design Options C-2 to C-3** and **D-2 to D-3** for other types of land use impacts, there are no large advantages to choosing one over the other, with the exception of impacts on property accesses (see discussion below).

Impacts to Unique Land Uses

Unique land uses are shown on Figure 40 (p. 79). These features include Camp Withycombe – Military Department, Camp Withycombe – ODOT, Williams Pipeline, KEX Transmitter Facility, KZNY Transmitter Facility, NW Pipe and Casing Superfund site (see Hazardous Materials section), and the Clackamas Pioneer Cemetery.

Alternatives 2 and 3 and **all design options** would affect the following unique land uses: KEX Transmitter Facility, NW Pipe and Casing Superfund site, and the Williams Pipeline regional natural gas distribution site. Only **Alternative 1** would not affect those sites.

The KEX Transmitter Facility site would be affected by the highway right-of-way crossing the southwest corner of the site while the new North Lawnfield Alignment would affect the southern and eastern boundaries. The north Lawnfield connection would impact the ground mat of copper wires for tower number 3 when it passes within 350 feet of the tower. A reduction in the area containing the ground mat of wires would result in a net reduction in antenna efficiency and coverage area. KEX is required to meet the efficiency standards set by the Federal Communications Commission; therefore, a reduction in efficiency would affect the viability of the radio operations. **Design Option A-2** would reduce those impacts by approximately one-half because the new North Lawnfield Alignment would not be built.

The proposed Sunrise Project transition to OR 212 encroaches on the Williams Pipeline gate station property by 75 feet. If the Sunrise Project alignment is located as proposed under **Alternatives 2 and 3**, the gate station would need to be relocated.

The portion of Camp Withycombe owned by the Oregon Military is only slightly impacted by minor right-of-way acquisition along SE Industrial Way. This impact would result in some reconfiguration of the activities currently located at Camp Withycombe. The portion of Camp Withycombe owned by ODOT was acquired to accommodate the proposed Sunrise Project. The alignment would run the entire east-west length of the ODOT parcel and in the area below the forested bluff. **Alternatives 2 and 3** would require the removal of a number of equipment storage areas currently used by Camp Withycombe and the closure of the firing range.

None of the alternatives would affect the Clackamas Pioneer Cemetery located between SE 82nd Avenue and Ambler Road. The build alternatives have been specifically designed to avoid encroaching on this historic property.

Compatibility with Land Use Plans and Policies

Land and transportation uses are governed by the local land use plans for Clackamas County and its cities, which implement Metro's regional plans and the statewide program for land use planning. The proposed Sunrise Project is a planned project contained in the adopted regional and local plans and therefore complies with the state's planning goals. (See Land Use Technical Report for more information.)

The plans that apply to the Sunrise Project are:

- Oregon Transportation Plan (20-year multimodal plan and policy document for the state transportation system);
- Oregon Highway Plan (a component of the Oregon Transportation Plan);
- Regional Framework Plan (Metro);
- Regional Transportation Plan (Metro); and
- Clackamas County Planning Requirements.

Alternative 1–No Build does not meet the local, regional and state policies that require creation of a through-route for freight in the OR 212/224 corridor between I-205 and US 26. **Alternative 1** is not compatible with adopted local land use and transportation plans due to congestion. This alternative is not expected to stop future planned development in the long term, but it could reduce the rate at which planned development occurs.

Alternatives 2 and 3 would be consistent with the planned land uses and would implement the local, regional, and state transportation policies that require the creation of a through-route for freight in the OR 212 corridor between I-205 and US 26. It should be noted that the Cities of Happy Valley and Damascus have recently become responsible for comprehensive planning in most of the land added to the UGB in 2002 which is located at the east end of the Sunrise Project. New or amended local comprehensive plans and transportation system plans are in the process of being developed. It is assumed the requirements for the through freight corridor will be included in these new plans due to the requirement for local plan consistency with the Regional TSP.

Recent Land Use Approvals and Planned Development

Land use development approved in the land use study area since January 2004 includes the planned medical care complex near Rock Creek and parks and trails by the North Clackamas Parks and Recreation District and Metro. The most significant impacts are described below.

Alternative 2 is expected to have a negative impact to a zone change from Industrial to Commercial that is in process for 29.4 acres at 15251 SE 142nd Avenue because approximately one-third of this site would be needed for right-of-way under this alternative.

Alternatives 2 and 3 would not preclude the future completion of the proposed Metro trail system or the future completion of the proposed North Clackamas Parks and Recreation District trail system. Although the final alignments of these trails have not been determined, the Sunrise Project bridges near the planned locations would allow the proposed trails to cross underneath and continue to their proposed destinations.

The North Clackamas Parks and Recreation District planned trails are similar to those contained in the Metro trails system. The North Clackamas Parks and Recreation District trail system, similar to the Metro Clackamas Bluff Trail, may be located on this route in the future or it may be rerouted to avoid impacting this natural resource.

Alternatives 2 and 3 would have a negative impact on the planned medical care complex to the east of Rock Creek. The property owner has requested 30 net acres to accommodate its planned development. **Design Option D-3** would have the least impact of the build alternatives and less impact than **Design Option D-2**, leaving the site with net 27 acres of buildable land.

Residential Access Impacts

In addition to displacements, access to properties would be affected by both build alternatives. The estimate of impacts is conservative, assuming that if the road next to a property were modified, the access may be affected. **Alternative 1** would have no direct impact on property access. As shown on Table 10, **Alternative 2** would have the highest impact on access, affecting 132 properties. **Alternative 3** would impact access to 91 properties. All of the design options would reduce that impact, in some cases by almost half. **Alternative 2 with Design Option C-2** or **Alternative 3 with Design Option D-2** would affect the fewest property accesses (70). New accesses would be required on many properties. **Alternative 3 with Design Option A-2** would require the least, 55 new accesses, while **Alternative 2 with Design Option D-3** would require the most, 114 new accesses.

Changes to travel patterns as a result of road closures or new routes that would result from the proposed Sunrise Project are shown on Figure 10 through Figure 17 (pp. 23 through 30) in Chapter 2 of this SDEIS. Those changes are discussed in the Businesses and Communities section of this chapter. Some of the more notable residential access changes would be where direct accesses to major streets are moved to frontage roads or where currently full-access turning movements would be limited to right-in/right-out only. These would generally be the same for the build alternatives and apply primarily to some sections of SE Johnson Road (south of Milwaukie Expressway), SE 82nd Drive, Lake Road, SE McKinley Avenue, north of OR 212/224 between SE 135th Avenue and SE 142nd Avenue, and at the east end of the proposed Sunrise Project.

Some business and residential parcels north of OR 212/224 between SE 135th Avenue and SE 142nd Avenue would have their accesses rerouted from OR 212/224 to SE 142nd Avenue via a new cul-de-sac frontage road located north of and parallel to the proposed Sunrise Project. Likewise, one residential unit that currently has access directly onto SE 142nd Avenue would have access changed to the cul-de-sac frontage road located north of the Sunrise Project and connecting to SE 142nd Avenue.

Indirect Effects

Alternative 1 would produce a number of negative indirect land use impacts in the vicinity of the proposed Sunrise Project, primarily related to increased traffic congestion (see Transportation Technical Report). Congestion would increase travel times for trucks moving freight through the area and for customers and employees reaching industrial and commercial destinations in the project area. These impacts would adversely affect the long-term viability of the Clackamas Industrial Area as a regional center for the distribution of freight. The forecast development and congestion could support more transit service than is currently assumed as part of this analysis. On the other hand, if future transit service is bus transit, it would also be negatively impacted by congestion under **Alternative 1**.

Alternatives 2 and 3 would support development of the new urban areas brought into the UGB in 2002 by providing capacity on the road network and helping to limit the growth of traffic congestion. The additional highway capacity would help control transportation costs for local business and facilitate truck freight movements in the area, supporting the long-term viability of the Clackamas Industrial Area. The build alternatives are expected to cause some additional congestion at certain points on the road network as a result of the rerouting of travel patterns. The additional congestion could affect the ease with which people can exit and enter their properties.

Potential Mitigation Measures

No land use mitigation measures are proposed under **Alternative 1–No Build**. The main impact of not building the proposed Sunrise Project would be increased congestion. No measures other than the proposed Sunrise Project have been identified.

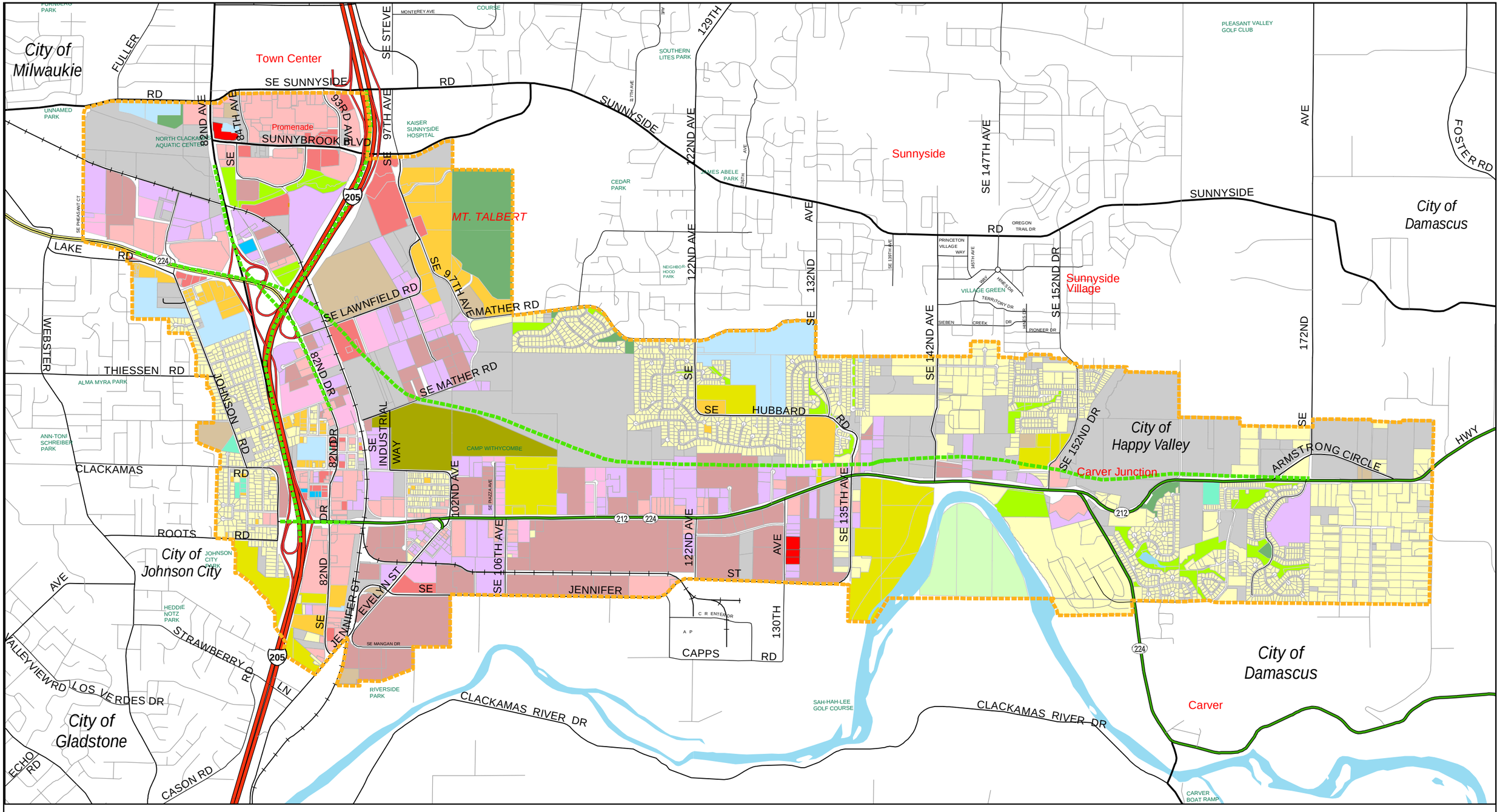
Alternatives 2 and 3 would require a number of mitigation measures to reduce land use impacts. Compensation to displaced residents and businesses is provided for through the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (see Businesses and Communities mitigation section). Displaced residents would be relocated to decent, safe, and sanitary housing within their financial means or housing of last resort will be considered.

Without changes to comprehensive plan or zoning designations, no mitigation would be available for the conversion of land zoned for other uses to transportation use.

KEX officials have been consulted since 1991 to determine the potential impacts of the proposed project. Appendix B contains a summary of coordination with KEX to-date. Consultation will continue during project development to develop appropriate mitigation.

All tax lots with existing accesses would either be provided alternative accesses or the lot would be acquired outright. However, no measures would be available to mitigate the longer traveling distances that may be required from affected lots to alleviate current and forecasted congestion.

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CLACKAMAS COUNTY
GEOGRAPHIC INFORMATION SYSTEMS

Sunrise Project Alignment
Land Use Study Area

1:24,000

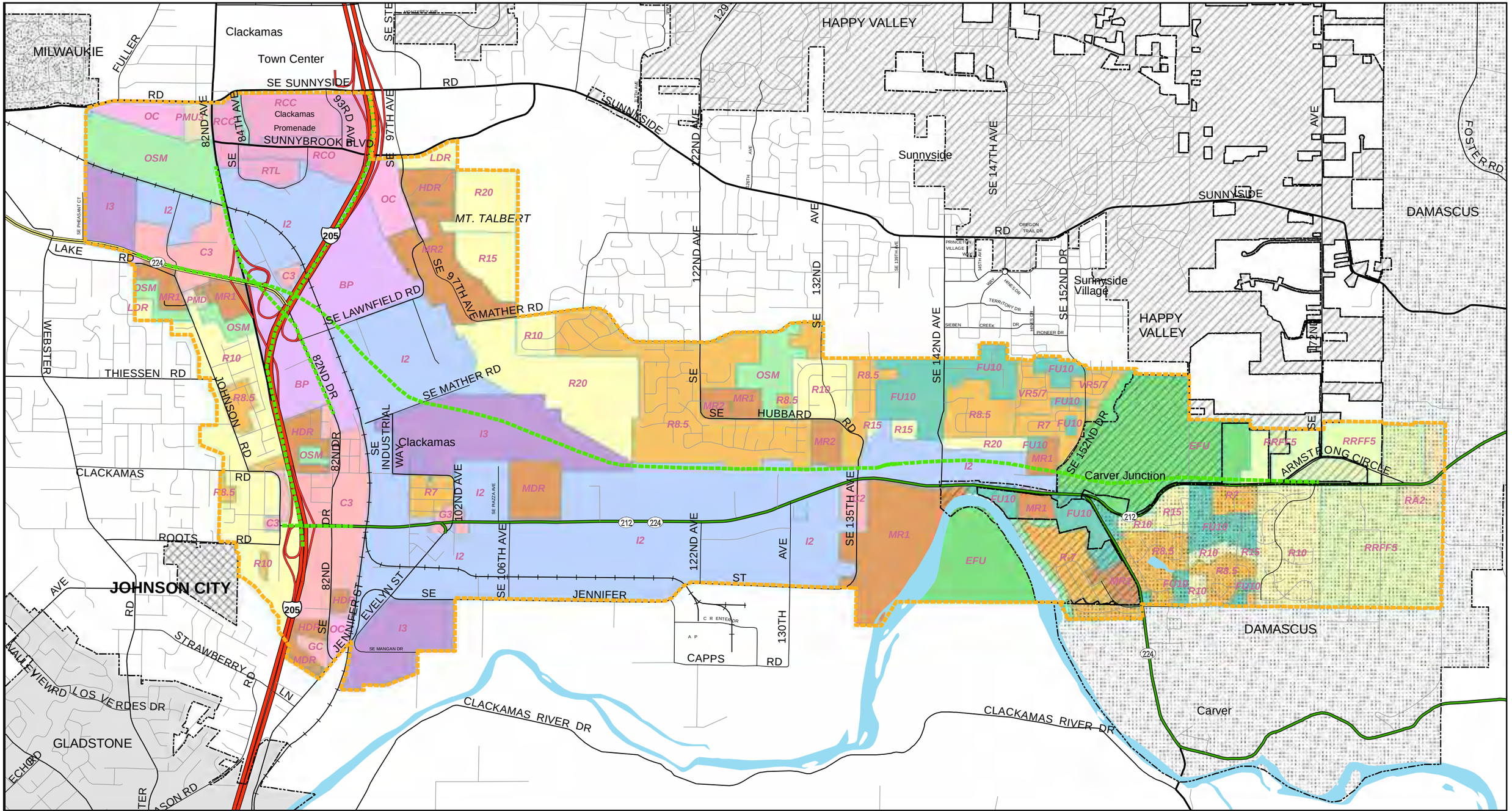
LAND USE CATEGORY

- Ag Lands
- Open Space
- Park
- Single-Family Dwelling
- Mobile Home Park
- Multifamily Dwelling
- Schools
- Community Uses
- Church
- Commercial
- Office
- Emergency Services
- Industrial
- Office Warehouse
- Warehouse
- Military
- Utlilties
- Vacant
- (Not Included in Study)

Figure 26

Existing Land Use (May 2006)

Sunrise Project, I-205 to Rock Creek Junction



CLACKAMAS COUNTY
GEOGRAPHIC INFORMATION SYSTEMS

1:24,000

ZONING DESIGNATIONS

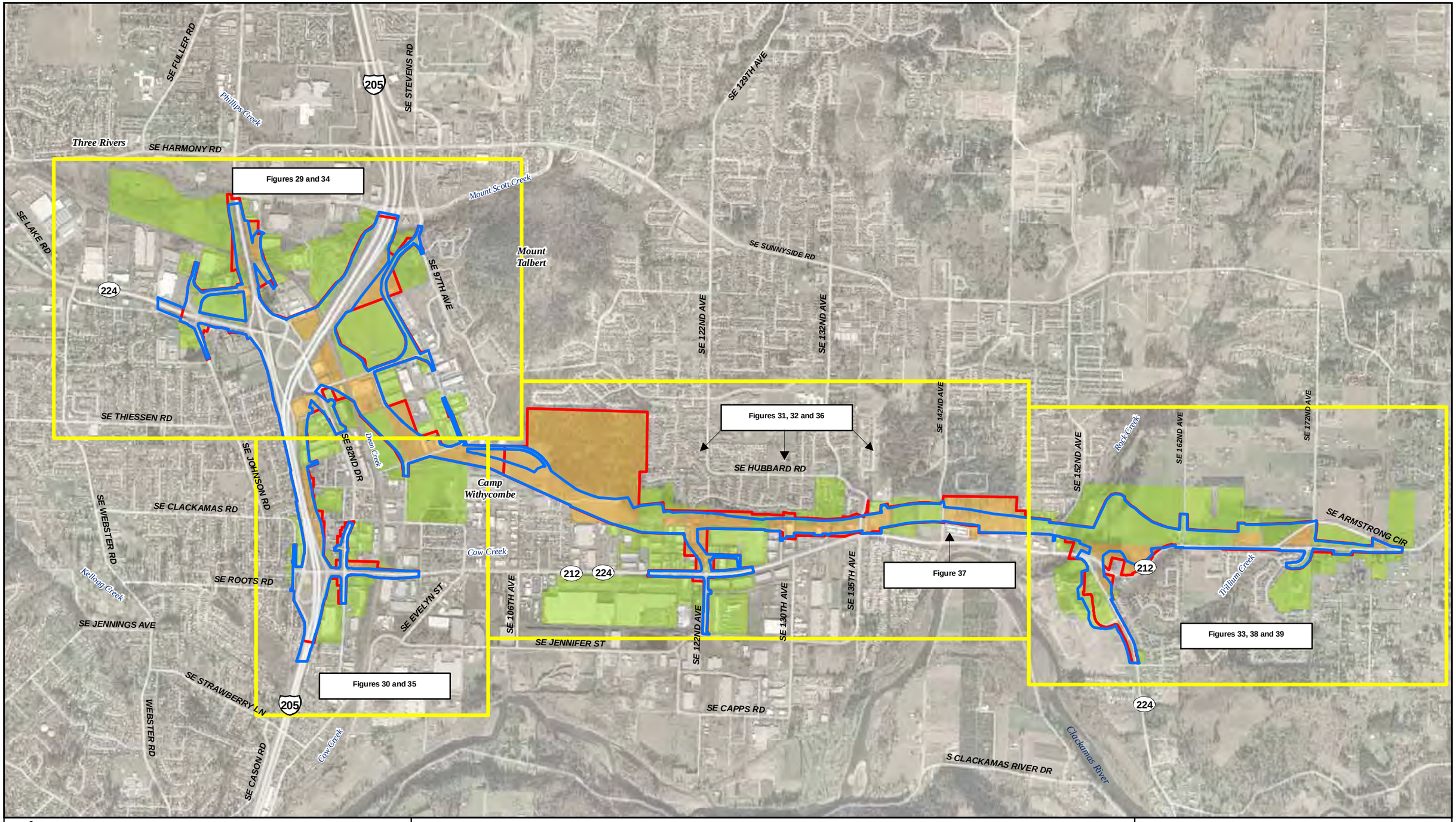
- Open Space Management (OSM)
- Exclusive Farm Use (EFU)
- Rural Res. Farm/Forest (RRFF5)
- Future Urban (FU10)
- Rural Single-Family Res. (RA2)
- Urban, Low Density Res. (R10)
- Urban, Low Density Res. (R15)
- Urban, Low Density Res. (R20)
- Urban, Low Density Res. (R8.5)
- Urban, Low Density Res. (R7)
- Village Residential (VR57)
- High Density Residential (HDR)
- Medium Density Res. (MR1)
- Medium High Density Res. (MR2)
- Planned Medium Density Res. (PMD)
- Planned Mixed Use (PMU3)
- Community Commercial (C2)
- General Commercial (C3)
- Neighborhood Commercial (NC)
- Office Commercial (OC)
- Business Park (BP)
- Regional Center Commercial (RCC)
- Regional Center Office (RCO)
- Retail Commercial (RTL)
- Light Industrial (I2)
- General Industrial (I3)

- Land Use Study Area
- Sunrise Project Alignment

Figure 27

Clackamas County Zoning Designations

Sunrise Project, I-205 to Rock Creek Junction



2,000 0 2,000 Feet

Sources:
ODOT and Metro, Portland OR

Legend

- Construction Impact Line
- Right-of-Way

Property Impacts (Property numbers referenced to corresponding Table 7)

Type of Property Impact

- Full Acquisition
- Partial Acquisition

Figure 28

Estimated Right-of-Way Impacts and Map Key

Sunrise Project, I-205 to Rock Creek Junction



800 0 800 Feet

Sources:
ODOT and Metro, Portland OR

Legend

Construction Impact Line
Right-of-Way

Property Impacts (Property numbers referenced to corresponding Table 7)
Type of Property Impact

Full Acquisition
Partial Acquisition

Figure 29

Estimated Right-of-Way Impacts
Alternatives 2 and 3, I-205 Interchange

Sunrise Project, I-205 to Rock Creek Junction

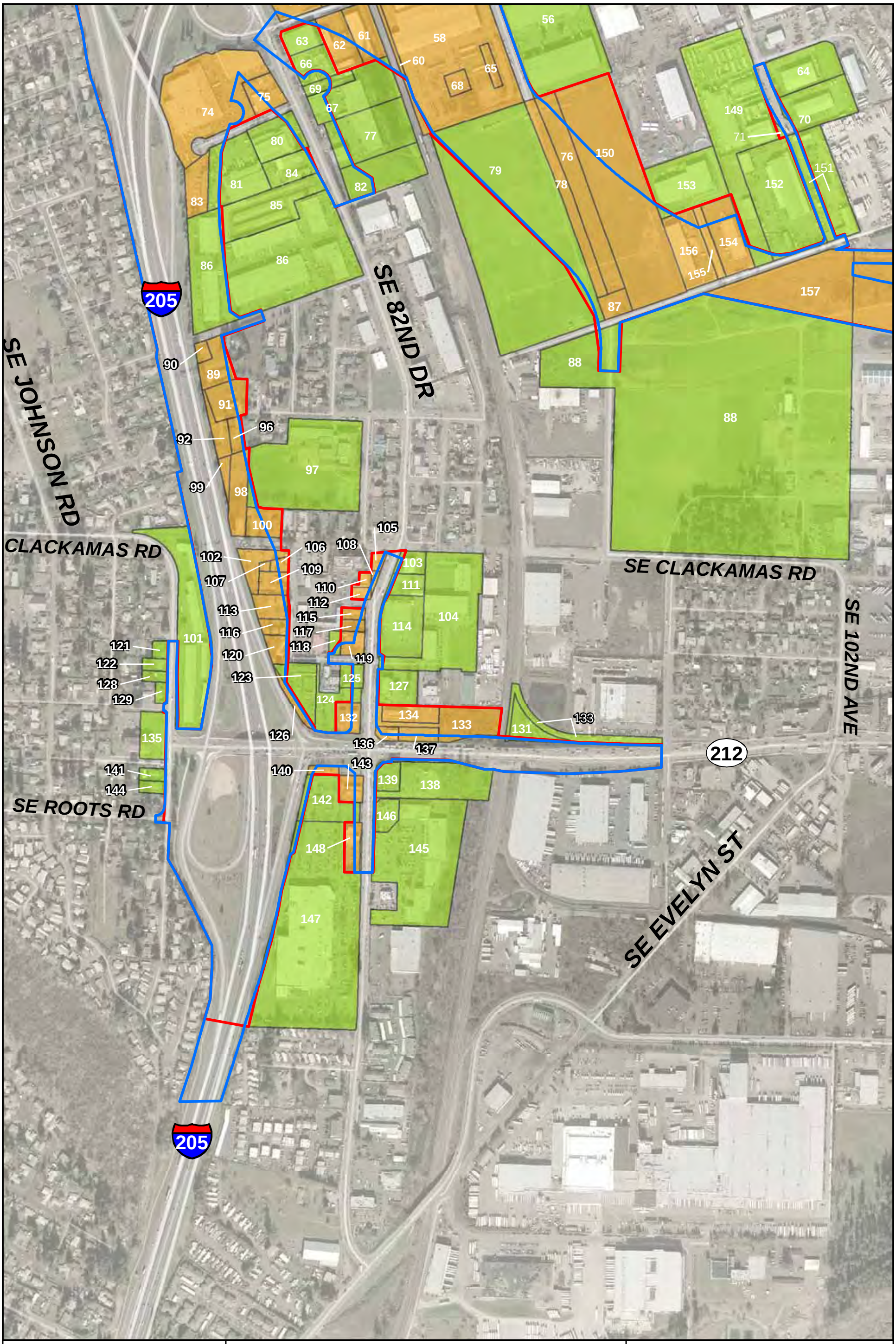
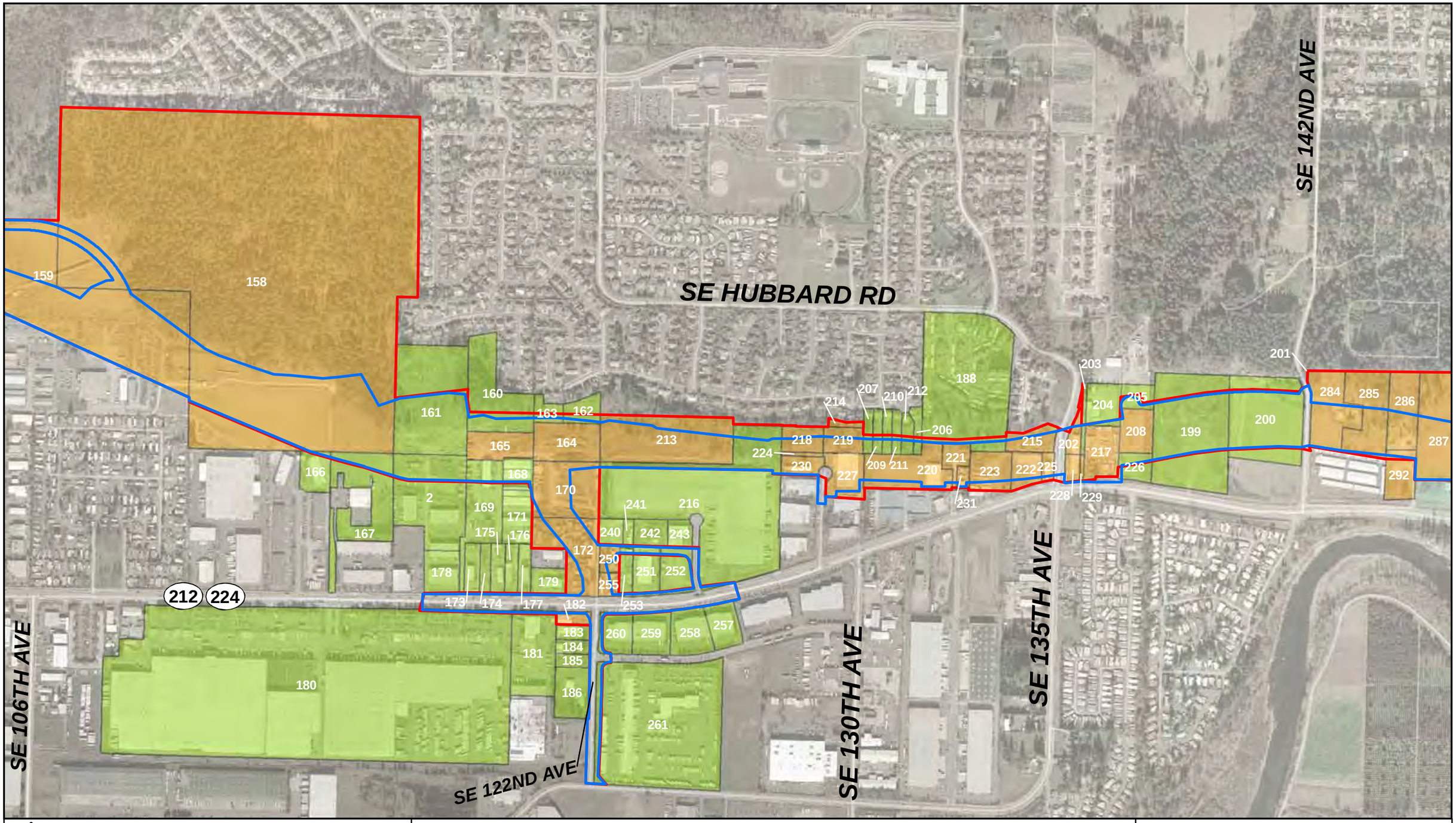


Figure 30

Estimated Right-of-Way Impacts, Alternatives 2 and 3, SE 82nd Drive and OR 212/224

Sunrise Project, I-205 to Rock Creek Junction



800 0 800 Feet

Sources:
ODOT and Metro, Portland OR

Legend

- Construction Impact Line
- Right-of-Way

Property Impacts (Property numbers referenced to corresponding Table 7)

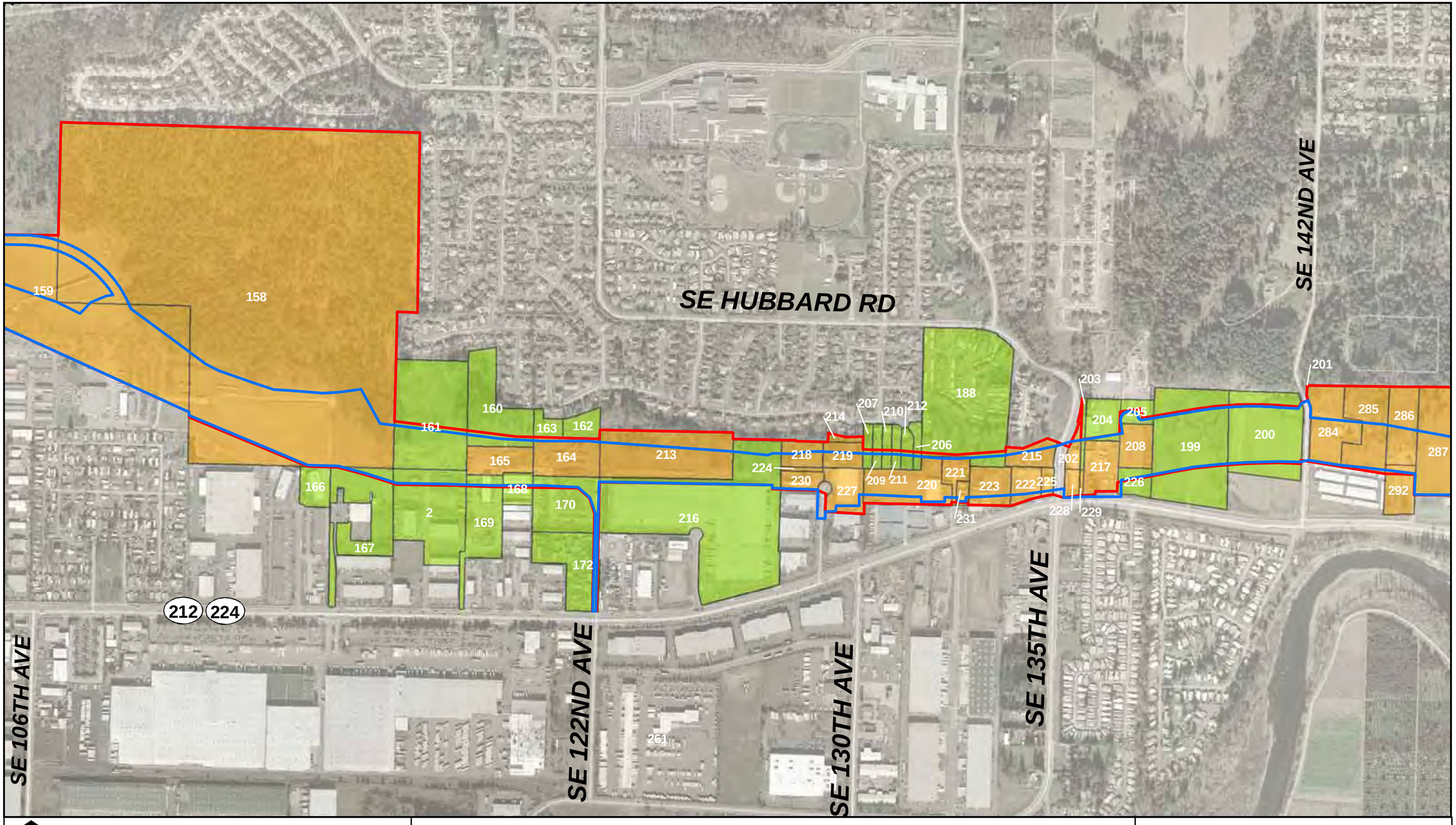
Type of Property Impact

- Full Acquisition
- Partial Acquisition

Figure 31

Estimated Right-of-Way Impacts
Alternative 2, Midpoint Area

Sunrise Project, I-205 to Rock Creek Junction



800 0 800 Feet

Sources:
ODOT and Metro, Portland OR

Legend

- Construction Impact Line
- Right-of-Way

Property Impacts (Property numbers referenced to corresponding Table 7)
Type of Property Impact

- Full Acquisition
- Partial Acquisition

Figure 32

Estimated Right-of-Way Impacts
Alternative 3, Midpoint Area

Sunrise Project, I-205 to Rock Creek Junction

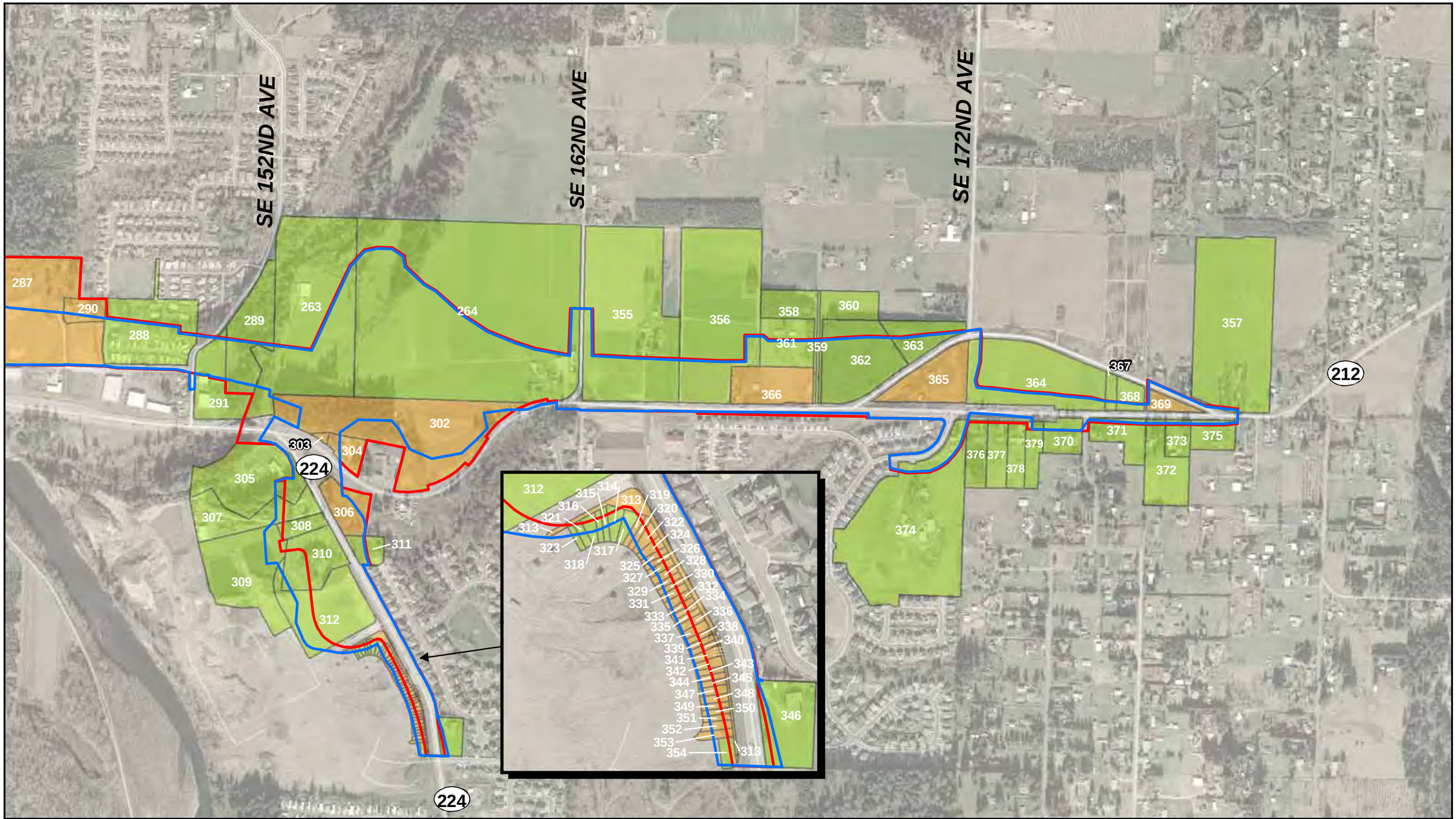


Figure 33

Estimated Right-of-Way Impacts
Alternatives 2 and 3, Rock Creek Junction

Sunrise Project, I-205 to Rock Creek Junction



800 0 800 Feet

Sources:
ODOT and Metro, Portland OR

Legend

Construction Impact Line
Right-of-Way

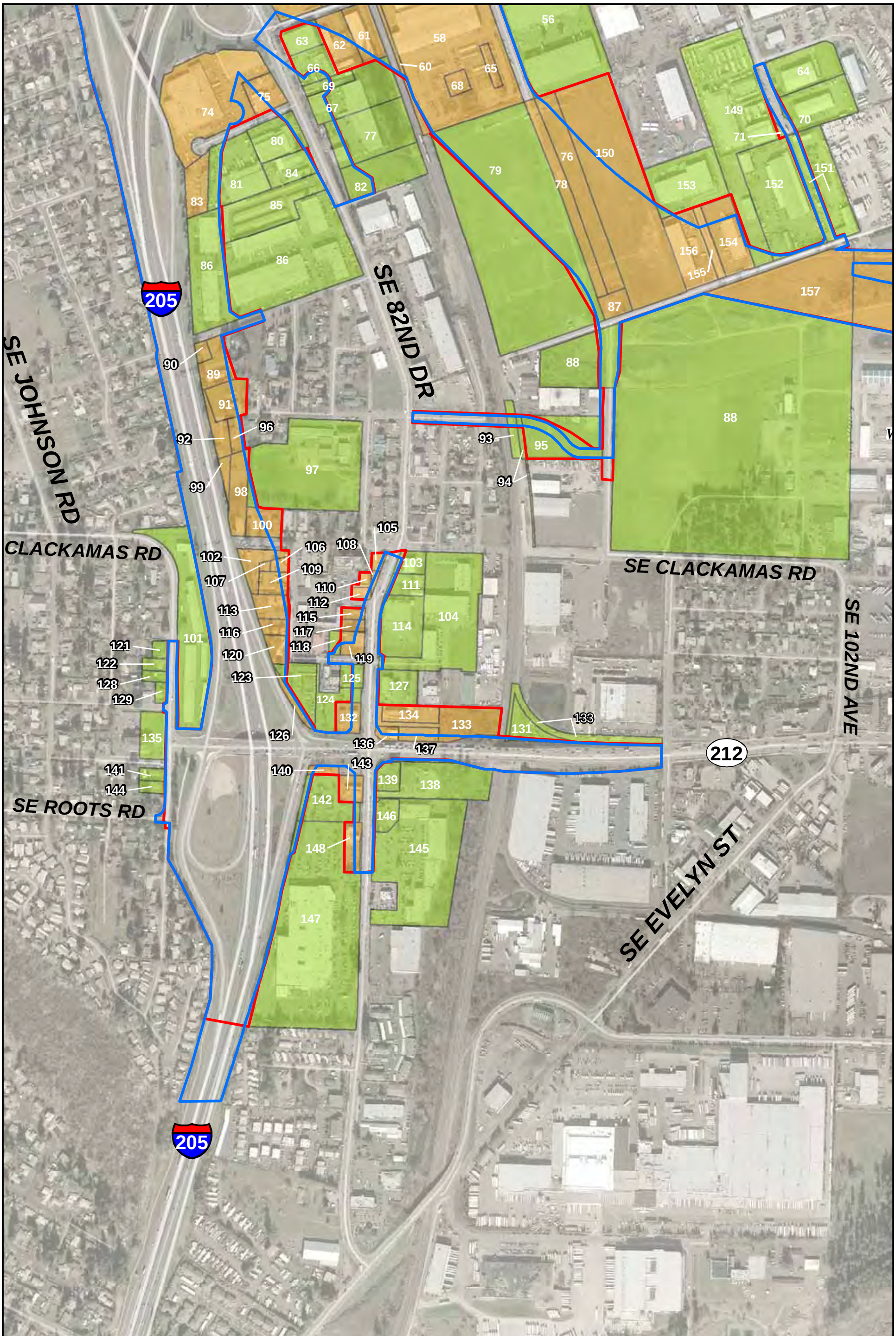
Property Impacts (Property numbers referenced to corresponding Table 7)
Type of Property Impact

Full Acquisition
Partial Acquisition

Figure 34

Estimated Right-of-Way Impacts
Design Option A-2, I-205 Interchange

Sunrise Project, I-205 to Rock Creek Junction



290 0 290 Feet

Sources:
ODOT and Metro, Portland OR

Legend

Construction Impact Line
Right-of-Way

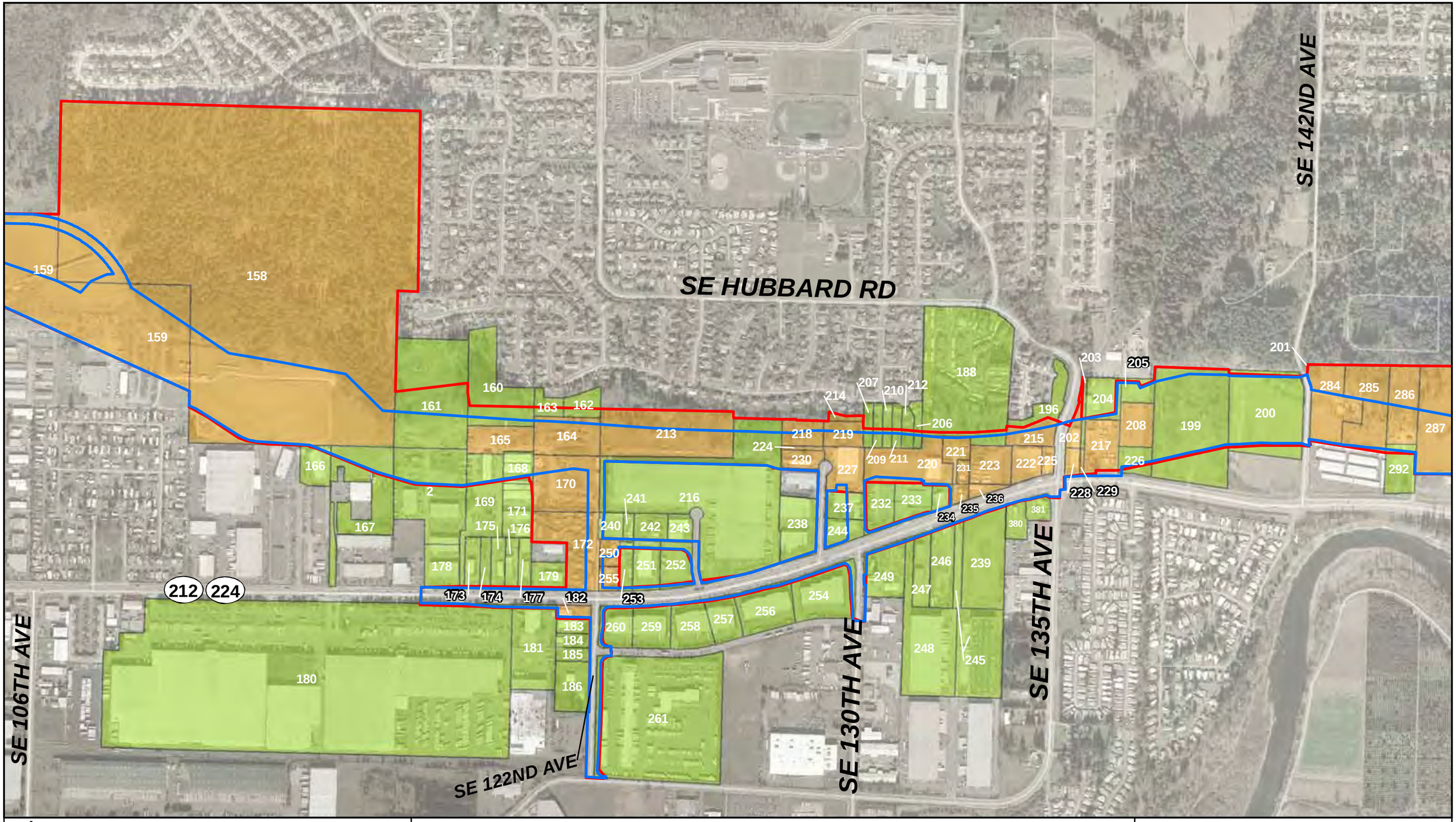
Property Impacts*
Type of Property Impact
Full Acquisition
Partial Acquisition

***(Property numbers referenced to corresponding Table 7)**

Figure 35

Estimated Right-of-Way Impacts
Design Option A-2, SE 82nd Drive and OR 212/224

Sunrise Project, I-205 to Rock Creek Junction



800 0 800 Feet

Sources:
ODOT and Metro, Portland OR

Legend

- Construction Impact Line
- Right-of-Way

Property Impacts (Property numbers referenced to corresponding Table 7)

Type of Property Impact

- Full Acquisition
- Partial Acquisition

Figure 36

Estimated Right-of-Way Impacts
Design Option B-2

Sunrise Project, I-205 to Rock Creek Junction

DESIGN OPTION C-2

DESIGN OPTION C-3

HUBBARD RD

SE 142ND AVE

SE 135TH AVE

SE 130TH AVE

1,000 0 1,000 Feet

Sources:
ODOT and Metro, Portland OR

Legend

Construction Impact Line

Right-of-Way

Property Impacts (Property numbers referenced to corresponding Table 7)

Type of Property Impact

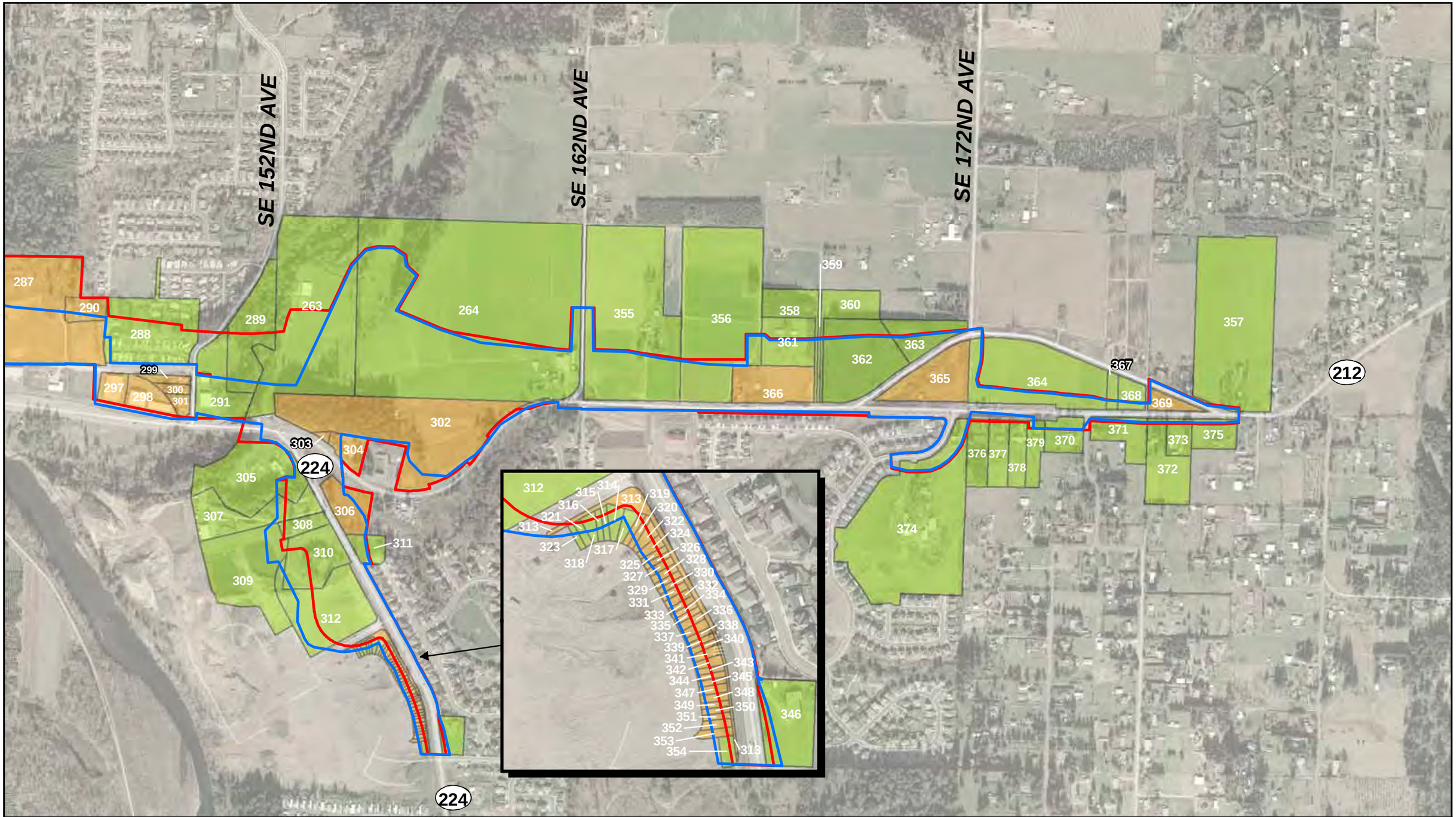
Full Acquisition

Partial Acquisition

Figure 37

Estimated Right-of-Way Impacts
Design Options C-2 and C-3

Sunrise Project, I-205 to Rock Creek Junction



800 0 800 Feet

Sources:
ODOT and Metro, Portland OR

Legend

- Construction Impact Line
- Right-of-Way

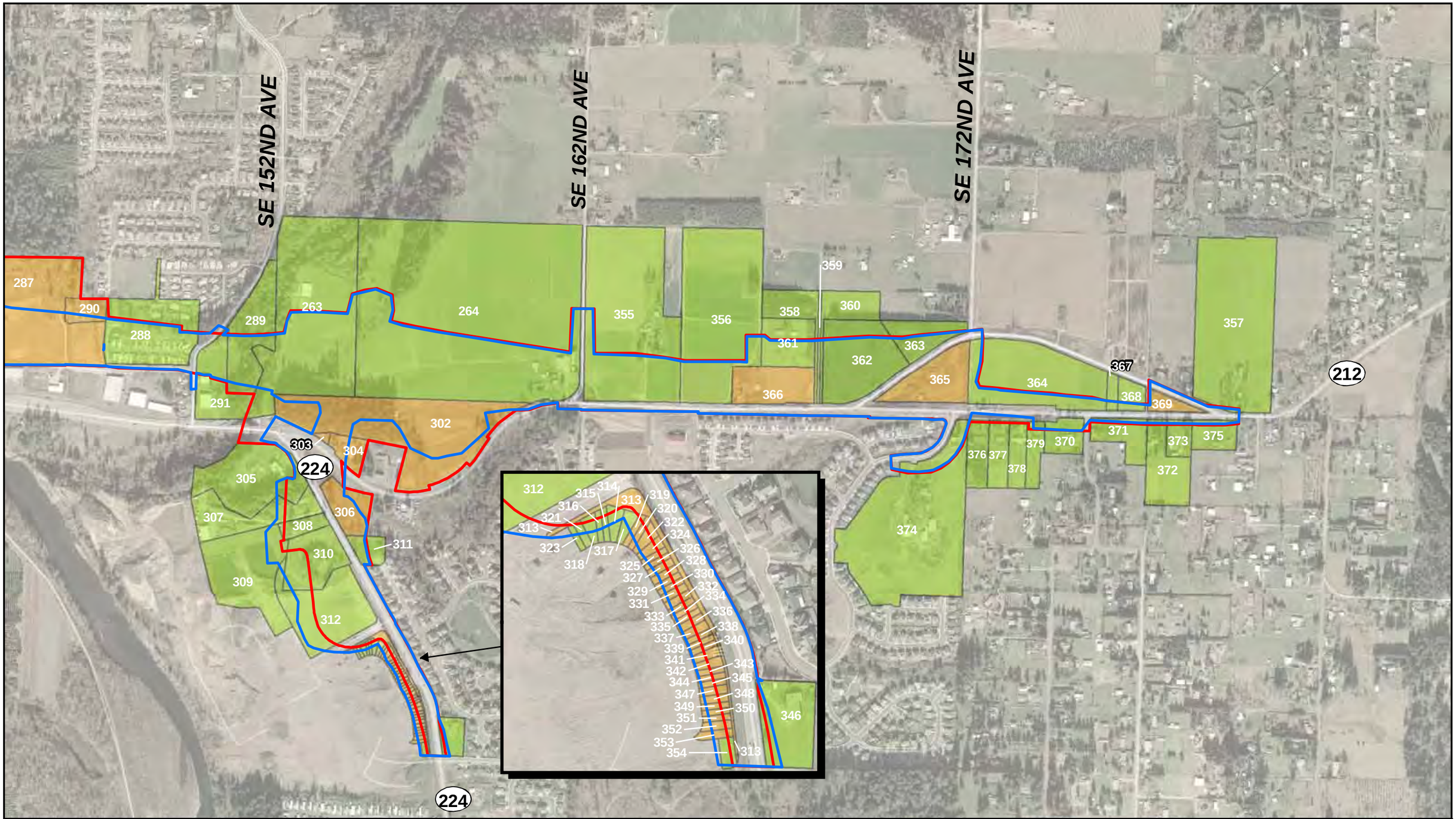
Property Impacts (Property numbers referenced to corresponding Table 7)
Type of Property Impact

- Full Acquisition
- Partial Acquisition

Figure 38

Estimated Right-of-Way Impacts
Design Option D-2

Sunrise Project, I-205 to Rock Creek Junction



800 0 800 Feet

Sources:
ODOT and Metro, Portland OR

Legend

- Construction Impact Line
- Right-of-Way

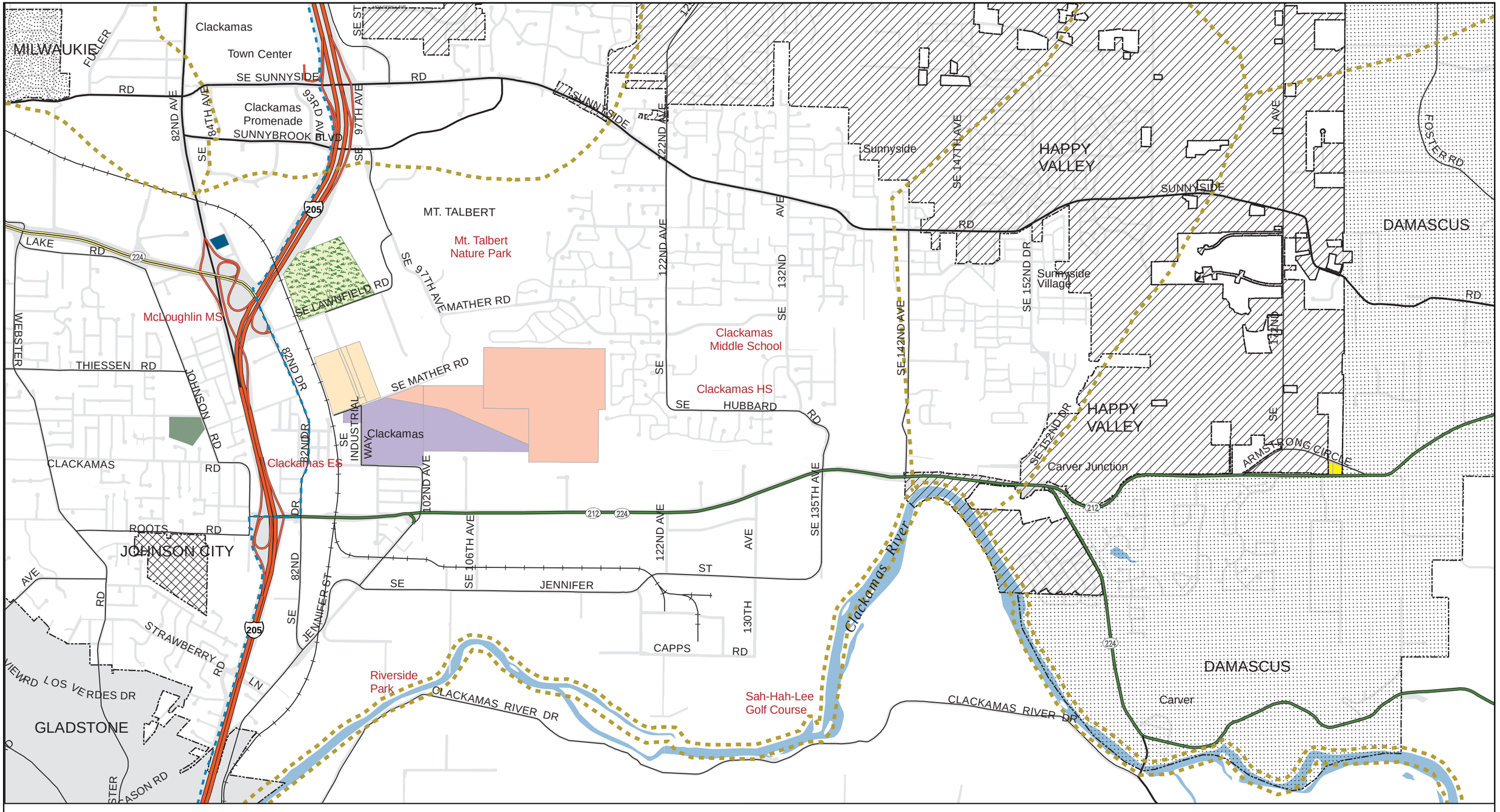
Property Impacts (Property numbers referenced to corresponding Table 7)
Type of Property Impact

- Full Acquisition
- Partial Acquisition

Figure 39

Estimated Right-of-Way Impacts
Design Option D-3

Sunrise Project, I-205 to Rock Creek Junction



Sunrise Project Alignment

Unique Land Uses

- Camp Withycombe - Military Dept.
- Camp Withycombe - ODOT
- Williams Pipeline Gas Distribution Facility
- KEX Radio
- KZNY Radio
- NW Pipe & Casing
- Clackamas Cemetery

1:24,003

Figure 40

Unique Land Uses and Features

Sunrise Project, I-205 to Rock Creek Junction

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Business and Communities

New roads can affect the social and economic characteristics of a community, such as neighborhood connectivity and cohesion, the local business environment, travel patterns and access to facilities, and local property tax revenues. Community and economic features in the land use study area, illustrated on Figure 41 (p. 93) are described below.

The Socioeconomics Technical Report on the attached DVD provides details on the following:

- Methodology
- Description of economic and social characteristics of business and employment, business access, significant economic issues, property values and tax revenues, community cohesion, environmental justice, urban renewal, industrial land requirements, temporary construction impacts
- Environmental consequences for the above and potential mitigation measures and enhancement opportunities

The Technical Reports for Land Use, Transportation, and Right-of-Way contain information and analysis pertinent to this element of the environment.

Businesses and the Economy

The land use study area for the proposed Sunrise Project is part of the largest metropolitan area in the state of Oregon. The Portland Metropolitan Area shares strong manufacturing and trade sectors, economic diversity, and employment and residential development trends. The existing transportation network, including I-205, OR 224, and OR 212/224, ties the study area to other communities in the Pacific Northwest, as well as to international markets, and supports warehousing and other uses that depend on excellent freeway and rail access.

The land use study area, when combined with adjacent employment areas in Milwaukie and the Clackamas Regional Center, is one of the largest business clusters in suburban Portland, with the largest employment concentrating in urban Clackamas County east of the Willamette River.

Oregon State Employment Division data (2004) indicate there are 893 business establishments and 17,576 employees in the land use study area. Metro's model for a traffic analysis area that covers the proposed Sunrise Project land use study area projects job growth of 74 percent, to more than 50,000 by 2030.[19] The annual payroll is more than $600 million dollars, and the average payroll per job is $36,053.[20]

Because of privacy laws, the impacts of some of the alternatives on business employment and payroll sometimes cannot be disclosed. Information provided by companies is presented in the Socioeconomic Technical Report.

Right-of-Way Impacts to Businesses

Roughly the same amount of existing employment would be displaced under all the build alternatives—about 5 to 6 percent of all the existing jobs in the study area. This accounts for 6 to 7 percent of the area's payroll. Roughly 7 to 8 percent of the existing businesses would be displaced.[21]

There are a number of existing or planned business districts in the study area (Figure 42, p. 94)—Clackamas Industrial Area, the Clackamas Business District, the future Rock Creek Employment Area, and the future

[19] *See Socioeconomics Technical Report, Methodology and Data Sources for a discussion of the data sources. Existing and projected conditions cited here can be found on page 49 and Table 7 of the report. Projections were based on Metro's Households and Employment Data for the years 2005 and 2030 at the Transportation Analysis Zone (TAZ) Level for 1,358 such zones. The land use study area used was slightly different from the transportation study area.*

[20] *Oregon Employment Department, Covered Employment and Wages at the State, MSA, and County levels for 2004.*

[21] *See Table 5 of the Socioeconomics Technical Report.*

medical care complex. The build alternatives and design options would affect those districts by removing existing employment uses and converting industrial and commercial land to highway use (see the Land Use section).

Building the proposed Sunrise Project would affect approximately 60 businesses in the land use study area. Some businesses would be displaced. Others would have sufficient land remaining after right-of-way acquisition to allow the business operations to continue. Between **Alternatives 2 and 3** and most of the design options, the differences are limited to two to three displacements (out of a total of approximately 60 displacements). An exception is **Design Option C-2,** which would impact an additional 11 businesses, compared to **Alternatives 2 and 3** and **Design Option C-3**.

Currently, more than 21,000 jobs are forecast to be created between 2005 and 2030.[22] The new employment would result from intensification of uses on existing developed sites and from development of currently vacant sites. Future employment capacity that is projected to develop on existing vacant land is estimated to be reduced by 4,900 to 5,200 jobs if some of the land is used for right-of-way for the build alternatives.[23] There are minor differences between the alternatives and design options.

The Rock Creek Employment Area, a planned future industrial and employment area located partially in the Rock Creek Junction area, is expected to account for 10,500 to 11,300 jobs at full buildout. The proposed Sunrise Project is considered essential to the economic viability of the Rock Creek Employment Area. **Alternative 1– No Build** would have an adverse impact on this area because the amount of congestion forecast would impact the ability of businesses to ship goods and provide services cost-effectively. At the same time, the particular alignment of the facility could have a significant impact on the amount of land that is available for employment uses. The Rock Creek area is relatively small and is constrained on all sides by natural features and existing development; therefore, the larger the land area used for right-of-way, the fewer the number of employees the area could accommodate. Impacts to the Rock Creek Employment Area are less under **Design Options D-2** and **D-3** than under **Alternatives 2 and 3**.

Right-of-way acquisition of industrial and commercial land would likely remove the most capacity for future job growth (approximately 5,240 jobs) under **Alternative 2** with **Design Option B-2**. The least impacts would result from choosing **Design Option D-2** or **D-3**. In the eastern half of the Midpoint area, nearly 40 percent of all businesses would be displaced under **Design Option C-2**. The relatively low inventory of vacant industrial land remaining in this area after right-of-way acquisition would likely result in minor job growth. **Alternatives 2 and 3** with **Design Option C-3** would have fewer impacts on the business environment than **Design Option C-2**.

The improved mobility and capacity anticipated with the proposed Sunrise Project are considered extremely important to maintaining and improving the business environment. Removal of individual businesses, however, would clearly have negative impacts on the businesses and their employees.

Significant Economic Issues

Several infrastructure issues are directly related to the economic viability of the county. These issues focus on maintaining and growing local businesses and providing basic infrastructure. The county's Economic Development Plan focuses on attracting and retaining businesses, improving freight mobility, developing a work force, marketing, and providing utility infrastructure.

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[22] *Table 7 of the Socioeconomics Technical Report. Source is Metro travel model data for 1358 traffic analysis zones, May 30, 2006.*

[23] *Data in this section are from the Environmental Consequences section of the Socioeconomics Technical Report. Tables 17 and 18 of the report summarize the projected impacts. Source is State of Oregon Employment Division, 2004, Clackamas County GIS.*

Both of the build alternatives would expand the transportation infrastructure to provide for improved passenger and freight mobility, especially in industrial areas. Congestion in the study area currently limits economic growth. Improved access and capacity offers the opportunity to expand businesses and use the existing land more intensively.

The county provides business retention services through its County Business and Economic Development Team to help displaced businesses relocate or expand elsewhere in the county.

The county and the Portland metropolitan region have a limited supply of employment and industrial land with access to services. Both build alternatives would impact the economy through the loss of developable land, which in turn reduces the future capacity for job creation. Also, building the proposed Sunrise Project would displace jobs in the short term. In that sense, none of the build alternatives and design options directly support the Economic Development Plan goals of job growth and business retention. In the long term, however, the proposed Sunrise Project would improve access and transportation capacity so that businesses may be able to use their land more intensively and accommodate more employees than anticipated. Improved mobility provided by the proposed Sunrise Project is consistent with the county's economic development strategy.

The term **"affordable housing"** generally refers to housing that persons in the **"low to moderate"** income category can afford. Low to moderate income families earn 80 percent or less of the area's median family income. In 2000, 34 percent of Clackamas County's households had low to moderate incomes.

Population and Households

In 2005, the land use study area for the proposed Sunrise Project contained about 11,000 households, mostly grouped in several neighborhoods, although there are scattered rural residences as well. Metro forecasts that the number will grow nearly 30 percent by 2030 to about 14,000 households.

This area of Clackamas County has a somewhat lower share of "one unit detached" (single-family) housing than of attached units or apartments (multifamily) when compared to the county and the state. Consequently, the area tends to have a higher rate of renter-occupied housing, primarily on the east side of the I-205 Interchange. The other housing characteristic that differs from the rest of the county is the higher percentage of manufactured homes—21 percent of the housing in the land use study area compared to 5 percent of housing in the county as a whole. The 1,113 manufactured home park spaces in the land use study area made up approximately 16 percent of all of the county's manufactured home spaces.

Affordable Housing

Within the study area, affordable housing can be privately owned, provided by nonprofit organizations, or provided by the Clackamas County Housing Authority. Affordable housing in the land use study area consists of 74 Subsidized Rental Housing units (Section 8) (see Figure 43, p. 107) units and a number of units operated by the Clackamas County Housing Authority, including a small apartment complex and six duplexes or triplexes located on individual lots in the Hollywood neighborhood. The land use inventory identified one group home facility, the Kay Hoffman House, located east of Johnson Road. None of these affordable housing units would be displaced by any alternative or design option.

Community Character

The proposed Sunrise Project impacts residences and community facilities located in several neighborhoods (see Figure 41, p. 93). The proposed Sunrise Project would not bisect or isolate identified neighborhoods or business districts that are currently contiguous, so it is unlikely to change their character. However, incremental property acquisition and changes to

travel patterns can affect the cohesion and viability of neighborhoods if access to community facilities is disrupted or important services are lost. If the number of displacements is large in proportion to total residences, the viability of a community can be affected. For example, a small cluster of six mobile homes could be reduced to two homes that would be isolated if the proposed Sunrise Project is built.

Alternative 1–No Build has one potential direct land use impact on a residential property but no direct impacts to travel patterns or acquisition, so no impacts to community cohesion would be expected.

I-205 Interchange area

West Clackamas is a large cluster of subdivisions and apartments located west of I-205 and south of OR 224. This neighborhood is a mix of older and newer houses and apartments and includes a cluster of Section 8 affordable housing. Under **Alternatives 2 and 3** and **Design Option A-2**, a convenience store and two office buildings would be displaced. Given the large amount of nearby retail and office space, the displacements would not represent a major change to the community.

Old Clackamas is a mixed-use neighborhood located on both sides of SE 82nd Drive north of OR 212/224. Previous road construction for I-205 has encroached on the community of Old Clackamas, and the proposed Sunrise Project would further that trend.

Apartments and single-family houses generally cluster around Clackamas Elementary School. **Alternatives 2 and 3** and **Design Option A-2** would widen I-205, displacing two apartment buildings, a duplex, and three single-family residences in Old Clackamas. The Clackamas Food Market on SE 82nd Drive is currently the closest retail store for residents. **Alternatives 2 and 3** and **Design Option A-2** would displace this market. As a result, residents without vehicles might have to walk farther to the Fred Meyer store south of OR 212/224 on SE 82nd Drive for groceries. (The distance from the Food Market to Fred Meyer is 0.36 mile.) Old Clackamas contains a retail outlet of the U.S. Postal Service, though mail is not sorted there. **Alternatives 2 and 3** and **Design Option A-2** would change access to SE 82nd Drive, which could result in pressure to move the post office.

Hollywood, an older neighborhood of small houses, is an island of single-family residences in the middle of the Clackamas Industrial Area just south of Camp Withycombe. Houses along OR 212/224 have been converted to commercial and industrial uses. Heavier traffic around the perimeter of this neighborhood would be expected with **Alternatives 2 and 3**.

Midpoint area

The Bluffs is a cluster of subdivisions and a large apartment complex located along the top of the Clackamas River Bluff. Six older single-wide manufactured homes ("**Mobile Home Park**" on Figure 41, p. 93) make up a small neighborhood cluster. **Alternatives 2 and 3** would remove four of the six manufactured homes, while **Design Option B-2** would remove all six. The displaced manufactured home units may be considered affordable housing units. Although the number of units and people displaced would not be high, given the total housing units in the land use study area, relocating older single-wide manufactured homes would be difficult and sufficient sites may not be available to keep the community intact. Consequently, **Alternatives 2 and 3** would isolate the remaining homes between the new alignment and OR 212/224 and adversely affect the sense of community for residents of the two remaining units. **Design Option B-2** would likely result in the community's dispersal.

The alignment for **Alternatives 2 and 3** and **Design Option C-3** would remove the Sunrise Village neighborhood, a 30-unit manufactured home park just west of SE 152nd Avenue. There would be no partial community left behind to experience the loss of community cohesion at that location. However, entire manufactured home parks can be difficult to relocate. If residents are dispersed to different locations, their current relationships could be disrupted. Relocating even individual manufactured home units may prove difficult. **Design Option C-2**

would not remove the Sunrise Village neighborhood.

The Eastridge Church meets at Sunrise Middle School, which would not be affected by any alternative. There are no service or commercial uses in this part of the proposed Sunrise Project area.

Rock Creek Junction area

Bel Air Estates is the cluster of subdivisions in the easternmost section of the land use study area, south of OR 212. **Anderegg Park** is a subdivision directly across from SE 172nd Avenue on the south side of OR 212. **Orchard Lake** is a cluster of newer subdivisions accessing OR 224 south of the Rock Creek intersection. The **Windswept Waters** subdivision is under construction in the southwest quadrant of the OR 212/224 split. These communities would be affected by changes to travel patterns and noise that would occur with all build alternatives and design options (see discussion below). The displacement of seven rural residences would not affect those communities.

Sunnyside Community Church on OR 212 at the east end of the project area was recently relocated as a result of the widening of Sunnyside Road. It would be further affected at this new location by changes to travel patterns under all alternatives (see discussion below).

Schools, Parks, and Emergency Services

Four schools are located in the land use study area: Sabin-Schellenberg Center, Clackamas Elementary School, Clackamas High School, and Sunrise Middle School. No school buildings would be affected by the proposed Sunrise Project. About 0.18 acre of the 6-acre recreation field located at the southwest corner of the recreation field at Clackamas Elementary School would be needed for right-of-way. (See 4(f) section for analysis.) No other educational facilities would be directly affected by any of the alternatives. To the extent that displaced households with school-aged children leave the area, attendance at local schools would decrease. However, because the schools are generally struggling to accommodate new students from recent and future residential development, the impact would not be adverse.

There are two parks within the study area owned and operated by the North Clackamas Parks and Recreation District. North Clackamas Aquatic Park and an associated neighborhood park on the south side of Harmony Road are adjacent to a site planned for a future urban natural area park (North Clackamas District Park). Mount Talbert Park is a 185-acre natural area north of Camp Withycombe. The primary access to Mount Talbert Park is Sunnyside Road, although Mather Road provides a secondary access. No parks would be directly affected by any of the alternatives.

Police, fire protection, and ambulance service are roadway-dependent emergency services that are important elements in maintaining community stability. The arterial roads in the land use study area currently provide for delivery of emergency services to the study area and surrounding areas. Clackamas County Fire District No. 1 operates the Clackamas Training Academy Campus on SE 130th Avenue. Ambulances are generally parked, ready for dispatch from several locations within and near the study area. OR 224 and OR 212/224 are top priorities for the seismic lifeline system, a planned evacuation coordinated by a number of jurisdictions.

I-205, OR 212/224, and SE Sunnyside Road are the most important routes for restoration and maintenance in the case of an emergency. No emergency service facilities would be directly affected by the alternatives. Adding a new east-west route would add capacity that could be beneficial in the event of an emergency, although the additional bridges on the proposed Sunrise Project could be a disadvantage during an earthquake.

Changes to Travel Patterns

Figures 10 through 17 (pp. 23 through 30) in the section titled “How New Connections Would Be Made” (p. 19) illustrate changes to access from

Alternatives 2 and 3. **Alternative 1** would not directly change any neighborhood or business district circulation patterns.

The following subsection highlights the major changes to travel routes under the build alternatives (and design options where noted). The proposed Sunrise Project would require out-of-direction travel from some locations, but would make travel through the area more efficient.

In general, the most notable constraint under **Alternatives 2 and 3** would be limited north-south connectivity in the I-205 Interchange area, across the proposed Sunrise Project and the Union Pacific Railroad line. However, the Sunrise Project would greatly enhance east-west mobility for freight transportation and for existing and future residents in the Damascus and Happy Valley areas.

The build alternatives create three major access changes to the primary road system that affect individual businesses and business districts:

- The Sunrise Project and the Milwaukie Expressway would combine to provide a significant east-west access corridor to facilitate the through movement of traffic and freight. The connection between this east-west corridor and I-205 would also be improved by the new I-205/Sunrise Project Interchange proposed as part of this project.
- The primary route connecting I-205, OR 212/224, and the Milwaukie Expressway to the Clackamas Regional Center would be modified by the Sunrise Project.
- Direct connection of SE 82nd Avenue to SE 82nd Drive would create a continuous north-south arterial road link between the Clackamas Regional Center and the west end of the Clackamas Industrial Area.

Other business access considerations include:

- No business districts would be bisected by the build alternatives.
- The build alternatives would create a major new barrier to south-north connections just east of I-205.
- The build alternatives would greatly enhance east-west mobility for freight.
- Business access under the build alternatives would be most noticeably different in the areas around I-205. **Alternatives 2 and 3** would disrupt current access patterns somewhat more than **Design Option A-2**.
- The Clackamas Business District would be affected by many access closures and route changes under all of the build alternatives.
- There would be longer out-of direction travel routes for business traffic between the Lawnfield Road and SE 97th Avenue areas and the Clackamas Business District and OR 212/224. This would be true under both **Alternatives 2 and 3** and under **Design Option A-2**, although the design option would retain a connection at SE 82nd Avenue.

I-205 Interchange area

Business and residential access would be most noticeably different in the I-205 area and somewhat more disrupted by **Alternatives 2 and 3** than under **Design Option A-2**.

The cluster of businesses in the OR 212/224 Business District would be affected by the proposed realignment of Deer Creek Lane and Johnson Road. The impacts to businesses and the local economy would be minor.

Access from the industrial uses on Ambler Road would be relocated so traffic would enter from the north rather than from the south, thereby creating out-of-direction travel of approximately a mile or more.

Lake Road would end in a cul-de-sac at Johnson Road. Residential and business traffic would have to travel to Webster Road to access the regional network. The intersection of Webster and Johnson roads currently performs poorly at LOS E (with LOS F being the worst). Driveways on

Johnson Road south of OR 224, including access to the Sabin-Schellenberg Center and business accesses, would be restricted to right-in/right-out only. The changes would require out-of-direction travel and could create more congestion at the Lake Road/Webster Road intersection.

The West Clackamas neighborhood is already oriented away from the east-west and north-south barriers created by I-205 and OR 212/224. Access to the hotel just west of the I-205/OR 212/224 Interchange would be altered. Jefferson Street would be closed at McKinley Avenue and all traffic rerouted to Hood Street or Roots Road, causing minor out-of-direction travel.

The existing access to I-205 from Lawnfield Road would be eliminated, and access to SE 82nd Drive from Lawnfield Road would be lost when the Lawnfield Road at-grade railroad crossing is closed. East-west travel on Mather Road would be closed at the proposed Sunrise Project. Closing the Lawnfield Road at-grade railroad crossing would end a direct connection between the multifamily complexes located on SE 97th Avenue and I-205 and SE 82nd Drive. Out-of-direction travel would be longer for business and residential traffic between the Lawnfield Road and SE 97th Avenue areas toward Old Clackamas and OR 212/224. This would be true under both **Alternatives 2 and 3** and under **Design Option A-2**, although the design option would retain the connection at SE 82nd Avenue. The new Lawnfield area connections would provide a route to the regional road system that would be longer than the current connection. However, reduced congestion growth in the corridor as a result of constructing the proposed Sunrise Project would have a beneficial impact on businesses overall.

More truck traffic would be expected on the roads around the Hollywood neighborhood due to rerouting of traffic down the Industrial Way extension.

Design Option A-2 would keep the existing connection to Lawnfield Road. A new connection between Tolbert Street and Industrial Way via a bridge over the Union Pacific Railroad main line would be added, which would be much more direct for businesses located east of the tracks than the route in **Alternative 2**.

Herbert Court's current access to SE 82nd Drive would be closed. Access to businesses would be rerouted via a new frontage road parallel to I-205 and extending from the west end of Herbert Court to the west end of Jannsen Road. Driveways for existing businesses that currently have direct access onto SE 82nd Drive would become right-in/right-out only, resulting in out-of-direction travel.

A number of businesses on the east side of SE 82nd Drive would acquire access via a new cul-de-sac frontage road that parallels SE 82nd Drive and ultimately connects with SE 82nd Drive to the south. Access to the remaining businesses would be possible but less direct.

The Old Clackamas neighborhood between Jannsen Road and Clackamas Road would be moderately affected by the closure of St. Helens, Adams, and Herbert Streets at SE 82nd Drive. Clackamas Road and Jannsen Road would be the main connections to SE 82nd Drive. The U.S. Post Office would no longer have direct access from SE 82nd Drive to Adams Street. Increased business traffic and truck traffic at those connections and near the residential neighborhood would be expected.

Midpoint area

The construction of the midpoint interchange under **Alternative 2** and the connecting arterial road would create relatively minor impacts related to right-in/right-out only access onto OR 212/224. Four parcels east of the new arterial connection along OR 212/224 would lose direct access to OR 212/224, and traffic would be routed from a new cul-de-sac that connects to SE 125th Court. Along SE 122nd Avenue, south of OR 212/224, any remaining access points are assumed to be right-in/right-out only.

Alternative 3 would not improve access to the regional transportation system like the midpoint interchange in **Alternative 2**. Otherwise, changes to local business access and travel patterns created by **Alternative 3** would be very similar to

Alternative 2 in the Midpoint area. The westbound trips destined for Clackamas Highway would have to exit at Rock Creek, make a left onto Damascus Boulevard/OR 224, and go down to the new "jug handle" and then up to Rock Creek Junction. The extra travel would be approximately 1,000 feet.

Construction of **Design Option B-2,** the split-diamond interchange, and the new connecting arterial road would restrict access to right-in/right-out only at OR 212/224. Four parcels located east of the new arterial connection along OR 212/224 would take a new access from SE 125th Court and from a new cul-de-sac that connects to SE 125th Court. Along SE 122nd Avenue, south of OR 212/224, the remaining access would be right-in/right-out only. Again, the impacts in this area would be minor and would be expected to be offset by the improved mobility through the area.

Access from the commercial or industrial parcels north of OR 212/224 between SE 135th Avenue and SE 142nd Avenue would be changed from direct access to OR 212/224 to a new cul-de-sac frontage road located north of and parallel to the proposed Sunrise Project, connecting to SE 142nd Avenue.

Rock Creek Junction area

The build alternatives would greatly enhance east-west mobility for existing and future residents in the Damascus and Happy Valley areas. Access to the proposed Sunrise Project via the Rock Creek Interchange would require some out-of-direction travel by vehicles originating at SE 152nd Avenue (an additional 0.2 mile) or SE 142nd Avenue (an additional 0.13 mile).

The revised arterial road connection from existing OR 212/224 to OR 224 south of the Rock Creek Interchange would require traffic to go out of direction to the south and then double back to the north to make the connection to the new Rock Creek Interchange. The accesses to Arne's Produce Stand and Bachman Paving Company, which are currently on OR 224, would be rerouted to a new frontage road. This frontage road would connect with the new arterial road that connects existing OR 212/224 and the existing OR 224. There would be 0.64 mile of out-of-direction travel between the current Rock Creek intersection and the proposed alternative.

The Sunnyside Community Church would be affected by the termination of the existing OR 212 in a cul-de-sac near SE 162nd Avenue, requiring travel to the west to OR 224 to access other roads. Traffic coming from or heading to the east will be required to travel about an extra 1.2 miles compared to existing conditions. However, improvements to SE 162nd Avenue and the new OR 212 extension could improve access to the church and mitigate the impacts of the cul-de-sac on OR 212.

The Orchard Lake and Bel Air Estates neighborhoods would be affected by out-of-direction travel resulting from the proposed Sunrise Project, but this would be offset to some extent by improved east-west traffic mobility through the area.

Closing Goosehollow Drive at OR 224 would affect an estimated 120 residences in the Orchard Lake neighborhood. Traffic would access OR 224 at Eckert Lane instead of Goose Hollow Lane. Traveling from the intersection of Goose Hollow Drive and Orchard View Lane south via Eckert Lane then north to Goose Hollow Drive along OR 224 represents an increase in travel distance of about 0.7 miles.

The Bel Air Estates neighborhood would be affected by the road improvements necessary to make the transition from the signalized intersection at SE 172nd Avenue and OR 212. The residents of Bel Air Estates may have their access to the subdivision changed to right-in/right-out only, depending on the final design of the transition from the proposed Sunrise Project to the existing OR 212. If the turning movements are restricted, it would require residents to exit their neighborhood by going east only to a point where they could safely turn to travel westbound, potentially resulting in fairly lengthy out-of-direction travel. In addition, the accesses of the four residences currently fronting OR 212 to the

west of Bel Air Drive would be rerouted to Bel Air Drive.

The access road currently connecting Windswept Waters to OR 224 would be replaced by a new connection at the intersection of OR 224 and Goose Hollow Lane. The new connection would close some individual accesses to OR 224 and limit access to the Windswept Waters area to the one connection. Access to OR 212 would be via OR 224. Out-of-direction travel would be approximately 0.47 mile.

Property Values and Tax Revenues

Land and improvements in the land use study area are valued at more than $2 billion. The 2006 taxable assessed value is nearly $1.4 billion, which raised more than $20 million in property taxes to support approximately 15 taxing districts. Right-of-way acquisition would affect local tax revenues because taxable properties would be converted to the non-taxable highway use. The impacts do not range widely between build alternatives. Building the proposed Sunrise Project with **Design Options A-2** and **D-3** would remove the least taxable value, about $42 million or 3 percent of the area's total taxable value. **Design Option B-2** removes the most value, about $45 million or 3.3 percent of the total. Property values typically increase in an area due to the accessibility and visibility improvements created by a major transportation facility such as the proposed Sunrise Project. However, these potential increases cannot be accurately projected.

Indirect Effects

The impacts of **Alternative 1-No Build** are primarily indirect—i.e., failing to support future planned growth in the corridor. The viability of the business districts is likely to be negatively affected by the increasing levels of congestion that cannot be alleviated under this alternative. There could also be negative indirect effects from **Alternatives 2 and 3** if the displacements disrupt the benefits other businesses derive from clustering with similar businesses or locating close to their suppliers or clients.

Potential Mitigation Measures

Alternative 1-No Build requires few mitigation measures for direct effects because there is no facility associated with this alternative except for construction of the climbing lane in the Rock Creek Junction area. Alternative routes to the climbing lane or ways to construct the climbing lane so that it would not impact the park could be examined. The indirect and cumulative effects of Alternative 1 on congestion and reduced regional access cannot be addressed without construction of additional transportation capacity.

Access and Circulation

Business and neighborhood access mitigation for the build alternatives has to some extent been addressed by the design of the alternatives and design options. The local arterial and collector street system that is assumed in all alternatives and design options is critical to mitigating business and neighborhood access impacts.

Additional mitigation measures could be implemented to offset or reduce the circulation impacts of **Alternatives 2 and 3** and the design options. The Socioeconomics Technical Report lists a set of traffic mitigation measures suggested to help offset indirect effects of increased traffic in places where connectivity would be reduced on other streets. These are described by neighborhood or district, below.

Lawnfield Area. The build alternatives create major changes in access including reductions in access to I-205 from the industrial uses in the Lawnfield area. Mitigation measures suggested to address these include:

- Build the bridge connecting SE Industrial Way to SE 82nd Drive on a structure over the rail corridor via SE Tolbert Street.
- Install a signal on SE 82nd Drive at SE Tolbert Street as warranted.
- Build the SE 98th Avenue extension to SE Mather Road.

- Relocate Oregon Iron Works rail spur to the north of SE Lawnfield Road to maintain this freight access to the area.

Clackamas Business District/Old Clackamas Neighborhood. The build alternatives impact the Old Clackamas Business District/Old Clackamas Neighborhood with multiple and major access changes. Mitigation measures suggested to address these impacts include:

- Install a signal on SE 82nd Drive at SE Jannsen Road as warranted.
- Install a signal on SE 82nd Drive at SE Clackamas Street as warranted.
- Keep a bike/pedestrian access from SE Adams to SE 82nd Drive.
- Maintain bike/pedestrian crossing at SE 82nd Drive and OR 212/224.
- Use retaining walls to avoid the recreation grounds at the Clackamas Elementary School site.

Ambler Road Area. A mitigation measure to address the impacts on the area accessed by SE Ambler Road is to build a SE Jasmine Lane connection on a structure over the rail corridor between SE Ambler Road and SE Oak Bluff Boulevard.

Lake Road Area/Highway 224 Business District. Mitigation measures to address the 2,700-foot-long cul-de-sac include:

- Maintain the pedestrian/bicycle connections between Lake and Johnson Roads.
- Improve the intersection of Lake and Webster as needed to accommodate the additional traffic. Improvements might include an updated traffic signal and turn lanes at OR 224 and Webster Road.
- Consider construction of access from Lake Road to OR 224 at Pheasant Road. Evaluate extension of Pheasant Road south to Lake Road and closure of Lake Road at Webster Road.

Orchard Lake Neighborhood. The build alternatives impact the Orchard Lake neighborhood by proposing major access changes. Mitigation measures suggested to address this include:

- Install a signal on OR 224 at SE Eckert Lane as warranted.
- Support Damascus city staff efforts to identify and implement enhancements to local connectivity and access between neighborhoods and OR 212.

Bel Air Estates Neighborhood. The build alternatives impact the Bel Air Estates neighborhood by proposing major access changes. A mitigation measure suggested to address this is to maintain full access to OR 212 or build a new access road to serve the subdivision.

Displacement

Compensation to displaced residents and businesses is provided through the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (see Land Use section). The act provides protections and assistance for people affected by the acquisition, rehabilitation, or demolition of real property for federal or federally funded projects. Federal law also addresses partial acquisition of property, addressing how payment and assistance to reconfigure each business and residence must take place. In addition to these required provisions, Clackamas County Business and Development would work with businesses to help them relocate.

One important factor in being able to relocate residents is the vacancy rate for multifamily and single-family residences. The vacancy rate for multifamily housing in the Clackamas County/Oregon City/Milwaukie market is 3.05 percent, compared to a regional average of 3.8 percent. The only area with a lower vacancy rate is southwest Portland.[24] Rates in downtown

[24] *Residential real estate data in this section is from the Norris Beggs and Simpson, First Quarter 2008 Report.*

Portland, Wilsonville, and Beaverton/Aloha, by comparison, were around 3.2 percent while Hillsboro, Gresham, and Lake Oswego reported over 6 percent vacancy rates. Consequently, the current market could make finding suitable multifamily units more difficult in this area of the region than in other areas.

Availability of single-family homes for sales has increased dramatically from 2006. The average number of days on the market has continued to increase and the number of homes for sale is six times the number of houses on the market during the same period in 2006. Consequently, in the current housing market, finding single family residences for relocating residents would likely be easier than finding affordable multifamily housing in Clackamas County.

Affordability is another factor because residents are entitled to be moved into comparably affordable homes. The subprime loan crisis has caused prospective home buyers to look for multifamily units instead, as home ownership rates declined from 2006, while the population has increased 1.6 percent. As a result, overall demand for multifamily units has risen while vacancy rates have stayed flat, allowing landlords to raise rents as much as 10 percent between tenant turnovers. In the single-family, detached house market, the median price declined 2 percent in the first quarter of 2008 from the last quarter of 2007, from $300,000 to $295,000.

Mitigation measures for the whole or partial removal of businesses could also include assistance by Clackamas County to keep relocated jobs in the local area.

Clackamas County could identify and apply community development tools (such as neighborhood plans, business district plans, or urban renewal plans) to encourage public/ private partnerships to revitalize the Clackamas Business District and Old Clackamas neighborhood after the proposed Sunrise Project has been built. To reduce impacts to the Hollywood neighborhood from increased truck traffic on Clackamas/SE 102nd Avenue, pedestrian and bicycle facilities could be improved. The proposed Sunrise Project could include driveway reconfiguration so that residents would not need to back into traffic to exit their property.

Clackamas County has a policy requiring a relocation plan for manufactured home parks when they convert to other uses. Because manufactured homes can be difficult to relocate, the county should work with owners of manufactured homes and the park owners to find suitable new locations within the land use study area. Since the Socioeconomics Technical Report was written, county and state rules have changed. As of December 20, 2007, the county's requirement for a relocation plan is defined as a compensation to the homeowner. Homeowners would then have the option to move or abandon the unit, consistent with Section 2(1)(b), Chapter 906, Oregon Laws 2007.

ODOT and the county could work with Sunnyside Community Church to develop directional signs on OR 224 or other improvements designed to offset the impacts of reduced highway visibility and access.

Enhancement opportunities could include providing pedestrian and streetscape improvements in the neighborhoods and commercial districts and designing safety improvements and landscaping for the proposed Sunrise Project multi-use path improvements.

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MILWAUKIE
La Salle High
Clackamas Town Center
Clackamas Promenade
CCC Harmony Campus
NORTH CLACKAMAS AQUATIC CENTER
KAISER SUNNYSIDE HOSPITAL
SOUTHERN HILLS PARK
PLEASANT VALLEY GOLF CLUB
CEDAR PARK
JAMES ABELE PARK
MT. TALBERT
Sunnyside
HAPPY VALLEY
DAMASCUS
Sunnyside Elementary
Sunnyside Village
VILLAGE GREEN
Oregon Trail Elementary
Clackamas High School
Sunrise Middle
Sabin Skills Center
Sabin-Schrellenburg
P.O.
ALMA MYRA PARK
West Clackamas
Old Clackamas
Clackamas
Clackamas Elementary
Bluffs
Sunrise Village
HAPPY VALLEY
Hollywood
Carver Junction
ANN-TONI SCHREIBER PARK
Bilquist Elementary
JOHNSON CITY
HEDDLE NOTZ PARK
Mobile Home Park
Three Mobile Home Parks
Clackamas River
Orchard Lake
Bel Air Estates
Anderegg Park
DAMASCUS
Carver
RIVERSIDE PARK
SAH-HAH-LEE GOLF COURSE
GLADSTONE
CARVER BOAT RAMP
205
224
212

CLACKAMAS COUNTY
GEOGRAPHIC INFORMATION SYSTEMS

1:24,000

Sunrise Project Alignment
Land Use Study Zones (A, B, C, D)
Neighborhood
Service Commercial Area

Existing Park
Existing School Recreation Site
Colleges Universities
Public Schools
Private Schools

Existing Stormwater Facility
Existing Golf Course
Existing Bike/Ped. Trails
Proposed Trails -- NCPRD
Proposed Clackamas Bluffs Trail - Metro

Police Station
Fire Station
Hospital
Ambulance
Churches
P.O. Post Office/ USPS Facility

Figure 41

Community Features

Sunrise Project, I-205 to Rock Creek Junction

The Clackamas Regional Center contains the Clackamas Town Center mall, the Clackamas Promenade mall, three hotels, a hospital, a college branch campus, county offices, and other retail, office, and service uses.

The Clackamas Industrial Area contains 1,558 acres for industrial and employment uses. Proximity and access to I-205 has resulted in a regional concentration of warehouses, transportation, and wholesale uses.

Highway 212/224 Business Districts are concentrations of retail uses located along OR 212/224.

The Rock Creek Employment Area has been identified in several plans as a location for future employment uses. Providence Medical Center has purchased a large site and plans a future hospital and medical office facility.

The Clackamas Business District is centered on SE 82nd Drive intersection with OR 212/224 has freeway-oriented retail and services, retail serving the surrounding residential and employment areas, and industrial and warehousing close to Lawnfield Road.

CLACKAMAS COUNTY
GEOGRAPHIC INFORMATION SYSTEMS

1:23,852

Sunrise Project Alignment
Land Use Study Area
Employer Locations

Clackamas Business District
Clackamas Industrial Area
Clackamas Regional Center
OR 212/224 Business Districts
Rock Creek Employment Area

Figure 42

Business Districts

Sunrise Project, I-205 to Rock Creek Junction

Environmental Justice

Executive Order 12898 on Environmental Justice directs federally funded programs, policies, and activities to examine whether they would have disproportionately high and adverse human health and environmental effects on minority and low-income populations.

The fundamental concepts of Executive Order 12898 are to:

- Identify protected populations that could be affected by a project, to help avoid, minimize, or mitigate disproportionately high and adverse effects on those populations;
- Ensure participation by the communities in the transportation decision-making process; and
- Prevent denial or delay of the receipt of benefits by the protected populations.

The term "high and adverse effects" includes more than just displacement of residents and businesses. The intent of an environmental justice analysis is to determine whether other types of significant impacts are likely to be borne disproportionately by sensitive populations. Those impacts can affect livability and human health, such as those resulting from increased air and water pollution, noise levels, visual disruption of a neighborhood, and environmental damage from hazardous materials.

The process of identifying environmental justice communities begins with the identification of the best available demographic information in the vicinity of the proposed project. The proposed Sunrise Project used census data from the year 2000 at the block group level as the basis of the identification process.

The 2000 Census is the only rigorous demographic data set that is available at this fine level of detail or geography and as such is always the first choice for identifying specific population attributes such as race or income levels. The county relies on the decennial census and does not collect information on local population demographics in the years between the decennial censuses.

The American Community Survey, which is conducted annually by the U.S. Census, is not available at the census tract or block group level. There are no other rigorous demographic data sources available for this analysis. During the analysis process, other local review was conducted, including the location of known low-income housing projects, mobile home parks,

The Socioeconomics Technical Report on the attached DVD provides details on the following:

- Demographics: total population, gender, race, age, education, disabilities, households, income, transportation modes, data tables
- Extended Environmental Justice evaluation

Minorities are defined as Black (or African American, having origins in any of the black racial groups of Africa); Hispanic (of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race); Asian American (having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands); or American Indian and Alaskan Native.

Very Low-Income persons are defined as people residing in households with income below the federal poverty guidelines. Poverty guidelines are determined for households by household size.

Low-Income persons are defined as people residing in households with an income between the federal poverty guidelines and an amount two times greater than the federal poverty guidelines.

Census Tracts are small statistical subdivisions of counties, generally having stable boundaries and, when first established, were designed to have relatively homogeneous demographic characteristics.

Block Groups are a collection of census blocks within a census tract, sharing the same first digit of their four-digit identification numbers.

and Section 8 units, and the results of a county land use field inventory (April–May 2006), to confirm the information provided by the census data.

Figure 43, Environmental Justice Areas of Concern (p. 107), shows the Census Block Groups in the project study area, together with selected race and income data for each of the block groups. The local review of environmental justice communities was determined using the methodology set out by the U.S. Environmental Protection Agency (EPA) in the Draft National Guidance for Conducting Environmental Justice Analyses in 1998. This methodology set out a clear and systematic approach for identifying potential environmental justice communities by comparing individual block group information with the state average for minorities and low-income populations.

The following Census Block Groups were identified as containing environmental justice communities (see Socioeconomics Technical Report, Figure 26):

- Block Groups 1 and 2, Census Tract 221.02 – Low and Very Low Income
- Block Group 4, Census Tract 221.02 – Low Income
- Block Group 1, Census Tract 221.03 – Minorities
- Block Group 3, Census Tract 232.02 – Low Income

When considering the impacts of the project on environmental justice communities, it is necessary to remember that there are three distinct population groups that are affected directly or indirectly by the project build alternatives, and that these impacts can be good or bad for all populations. The first population to be considered is the population that will be relocated by build alternatives. This population is the subject of most of the following analysis because it is the one that is directly impacted.

The second population to be considered is the larger environmental justice community as a whole, whether or not it is directly impacted by a project build alternative. In the case of the proposed Sunrise Project build alternatives, the indirect and cumulative impacts to this population are very similar, if not exactly the same, as the impact to the resident population remaining after the completion of project build alternatives.

This third population is the resident population remaining after project build alternatives are completed. Impacts to this population are described in this document, some of which are positive and some negative. But in general the benefits of the build alternatives to the resident population outweigh the negative impacts of the improvements.

Table 11 (p. 97) provides a summary of selected comparative demographics for the Census Block Groups in the proposed Sunrise Project study area, Clackamas County, and the State of Oregon.

More information about those groups is presented in the Socioeconomics Technical Report.

Minority Populations

The following general statements can be made about the racial composition of the study area, the county, and the state.

- In general, the ratio of minorities to “Whites Alone” in the block group study area is similar to that of the state and slightly lower than the county.
- The ratio of Asian American population to the whole population in the study area is higher than in the county and the state, but less than in the Portland metropolitan area.
- The ratio of African American population to the whole population in the study area is slightly lower than in the state but the same as in the county overall.

Table 11. Summary of Selected Comparative Demographics			
U.S. Census, 2000 Population by Race	SDEIS Block Group Study Area[1]	Clackamas County	State of Oregon
White Alone	25,145	308,512	2,961,623
Percent of Total	88%	91%	87%
Black Alone	333	2,184	55,662
Percent of Total	1%	1%	2%
Asian Alone	1,251	8,114	101,350
Percent of Total	4%	2%	3%
Hispanic or Latino of Any Race	1,293	17021	275,314
Percent of Total	5%	5%	8%
All Other	1,884	19,581	302,764
Percent of Total	7%	6%	9%
Total Minority – All Races per EPA Methodology	3,864	36,801	564,299
Percent of Total	13.5%	10.9%	16.5%
Low Income	3,703	40,827	603,550
Percent of Total	13.1%	12.2%	18.0%
Very Low Income	1,825	21,969	388,740
Percent of Total	6.4%	6.6%	11.6%

[1] See Figure 43, p. 107.

- The ratio of Hispanic population to the whole population is about the same in the study area and the county but lower than in the state as a whole.
- Block Group 1 of Census Tract 221.03 and Block Groups 4 and 5 of Census Tract 221.04 had a somewhat higher proportion of Asian American residents than the county and state. The block groups with a higher share of Asian American people also have a slightly higher share of African American people. Block Group 1 of Census Tract 221.04 has a slightly greater share of African Americans but is outside any proposed direct impacts from the build alternatives.
- The ratio of Hispanic or Latino residents in the study area is generally similar to, or lower than, the populations in the county and in the state. Three block groups have ratios that are higher by a few percentage points.

Low-Income Populations

The following general statements can be made about the distribution of very low-income and low-income individuals and households in the study area, the county, and the state.

- Block Groups 2, 3, and 4 of Census Tract 221.04 had median household incomes lower than the county median.
- Block Groups 1 and 2 of Census Tract 221.04 had double the proportion of households in poverty compared with the county as a whole. These two block groups are located east of SE 82nd Avenue from the north end of the project area to the south end. As noted earlier, Block Group 1 of Census Tract 221.04 is outside any proposed direct impacts from the build alternatives.

- The remaining block groups in the study area had poverty rates comparable to or less than the county and state poverty rates.

Block Group 1 of Census Tract 221.03 and Block Group 1 of Census Tract 221.04 have been identified as containing identifiable very low-income environmental justice communities using the EPA methodology.

Block Group 1 of Census Tract 221.03 and Block Groups 1, 3 and 5 of Census Tract 221.04 have been identified as containing identifiable low-income environmental justice communities using the EPA methodology.

Other Groups

Within the block groups surrounding the Sunrise Project area, there are higher concentrations of children, the elderly, and the disabled. Though their protection may be important to the community, they are not protected by Executive Order 12898.

Block Group 3 of Census Tract 221.04 has nearly triple the ratio of people who are 65 and older compared to the county and the state because it is the location of a mobile home park for persons over 55 years of age and the total population in the block group is relatively small.

In Block Groups 2 and 3 of Census Tract 221.04, the proportion of disabled people is more than twice that of the county and the state. It should be noted that this population is self-identified in the census process and many of the individuals that have identified themselves as disabled are employed.

More information on these groups can be found in the Socioeconomics Technical Report.

Community Resources

Retaining and protecting access to community facilities in and near the Sunrise Project area is part of the effort to reduce impacts on protected populations. The parks, schools, and churches identified in the Business and Communities section (see Figure 41, Community Features, p. 93) are the known community facilities in the study area. There are no religious or fraternal organizations, service centers for low-income populations, or similar facilities that might be particularly associated with environmental justice populations. Other important resources are community centers in manufactured home parks and apartment complexes.

Travel Patterns and Accessibility

According to Census 2000 data, between 89 and 91 percent of people in the study area and in the county drove to work, including 10 percent that carpooled. An exception is Block Group 2 of Census Tract 221.04, in which 69 percent drove to work and 18 percent carpooled. That block group also had more transit users (15 percent compared to 3 percent countywide), as well as walkers and cyclists (10 percent compared to 2 percent countywide). Proportionately fewer households in Block Group 2 have access to two vehicles compared to the county percentage.

This block group also has a low median household income and a high share of poverty when compared to the block group study area. It also has a high share of people with disabilities (26 percent). This area has low median household income and relatively high poverty, compared to the county population.

About 10 percent of households in Block Group 1 of Census Tract 221.04 have no access to a vehicle compared to 5 percent in the county as a whole. Eight percent of households in Block Group 3 of Census Tract 221.04 had no access to a vehicle.

Noise Impacts

The Sunrise Project study area has a number of locations that have been somewhat impacted by the noise of I-205 since it was constructed in the 1970s. The Old Clackamas neighborhood, which has been identified as a low-income area, located along the east side of I-205 between the freeway and the Clackamas Industrial Area, is one of those neighborhoods with relatively high existing noise

levels. The proposed Sunrise Project build alternatives would produce increased noise levels and an unacceptable noise impact in this neighborhood without noise mitigation. The proposed sound walls will reduce the noise levels in the neighborhood below their current levels after the proposed Sunrise Project is completed. This benefit will be enjoyed by the remaining residents of the area. The same situation occurs in existing residential areas in a number of locations along the existing alignment of I-205 and OR 224. A similar set of circumstances exists at several points along the proposed Sunrise Project alignment to the east of Camp Withycombe.

Unfortunately, the proposed Sunrise Project is expected to cause high and adverse noise in the Bluffs neighborhood, which cannot be mitigated within FHWA guidelines. But this neighborhood is not located in an environmental justice community so there are no identified high and adverse noise effects on environmental justice communities.

Air Quality Impacts

There are no identified air quality impacts from the proposed Sunrise Project build alternatives that would negatively affect environmental justice communities or the larger residential community that would exist after the construction of the build alternatives.

Determining Environmental Justice Effects

As discussed in the following text, the first and second fundamental elements of environmental justice are addressed in the same way for all alternatives. The third element is addressed only for the build alternatives.

1. Full and fair participation by all potentially affected communities in the transportation decision-making process.

The Sunrise Project's public involvement program made an extra effort to address environmental justice communities, as previously discussed in the Executive Summary (Public involvement activities since 2004, p. 5). Appropriate public involvement and outreach strategies were designed to help engage minority and low-income environmental justice populations that may be affected by any of the proposed Sunrise Project alternatives, including the no build alternative. By targeting special outreach to environmental justice communities, potential project benefits and adverse impacts are intended to be identified as they are perceived by the communities. Mitigation opportunities are also expected to be suggested by the communities.

As discussed above, the public involvement team used U.S. Census data to identify concentrations of environmental justice populations and supplemented this information with data on the locations of low-income housing units, Housing Authority-owned housing, and Section 8 housing units. Several census tracts in the study area have populations above the state average of low-income residents. There is only one census tract with a high percentage of minority residents, specifically Asian American. This census tract is also higher income. There was no information indicating that there are language barriers for residents in this census tract.

Although individual household income information is unknown for residents of the area's many manufactured home communities, the Sunrise Project public involvement team chose to provide opportunities for manufactured home park residents to obtain information and provide input on the project, since displacement issues are more complex for manufactured home owners.

Specific outreach conducted by the Sunrise Project team included meeting with managers of manufactured home parks, distributing meeting invitations and flyers door-to-door within manufactured home parks and to site addresses in order to reach renters and business lessees (not just property owners), and presenting project information at a meeting of the Clackamas County Community Action Board. In addition, a Project Advisory Committee position

was specifically filled by a member from a population protected by Executive Order 12898.

2. To prevent the denial of, reduction in, or significant delay in the receipt of benefits by environmental justice communities.

Most aspects of mitigation for property acquisition and residential and business relocations are addressed by federal and state regulations, which require that property be purchased at fair market value and that all displaced residents be provided decent, safe, and sanitary replacement housing.

In the case of the Sunrise Project build alternatives, it should be noted that the residential relocation impacts of the project are small and very localized. The Sunrise Project land use study area contains a total of 5,345 residential units—2,400 single-family residential units, 1,832 multifamily residential units, and 1,113 mobile homes.

- **Design Option C-2** with either Alternative 2 or 3 would result in the least number of residential unit displacements (43).
- **Design Option B-2** (1996 Split Interchange–Modified) with Alternative 2 would result in the highest number of residential unit displacements (75).
- **Alternatives 2 or 3** would result in displacement of 72 residential units.
- The range of residential units impacted for all build alternatives is between 0.8 percent and 1.4 percent of the existing residential units in the study area.

These impacts to residential units are predominantly located in two areas:

- There is a 30-unit mobile home park at SE 152nd Avenue that is within the physically constrained corridor between the Clackamas River and the Clackamas Bluff. This housing is old and in relatively poor condition. It is probably one of the few low-income developments in a block group.
- The Old Clackamas neighborhood, which has been identified as a low-income area, is located along the east side of I-205, between the freeway and the Clackamas Industrial Area. This small residential area was isolated by the I-205 construction in the 1970s. It has been subject to impacts from that facility ever since.

Federal and state guidelines, such as the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended), determine the standards and procedures for providing such replacement housing, based on the characteristics of individual households. Relocation benefit packages usually include replacement housing for owners and renters, moving costs, and assistance in locating replacement housing. Similarly, relocation benefits for businesses include moving costs, site search expenses, and business re-establishment expenses. As with displaced residential units, the specifics of a relocation package are determined on an individual basis according to ownership or tenant status. In general, attempts have been made to minimize relocation impacts to residences, businesses, and public facilities. Eligibility and terms of relocation assistance will be determined by a real estate team during future project planning.

Displacement of residents and community resources would be mitigated by first exploring relocation options within their neighborhoods. This could mitigate the impact to the residents and avoid the loss of these resources to their communities. This is especially important for neighborhood resources, such as the 30-unit Sunrise Village manufactured home park, which serves minority and low-income clients.

During the planning and project selection process, the project designers attempted to avoid and minimize potential acquisition impacts by modifying alignments or shifting alignments as possible. These shifts were conducted to minimize acquisition needs and to avoid undesirable building and access impacts. Right-of-way business displacements, losses in parking,

and changes in access are based on preliminary conceptual designs for the build alternatives.

Housing choices are available throughout the Portland-Vancouver metropolitan area with a varying level of affordability. The March 20, 2008, RMLS Housing Market Report lists the year-to-date housing market information for the Milwaukie/Clackamas area as follows:

Listings on the market:	1,264
Pending Sales Year-to-Date:	349
Closed Sales Year-to-Date:	275
Average Sale Price:	$356,000
Median Sale Price:	$300,000

It is reasonable to assume that there will be sufficient relocation possibilities for residents who would be affected by the proposed project, with the possible exception of some of the residents of manufactured home sites. All of the 30-unit Sunrise Village manufactured home park units might be relocated by some of the build alternatives.

There are limited opportunities to relocate older-style, single-wide manufactured homes in the region. Many such home parks in the immediate area operate at capacity. Most manufactured home parks do not accept single-wide units. Some of the existing single-wide manufactured homes may not have sufficient structural integrity to support a move to another location. Ideally, relocations would be near their original location, although this may not be possible. These relocations could potentially occur in the following ways:

- Purchase or construction of sites suitable for manufactured home units, although this might be difficult because of current standards on types of units allowed; and
- Purchase of impacted residents' low-value manufactured housing units, and replacement with newer units that are comparable, or better, to ones displaced, that would be accepted in existing manufactured home parks.

Searching early for relocation opportunities to maximize the possibility of finding suitable relocation options would be important. This might require early permission to purchase property and the allocation of funds to do so.

Project partners may need to serve as providers of housing of last resort for low/moderate income residents who are unable to find suitable, comparable replacement housing. This is particularly true of owners/residents of older-style manufactured housing units.

It is difficult to forecast the availability of future replacement low-income housing for units that may be displaced by the proposed Sunrise Project, given the uncertainties of the housing market and regional economy. However, the RMLS Housing Market Report provides a snapshot of available housing units at different price points in the project vicinity (zip codes 97015, 97027, 97045, and 97267). In March 2008 the following were available:

- 4 properties under $100,000.
- 7 properties from $100,000 to $150,000.
- 32 properties from $150,000 to $200,000.
- 53 properties from $200,000 to $250,000
- 110 properties from $250,000 to $300,000.

The Housing Authority of Clackamas County is the principal county-wide agency charged with addressing the housing needs of low/moderate income residents of the county. It owns and manages 1,072 rental units and administers about 1,500 Housing and Urban Development Section 8 vouchers.

The demand for low-rent public housing is high. The current waiting time for available units ranges from 18 to 24 months. If such housing is not available in the general area of the proposed Sunrise Project, then the use of housing of last resort will be considered. The residential relocations made under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, which result in a distribution of relocation benefits, are based on market values

without discrimination on the basis of minority status or income.

The availability of affordable housing (multifamily and single-family dwellings) for low-income households is limited in the metropolitan area and in Clackamas County. There are a limited number of affordable housing units located in the general vicinity of the project, but these generally have high occupancy rates and may not in fact be available at a specific point in time in the future. This may result in some residents being moved out of the area as a result of the displacement of their residences by the project.

The main benefits of the project—increased mobility and transportation access—are expected to be fairly distributed since in all of the block groups in the study area a proportion of the population has access to vehicles for transportation in similar proportions to the county and state. The highway would become available at the same time for all users. Most of the potential mitigation measures that are proposed by the project are beneficial to both environmental justice communities and to the large residential communities as a whole.

3. To avoid, minimize, or mitigate disproportionately high and adverse human health, environmental, social, or economic effects on environmental justice communities.

To assess whether impacts are disproportionately high and adverse, the environmental justice analysis answers five questions, as addressed below for the build alternatives. **Alternative 1** would not have any direct impacts to environmental justice populations in the project land use study area. Only one project is associated with this alternative, which would potentially displace one residence that has not been identified as being protected by Executive Order 12898.

Question 1: How does the project directly impact environmental justice areas of concern? Would it impact minority or very low or low-income persons in these areas?

The direct project impacts to individuals and households has been limited, due in large part to the efforts to locate the project build alternatives in such a manner that they avoid most of the populated areas. As a result, the direct impacts to environmental justice areas of concern are likewise limited. Block Groups 1 and 2 of Census Tract 221.04 are located along the east side of I-205. As previously noted, this small residential area was isolated from the larger residential areas to the west by the I-205 construction in the 1970s. This area has been the location of lower income housing since that time.

Block Groups 1 and 2 of Census Tract 221.04 have a higher share of very low-income residents and, together with Block Group 4, also have a higher share of low-income residents than the state. Widening of I-205 is likely to displace low- or very low-income residents through relocation of 27 dwelling units, most of which are multifamily units in Block Group 2 of Census Tract 221.04. It is likely that many of the households to be displaced adjacent to I-205 would have lower than average incomes; therefore, that area is an environmental justice area of concern.

Residential development in Block Groups 4 and 5 of Census Tract 221.04 and Block Group 1 of Census Tract 221.03 is predominantly located above the Clackamas Bluff and as such is physically separated from the direct impacts of the project alternatives.

Block Group 5 of Census Tract 221.04 has a slightly higher ratio of people identifying themselves as Asian American compared to the ratio for the study area, the county, or the state. Since the residential areas in this block group are along the bluff and outside the range of any direct impacts, this is not considered an environmental justice area of concern. Impacts that may be experienced include additional noise and visual disruptions, though these could be mitigated. It is not clear that the Asian American minority population would be the only group affected by these impacts. The bluff area is not an environmental justice area of concern.

Block Group 1 of Census Tract 221.03 has a higher share of Asian American residents than other block groups in the study area. The proposed Sunrise Project (except **Design Option C-2**) passes through the southern part of this block group, affecting one 30-unit manufactured home park and three single-family houses. There is no information about whether the Asian American residents are disproportionately represented in the 33 units to be removed. This block group has a lower than average ratio of people below the poverty line. As a whole, Block Group 1 is not an environmental justice area of concern.

Land uses in the Rock Creek Junction area are divided into future industrial and employment uses to the north of OR 212 and residential uses to the south of OR 212.

The Rock Creek Junction area includes Block Group 3 of Census Tract 232.02, which has a higher share of low-income residents than the state. The ratio of households with income below the poverty level is the lowest of all the areas in the study area. However, acquisition of right-of-way does not affect the two manufactured home parks or the areas of older housing in Carver where low-income residents could be expected to reside. There would be seven displacements under **Alternatives 2 and 3**. It is not known whether occupants in those residences are minorities or low-income. The area near the Rock Creek Junction is not considered an environmental justice area of concern.

Question 2: Would the project result in high and adverse effects that would be predominantly borne by a sensitive population?

In the Old Clackamas neighborhood, most residential displacements are multifamily units and this area has been identified as an environmental justice area of concern that has a higher share of very low-income residents. This small residential area was isolated by the I-205 construction in the 1970s. It has been subject to impacts from that facility ever since. Consequently, the impacts could be disproportionately borne by lower income households, to the extent that the multifamily units contain lower income households. This area has a higher than average proportion of renters in multifamily units who may have less flexibility in finding appropriate new housing in the same neighborhood. In addition, the displacement could cause more disruption with respect to access to transit and routes to work.

Alternatives 2 and 3 would affect a small manufactured home park (identified on Figure 41, Community Features, p. 93, as "Mobile Home Park"). As residents of manufactured home parks are often part of low- or very low-income households, there may be some impact to environmental justice sensitive households there.

Both **Alternatives 2 and 3** and **Design Options B-2 and C-3** would require the relocation of households in 33 to 35 dwelling units, 30 of which are in a manufactured home park. Because most of the displacements are manufactured homes, the project could potentially result in adverse effects that would be borne predominantly by either a minority group or low-income populations, or both. Whether the effect is high and adverse for those displaced would depend to some extent on the ability to relocate them to better locations or improved residences, or both. **Design Option C-2** would not impact the 30-unit manufactured home park. Four single-family houses would be removed. There is no information about whether Asian American residents are disproportionately represented in the four units that would be removed.

The large cluster of manufactured home parks (identified as "Three Mobile Home Parks" on Figure 41, Community Features, p. 93) could be impacted by the nearness of the proposed highway. Potential effects include dust, noise, and visual impacts, but they are not expected to be both high and adverse. The change would be diminished somewhat by the presence of the existing highway and removal of some through traffic from OR 212/224.

No high and adverse impacts would accrue to blocks of environmental justice sensitive populations in the Midpoint area. However, there

is concern that there may be displacement impacts to low-income, environmental justice sensitive households in the manufactured home park for all of the alternatives and design options except **Design Option C-2.**

No environmental justice sensitive populations are close to the project in the Rock Creek Junction area; therefore, no high and adverse effects would be disproportionately borne by environmental justice populations.

Question 3: Would the project result in high and adverse effects that would be suffered by an environmental justice population that would be appreciably more severe or greater in magnitude than the effect that would be suffered by the non-sensitive population?

The loss of 27 dwelling units on the east side of I-205 may affect up to 21 percent of the low-income or very low-income persons in the block group. The adverse effects are disproportionately borne by renters in multifamily housing, in a neighborhood statistically known to contain a higher proportion of lower income residents. This impact could be characterized as a greater impact than that suffered by the non-sensitive population.

If the manufactured home park in the Midpoint area contains minorities protected under the environmental justice guidance or low-income populations, its displacement would create effects appreciably more severe or greater than those suffered by the rest of the adjacent population. It is assumed that the manufactured home units are likely to be occupied primarily by low-income households. There is no current information to indicate that the 33 units to be purchased for right-of-way are predominantly occupied by minority households.

Relocating the homes in the manufactured home park could be challenging. Older, single-wide manufactured homes, which are valuable as affordable housing resources, are more difficult to relocate than newer double-wide homes. Many units are so deteriorated that they could not be moved. Other manufactured home parks in the project area are also showing signs of deteriorating units and vacant spaces. Moving residents out of the area to suitable substitute dwellings could be difficult and represents a high and adverse impact to those residents.

Building the proposed Sunrise Project could uncover hazardous materials and would create additional stormwater runoff and noise. Those potential impacts and their mitigation would be distributed throughout the project area and would not be disproportionately borne by environmental justice populations.

Question 4: Would the project result in adverse impacts to community resources that are particularly important to environmental justice populations?

Impacts to community resources are limited to changes to access (see Businesses and Communities section). **Alternatives 2 and 3** would affect access to the Sunnyside Community Church. The impacts would not be high and adverse and might be a benefit in the long term; without the proposed Sunrise Project, congestion would make leaving and entering the church property from OR 212/224 extremely difficult. There is no information to indicate that this church has a higher share of minority or low- or very low-income parishioners than other local churches.

Question 5: Are there project benefits that would accrue to environmental justice populations?

The benefits of increased mobility with the proposed Sunrise Project (for all modes) would generally accrue to all area residents, including environmental justice populations. However, Block Group 2 of Census Tract 221.04 has households with less access to vehicles and more carpoolers than other block group households. In addition, this block group has a larger proportion of people whose commute to work is over 60 minutes. Displacement and more out-of-direction travel as a result of the project may have a negative impact on residents' ability to continue to use carpooling as a transportation mode.

Indirect Effects

The indirect effects include those already discussed above: changes to views, additional noise levels, increased stormwater runoff, and potential exposure to air emissions and hazardous materials.

Potential Mitigation Measures

The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 is the chief mitigation measure for displacements. During the comment period, additional outreach would be conducted to communicate impacts of special importance to known and potential environmental justice populations. The outreach will be used to identify the specific needs of the protected populations and to develop additional mitigation, including the following:

- Door-to-door personal outreach in specific areas identified by potential impacts;
- Small group meetings for particular communities to discuss issues and potential impacts, specifically manufactured home communities, some specific residential areas, and possibly business meetings for employers and employees; and
- Coordination with employers to share information with area employees.

The project team will focus on keeping information accessible and understandable. If translation or interpretation services appear necessary, the project team will make every effort to provide them.

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BG 2 CT 221.04
26% disabled
median houshold income $37,292
16% below poverty line

BG 4 CT 221.04
5% Asian
2% African American
31% 65 and older
median houshold income $37,500

BG 5 CT 221.04
7% Asian

BG 1 CT 221.03
10% Asian
2% African American

BG 1 CT 215.00

BG 1 CT 221.01

BG 2 CT 221.01

BG 3 CT 232.02

BG 1 CT 221.04
3% African American
median household income $26,396
11% below poverty line

BG 3 CT 221.04
38% disabled
median household income $35,489

CLACKAMAS COUNTY
GEOGRAPHIC INFORMATION SYSTEMS

1:32,850

Sunrise Project Alignment
Land Use Study Area
Section 8 Housing Site
Mobile Home Parks

County:
2% Asian
1% African American
11% 65 and older
14% disabled

median household income $52,080
6% below poverty line

State:
3% Asian
2% African American
12% 65 and older
17% disabled

median household income $40,916
11% below poverty line

Figure 43

Environmental Justice Areas of Concern

Sunrise Project, I-205 to Rock Creek Junction

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Visual Character and Resources

The proposed Sunrise Project area currently transitions from being quite developed in the western portion, with substantial commercial and light industrial land uses adjacent to I-205 and OR 212/224 and relatively few intact, grassy fields, to moderately developed land use in the eastern portion with single-family residential uses and some vacant land. A variety of land use zoning designations apply throughout the project, including but not limited to general industrial, general commercial, medium density residential, urban low-density residential, rural single-family residential, and exclusive farm use. Visual resources have been inventoried and the locations shown on Figures 44 through 47 (p. 121 through p. 124).

Visual Quality Scoring

A quantitative analysis was also done for representative views in each subarea of the project area. Assessing the visual quality of views in the Sunrise Project area is based on scoring a view's vividness (landform, vegetation, water, and man-made development), intactness, and unity. The vividness, intactness, and unity scores are then averaged to determine the view's overall visual quality score. Visual quality is rated on an ascending scale, as shown in Table 12.

Table 12. Visual Quality Rating for the Sunrise Project Area

	I-205 Interchange Area	Midpoint Area	Rock Creek Junction Area	
Western End	moderately low (3)	average (4)	moderately high (5)	Eastern End

The project area as a whole has average visual quality of 4.

1 = very low, 2 = low, 3 = moderately low, 4 = average, 5 = moderately high, 6 = high, 7 = very high

The Visual Technical Report on the attached DVD provides details on the following:

- Existing visual conditions
- Visual quality scores
- Comparison of viewer sensitivity
- View simulations of approximate changes
- Mitigation measures

Vividness is the memorability of the visual impression received from contrasting landscape elements as they combine to form a striking and distinctive visual pattern and encompasses: landform, vegetation, water, and man-made development.

Intactness is the integrity of visual order and how much the view is free from encroaching features.

Unity is the degree to which the visual resources of the landscape form a coherent, harmonious visual pattern and the compositional harmony or compatibility between landscape elements.

Foreground is the area closest to the viewer, which can be designated with clarity and simplicity because the observer is a direct participant.

Middleground is the area where parts of the landscape may be seen to join together (i.e., where trees become a forest) or revealed as either comfortable or conflicting with the landscape.

Background is the area farthest from the viewer where distance effects are primarily explained by aerial perspective (i.e., emphasis is primarily on outlines or edges).

As the project area transitions from the developed western end to the moderately developed eastern end, the existing visual quality scores increase.

Twenty-one views from a variety of locations were analyzed for the impacts of the proposed project on the visual resources and visual quality.

Moderately high and high quality views and descriptions of the potential impacts of the proposed Sunrise Project on those views are presented Figures 44 through 47 (p. 121 through p. 124).

Viewers and Viewer Sensitivity

Evaluations of views also considers who the viewers are, where they see the views from, for how long, how big the viewer group is, and what their expectations are. For example, a commuter and a resident have different expectations for views and a commuter has a view for a shorter time period than a resident. Viewer groups for the proposed Sunrise Project include employees, motorists (drivers and passengers), bicyclists, pedestrians, and residents. Residents in the project area are likely to be the most sensitive viewers because of their stationary and long-term views. Motorists would be less sensitive to visual changes because they are moving through the project area and because most tend to be focused on driving rather than on sightseeing.

Visual Quality and Viewer Sensitivity

The existing visual quality of the Sunrise Project area is average (4). The main visual changes would result from the changes to the terrain (cuts and fills), removal of vegetation and buildings, changes to aboveground utilities, new pavement for the multi-lane highway, new structures (walls, elevated ramps, and bridges), expanded intersections, and new signals and lights. New roads would be new sources of light and glare. The average visual quality scores for existing and proposed views for the build alternatives and design options are shown in Table 13, Comparison of Visual Quality Scores by Alternative and Design Option. **Alternative 1–No Build** would cause very little visual change to most views in the project area.

Table 13. Comparison of Visual Quality Scores by Alternative and Design Option

	Alternatives 2 and 3	Option A-2	Option B-2	Option C-2	Option C-3	Option D-2	Option D-3
I-205 Interchange Area							
Viewer Sensitivity[1]	Moderately low	Moderately low					
Existing VQ	3	3					
Proposed VQ	2	2					
Midpoint Area							
Viewer Sensitivity	Moderately high		Moderately high/high	Moderately high	High[2]		
Existing VQ	4		4	4	4		
Proposed VQ	3		3/2[2]	3	2		
Rock Creek Area							
Viewer Sensitivity	High[3]					High[2]	High[2]
Existing VQ	5					5	5
Proposed VQ	2					2	2

[1]Represents anticipated sensitivity of residents to visual impacts (visual change from existing conditions). Residents are those that have existing, stationary views toward the project area.

[2] The combination score derives from combining the impacts of Zone B and Zone C (from the Visual Technical Report) into the Midpoint area.

[3] The "high" ranking is based on residential sensitivity to the overall visual changes that would occur in the Rock Creek Junction area as a whole.

Seven photo simulations have been prepared to portray what the new highway might look like upon completion. The simulations are based on preliminary design at the time of the writing of this report, do not include potential mitigation measures, and are meant to provide a reasonable estimate of the project's visual impact. (See photos S1 through S7 at the end of this section. The photo on the left shows existing conditions, the photo on the right is the project simulation. Figure 48, p. 125, shows their locations.)

I-205 Interchange area

All viewer groups are present in this area. Expectations are based on existing highways, interchanges, and the highly developed commercial/industrial corridor with adjacent low- to high-density residential neighborhoods. The average visual quality score for the I-205 Interchange area is moderately low (3). In some cases, these resources blend into vivid, intact, and unified views while in other places, substantial encroachment from the man-made development causes views to appear less unified, less memorable, and less organized.

Alternatives 2 and 3 would cause the visual quality of the interchange area to decline to low (2). At its highest point, the new interchange would be three levels instead of two and approximately 70 to 80 feet above the existing I-205 northbound lanes. Viewer sensitivity of motorists and employees would be low.

View S1 shows an approximate representation of how **Alternatives 2 and 3** could affect the visual quality of the view from a playing field southwest of the I-205 interchange. View S2 shows an approximate representation of how **Alternatives 2 and 3** could affect the visual quality from SE 97th Avenue.

Residents, pedestrians, and bicyclists would likely be more sensitive to visual changes, including the addition of the solid, linear mass of bridges, ramps, and a fly-over to the foreground or middleground. This is due to the longer duration of their views. Residents living east of I-205, particularly those living on the bluff, would have wide views of the new highway in the middleground. The expanse and elevation of the interchange would make it more noticeable than the existing highway. However, since the I-205 Interchange area is already quite developed, residents and other viewers are already accustomed to views that are of moderate visual quality.

Alternative 3 would have very similar visual impacts as **Alternative 2**. **Design Option A-2** would have similar impacts to the build alternatives. However, not building the new North Lawnfield Alignment would cause slightly less visual impact because the existing trees and topography would remain and no bridge northeast of the KEX towers would be built.

Midpoint area

All viewer groups are present in this area. Expectations are the same at the west end of the Midpoint area as in the I-205 Interchange area. The eastern portion has less development, some vacant parcels, and visual resources that are more unified and intact. The visual quality in the Midpoint area is average (4). Some views appear relatively organized and have a variety of beneficial visual resources, such as the Camp Withycombe buildings. Some views are cluttered by the combination of buildings, lights, signs, vehicles, and utilities. Views from most residences on the bluff looking south are mostly shielded by a thick stand of mature trees. From the Hubbard Terrace neighborhood on the eastern end of the bluff, however, residents can see through and over vegetation to the existing OR 212/224 corridor. Viewers in this neighborhood have extensive views toward the existing knoll formation, and Mount Hood is visible in the background.

The average visual quality under **Alternative 2** would decline to moderately low (3). The proposed Sunrise Project would cause visual change along the southern edge of the bluff; however, trees on the bluff would mostly shield residents' views. The most noticeable visual

change in the Midpoint area would be east of SE 135th Avenue because a new roadway with some elevation would be going through relatively intact open fields. Views in the western part of the Midpoint area would have less change as this area is already quite developed.

The highway would be approximately 30 feet above the existing ground level near SE 122nd Avenue. Between SE 135th Avenue and the OR 212/224 split, the existing highway already encroaches on views somewhat. However, the proposed Sunrise Project would be more noticeable because of its elevation.

Viewers include motorists, residents, bicyclists, pedestrians, and employees of local businesses and Camp Withycombe. Residents, bicyclists, and pedestrians would likely be more sensitive than motorists or employees. Residents in the northeast corner of the Oak Acres manufactured home park would have views of the highway, which would be slightly elevated approximately ten feet above grade. Their existing views of a grassy field would change to views of the field bisected by a multi-lane highway.

Residents living on the south edge of the bluff would be expected to be sensitive to visual changes. However, most residents on the bluff have trees in their backyards that would help shield views of the new highway. Residents on the eastern end of the bluff have fewer trees to screen their views looking east. Although OR 212/224 is visible in existing views, the new highway would take up a larger part of the view and would be elevated. Mount Hood would still be visible to residents.

The view toward the intersection of OR 212/224 and SE 135th Avenue for residents living in the Shadowbrook manufactured home park would be dominated by the elevated highway and the existing intersection.

Without a midpoint interchange, **Alternative 3** would have slightly less visual impact than **Alternative 2**. There would be less paved surface and a narrower roadway, slightly less vegetation removal and terrain modification, and fewer street lights and signs. There would be no brake lights or signals associated with an interchange. Views 9, 10, 11, and 14 in the Midpoint area (all rated as moderately high) would have slightly fewer visual changes under **Alternative 3** than under **Alternative 2**. All viewers would be expected to have very similar, but somewhat less, sensitivity to visual changes than under **Alternative 2**.

View S3 simulation looking east from just north of Oak Acres mobile home park provides an approximate representation of **Design Option B-2**. The visual quality would decrease. View S4 looking northwest from southeast of the intersection of OR 212/224 and SE 135th Avenue provides an approximate representation of **Design Option B-2**.

Design Option B-2 would cause slightly more impacts to visual quality compared to the build alternatives. The decline in visual quality would be due to the bigger structure needed for eight lanes as well as the multi-use path improvements over the new highway. Residents of the Oak Acres manufactured home park would likely be only slightly more sensitive to visual changes from this design option. Residents in the Hubbard Terrace neighborhood and the Shadowbrook manufactured home park would be expected to be more sensitive to visual changes from **Design Option B-2** than from **Alternatives 2 or 3** or **Design Option C-2**. The highway, off-ramp, and fly-over ramp design create a multiple-layer effect and several walls would be visible to residents of the manufactured home park, further blocking their views of the vegetated slope.

Design Option C-2 would have impacts to visual resources that are similar to **Alternative 2**.

Under **Design Option C-3**, the scores would be the same for View 13 as under **Alternative 2**, but lower than under than **Alternative 3**. The visual quality of View 14 would decrease from moderately high (5) to low (2). Vegetation removal, light and glare, and terrain modification would be more noticeable in the foreground

because the highway would be curving much closer to the Hubbard Terrace neighborhood.

Residents of the Hubbard Terrace neighborhood would be expected to be more sensitive to visual changes from this design option than from **Alternatives 2 and 3** or **Design Option C-2**. Residents of the Shadowbrook manufactured home park would also be quite sensitive to this design because the cut into the forested slope would substantially alter one of the few visual resources in their foreground view.

It is important to note that, under any of the alternatives and design options, land use and zoning in this area are anticipated to allow for future urbanization and development. The highway may speed up that development, but some degree of future urbanization and development is anticipated to occur with or without the highway.

Rock Creek Junction area

Viewer groups are primarily residents, motorists, bicyclists, and pedestrians. Expectations are based on the presence of several large, low-density neighborhoods, some vacant parcels, fairly unified and intact resources, the existing knoll formation, and two-lane highway corridor. There are a variety of visual resources, but commercial and industrial development influences views less than areas farther west. The existing visual quality in the Rock Creek Junction Area is moderately high (5).

Under **Alternative 1–No Build**, the proposed visual quality would decline to average (4). Road widening projects and the construction of a new arterial extending north of OR 224 at Rock Creek Junction would cause the visual impacts. Motorists and residents would likely have moderate sensitivity to visual change.

The proposed visual quality with **Alternative 2** would be low (2). Just west of the point where the new OR 212 bridge would cross over OR 224, OR 212 would be approximately 40 feet above existing grade level, higher than the existing highway. The proposed Sunrise Project would substantially expand that interchange.

Three residential developments in the Rock Creek Junction area could have views of the new interchange based on local topography: Riverwood manufactured home park, Orchard Lake neighborhood, and the Windswept Waters development. Riverwood residents, northwest of the interchange, have a partial to complete vegetative screen that would be thinned, increasing the visibility of vehicles on the roadway. Light and glare would substantially increase due to the highway's proximity to this manufactured home park.

The Orchard Lake neighborhood would continue to have numerous mixed trees to provide screening between the proposed Sunrise Project and this neighborhood.

The first phase of the Windswept Waters development is being constructed. The most sensitive viewers in Windswept Waters would be on the northeastern corner and eastern edge of the subdivision. These residents would have close views toward the interchange.

Viewers in the Rock Creek Junction area include motorists and residents, bicyclists, and pedestrians, as well as a very limited number of employees of local businesses. Motorists and employees would likely be focused on driving or working. However, the Rock Creek Junction area has higher existing visual quality than the I-205 Interchange and Midpoint areas. While the area is urbanizing in places, rural and suburban residential characteristics and relatively unified and intact views remain. The highway's elevation would likely allow more expansive views for motorists (especially eastbound).

Residents, bicyclists, and pedestrians east of the knoll would also have longer-duration views of the new highway and would be expected to be sensitive to visual changes. The expanded highway would be a larger facility than OR 212 and would encroach on existing agricultural fields and stands of trees that are visual resources for these residents.

Alternative 3 would have the same visual impacts as **Alternative 2** in the Rock Creek Junction area.

View S5 shows an approximate representation of how **Design Option D-2** could decrease visual quality from residences in the Hubbard Terrace neighborhood. View S6 shows an approximate representation of how the view north from the Oak Terrace neighborhood would be affected by the removal of the knoll under **Design Option D-2.** View S7 generally shows how views from the Windswept Waters development might look upon completion.

Design Option D-2 would cause similar impacts to visual resources as **Alternatives 2 and 3**. Residents east of the knoll would be expected to have similar sensitivity to this design option as to **Alternatives 2 and 3**.

Overall, the visual quality scores under **Design Option D-3** would be the same as under **Alternatives 2 and 3** and **Design Option D-2**.

Residents in the Riverwood manufactured home park would likely be slightly more sensitive to **Design Option D-3** and **Alternatives 2 and 3** than to **Design Option D-2** because the visual impacts would be closer. Residents east of the knoll would be expected to have slightly more sensitivity to **Design Option D-3** than to **Design Option D-2** because structures would be slightly higher.

Zoning in this area anticipates some non-residential use. The highway may speed up that development, but some degree of future urbanization and development is anticipated to occur with or without the highway.

New Views

The project would create new views from the new highway, adjacent roads, and the multi-use path improvements for motorists, pedestrians, and bicyclists. The new views would have approximately the same visual quality as the existing views. Removing the knoll in the Rock Creek Junction area would open up views for motorists traveling east or west. They would have more expansive views across the Clackamas River valley to the west and toward Mount Hood in the east, although the highway would be visible in the foreground in either direction. Motorists' new views would likely be of slightly better visual quality than under the existing conditions because they would be broader and more distant.

Indirect Effects

Indirect effects would be approximately the same for both build alternatives and the design options. Indirect effects from the project would potentially include increased traffic on the facility and adjacent roads that would affect key views by increasing light and glare over time. Also, increased movement through views by cars, trucks, pedestrians, and bicyclists would detract from the unity and cohesion of existing views, and it would potentially further distract viewers from other views beyond the immediate foreground.

Potential Mitigation Measures

Potential mitigation measures focus on mitigating effects to residents, pedestrians, and bicyclists who would be expected to be more sensitive to visual impacts than motorists or employees.

Mitigation measures consist of retaining and planting vegetation to screen the highway from adjacent viewers as follows:

- Retain existing vegetation at the eastern edge of the ball park at Sabin-Schellenberg Center and east of the apartment complex to the north.
- Plant native coniferous and deciduous trees at the south side of the highway near Oak Acres mobile home park.
- Retain existing vegetation south of residences on the bluff.
- Design an aesthetic design treatment for the walls at SE 135th Avenue and the

proposed project (visible from the mobile home park southeast of this intersection) and at the walls and structures at the new OR 212/224 interchange; use wall materials that complement the surrounding geology; and plant native trees and shrubs on slopes to help visually tie the interchange to surrounding vegetation and replace some of the lost vegetation.

- Plant native coniferous and deciduous trees along the north and south slopes of the highway between SE 135th Avenue and SE 152nd Drive to help screen sensitive viewers (i.e., residents of Hubbard Terrace and the mobile home park on the southeast corner of SE 135th Avenue and OR 212/224).
- Plant native coniferous trees along the north slope of the interchange near Riverwood mobile home park.
- Plant native coniferous trees in the southwest quadrant of the OR 212/224 interchange, particularly between the developing parcel and the new intersection, to screen viewers from headlights and taillights.
- Plant native coniferous trees and retain as many existing trees as possible in this area at the north end of SE Orchard View Lane.
- Plant native coniferous and deciduous trees between SE 162nd Avenue and SE 172nd Avenue on the south side of the new highway.

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View S1 from playing field southwest of the I-205 interchange – existing (left), project simulation (right).



View S2 from SE 97th Avenue – existing (left), project simulation (right).



View S3 toward the east from just north of Oak Acres mobile home park – existing (left), project simulation (right).



View S4 looking northwest from southeast of the intersection of Highway 212/224 and SE 135th Avenue – existing (left), project simulation (right).



View S5 shows how **Design Option D-2** could decrease visual quality from residences on Hubbard Terrace neighborhood – existing (left), project simulation (right).



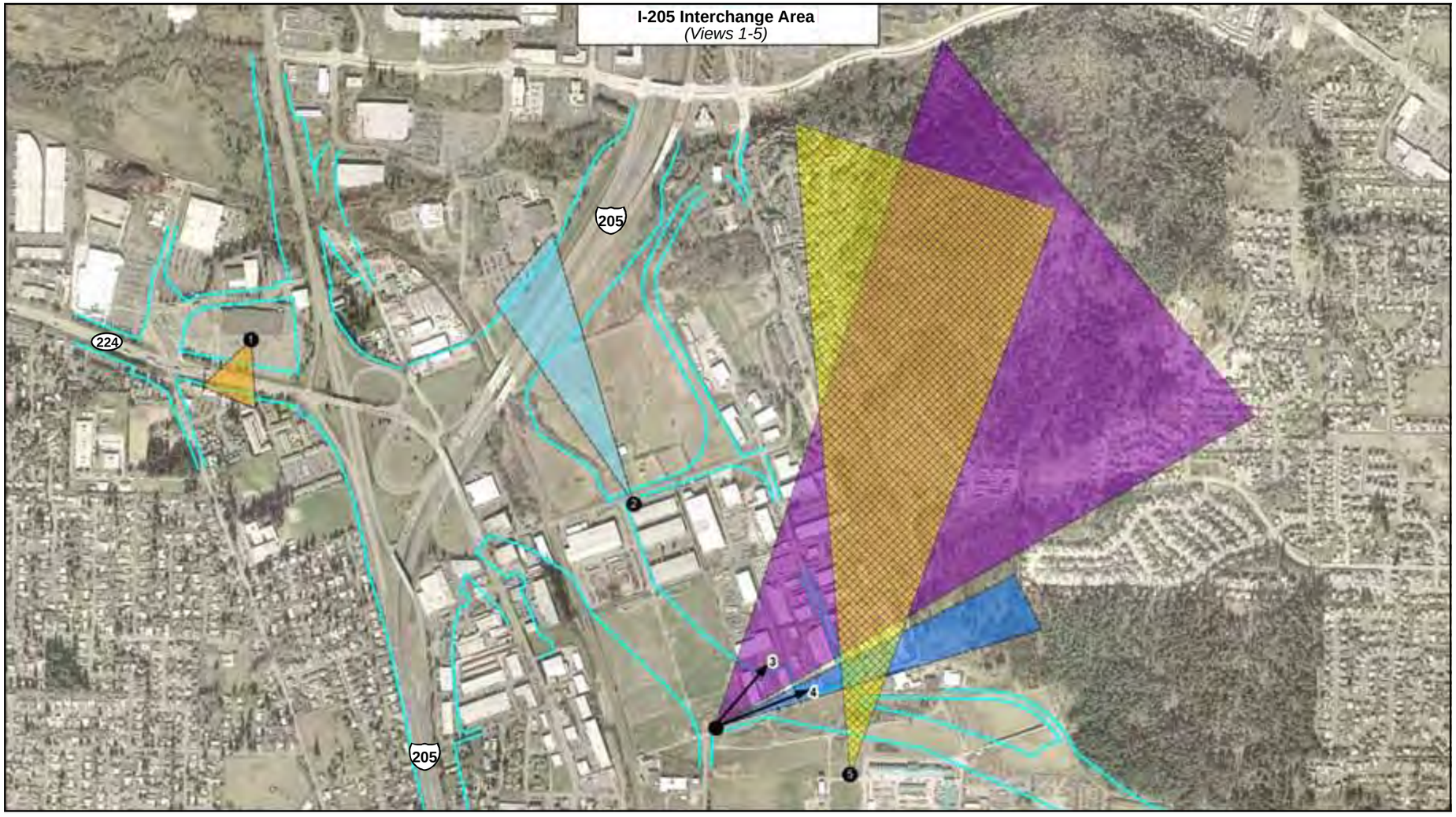
View S6 shows that under **Design Option D-2** the view north from the Oak Terrace neighborhood would be affected by the removal of the knoll – existing (left), project simulation (right).





View S7 shows the Windswept Waters development and how the neighborhood may look upon completion – existing (left), project simulation (right).

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0 650 1,300 2,600 Feet

N

Sources:
ODOT, Metro, Portland OR and Parsons Brinckerhoff

Legend:

- View
- Viewshed 1
- Viewshed 2
- Viewshed 3
- Viewshed 4
- Viewshed 5
- Project Corridor *

**This generally shows the areas within which all alternatives and design options would be contained*

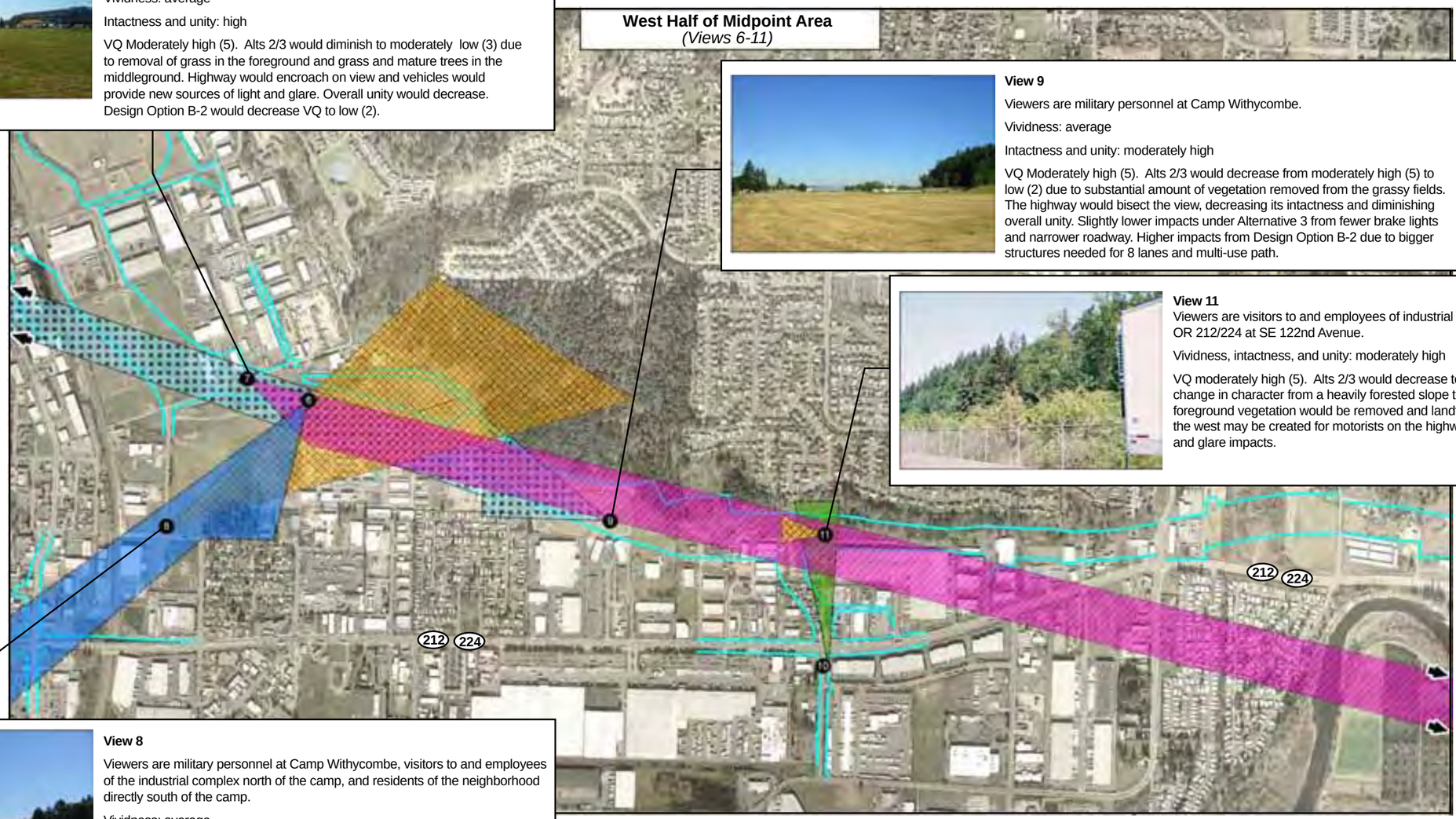
NOTE: Photos for views scoring moderately high are included. There are no moderately high (5) values in this area.

Figure 44

I-205 Interchange Area Viewsheds

Sunrise Project, I-205 to Rock Creek Junction

West Half of Midpoint Area
(Views 6-11)





View 7

Viewers are employees at Camp Withycombe and visitors to and employees of the industrial complex north of the camp. Some residents see this view as they walk, run, or ride their bicycles along Industrial Way and SE Mather Road.

Vividness: average

Intactness and unity: high

VQ Moderately high (5). Alts 2/3 would diminish to moderately low (3) due to removal of grass in the foreground and grass and mature trees in the middleground. Highway would encroach on view and vehicles would provide new sources of light and glare. Overall unity would decrease. Design Option B-2 would decrease VQ to low (2).

View 9

Viewers are military personnel at Camp Withycombe.

Vividness: average

Intactness and unity: moderately high

VQ Moderately high (5). Alts 2/3 would decrease from moderately high (5) to low (2) due to substantial amount of vegetation removed from the grassy fields. The highway would bisect the view, decreasing its intactness and diminishing overall unity. Slightly lower impacts under Alternative 3 from fewer brake lights and narrower roadway. Higher impacts from Design Option B-2 due to bigger structures needed for 8 lanes and multi-use path.

View 11

Viewers are visitors to and employees of industrial facilities north of OR 212/224 at SE 122nd Avenue.

Vividness, intactness, and unity: moderately high

VQ moderately high (5). Alts 2/3 would decrease to low (2) due to considerable change in character from a heavily forested slope to six-lane highway. Most foreground vegetation would be removed and landform graded. New views to the west may be created for motorists on the highway. Substantial new light and glare impacts.



View 8

Viewers are military personnel at Camp Withycombe, visitors to and employees of the industrial complex north of the camp, and residents of the neighborhood directly south of the camp.

Vividness: average

Intactness and unity: high

VQ Moderately high (5). Alts 2/3 would decrease to average (4) due to highway crossing through the middleground in front of bluff. Highway, declining from left to right, would partially block views of some of the vegetation on the bluff.

0 750 1,500 3,000 Feet

N

Sources:
ODOT, Metro, Portland OR and Parsons Brinckerhoff

Legend:
- View
- Viewshed 6
- Viewshed 7*
- Viewshed 8
- Viewshed 9*
- Viewshed 10
- Viewshed 11
- Project Corridor **

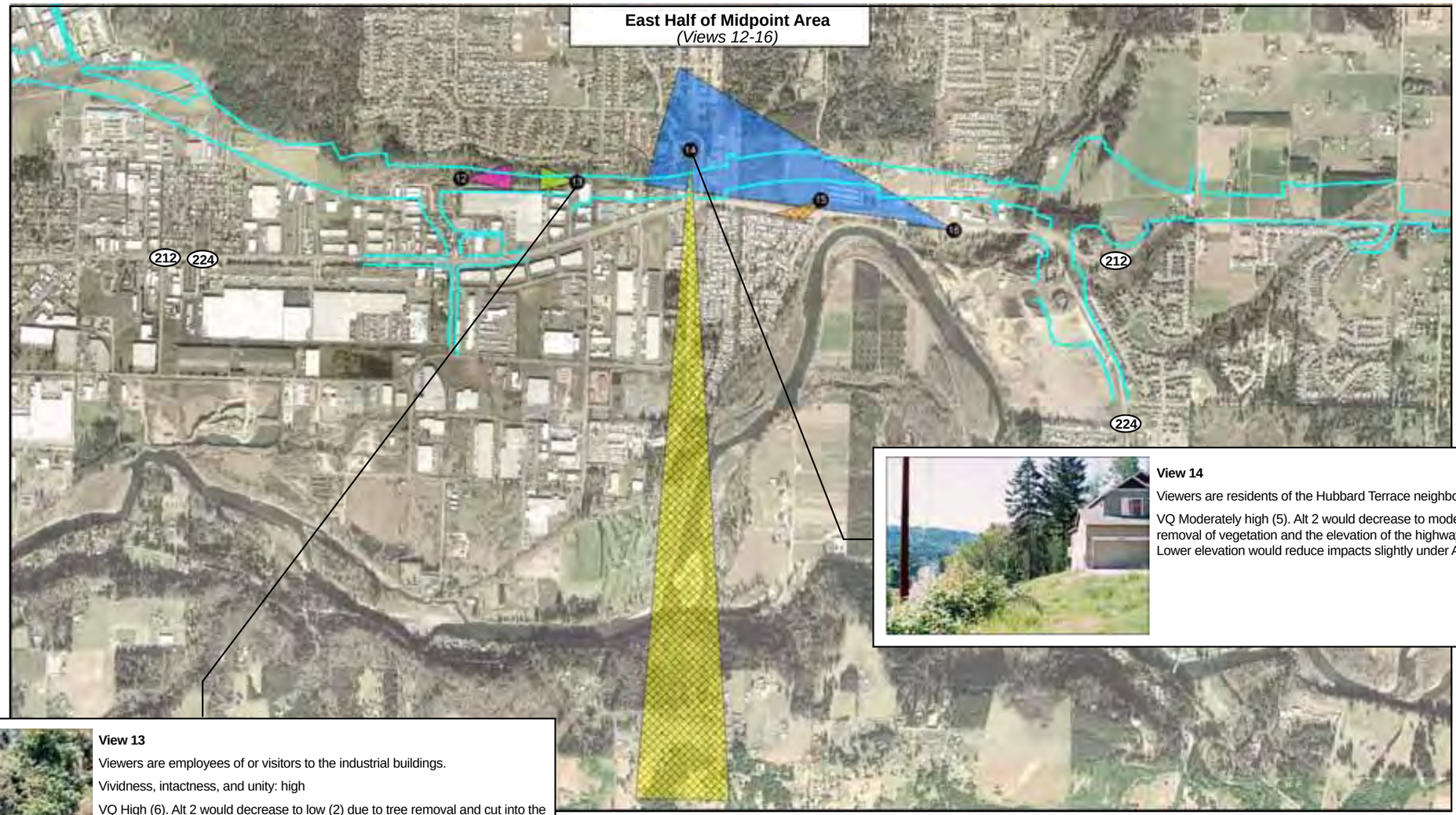
*Viewshed extends beyond map extent. **This generally shows the areas within which all alternatives and design options would be contained.

NOTE: Photos for views scoring moderately high are included. Views 7, 8, 9, and 11 scored moderately high (5).

Figure 45

West Half of Midpoint Area Viewsheds

Sunrise Project, I-205 to Rock Creek Junction



View 14

Viewers are residents of the Hubbard Terrace neighborhood.

VQ Moderately high (5). Alt 2 would decrease to moderately low (3) due to the removal of vegetation and the elevation of the highway 30 feet above grade. Lower elevation would reduce impacts slightly under Alt 3.



View 13

Viewers are employees of or visitors to the industrial buildings.

Vividness, intactness, and unity: high

VQ High (6). Alt 2 would decrease to low (2) due to tree removal and cut into the slope to level the terrain. The remaining slope would be supported by a retaining wall. Six travel lanes, signs, lights, and traffic would encroach, reducing intactness. Alt 3 would decrease VQ to moderately low (3), with less impact than Alt 2 due to lack of interchange.

0 1,000 2,000 4,000 Feet

N

Legend:

- View
- Viewshed 12
- Viewshed 13
- Viewshed 14
- Viewshed 15
- Viewshed 16
- Project Corridor *

**This generally shows the areas within which all alternatives and design options would be contained.*

Sources:
ODOT, Metro, Portland OR and Parsons Brinckerhoff

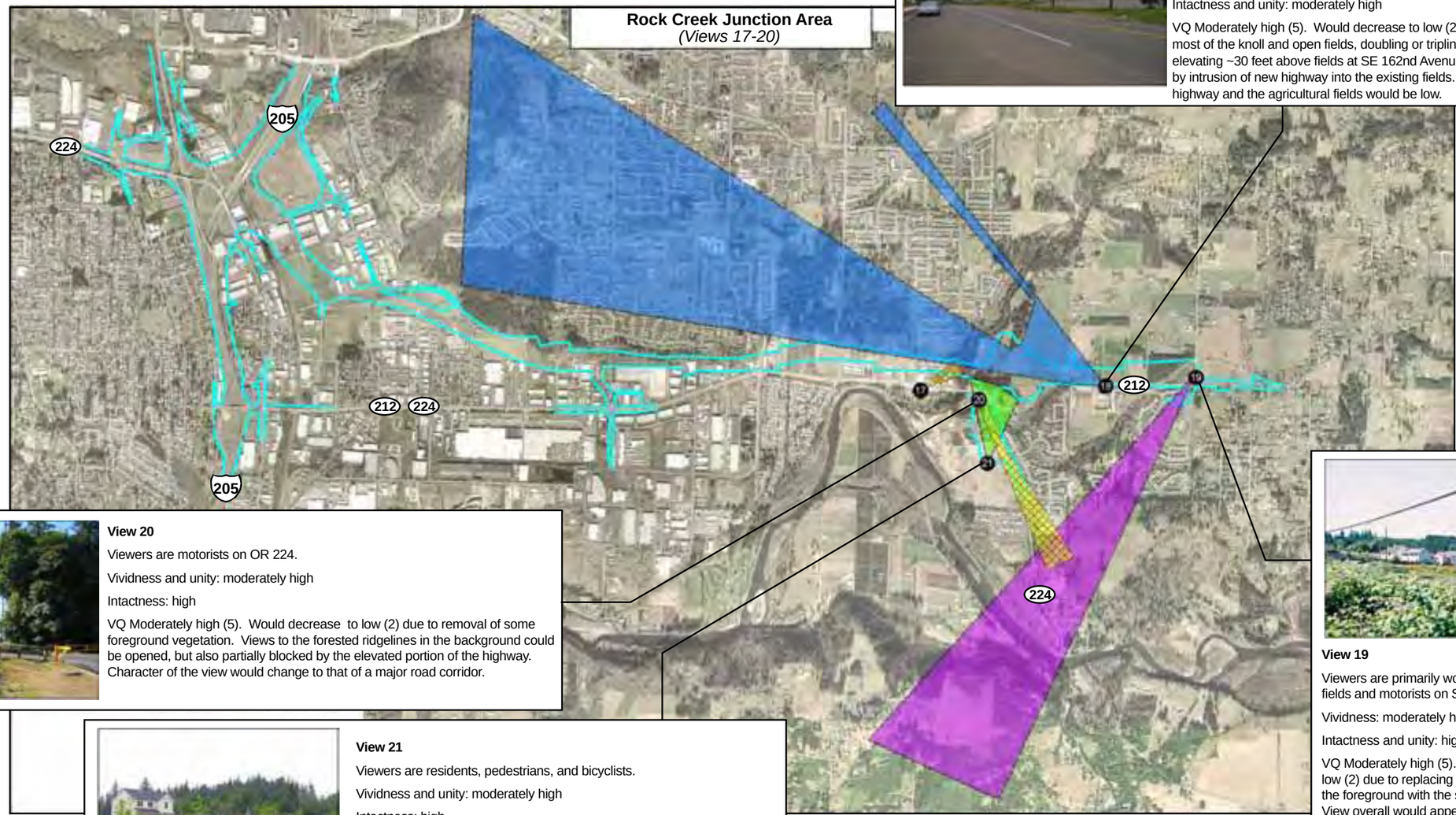
NOTE: Photos for views scoring moderately high are included. Views 13 and 14 scored moderately high (5).

Figure 46

East Half of Midpoint Area Viewsheds

Sunrise Project, I-205 to Rock Creek Junction

Rock Creek Junction Area
(Views 17-20)





View 18

Viewers are residents of the neighborhood east of the Sunnyside Community Church, especially those living on the northwest corner of the development, and pedestrians walking along OR 212/224.

Vividness: average

Intactness and unity: moderately high

VQ Moderately high (5). Would decrease to low (2) due to highway replacing most of the knoll and open fields, doubling or tripling the visible pavement and elevating ~30 feet above fields at SE 162nd Avenue. View's intactness decreased by intrusion of new highway into the existing fields. Unity between the man-made highway and the agricultural fields would be low.



View 20

Viewers are motorists on OR 224.

Vividness and unity: moderately high

Intactness: high

VQ Moderately high (5). Would decrease to low (2) due to removal of some foreground vegetation. Views to the forested ridgelines in the background could be opened, but also partially blocked by the elevated portion of the highway. Character of the view would change to that of a major road corridor.



View 21

Viewers are residents, pedestrians, and bicyclists.

Vividness and unity: moderately high

Intactness: high

VQ Moderately high (5). Would decrease to moderately low (3) due to removal of the knoll and new elevated structure on OR 224. Visibility of parts of the OR 224 structure would impose a more noticeable man-made, linear feature on the view.



View 19

Viewers are primarily workers in the agricultural fields and motorists on SE 172nd Avenue.

Vividness: moderately high

Intactness and unity: high

VQ Moderately high (5). Would decrease to low (2) due to replacing the vegetated field in the foreground with the six-lane intersection. View overall would appear more bisected between the developed intersection and housing development in the foreground and the vegetated slopes in the middleground and background.

0 1,750 3,500 7,000 Feet

N

Sources:
ODOT, Metro, Portland OR and Parsons Brinckerhoff

Legend:
- View
- Viewshed 17
- Viewshed 18
- Viewshed 19
- Viewshed 20
- Viewshed 21
- Project Corridor *

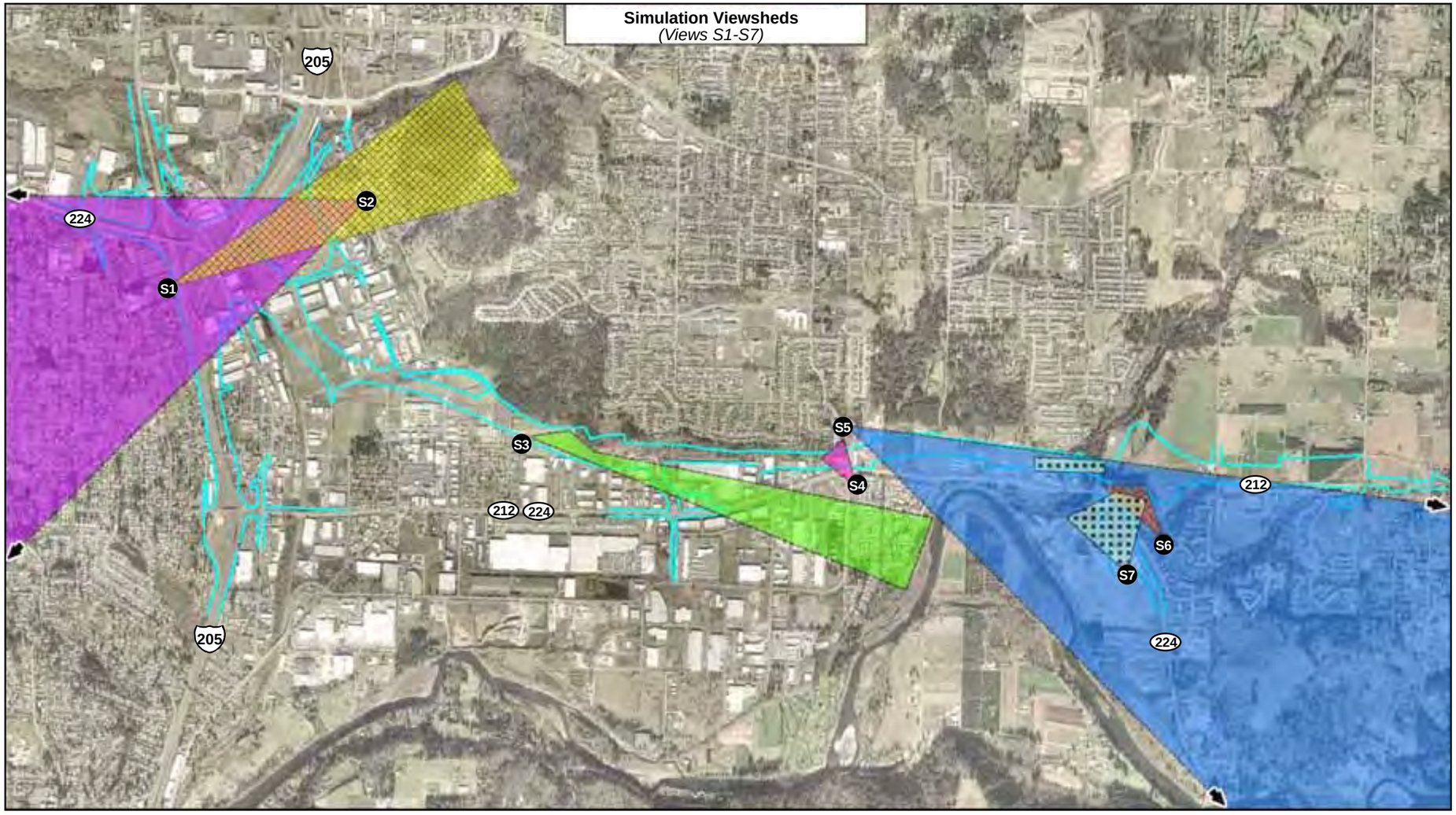
**This generally shows the areas within which all alternatives and design options would be contained.*

NOTE: Photos for views scoring moderately high are included. Views 18, 19, 20, and 21 scored moderately high (5).

Figure 47

Rock Creek Junction Area Viewsheds

Sunrise Project, I-205 to Rock Creek Junction



0 1,500 3,000 6,000 Feet

N

Sources:
ODOT, Metro, Portland OR and Parsons Brinckerhoff

Legend:

- View
- Viewshed S1
- Viewshed S2
- Viewshed S3
- Viewshed S4 *
- Viewshed S5 *
- Viewshed S6
- Viewshed S7
- Project Corridor **

Viewshed extends beyond map extent.* *****This generally shows the areas within which all alternatives and design options would be contained.*

Figure 48

Simulation Viewsheds

Sunrise Project, I-205 to Rock Creek Junction

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Noise

Noise impacts are typically determined by using a computer model to predict existing and future noise levels for a project. Sound level measurements are taken in some locations to provide a comparison of existing measured and modeled conditions to validate use of the model. Whether the changes would create an "impact" depends on how much worse than existing conditions noise would become at specific locations (called a substantial increase) or whether the expected noise would reach an absolute threshold noise level. Sometimes impacts meet both the absolute and relative increase criteria.

ODOT's impact criteria for the relative change in noise levels is 10 dBA or more over existing noise levels. A 10 dBA increase is perceived as a doubling of loudness. A 3 dBA increase is the minimum that is normally perceptible to people. ODOT's absolute impact criteria are different for different land uses. (See Land Use section for a description of land uses in the project area.) The absolute criteria are as follows:

- 65 L_{eq}-dBA *exterior use areas of* residences, recreation sites, places of worship, schools, libraries and hotels;
- 50 L_{eq}-dBA *inside* residences, recreation sites, places of worship, schools and hotels; and
- 70 Leq-dBA outside commercial and industrial sites.

Traffic noise impacts typically occur within about 500 feet of a roadway, but can reach farther if noise is predicted to increase substantially.

dBA means A-weighted decibels. For comparative purposes, human breathing is approximately 10 dBA, a calm room ranges 40-50 dBA, normal talking ranges 40-60 dBA, typical television setting is about 60 dBA at 10 feet, and a passing car is 60-80 dBA at 50 feet.

Noise impacts occur when traffic noise levels exceed the ODOT impact criteria or if levels increase by 10 dBA or more over existing levels.

The Noise Technical Report on the attached DVD provides details on the following:

- Federal and state regulations and standards
- Methodology
- Affected environment
- Environmental consequences
- Proposed abatement

Appendix A contains general information on noise levels and measurements.

Appendix B contains traffic data used in the noise analysis.

Appendix C contains monitoring data.

Appendix D contains electronic validation Traffic Noise Model files.

Project Area Impacts

Noise monitoring of existing conditions showed that noise levels adjacent to I-205 and OR 212/224 currently exceed the ODOT absolute noise impact criteria except in some areas with existing sound walls, such as west of I-205 and the residential area east of OR 224 south of Rock Creek Junction.

The Traffic Noise Model computer model was used to predict future sound levels from the traffic volumes projected for 2030. Noise levels were predicted for 175 noise prediction sites representing 574 residential units, schools, commercial, or industrial properties. Sound levels were predicted at 5 feet above ground level in most locations. At a few properties, sound levels were predicted at second, third, or fourth floor heights. Figure 49, Noise Impact Sites (p. 131) shows approximate locations where sound levels were predicted in the noise model and identified whether the impact was due to noise exceeding either the absolute or relative increase criteria, or both. At some locations, the road will move away from some properties, and sound levels are expected to diminish if the project is built.

Alternative 1–No Build

Noise from traffic would increase in the project area as traffic volumes increase between 2005 and 2030. Noise levels are predicted to increase by 1 to 2 dBA over existing levels next to roadways that do not have planned improvements (such as road and bridge widening, construction of a new connector road, or the addition of a climbing lane). In areas where improvements are planned, future noise levels would increase from 3 to 4 dBA. This includes areas north of OR 212/224, adjacent to OR 224 south of Rock Creek Junction, and north of Carver Bridge.

Alternatives 2 and 3

Noise level projections for **Alternatives 2 and 3** are essentially identical (within 1 dBA) in areas where the alignment is the same. Properties that would only be affected by one build alternative are noted. The locations of sound levels area also presented (Figure 49, p. 131) where they are predicted to decrease, because those properties would be farther from the proposed alignment than from existing OR 212/224.

Table 14 summarizes the total number of residential, commercial, and institutional properties impacted by alternative and design option. Noise impacts remaining after inclusion of abatement measures determined to be reasonable and feasible are also listed.

Table 14. Number of Noise Impacts for Existing Conditions and Project Alternatives (without/with Abatement)

	Residential Impacts		Commercial / Industrial Impacts		School Impacts		Total[1]
	Exceeds Absolute Threshold	Substantial Increase over Existing (>10 dBA)	Exceeds Absolute Threshold	Substantial Increase over Existing (>10 dBA)	Exceeds Absolute Threshold	Substantial Increase over Existing (>10 dBA)	
Existing	179		9		1		189
Alternative 1	225	0	20	0	1	0	246
Alternatives 2 and 3[1]	296 / 143	111 / 69	19 / 17	5 / 5	1 / 0	0 / 0	352 / 175
I-205 Interchange Area							
Alternative 2	155 / 43	0	18 / 16	4 / 4	1 / 0	0	174 / 59
Design Option A-2	163 / 51	0	18 / 16	4 / 4	1 / 0	0	182 / 67
Midpoint Area: SE 106th Avenue to SE 135th Avenue							
Alternative 2	103 / 99	101 / 78	1	5	0	0	144 / 121
Alternative 3	100 / 96	121 / 98	1	5	0	0	141 / 118
Design Option B-2	94 / 90	91 / 68	1	8	0	0	134 / 111
Midpoint Area: SE 135th Avenue to SE 152nd Avenue							
Alternatives 2/3	93 / 82	58 / 45	0	0	0	0	97 / 84
Design Option C-2	78 / 67	40 / 27	0	0	0	0	81 / 68
Design Option C-3	78 / 67	81 / 68	0	0	0	0	83 / 70
Rock Creek Junction Area							
Alternative 2/3	25 / 19	10 / 4	0	0	0	0	25 / 19
Design Option D-2	27 / 13	7 / 7	0	0	0	0	31 / 17
Design Option D-3	20 / 14	7 / 1	0	0	0	0	24 / 18

[1]Impacts are not changed by the midpoint interchange and resulting traffic volumes. Differences in impacts are caused by variations in alignment with the alternatives and design options. Only noise prediction sites affected by the alignment changes are shown in the impacts for the area summaries and so are not directly comparable to the total alignment impacts.

Noise levels adjacent to I-205 and to OR 212/224 are predicted to be above the ODOT noise impact criteria except in some areas that already have sound walls. Overall, noise levels were predicted to increase by up to 20 dBA over levels under **Alternative 1**. Sound levels at properties adjacent to the proposed alignment would generally exceed ODOT absolute noise impact criteria and would also exceed the substantial increase criteria in many locations.

Construction of **Alternatives 2 and 3** may cause localized, short-duration noise impacts. Clackamas County exempts construction noise from regulations between the hours of 6 AM and 10 PM. Use of standard ODOT specifications for control of noise sources during construction can minimize construction impacts. The ODOT specifications are described below under the heading titled Potential Abatement Measures.

I-205 Interchange area

Under **Alternatives 2 and 3**, portions of the residential areas west of I-205 are predicted to have improved noise conditions compared to **Alternative 1–No Build** because the main line of I-205 would move slightly to the east. However, the shift to the east increases noise levels on the east side of I-205 and several multifamily units and a school would experience sound levels exceeding the absolute threshold.

Six locations at the north side of the manufactured home park east of SE 106th Avenue are predicted to undergo substantial noise increases ranging from 13 to 19 dBA over existing levels, but only one location would have predicted noise levels above the absolute noise impact criteria.

Design Option A-2 affects sound levels at a small number of locations relative to **Alternatives 2 and 3** in the same area. **Design Option A-2** would decrease noise levels adjacent to the proposed connector roads in the Lawnfield area. A slight increase in sound levels adjacent to SE 97th Avenue would occur because traffic would not be diverted from this area as it is for **Alternatives 2 and 3**. **Design Option A-2** increases the number of residential noise impacts in the I-205 Interchange area by eight residences.

Midpoint area

Substantial increases in noise levels would impact the residential area north of the proposed Sunrise Project, on Diamond Court and SE Bluff Drive. Numerous residences would also exceed the absolute threshold. East of SE 135th Avenue and north of the proposed highway alignment, several isolated residences and a new, partially developed neighborhood would have substantial increases; however, the absolute noise impact criterion is predicted to be exceeded only at the portions of the new development located closest to SE 142nd Avenue.

Noise levels at properties adjacent to the proposed Sunrise Project and west of SE 152nd Avenue would exceed the substantial impact and absolute impact criteria.

Design Option B-2 would slightly reduce residential impacts. Most of the changes in impacts are due to small changes in sound levels for properties with predicted levels right at the impact criterion of 65 dBA.

Differences among impacts for **Design Options C-2 and C-3** are primarily driven by whether or not the new development north of the alignment and east of SE 142nd Avenue is impacted and the apartments just west of SE 135th Avenue are impacted.

Rock Creek Junction area

Numerous properties south of the proposed alignment between SE 162nd and SE 172nd Avenues would undergo a decrease in noise impacts compared to both existing conditions and **Alternative 1**. One location would be impacted under **Alternative 2** but not **Alternative 3**, and another location would be impacted under **Alternative 3** but not **Alternative 2**.

Changes in the number of impacts between **Design Options D-2 and D-3** result from variations at individual properties with changes in the alignments that occur in several areas.

Indirect Effects

Noise impacts are generally direct. The effects of growth in the proposed Sunrise Project area are included in the predicted sound levels as a result of the cumulative traffic data used. The forecast traffic volumes used in this analysis were based on land use and employment forecasts and included traffic from all sources, including projected development in the area.

Potential Abatement Measures

Several methods of noise abatement were considered to mitigate impacts, such as truck restrictions, speed restrictions, and alignment changes. Federal funds may be used for noise abatement measures when an impact has been identified, the measures would substantially reduce the noise impact (feasibility criteria), and the overall benefits from abatement outweigh other potential adverse effects and the cost of abatement (reasonableness criteria). ODOT has procedures and guidelines to determine whether proposed abatement meets the criteria for feasibility and reasonableness.

Of all abatement measures considered, noise walls appear to be the most feasible form of mitigation for the proposed Sunrise Project. Restricting trucks and speed on the proposed Sunrise Project would not meet the purpose and need for the project. Changes in alignment were considered with all of the design options. In addition, further potential alignment changes were analyzed for the Bluff neighborhood, as discussed in detail in the Noise Technical Report. Generally, changes in alignment shift impacts to other properties. In some cases, the changes in horizontal or vertical alignment affect the number and location of traffic noise impacts.

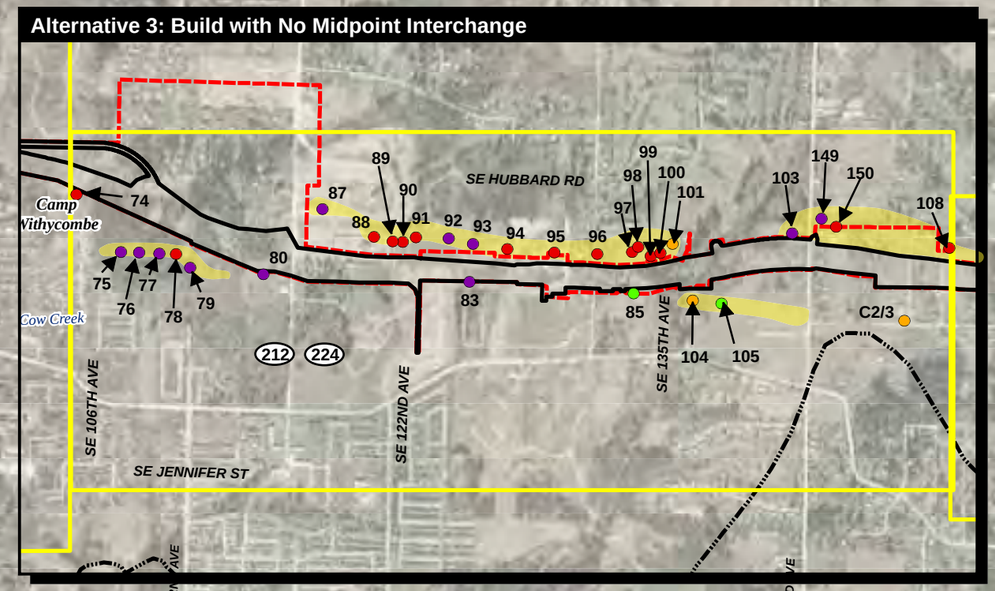
Fifteen sound walls were considered and 14 were analyzed for reasonableness (see Figure 50, p. 132). Nine of those analyzed are recommended for inclusion in the project: 1, 2, 3, 4, 6, 11, 13, 14 (**Design Option D-2** only) and 15. Wall 5 is recommended for special consideration because although it would be constructed in an area planned for future commercial use, there would be good noise reductions of severe predicted impacts, the residences are expected to remain for 10 to 15 years, and the costs are within guidelines. The other five walls did not meet either the feasibility or reasonableness criteria.

The noise abatement effects of the nine noise walls on the number of impacts are listed in Table 14 (p. 128). The total cost for the nine recommended sound walls is approximately $3.5 million. The approximate cost for the additional wall proposed for special consideration is $200,000.

Noise walls analyzed in the I-205 Interchange area were found to be effective at reducing noise levels and most walls met the ODOT reasonableness criteria. Consequently, noise impacts in this zone can be expected to be well mitigated. Noise abatement analyzed in the Midpoint area was generally found to be either ineffective at reducing sound levels or costs were too high to meet the ODOT reasonableness criteria. The exceptions are the manufactured home park east of SE 106th Avenue and an area north of the proposed Sunrise Project east of SE 142nd Avenue, for which abatement appears reasonable and feasible. As a result, residential units in neighborhoods at the top of the bluff have the potential for unmitigated and substantial noise increases as a result of the proposed build alternatives. Impacts in the Rock Creek Junction area could be partially mitigated.

Noise studies completed to date appear to indicate that the recommended sound walls will be considered for incorporation into the final design of the project. A final decision on installing sound walls would be made upon completion of the project design and the public involvement process, and the noise mitigation will be disclosed in the Record of Decision. During the final project design, the walls would be re-evaluated to determine whether the feasibility and reasonableness criteria are still met. If conditions have significantly changed by that time, the sound walls may not be provided. The scenic views of the affected residences and their approval of the abatement measures would be considered in the final abatement decision.

Alternative 3: Build with No Midpoint Interchange



NOTE: 175 sites were evaluated for impacts. This figure shows sites that exceed the impact criteria. The exceptions are the green dot sites, where the increase in the noise level would not be an impact under the build alternatives but would be an impact under the No Build Alternative. Not shown are sites that had noise levels below the absolute or substantial increase impact criteria (except for the green dot locations).

Differences of Design Options

10	A-2 Only	**103**	No Criteria Exceeded under B-2, C-2	**C2-1**	C-3 Only
83	B-2 Only	**104**	No Criteria Exceeded under B-2, C-3	**C2-3**	C-3 Only
84	B-2 Only	**108**	C-2, D-2, D-2 and C-2, D-2, D-3 (3rd & 4th floors)	**C3-3**	C-3 Only
88	B-2 Only	**110**	C-2, D-2, D-3	**D2 & 3-2**	D-2 Only
98	C-3 Only	**116**	No Criteria Exceeded under C-2, C-3		
100	C-2 Only	**128**	D-2, D-3		
101	C-3 Only	**148**	D-2, D-3		
		149	No Criteria Exceeded under B-2, C-2		

2,000 0 2,000 Feet

Sources:
ODOT and Metro, Portland OR

Legend

- Urban Growth Boundary (UGB)
- Project Subareas
- Construction Impact Line
- Right-of-Way

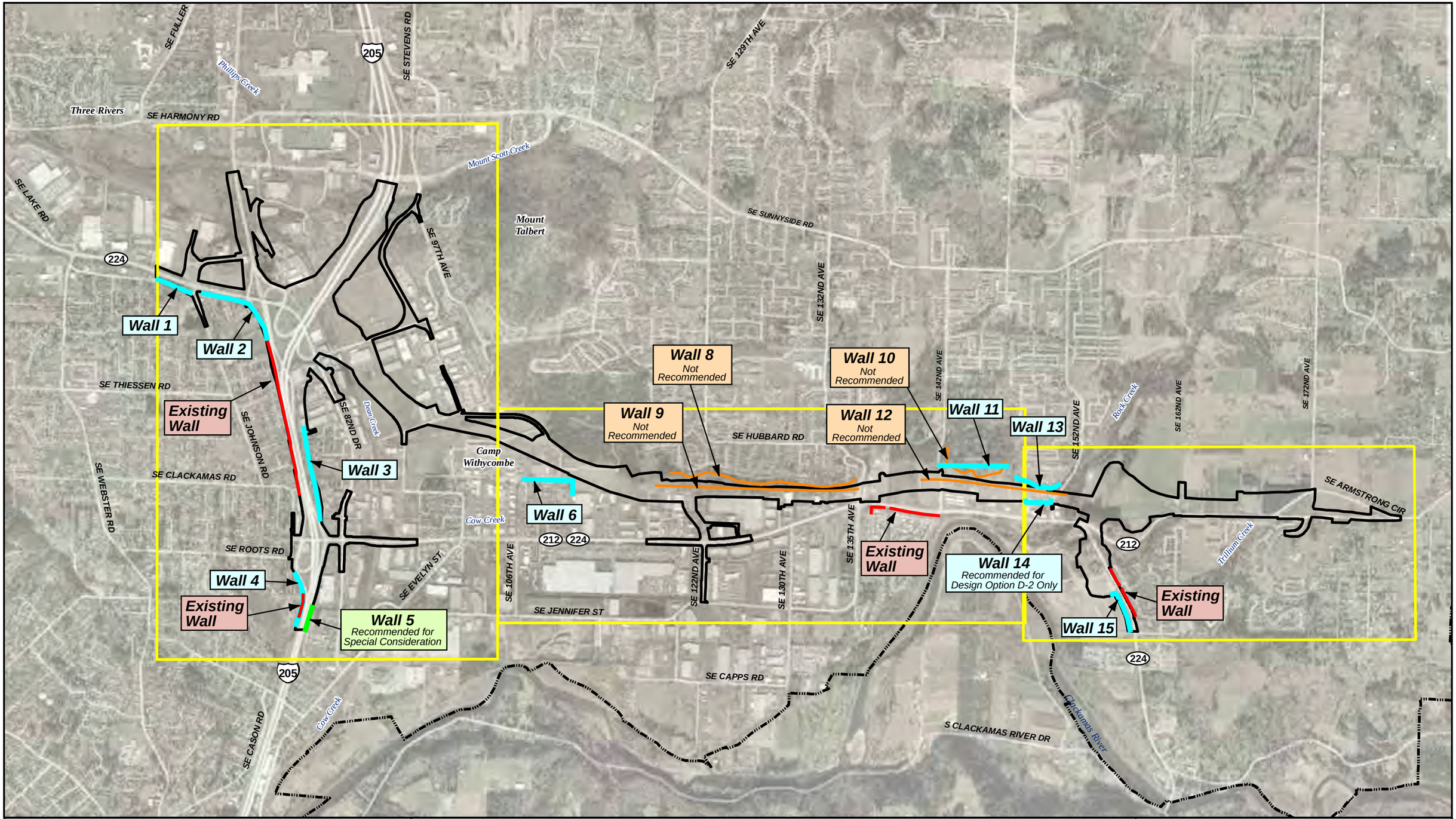
Predicted Noise Impact Locations

- Exceeds Absolute Criteria Only
- Exceeds Absolute and Substantial Increase Criteria
- No Noise Impact and Lower Noise Level than Alternative 1
- Exceeds Significant Increase Criteria Only
- General Locations of Noise Prediction Sites

Figure 49

Noise Impact Sites, Alternatives 2 and 3

Sunrise Project, I-205 to Rock Creek Junction



2,000 0 2,000 Feet

Sources:
ODOT and Metro, Portland OR

Legend

- Urban Growth Boundary (UGB)
- Project Subareas
- Construction Impact Line

Noise Walls

- Existing
- Recommended for Inclusion in the Project
- Recommended for Special Consideration
- Not Recommended

Figure 50

Noise Walls

Sunrise Project, I-205 to Rock Creek Junction

Map Document: (P:\O\ODOT00000548\0600INFO\GS\arcmap\EIS Figures\Fig_4_Noise.mxd)
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Air Quality

Air quality impacts are closely tied to traffic impacts. Air quality was analyzed on both a local and regional basis for the SDEIS. The study area includes existing roadways, planned new roadways, and local, poorly performing intersections where changes in traffic volumes would occur as a result of the project. The Environmental Protection Agency (EPA) is responsible for the establishment of National Ambient Air Quality Standards (NAAQS), national guidance, and guidelines for the uniform and scientifically reliable study of air pollutants.

The Air Quality Technical Report on the attached DVD contains more details about the following:

- Federal and state laws and regulations, including the Clean Air Act, National Environmental Policy Act of 1969, National Ambient Air Quality Standards, control of emissions, Mobile Source Air Toxics, and impacts analyses
- Discussion of emission estimates, dispersion, and exposure levels and health effects
- Existing air quality including monitoring data, air quality trends, and air toxics assessment
- Environmental consequences
- Mitigation measures

Project Area Impacts

The proposed Sunrise Project is located within the Portland carbon monoxide maintenance area and the Portland Air Quality Maintenance Area. The Portland Air Quality Maintenance Area is an attainment area for ozone, and a plan is in place to maintain compliance with the NAAQS. In the Portland metropolitan area, the primary pollutants from transportation projects are nitrogen oxides, volatile organic compounds, and carbon monoxide. Other pollutants of concern for transportation projects can be fine and very fine particulates.

National Ambient Air Quality Standards are standards used to measure air quality, expressed as concentrations of pollutants averaged over fixed time periods.

Attainment and maintenance areas refer to a region's ability to meet the National Ambient Air Quality Standards and to maintain them over time.

Mobile Source Air Toxics refer to several hazardous air pollutants that cause or may cause cancer or other serious health effects.

Because a new roadway would be constructed where a road has not previously existed, areas in the immediate vicinity of the new road would receive increased emissions and increased concentrations of traffic-related pollutants.

Analysis of emissions is based on the number of vehicle miles traveled (VMT). An emissions analysis performed for the study area concluded that emissions of carbon monoxide and fine particulates are expected to increase in the future under all alternatives. There is effectively no difference in VMT and corresponding pollutant emission levels between **Alternatives 2 and 3**.

VMT increases by nearly 20 percent for **Alternatives 2 and 3** over **Alternative 1–No Build** because of the additional capacity provided by the proposed Sunrise Project. The different design options do not show a significant variance in VMT and, consequently, the design options do not result in different levels of air pollutant emissions. Therefore, only impacts from the build alternatives are discussed.

Alternatives 2 and 3 would result in more emissions compared to **Alternative 1–No Build**. Area-wide emissions of nitrogen oxides, volatile organic compounds, and very fine particulates are expected to decrease in the future relative to existing conditions but overall emissions would be greater with the proposed Sunrise Project than without it.

The air quality analysis for the proposed Sunrise Project included evaluation of localized impacts from carbon monoxide at the three worst-performing intersections affected by the project alternatives (OR 224 and Webster Road, SE 82nd Drive and SE Jennifer Street, and OR 212/224 and SE 82nd Drive). The results of the analysis showed that the NAAQS are not

expected to be exceeded in the opening year after construction (2012) or by 2030 at any location for any alternative.

The Clean Air Act Amendments of 1990 identify 188 air toxics, also known as hazardous air pollutants. The EPA defines air toxics as pollutants that cause or may cause serious health effects. The EPA assessed this expansive list of toxics and identified a group of 21 as Mobile Source Air Toxics (MSATs), which are set forth in an EPA final rule, Control of Emissions of Hazardous Air Pollutants from Mobile Sources (66 FR 17235). From the list of 21 MSATs, EPA identified six toxics as priority MSATs: benzene, formaldehyde, acetaldehyde, diesel exhaust (particulate matter/diesel exhaust organic gases), acrolein, and 1,3-butadiene. Although these MSATs are considered the priority transportation-related toxics, EPA emphasizes that the lists are subject to change and may be adjusted in future rules.

To date, there are no NAAQS for MSATs, and there are no established criteria for determining when MSAT emissions should be considered a significant issue. In its February 2006 interim guidance for MSATs in NEPA documents, the FHWA identified three levels of analysis:

- No analysis for projects with no potential for meaningful MSAT effects;
- Qualitative analysis for projects with low potential MSAT effects; and
- Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

Greater potential for MSAT effects typically occurs for roadways with an annual average daily traffic (AADT) volume of 140,000 to 150,000 vehicles or more per day in 2030 (design year). The average daily traffic (ADT) volume is forecast to be 93,500 for Alternative 2 and 95,700 for Alternative 3 in 2030, resulting in low potential for MSAT impacts. Because they are not adjusted for lower traffic volumes on weekends, ADT volumes are typically slightly higher than AADT volumes. Therefore, a qualitative analysis for the Sunrise SDEIS is recommended by FHWA. To provide additional information for decision-makers and the public, a simplified calculation method was used to estimate annual study area emissions of MSATs based on (1) vehicle miles traveled (VMT) for **Alternative 1–No Build** and the build alternatives, and (2) the study area average MOBILE 6.2 emission factors (see discussion below under "Emissions").

For each alternative, the amount of Mobile Source Air Toxics emitted would be proportional to the VMT, assuming that other variables are the same. The proposed Sunrise Project would add capacity so VMT is higher and the study area emissions for the build alternatives relative to **Alternative 1–No Build** are higher. Overall, future Mobile Source Air Toxics emissions are predicted to be lower than existing emissions due to vehicle emission controls that are expected to come into effect over the next 25 years. **Alternatives 2 and 3** would result in higher emissions by 2030 than under **Alternative 1**, but there is no difference between **Alternatives 2 and 3**.

Mobile Source Air Toxic Impact Analysis

This subsection provides a basic discussion of the issues associated with MSAT emission impact analysis for projects such as the proposed Sunrise Project. Available technical tools do not enable prediction of the project-specific health impacts resulting from the emission changes associated with the Sunrise Project. Due to these limitations, the following discussion is included in accordance with Council on Environmental Quality regulations (40 CFR 1502.22(b)) regarding incomplete or unavailable information.

Unavailable or incomplete information

Evaluating the environmental and health impacts from MSATs on a proposed highway project would involve several key elements, including emissions modeling, dispersion modeling in order to estimate ambient concentrations resulting from the estimated emissions, exposure modeling in order to estimate human exposure to

the estimated concentrations, and then final determination of health impacts based on the estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science that prevents a more complete determination of the MSAT health impacts of this project.

Emissions

The EPA tools for estimating MSAT emissions from motor vehicles are not sensitive to key variables that determine emissions of MSATs in the context of highway projects. While MOBILE 6.2 is used to predict emissions at a regional level, it has limited applicability at the project level. MOBILE 6.2 is a trip-based model; emission factors are projected based on a typical trip of 7.5 miles and on average speeds for this typical trip. This means that MOBILE 6.2 does not have the ability to predict emission factors for a specific vehicle operating condition at a specific location at a specific time. Because of this limitation, MOBILE 6.2 can only approximate the operating speeds and levels of congestion likely to be present on the largest-scale projects and cannot adequately capture emissions effects of smaller projects. For particulate matter, the model results are not sensitive to average trip speed, although the other MSAT emission rates do change with changes in trip speed. In its discussions of particulate matter under the conformity rule, EPA has identified problems with MOBILE 6.2 as an obstacle to quantitative analysis.

These deficiencies compromise the capability of MOBILE 6.2 to estimate MSAT emissions. Although MOBILE 6.2 is an adequate tool for projecting emissions trends and performing relative analyses between alternatives for very large projects, it is not sensitive enough to capture the effects of travel changes tied to smaller projects or to predict emissions near specific roadside locations.

Dispersion

The tools to predict how MSATs disperse are also limited. EPA's current regulatory models, CALINE3 and CAL3QHC, were developed and validated more than a decade ago for the purpose of predicting episodic concentrations of carbon monoxide to determine compliance with the NAAQS. The performance of dispersion models is more accurate for predicting maximum concentrations that can occur at "some" time at "some" location within a geographic area. This limitation makes it difficult to predict accurate exposure patterns at specific times at specific highway project locations across an urban area to assess potential health risk.

The National Cooperative Highway Research Program is conducting research on best practices in applying models and other technical methods in the analysis of MSATs. This work would focus on identifying appropriate methods of documenting and communicating MSAT impacts in the NEPA process and to the general public. Along with these general limitations of dispersion models, FHWA is also faced with a lack of monitoring data in most areas for use in establishing project-specific MSAT background concentrations.

Exposure levels and health effects

Even if emission levels and concentrations of MSATs could be accurately predicted, shortcomings in current techniques for exposure assessment and risk analysis preclude reaching meaningful conclusions about project-specific health impacts. Exposure assessments are difficult to perform because it is difficult to accurately calculate annual concentrations of MSATs near roadways and to determine the portion of a year that people are actually exposed to those concentrations at a specific location. These difficulties are magnified for 70-year cancer assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over a 70-year period.

There are also considerable uncertainties associated with the existing estimates of toxicity of the various MSATs because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population. Because of these shortcomings, any

calculated difference in health impacts among alternatives or design options is likely to be much smaller than the uncertainties associated with calculating the impacts. Consequently, the results of such assessments would not be useful to decision-makers, who would need to weigh this information against other project impacts that are better suited for quantitative analysis.

Summary of existing credible scientific evidence relevant to evaluating the impacts of MSATs

Research into the health impacts of MSATs is ongoing. For different emission types, there are a variety of studies which show that some types are statistically associated with adverse health outcomes through epidemiological studies (frequently based on emissions levels found in occupational settings) or by tests on animals that demonstrate adverse health outcomes when exposed to large doses.

Exposure to toxics has been a focus of a number of EPA efforts. Most notably, the agency conducted the National Air Toxics Assessment in 1996 to evaluate modeled estimates of human exposure applicable at the county level. While not intended for use as a measure of or benchmark for local exposure, the modeled estimates in the study's database best illustrate the levels of various toxics when aggregated to a national or state level.

EPA is in the process of assessing the risks of various kinds of exposures to these pollutants. The EPA Integrated Risk Information System is a database of human health effects that may result from exposure to various substances found in the environment. The IRIS database can be accessed at http://www.epa.gov/iris.

The following toxicity information for the six prioritized MSATs was taken from the IRIS database Weight-of-Evidence characterization summaries. This information is taken verbatim from EPA's IRIS database and represents the agency's most current evaluations of the potential hazards and toxicology of these chemicals or mixtures.

- Benzene is characterized as a known human carcinogen.
- The potential carcinogenicity of acrolein cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure.
- Formaldehyde is a probable human carcinogen, based on limited evidence in humans and sufficient evidence in animals.
- 1,3-butadiene is characterized as carcinogenic to humans by inhalation.
- Acetaldehyde is a probable human carcinogen based on increased incidence of nasal tumors in male and female rats and laryngeal tumors in male and female hamsters after inhalation exposure.
- Diesel exhaust is likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel exhaust as reviewed in this document is the combination of diesel particulate matter and diesel exhaust organic gases.
- Diesel exhaust also represents chronic respiratory effects, possibly the primary noncancer hazard from MSATs. Prolonged exposures may impair pulmonary function and could produce symptoms, such as cough, phlegm, and chronic bronchitis. Exposure relationships have not been developed from these studies.

Other studies have addressed MSAT health impacts in proximity to roadways. The Health Effects Institute (a nonprofit organization funded by EPA, FHWA, and industry) has undertaken a major series of studies to research near-roadway MSAT hot spots, the health implications of the entire mix of mobile source pollutants, and other topics. The final summary of the series is not expected for several years.

Some recent studies have reported that proximity to roadways is related to adverse health

outcomes, particularly respiratory problems.[25] Much of this research is not specific to MSATs, instead surveying the full spectrum of both criteria and other pollutants. The FHWA cannot evaluate the validity of these studies, but more important, the studies do not provide information that would lessen the uncertainties listed above and make it possible to perform a more comprehensive evaluation of the health impacts specific to this project.

Portland Air Toxics Assessment

The Portland Air Toxics Assessment (PATA) was recently published by the Oregon Department of Environmental Quality (ODEQ). PATA is a computer modeling project designed to estimate and assess the risk from 12 air toxics in the Portland area. It is the first local-scale air toxics modeling project conducted in Oregon as part of the developing state air toxics program. It is based on the 1999 air emissions inventory for the Portland area. The purpose of the assessment is to provide more refined estimates of the most significant air toxics in the Portland area. Such estimates would enable ODEQ to better characterize the risks from air toxics, to better understand local patterns of air toxics exposure, and to identify locations with elevated risk. Finally, ODEQ can measure changes in emissions and develop emission reduction strategies from the information provided by PATA.

PATA results identify diesel exhaust, motor vehicles, and burning as important sources of air toxics in Portland. In general, the assessment shows widespread risks from three MSATs—benzene, formaldehyde, and diesel exhaust—throughout the Portland region.

[25] South Coast Air Quality Management District, Multiple Air Toxic Exposure Study-II (2000); Highway Health Hazards, The Sierra Club (2004) summarizing 24 studies on the relationship between health and air quality); NEPA's Uncertainty in the Federal Legal Scheme Controlling Air Pollution from Motor Vehicles, Environmental Law Institute, 35 ELR 10273 (2005) with health studies cited therein.

Conformity

The Metro 2035 RTP includes the following in the list of fiscally constrained projects for this Sunrise project: acquire right-of-way from I-205 to SE 172nd Avenue, perform preliminary engineering, and construct new highway facility from I-205 to SE 122nd Avenue interim connection.

The regional conformity determination for the 2035 RTP included the full Sunrise Project build alternative from I-205 to SE 172nd Avenue with six lanes, no tolls, completed by 2017. Following completion of interagency consultation, which included the EPA, ODEQ, and ODOT, on March 6, 2008, FHWA and FTA issued a regional conformity determination for the Metro 2035 RTP which includes emissions for a fully constructed Sunrise Project as described in this SDEIS.

A local hot spots analysis was performed for the full build project alternatives and design options for the expected year of opening and the design year, and no violations of the NAAQS were predicted. Consequently, the analyses show that the full build alternative with six lanes, no toll from I-205 to SE 172nd Avenue constructed by 2017 would conform to the State Implementation Plan.

Indirect Effects

The forecast traffic volumes used to analyze the air quality impacts of the proposed Sunrise Project alternatives and design options are based on the future expected land use and employment information for the project area. These analysis methodologies include expected traffic from development in the region and project area, and traffic-related air quality impacts shown in this report include expected development.

Potential Mitigation Measures

Construction of concrete structures may have associated dust-emitting sources, such as concrete mixing operations. Stationary sources such as concrete and asphalt mix plants are generally required to obtain air permits from the Oregon Department of Environmental Quality

and to comply with regulations to control dust and other pollutant emissions. Construction contractors are required to comply with state laws that place limits on fugitive dust that causes a nuisance or violates other regulations. Best management practices or reasonable precautions can be taken to avoid dust emissions, such as using enclosures, water, or chemicals to control dust; covering truck beds; and removing materials that could become airborne from streets. In addition, contractors are required to comply with ODOT standard specifications. The control measures would be documented in the pollution control plan that a contractor is required to submit prior to construction.

Mitigation is not required for long-term impacts. The proposed Sunrise Project is located in an area currently in attainment for all pollutants except carbon monoxide. A hot spot analysis was completed, and carbon monoxide concentrations, adjacent to the poorest performing intersections affected by the project alternatives, are expected to be below the national standards. Overall, future study area emissions of Mobile Source Air Toxics are projected to decrease relative to existing levels. Consequently, significant adverse air quality impacts are not expected as a result of the project, and mitigation is not proposed.

Greenhouse Gas Impacts and Global Climate Change

The issue of greenhouse gas (GHG) emissions and global climate change is an important national and global concern that is being addressed by various state and federal agencies, including ODOT and FHWA, even though no national regulatory thresholds for GHG emissions or concentrations have been established through law or regulation.[26]

Since the context for GHG emissions is on a global scale, it is virtually impossible to perform a meaningful analysis of most local transportation projects. GHG emissions analyses are more informative at regional, state, or national levels and should be accomplished during local and regional land use planning processes when more capable modeling tools are developed. While it still may be possible to quantify GHG emissions associated with a proposed transportation project, tools have not been developed for how to translate those emissions into effects on climate change on any scale. ODOT's recent land use and transportation modeling efforts have shown that land use patterns have a much greater effect on all emissions than do highway expansions. Further, the needs for most highway projects are typically a result of land use changes, development, growth, and other local and regional changing trends. Therefore, to best inform decision-making, GHG emissions estimation needs to be done during the transportation system and land use planning processes.

As of May 1, 2008, there are no federal laws specifically requiring GHG emissions analyses in project-level NEPA documents. NEPA requires federal agencies to scope and address the significant issues of any proposal and to concentrate on the analyses of issues that can be truly meaningful to the consideration of and comparison between project alternatives. In the absence of federal regulations and a regional or national framework for considering the implications of project-level GHG analyses, FHWA concludes that GHG emissions cannot be usefully evaluated in the same way that other vehicle emissions are within a local project-level context and that such an attempted analysis would not inform project decision-making in any meaningful way.

Oregon Strategies

Greenhouse gas (GHG) emissions are currently not regulated in the state of Oregon. However, there are numerous goals for states and the nation to meet, and strategies to reduce GHG emissions are currently being addressed by ODOT

[26] *The predominant anthropogenic GHG emission–carbon dioxide (CO_2) – results primarily from fossil fuel combustion. In 2004, the transportation sector was responsible for 31 percent of all U.S. CO_2 emissions. For the same year, Oregon's transportation sector was responsible for an estimated 34 percent of the state's GHG emissions of CO_s.*

and other state agencies throughout Oregon. On August 7, 2007, the Climate Change Integration Act came into effect with the passage of Oregon House Bill 3543. The act creates GHG emissions reduction goals for the State of Oregon, which aim to reduce the emissions 10 percent below 1990 levels by 2020 and achieve a 75 percent reduction below the 1990 levels by 2050. Oregon HB 3543 also created the Oregon Global Warming Commission, which is responsible for recommending policies to state and local governments to reduce GHG emissions. The commission is expected to promulgate rules to direct agencies on how to regulate and enforce the act.

Intelligent transportation systems and land use planning policies will be among several strategies necessary to meet the state's goal of reducing GHG emissions. To accomplish this, the Oregon Global Warming Commission, has formed a Land Use and Transportation Committee. The scope and function of the committee is to work with state agencies including ODOT and the Oregon Department of Land Conservation and Development to integrate GHG reduction goals into state transportation planning and land use policies currently under development. Transportation and land use policies will be designed to stop the growth of GHG emissions, and then reduce them over time, according to the specific goals set out by the Oregon Legislature.

Research is also underway to develop more capable models for measuring, analyzing, evaluating, and reporting on GHG emissions. ODOT is coordinating with other state and federal agencies to determine appropriate contexts for measuring impacts from transportation and land use changes.

Appendix D contains a draft briefing paper outlining ODOT's efforts regarding climate change.

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Energy

This section evaluates the amount of energy that would be required to construct and use each alternative in 2030. While the energy analysis may not influence the selection of one alternative over another, the results of the analysis may highlight opportunities to improve the energy efficiency of the selected alternative.

The Energy Technical Report on the attached DVD provides details on the following:

- Methodology for calculating impacts
- Construction energy use by alternative
- Operational energy use by alternative
- Detailed mitigation descriptions
- Energy calculation sheets

Project Area Impacts

The proposed Sunrise Project would result in direct impacts due to fuel consumption by drivers on the highway, and in indirect impacts from using energy to construct the highway. The energy calculations are useful for comparing overall energy impacts among alternatives, but, because variables such as average fuel efficiency are used, the results are not precise enough to be considered definitive. Energy use is calculated using the number of average daily vehicles, the average distance those vehicles travel, and fuel consumption rates. Fuel consumption rates vary by type of vehicle, and energy use varies by type of fuel.

Operational energy analysis is based on vehicle miles traveled. Operational energy was calculated at the subregional area, the same area used for the transportation and air quality analyses, and at the corridor level. In 2005, VMT was 713,400 miles within the subregional area bounded by Sunnyside Road on the north, Jennifer Street and Eckert Lane on the south, I-205 and Webster Road to the west, and SE 172nd Avenue on the east. By 2030, VMT is expected to increase by 2.5 times within the same area if the proposed Sunrise Project is not built. In 2030, **Alternative 1–No Build** would result in the use of about 10.51 million gallons of fuel annually to drive 1.86 million miles.

Project **Alternatives 2 and 3** would increase VMT by 22 percent over **Alternative 1**, but would reduce the duration of congestion in the study area. This is because the project provides more capacity for the vehicles to drive during the peak periods. In the corridor, **Alternative 2** would result in between 13.07 to 15.80 million gallons of fuel consumed annually. **Alternative 3** would result in 14.31 to 14.38 million gallons consumed annually. The range of energy use depends on the design option chosen, as shown below in Table 15. Most design options do not change the energy consumption by any noticeable amount, with the exception of **Alternative 2** with **Design Option B-2**. The main reason for this similarity is because the volumes and length of roadway do not differ sufficiently between **Alternatives 2 and 3** to cause a corresponding change in fuel consumption.

Table 15. Energy Use for Construction and Operation by Alternative (million gallons of gasoline)

	Alt. 1	Alt. 2	Alt. 2 with A-2	Alt. 2 with B-2	Alt. 2 with C-2	Alt. 2 with C-3	Alt. 2 with D-2	Alt. 2 with D-3
Construction[1]	n/a	59.10	58.40	65.40	59.20	60.00	61.10	61.60
Operation[2]	10.51	13.07	13.87	15.80	13.87	13.94	13.87	13.87
	Alt. 1	**Alt. 3**	**Alt. 3 with A-2**		**Alt. 3 with C-2**	**Alt. 3 with C-3**	**Alt. 3 with D-2**	**Alt. 3 with D-3**
Construction[1]	n/a	56.30	55.60	n/a	56.50	57.20	58.40	58.80
Operation[2]	10.51	14.31	14.31	n/a	14.31	14.38	14.31	14.31

[1]The total energy equivalent of **millions** of gallons of fuel to construct.

[2]The total energy equivalent of **millions** of gallons of fuel for all vehicles using the Sunrise Project and the existing OR 212/224, annually, in 2030. Alternative 1 totals are for the existing configuration of OR 212/224 with 2030 volumes.

Indirect Effects

In terms of comparing indirect impacts from construction, **Alternative 1–No Build** was not evaluated as it would have extremely minor impacts for the one project that it is associated with, in contrast to the major effort needed to build the proposed Sunrise Project.

Construction energy for **Alternatives 2 and 3** and the design options would require the equivalent of 55 to 65 million gallons of fuel. **Alternative 3** would use less energy to construct than **Alternative 2** (3 million fewer gallons of fuel). **Design Option A-2** is the only option that would require less energy to construct than **Alternatives 2 and 3**. All of the other design options would increase the energy needed compared to **Alternatives 2 and 3** without the design options. **Design Option B-2** would have the greatest impact, using 13 percent more energy than other options. This results from **Design Option B-2** having a longer roadway. **Design Option C-2** would require less energy to construct than **Design Option C-3**, by about 0.3 million gallons. **Design Option D-2** would require less energy to construct than **Design Option D-3**, by about 0.4 million gallons.

Of the major construction activities associated with the proposed Sunrise Project, roadway construction would require the most energy (approximately 65 percent), followed by construction of associated structures (approximately 28 percent).

Potential Mitigation Measures

There are no regulations requiring mitigation for the energy consumption expected for this project. This section suggests ways to reduce the energy use of the project in terms of its construction and operation.

Energy use could decline if the growth in the number of vehicles on the roadway declines and if the fuel efficiency of vehicles continues to improve. Vehicle use may be minimized by measures to help people reduce the number of trips they need to take and by providing alternatives to single-occupancy vehicles. A strong Transportation Demand Management Program that could, for example, provide subsidized transit passes or encourage carpools may reduce some trips during the peak period. Transit service is somewhat minimal in the project area, but over time it may become more feasible to increase service as the number of households and jobs increases.

Consideration should be given to reducing the energy required to operate and maintain the project, such as lighting, water collection and treatment, roadway materials, landscape maintenance, and structural maintenance.

Biology

For decades, much of the Sunrise Project area has undergone considerable development with associated adverse impacts to its wildlife, fish, and botanical habitats. Some important wildlife features maintain a tenuous hold. Most of the wildlife and fish impacts are due to the loss of habitat, resulting in a few large habitat patches connected by narrow corridors that are bisected by numerous roads. Figure 51 and Figure 52 (pp. 155 and 156) illustrate the habitat types, streams, and wetlands in the project area. Figure 53 through Figure 59 (pp. 157 through 163) identify impacts to habitats for the alternatives and design options.

The Biology Technical Report on the attached DVD provides more detailed discussion of the following:

- Habitat types
- Threatened and endangered species
- Wildlife corridors
- Fish resources, including Mt. Scott Creek, Dean Creek, Phillips Creek, Clackamas River, Cow Creek, Sieben Creek, Graham Creek, Rock Creek and tributaries, Trillium Creek and tributaries
- Botanical resources, including wetlands, uplands, forest, sensitive plant species, and noxious weeds
- Impacts to habitat, quantitative and qualitative

Wildlife Habitat

Important habitat for wildlife is found on Mount Talbert, the Three Creeks area (a large area of mixed wetland and upland west of SE 82nd Avenue, and containing the confluence of Phillips and Dean Creeks with Mt. Scott Creek), and a large forested parcel between Mount Talbert and Camp Withycombe owned by ODOT. The Clackamas River provides another regionally important habitat feature for fish and wildlife. Deer, coyote, and other small mammals continue to move between these patches through two wildlife corridors: Mount Talbert to Three Creeks corridor and Mount Talbert to Rock Creek corridor. Wildlife use of some of these areas is well documented and is also evident to the casual observer. Wildlife use of other areas is less documented.

Upland wildlife habitats are non-riparian areas that provide wildlife with food, shelter, and corridors for moving from one habitat area to another.

Riparian habitat is land or vegetation near streams, rivers, wetlands, and lakes.

Wildlife corridors provide foraging and breeding habitat for small mammals and a conduit for movement among habitat patches. The quality of a wildlife corridor depends on several factors, including width, barriers, and fragmentation. Generally, the wider the corridor, the more species it supports and the more habitat functions it provides. In the narrow corridor segments present in the Sunrise Project area, animals are likely to pass through without seeking shelter, cover, or food. For passage, the important constraints are width of the corridor, barriers across the corridor, and the potential for those barriers to fragment habitat.

Barriers to movement within a corridor, such as roads and urbanized areas, increase the likelihood of the corridor becoming an isolated patch. When barriers surround habitat or connections between patches of habitat are cut off, habitats are fragmented and isolated and may be too small to support larger species. In some areas of the project, corridors are wide and secure, but mostly they have been bisected and crowded by development. In some areas, the corridors are extremely narrow and future development could easily sever them. The proposed Sunrise Project further impacts these corridors by direct habitat loss and indirect habitat loss, resulting from increased noise disturbance. Generally, as traffic volume increases, traffic-related wildlife mortality increases until animals no longer attempt to cross and the road becomes a complete barrier to wildlife movement. Areas of particular concern are Mt. Scott Creek to Dean Creek, Mt. Scott Creek at SE 82nd Avenue, the Clackamas Bluffs, and the area between an unnamed tributary to Rock Creek and Rock Creek.

Alternative 1–No Build would result in minimal impacts. The SE 82nd Drive extension would be constructed through developed urban land that provides habitat for species that are tolerant of human disturbance. Most native vegetation has been eliminated, and much of the wildlife habitat consists of man-made structures. Exotic generalist species, such as rock doves, starlings, and house sparrows, are expected to be the most abundant species. The area does not provide for any wildlife dispersal or movement.

The OR 212 eastbound climbing lane and SE 172nd Avenue (Foster Road to OR 212) are located in primarily agricultural lands. The quality of wildlife habitat in this area is low. Since the project would improve existing roads, impacts would be confined along the edge of the roads that provide little wildlife habitat value. However, as traffic volumes increase, an animal's ability to cross the road decreases until traffic volumes reach a level where the road becomes a complete barrier to wildlife movement.

Alternative 2 would affect a total of 101 acres of Metro's mapped upland wildlife habitat (56 acres) and riparian corridors (45 acres), as listed in Table 16. **Alternative 3** would impact 98 acres of Metro's mapped upland wildlife habitat (53 acres) and riparian corridors (45 acres).

Wildlife travels through a very narrow corridor along the I-205 freeway fill slope from Mt. Scott Creek to Dean Creek southeast of I-205.

Table 16. Habitat Impacts by Type in Acres

	Alternative 2 (Alternative 3)
Upland Class A	8.7
Upland Class B	24.8 (21.8)
Upland Class C	22.8
Subtotal Upland	56.3 (53.3)
Riparian Class I	22.7
Riparian Class II	19.2
Riparian Class III	2.8
Subtotal Riparian	44.7
Total Habitat Impacts	**100.9 (97.9)**

The proposed I-205 on-ramp over Mt. Scott Creek could sever the corridor unless land is set aside for a corridor or another option to maintain connectivity for wildlife traveling between the Three Creeks area and east of I-205 is constructed, such as a bridge or wildlife culvert over Mt. Scott Creek. Fill slopes for the I-205 on-ramp would further restrict an already narrow section of the corridor. In this same area, the proposed Lawnfield realignment would impact forested habitats used by deer and other small mammals. Impacts by acreage are presented in Table 17 (p. 145).

Under **Design Option A-2**, the northern Lawnfield realignment would not be constructed, reducing impacts by 2.6 acres compared to **Alternatives 2 and 3**. Class I riparian habitat makes up 2.0 acres of the 2.6 acres of total impact. The other advantage to wildlife of **Design Option A-2** is that the fill slopes for the I-205 on-ramp would not join with those of the Lawnfield realignment, which would create narrow, V-shaped topography that wildlife is less likely to use.

Near Mt. Scott Creek at SE 82nd Avenue a new bridge is proposed to connect the southern and northern sections of SE Ambler Road. This bridge would be constructed over the Mount Talbert to Three Creeks wildlife corridor, potentially maintaining or improving access for wildlife in this corridor.

In the Midpoint area, a section of the Mount Talbert to Rock Creek wildlife corridor extends along the Clackamas Bluffs, where residential uses are prevalent along the top and industrial uses dominant along the base. The proposed Sunrise Project would be built along the lower third of the bluff, reducing the corridor's width. **Alternative 2** would affect 3 more acres of upland Class A habitat, needed to construct the interchange. **Design Option B-2** reduces upland habitat impacts by 2.8 acres but increases impacts on riparian habitat by 3 acres for a net increase in impact of 0.3 acre compared to **Alternative 2**.

Table 17. Wildlife Impacts by Habitat Type by Design Option

	Alt. 2 with A-2	Alt. 3 with A-2	Alt. 2 with B-2	Alt. 2 with C-2	Alt. 3 with C-2	Alt. 2 with C-3	Alt. 3 with C-3	Alt. 2 with D-2	Alt. 3 with D-2	Alt. 2 with D-3	Alt. 3 with D-3
Upland Area in Acres											
Class A	8.7	8.7	8.7	8.7	8.7	8.7	8.7	9.1	9.1	6.8	6.8
Class B	24.2	21.2	20.9	20.2	17.2	39.2	36.2	25.9	22.9	24.8	21.8
Class C	22.7	22.7	23.9	23.2	23.2	22.3	22.3	22.7	22.7	23.2	23.2
Subtotal	**55.6**	**52.6**	**53.5**	**52.1**	**49.1**	**70.2**	**67.2**	**57.7**	**54.7**	**54.8**	**51.8**
Riparian Area in Acres											
Class I	20.7	20.7	24.1	20.1	20.1	19.4	19.4	23.3	23.3	23.2	23.2
Class II	19.2	19.2	20.8	17.8	17.8	18.7	18.7	19	19	19.2	19.2
Class III	2.8	2.8	2.8	2.8	2.8	2.8	2.8	1.9	1.9	2.8	2.8
Subtotal	**42.7**	**42.7**	**47.7**	**40.7**	**40.7**	**40.9**	**40.9**	**44.2**	**44.2**	**45.2**	**45.2**
Total	**98.3**	**95.3**	**101.2**	**92.8**	**89.8**	**111.1**	**108.1**	**101.9**	**98.9**	**100**	**97**

Design Option C-2, the central alignment, reduces impacts to upland and riparian habitats between SE 135th Avenue and Rock Creek compared to either **Alternative 2 or 3** at the same location by moving the proposed alignment closer to OR 212/224. The shift in the alignment reduces impacts to a large wetland between SE 135th Avenue and SE 142nd Avenue. It would also minimize impacts to the emergent wetland behind the EZ Storage units by only filling approximately the southern third of the wetland rather than entirely filling the wetland as **Alternative 2** would. Impacts to the wildlife corridor along the Clackamas Bluffs would be slightly less than under **Alternatives 2 and 3** because the **Design Option C-2** alignment would not curve around the base of the bluff just west of SE 135th Avenue. The impacts would be even less compared to **Design Option C-3**.

Design Option C-3, the modified tree-line alignment, would encroach more on the wildlife corridor. SE 142nd Avenue would be built up on fill slopes and cross over the proposed Sunrise Project on a new bridge instead of passing under it as with **Alternatives 2 and 3** and **Design Option C-2**. Fill slopes north of the overpass would impact mixed forest habitat in the wildlife corridor and create a vertical barrier to wildlife movement. The northward curve of **Design Option C-3**, immediately west of SE 135th Avenue at the base of the bluff, would pinch the corridor to a width of about 50 feet, whereas the other alignments would leave the corridor width closer to 100 feet. Compared to **Alternatives 2 and 3**, **Design Option C-3** would increase upland habitat impacts by 14 acres and reduce riparian habitat impacts in large wetlands west of SE 142nd Avenue by nearly 4 acres, for a net increase in impacts of nearly 11 acres. **Design Option C-3** would include construction of a stormwater treatment/detention facility in the palustrine emergent wetlands behind the EZ Storage facility.

The wildlife corridor linking Mount Talbert to Rock Creek and beyond is narrowest between an unnamed tributary to Rock Creek and the Rock Creek riparian corridor. The corridor of mixed-forest land is less than 200 feet wide and sandwiched between housing developments to the north and a manufactured home development to the south. Wildlife use of this narrow patch is not documented. It is the only non-developed habitat patch remaining within the alignment. The alignment for **Alternatives 2 and 3** runs primarily through the manufactured home park, but it also affects the wildlife corridor. The alignment inclines on slopes as it approaches the proposed new bridge over Rock Creek. Rock Creek provides the last leg of the wildlife corridor to the Clackamas River corridor.

Design Option D-2, the folded diamond interchange through the knoll, would locate the interchange south of where it would be under **Alternatives 2 and 3**. Consequently, the western approach to the intersection would be located farther south than the build alternatives and would avoid the narrow portion of the wildlife corridor between the housing development and the manufactured home park. **Design Option D-2** would impact 1 more acre of habitat than **Alternative 2 or 3**, but it is essentially identical in impact to the two build alternatives.

Design Option D-3, the single-point diamond interchange, has impacts similar to the build alternatives, leaving only the northernmost portion of the wildlife corridor unaffected. Construction activities and the narrowness of the remaining corridor would create a substantial barrier to wildlife movement.

Fish Habitat

Fish habitat has also suffered from development pressure over the years, and most of the smaller streams in the project area have been realigned, ditched, or piped. Under the Endangered Species Act (ESA), Lower Columbia Chinook salmon have been listed as threatened. They are present in the lower reach of Rock Creek. A natural waterfall upstream of the OR 224 bridge limits migration for this species. Chinook salmon have not been documented in Mt. Scott Creek or Dean Creek but may be present in Kellogg Creek, several miles downstream of the project area. Lower Columbia River coho salmon and steelhead trout

are present in lower Rock Creek, Mt. Scott Creek, and the lowermost reach of Sieben Creek. Both stocks are ESA-listed as threatened. Project-area reaches of Mt. Scott Creek, Rock Creek, and the Clackamas River have been designated as critical habitat for steelhead, Chinook salmon, and coho salmon under the ESA.

Impacts on fish may be caused by increases in impervious surface in the project area, which increases the peak flow and volume of stormwater runoff and degrades water quality, and by direct discharge of pollutants or impacts to stream channels during construction. Table 18 presents the amount of new impervious surface area created by the two build alternatives alone and when combined with one of the six design options.

The project may affect fish resources primarily through three mechanisms:

- Direct impacts during in-water construction, such as removing habitat, obstructing fish migration, or causing turbidity in the water;
- Impacts caused by clearing vegetation near creeks and streams; and
- Impacts of stormwater runoff from increased impervious surfaces (pavement), such as changes in stream hydrology and water quality.

The greatest potential adverse effect on fish resources would be changes to hydrology and water quality caused by stormwater runoff from the larger impervious surface area. Adding impervious surface increases the volume and intensity of stormwater runoff. The increased runoff increases the level or duration (or both) of stream flows, which can scour out gravel spawning beds, flush juvenile fish downstream from their rearing habitat, negatively change conditions for creatures on which the fish feed, and cause erosion. Increased impervious surfaces also reduce stormwater infiltration and groundwater recharge, which may lead to decreased dry season flows. Reduced flows can kill or injure fish directly by stranding them without sufficient water, or indirectly by leading to depleted dissolved oxygen in the water on which fish depend, and increasing water temperature to levels intolerable to fish.

Stormwater runoff from impervious roadway surfaces can also carry toxic levels of pollutants that come from vehicles, such as petroleum-based compounds and metals. Concentrations of some dissolved metals, particularly copper and zinc, may reach levels in stormwater runoff where they exceed toxicity

Table 18. New Impervious Surface Added to Drainage Basins (in acres)

	Sieben Basin	Cow Basin	Dean Basin	Rock Basin	Total
Alternative 2	10	39	33	41	123
With a design option[1]					
With A-2	10	39	28	41	118
With B-2	10	43	33	41	127
With C-2	10	39	33	41	123
With C-3	11	39	33	41	124
With D-2	10	39	33	41	123
With D-3	10	39	33	42	124
Alternative 3	10	30	33	41	114
With a design option*					
With A-2	10	30	28	41	109
With B-2	10	30	33	41	114
With C-2	10	30	33	41	114
With C-3	11	30	33	41	115
With D-2	10	30	33	41	114
With D-3	10	30	33	42	115

[1]Totals calculated for Alternative with one design option, as indicated. The combination that would produce the largest impact would include B-2, C-3, and D-3 (129 acres, with Alternative 2) and C-3 and D-3 (116 acres, with Alternative 3). Design Option A-2 reduces impacts under both alternatives.

standards. Dissolved copper in low concentrations may adversely affect salmonids. Motor vehicle brakes are a major source of dissolved copper in streams.

Increased impervious surface in the Rock Creek basin would have more immediate effects because this stream supports salmonids, including ESA-listed species, and retains good aquatic habitat. Impacts to the on-site portions of Cow and Dean Creeks would have little immediate effect on fish resources because these basins are already highly impervious. Moreover, the project area stream reaches are already highly degraded, fully channelized, and exceed Oregon Department of Environmental Quality (ODEQ) standards for dissolved copper concentration. However, such impacts are still of concern because these waters drain to fish populations and more intact habitat in lower Cow Creek and Mt. Scott Creek, respectively.

Alternative 1–No Build would have the least potential adverse effect on fish because it creates the least area of new impervious surface. However, impacts would be concentrated in the Rock Creek basin, which comprises the most intact salmonid populations of any on-site tributary stream and most of the project area critical habitat. This alternative has a minor impact to Dean and Mt. Scott Creeks and no impact to Sieben, Cow, or Graham Creeks.

Alternatives 2 and 3 would involve new structures over Dean, Mt. Scott, Sieben, and Rock Creeks (either bridges or culverts) that would be built to Oregon Department of Fish and Wildlife fish passage standards.

Alternatives 2 and 3 would result in a substantial increase in impervious surface. Regardless of which design options are chosen, **Alternative 2** would have more potential impact than **Alternative 3** from increased impervious surface—117 to 129 acres—depending on the combination of design options (see Water Quality Technical Report, Table S1). **Alternative 3** impacts could range from 108 to 116 acres of new impervious surface. Choosing **Design Options B-2, C-3, and D-3** would have the greatest impact. Choosing **Design Options A-2 and C-2** instead of the build alternatives in that section of the highway would lower the impacts.

For the Sieben, Dean, and Rock Creek drainage basins, **Alternatives 2 and 3** have similar impacts. However, there is a considerable difference in the Cow Creek basin, where **Alternative 3** would create 9 fewer acres of impervious surface than **Alternative 2**, and 13 fewer acres than **Alternative 2** with **Design Option B-2**.

Table 19 (p. 149) summarizes the increase in impervious surface in each basin under the maximum-impact scenario: **Alternative 2** with **Design Options B-2, C-3, and D-3** (the alternative and design option combination that would have the most impact). This information adds perspective to the preceding comparison of alternatives by demonstrating the actual relative impact to each basin. The most significant impacts would be to Cow Creek basin. Impervious area would increase from the current 10 percent, which is generally considered a threshold for significant basin degradation, to 26 percent, at which point hydrology impacts would be assumed to severely degrade aquatic habitat. This would primarily impact the more intact reaches of Cow Creek downstream of the Area of Potential Impact. These impacts would be reduced somewhat by the proposed Sunrise Project's stormwater detention facilities.

Although the maximum impact design option would nearly double the proportion of Dean Creek basin that is impervious, this impact is actually less significant to fish because the basin's aquatic habitat is already severely degraded by runoff from the existing 44 percent impervious surface. However, project impacts may have a more significant hydrologic effect on Mt. Scott Creek downstream. These impacts would be reduced somewhat by the proposed Sunrise Project's stormwater detention facilities.

Table 19. Impervious Surface Summary

Stream Name	Basin Acreage	Existing		Maximum Percent Increase in Impervious Area	Maximum Impervious Area Added by Sunrise	Post-Construction	
		Impervious Area (in Acres)	Percentage Impervious			Impervious Area (in Acres)	Percentage Impervious
Dean Creek	75	33	44	99	32.9	65.9	88
Cow Creek	265	27	10	158	42.7	74.2	28
Sieben Creek	1,176	50	4	22	11.2	61.2	5
Rock Creek	5,754	280	5	15	42	322	6

Direct and indirect hydrologic impacts to Rock Creek and Sieben Creek aquatic habitat from the Sunrise Project may be moderate even under the maximum impact alternative/option. Because these basins are so much larger than Dean Creek and Cow Creek basins, the project would increase the percentage of impervious area by only one percent in each basin, and would leave each well below the 10 percent threshold generally considered to reflect severe degradation.

Water Quality

The hydrologic effects of stormwater runoff from the proposed Sunrise Project's impervious surfaces are discussed above under Fish Habitat, because they are the most significant potential effects to that resource. This section focuses on potential discharges of pollutants from the project's impervious surfaces to project-area streams, which also affect fish habitat quality.

The Clackamas River, Cow Creek, Rock Creek, and Sieben Creek are listed on ODEQ's 303(d) List (§303(d) of the Federal Clean Water Act) of water bodies that do not meet water quality standards. All four are listed for not meeting standards for bacteria; the Clackamas River and Cow Creek are also listed for not meeting temperature standards.

Generally, **Alternative 2** is associated with more impervious surface, so it would result in more runoff and water quality issues than **Alternative 3**.

Design options for **Alternatives 2 and 3** were analyzed to determine the combination of design options that would produce maximum and minimum water quality impacts. The analysis showed that the minimum water quality impacts would be associated with **Alternative 3 with Design Options A-2 and C-2,** and the maximum water quality impacts would be associated with **Alternative 2** with **Design Options B-2 and C-3**. In the different basins, Cow Creek would have the greatest increase in annual pollutant loads, and Dean Creek would have the greatest potential increase in once-in-three-year exceedance criteria.

Threatened or Endangered Fish, Terrestrial Wildlife, and Plants

For project specific information regarding the presence or absence of NMFS trust species, NMFS relies on a combination of resources including StreamNet and direct communication with ODFW fish biologists with on-the-ground knowledge of the specific streams and reaches in question. ORNHIC, StreamNet, and personal communications with the Oregon Department of Fish and Wildlife identified several listed fish species in the project area. Fish species listed as threatened are Lower Columbia River Chinook, Lower Columbia River steelhead, and Lower

Columbia River coho. All three species are present in the Clackamas River, lower Rock Creek, and Kellogg Creek off-site and downstream of Mt. Scott Creek. Project investigations confirmed that habitat limitations and migration barriers prevent the listed fish species from inhabiting other streams in the project corridor. There will be no construction-related direct impacts to these streams. Impacts will be related to stormwater runoff and quality. Although stormwater impacts are likely to be mitigated, Section 7 ESA consultation with the National Marine Fisheries Service is anticipated. Based on personal communication with NMFS on September 11, 2008, formal consultation is anticipated.

Queries of the Oregon Natural Heritage Information Center and the US Fish and Wildlife Service databases and personal communications with ODFW were used to identify listed wildlife and plant species that have been documented or have the potential to occur within the project corridor. The bald eagle, which was recently delisted (USFWS 2008), was the only threatened or endangered wildlife species that was identified as potentially occurring within the project corridor (USFWS 2004). The bald eagle remains an Oregon state-listed species.

The query to the Oregon Natural Heritage Information Center resulted in no reported occurrences of threatened or endangered wildlife species within two miles of the project corridor, but did identify six plant species as potentially occurring in the project area. The project corridor has been subject to a history of disturbance and at best provides marginal habitat for only Bradshaw's lomatium and Nelson's sidalcea in emergent wetlands and some upland pastures. These habitats were subject to two rare plant surveys in 2005 and 2006, which were timed to the flowering period of these two species. No individuals or populations of either species were observed during the surveys. The history of disturbance has left the remainder of the corridor unsuitable for any other sensitive plant species identified as potentially occurring with the project corridor by USFWS and ORNHIC. Due to the lack of known populations and lack of undisturbed, suitable habitat, there will be no direct, indirect, or cumulative impacts to listed wildlife and plant species.

Because the project will not result in direct, indirect, or cumulative impacts to listed wildlife and plant species, ESA Section 7 consultation with the USFWS is not required. ODOT will document this lack of impact in a technical memorandum to the FHWA for inclusion in the project administrative record.

Indirect Effects

Indirect effects on the biological systems are those related to changes in the land use patterns and increased population growth in areas served by the proposed Sunrise Project. Growth would occur with or without the proposed Sunrise Project and regardless of the project alternative chosen, but the location and intensity of impacts would vary with the alternative selected.

These changes would also impact wildlife by increasing traffic noise, light, and human activities, especially in the narrow wildlife corridors. With reduced available habitat, local populations of larger mammals such as deer, coyote, and bobcat would be expected to decline in the affected areas. Habitat loss may also affect nesting and roosting habitat for neotropical migrant birds. Populations of generalist species that are adapted to urban environments, such as raccoons and house sparrows, would be less affected and may increase due to human disturbance.

Clearing and grading riparian (streamside) areas may lead to short-term erosion and sedimentation, and development of riparian areas would impair necessary habitat functions.

Potential Mitigation Measures

Following the selection of the preferred alternative the project team would begin consultation on required mitigation with the permitting agencies. ESA mitigation will require stormwater treatment and detention, replacing lost critical habitat or restoring critical habitat

that is temporary impacted during construction. The terms and conditions of the agency consultation as well as mitigation measures would be incorporated into the record of decision.

Wildlife habitat mitigation

In general, the following measures would help to mitigate impacts on the wildlife habitat:

- In all areas, build bridges to span creeks and provide wildlife passage; if not practicable, install oversized culverts for passage of smaller mammals, amphibians and fish.
- Consider reducing traffic speed by reducing speed limits at the corridor crossings or installing speed bumps in the roads prior to crossing the wildlife corridors. Traffic control measures and wildlife crossing signs should be installed at the following locations:

  - Mather Road south of Mount Talbert

  - SE 135th Avenue

  - SE 142nd Avenue

  - SE 152nd Avenue

  - SE 82nd Avenue

- Retain mature trees and limit disturbance to the Mt. Scott Creek riparian corridor while constructing the new bridge that connects the southern and northern sections of SE Ambler Road over Mt. Scott Creek and the Mount Talbert to Three Creeks wildlife corridor. Limit number of piers in the crossing of Mt. Scott Creek south of SE Ambler Road.

Mt. Scott Creek Culvert Area

The goal of any mitigation effort in this area is to preserve the wildlife corridor between Mount Talbert and the Three Creeks wildlife corridor. Four options would meet this goal.

- Replacing the existing Mt. Scott Creek culvert with new structures that allow both fish and wildlife passage or adding a terrestrial culvert above fish culvert.
- Retaining mature trees and limiting disturbance to the Mt. Scott Creek riparian corridor while constructing the new bridge that connects the southern and northern sections of SE Ambler Road over Mt. Scott Creek and the Mount Talbert to Three Creeks wildlife corridor.
- Limiting the number of piers in the crossing of Mt. Scott Creek south of SE Ambler Road.
- In the area of realigned Lawnfield Road, steepening fill slopes to the maximum extent practicable to allow room for a level, 50-foot-wide path through the area where fill slopes from the proposed new on-ramp meet fill slopes from the new Sunnybrook Connector realignment.

Sunnybrook Connector/Lawnfield Road Realignment

- Near realigned Lawnfield Road, steepen fill slopes to the maximum extent practicable to allow room for a level, 50-foot-wide path through the area where fill slopes from the proposed new on-ramp meet fill slopes from the new Sunnybrook Connector realignment.
- Densely plant slopes with evergreen natives, such as Douglas fir and Ponderosa pine, to provide immediate screening for wildlife. Trees should be at least 6 feet tall. Intersperse a variety of native shrubs to augment screening.
- Maintain wildlife passage to forested wetland northeast of the KEX radio tower site.
- Limit temporary construction impacts and permanent footprint through forested wetland.

KEX Radio Tower Site

- To allow for wildlife movement, steepen the fill slopes as much as possible and locate the retaining wall as far from the ditch as

possible. Maintain a 50-foot-wide wildlife corridor north of the ditch along the north fence of the KEX radio tower site. Densely plant slopes with evergreen natives, such as Douglas fir and Ponderosa pine, to provide immediate screening for wildlife. Trees should be at least 6 feet tall. Intersperse a variety of native shrubs to augment screening.

Camp Withycombe Area

- Relocate multi-use path improvements outside of the edge habitat between the conifer forest and pastures of Camp Withycombe.

Terrace Escarpment/Clackamas Bluffs

- Construct retaining walls along the upslope (north) side of the proposed Sunrise Project to limit the extent of intrusion into the wildlife corridor.
- Densely plant all exposed slopes with evergreen natives, such as Douglas fir and Ponderosa pine, to provide immediate screening for wildlife. Trees should be at least 6 feet tall. Intersperse a variety of native shrubs to augment screening.
- Establish native groundcover in an effort to exclude Himalayan blackberry.
- Direct lighting to paved surfaces only. Shield lighting from the wildlife corridor along the escarpment.
- Remove Himalayan blackberry where it remains along escarpment following construction.

SE 135th Avenue to Rock Creek

- Provide for small mammal and amphibian passage in the new Sieben Creek culvert. The culvert should be large enough to include an earthen bench that allows small mammals and amphibians to pass through it.
- Steepen fill slopes or build retaining walls to limit extent of impacts to wetland, riparian, and upland habitats.
- Between the unnamed tributary to Rock Creek and the Rock Creek riparian corridor, reduce impact to the wildlife corridor between the single-family housing subdivision and the mobile home court by steepening fill slopes or building retaining walls. Plant all exposed slopes with evergreen natives, such as Douglas fir and Ponderosa pine, to provide immediate screening for wildlife. Trees should be at least 6 feet tall. Intersperse a variety of native shrubs to augment screening.

OR 212/224 Interchange

- Provide for small mammal and amphibian passage in the new culverts for Trillium Creek and its unnamed tributary. The culverts should be large enough to include an earthen bench that allows small mammals and amphibians to pass through it.

[Because there are no impacts to sensitive plants, no mitigation measures related to sensitive plants are required.]

Wildlife corridor mitigation

Through the acquisition process for right-of-way, key parcels or easements could be acquired to preserve the wildlife corridors. A discussion of the parcels, a list, and a map are included in the Biology Technical Report. Several pinch points in the wildlife corridors could be relieved by such mitigation measures.

Fish habitat mitigation

All new culverts would be designed to comply with state laws. Some existing culverts may need replacement in order to comply. In other locations, fish passage may not be required if it would not provide access to any suitable habitat.

The most effective mitigation measures to reduce unavoidable impacts to fish would be to infiltrate as much stormwater as possible. Where that is

not feasible, mitigation would include facilities to collect, detain, and treat runoff from new and existing impervious surfaces, particularly roadways. The stormwater facilities required to detain and treat runoff would be designed to meet the standards required by jurisdictional agencies, including NMFS, ODEQ, and Clackamas County Water Environment Services. This level of stormwater flow control would significantly reduce the level of adverse physical impacts to stream channels and aquatic habitat caused by the proposed Sunrise Project.

Fish habitat enhancement

Although Dean and Cow Creeks have been profoundly urbanized, they offer some limited opportunity for enhancement, particularly shading for temperature mitigation of their open sections. Opportunities exist for bank stabilization, stream habitat restoration, and riparian vegetation enhancement in many of the project-area streams. A biological assessment for threatened and endangered fish would be prepared.

Water quality mitigation

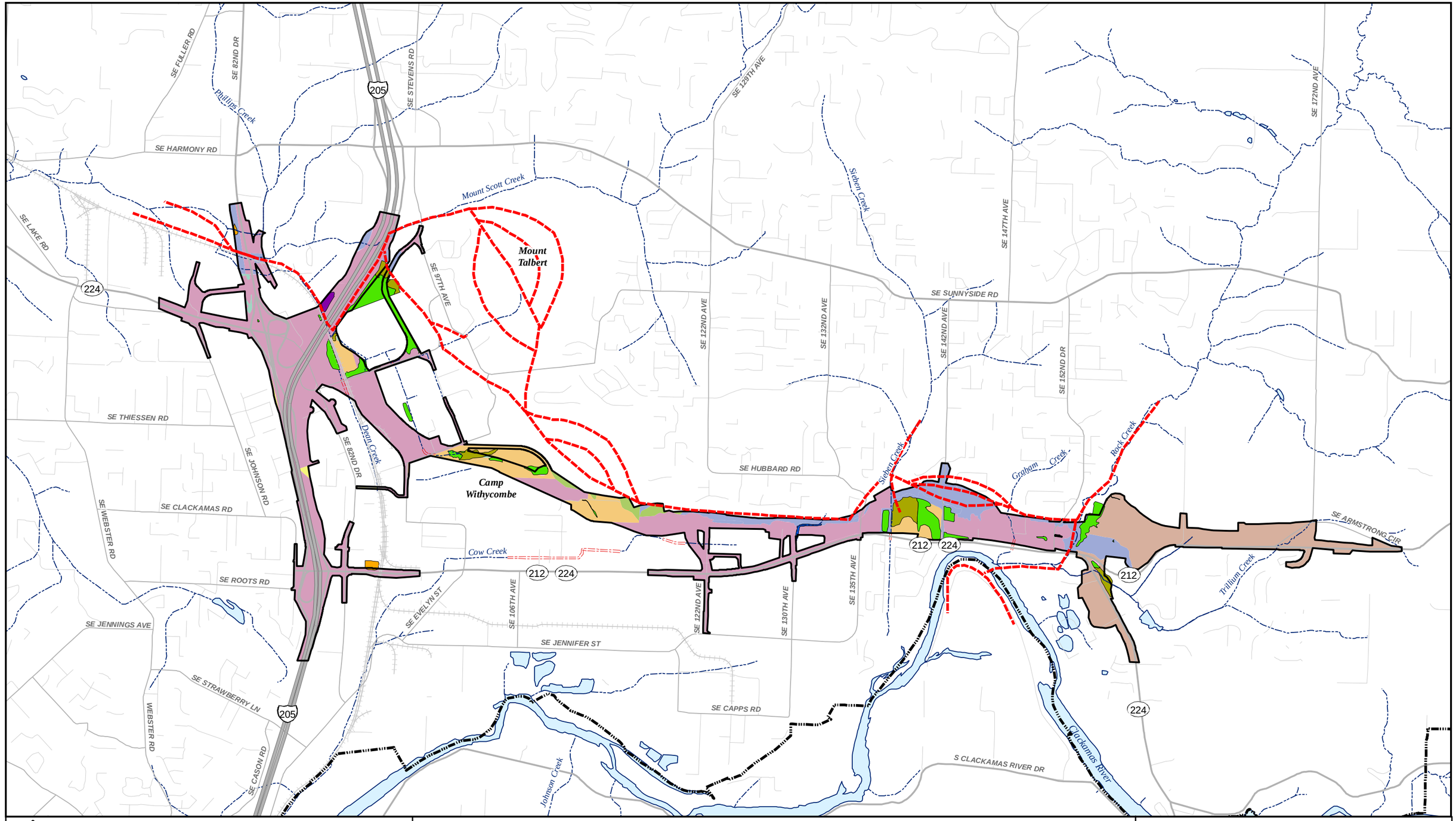
Figures 5 through 9 (pp. ES-9 through ES-13) show possible locations for water quality and quantity treatment or mitigation facilities in the project area. These locations were investigated in a Conceptual Stormwater Analysis. The proposed Sunrise Project design would need to meet permit requirements and design guidance cited in the section titled Applicable Laws and Approval Requirements. The requirements include water quality treatment as mitigation for water quality impacts. Water quality treatment and detention would need to meet Clackamas County Water Environment Services requirements, ODEQ standards, and NMFS guidelines for stormwater management.

The conditions after the project and with mitigation for each water basin and both build alternatives was analyzed. Water quality treatment for all new impervious area was assumed to be provided. Water quality treatment facilities proposed for the project are estimated to remove 70 percent of particulate pollutants and 20 percent of soluble pollutants, including dissolved copper. Water quantity impacts following the project with mitigation were also modeled and found to meet permitting agency standards.

Given equal approaches to mitigation across alternatives, the alternatives and design options with more impervious surface would result in greater stormwater impacts than those without as much impervious surface. Once a preferred alternative has been selected, a detailed treatment and mitigation analysis will be conducted and included in a Stormwater Report.

Mitigation measures related to wetlands can also influence water quality and quantity. Readers are directed to the Wetlands section for a discussion of impacts and mitigation.

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2,000 0 2,000 Feet

Sources:
ODOT and Metro, Portland OR
Streams as modified by DEA as found on field visit

Legen

- Area of Potential Impact API
- Urban Growth Boundary UGB
- Wildlife Corridors
- Piped Culverted
- River
- Streams

Wetland Communities

- Palustrine Emergent Wetland
- Palustrine Forested Wetland
- Palustrine Scrub-Shrub Wetland
- Palustrine Forested Scrub-Shrub Wetland
- Palustrine Scrub-Shrub Emergent Wetland

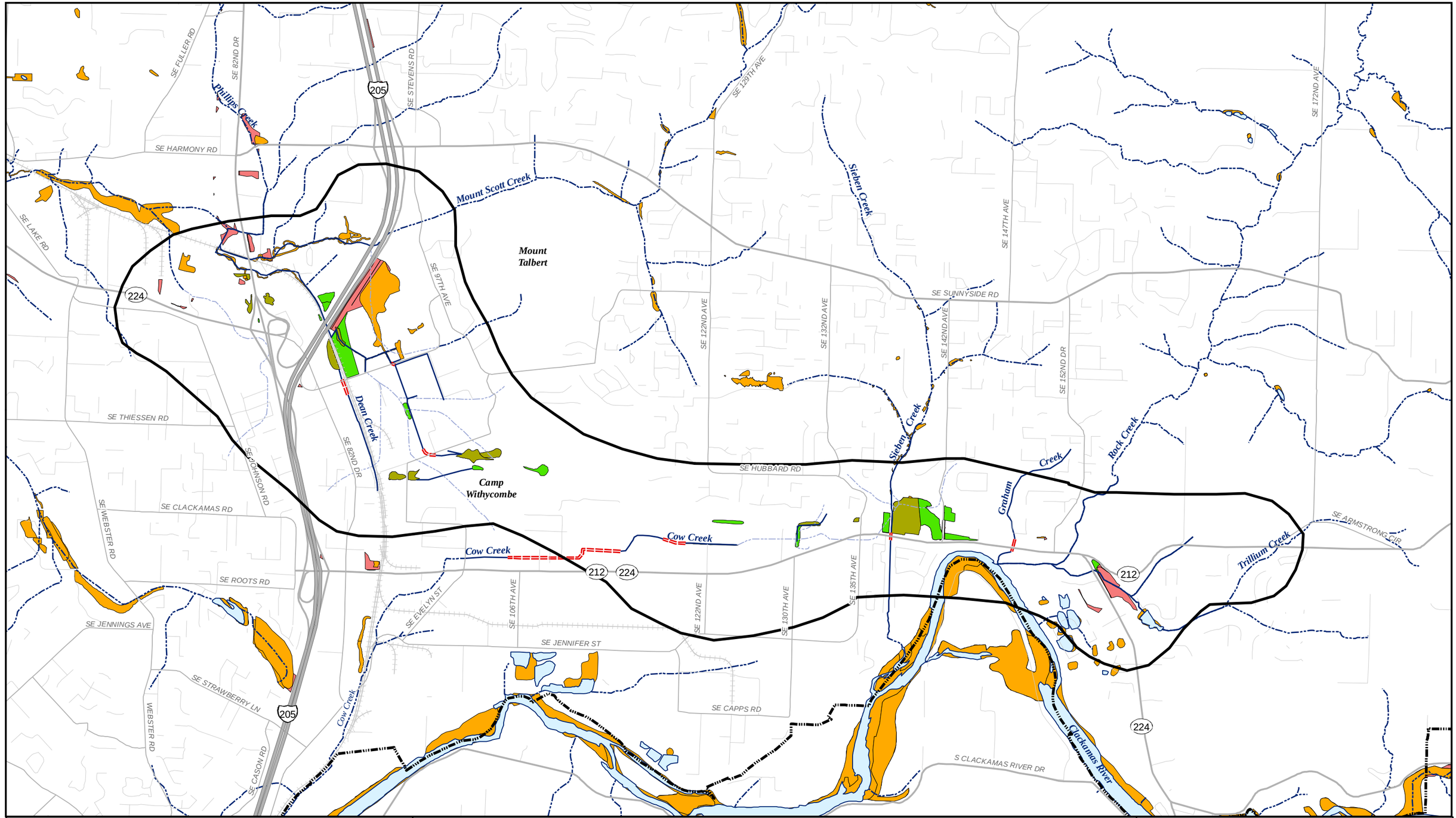
Upland Communities

- Conifer Forest
- Emergent Wetland
- Forested Scrub-Shrub Wetland
- Industrial Disturbed
- Mi ed Forest
- Residential
- Upland Grassland
- Agricultural

Figure 51

Habitat Types/Plant Communities

Sunrise Project, I-205 to Rock Creek Junction



2,000 0 2,000 Feet

Sources:
ODOT and Metro, Portland OR
Streams as modified by DEA as found on field visit

Legen
- Project Area Considered in Evaluation
- Urban Growth Boundary UGB
- River

Streams (Field Verified by DEA)
- Streams As shown in Metro s Regional Land Information System RLIS , not verified
- Streams shown in RLIS, that no longer e ist in mapped alignments
- Daylight Channel
- Piped Culverted

Wetlands
- Wetlands, National Wetlands Inventory, Metro
- Wetlands, Salmon Resource and Sensitive Area Mapping Project

Field Verified Wetlands
- Emergent Wetland
- Forested Scrub-Shrub Wetland

Figure 52

Wetlands and Streams

Sunrise Project, I-205 to Rock Creek Junction

SE 2n A enue
Bridge would connect north/south sections of SE Ambler Road over UPRR and Mount Scott Creek.

Bridge for new on-ramp would affect east edge of forested wetland, and cross Philips Creek, the UPRR track, Mt. Scott Creek, and Dean Creek. Impacts confined to the areas where wildlife values are already compromised.

Mt. S ott Cree Cu ert Area
New slopes for on-ramp, creating new impacts to the narrowest segment; wildlife can travel along southern bank but narrowed already by I-205 development. Wildlife trails evident on the I-205 fill slope above culvert, where on-ramp would be constructed, potentially creating a complete barrier.

South of culvert, wildlife confined to single-file path along the Sunnybrook off-ramp fill slope and a dense Himalayan blackberry thicket (only 20 to 30 feet wide). Build alternatives would expose wildlife to traffic for 100 feet down to the KEX tower site. Mitigation plantings to provide adquate cover would take many years.

La n ie ea ign ent
Fill slopes for northbound ramp to I-205 and Lawnfield Extension create a long V-shaped topography which wildlife typically would avoid. Base should be at least 50 feet wide.

Lawnfield Extension would bisect KEX site wetlands used by wildlife for food and shade in summer. The KEX grasslands and adjacent wet meadow are used by wildlife for food and water, particularly by waterfowl, amphibians, and mammals. An approximately 400-foot-long bridge through the forested area would allow wildlife passage underneath. Trees and shrubs would be removed.

This realignment could sever one of the two main accesses for wildlife between Mount Talbert and

La n ie
ea ign ent

KE a io To er Site
New bridge over Dean Creek. North of bridge, retaining wall about 450 feet long would likely narrow small corridor through ditch already mostly impassable with overgrowth. Road currently used by wildlife would be removed. Steepening fill slopes and placing wall far from ditch would help reduce impacts.

B u
Single-family housing forms north edge and industrial land uses along base of bluff form south edge of corridor. Retaining walls for interchange built on the north side of alignment would limit intrusion into corridor. Midpoint interchange would narrow width of corridor from 150 to 75 feet for ~2,000 feet. Lights at interchange and on the highway would reduce the suitability of the corridor for nocturnal animals.

Alternative 2's midpoint interchange would impact additional 3.0 acres of Upland Class B compared to Alternative 3.

East of the interchange area, alignment forms southern third of the bluff width so the corridor would be narrowed in the least usable part of the corridor.

Vegetation removed during construction; temporary loss of habitat during regrowth of mitigation plants would functionally narrow the corridor for several years, decreasing its suitability for species less tolerant of human activity.

Tree removal would result in permanent impacts to wildlife.

Areas next to development are susceptible to invasion by non-native plants, such as Himalayan blackberry, which further degrades suitability of the area for wildlife travel.

Ca Wit y o e Area
Alignment enters Camp Withycombe where it crosses maintained fields that provide habitat for small mammals. Planned multi-use path would be located where forested and grassland habitat types converge. Loss of edge habitat reduces overall habitat complexity and directly reduces habitat for edge species.

Mt. Scott Creek
Sieben Creek
Mount Talbert
Camp Withycombe
Dean Creek
Cow Creek
SE LAKE RD
SE 97TH AVE
SE THIESSEN RD
SE WEBSTER RD
SE JOHNSON RD
SE 82ND DR
SE CLACKAMAS RD
SE HUBBARD RD
SE EVELYN ST
SE 106TH AVE
SE 122ND AVE
SE 130TH AVE
SE 135TH AVE
SE JENNIFER ST
224
205
212

Map Locator

1,500 0 1,500 Feet

Legen
Area of Potential Impact (API)
Urban Growth Boundary (UGB)
Wildlife Corridors
River
Streams
Culvert

Metro Resource Habitat Classification
Riparian Class I
Riparian Class II
Riparian Class III
Upland Class A
Upland Class B
Upland Class C

Sources:
ODOT and Metro, Portland OR
(Streams as modified by DEA as found on field visit)

Figure 53

Descriptions of Wildlife Habitats and Impacts (I-205 and Midpoint Areas)

Sunrise Project, I-205 to Rock Creek Junction

B u
Single-family housing forms north edge and industrial land uses along base of bluff form south edge of corridor. Retaining walls for interchange built on the north side of alignment would limit intrusion into corridor. Midpoint interchange would narrow width of corridor from 150 to 75 feet for ~2,000 feet. Lights at interchange and on the highway would reduce the suitability of the corridor for nocturnal animals.

Alternative 2's midpoint interchange would impact additional 3.0 acres of Upland Class B compared to Alternative 3.

East of the interchange area, alignment forms southern third of the bluff width so the corridor would be narrowd in the least usable part of the corridor.

Vegetation removed during construction; temporary loss of habitat during regrowth of mitigation plants would functionally narrow the corridor for several years, decreasing its suitability for species less tolerant of human activity.

Tree removal would result in permanent impacts to wildlife.

Areas next to development are susceptible to invasion by non-native plants, like Himalayan blackberry, which further degrades suitability of the area for wildlife travel.

o Cree Tri utary to o Cree
Wildlife corridor width less than 200 feet, mixed-forest land between housing on north/south. Alternative 2/3 built on fill slopes at approach to proposed new bridge over Rock Creek, creating at least temporary impacts. Replanted cover would take several years to achieve sufficient size to provide cover for traveling wildlife, which may stop using the area in the interim.

New bridge over Rock Creek, which is last portion of the wildlife corridor to the Clackamas River corridor.

Ca Wit y o e Area
Alignment enters Camp Withycombe where it crosses maintained fields that provide habitat for small mammals. Planned multi-use path would be located where forested and grassland habitat types converge. Loss of edge habitat reduces overall habitat complexity and directly reduces habitat for edge species.

SE 135t A enue to o Cree Tri utary
Riparian habitats at Sieben Creek add complexity and prey for wildlife traveling the Mount Talbert to Rock Creek corridor. Traffic on the access road could result in an increase of animal-vehicle collisions. Removal of Douglas-fir trees would result in impacts to fish habitat due to watershed effects. Other wildlife impacted will be to bats, neotropical birds, and raptors.

Alternative 2 would build access road north of the alignment west from SE 142nd Avenue. It would bisect the wetland/upland area, severing habitat from forested area north.

New bridge for expressway across SE 142nd Avenue would be built on fill slopes, which are main cause for impacts to wildlife habitat.

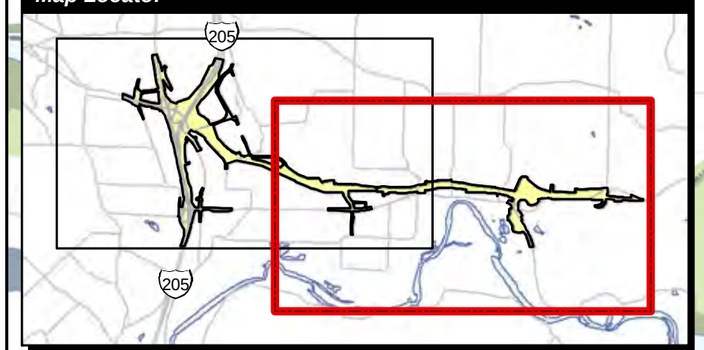
Vegetation removed during construction; temporary loss of habitat during regrowth of mitigation plants would functionally narrow the corridor for several years, decreasing the suitability of the corridor for species less tolerant of human activity.

Areas next to development susceptible to invasion by non-native plants, such as Himalayan blackberry, which further degrades suitability of the area for wildlife travel.

o Cree Tri utary to o Cree
Construction of Alternative 2/3 interchange would remove all of Upland Class A and B habitat on wooded knoll. Alternatives 2/3 impact low-value agricultural fields and dense stand of Douglas fir, habitat for small animals.

SE HUBBARD RD
SE JENNIFER ST
SE 122ND AVE
SE 130TH AVE
SE 135TH AVE
SE 142ND AVE
SE 152ND DR
SE ARMSTRONG CIR
Sieben Creek
Rock Creek
Trillium Creek
River
212
224
205

Map Locator



1,500 0 1,500 Feet

Legen
- Area of Potential Impact (API)
- Urban Growth Boundary (UGB)
- Wildlife Corridors
- River
- Streams
- Culvert

Metro Resource Habitat Classification
- Riparian Class I
- Riparian Class II
- Riparian Class III
- Upland Class A
- Upland Class B
- Upland Class C

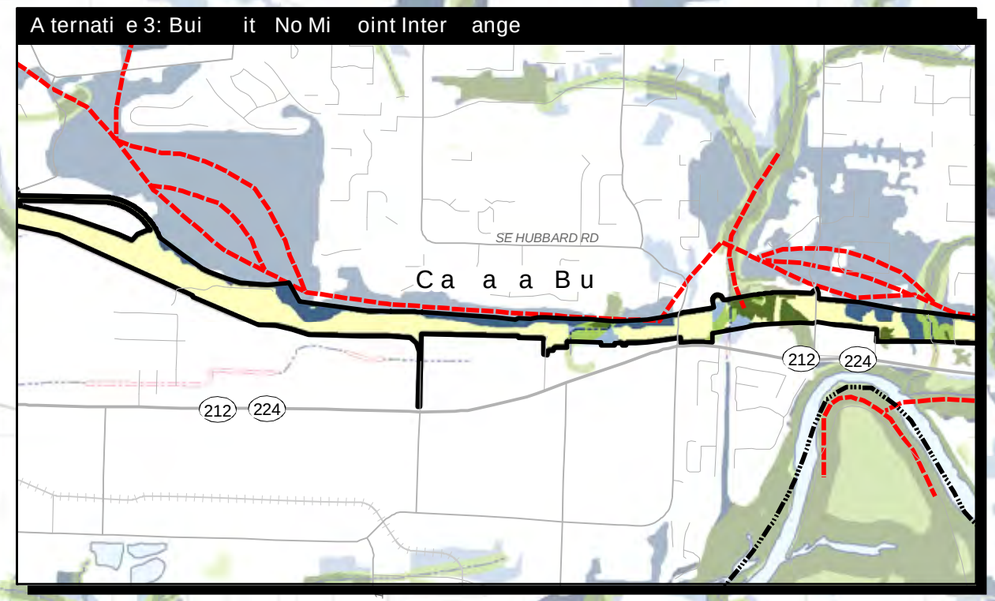
Sources:
ODOT and Metro, Portland OR
(Streams as modified by DEA as found on field visit)

Figure 54

Descriptions of Wildlife Habitats and Impacts (Midpoint Area and Rock Creek Junction)

Sunrise Project, I-205 to Rock Creek Junction

A ternati e 3: Bui it No Mi oint Inter ange



T ree Cree

Ca a a Bu

o Cree
Jun tion

SE FULLER RD
Phillips Creek
205
SE STEVENS RD
SE 129TH AVE
SE HARMONY RD
Mount Scott Creek
SE LAKE RD
224
Mount Talbert
SE 97TH AVE
SE 122ND AVE
SE 132ND AVE
SE THIESSEN RD
SE JOHNSON RD
SE 82ND DR
Dean Creek
Camp Withycombe
SE HUBBARD RD
Rock Creek
SE CLACKAMAS RD
SE WEBSTER RD
Cow Creek
212
224
SE ARMSTRONG CIR
Kellogg Creek
SE ROOTS RD
SE EVELYN ST
SE 106TH AVE
SE 122ND AVE
SE 130TH AVE
SE 135TH AVE
Trillium Creek
SE JENNINGS AVE
SE STRAWBERRY LN
WEBSTER RD
205
SE CAPPS RD
224
SE CASON RD
Cow Creek
Johnson Creek
S CLACKAMAS RIVER DR
Clackamas River

2,000 0 2,000 Feet

Sources:
ODOT and Metro, Portland OR
Streams as modified by DEA as found on field visit

Legen
Area of Potential Impact API
Urban Growth Boundary UGB
Wildlife Corridors
River
Streams
Culvert

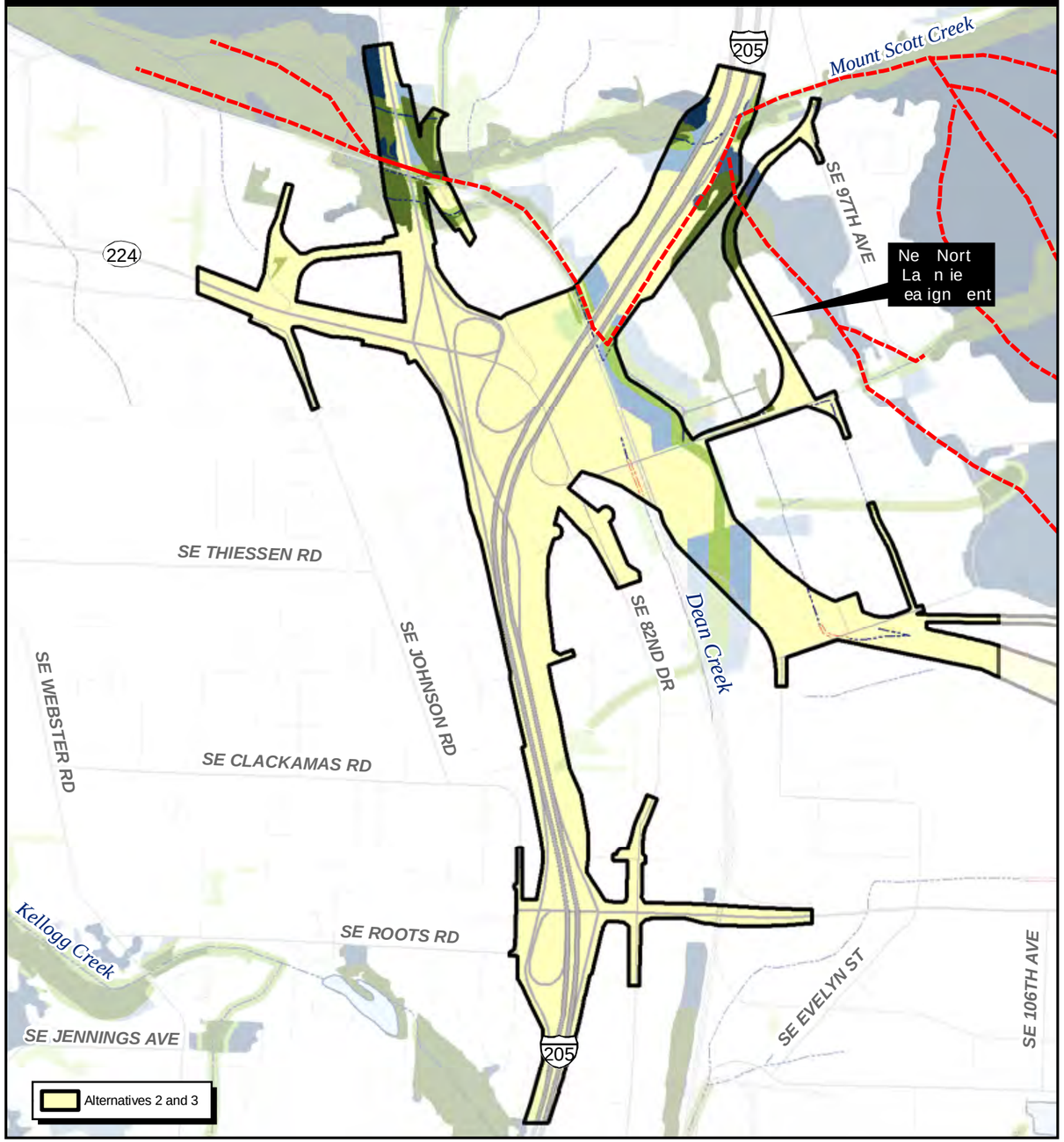
Metro Resource Habitat Classification
Riparian Class I
Riparian Class II
Riparian Class III
Upland Class A
Upland Class B
Upland Class C

Figure 55

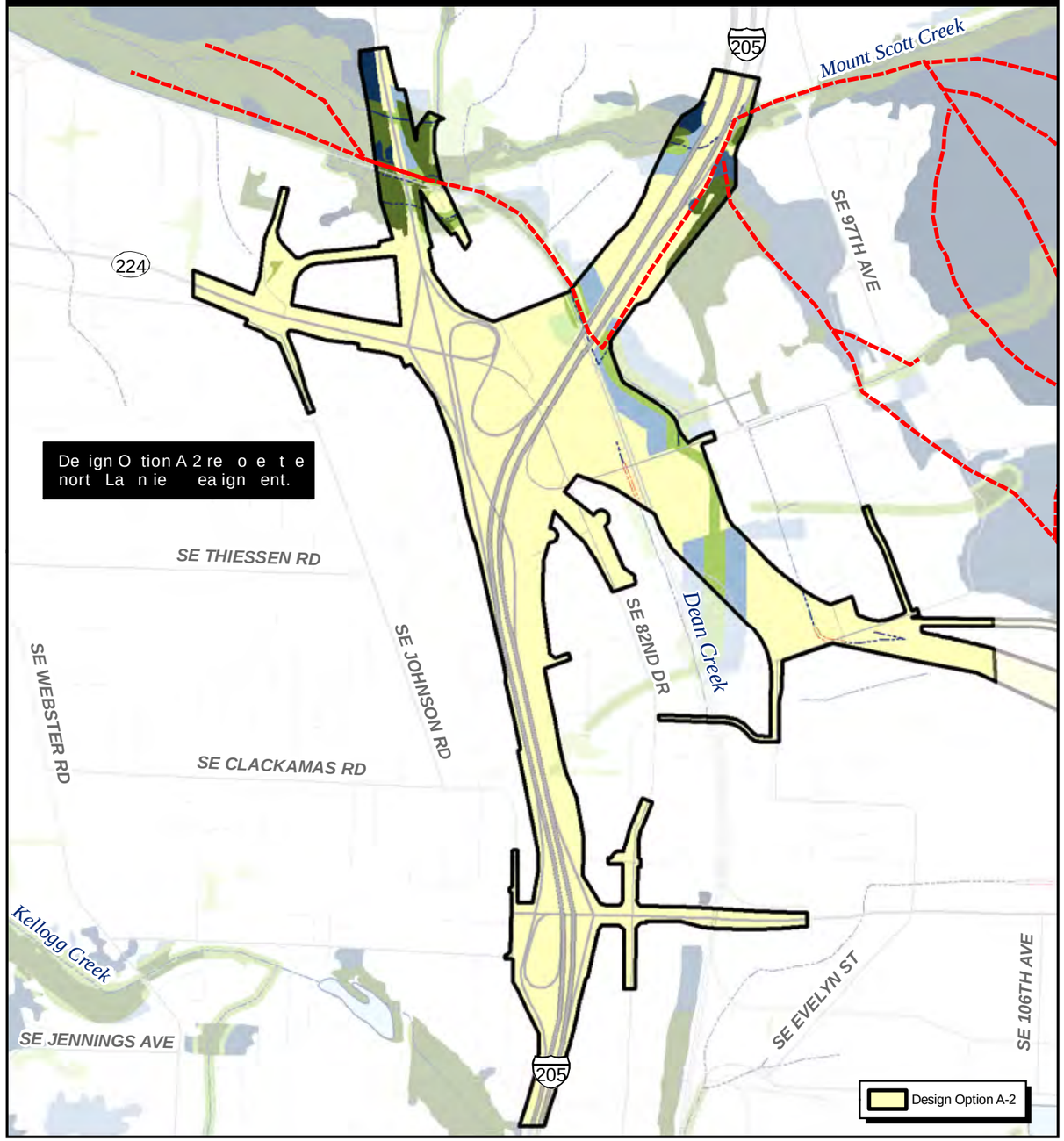
Habitat Impacts for Alternatives 2 and 3

Sunrise Project, I-205 to Rock Creek Junction

Alternatives 2 and 3



Alternatives 2 and 3 with Design Option A-2



1,500 0 1,500 Feet

Sources:
ODOT and Metro, Portland OR
Streams as modified by DEA as found on field visit

Legen
River
Streams
Culvert
Wildlife Corridors

Metro Resource Habitat Classification

Riparian Class I	Upland Class A
Riparian Class II	Upland Class B
Riparian Class III	Upland Class C

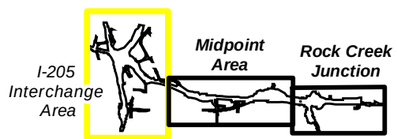
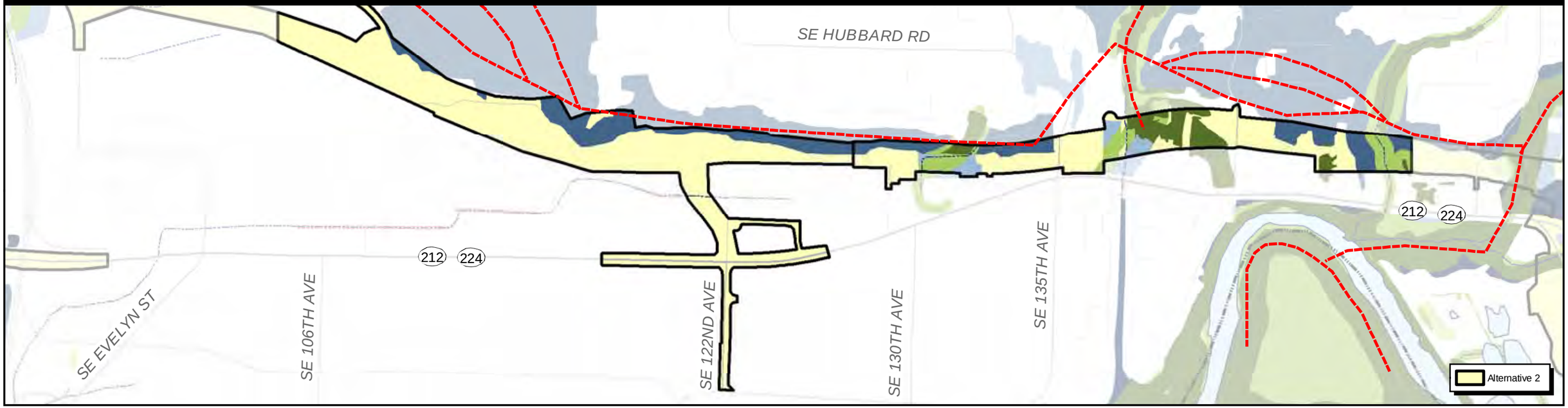


Figure 5

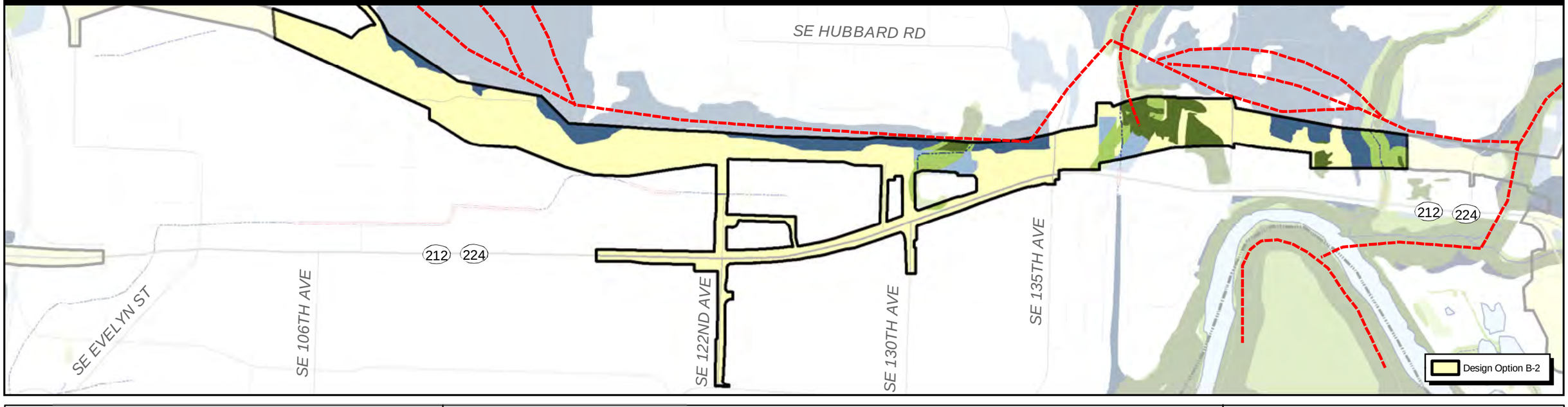
Habitat Impacts, I-205 Interchange Area Options

Sunrise Project, I-205 to Rock Creek Junction

Alternative 2



Alternative 2 with Design Option B-2



1,200 0 1,200 Feet

Sources:
ODOT and Metro, Portland OR
Streams as modified by DEA as found on field visit

Legen
River
Streams
Culvert
Wildlife Corridors

Metro Resource Habitat Classification
Riparian Class I
Riparian Class II
Riparian Class III
Upland Class A
Upland Class B
Upland Class C

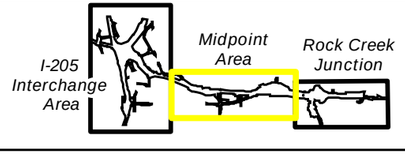
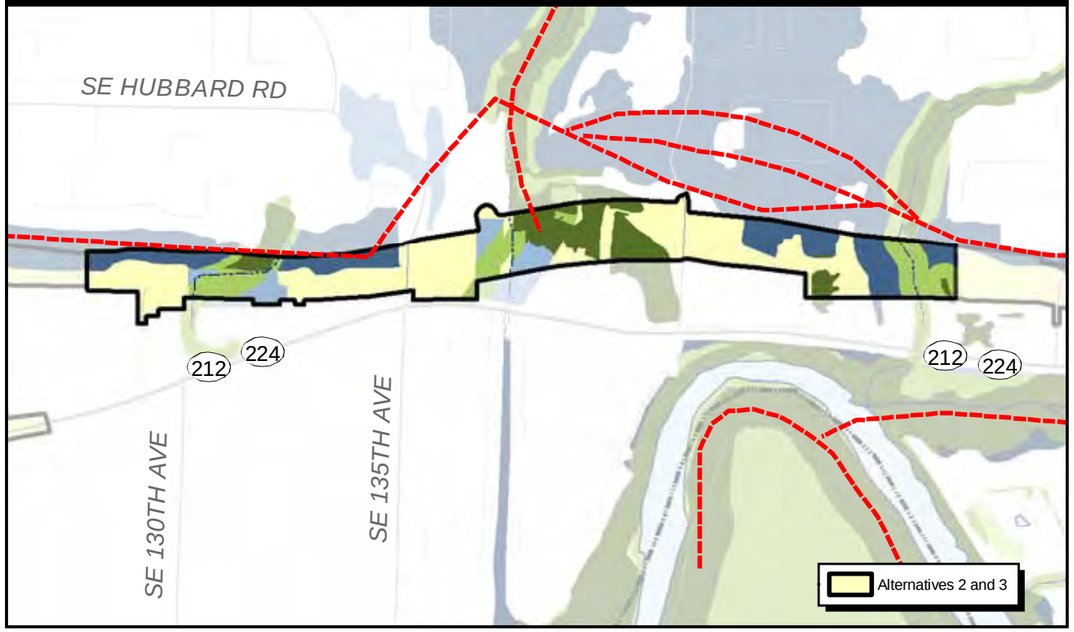


Figure 5

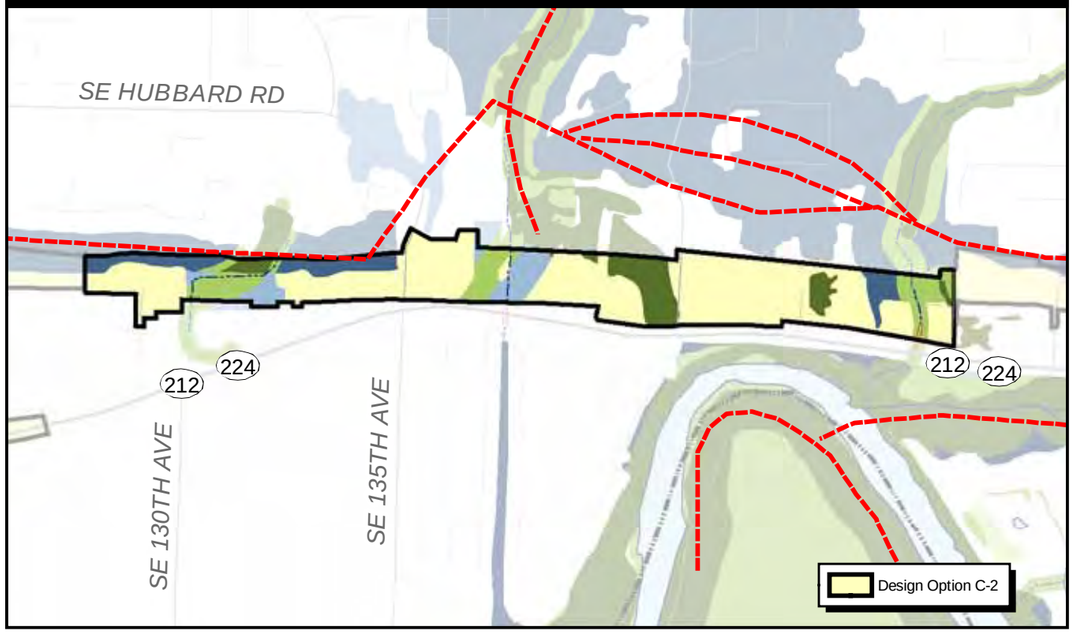
Habitat Impacts, Midpoint Area Options, Alternative 2

Sunrise Project, I-205 to Rock Creek Junction

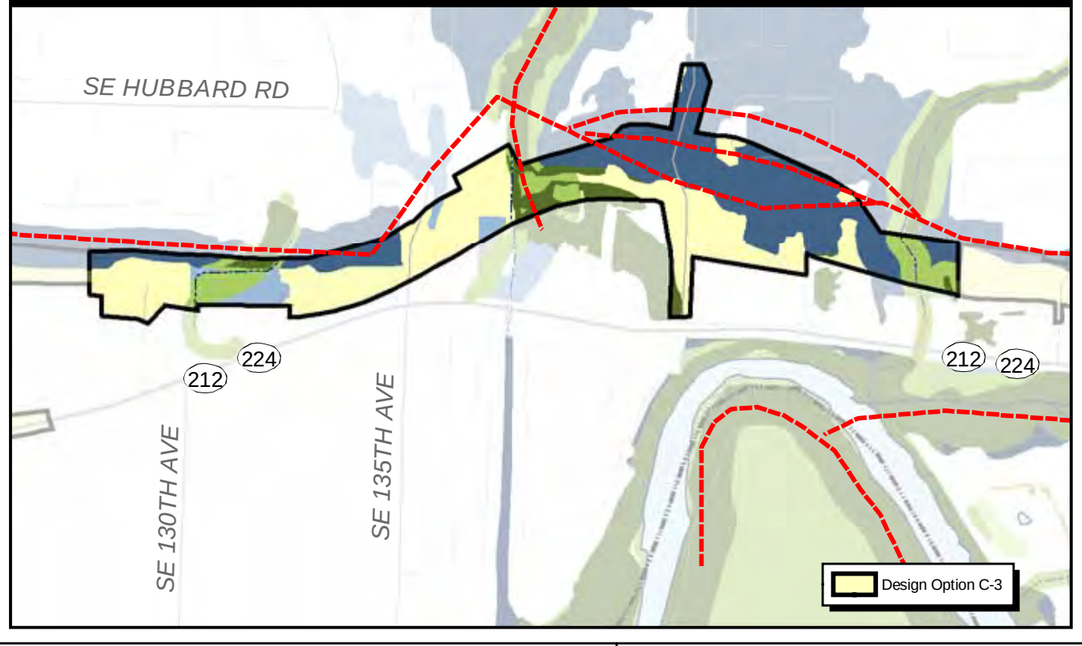
Alternatives 2 and 3



Alternatives 2 and 3 with Design Option C-2



Alternatives 2 and 3 with Design Option C-3



930 0 930 Feet

Sources:
ODOT and Metro, Portland OR
Streams as modified by DEA as found on field visit

Legen
River
Streams
Culvert
Wildlife Corridors

Metro Resource Habitat Classification
Riparian Class I
Riparian Class II
Riparian Class III
Upland Class A
Upland Class B
Upland Class C

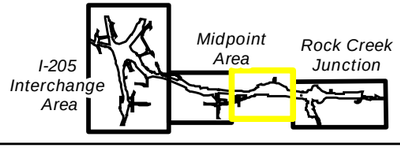
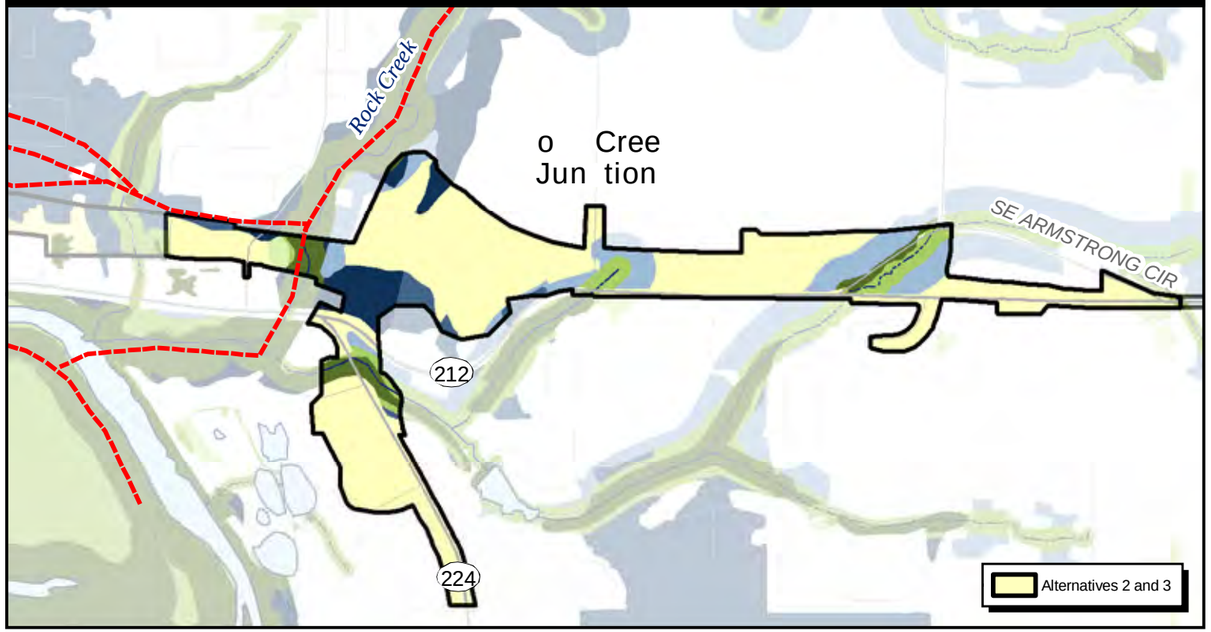


Figure 5

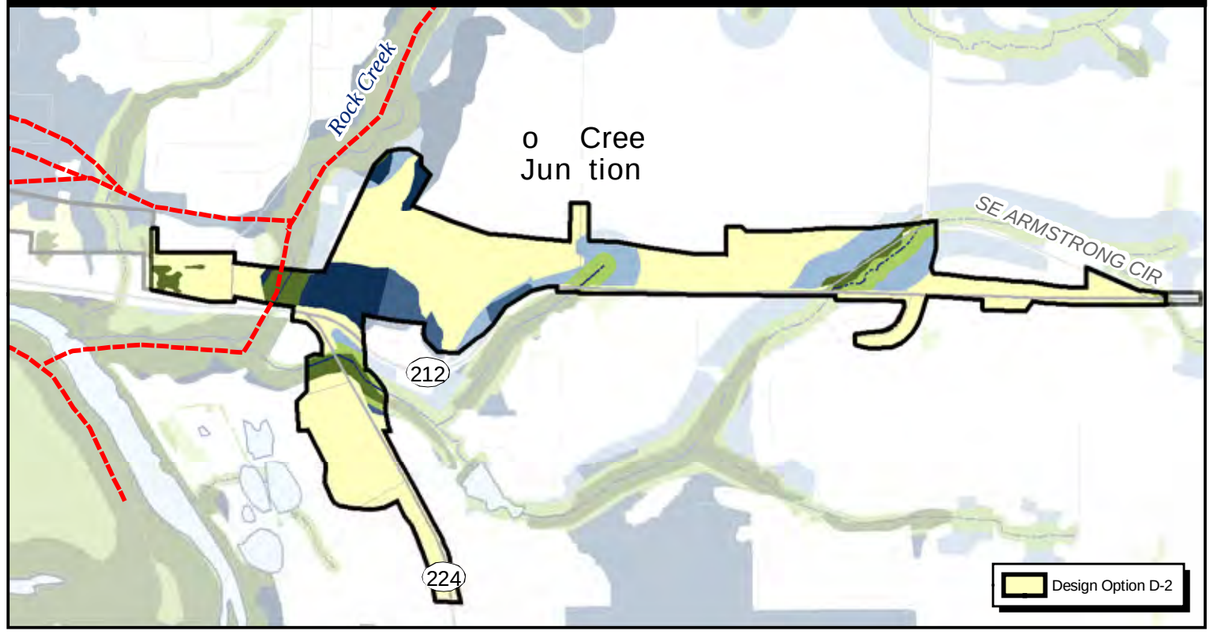
Habitat Impacts, Midpoint Area (East End) Options

Sunrise Project, I-205 to Rock Creek Junction

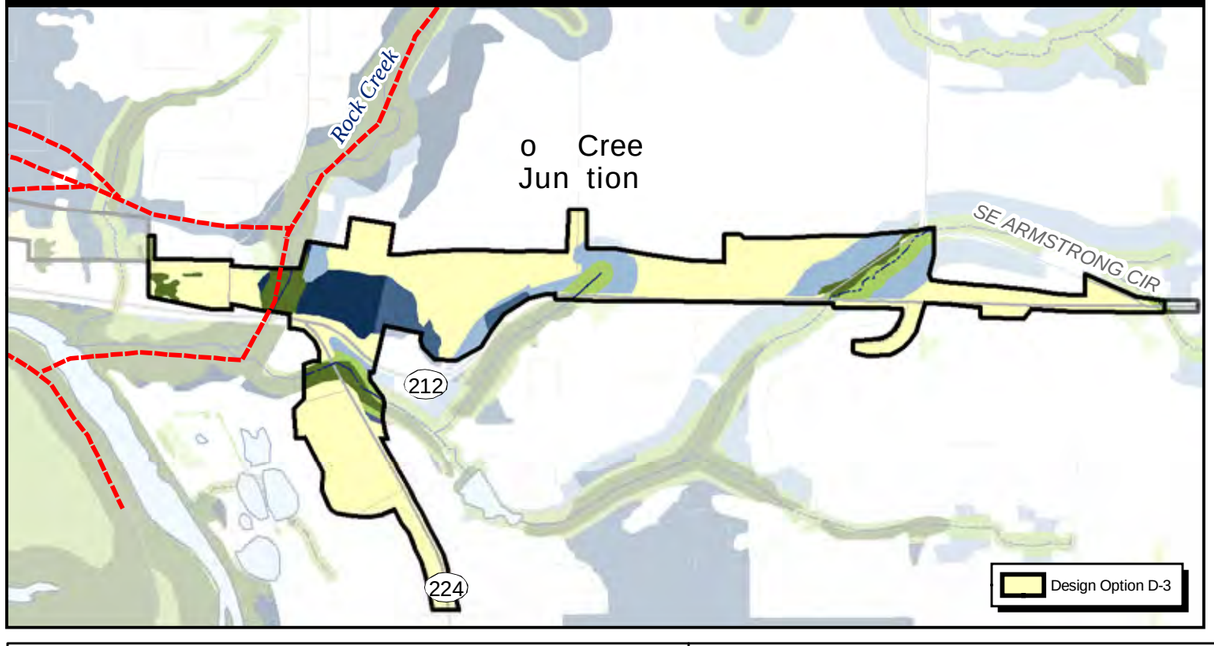
Alternatives 2 and 3



Alternatives 2 and 3 with Design Option D-2



Alternatives 2 and 3 with Design Option D-3



1,500 0 1,500 Feet

Sources:
ODOT and Metro, Portland OR
Streams as modified by DEA as found on field visit

Legen
River
Streams
Culvert
Wildlife Corridors

Metro Resource Habitat Classification

Riparian Class I	Upland Class A
Riparian Class II	Upland Class B
Riparian Class III	Upland Class C

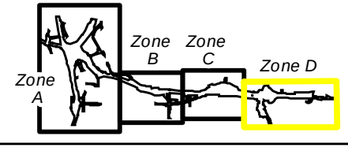


Figure 5

Habitat Impacts, Rock Creek Junction Area Options

Sunrise Project, I-205 to Rock Creek Junction

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Wetlands

Wetlands provide important functions that serve both the built and natural environments. They support fish and wildlife, store rain and flood waters, recharge groundwater, and remove sediments and pollutants from stormwater runoff.

In considering the environmental impacts of the proposed Sunrise Project, it is important to know where the wetlands are located and what functions they serve so that impacts among alternatives and design options can be compared and potentially reduced.

The Wetlands Technical Report on the attached DVD provides details on the following:

- Wetland delineation methodology
- Wetland characterization and acreages
- Wetland functional capacity
- Proposed mitigation planning strategy

Wetlands in the Project Area

Wetland biologists reviewed previous studies, maps, and aerial photographs and visited most of the property within the Sunrise Project area (including temporary construction areas). They mapped over 41 acres of wetlands at 14 sites within the Sunrise Project right-of-way or temporary (construction) impact area. Most of the wetlands belong to one or a combination of three main types or classifications: palustrine emergent (PEM, 26.80 acres), palustrine scrub-shrub (PSS, 12.1 acres), and palustrine forested (PFO, 1.4 acres). The classifications are based on the characteristics of the wetlands. The palustrine emergent type indicates wetlands dominated by herbaceous vegetation. Scrub-shrub and forested wetlands often take longer to establish, provide more functions, and are therefore considered more valuable and difficult to replace.

Palustrine wetlands (commonly called marsh, swamp, bog, fen, or prairie) may include small shallow ponds and are found near lakes, rivers, and estuaries or in isolated catchments or on slopes. They are distinguished from riverine and lacustrine (lake) wetlands because vegetation areas are greater than open water.

Palustrine emergent (PEM) wetlands are dominated by herbaceous, hydrophytic (water tolerant), and often perennial vegetation that is present most of the growing season in most years.

Palustrine forested (PFO) wetlands include areas dominated by woody vegetation that is at least 6 meters (20 feet) tall.

Palustrine scrub-shrub (PSS) wetlands are dominated by woody vegetation less than 6 meters (20 feet) tall that may include true shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions.

Figure 60 (p. 173) identifies the 14 wetlands with letters “A” through “N” and shows their locations, types, general characteristics, and approximate boundaries inside the project area. The numerous creeks that drain to Mt. Scott Creek and the Clackamas River are also shown on Figure 60, of which some are connected hydrologically to the wetlands.

The I-205 Interchange area contains Wetlands A, B, C, D, E, F, G, and H, with most of the acreage near the KEX radio tower, Seventh-Day Adventist Church, and Camp Withycombe properties. The Midpoint area has a small wetland, near SE 130th Avenue and a large area (Wetland J) near Sieben Creek and the Clackamas River. The remaining larger wetlands (K and L) are found near the Rock Creek Junction.

In general, historical land clearing and urban development have significantly altered natural drainages in the project area by rerouting and placing them in ditches, culverts, and pipes. A large portion of the project area is covered by impervious surfaces (roofs and pavement), which prevent stormwater from entering the ground and recharging the groundwater systems, some of which feed

local wetlands. The health of wetlands declines as their recharge declines over time, and invasive and non-native plant species can take over from native species, in turn limiting habitat values for native wildlife. Many of the emergent wetlands, the dominant type of wetland in the project area, contain a number of invasive plant species.

Amount of Wetlands Affected

Alternative 1–No Build has the potential for minor impacts to wetlands when planned projects are built, which would be far less than the effects associated with building the proposed Sunrise Project. Most of the projects under **Alternative 1** would widen existing roads that could potentially encroach on small wetlands adjacent to the roadways. To obtain a permit from the U.S. Army Corps of Engineers (USACE) and the Oregon Department of State Lands, each project must avoid wetlands if possible, minimize impacts to unavoidable wetlands, and mitigate the impacts to the affected wetlands. While the impacts associated with the individual projects might be small, the cumulative effects of all the projects' impacts upon wetland functions in the watershed area would need to be considered for every project. Figure 61 and Figure 62 (pp. 174 and 175) identify wetland impacts for the **Alternatives 2 and 3** and the six design options, respectively.

Alternatives 2 and 3 would both remove the same amount of wetlands, 32.3 acres, leaving less than 9 acres of the total 41 acres within the Sunrise Project area. Although **Alternative 2** has a larger footprint at the midpoint, that difference would not affect any wetlands.

Alternatives 2 and 3 would impact all 7 acres of Wetland C inside the project area, though the wetland extends outside it. Wetland C was ranked as the highest functioning of all 14 wetlands (see the discussion in the following Wetland Functions section). Large acreage impacts would also occur to other notable wetlands (A, F, G, I, J, K, and L).

All of Wetland B within the project area (1.36 acres) would be lost; however, a portion of the site outside the project area would be left intact. Wetland M would not be affected by **Alternatives 2 and 3**.

The choice of design option would affect the overall loss of wetland acreage as follows:

- **Design Option A-2** would have about five fewer acres of impact, mostly in the emergent wetland category.
- **Design Option B-2** would result in the greatest loss of wetlands, about two acres more than under **Alternative 2**, and it includes the most mixed forested/scrub-shrub wetlands.
- Both **Design Options C-2 and C-3** would result in fewer total wetland impacts than under **Alternatives 2 and 3**—**C-2** by about four acres and **C-3** by about six acres. **Design Option C-2** would affect the least amount of mixed forested/scrub-shrub wetlands.
- **Design Option D-2** would have slightly fewer impacts in the emergent wetlands category than **Alternatives 2 and 3**.
- **Design Option D-3** would have slightly higher impacts on wetlands than Alternatives 2 and 3, also in the emergent wetlands category.

Table 20 summarizes loss of wetland acreage by wetland category.

Wetland Functions

Wetlands in the Sunrise Project area provide about 11 different functions that can be grouped under three main categories: water quantity, water quality, and fish and wildlife habitat. Water quantity function refers to a wetland's ability to store stormwater or flood waters and then delay its release. Water quality functions refer to a wetland's ability to stabilize and store sediments, regulate the cycling of nutrients such as phosphorous and nitrogen, and regulate water temperatures. Fish and wildlife functions refer to a wetland's ability to provide the food sources,

Table 20. Wetland Acreage Loss, Total and by Wetland Classification

	Total Acres Lost	PFO	PFO/ PSS	PSS	PSS/ PEM	PEM
Alternatives 2 and 3	32.3	0.5	9.7	0.5	1.4	20.2
Option A-2	27.2	0.5	9.3	0.5	1.4	15.5
Option B-2	34.4	0.5	11.0	0.6	1.4	20.9
Option C-2	28.6	0.5	6.1	0.5	1.4	20.2
Option C-3	26.2	0.5	6.7	0.7	1.4	17.0
Option D-2	31.6	0.5	9.7	0.5	1.4	19.5
Option D-3	32.2	0.5	9.7	0.5	1.34	20.1

See the call-out box on of the first page of the Wetlands section for a description of wetland classes.

habitat structures, and other critical factors for fish and wildlife during some or all of their various life stages.

Functions were rated on a scale of zero to one (0.0 to 1.0) in one-tenth increments so that their values could be compared. Table 21 summarizes the comparison.

Most wetlands within the Sunrise Project area ranked as having moderate to moderately low functional capacity. However, several individual wetlands have functions that scored high to moderately high, including Wetlands A, B, and C near I-205 and the Lawnfield area, Wetlands F and G at Camp Withycombe, and Wetlands L and M near Rock Creek and the Clackamas River.

Wetland C straddles the border between the KEX and Seventh-Day Adventist Church properties. It received the highest score, or tied for highest score, in 7 of the 13 functions evaluated; it is also the second largest wetland. What makes Wetland C an important resource is its diverse plant community, complex microtopography, and abundant puddles, as well as its location next to other wetlands and upland habitats outside of the project area. Its habitat functions are limited by field mowing on the KEX site and by development encroaching on its margins.

As it relates to wetlands, **microtopography** refers to small-scale changes in elevations, typically in inches.

Wetland A, located on the west side of SE 82nd Avenue and associated with Phillips Creek, scored highest or tied highest on 4 out of 13 functions, but it is only 0.32 acre. Wetland A is part of a larger wetland and riparian complex that extends outside the Sunrise Project area and to Phillips Creek, a tributary to Mt. Scott Creek. Wetland A's trees, native plants, connection to off-site habitats, and seasonal ponding and flooding make its functions rank high. However, the functions are limited by the nearness of SE 82nd Avenue and other development and by the presence of a hazardous waste remediation site.

Wetland F at Camp Withycombe has two notable features—relatively large patches of palustrine-forested/palustrine scrub-shrub habitat (2.42 acres), and emergent wetland with an abundance of common camas, once an important food source for indigenous people but no longer widespread in the region. Wetland G also has a camas meadow. Aside from common camas, however, most of the vegetation within the emergent plant communities of Wetlands F and G is not native.

Wetland I near SE 130th Avenue receives cold water from groundwater and cools local streams during hot summer months. The wetland is believed to connect hydrologically to either Cow Creek or Sieben Creek via pipes underneath developed areas.

Table 21. Summary of Acreage Impacts on Wetlands Functions (percent)

Design Option	Percent Acreage Impact[1, 2]	Water Storage and Delay	Sediment Stabilization and Phosphorous Retention	Nitrogen Removal	Primary Production	Invertebrate Habitat Support	Amphibian and Turtle Habitat	Wintering and Migratory Water Bird Support	Songbird Habitat Support	Support of Characteristic Vegetation
Alternative 2 and 3	78%	77%	78%	77%	76%	78%	78%	78%	77%	78%
Option A-2	66%	61%	64%	62%	65%	64%	61%	60%	59%	60%
Option B-2	83%	81%	83%	82%	82%	83%	82%	82%	81%	82%
Option C-2	69%	73%	70%	70%	65%	70%	69%	72%	71%	71%
Option C-3	63%	67%	65%	65%	59%	65%	65%	67%	66%	67%
Option D-2	76%	75%	77%	75%	75%	77%	76%	76%	75%	76%
Option D-3	78%	77%	78%	77%	76%	78%	77%	78%	77%	78%

[1] Percent acreage impact refers to percentage of wetland acreage within API that would be directly impacted.

[2] Functions with an acreage weighted average score of 0.0 (i.e., Thermoregulation, Resident and Anadromous Fish Habitat Support, and Breeding Water Bird Support) are not included in the table, since percent functional loss scores would be misleading).

Green denotes lowest percentage loss of function for each function or lowest percentage acreage loss.
Blue denotes highest percentage loss of function for each function or highest percentage acreage loss.
Option with greatest loss (acreage and functional) is shown in blue.
Option with least acreage loss is shown in green. Option with least functional loss is also shown in green.

Wetland J, at the east end of the Midpoint area, scored relatively low, but its larger size and connection to the upland wildlife corridor to the north are important. However, when the biologists were visiting the area, the site was being cleared and the forested and scrub-shrub plant community may no longer exist.

Wetland K did not score high because of its past use as pasture and the domination of non-native grasses. However, Wetland K does provide a relatively large area (3.4 acres) of undeveloped habitat within a larger area of undeveloped upland habitats along Rock Creek.

Wetland L contains 1.86 acres of palustrine-forested/palustrine scrub-shrub habitat, which is uncommon in the project area and surrounding areas. Because it borders a tributary to Rock Creek, it provides thermoregulation and supports resident and anadromous fish habitats. The lower reaches of Rock and Trillium Creeks provide extremely sensitive spawning and rearing fish habitat.

Wetlands B and M were created to mitigate previous impacts to wetlands. Impacting mitigation wetlands could require more mitigation than that required for impacting non-mitigation wetlands.

Table 21 lists the percent loss of wetland functions and acreage that would occur from each design option. Cells highlighted in blue note the greatest percent loss calculated for each function and percent loss of wetland acreage. Cells highlighted in green note the least percent loss calculated for each function and percent loss of wetland acreage. It is important to compare the impact results in Table 21 with those in Table 19 because, although the percentage loss of a function may be very high, the original function provided may have been very low to begin with. This is the case for the thermoregulation and resident fish habitat support functions.

As Table 21 indicates, the percentage loss of wetland functions is similar to the amount of acreage that would be affected.

Alternative 1 would have minimal impacts to the function of wetlands in the project area.

Alternatives 2 and 3 would remove nearly 80 percent of most wetland functions in the Sunrise Project area. All seven acres of Wetland C, ranked as the highest functioning wetland overall, would be removed. Large acreage impacts would also occur to other wetlands with higher functions, such as Wetlands A, F, G, I, J, K, and L.

Wetland B, an ODOT wetland mitigation site, would also be affected. All of the site within the Area of Potential Impact would be lost (1.36 acres); however, a portion of the site outside of the Area of Potential Impact would be left intact. Wetland M, another wetland mitigation site within the Area of Potential Impact, would not be affected by the build alternatives.

Although **Design Option C-3** would result in the fewest impacts to wetland acreage, **Design Option A-2** would result in the fewest impacts to wetland function. This is primarily because **Design Option A-2** would avoid impacts to wetlands around the KEX and the Seventh-Day Adventist properties, which were identified as providing the highest overall function within the project area.

Design Option B-2 would result in the highest percentage loss of function in most of the functional categories analyzed (i.e., **Design Option B-2** contains the most cells shaded in blue in Table 21).

The alignment of **Design Option C-2** would leave more of Wetland J intact and connected to the wildlife corridor to the north compared to **Alternatives 2 and 3** and **Design Option C-3**. However, **Design Option C-2** would result in the complete removal of Wetland M, an existing wetland mitigation site. **Design Option C-3** would have only minor impacts on Wetland M.

Design Option C-3 would shift the new highway alignment substantially to the north near Wetlands J and M. Acreage impacts to Wetland J would be less than under **Alternatives 2 and 3** and **Design Option C-2**. However, the trade-off for choosing **Design Option C-3** would be more

impacts to the wildlife corridor to the north and elimination of the connection between the remaining portion of Wetland J and the wildlife corridor. The disruption could adversely affect the flow of water to Wetland J from underground sources.

Design Option D-2 would shift the alignment partially to the south in the general vicinity of Wetlands K, L, and N. This shift results in much less impact to Wetland K compared to other options (i.e., 0.71 acre of impact for **Design Option D-2** versus 1.62 acres for **Alternatives 2 and 3**). This is the only design option that would impact Wetland N, removing it completely. Wetland N rated fairly low for most functions.

Design Option D-3 would have impacts on wetland function similar to **Alternatives 2 and 3**. The change in the project's footprint in **Design Option D-3** would result in slightly less impact to Wetland K compared to **Alternatives 2 and 3** (1.3 acres compared to 1.6 acres). However, **Option D-3** would result in the complete loss of Wetland N (0.22 acre), whereas **Alternatives 2 and 3** would avoid Wetland N altogether.

Even if all wetlands in the area are not directly affected by constructing the proposed Sunrise Project, indirect impacts on the functions of the remaining wetlands could still occur. Traffic, removing sources of wetland hydrology, reducing wetland size, and cutting off connections to other viable habitats and wildlife corridors are typical indirect impacts.

For example, additional functional loss to Wetland C could occur as a result of the proposed Lawnfield realignment under **Alternatives 2 and 3**, which would result in encroachment of high traffic areas onto adjoining low traffic wetland areas (KEX and Seventh-Day Adventist sites). The Lawnfield realignment would likely adversely affect the connection of Wetland C to the adjacent wildlife corridor (see Biology section). The Lawnfield realignment could adversely alter the water source for Wetland C.

The proposed Sunrise Project would go straight through Wetland J, leaving a small patch to the north and a small patch to the south. The northern patch would still connect to the wildlife corridor farther north; however, the new highway would result in a substantial increase in traffic adjacent to both patches. In addition, the water source for the southern patch of Wetland J could be adversely affected.

Indirect Effects

The loss of wetlands could indirectly affect surface waters downstream of the wetland sites due to the loss of water quantity and water quality functions. Local wildlife would lose those habitats and their links to adjacent upland habitats. If the loss is large enough, regional use by wildlife could decline as viable corridors are broken up.

The proposed Sunrise Project would reduce the amount of land in the area, which could lead to increased pressure to develop within remaining wetlands, as fewer viable upland sites are likely to remain. Due to the project's location within the UGB, many of these same pressures would likely occur even without the Sunrise Project.

Potential Mitigation Measures

Wetland impacts must be minimized. Minimization measures include the following:

- Combining design options with the fewest impacts, where feasible;
- Using retaining walls to limit fill encroachment into wetlands and other waters;
- Installing culverts to provide hydrologic connectivity from one side of roadway to the other for wetlands that have been bisected;
- Installing culverts to provide amphibian and small mammal passage;
- Using fish passable culverts or bridge structures where appropriate;
- Choosing alternative placement of stormwater detention facilities currently

proposed that would impact Wetlands J and G; and

- Choosing alternative placement of the proposed bike path through Camp Withycombe to avoid increased pedestrian traffic.

Project impacts are estimated conservatively to be between 26.23 and 34.39 acres (Table 20), likely triggering wetland mitigation ranging from 26.23 to 103.17 acres, calculated for the alternatives and design options in Table 22. Mitigation would probably consist of creating and enhancing wetlands since opportunities for restoration are very limited. The permitting agencies typically require a higher mitigation ratio for that type of mitigation. Therefore, the amount of mitigation is more likely to fall within the mid- to higher range.

A comprehensive wetland mitigation strategy is being developed for the impacts associated with the proposed Sunrise Project. The strategy would focus on aggregating the impacts on one or several large-scale sites.

Table 22. Wetland Mitigation Acreage by Design Option

Alternatives with and without Design Options	Minimum [1, 3] (1:1 ratio)	Maximum [2, 3] (3:1 ratio)
Build Alternatives	32.26	96.78
A-2	27.23	81.69
B-2	34.39	103.17
C-2	28.63	85.89
C-3	26.23	78.69
D-2	31.58	94.74
D-3	32.22	96.67

[1]Minimum acreage assumes 100 percent mitigation in the form of restoration, which is calculated at a 1:1 ratio (mitigation:impacts) based on Department of State Lands (DSL) rules.
[2]Maximum acreage assumes 100 percent mitigation in the form of enhancement, which is calculated at a 3:1 ratio (mitigation:impacts) based on DSL rules.
[3]Minimum and maximum acreage amounts account for impacts to existing mitigation sites; the standard DSL ratios are used to calculate mitigation requirements. In reality, both DSL and the U.S. Army Corps of Engineers would likely require a greater ratio of mitigation for impacts to these wetlands.

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Wetland A (0.32 Acres)
Forested wetland adjacent to west side of SE 82nd along floodplain of Phillips and Mt. Scott Creeks. Phillips Creek flows through wetland just prior to its confluence with Mt. Scott Creek. Adjacent is a hazardous waste groundwater remediation area.

Wetland B (1.36 Acres)
Wetland is ODOT mitigation site adjacent to I-205, office park development, and Dean Creek. Conditions favorable to native frogs.

Wetland C (7.09 Acres)
Most valuable wetland resource within project API, includes diverse plant communities with native species and evidence of deer bedding down. KEX Radio tower portion is emergent wetland. Seventh-Day Adventist property contains emergent and forested/scrub-shrub plant communities.

Wetland D (4.17 Acres)
Patches of remnant wetlands west of KEX Radio tower site and railroad tracks, emergent with small patch of forested/scrub-shrub and high percentage of invasive and non-native species adjacent to ditched section of Dean Creek.

Wetland E (0.36 Acres)
Emergent wetland of low function due to isolation and high presence of invasive species.

Wetland F (3.65 Acres)
At Camp Withycombe, wetland is mix of emergent and forested wetlands. Water from the ditch flows through center of the wetland and eventually to Dean Creek.

Wetland G (1.66 Acres)
Wetland at Camp Withycombe contains a large population of common camas.

Wetland I (0.64 Acres)
Scrub-shrub wetlands, bordered by industrial facilities, are shallow but wide areas created by draining hillside seeps that provide connection to other natural resource areas.

Wetland J (15.30 Acres)
Estimated wetland acreage and conditions only, not verified. Potential acreage is large and property connects with upland wildlife corridor to north, which helps support wildlife habitat function. Past disturbance from mowing and removal of vegetation and possibly fill in places has reduced acreage.

Wetland K (3.34 Acres)
Emergent wetland lies adjacent to Rock Creek, roughly 40 to 50 feet above active channel. Historically cattle pasture, wetland is dominated by non-native grasses. Visitation by humans is infrequent and the area is relatively well-buffered from other traffic.

Wetland E (0.36 Acres)
Emergent wetland of low function due to isolation and high presence of invasive species.

Wetland E (0.36 Acres)
Emergent wetland of low function due to isolation and high presence of invasive species.

Wetland H (0.21 Acres)
Forested wetland is surrounded by development, which severely limits its wildlife support functions.

Wetland M (0.88 Acres)
Wetland mitigation site next to a self-storage facility. Beginning to transition from emergent to a scrub-shrub community. A high percentage of native plant species.

Wetland N (0.22 Acres)
Emergent wetland dominated by non-native grasses but has some native species. Bordered on all sides by development.

Wetland L (2.20 Acres)
Tributary of Rock Creek crosses under OR 224, via culvert near intersection with OR 212, and runs through emergent wetland. Downed trees showed beaver activity along roadway fill slopes of OR 224.

SE FULLER RD · Phillips Creek · SE STEVENS RD · 205 · SE 129TH AVE · SE 172ND AVE · Mt. Scott Creek · Sieben Creek · SE 147TH AVE · SE LAKE RD · 224 · SE 97TH AVE · SE 122ND AVE · SE 132ND AVE · SE SUNNYSIDE RD · Rock Creek · SE THIESSEN RD · SE 82ND DR · Dean Creek · SE 142ND AVE · SE 152ND DR · SE JOHNSON RD · SE HUBBARD RD · SE WEBSTER RD · SE CLACKAMAS RD · SE ARMSTRONG CIR · Kellogg Creek · SE ROOTS RD · 212 · 224 · SE EVELYN ST · SE 106TH AVE · SE 122ND AVE · SE 130TH AVE · SE 135TH AVE · SE JENNIFER ST · SE JENNINGS AVE · SE STRAWBERRY LN · 205 · WEBSTER RD · SE CASON RD · Cow Creek · Johnson Creek · SE CAPPS RD · S CLACKAMAS RIVER DR · Clackamas River

N

2,000 0 2,000 Feet

Sources:
ODOT and Metro, Portland OR
Streams as modified by DEA as found on field visit, DEA Wetland Boundaries

Legend

- Urban Growth Boundary (UGB)
- Area of Project Impact (API)
- River
- Streams
- Culvert

Wetlands - Cowardin Classifications

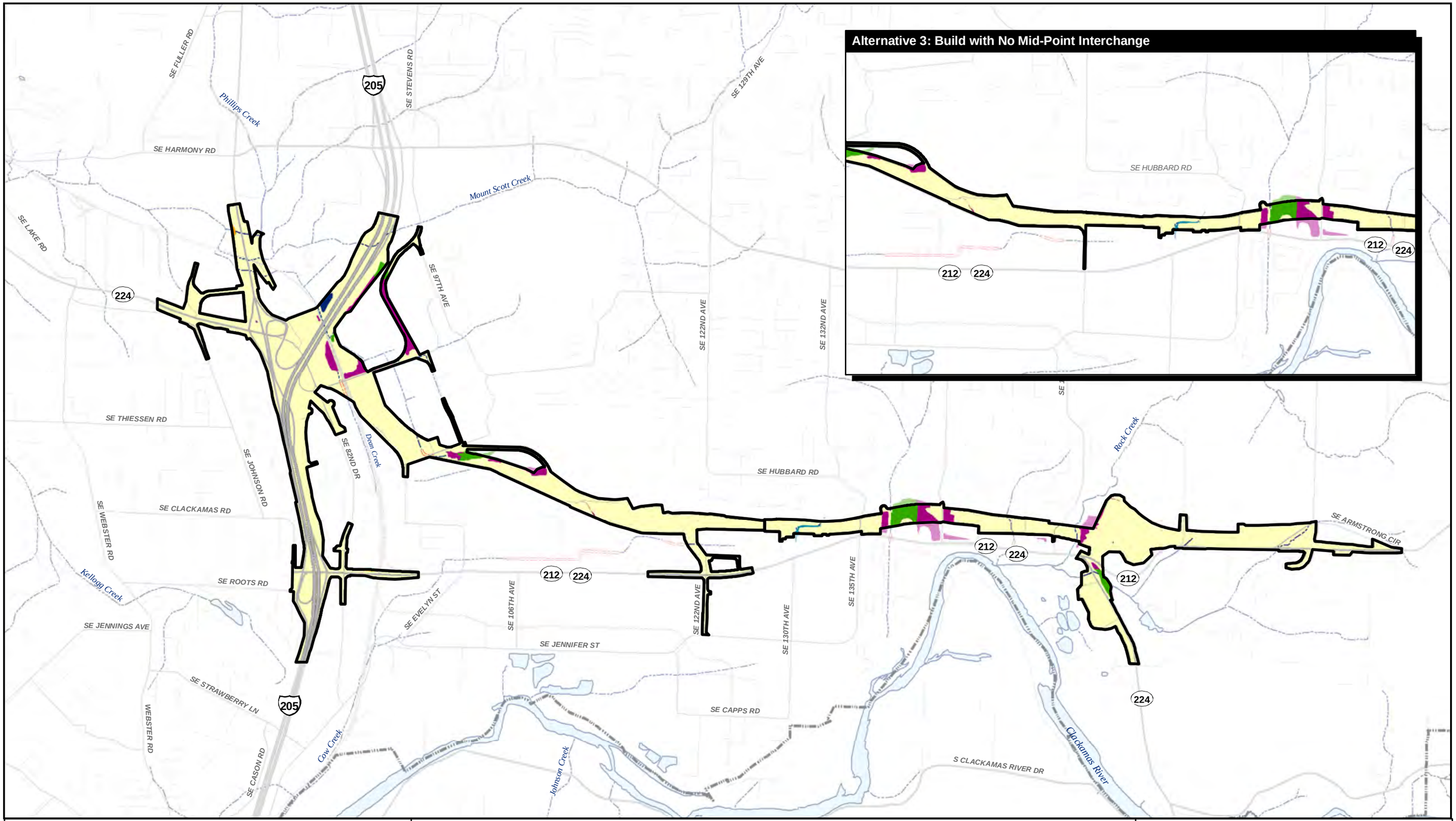
- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Palustrine Scrub-Shrub (PSS)
- Palustrine Forested/Palustrine Scrub-Shrub (PFO/PSS)
- Palustrine Scrub-Shrub/Palustrine Emergent (PSS/PEM)

Figure 60

Wetlands and Other Waters in the Area of Project Impact (Aerial)

Sunrise Project, I-205 to Rock Creek Junction

Alternative 3: Build with No Mid-Point Interchange



2,000 0 2,000 Feet

Sources:
ODOT and Metro, Portland OR
Streams as modified by DEA as found on field visit, DEA Wetland Boundaries

Legend

- Urban Growth Boundary (UGB)
- Alternative 2 - Area of Project Impact (API)
- River
- Streams
- Culvert

Wetlands - Cowardin Classifications

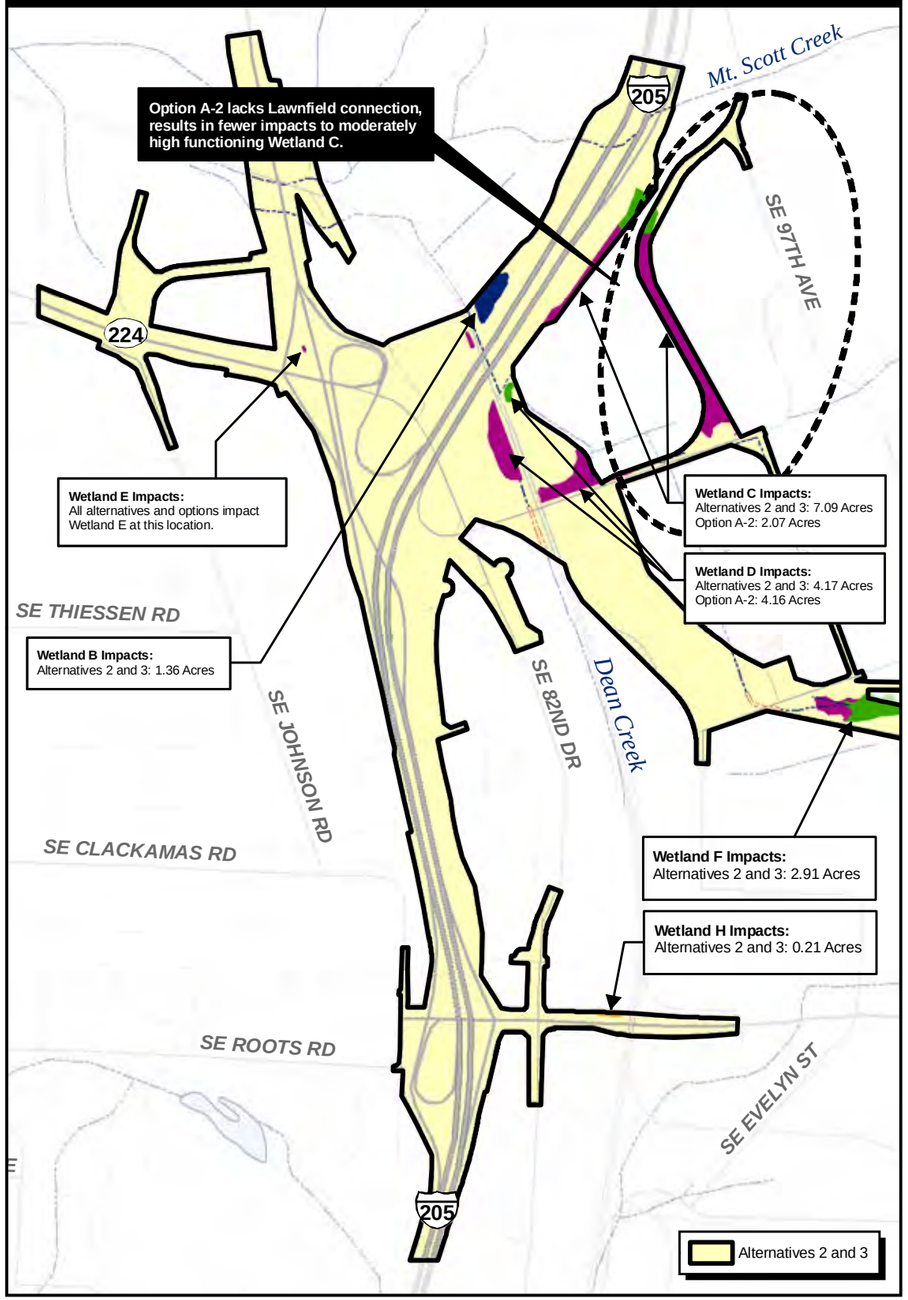
- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Palustrine Scrub-Shrub (PSS)
- Palustrine Forested/Palustrine Scrub-Shrub (PFO/PSS)
- Palustrine Scrub-Shrub/Palustrine Emergent (PSS/PEM)

Figure 61

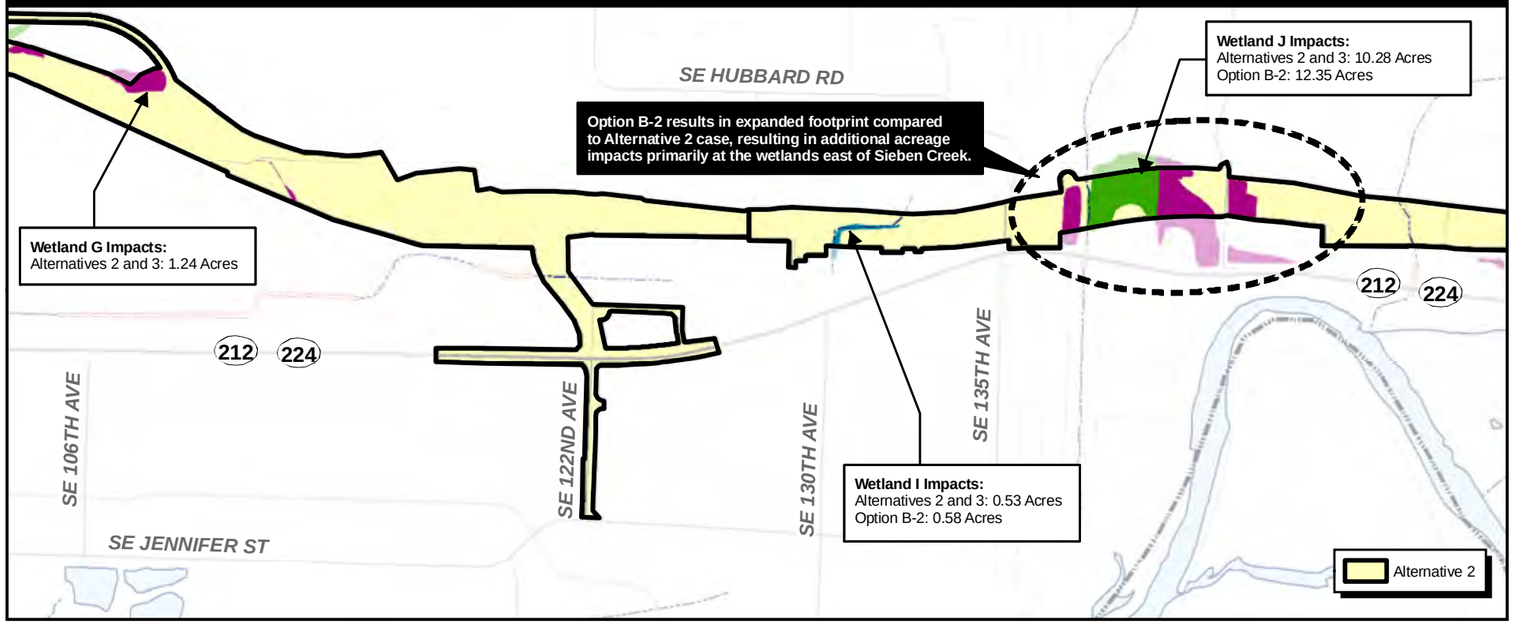
Wetland Impacts for Alternative 2 and Alternative 3

Sunrise Project, I-205 to Rock Creek Junction

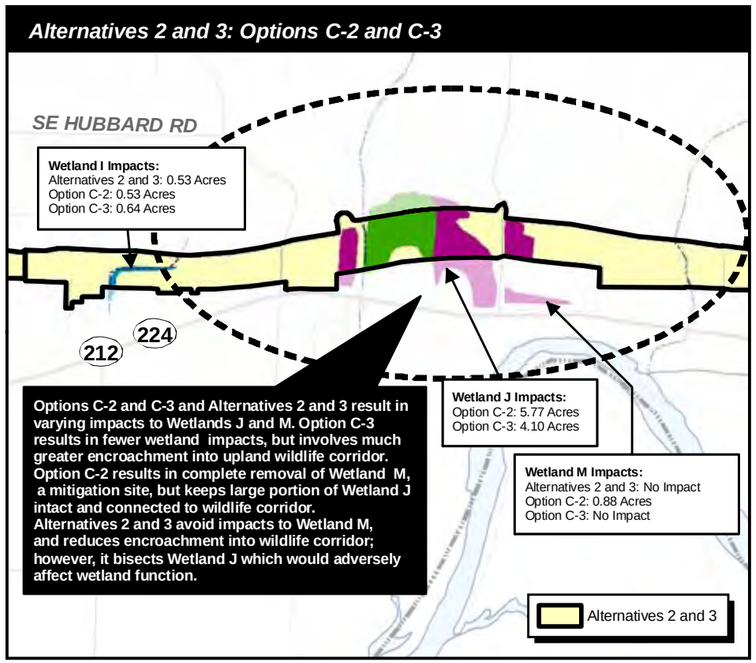
Alternatives 2 and 3: Option A-2



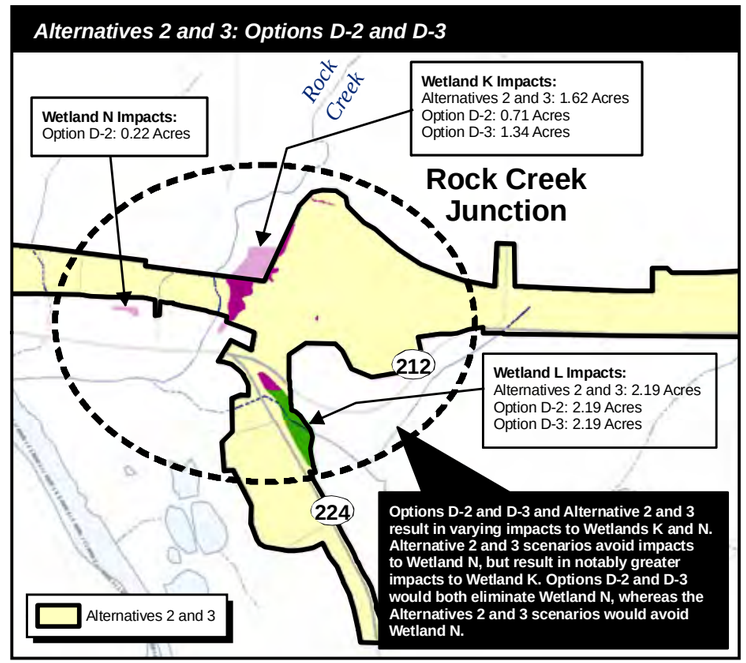
Alternative 2: Option B-2



Alternatives 2 and 3: Options C-2 and C-3



Alternatives 2 and 3: Options D-2 and D-3



1,500 0 1,500 Feet

Sources:
ODOT and Metro, Portland OR
Streams as modified by DEA as found on field visit, DEA Wetland Boundaries

Legend

River
Streams
Culvert

Wetlands - Cowardin Classification

Palustrine Emergent (PEM)
Palustrine Forested (PFO)
Palustrine Scrub-Shrub (PSS)
Palustrine Forested/Palustrine Scrub-Shrub (PFO/PSS)
Palustrine Scrub-Shrub/Palustrine Emergent (PSS/PEM)

Figure 62

Comparison of Wetland Impacts from Design Options

Sunrise Project, I-205 to Rock Creek Junction

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Geology and Soils

This section describes the local geology, soils, groundwater, and seismology in the Sunrise Project area. All of these factors affect the constructability of the project and how it might need to be specifically engineered, including methods to protect other features. Figure 63 and Figure 64 (p. 181 and p. 182) show the main local features of the soils and geology of the project area.

The Soils and Geology Technical Report on the attached DVD provides details on the following:

- Methods
- Regional and local geology, landslides, subsurface soils, surficial soils, groundwater, and seismic settings
- Environmental consequences: stability of cut slopes and excavation, groundwater, shrink/swell and erodible soils, fill embankments, liquefaction, borrow and disposal sites
- Possible mitigation measures for each environmental consequence

Geology

The geology of the Sunrise Project area has base layers of two types of bedrock overlain by a variety of deposits, followed by surface soils. The two types of bedrock units—Boring Lavas and Sandy River Mudstone—have different characteristics that could affect construction of the proposed Sunrise project. Boring Lavas consist of hard basalt, volcanic sediments, and areas of rock fragments. Boring Lavas mostly underlie the highland areas immediately north of the alignment and from Mount Talbert to the slopes of Rock Creek. Sandy River Mudstone has a finer, softer texture and is found along the slopes of Rock Creek and the Clackamas River (see Figure 63, p. 181). Bedrock is likely to be encountered in the eastern portion of the project corridor and during construction of deep foundations, particularly in areas where the alignment encroaches on the south-facing slopes flanking most of the corridor.

Alluvium is soil or sediments deposited by a river or other running water.

Colluvium is sediment that has been deposited or built up at the bottom of a low grade slope or against a barrier on that slope, transported by gravity.

Terrace deposit is a geological term for a flat platform of land created alongside of a river or sea, where, at some time in the past, the river has cut itself a deeper channel.

Both bedrock units are covered by near surface and surface deposits (called geologic units on Figure 63), such as constructed fill, alluvium (soils associated with the Clackamas River and its tributaries), landslide deposits, colluvium (produced by weathering of the Boring Lavas), and terrace deposits. The I-205 Interchange area to Rock Creek Junction contains the Boring Lavas, landslide soils, fills, alluvium, and colluvium. Most of the Sandy River Mudstone and terrace deposits occur along the toe of the Eastern Landslide and east of Rock Creek. Construction of the alignment would mostly be in the surface soils but, as noted in the preceding paragraph, could reach into the bedrock as well.

Soils

The near surface soils consist of clay, silt, sand, and gravel mixtures to depths ranging between 4 and 20 feet, overlying gravel layers. The gravels contain groundwater at levels that fluctuate with river levels in the Clackamas River and with precipitation. The slopes north of the proposed Sunrise Project alignment have shallow groundwater and groundwater springs or seeps. The groundwater depth is generally shallower in the I-205 Interchange and Midpoint areas than in the Rock Creek Junction area. Wetland areas have even shallower groundwater (see the previous Wetlands section).

Soils are shown on Figure 64. Most of the surface soils are described as moderately to severely wet and subject to erosion. In addition, they have a high “plasticity,” which means they are not particularly good at supporting heavy structures compared with other types of soils. The area north of Camp Withycombe and east of

the Union Pacific Railroad tracks is covered by Cove silty clay loam soils (see Figure 64, p. 182), a soil type susceptible to shrinking and swelling as its moisture content changes. The fluctuation in volume usually occurs unevenly and can be large enough to damage structures and pavements resting on or embedded in the soil.

Two landslides have been mapped in the Midpoint area. One landslide (referred to as the Camp Withycombe Landslide) is in the northeastern portion of Camp Withycombe. The other landslide (referred to as the Eastern Landslide) is located approximately between SE 115th Avenue and SE 119th Avenue. The size and location of the two landslides are illustrated on Figure 63 (p. 181).

There is evidence of recent landslide activity near the southeastern corner of the Camp Withycombe Landslide but none at the Eastern Landslide. Construction activities that are nearby or encroach on the landslide area could trigger further movement of the landslide.

The general constraints of the underlying geology and soils of the Sunrise Project area apply to the proposed Sunrise Project under all the alternatives. The more construction and excavation needed, the greater the chances of encountering geotechnical issues. Generally, the problems can be engineered to compensate for the constraints (see the Potential Mitigation Measures section), but each engineering solution has different risks and costs associated with it.

However, because the road improvements under **Alternative 1–No Build** would involve so little ground disturbance compared to building the proposed Sunrise Project, **Alternative 1** would have little to no impacts. The main difference between **Alternatives 2 and 3** is the degree and location of excavation that would be required. Grading and earthwork would tend to be more hazardous in the landslide areas and where local slopes have soft and weak colluvium soils (mostly in the Midpoint area). The interchange at SE 122nd Avenue under **Alternative 2** would require slope stabilizations and a cut up to 40 feet high into the Eastern Landslide and local slopes. This cut would have substantial impacts on the stability of the slopes. Cuts in the toe of the Camp Withycombe Landslide could reactivate the landslide. **Alternative 3** would not have that impact. **Alternative 3** would have less impact on the stability of the slopes compared to **Alternative 2**. In addition, **Alternative 3** may not require temporary shoring and retaining structures to sustain the cut slopes.

Up to 50 feet of fill could be needed for the Sunrise Project at various points. The fill and the embankments at the bridge approaches would cause settlement of between one and eight inches in some of the finer-grained soils. Appropriately designed embankment slopes should be relatively stable, but the estimate of the total amount of fill needed could increase as a result of the settlement. In addition, the settling could negatively affect adjacent structures and utilities. Structures and utilities sensitive to settlement near the fill embankments could require site-specific geotechnical investigations to protect them from potential impacts.

Earthwork for construction could encounter cobbles, boulders, and hard intact Boring Lavas basalt. Particularly in the Rock Creek Junction area, construction of the entrance and exit ramps would require excavating to a depth of 40 to 60 feet. That depth of cut could reach to the Boring Lavas, entailing excavation of rock, gravel, cobbles, and boulders. On the other hand, the Boring Lavas could sustain near vertical cuts in the slopes.

Because of the shallow groundwater within the upper 10 to 30 feet in the Rock Creek Junction area, drying out the soils (dewatering) would be required prior to construction. The dewatering could have several effects, including settling of adjacent structures, drying adjacent wetlands, and lowering groundwater levels in wells.

There appear to be no particular geotechnical advantages to selecting **Design Options A-2, C-2,** or **D-2** over **Alternatives 2 and 3**.

Design Option B-2 would have impacts similar to **Alternative 3** and less impact than **Alternative 2**. Although cuts into the Eastern Landslide and local

slope areas would be required, the cuts would be less, thereby reducing potential impacts on the stability of the slopes.

Design Option C-3 would require deeper cuts into the slopes north of this area than **Design Option C-2** would. East of SE 135th Avenue, **Design Option C-3** would result in a permanent cut slope that extends to the top of the hillside, likely cutting through terrace deposits, colluvium, and Boring Lavas. The basalt can sustain the degree of the slope, but the colluvium could be more unstable during excavation. Groundwater seeps and shallow groundwater are likely to be encountered during construction of the cut slope, which would most likely require groundwater drainage control. While most slopes along this more northerly alignment generally appear to be stable, there is a groundwater spring and seeps are present just west of SE 142nd Avenue.

Liquefaction describes the behavior of loose saturated sands, which go from a solid state to the consistency of a heavy liquid, or reach a liquefied state.

Design Option D-3 has a slight advantage related to the westbound exit ramps at Rock Creek Junction. **Design Option D-2** and the design for **Alternatives 2 and 3** place the westbound exit ramp deeper into the basalt knoll. The more southerly alignment of the westbound exit ramp for **Design Option D-3** would probably require less excavation in the knoll.

Earthquakes

Crustal earthquakes (generally within depths of ten miles below the surface) are the most common source of earthquakes in the Portland region. Some of the shallow earthquake faults could be active in the Portland-Vancouver area. Three significant faults within 25 miles of the project area are believed to have undergone movement within the last 15,000 years. The closest of the three faults is the East Bank Fault (6 miles northwest), followed by the Canby-Molalla Fault (8 miles west). The Mount Angel Fault is approximately 24 miles southwest.

ODOT has seismic design standards for bridges and overpasses.

Earthquakes can cause liquefaction of wet and loose soils that then lose their strength to support structures. Liquefaction would cause footings to lose their capacity to support the overhead structures, embankments to settle and spread laterally, and slopes to lose stability, and it would generally adversely affect any supporting structures in those soils.

Saturated, loose, cohesionless silt and sand combined with shallow groundwater—susceptible to liquefaction during earthquakes—is a combination present locally throughout the Sunrise Project area. It is difficult to associate with specific alternatives or design options; therefore, the risks specific to each alternative and design option are unknown at this time.

Indirect Effects

The volume of excavation and fill and construction operations would result in a significant increase in truck traffic due to hauling of fill materials to and from the project site. This would likely result in congestion on local streets, pavement damage, noise and air pollution, and aggregate fill extraction (borrow pits).

Construction in the wet soils could require drying or dewatering them, which could lower adjacent groundwater levels, thus causing settling of adjacent structures, drying of adjacent wetlands, and increased risk of contamination migrating under the surface.

Potential Mitigation Measures

To stabilize the Eastern Landslide and slope areas where dewatering would be required, mitigation would consist of excavating in short segments and installing retaining structures or rock buttresses. Benching in landslide debris or colluvium should be limited to temporary, low vertical cuts.

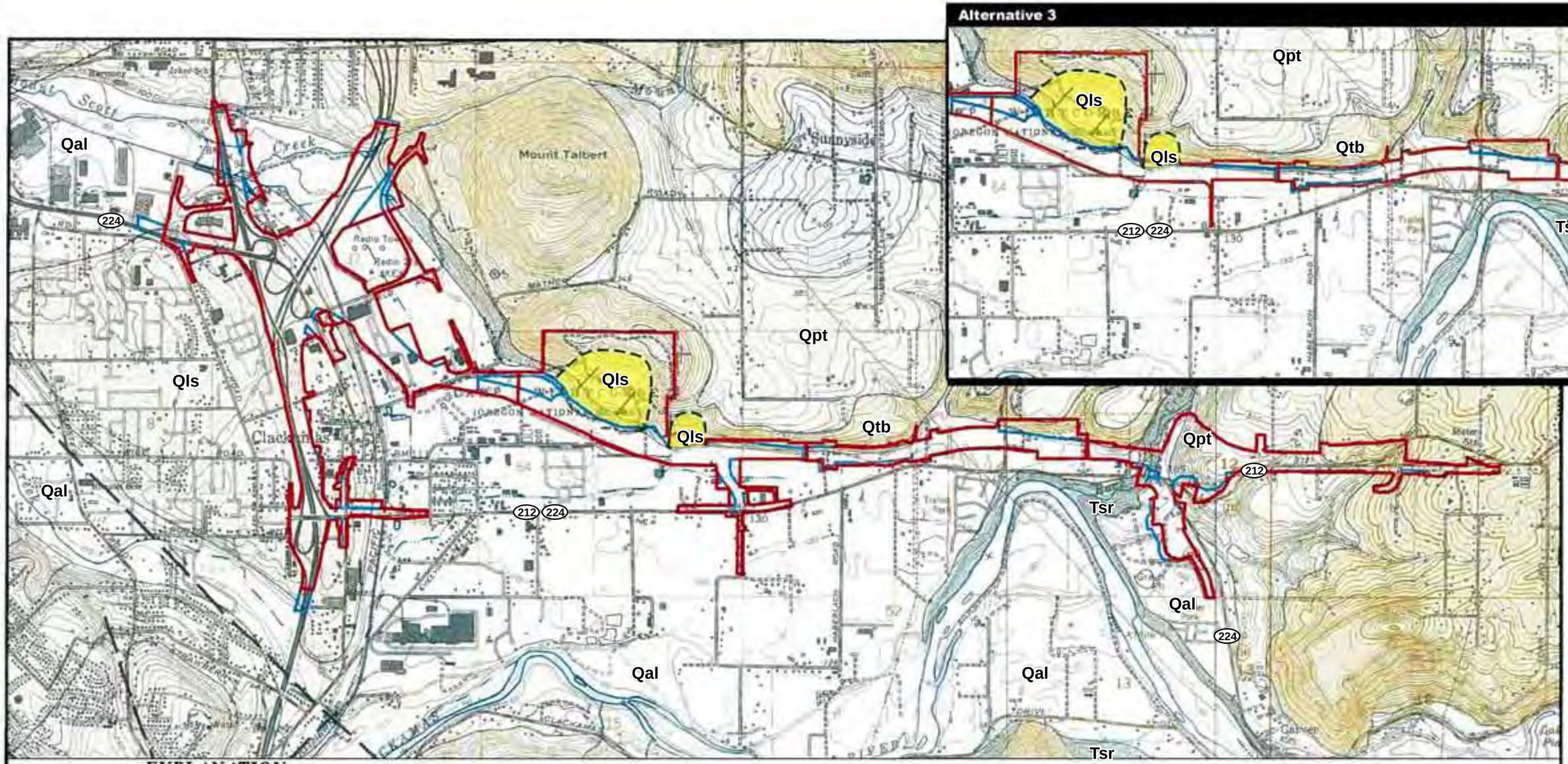
Soft and wet soils could be compressed or removed and replaced with engineered fill prior to placement of structural fill and/or structures.

Site preparation should include stabilization of the subgrade to reduce the construction traffic disturbance of the soft and wet soils.

The shrink/swell soils should be evaluated on a site-specific basis to determine appropriate ways to reduce shrink/swell potential of the Cove silty clay loam.

The risk of slope instability caused by erosion gullies could be reduced by cultivating vegetation on slopes as soon as possible after grading and by constructing surface runoff collection systems to prevent the flow of water over the slopes.

The liquefaction issues would need to be evaluated on a site-specific basis during design. Structures should be supported on shallow spread footings and/or piles extending into the underlying dense gravel. The precise foundation types for structures would depend on the depth of the dense gravel soil.



EXPLANATION

GEOLOGIC UNITS

- Qal pt — Quaternary Alluvium
- Qls — Quaternary Landslide
- Qpt — Pleistocene Terrace Deposits
- Qpg — Pliocene-Pleistocene Gravels
- Qtb wx — Boring Lavas
- Tsr — Sandy River Mudstone

GEOLOGIC SYMBOLS

- Contacts
- Faults
- Normal fault *(ball and bar on downthrown side)*
- Inferred fault
- syncline *(showing plunge of axis)*
- Lineament
- Proposed Right-of-Way Line
- Construction Impact Line

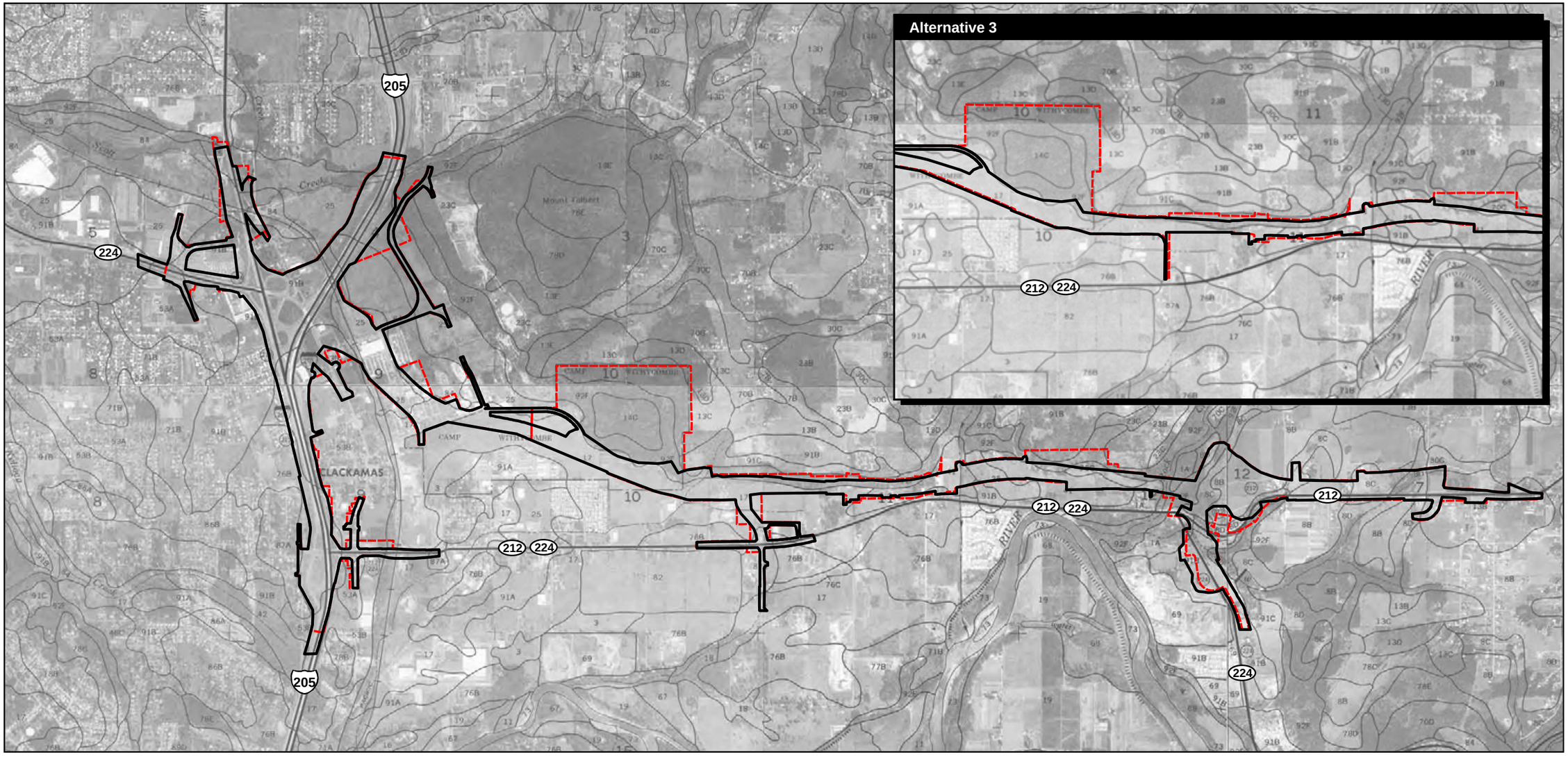
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Reference (from Schlicker and Finlayson, 1979)

Figure 63

Geologic Map, Alternatives 2 and 3

Sunrise Project, I-205 to Rock Creek Junction



1A	Aloha silt loam, 0 to 3 percent slopes	41	Huberly silt loam
8B	Bornstedt silt loam, 0 to 8 percent slopes	53A	Latourell loam, 0 to 3 percent slopes
8C	Bornstedt silt loam, 8 to 15 percent slopes	53B	Latourell loam, 3 to 8 percent slopes
8D	Bornstedt silt loam, 15 to 30 percent slopes	70C	Powell silt loam, 8 to 15 percent slopes
13B	Cascade silt loam, 3 to 8 percent slopes	71B	Quatama loam, 3 to 8 percent slopes
13C	Cascade silt loam, 8 to 15 percent slopes	76B	Salem silt loam, 0 to 7 percent slopes
13D	Cascade silt loam, 15 to 30 percent slopes	84	Wapato silty clay loam
14C	Cascade silt loam, stony substratum, 3 to 15 percent slopes	87A	Willamette silt loam, gravelly substratum, 0 to 3 percent slopes
17	Clackamas silt loam	91A	Woodburn silt loam, 0 to 3 percent slopes
23C	Cornelius silt loam, 8 to 15 percent slopes	91B	Woodburn silt loam, 3 to 8 percent slopes
25	Cove silt clay loam	91C	Woodburn silt loam, 8 to 15 percent slopes
30C	Delena silt loam, 3 to 12 percent slopes	92F	Xerochrepts and Haploxerolls, very steep

N

0 — 0.86 mi.

Figure 64

Surface Soils Map, Alternatives 2 and 3

Sunrise Project, I-205 to Rock Creek Junction

Cultural Resources

The proposed Sunrise Project is subject to both Section 106 of the National Historic Preservation Act (NHPA) and Section 4(f) of the Department of Transportation Act. These regulations require identification of resources that are or may be eligible for listing in the National Register of Historic Places (NRHP) and, if so, whether the project could affect the resource. Section 4(f) protects significant historic resources as well as wildlife refuges and public recreation resources (see also the Section 4(f) Evaluation following Appendix D).

Information on archaeological and historic resources comes from previous literature and site surveys for past projects. Research in the cultural resources literature reveals previously identified and sometimes documented resources. Field surveys are used to confirm that known resources still exist and to identify new resources. When the documentation has been collected, resources can be grouped as follows:

- Already listed on the NRHP;
- Known and determined to be eligible but not (yet) listed on the NRHP;
- New sites that are possibly eligible (typically followed by a recommendation to agencies that they be declared eligible); and
- Potentially eligible because of their age but do not meet the criteria for eligibility (typically followed by recommendation to agencies that they be documented as ineligible).

The impact analysis focuses on which of the sites (either registered or eligible to be registered) could be affected by the proposed Sunrise Project. Documents are filed with the State Historic Preservation Officer (SHPO) requesting agreement with the assessment regarding the eligibility of the resources, whether there is an impact on a listed or eligible resource, and, if so, whether the impact is significant. An impact that would require mitigation under the NHPA regulations is, in the end, determined through SHPO's agreement with the research and conclusions supplied by the consultant to ODOT. ODOT acts as an agent for FHWA, involving them in findings and recommendations.

An **isolated find** in Oregon is defined as one to nine artifacts discovered in a location that appears to reflect a single event, loci, or activity. By definition, isolates are not significant.

The Cultural Resources Technical Report on the attached DVD contains more detailed discussion of the following topics:

- Literature survey results
- Field survey results

The report contains the following appendixes:

- Appendix A (Description of all historic resources within the project impact area)
- Appendix B (Determination of Eligibility Letters)
- Appendix C (Section 106 Documentation Forms)
- Appendix D (Finding of Effect Forms)

Archaeological Resources

The Sunrise Project area was homeland to the Clackamas Indians, who occupied the area when the first Euroamericans visited the area in the early 1800s. The Native Americans fished at Willamette Falls and had villages and fishing stations along the Clackamas and Willamette Rivers. Hunting and gathering camps were located in the uplands surrounding the project area. Archaeological sites document some of these past uses and activities in the Sunrise Project area.

Eight archaeological resources were identified in a review of existing data and a field survey, of which four are either known to not be significant resources or are considered not significant. The NRHP eligibility of the remaining four archaeological sites is currently unknown and will require site investigations or construction monitoring (see Table 23 and Mitigation discussion).

Alternative 1–No Build would have no direct effects on any identified archaeological resources.

Table 23. Potentially Affected Known and Potentially Eligible Archaeological Resources

Site Number	Description	Location	Previously Identified	Significance	Impacts
OR-CL-9	Rock and concrete foundation and rock wall	Midpoint area	1991	Site not accessible; needs to be evaluated for eligibility	Both alternatives, including Design Option B-2
35CL253	Prehistoric deposits	Midpoint area	1984 and 1998	Site currently paved and previously disturbed; has not been evaluated for eligibility	Both alternatives, including Design Options B-2, C-2, and C-3
06/1328-1	Early 20th century residential debris	Near I-205	2006 (new)	Site substantially disturbed; additional testing needed to evaluate eligibility	Both alternatives
06/1328-2	Deposits that reflect prehistoric use	Near I-205	2006 (new)	Investigation too limited to provide a recommendation; needs to be evaluated for eligibility	Both alternatives

Alternatives 2 and 3 would possibly affect four identified archaeological resources that are potentially eligible and that are recommended by the proposed Sunrise Project archaeologists for further study, as shown in Table 24.

Table 24. Possible Effects on Significant Archaeological Sites

Direct effects	35CL253	OR-CL-9	06/1328-1	06/1328-2
Alt. 2	✓	✓	✓	✓
Alt. 3	✓	✓	✓	✓
A-2			✓	✓
B-2	✓	✓		
C-2	✓			
C-3	✓			
D-2				
D-3				

Construction of either build alternative would disturb or destroy any remaining deposits at sites 35CL253, OR-CL-9, 06/1328-1, and 06/1328-2, if they are determined to be eligible.

Design Option A-2 would have the same impact as the build alternatives on sites 06/1328-1 and 06/1328-2 and would not reduce the potential for disturbance. **Design Option B-2** would have the same impact as the build alternatives on OR-CL-9 and would not reduce the potential for disturbance. **Design Options B-2, C-2, and C-3** would have the same impacts as the build alternatives on site 35CL253 and would not reduce the potential for disturbance. None of the four archaeological resources are in Rock Creek Junction, so **Design Options D-2 and D-3** would not affect them.

In addition to specific resources found in the literature and by site visits, six locations have a comparatively high probability for containing archaeological resources (high-probability areas or HPAs). The locations of the six HPAs are not published in this SDEIS to avoid the chance of their being disturbed before the sites can be investigated. There are also areas where no previous studies or observations have been done, and they would likely require further investigation and could reveal other resources.

Alternatives 2 and 3 would affect five of the six HPAs (1, 2, 4, 5, and 6). **Design Option A-2** would affect HPAs 1 and 2. **Design Options B-2 and C-3** would not affect any HPAs. **Design Option C-2** would directly affect HPA 3. **Design Options D-2 and D-3** would affect HPAs 4, 5, and 6, similar to **Alternatives 2 and 3**.

Historic Resources

The Sunrise Project area has been the focus of historical activity since the early to mid-1800s. The early settlers were attracted to the rich farmland and rivers and made use of the power source provided by the falls at Oregon City. Early settlements were centered around the falls and along the Willamette and Clackamas Rivers. The overland branch of the Oregon Trail passed through the project area and many of the early travelers settled in the newly created communities of Gladstone and Oregon City.

The Sunrise Project area contains 71 resources or contributing features to resources that are or would be 50 years of age within five years. Figures 65 and 66 (pp. 189 and 190) show the locations of the 71 historic resources or contributing features. (There may be more than one contributing feature to a given resource. All 71 resources and/or contributing features are described in Appendix C.) This section discusses only the four historic resources eligible for listing on the NRHP and potentially directly or indirectly affected by any of the proposed Sunrise Project alternatives or design options.

Section 106 of the National Historic Preservation Act of 1966 requires federal agencies to take into account the effects of federal undertakings on any district, site, building, structure, or object that is listed in or eligible for listing in the National Register of Historic Places. The 106 process provides for the identification and evaluation of significant historic properties and for the development and implementation of agreements about how adverse effects to these properties will be considered. The 106 process involves consultation with the State Historic Preservation Office, the tribes, local governments, and the public. If there are adverse effects to a historic property, consultations to avoid, minimize, or mitigate adverse effects will follow.

Camp Withycombe (with contributing features #21, #23, #24, and #25 on Figure 65) has previously been determined by SHPO to be eligible for listing in the NRHP. The Frank A. Haberlach House/Silverthread Kraut and Pickle Works Building (a single resource with two features, #38 and #39) is eligible for listing in the NRHP and is also a Goal 5 Resource listed as a Clackamas County Landmark. The third eligible resource is the KEX Transmitter Facility (#28), consisting of a building, radio transmission towers, and underground wire necessary for transmission. The fourth eligible resource is a portion of the main line of the Southern Pacific Railroad (now Union Pacific Railroad [#42]).

Section 106 Determination of Eligibility forms for three resources (Camp Withycombe was already determined eligible) were prepared to request SHPO's concurrence on the recommendation of eligibility for listing in the NRHP and on the significance of the impact. SHPO had reviewed and concurred with the recommendations and findings of effect in the Section 106 forms for the resources by August 2008. Table 25 lists the NRHP-eligible historic resources and the level of effect to those resources.

Alternative 1–No Build would have no direct effects on any of the identified aboveground historic resources.

Alternatives 2 and 3 would directly affect two historic resources: the Camp Withycombe site's contributing resources and the KEX Transmitter Facility. Building the proposed Sunrise Project would result in the alteration of all or part of each of these two resources.

Design Option A-2 would have no direct effects on any identified aboveground historic resources.

Design Option B-2 would directly impact the Haberlach House and Silverthread Pickle Building. If **Design Option B-2** is selected, a finding of no adverse affect to the historic resource has already been discussed with SHPO and a *de minimis* finding would be proposed to satisfy Section 4(f).

Design Options C-2, C-3, D-2 and D-3 would not result in any impacts to historic resources. This is the same impact as under **Alternatives 2 and 3**.

Indirect Effects

There would be no indirect effects to any of the identified archaeological resources. Indirect impacts on historic resources can occur when a project would not physically alter the resources themselves but would alter their setting, thereby affecting the ability of the resource to convey its historic character and sense of place.

Alternatives 2 and 3 may have indirect effects on the Southern Pacific Railroad Willamette Valley Main Line (#42). The build alternatives would create overpasses over the railroad main line.

Table 25. Potentially Affected Eligible Historic Resources

Eligible Resource	Description of Resource or Contributing Feature	Location Reference Number (Figure 65)	Listed or Eligible for Listing on the National Historic Register	Summary of Impacts
Camp Withycombe Historic District	Machine Gun Range, contributing feature	#21	Determined eligible	Both alternatives, adverse effect (alteration of resources)
	Military Pistol Range, contributing feature	#23		
	1,000-yard Rifle Range, contributing feature	#24		
	500-inch Small Bore Range, contributing feature	#25		
KEX Transmitter Facility	KEX Transmitter Facility, southeast of I-205 near Lawnfield Road	#28	Determined eligible	Both alternatives, potential effect (alteration of resource)
Frank A. Haberlach House/Silverthread Kraut and Pickle Works	Frank A. Haberlach House, SE 130th Avenue and OR 212/224	#39	Determined eligible	Design Option B-2, house only; indirect effect (right-of-way acquisition for sidewalk construction, no change to building)
	Silverthread Kraut and Pickle Works Building, SE 130th Avenue and OR 212/224	#38		
Southern Pacific Railroad Willamette Valley Main Line	Southern Pacific Railroad (now Union Pacific Railroad), east of and parallel to SE 82nd Drive	#42	Determined eligible	Indirect effect (construction of overpass)

Design Option B-2 is the only option that could potentially indirectly affect the historic resource in the southeast quadrant of the intersection of SE 130th Avenue and OR 212/224. Contributing feature #38, the Silverthread Kraut and Pickle Works Building, extends into the roadway right-of-way, and its adjacent contributing feature, site #39, the Frank Haberlach House, is currently used as a restaurant. **Design Option B-2** has the potential to indirectly impact #39 by the placement of a sidewalk along OR 212/224. For #38, the construction impact line has been purposely placed so as to avoid impacts to the building, and the proposed widening of SE 130th Avenue would take place on the opposite side of SE 130th Avenue from the building. For contributing feature #39, the construction impacts would occur along the north edge of the parcel and would include the construction of a sidewalk. In both cases, the buildings would not be impacted, and the impacts from the placement of a sidewalk in front of the present restaurant would likely be an enhancement.

Design Options C-2, C-3, D-2, and D-3 would not indirectly affect any resources.

Potential Mitigation Measures

No significant archaeological resources have been identified in the studies conducted to date but the significance of four identified resources is still unknown. Excavations should be conducted at those sites to evaluate their significance. Since pavement covers the 35CL253 area, an archaeologist should monitor any work in that area. If evidence of archaeological deposits is observed during monitoring, systematic test excavations should be conducted to evaluate the significance of the deposits.

Because the HPAs could contain buried archaeological resources, additional investigation where the proposed Sunrise Project crosses the HPAs should be conducted.

If the investigations determine that the project area contains significant archaeological deposits that would be unavoidably and adversely impacted by the proposed Sunrise Project, then ODOT and Clackamas County would need to develop appropriate mitigation measures in consultation with SHPO, agencies, and tribes. Mitigation measures may include preserving the resource in place or excavating it if the resource is significant primarily for its scientific values.

Mitigation measures would be needed for any historic resource determined to be eligible for listing in the NRHP and for which a Section 106 Finding of Effect determined that the project would have an adverse effect. Mitigation measures may include, but are not necessarily limited to, documenting the affected resources with photographs, and this work must be negotiated in consultation with SHPO. A Memorandum of Agreement would be prepared and signed by participating parties. The Memorandum of Agreement would outline the measures to reduce, avoid or mitigate the adverse effects.

The proposed Sunrise Project would have an adverse effect on Camp Withycombe, and therefore mitigation measures would be required. The project team has prepared a Section 4(f) Evaluation that considers the impacts to Camp Withycombe (see Section 4(f) Evaluation following Appendix D).

SHPO concurred with the finding of "No Historic Properties Adversely Affected" for the Southern Pacific Railroad Willamette Valley Main Line (#42) and Clackamas Elementary School (#71). No mitigation measures would be required for those resources.

A Finding of Effect (FOE) has not yet been submitted for the KEX Transmitter Facility. Mitigation measures may be required for the KEX Transmitter Facility if the project cannot be designed to avoid expected impacts.

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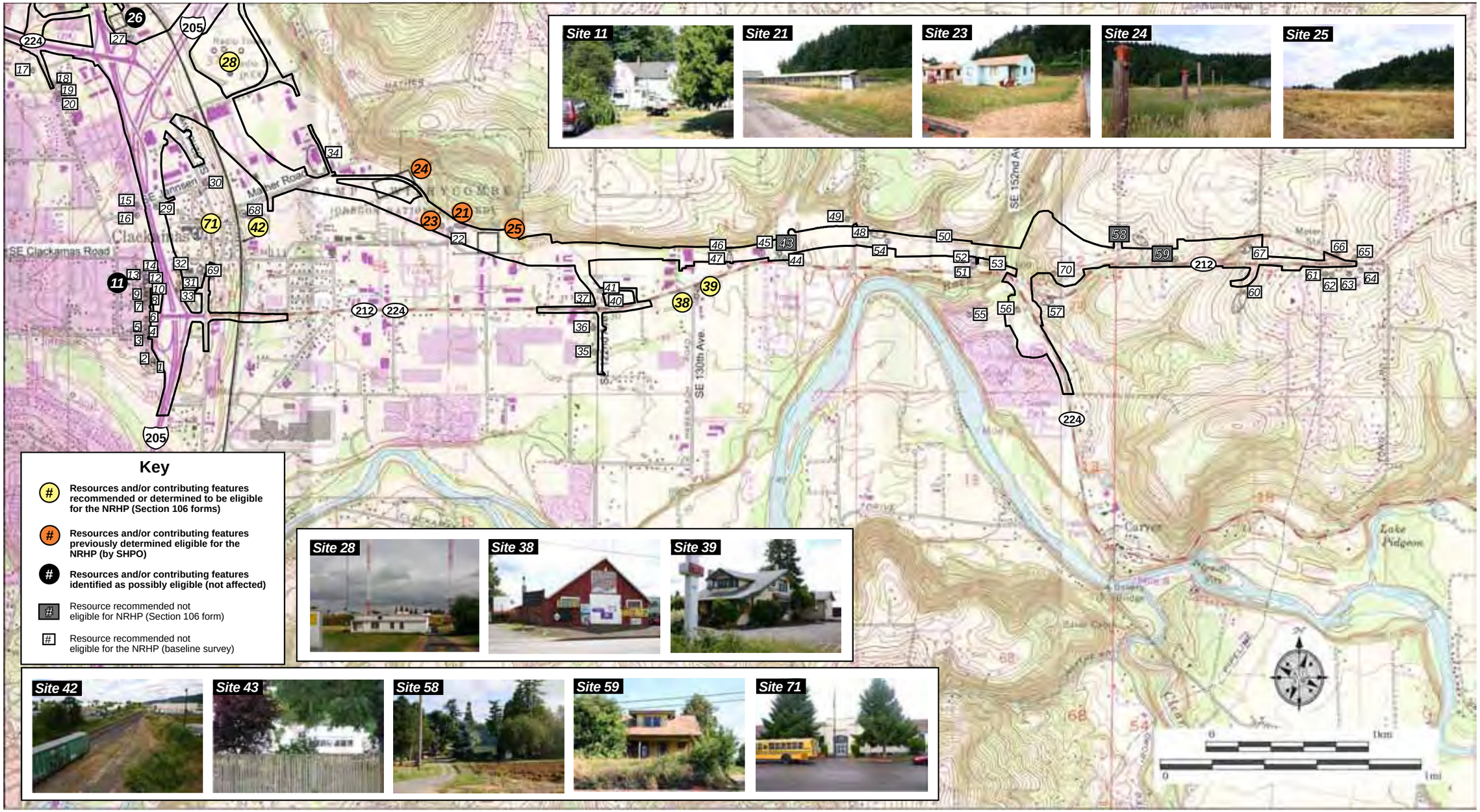


Figure 65

Location of Historic Resources

Sunrise Project, I-205 to Rock Creek Junction

Source:
USGS Quadrangles: Damascus, OR 1961 (Photorevised 1984) and Gladstone, OR 1961 (Photorevised 1984)

Legend

- Resource and/or contributing features recommended or determined to be eligible for NRHP (Section 106 forms)
- Resource and/or contributing features previously determined eligible for NRHP (by SHPO)
- Resource and/or contributing features identified as possibly eligible for NRHP (not affected)
- Resource recommended not eligible for NRHP (baseline survey)
- Resource recommended not eligible for NRHP (Section 106 form)


Site 11


Site 21


Site 23


Site 24

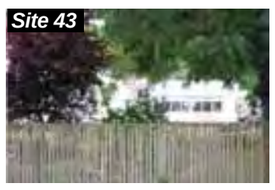

Site 25


Site 28


Site 38


Site 39


Site 42


Site 43


Site 58


Site 59


Site 71

Figure 66

Location of Historic Resources (Aerial)

Locations of all resources identified during the Archaeological Investigations Northwest, Inc. (AINW) reconnaissance survey. The resource numbers are keyed to Appendix A of the Cultural Resources Technical Report.

Sunrise Project, I-205 to Rock Creek Junction

Hazardous Materials

Activities involving hazardous materials have the potential to create and leave behind conditions that can be harmful to the environment and to other people. NEPA requires that the potential for encountering hazardous materials during construction or operation of a proposed project be disclosed.

Three categories of sites have the potential to constrain transportation project development:

- Sites with known contamination that are still being investigated and remediated;
- Sites that had historical contamination but have received no further action (NFA) determinations from appropriate agencies; and
- Sites without known contamination whose land and business uses are commonly associated with hazardous materials.

The first two categories of sites were found by reviewing the regulatory agency databases of hazardous material investigations (see sidebar) for the Sunrise Project right-of-way and adjacent areas. Other research on the potential for encountering hazardous materials in the Sunrise Project area consisted of reviewing historical land use from the 1930s to the present using aerial photographs and visually surveying the Sunrise Project area from public rights-of-way. Camp Withycombe was toured as well. Hazardous material specialists drove through the area looking for obvious indications of current or past operations that may have resulted in possible soil and/or groundwater contamination. Generally, the site visit only revealed the land use types and names and types of businesses. It is presumed that many of the businesses along the proposed alignment store, use, and/or transport, for disposal, hazardous materials. The Resource Conservation and Recovery Act (RCRA) database lists 71 generators of hazardous waste within 0.25 mile of the Sunrise Project area.

The current regulatory environment allows sites with residual contamination to be granted an NFA status from ODEQ. Sites with residual contamination can be acceptable for closure (NFA) if the chemicals do not pose a significant risk of exposure. Because ODEQ can grant an NFA when a pocket of contamination is under a

The Hazardous Materials Technical Report on the attached DVD provides details on the following:

- Methodology: land use history, regulatory agency database, and site reconnaissance
- List of potential hazardous materials sites
- Discussion of general hazardous materials issues
- Environmental consequences: sites with known contamination, historical contamination, and no known contamination but associated with hazardous materials
- Mitigation measures for potential hazardous materials issues

Environmental Protection Agency databases:

- Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS). Environmental Protection Agency database of known and potentially hazardous waste facilities reported
- National Priority List (NPL). A subset of CERCLIS properties; identifies priority sites for cleanup under the Superfund Program.
- Resource Conservation and Recovery Act (RCRA). Identifies facilities that handle hazardous waste as part of their business.

Oregon Department of Environmental Quality databases:

- Environmental Cleanup Site Information System (ECSI) & Confirmed Release List. Includes facilities where there has been a confirmed release of hazardous substances, facilities where investigation or cleanup has been initiated, and facilities suspected of a release of hazardous substances.
- Leaking Underground Storage Tank (LUST) database. Includes facilities where a petroleum release from an UST had occurred.
- Registered Underground Storage List (UST) database. Includes facilities with current operational USTs and former (decommissioned) USTs.

structure, a site with an NFA does not necessarily mean the site is free of contamination.

The third category of potential environmental constraints applies to those sites whose land and business uses involve the storage, use, and disposal of hazardous materials, but the site does not have a documented release of hazardous materials. Based on experience with roadway projects on former industrial land, it is likely that areas of undocumented contamination would be encountered during construction. The proposed Sunrise Project would also likely encounter construction-excavated soils that do not require cleanup; however, because such soils are excavated (e.g., grading, utility trench) and are slightly impacted, they would require special handling and disposal as contaminated materials.

Construction of the project would involve demolition of structures (buildings and roadways) prior to site development. Older building materials are likely to contain the following hazardous substances and require that special procedures be followed for their handling and disposal:

- Asbestos (within building materials);
- Lead-containing paint (on buildings and the I-205 structures);
- Fluorescent light fixtures (PCBs) for pre-1978 fixtures and mercury vapor in light tubes inside buildings); and
- Chemically treated wood products.

Surveys for hazardous building materials and abatement of the hazards may occur sporadically if the proposed Sunrise Project does not occur; however, the scale of this project would likely result in a significant amount of additional investigation prior to site development.

Transportation of hazardous materials on I-205 or OR 212/224 is not restricted by ODOT, although specific route plans are required for haulers of radioactive or explosive wastes. ODOT would likely regulate hauling of hazardous materials similarly on the proposed Sunrise Project.

Alternative 1–No Build

If **Alternative 1** is selected, then sites with hazardous material issues would be dealt with under current regulations. No displacements of buildings would occur so the **Alternative 1** road project would not have the same issues related to hazardous building materials (asbestos, lead, PCBs, and mercury) as under **Alternatives 2 and 3**. Those issues would be managed at their current regulatory pace, in time frames specific to each individual property and the long-term management of those properties. Transportation routes of hazardous materials would not be affected. To the extent that roads are widened or built over agricultural land, the risks of exposure to chemicals or materials associated with historical rural residential and agricultural uses would be similar in type but not in magnitude to those described for the construction of **Alternatives 2 and 3** through the Midpoint and Rock Creek Junction areas. Within the **Alternative 1-No Build f**uture road projects, the SE Industrial Way upgrade appears to cross Camp Withycombe property; therefore, a site-specific assessment would be necessary prior to construction. Similarly, the proposed widening at SE 82nd Drive would likely involve right-of-way expansion that would impact the following facilities with past investigations:

- #29, Chevron, 15901 SE 82nd Drive, LUST database, NFA
- #33, General Furnace & Air Conditioning, 15536 SE 82nd Drive, LUST database, NFA

Alternatives 2 and 3

The hazardous material environmental consequences for **Alternatives 2 and 3** are essentially the same. With the combination of older industrial, rural residential, and agricultural uses, numerous sites were found on one or more of the listed databases. All of the federally listed sites are also on the state's Environmental Cleanup Site Information (ECSI) System lists. The state's ECSI lists 22 sites of confirmed or suspected releases of hazardous materials in the local area. Of those, nine are within the proposed right-of-way for both alternatives, and six are

adjacent. Four additional ECSI sites are adjacent to **Alternative 2** only. One of the adjacent ECSI sites is within **Design Option C-3**, and adjacent to **Design Option C-2**. Thirty-four LUST sites are within one-quarter mile of the Sunrise Project area, of which 12 are within the proposed right-of-way and 12 are adjacent to the proposed right-of-way for the build alternatives. Five additional LUST sites are adjacent to **Alternative 2** only. Because less land is affected by right-of-way acquisition or construction in the Midpoint area, **Alternative 3** would affect seven fewer adjacent sites. They are:

- #20, Met Tek (15651 SE 125th Court)
- #24, Safety Kleen Corp (11843 SE OR 212)
- #25, Pritchard's Truck Center (11857 SE OR 212)
- #27, CMD Transportation (1240 SE Jennifer Street)
- #36 & #37, Clackamas/Fred Meyer Distribution Center (11500/12108 SE OR 212)
- #43, Safeway Bakery (9450 SE Morgan Way), LUST database, NFA

Figure 67 (p. 197) shows the locations of the ECSI-listed sites and includes some details about the sites of most concern for constructing the proposed Sunrise Project. For a more lengthy description, reviewers should consult the Hazardous Materials Technical Report.

I-205 Interchange area

The project right-of-way in the I-205 Interchange area contains 13 sites that are listed in the federal or state databases for potential or known soil or groundwater contamination and/or having a leaking underground storage tank (LUST). Many more sites within one-quarter mile of the right-of-way are listed on Figure 67 (p. 197).

Five of the 13 sites within the right-of-way pose some concern for risk of exposure to hazardous materials if the proposed Sunrise Project were constructed under either alternative. They are:

- #1, Ellsworth Dump Site
- #3, Northwest Pipe and Casing
- #10, Temco Metal Products
- #13, Camp Withycombe Firing Range and Landfill
- #14, ODOT Ambler Road West

The remaining eight sites do not require further action either by EPA, the federal authority, or ODEQ, the state authority.

Illegal dumping at 14570 SE 82nd Drive (#1, Ellsworth property) was reported to EPA in 1980. Although EPA found no hazardous materials, ODEQ recommends soil sampling.

The Northwest Pipe and Casing facility at SE Mather Road and SE Industrial Way (#3) is the most significant hazardous materials site within the proposed right-of-way. It was added to the National Priority List (NPL) as a Superfund site in 1992. Remedial activities were conducted between 1992 and 2003 for widespread soil and groundwater contamination. A 2-foot-deep cap of clean soil now covers areas that still contain some contamination. In-ground treatment and monitoring wells were installed in 2003 to remedy and track the groundwater contamination. In May 2007, ODEQ indicated a need to critically evaluate the current groundwater treatment method because of an insufficient drop in VOC concentrations in groundwater. Disturbance of the cap and treatment wells by the construction of either **Alternative 2** or **Alternative 3** would require proper notification and an understanding that contaminated soils management may be necessary if the clean fill cap is excavated. Similarly, disturbance or abandonment of wells at the site would have to be approved by ODEQ.

The Temco facility (#10) was listed on the state databases for soil, groundwater, and surface water contamination by trichloroethene and perchloroethene. A Phase I Remedial Investigation Work Plan (RI) was approved by ODEQ and the investigation completed by 1999. A Phase II RI was implemented in early 2001. In

2005, contaminated soil was removed from the adjacent Keller Property (#9), which is adjacent to the Sunrise Project right-of-way. The Keller Property and Temco are both owned by the Russell Keller Trust. According to the ODEQ summary, further investigation is required, and negotiations are under way to combine the two properties into one investigation. Both alternative alignments would affect this site.

Camp Withycombe's firing ranges (#13), in use from 1909 until recently, are the likely source for high levels of lead contamination affecting as much as 12,000 cubic yards of soil (according to ODEQ). The firing ranges are currently being investigated and cleaned up by the Oregon Military Department under ODEQ's Voluntary Cleanup Program. Cleanup of the firing ranges should be complete by 2009, before the proposed Sunrise Project would be built. The Sunrise Project right-of-way under both build alternatives may not directly affect the lead remediation area, but portions of the construction area and the multi-use path improvements may affect it. There would be no difference between **Alternatives 2 and 3** in terms of impacts as both would call for the same amount of soil excavation in that area.

Camp Withycombe also contains a landfill that was excavated and remediated between 1995 and 1997. ODEQ issued an NFA determination in 1998 after receiving acceptable results from soil sampling in 1997.

ODOT purchased right-of-way for the Sunrise Project at SE Ambler Road and SE 82nd Avenue (#14). In the early 1990s, widespread groundwater contamination by solvents was discovered. Remediation activities have been ongoing since about 1995 and declining levels of contamination reported. ODEQ is currently reviewing a Baseline Risk Assessment that should reveal the extent of the risk for constructing the proposed Sunrise Project. ODOT has stated that ODEQ issued an NFA with a deed restriction and ongoing monitoring of surface water. Both alternatives would have the same level of impact.

Four adjacent sites could also be cause for concern because of unresolved issues:

- #9, Keller Property (see Temco, #10 above)
- #12, RS Davis Recycling (10105 SE Mather Road)
- #18, Precision Castparts Small Structures Business Operations (13340 SE 84th Avenue)
- #19, Interstate Industrial Park (13101 SE 84th Avenue)

LUST sites adjacent to the right-of-way are found from the Johnson Road and Ambler Road areas, along SE 82nd Drive, its industrial side streets and SE Mather Road, and along OR 212/224. Only one of the LUST sites in the I-205 Interchange area (#5, McFarlane's Bark, on Johnson Road) has not received an NFA determination from ODEQ. Although no further action may be required at closed LUST sites, some amount of residual contamination may remain and may be encountered during construction. In general, there is not much difference in the potential for exposure of contamination between the alternatives and all of the design options in this area.

Since both **Design Option A-2** and **Alternatives 2 and 3** incorporate the Northwest Pipe and Casing site, and substantially similar ECSI and LUST listings, there does not appear to be an advantage in choosing **Design Option A-2** in terms of hazardous materials.

Because development in the Sunrise Project area, particularly in the I-205 Interchange area, dates back 75 years or more, it is likely that hazardous building materials could be encountered during construction. The Land Use section notes that between 97 and 164 structures could be removed if the proposed Sunrise Project is built, depending on the alternative and design option(s) chosen. Since the materials in each building are currently unknown, it is not possible to assess the difference between alternatives and design options with respect to the risk of encountering hazardous building materials.

Midpoint area

There are four sites within the project right-of-way in the Midpoint area that are listed in the federal or state databases. Three are LUST sites, all of which have received NFA determinations. The fourth site, American Wood Dryers (#21, at 15495 SE For Mor Court), is listed because it produces hazardous materials, but ODEQ does not consider the site to be a threat to the environment and no further action is required there. More sites are within one-quarter mile of the right-of-way.

All of the adjacent LUST sites have received NFA determinations, although as noted earlier, the determinations do not guarantee the sites are free from contamination. **Alternative 3** would affect seven fewer adjacent sites. They are:

- #20, Met Tek (15651 SE 125th Court)
- #24, Safety Kleen Corp (11843 SE OR 212)
- #25, Pritchard's Truck Center (11857 SE OR 212)
- #27, CMD Transportation (1240 SE Jennifer Street)
- #36 & #37, Clackamas/Fred Meyer Distribution Center (11500/12108 SE OR 212)
- #43, Safeway Bakery (9450 SE Morgan Way)

Two adjacent ECSI-listed sites may require further investigation as not all issues with the sites have been resolved. They are:

- #20, Met-Tek (15651 SE 125th Court)
- #25, Pritchard's Truck Center (11857 SE OR 212)

There are substantially similar ECSI and LUST listings for **Design Option B-2** and **Alternative 2**.

There does not appear to be a clear advantage concerning hazardous materials for choosing the design options over the design of **Alternatives 2 and 3**.

Agricultural uses in this part of Clackamas County date back a long time. Because the proposed Sunrise Project would likely cross rural lands that have an agricultural history particularly in the Midpoint and Rock Creek Junction areas, construction of either **Alternative 2 or Alternative 3** could encounter contamination by residual hazardous substances typically associated with agricultural practices. They include the following:

- Persistent pesticides and herbicides;
- Heating oil and fuel underground storage tanks; and
- Chemical containers for solvents, garden chemicals, small lubricants, paint, and fuel.

Contamination from persistent pesticides and herbicides may pose a potential hazard to construction workers if the proposed Sunrise Project is built. If those pesticides and herbicides were applied according to label instructions and detectable concentrations are below applicable risk-based cleanup concentrations, then there should be no requirements for soil remediation or a significant health risk to construction workers. However, if present, residual pesticides and herbicides may restrict how and where excavated soil may be disposed if concentrations exceed ecological screening levels. The risks from underground storage tanks and spills of chemicals can be assessed and mitigated during construction.

Rock Creek Junction area

This area has risks similar to those described for the rural residential and agricultural uses in the Midpoint area. **Design Options D-2 and D-3** had the same number of regulatory investigations listed as **Alternatives 2 and 3**. Where there is less disturbance of previous agricultural areas for constructing the proposed Sunrise Project, such as under **Design Option D-3**, there would be less risk of encountering hazardous materials associated with that use.

Indirect Effects

A potential indirect effect is the risk of accidental spills or mishandling of hazardous materials off site. Since excavation work for the remediation of contaminated soil and groundwater is commonly performed by qualified contractors, the marginal increase in the risk of accidental spills to public roads/highways or the exacerbation of existing contamination issues would be considered minor and equivalent for Alternatives 1, 2, and 3.

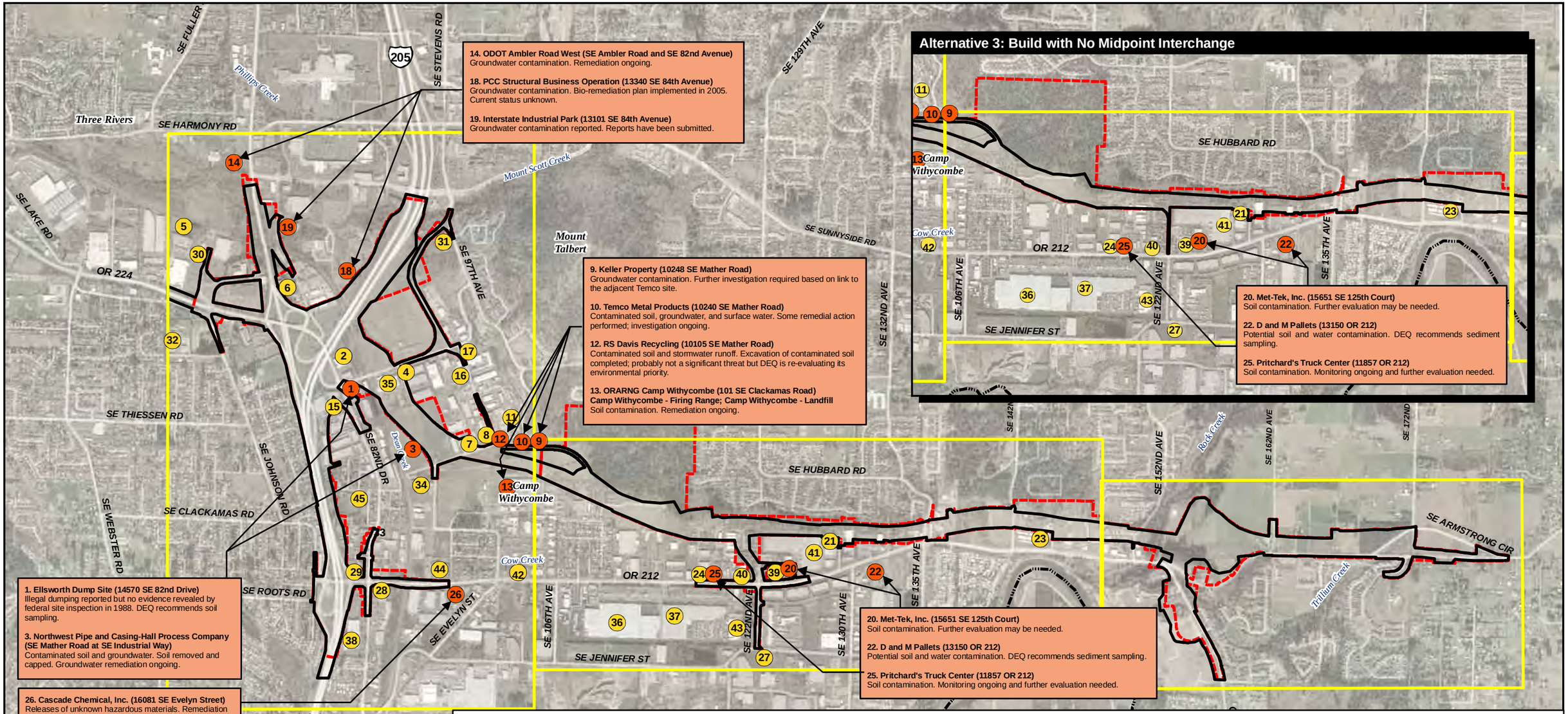
Haulers of hazardous materials to and from industrial businesses in the vicinity of the proposed Sunrise Project and between the Portland Metro area and central Oregon could find the proposed Sunrise Project route faster than using Interstate 84 and crossing through Gresham to reach Highway 26. In that case, the impacts would be unknown.

Hazardous waste is currently hauled for disposal to Arlington, Oregon, via Interstate 84. Increased traffic from hauling hazardous waste to Arlington along the proposed Sunrise Project could occur because the waste would originate from the industrial area between I-205 and Rock Creek. Depending on land use zoning, more businesses that generate hazardous waste could locate in the Sunrise Project area under both **Alternatives 2 and 3**, thereby increasing the volume of hazardous waste shipping in the area compared to **Alternative 1–No Build**.

Potential Mitigation Measures

Mitigating potential hazardous materials issues during construction is typically helped or accomplished through spill prevention plans or other types of remedial measures typical for the construction and remediation industry.

The proposed Sunrise Project could accelerate the cleanup of contaminated soils within the project area. However, typical road construction projects do not include comprehensive cleanup of sites unless the contamination is an impediment to construction or poses a risk to worker health and safety.


Alternative 3: Build with No Midpoint Interchange
14. ODOT Ambler Road West (SE Ambler Road and SE 82nd Avenue)
Groundwater contamination. Remediation ongoing.
18. PCC Structural Business Operation (13340 SE 84th Avenue)
Groundwater contamination. Bio-remediation plan implemented in 2005. Current status unknown.
19. Interstate Industrial Park (13101 SE 84th Avenue)
Groundwater contamination reported. Reports have been submitted.
9. Keller Property (10248 SE Mather Road)
Groundwater contamination. Further investigation required based on link to the adjacent Temco site.
10. Temco Metal Products (10240 SE Mather Road)
Contaminated soil, groundwater, and surface water. Some remedial action performed; investigation ongoing.
12. RS Davis Recycling (10105 SE Mather Road)
Contaminated soil and stormwater runoff. Excavation of contaminated soil completed; probably not a significant threat but DEQ is re-evaluating its environmental priority.
13. ORARNG Camp Withycombe (101 SE Clackamas Road)
Camp Withycombe - Firing Range; Camp Withycombe - Landfill
Soil contamination. Remediation ongoing.
20. Met-Tek, Inc. (15651 SE 125th Court)
Soil contamination. Further evaluation may be needed.
22. D and M Pallets (13150 OR 212)
Potential soil and water contamination. DEQ recommends sediment sampling.
25. Pritchard's Truck Center (11857 OR 212)
Soil contamination. Monitoring ongoing and further evaluation needed.
1. Ellsworth Dump Site (14570 SE 82nd Drive)
Illegal dumping reported but no evidence revealed by federal site inspection in 1988. DEQ recommends soil sampling.
3. Northwest Pipe and Casing-Hall Process Company (SE Mather Road at SE Industrial Way)
Contaminated soil and groundwater. Soil removed and capped. Groundwater remediation ongoing.
26. Cascade Chemical, Inc. (16081 SE Evelyn Street)
Releases of unknown hazardous materials. Remediation investigation needed; "medium priority" status for further state action.
Three Rivers
Mount Talbert
Camp Withycombe
SE HARMONY RD
SE HUBBARD RD
SE SUNNYSIDE RD
SE THIESSEN RD
SE CLACKAMAS RD
SE ROOTS RD
SE JENNIFER ST
OR 212
OR 224
SE FULLER
SE STEVENS RD
SE LAKE RD
SE 97TH AVE
SE 82ND DR
SE JOHNSON RD
SE WEBSTER RD
SE CASON RD
SE EVELYN ST
SE 106TH AVE
SE 122ND AVE
SE 130TH AVE
SE 132ND AVE
SE 135TH AVE
SE 142ND AVE
SE 152ND AVE
SE 162ND AVE
SE 172ND
SE 129TH AVE
SE ARMSTRONG CIR
Phillips Creek
Mount Scott Creek
Cow Creek
Deer Creek
Rock Creek
Trillium Creek
205
1. Ellsworth Dump Site (CERCLIS-NFRAP, ECSI)
2. Enoch Manufacturing (ECSI; VOC contamination of subsurface soil; no further investigation required by DEQ)
3. Northwest Pipe and Casing (NPL; CERCLIS, ECSI; ongoing)
4. Northwest Development (ECSI)
5. McFarlane's Bark (LUST)
6. Neptune Pool (LUST-NFA)
7. Townes Property/NW Petroleum-Exxon (ECSI; ASTs; contaminated soil excavated; contaminated groundwater from off-site sources; DEQ approved NFA)
8. Timfab (LUST-NFA)
9. Keller Property (ECSI)
10. TEMCO Metal Products (ECSI; LUST-NFA; Decommissioned USTs; VOCs in groundwater)
11. Portable Equipment Salvage Co. (ECSI, CRL, OR Institutional Controls for O&M; soil cleanup in 1993)
12. RS Davis Recycling (ECSI; former contaminated soil removal)
13. Camp Withycombe (Voluntary Cleanup Program; multiple LUSTs, multiple NFAs)
14. Ambler Road West (ECSI, OR CRL)
15. Gem Top Manufacturing, Inc. (ECSI, NFA)
16. Howard S. Wright Construction (LUST-NFA)
17. Dietrich Property (Lust-NFA)
18. PCC Structural Business Operation (ECSI; OR CRL; undergoing remediation for solvent contamination in groundwater)
19. Interstate Industrial Park (ECSI; TCE, DCE, and PAHs groundwater contamination from offsite source)
20. Met-Tek (ECSI; OR CRL; removal of TPH and PCB-contaminated soil; DEQ recommended further evaluation
21. American Wood Dryers (ECSI; CERCLIS-NFRAP; NFA provided by DEQ and EPA
22. D&M Pallets (ECSI; OR CRL; PAH/BTEX/metals soil contamination, further evaluation required by DEQ)
23. Smith Masonry Contractors (LUST-NFA)
24. Safety-Kleen Corporation 7-148 (ECSI; OR CRL; CERCLIS-NFRAP; CORRACTS; NFA provided by DEQ
25. Pritchard's Truck Center (ECSI; DEQ recommended further soil evaluation, and LUST-NFA)
26. Cascade Chemical Inc. (ECSI; CERCLIS-NFRAP; OR CRL; LUST-NFA; VOCs, PCE, and TCE contamination of soil and groundwater; medium priority listing
27. CMD Transportation (ECSI; LUST-NFA; contaminated soil removed, NFA provided by DEQ
28. Panoco 53 (LUST-NFA)
29. Chevron USA Inc. (LUST-NFA)
30. Coremark Distributors (LUST-NFA)
31. Western Oregon Conference of Seventh Day Adventists (LUST-NFA)
32. Transportation Center (LUST-NFA)
33. General Furnace and Air Conditioning, Inc. (LUST-NFA)
34. GTS Drywall (LUST-NFA)
35. ODOT Maintenance Facility (LUST-NFA)
36. Clackamas Distribution Center (LUST-NFA)
37. Fred Meyer Distribution Center (LUST-NFA)
38. Fred Meyer Clackamas (LUST-NFA)
39. Knez Building Supply (LUST-NFA)
40. Elting Pekkola Properties (LUST-NFA)
41. Ray's Food Service (LUST-NFA)
42. ODOT (LUST-NFA)
43. Safeway Bakery (LUST-NFA)
44. Lumbermens of Oregon (LUST-NFA)
45. Clackamas Elementary School (LUST-NFA)
For more information on these sites refer to the Hazardous Materials Technical Report.
2,000 0 2,000 Feet
Sources:
ODOT and Metro, Portland OR
Legend
Urban Growth Boundary (UGB)
Project Subareas
Construction Impact Line
Right-of-Way
Hazardous Materials Site
Important Hazardous Materials Site
Figure 67
Hazardous Material Sites
Sunrise Project, I-205 to Rock Creek Junction

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Utilities

The Sunrise Project area contains numerous utility facilities that could be affected by construction of the proposed project. The following sections identify service providers in the project area. Figure 68 through Figure 71 (pp. 201 through 204) show the location of their facilities, including those potentially affected by the proposed project.

Water supply. Clackamas River Water District has two sets of main water transmission lines in the Sunrise Project area, one parallel to the Union Pacific Railroad line and one along OR 212/224. Sunrise Water Authority provides domestic and irrigation water from lines within street rights-of-way (Figure 68, p. 201).

Sanitary sewer. Clackamas County Service District No. 1 has a main sewer trunk line extending east-west across or near the Sunrise Project area. An extension of the trunk line is being built along Rock Creek from OR 212 to Sunnyside Road (Figure 68, p. 201).

Stormwater management services. Clackamas County Sewer District No. 1 has small facilities connected to existing waterways (Mt. Scott Creek, Phillips Creek, Dean Creek, Cow Creek, and other unnamed drainage ways). In some areas, these facilities consist primarily of "dry wells" that allow collected surface water to percolate into groundwater. The land use study area contains no large stormwater facilities.

Electric power. Portland General Electric has local electric service lines and power transmission lines in the project area (Figure 69, p. 202).

Natural gas. Williams Northwest Pipeline has a natural gas transmission pipeline running generally north-south at the east end of the Sunrise Project area. A gas distribution facility east of SE 172nd Avenue connects the Williams and the NW Natural systems. Gas is transferred at the Gate Station east of SE 172nd Avenue between OR 212 and Armstrong Circle (Figure 70, p. 203). This regional distribution system is a key link between national supply and the Portland area market.

The Utilities Technical Report on the attached DVD provides details on the following:

- Summary of financial impacts
- Utility providers and locations, including Clackamas River Water District and Sunrise Water Authority, Clackamas County Service District No. 1, Portland General Electric, Northwest Natural, Williams Pipeline Company, Qwest, Level 3, and Comcast
- Environmental consequences

Telecommunications. A variety of providers supply services in the project area. Facilities include telephone cables, fiber-optic cables, TV cables, and cell towers (Figure 71, p. 204).

Alternative 1–No Build would have little to no direct utility impacts different from the alternatives and design options. Construction of the passing lane on OR 212 between Rock Creek Junction and SE Armstrong Circle at the OR 212/224 intersection may affect adjacent utilities.

Alternatives 2 and 3 and the **design options** are expected to have very similar impacts on the following utility facilities:

- Water lines
- Sewer lines and planned pump stations and treatment facility
- Stormwater facilities
- Electrical lines, distribution lines and poles
- Natural gas pipeline
- Telephone lines, overhead and underground
- Fiber-optic lines
- Cable TV lines
- Cellular telephone transmission towers

Affected utilities will be required to relocate their facilities into designated Public Utility Easements acquired for that purpose. Utility providers typically pay for relocation or modification of their facilities within the right-of-way. The

proposed Sunrise Project would be required to pay for those relocations or modifications outside of the right-of-way. The estimated minimum utility cost for modifications outside the right-of-way would be $7.7 million. Some utilities did not provide estimates, so the cost would likely be higher.

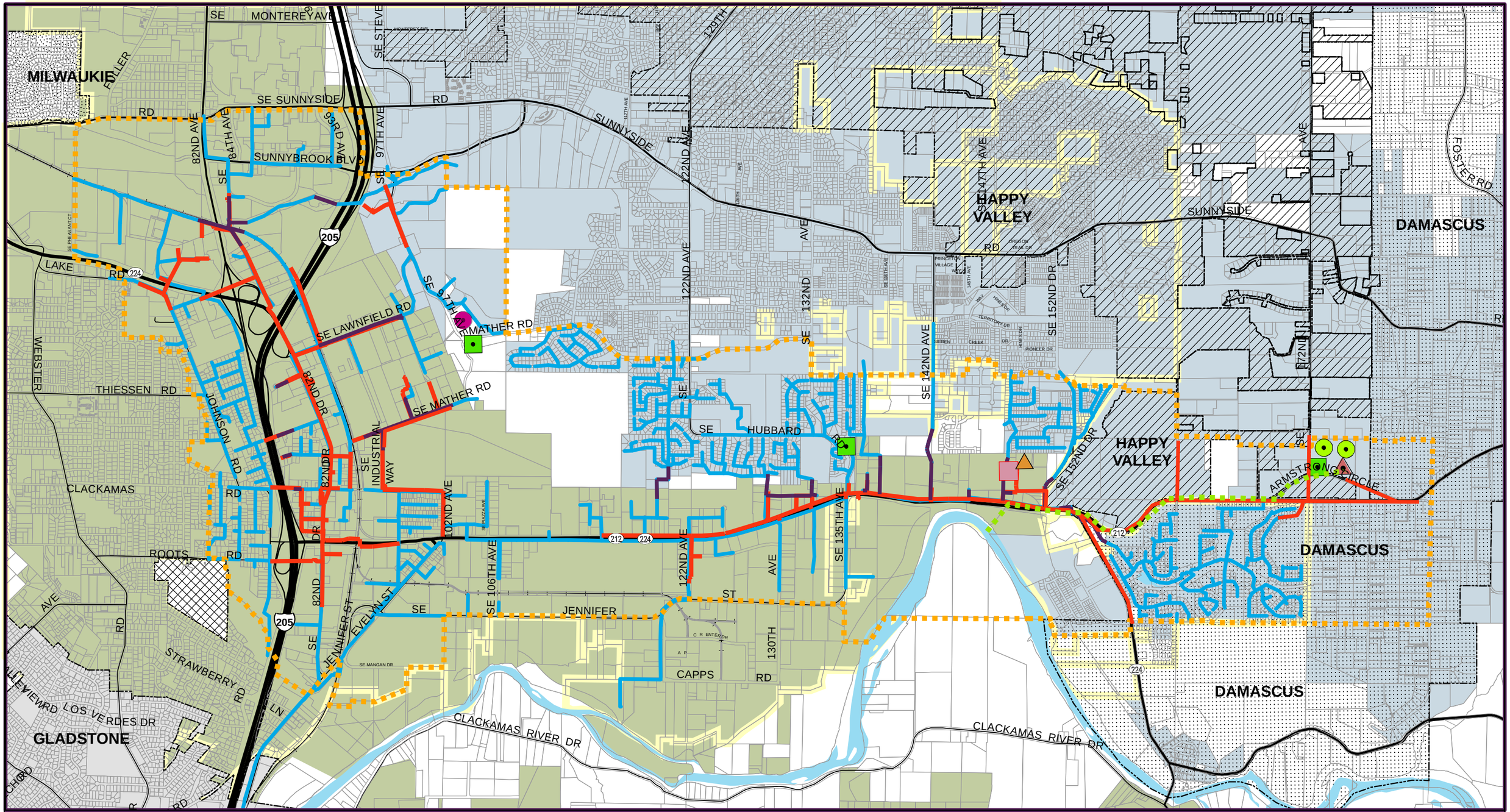
Because the physical and cost impacts are identical or similar in magnitude among all build alternatives and design options, details about specific facilities affected (discussed in the Utilities Technical Report) are not summarized here.

Indirect Effects

No indirect effects would be expected because no other projects of a similar magnitude are planned for the area.

Potential Mitigation Measures

The utility providers did not propose any mitigation measures for Alternatives 2 and 3. The construction specifications would contain measures to ensure that the construction procedures for relocations would minimize disruptions to services.



CLACKAMAS COUNTY
GEOGRAPHIC INFORMATION SYSTEMS

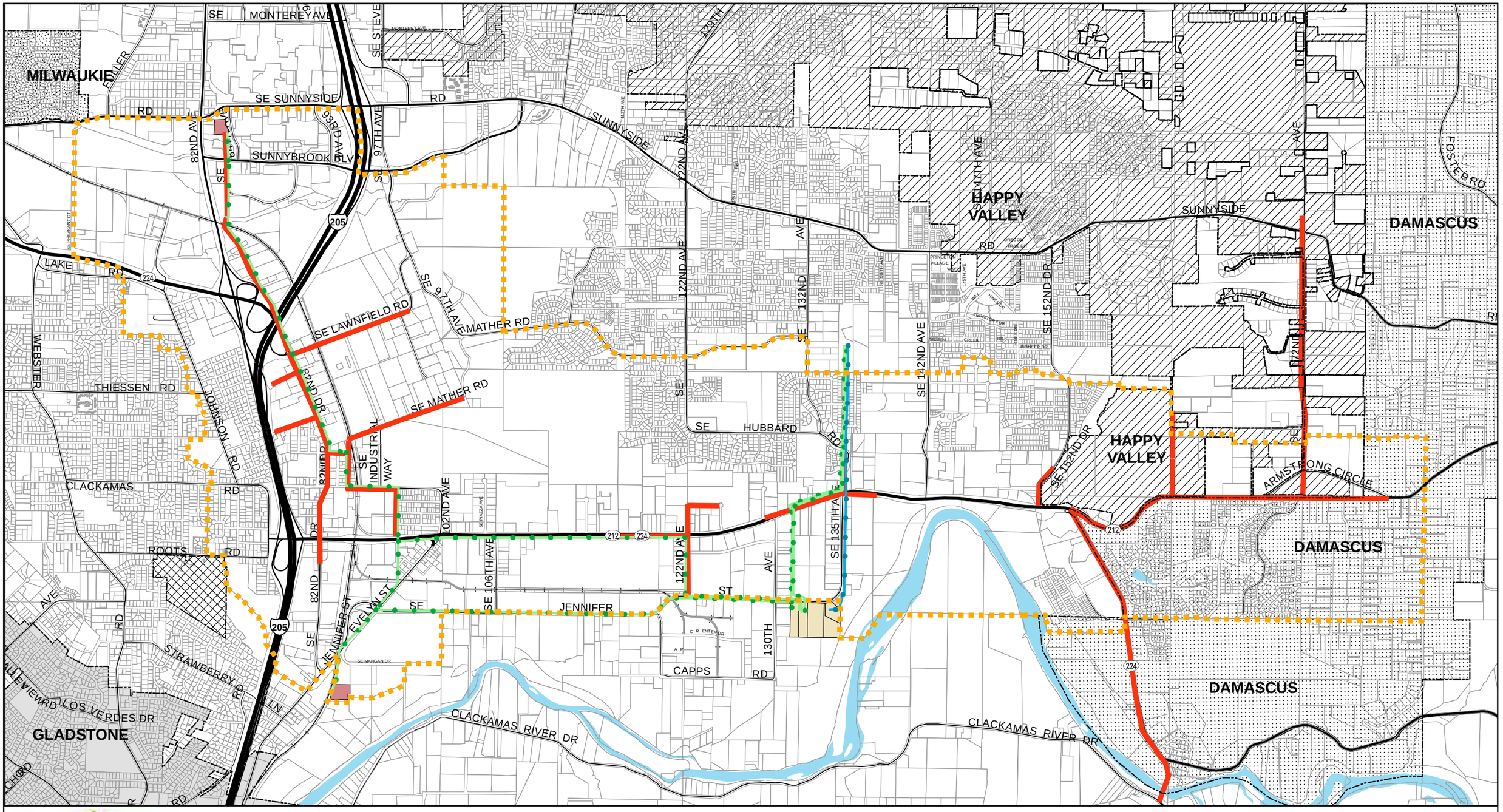
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- Land Use Study Area
- Clackamas County Service District I
- Clackamas River Water (CRW)
- Sunrise Water Authority (SWA)
- Potentially Impacted Water Lines
- Potentially Impacted Sewer Lines
- Existing Sewer Lines
- CRW Water Reservoir
- CRW Proposed Reservoir
- SWA Future Water Supply Line
- SWA Pump Station
- SWA Future Pumping Station
- SWA Future Water Treatment Facility
- SWA Future Wells

Figure 68

Sewer and Water Systems

Sunrise Project, I-205 to Rock Creek Junction



Land Use Study Area

Distribution Line Impacts

115 KW Mainline

230 KW Mainline

Carver Substation

PGE Substations

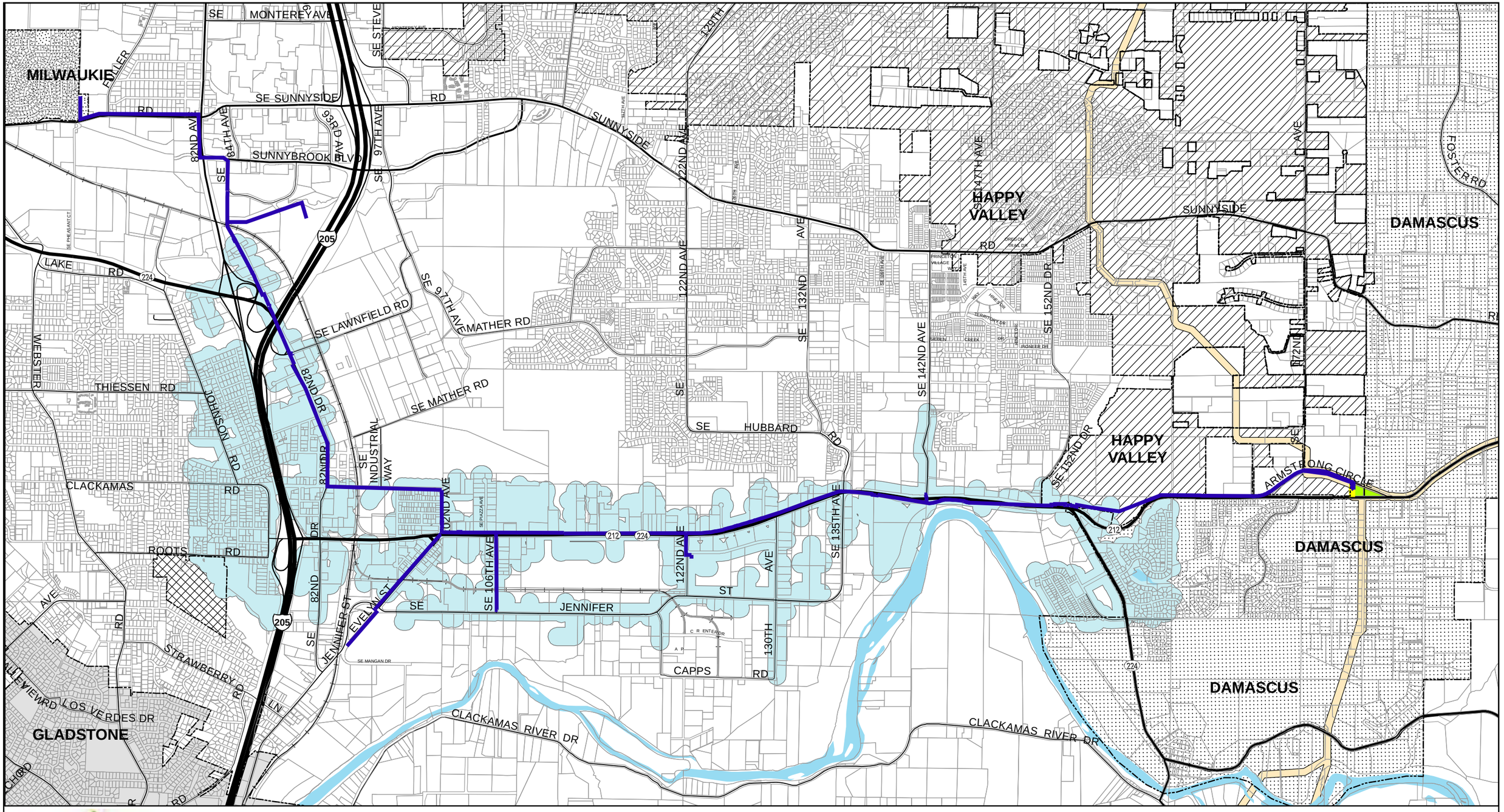
CLACKAMAS COUNTY
GEOGRAPHIC INFORMATION SYSTEMS

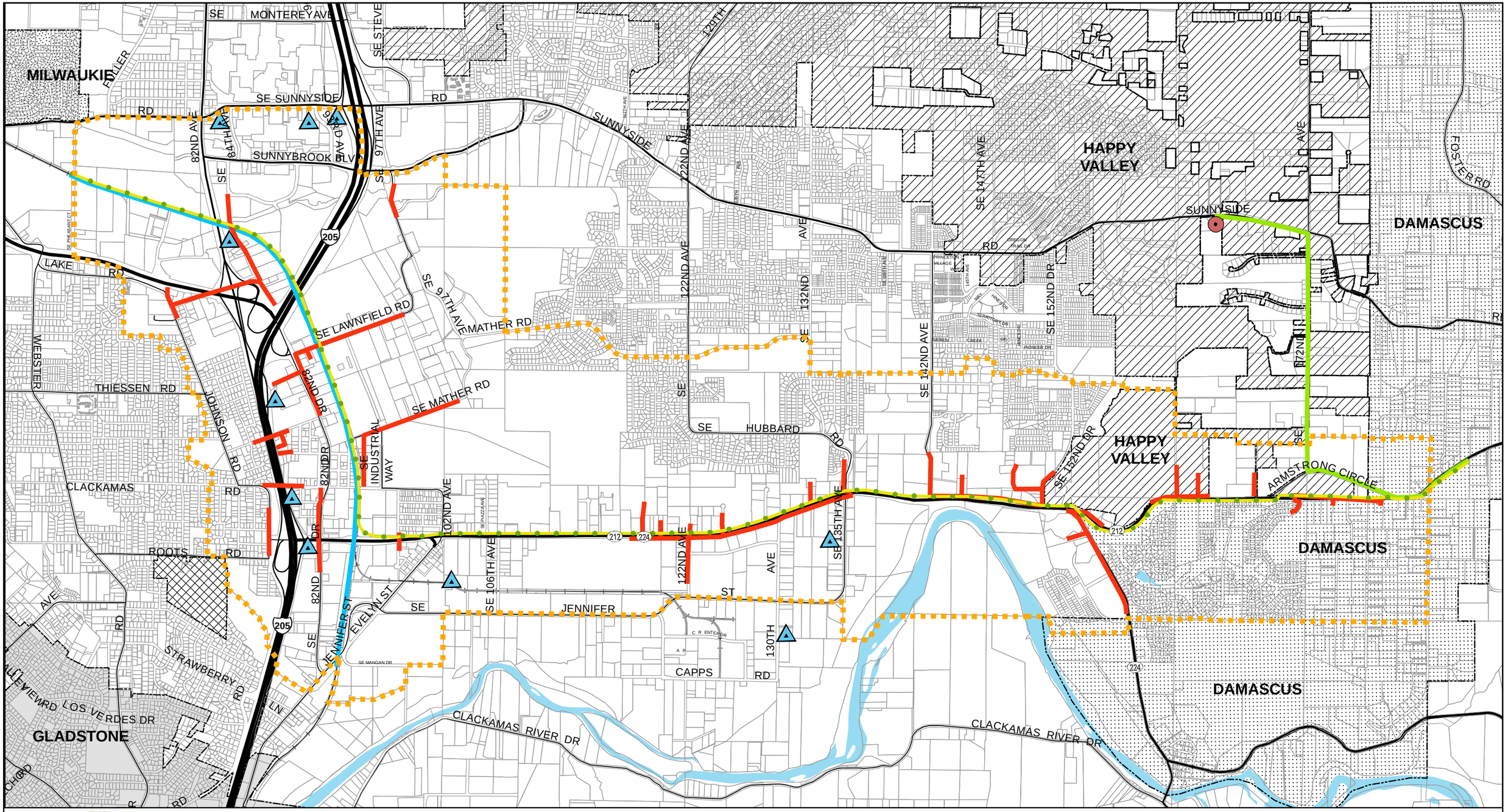
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Figure 69

Major Electric Power System
Portland General Electric

Sunrise Project, I-205 to Rock Creek Junction


MILWAUKIE
SE MONTEREY AVE
SE SUNNYSIDE RD
SUNNYBROOK BLVD
SUNNYSIDE
HAPPY VALLEY
DAMASCUS
LAKE RD
SE LAWNFIELD RD
SE MATHER RD
MATHER RD
THIESSEN RD
CLACKAMAS RD
ROOTS RD
SE HUBBARD RD
JENNIFER
CAPPS RD
ARMSTRONG CIRCLE
CLACKAMAS RIVER DR
GLADSTONE
82ND AVE
82ND DR
97TH AVE
93RD AVE
122ND AVE
132ND AVE
142ND AVE
147TH AVE
152ND DR
135TH AVE
106TH AVE
130TH
205
224
212
SE 97TH AVE
SE INDUSTRIAL WAY
SE JENNIFER ST
SE 82ND DR
SE 152ND DR
SE 172ND AVE
SE 129TH AVE
SE 122ND AVE
SE 132ND AVE
SE 142ND AVE
SE 135TH AVE
SE 106TH AVE
SE 82ND AVE
SE 84TH AVE
SE 97TH AVE
SE 122ND AVE
SE 132ND AVE
SE 142ND AVE
SE 147TH AVE
SE 152ND DR
SE 172ND AVE
SE 129TH



Land Use Study Area

Telecom and Cable TV Impacts

Level 3 to Sacramento

Level 3 to Boise

Verizon Fiber Optic Cable

Verizon Switching Station

Cell Towers

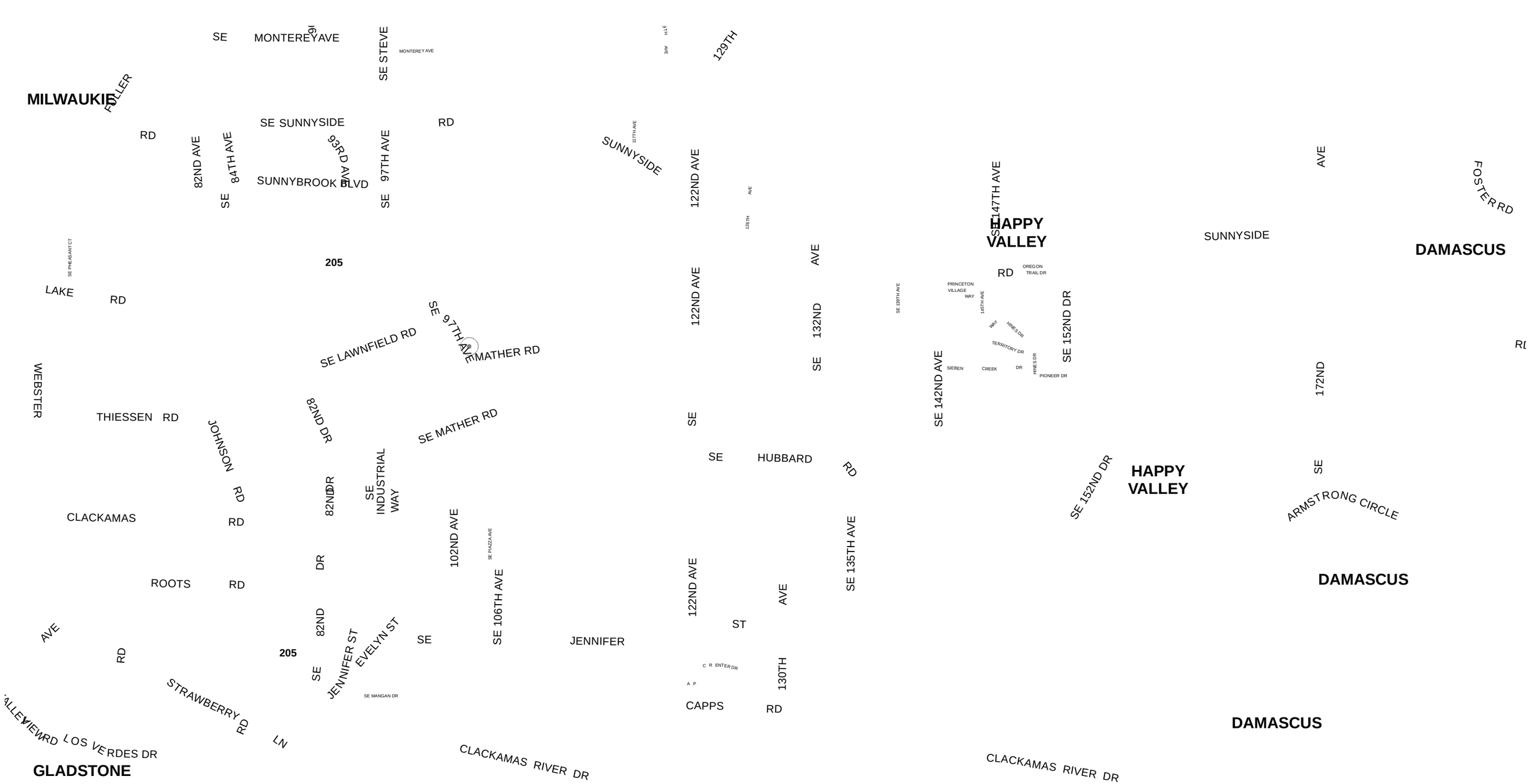
CLACKAMAS COUNTY
GEOGRAPHIC INFORMATION SYSTEMS

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Figure 71

Telecommunications and Cable Lines

Sunrise Project, I-205 to Rock Creek Junction



CLACKAMAS COUNTY
GEOGRAPHIC INFORMATION SYSTEMS
DEPARTMENT OF TRANSPORTATION & DEVELOPMENT
9101 SE SUNNYBROOK BLVD
CLACKAMAS, OR 97015

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Land Use Study Area

Clackamas County Service District I

Clackamas River Water (CRW)

Sunrise Water Authority (SWA)

Potentially Impacted Water Lines

Potentially Impacted Sewer Lines

Existing Sewer Lines

CRW Water Reservoir

CRW Proposed Reservoir

SWA Future Water Supply Line

SWA Pump Station

SWA Future Pumping Station

SWA Future Water Treatment Facility

SWA Future Wells

Figure 68

Sewer and Water Systems

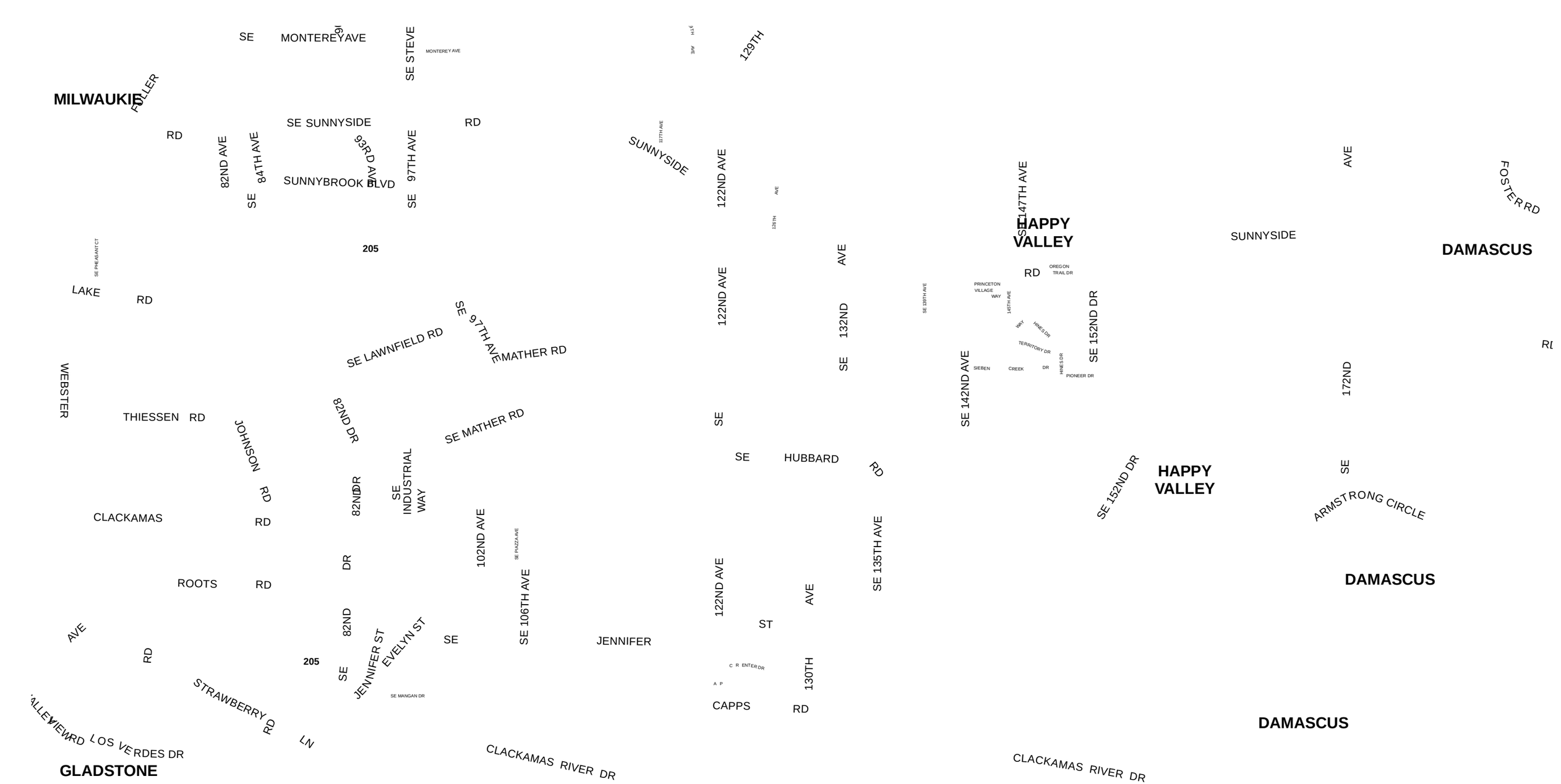


Figure 69

Major Electric Power System
Portland General Electric



Land Use Study Area

NW Natural Distribution

Williams Pipeline Distribution

Williams Pipeline

Local Gas Service Area

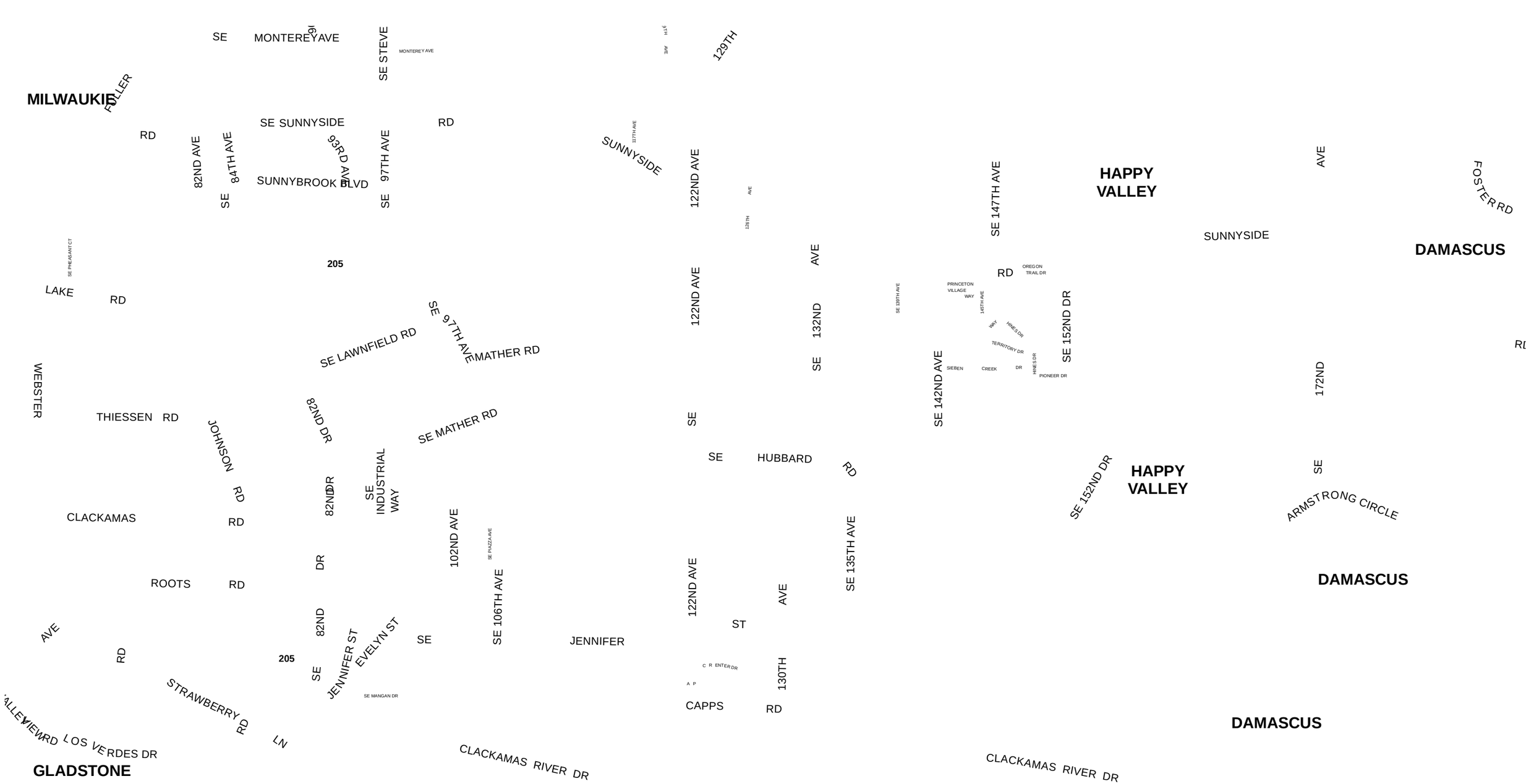
NW Natural Transmission Lines

CLACKAMAS COUNTY
GEOGRAPHIC INFORMATION SYSTEMS
DEPARTMENT OF TRANSPORTATION & DEVELOPMENT
9101 SE SUNNYBROOK BLVD
CLACKAMAS,OR 97015

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Figure 70

Natural Gas Service



Land Use Study Area

Telecom and Cable TV Impacts

Level 3 to Sacramento

Level 3 to Boise

Verizon Fiber Optic Cable

Verizon Switching Station

Cell Towers

1:24,000

Figure 71

Telecommunications and Cable Lines

CHAPTER 4. ADDITIONAL IMPACTS (CONSTRUCTION, CUMULATIVE, AND UNAVOIDABLE) AND APPLICABLE LAWS

Construction Impacts

Alternative 1–No Build would not create construction impacts. Therefore, this section applies only to **Alternatives 2 and 3** and the design options.

Alternatives 2 and 3 would cause substantial construction impacts. Construction activities common to both alternatives and the design options would be trucking fill material to raise the roadbed, constructing bridges, moving earth and rock on the site, and reconstructing the interchanges.

Constructing the proposed Sunrise Project would affect the immediate vicinity of businesses and residences and also be more widespread in the project area. Typical construction impacts are as follows:

- Increased use of local and arterial roads by construction equipment and truck traffic resulting in traffic delays;
- Temporary traffic rerouting and road and access closures;
- Construction noise from heavy equipment operation and the construction of bridges and wall forms;
- Blasting noise and dust;
- Dust from excavating and placing fill; and
- Lighting in construction areas in the evening.

Additional impacts on businesses include:

- Traffic rerouting, temporary road and driveway closures and delays;
- Temporary loss of visibility from key roadways; and
- Difficulty maneuvering trucks.

Over 2 million cubic yards of fill could be moved from borrow pits outside the immediate area of the proposed Sunrise Project. This would require crossing arterial and collector streets, especially SE 135th Avenue, SE 142nd Avenue, and SE 152nd Avenue. The truck volumes are expected to interfere with other traffic movement. Constructing bridges would require trucking of other building materials, resulting in a greater impact under **Alternative 2** than **Alternative 3** because the former has more bridges. Moving construction materials would temporarily increase the congestion on the major roadways in the area.

The reconstruction of the existing I-205/OR 212/224 Interchange would produce short-term negative impacts to the truck traffic originating or ending in the Clackamas Industrial Area. Likewise, this project would impact through truck traffic using the OR 212 freight route that connects US 26 and I-205. The need to continue to provide access from I-205 to OR 212/224 during this reconstruction may require the construction of a temporary interchange facility while the existing interchange is rebuilt.

A large cut to the east of Rock Creek may reach down 80 feet and require blasting of the basalt. If the excavated material is suitable for fill, it would be trucked to other portions of the facility for reuse. If the material is not suitable, then it would be necessary to truck it to an external site for disposal. Constructing the Rock Creek Interchange could interrupt traffic on OR 212, OR 224, SE 152nd Avenue, and SE 162nd Avenue for varying periods of time.

The construction impact is larger than the proposed right-of-way in the Rock Creek Junction area, near the Windswept Waters development. Temporary construction easements are assumed to be necessary due to the topographic constraints and the unknown location of the approved development.

Businesses and communities. Impacts to both business districts and neighborhoods have the potential to affect business traffic and residential livability. A construction management plan should be developed that supports the continued operation of business districts and the livability of affected neighborhoods.

Air quality. The primary impacts of construction would be the generation of dust from site clearing, excavation, and grading activities, and impacts to traffic flow in the project area. Traffic congestion increases idling times and reduces travel speeds, resulting in increased vehicle emission levels. Construction of concrete structures may have associated dust-emitting sources, such as concrete mixing operations. Stationary sources such as concrete mix plants are generally required to obtain air contaminant discharge permits from the Oregon Department of Environmental Quality and to comply with regulations to control dust and other pollutant emissions.

Construction impacts would vary in extent and location, depending on the alternative or design options selected and on weather conditions (e.g., rain suppresses dust but increases erosion). Construction impacts would logically be lowest with **Alternative 1–No Build** and higher for **Alternatives 2 and 3**.

Energy. ODOT may be able to reduce construction energy use by the following measures:

- Minimize the number of hauling trips by using full trucks to and from the site;
- Use recycled materials when possible, so that energy is not used to create new products;
- Use regional products whenever possible to reduce the distance materials travel;
- Use biodiesel or other nonpetroleum fuels and limiting vehicle idling;
- Locate staging areas near work sites; and
- Reuse construction signage, barriers, lighting, and other common materials to reduce energy in the production of materials.

Views. To minimize temporary disturbances during construction, construction areas could be placed out of sight from the majority of viewers and restored to their pre-project condition. Lighting on work areas could be shielded to minimize spillover onto adjacent areas. Some of the temporary effects result from safety measures (e.g., brightly colored signs, safety lights) and cannot be mitigated.

Biology. Construction activities and fill slopes would create at least a temporary impact to the wildlife corridor between the unnamed tributary to Rock Creek and Rock Creek. The banks of the fill slope would be planted with vegetation appropriate for the wildlife that use the area, but it would take several years for the plants to grow tall enough to provide cover for traveling wildlife. Consequently, wildlife may avoid the area for some time.

Geology and soils. In the Midpoint area, construction traffic could create unstable roadway subgrades where there are wetlands and areas with shallow groundwater because the soils are likely to be weak and compressible. Shallow groundwater and seeps, found in places along the slopes in the Midpoint area, could also have adverse effects on slope stability during construction of temporary cut slopes.

Placing fill while benching slopes could also potentially affect the temporary stability of slopes that have weaker soils underneath. For example, slopes underlain by Quaternary alluvium (or similar materials) may result in smaller failures or slumps if the cuts are too steep.

Erosion during construction could greatly increase the sediment load being carried by surface runoff water into adjacent streams or lakes, thus causing subsequent environmental degradation. Development of deep gullies caused by continued long-term erosion could result in excessive maintenance costs associated with shallow cut or fill slope instability.

Noise. Construction of the build alternatives may cause localized, short-duration noise impacts. Clackamas County exempts construction noise from regulations between the hours of 6 AM and 10 PM. Use of standard ODOT specifications for control of noise sources during construction can minimize construction impacts. The ODOT specifications are described in the Noise Technical Report (Construction Noise Mitigation).

Cumulative Impacts

Cumulative impacts on the environment are those that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.

General Historic Overview

The Sunrise Corridor project area was homeland to the Clackamas Indians who occupied the area when the first Euroamericans visited the area in the early 1800s. The Native Americans fished at Willamette Falls and had villages and fishing stations along the Clackamas and Willamette rivers. Hunting and gathering camps were located in the uplands surrounding the project area.

The Sunrise Corridor has been the focus of historical activity since the early to mid-1800s. The early settlers were attracted to the rich farmland and rivers, and made use of the power source provided by the falls at Oregon City. Early settlements were centered around the falls and along the Willamette and Clackamas rivers. The overland branch of the Oregon Trail passed through the project area and many of the early travelers settled in the newly created communities of Gladstone and Oregon City.

Between 1847 and 1865, the county rural population began to grow, creating the need for rural centers. As the rural population increased, so did the need for better transportation routes. Several spurs and wagon roads developed as offshoots from the well-established Barlow Trail.

The town of Clackamas was platted in 1869-70 and developed around the railroad. The Oregon Central Railroad ran its line through Clackamas (previously called Marshfield) in 1869. In 1870, Clackamas donated land to the railroad under the stipulation that a depot be built in the town. The depot was constructed shortly after the land transaction. The community benefited greatly from the railroad, and many businesses developed there because of it.

The continued growth of rural areas and small towns in Clackamas County followed a pattern that was similar to the rest of Oregon for most of the first half of the twentieth century. Most of the growth occurred in or near small towns.

After the Second World War, suburban residential and commercial development followed the existing road system in to northwestern Clackamas County, creating a large urban area by the 1960s. While suburban growth has continued until the present day, a series of major decisions made during the 1970s have played a major role in shaping the urban form of northwestern Clackamas County

Major decisions of the 1970s

Two major transportation projects, I-205 and the Milwaukie Expressway (OR 224), and two major land use policy decisions set the stage for the development that occurred in the last 30 years in the study area. During this time, a major regional employment, manufacturing, and wholesale distribution complex has developed, along with residential areas in urban unincorporated Clackamas County and in the City of Happy Valley. The transportation and land use patterns

that evolved as a result of these transportation projects and policy decisions provide the impetus for the expected future growth in the recent UGB expansion areas of Damascus and East Happy Valley urban areas. This urbanization pattern has set the stage for future expansion of the UGB over the next twenty years.

Major Highway Projects

I-205 and the Milwaukie Expressway (OR 224), both built in the 1970s, are the transportation and freight backbone of the regional transportation system in Clackamas County's portion of the Portland metropolitan area east of the Willamette River. The other main transportation corridor in this area is OR 99E, also known as McLoughlin Boulevard.

I-205, formally known as Oregon Highway No. 64, the East Portland Freeway, was the largest of these major highway construction projects. This 26.6-mile-long route starts at I-5 at Tualatin, travels through Clackamas and Multnomah Counties to the Columbia River and then continues through Clark County, Washington, to rejoin I-5 just north of Vancouver, Washington.

I-205 is now one of the most heavily traveled portions of interstate highway in Oregon and is a major truck route for the region. Average daily traffic on I-205 near its connection with I-84 in Portland is 148,300 vehicles per day. It took fourteen years to complete construction of I-205, which was built and opened in segments:

- The first contract for construction of Willamette River Bridge at West Linn and Oregon City was awarded on January 11, 1968.
- The connection from I-5 to Oregon City was opened to traffic on May 28, 1970.
- The segment between Oregon City and Sunnyside Road was completed in 1974. At that time, I-205 was connected to OR 213N (82nd Avenue) and to the Milwaukie Expressway (OR 224).
- By 1978-1979, construction on the remaining 9.2-mile section of I-205 in Oregon was underway. The final section of the I-205 project was one of the first Oregon highways to successfully follow the requirements of the National Environmental Policy Act.
- The Glenn L. Jackson Bridge, which spans the Columbia River and connects Oregon and Washington, was opened in December 1982.

Completion of I-205 was the final step in establishing the major truck freight distribution center now located along OR 212/224 and the Milwaukie Expressway (OR 224).

The Milwaukie Expressway (OR 224), also built in the 1970s, is a 4-mile roadway traveling through Milwaukie to I-205. An early plan map for this project is dated 1949. OR 224 starts at OR 99E on the western edge of Milwaukie and travels east about four miles until it intersects with I-205 south of the Clackamas Regional Center (this section is the Milwaukie Expressway; east of I-205 the road is named OR 212/224). This four-lane expressway provides a major east-west traffic connection for employment areas and provides a north-south connection as well, connecting to US 99E and thus to Portland.

OR 224 continues east, as OR 212/224, through the Clackamas Industrial Area until it reaches the Rock Creek Junction where is turns south to Carver and then travels through rural Clackamas County to Estacada.

OR 212 continues east through the city of Damascus to US 26, which continues through the city of Sandy, over Mount Hood, and then to Bend and other parts of central Oregon, supporting the freight distribution function of the study area.

Major Land Use Policy Decisions

Beginning in 1973, Oregon established a statewide planning system that was intended to direct growth towards the urban areas as defined

by urban growth boundaries. The establishment of the Portland regional UGB beginning in 1977 committed most of the land in the land use study area to future urban development. The subsequent adoption of the Clackamas County Comprehensive Plan in 1981 committed the area around I-205, the OR 224, and OR 212/224 to future development as a regional retail and office center, an employment/manufacturing center, and one of the largest truck distribution centers in the region. These decisions created the policy framework that guided the expansions of urban uses in the vicinity of the Sunrise Project, which has, in turn, produced the demand for more transportation facilities in the area.

The second major policy decision that affects the Sunrise Project was a major expansion of the UGB in 2002. The location of the regional UGB did not significantly change for nearly twenty years after it was first established. Two small expansions located northeast of the Sunrise Project were approved in the late 1990s, followed in 2002 with a major expansion of the UGB that added 12,000 acres of land to the north and east of the Sunrise Project. The 2002 UGB expansion area, which contains the new city of Damascus and the easternmost part of the city of Happy Valley, is expected to eventually contain an estimated 45,000 new jobs and 25,000 new households.

Past, Present, and Foreseeable Future Actions

The following list includes past, present, and foreseeable future actions in the Sunrise Corridor area from the I-205 interchange area to just east of the Rock Creek Junction and areas beyond the project in all directions that could be included in a cumulative effects analysis.

Transportation Projects

Past highway projects

- I-205 is a 26.6 mile-long route that meets I-5 south of Portland at Tualatin and joins I-5 just north of Vancouver, Washington.
- OR 224 is a 22-mile roadway from Milwaukie to Estacada that intersects with I-205 about four miles east of Milwaukie and then traverses the project area to the Rock Creek Junction where it turns south.

No Build and Build assumptions for future road projects (arterial)

- Widen SE 82nd Drive between Lawnfield Road and OR 212/224 (5 lanes).
- Improve OR 212 connection to Mather Road via SE 102nd Avenue and Industrial Way (3 lanes).
- At Rock Creek Boulevard, a new arterial road, create a new northerly extension from OR 224 at Rock Creek Junction that curves east to connect to SE 162nd and SE 172nd Avenues (5 lanes).
- Widen SE 172nd Avenue between Foster Road and OR 212 (5 lanes).
- Widen OR 224 between Rock Creek Junction and Carver Bridge (5 lanes).
- Widen Carver Bridge to 5 lanes.
- SE 82nd Drive, improvements, Gladstone to OR 212/224 (5 lanes).
- Sunnybrook Boulevard Extension from SE 82nd Avenue (OR 213N) to Harmony Road (3 lanes).
- Create a climbing lane on OR 212 between Rock Creek Junction and SE 172nd Avenue.

Proposed transportation projects outside of the Sunrise Project

Arterial road projects, Damascus

- SE 242nd Avenue from OR 212 to Palmquist (5 lanes, 35 mph).
- OR 212 from Rock Creek to SE 257th Avenue (5 lanes, 35 mph).
- Sunnyside Road extension from SE 172nd to SE 242nd Avenues (5 lanes, 35 mph).
- SE 232nd Avenue extension from OR 212 to Borges Road (3 lanes, 25 mph).
- SE 190th Avenue extension from Tillstrom Road to SE 172nd (5 lanes, 35 mph).

Arterial road projects, outside the UGB, south of the Clackamas River

- Gronlund Road (5 lanes, 35 mph).
- Bradley Road (3 lanes, 35 mph).
- Forsythe Road (5 lanes, 35 mph).
- Holcomb Boulevard (3 lanes, 35 mph).
- Clackamas River Drive (3 lanes, 35 mph).
- OR 213 (south of I-205) (4 lanes).
- A new crossing of the Clackamas River connecting the I-205/Gladstone interchange with Clackamas River Drive (5 lanes, 35 mph).

Transit-related projects

- I-205 Light Rail with Station at Clackamas Town Center.
- New bus routes connecting the Oregon City Transit Center with Carver (and Clackamas Town Center Transit Center) via Holcomb Boulevard and Forsythe Road. Buses will run every 30 minutes during service hours.

Rail projects

- Oregon Iron Works Railroad spur.
- Closure of Lawnfield Road at-grade crossing of UPRR to vehicles.

Bicycle network and related projects

- I- 205 multi-use path improvements (existing gap completed between SE 82nd Drive and SE Roots Road).
- Sunrise Project multi-use path construction, from I-205 multi-use path to SE 122nd Avenue/OR 212/224.
- Bike paths and sidewalks on all proposed arterial streets listed above.

Other agency plans

- **Parks**. Both Metro and the North Clackamas Parks District identify several planned parks, greenspaces, natural resources areas, and trails or linear parks as part of the planned regional trails and greenways system.
- **Sewer.** Clackamas County's Water Environmental Services is constructing a sewer trunk line located beside Rock Creek (planned to be completed in late 2006) and plans to install sewer line in SE 172nd Avenue as part of a road construction project in 2007 and 2008. This is the first step in the delivery of sewer services to the east Happy Valley area within the Rock Creek basin.
- **Water**. The Clackamas River Water District proposes a 6-million-gallon water reservoir about 800 feet west of SE 152nd Drive above the bluff and near its eastern edge. Sunrise Water Authority has proposed to put a new water reservoir northwest of the intersection of SE 172nd Avenue and Armstrong Circle.
- **Camp Withycombe**. The site's armory and readiness training center functions have been identified for upgrade or replacement to house the corporate headquarters of the 41st Brigade as well as joint forces in a new Armed Forces Readiness Center for realigned units from closing installations in the region. A new master plan for the site is

being developed to identify how this and other future development on the site will be accommodated within the effective period of the Master Plan. Part of this master plan includes the possible construction of an overcrossing of UPRR tracks from Industrial Way to SE 82nd Drive via SE Tolbert Street.

Land Use Decisions

Land use decisions – past

- Original Regional UGB location decision – 1977.
- UGB expansions late 1990s and 2002—Pleasant Valley UGB expansion area, Rock Creek UGB Expansion Area, and Damascus Boring Concept Plan Area.

Land use decisions – future

- East Happy Valley Comprehensive Plan—Happy Valley implementation of their portion of the Damascus Boring Concept Plan.
- Damascus Comprehensive Plan—Damascus implementation of their portion of the Damascus Boring Concept Plan.

Land use decisions – development on private land

- **Providence Hospital.** The hospital plans to develop a campus on property north of Rock Creek Junction, east of Rock Creek. A minimum of 30 net acres is needed to accommodate a full-service regional medical center to be developed over a 40-year period. At full build-out, the proposed medical center will:
  - Have up to 5,000 employees, about 45 percent of employees in the Rock Creek Employment Area as a whole. This is an employee density of 72 employees per gross acre and 170 employees per net acre.
  - Have a building inventory of 1.6 million gross square feet (gsf), including a 400- to 500-bed hospital and related inpatient facilities (1.1 million gsf) and outpatient facilities (0.5 million gsf), and up to 4,430 structured parking spaces.
- **Windswept Waters.** This 192-lot subdivision is between OR 224 and the Clackamas River, south of the Rock Creek intersection and north of Carver. In 2003 the comprehensive plan designation was changed from Medium Density Residential to Low Density Residential. In 2005 the zone was changed from FU-10 to a combination of R-7 (Low Density Residential), MR-1 (Medium Density Residential), and OSM (Open Space Management). At the time of this report, the site is under construction.
- **River Rim.** Design Review was approved for 144 single-family townhome lots on the western edge of OR 224, approximately 1,000 feet south of the OR 212/224 intersection (Rock Creek Interchange). At the time of this report, the site is under construction.
- **Clackamas Town Center** expansion and Light Rail Station. At the time of this report, the site is under construction.
- **Clackamas Community College** expansion at Harmony Road/82nd Avenue—Nurse Training Program. At the time of this report, the site is under construction.
- **Wentzel Park Estates**, an approved 76-lot planned unit development and associated zone change at 14830 SE 142nd Avenue. In 2004, a zone change converted FU-10 (Future Urbanizable, 10-acre minimum lot size) to R-8.5 (Urban Low Density Residential, 8,500-square foot average lot size), resulting in 76 lots east of SE 142nd Avenue and north of OR 212/224. This development north of the corridor will contribute to the significant residential development occurring in the Sunnyside neighborhood above the bluff. It appears

that Option C-3 may take up to 22 lots and new homes in this subdivision.

Zoning changes

Approved zone change from Industrial to Commercial at 15251 SE 142nd Avenue. The subject land contains both local and jurisdictional wetlands. The approval for the zone change permitted the applicant to impact the wetlands in exchange for off-site mitigation. The proposal will likely have mitigation and permitting challenges. Development of expected commercial uses may also include rerouting and enhancement of Sieben Creek. The land use action has not been finalized as of this report.

Changes to Natural Resources

Local and jurisdictional wetlands exist on the site at 15251 SE 142nd Avenue (see previous bullets).

Cow Creek flows southwest to the Clackamas River through commercial and industrial areas. The drainage has become almost entirely contained in underground structures.

Sieben Creek flows south from the hills north of the project area. South of OR 212/224 the creek has been ditched to the Clackamas River.

Dean Creek flows from the Mount Talbert area to Mt. Scott Creek. It has been ditched at the I-205 crossing.

Cumulative Impacts by Topic Area

Transportation

The future road projects common to all alternatives are expected to occur in support of the developing urban areas. In addition the road system will expand as local streets are built as part of the development process. Those projects would support the expanding urban area in the new additions to the UGB. While the projects would not be enough by themselves to provide adequate transportation infrastructure to support the new urban development, they would provide enough accessibility to allow development to occur for the foreseeable future. **Alternative 1–No Build**, in combination with the future highway and road projects common to all alternatives, would negatively impact this future transportation system by allowing increased congestion to affect the future arterial road system and freight movement on the main roads. The future arterial road facilities would support the future development in the Sunrise Project vicinity.

Alternatives 2 and 3 would support the future transportation system by carrying much of the through traffic and freight movement in the corridor. **Alternatives 2 and 3**, in combination with the future highway and road projects common to all alternatives, would positively impact the future transportation system by providing the capacity needed to manage congestion on the future arterial road system and accommodate freight movement as needed.

The development of future area road improvements common to all alternatives would result in an increase in the number of bike lanes and pedestrian facilities in the vicinity of the Sunrise Project. **Alternative 1–No Build** in combination with a planned bicycle network and related projects would allow the growth of more congestion and create additional safety concerns for bicycle lanes on roadways. **Alternatives 2 and 3** would provide additional multi-use path improvements from the I-205 Interchange to SE 122nd Avenue. The cumulative effects of **Alternatives 2 and 3** in combination with bicycle network and related projects would increase opportunities for alternative forms of travel in the vicinity of the Sunrise Project compared to **Alternative 1**.

Land Use

Major highway projects and land use policy decisions, previously discussed in this report, supported the urban development that occurred in the last 30 years in the vicinity of the Sunrise Project. However, because of Oregon's unique land use laws and the presence of the UGB, there is one key assumption that underlies the analysis

of the Sunrise Project that is different from assumptions made for the analysis of projects in most other states. That assumption is that the population and employment growth forecast for the study area and the resulting future land uses will occur regardless of the outcome of the decision concerning whether or not to build the Sunrise Project.

Land development in Oregon is not primarily driven by the development of the highway system to the same extent that it is in other states. The availability of sewer service, water service, and land zoned for urban development within the UGB will drive development over the next 20 to 30 year time period. Similarly, the Oregon land use planning system directs urban growth and densities towards those areas that are within UGBs and away from lands that are outside the UGB and it defines the priority areas to be brought into UGBs in the future. Lands outside the future expansion area for the UGB are not expected to be available for large scale urban development.

Alternative 1 would negatively impact the future transportation system by allowing increased congestion. Congestion and limited freight access opportunities are expected to have the effect of limiting employment and other types of development envisioned in local plans. It is understood that future urban growth may slow down as traffic and congestion problems increase and as other portions of the region that have developable lands within the UGB compete for the region's growth. However it is unlikely that development of the area around the Sunrise Project and the area to the east of the project, within the UGB, will actually be stopped by traffic and congestion problems.

The cumulative effects of **Alternatives 2 and 3**, in combination with past highway and land use policy actions, would be to continue to support future urban development in the Sunrise Project vicinity and in the newer urban areas to the south and east by providing the capacity needed to manage congestion on the future arterial road system and accommodate freight movement as needed. **Alternatives 2 and 3** in combination with other bicycle network and related projects is expected to increase the opportunity for alternative forms of travel in the vicinity of the Sunrise Project and in the new urban areas to the south and east.

The cumulative effects of **Alternatives 2 and 3** may also be present in the form of more rapid development. The increased access to I-205, providing a streamlining of movement to and from Portland and other distribution centers, would likely result in the area around I-205 becoming increasingly commercial, with loss of remaining residential areas. As the residential centers in the vicinity of OR 212 are displaced, they would increasingly relocate to the east, taking advantage of the streamlined access of the now-outlying areas to I-205.

Communities and Businesses

The cumulative effects of **Alternative 1** would be to allow increased congestion and reduced access to the regional transportation system so that there would be a significant negative impact on future employment growth and the viability of the business districts in the Sunrise Project area.

The Old Clackamas and Hollywood neighborhoods have already been impacted by expansion of transportation facilities and incursion of industrial and commercial development. Both **Alternatives 2 and 3** would add to the previous encroachment. The future of the manufactured home parks located within or adjacent to the Clackamas Industrial Area is also a concern; nationwide market forces at this time are supporting the conversion of manufactured home parks to other uses.

The improved regional accessibility of **Alternatives 2 and 3** and the design options may make neighborhoods more attractive for intensification and redevelopment. The risk would be the potential loss of affordable housing, particularly in manufactured home parks. It is also reasonable to expect requests to convert some of these existing residential areas to commercial or industrial land uses, similar to

previous requests for changes in Hollywood and Old Clackamas.

Under **Alternatives 2 and 3**, development of the limited supply of vacant employment land within the land use study area is likely to be more employment-intensive with the more supportive transportation system. Also, existing employment areas are expected to intensify over time due to the cumulative effects of a more efficient and convenient transportation system.

Environmental Justice

Because **Alternatives 2 and 3** and the design options, in combination with other past, present, and reasonably future actions, may support gentrification or redevelopment/replacement of moderate and low-income areas (such as the manufactured home parks that are already at risk from market forces), there may be a cumulative effect of further displacing low-income residents beyond the direct effects already noted. Thus, they might have cumulative effects on environmental justice populations.

Visual Resources

The cumulative effects and benefits would be expected to be approximately the same for both **Alternatives 2 and 3** and all the design options. The main cumulative effect of the proposed project and other proposed or current projects is increased man-made development, particularly roads, intersections, structures, and on- and off-ramps, which would potentially cause the character of the project area, especially in Zones C and D, to become urbanized more rapidly than if the highway were not built. However, transportation improvement projects such as widened roads would potentially reduce traffic congestion, which can encroach upon views, particularly in areas that are currently less developed.

New roads and associated improvements can also further encroach on visual resources and contribute to the segmentation of existing visual resources, such as those of fields and intact stands of trees. The projects would also contribute to the collective removal of vegetation and grading of terrain in the project area. This would negatively affect existing views by decreasing the color, form, texture, and line variation that trees, shrubs, and hills provide.

Noise

The impacts described throughout this report represent cumulative noise impacts. The forecast traffic volumes used in this analysis were based on land use and employment forecasts and included traffic from all sources, including projected development in the area.

Air Quality

The forecast traffic volumes used to analyze the air quality impacts of the proposed Sunrise Project alternatives and design options include traffic from all sources. Background concentrations representing the cumulative emissions of other sources in the area are added into the predicted local concentrations for carbon monoxide at intersections. Because of these inclusive analysis methodologies, the impacts evaluated already represent cumulative air quality impacts.

Energy

The proposed Sunrise Project would be constructed in a region projected to gain one million residents by 2030. Many other road and infrastructure projects are planned in addition to the Sunrise Project in the Portland metropolitan region. When considered in the context of the entire Portland metropolitan region, the proposed Sunrise Project would have a marginal impact on total fuel consumption, and cumulative energy effects resulting from the Sunrise project would be minimal.

Biology

Past and planned road projects add to the biological impacts of the proposed Sunrise Project, primarily as a result of increased impervious surface. It is assumed that these road projects would comply with state water quality standards for detention/retention and water

quality treatment existing at the time of construction.

Residential development is expected to continue on the vacant lands in the vicinity of the proposed Sunrise Project, which adds roofs to the sum of impervious surfaces.

New bus lines would presumably use existing facilities and would not result in additional impacts to fish, wildlife, and botanical resources. These new bus lines may benefit those resources by slowing the demand for additional new facilities. Nevertheless, it is safe to assume that increased growth would occur and would negatively impact fish habitat.

Sewer and water projects built as part of a road construction project or built in existing road prisms do not constitute significant impacts to biological resources because the areas are already disrupted by construction. Sewer projects that follow stream corridors can be very disruptive to the natural environment.

Camp Withycombe plans to add new facilities to the camp in order to locate the new 41st Brigade headquarters and logistics center. Wildlife habitats at the camp are already compromised due to the existing amount of activity there.

It is unknown whether the wetland on the future medical care complex site would be adversely affected. Permits would be required from USACE and DSL. The agricultural field provides limited wildlife habitat.

New urban areas to the south and the east of the proposed Sunrise Project are expected to begin development within three to five years. If all privately held land were to fully develop, the Mount Talbert to Rock Creek wildlife corridor could be severed.

Wetlands

Past development has likely resulted in a significant loss of wetland acreage and wetland function in this portion of Clackamas County. Consequently, the hydrology and plant communities of the remaining wetlands have been altered significantly, and linkages between wetlands and other native habitats are largely lost. The proposed project would significantly add to this cumulative loss by further impacts to wetland acreage and function. If pressure to develop in wetlands increases, many impacts to small- and medium-sized wetlands could occur.

Water Quality

No cumulative water quality effects are anticipated from **Alternative 1** or the proposed project. The project area is currently fully urbanized. If the project does prompt redevelopment, such redevelopment would require stormwater mitigation in addition to the project-related stormwater mitigation.

Geology and Soils

Cumulative effects to geology and soils would be minimal because no other large construction projects are planned to occur simultaneously with the proposed Sunrise Project. Potential cumulative effects to landslide-prone areas also need to be considered in association with any of the project alternatives.

Cultural Resources

Urbanization would occur regardless of the proposed Sunrise Project; however, constructing the highway may accelerate development of currently undeveloped and open lands, especially in east Happy Valley and Damascus. That development is likely to result in the loss of archaeological resources that may be present on developable lands in these areas.

If development triggers federal involvement, the developer would be required to determine whether archaeological resources would be affected by the proposed development and to mitigate for adverse effects to significant resources. Oregon state law protects archaeological resources, but no surveys prior to development are required if there is no federal agency involvement. Unrecorded and unreported archaeological resources are therefore likely to be unknowingly disturbed or destroyed.

Similarly, development and urbanization of areas recently added to the urban growth boundary may also affect the historical resources located within the UGB.

Hazardous Materials

Major cumulative effects related to remediation of contaminated soil/groundwater due to the construction of the proposed Sunrise Project would not be expected. Concerns may arise that a project the size of the proposed Sunrise Project could create a shortage of experts available to handle the workload across the region. The opinion of the contributors to this SDEIS is that qualified contractors could absorb the work.

Utilities

No cumulative impacts would be expected because no other projects of a similar magnitude are planned for the area.

Irretrievable and Irreversible Commitment of the Resources

Implementation of the proposed action involves a commitment of a range of natural, physical, human, and fiscal resources. NEPA requires the SDEIS to identify how building the Sunrise Project would commit resources that could not in future be retrieved (once the resource is used, it is gone, such as fuel or labor) and commit resources to a use in a way that could not be reversed (such as natural wetlands that could not be recreated).

The commitment of these resources is based on the concept that residents in the immediate area, state, and region will benefit by the improved quality of the transportation system. These benefits will consist of improved accessibility and safety, savings in time, and greater availability of quality services which are anticipated to outweigh the commitment of these resources.

Land Consumption

Land used in the construction of the proposed Sunrise Project is considered an irreversible commitment during the time period that the land is used for a highway facility. **Alternatives 2 and 3** with any design option would commit land from existing uses to transportation and related uses. While this land might be retrievable in the long term, if a greater need arises for use of the land or if the highway facility is no longer needed, it represents an irreversible commitment within the foreseeable future. While the land can be converted to another use, there is no reason to believe such a conversion will ever be necessary or desirable. **Alternative 2** with **Design Option B-2** would have the largest impact by converting about 520 acres of land to transportation. **Alternative 3 with Design Option A-2** would have the least impact among the build alternatives by converting about 477 acres.

Natural Resources

Large amounts of natural resources are used in the fabrication and preparation of construction materials. Additionally **Alternatives 2 and 3** would cause irretrievable loss or conversion of wetlands and upland and riparian habitats to pavement or roadway slopes. **Alternative 2** would impact 101 acres of habitat and 32 acres of wetlands. **Alternative 3** would impact 99 acres of habitat. **Design Option B-2** would have the greatest impacts on habitat while **Design Option C-3** would have the least.

Energy Resources

Alternatives 2 and 3 would require the irreversible and irretrievable expenditure of energy resources, approximately 35,800 to 43,300 gallons of fuel per day for the operation of vehicles on the corridor in 2030 or 13.07 to 15.80 million gallons of fuel annually.

To construct the project, the commitment of energy sources would include petroleum products expended by construction equipment on the site and in transport to and from the site, and the energy invested in the preparations or fabrication of the construction materials. Construction is estimated to require between 55.6 and 61.6 million gallons of fuel.

Materials

Considerable amounts of highway construction materials such as cement, aggregate, and bituminous material would be used to build the proposed Sunrise Project. These materials are generally not retrievable except for those items that have some salvage value and can be recycled. However, they are not in short supply and their use will not have an adverse effect upon continued availability of these resources. Any construction will also require a substantial one-time expenditure of both state and federal funds that are not retrievable. **Alternative 2** with **Design Option B-2** would require the most materials.

Financial Resources

Funds expected in the design, construction, operation, and maintenance of the proposed Sunrise Project would be totally committed and unavailable for other uses.

Unavoidable Impacts

Transportation

Congestion on the road network would continue to grow even if the proposed Sunrise Project is built.

Land Use, Communities, and Businesses

Changes to access and circulation would require longer traveling distances for residents and businesses at specific points in the Sunrise Project area. The conversion of developable land to transportation uses is unavoidable.

Environmental Justice

Displacement of some low-income housing is likely. Whether residents could be relocated within the land use study area is unknown.

Visual Resources

Permanent impacts to some visual resources would be unavoidable.

Noise

Areas adjacent to the project would experience an increase in traffic noise levels with and without the project. Noise increases that do not meet the criterion for funding of abatement measures would not be mitigated for noise impacts. Noise mitigation analyzed in the Midpoint area was generally found to be either ineffective at reducing sound levels or had costs too high to meet the ODOT reasonableness criterion. Residential units in neighborhoods north of the proposed Sunrise Project alignment at the top of the bluff have the potential for unmitigated and substantial noise increases as a result of the proposed build alternatives. Even with mitigation measures at some locations, there would be unavoidable noise impacts.

Biology and Wetlands

Replacement of upland, riparian, and wetland habitats with pavement would be unavoidable.

Water Quality

Mitigation would not prevent all pollutants in stormwater from entering surface and groundwater.

Soils and Geology

Excavation into rock or dewatering (if required) for construction of the interchange in the Rock Creek Junction area would be unavoidable.

Cultural Resources

Alteration of some historic resources would be unavoidable.

Utilities

Relocation of public and private utilities would be unavoidable.

Applicable Laws and Approval Requirements

Noise

No permits would be required for permanent impacts. A noise variance could be required by Clackamas County during construction.

Air Quality

No Air Quality permits are required.

Clean Air Act

This law forms the basis for regulations that control allowable air emissions and concentrations of air pollutants in the environment.

National Ambient Air Quality Standards

The federal government has established National Ambient Air Quality Standards to protect the public from air pollution. Geographic areas where concentrations of a pollutant exceed the ambient air quality standards are classified as nonattainment areas (as in, they do not attain standards). Nonattainment areas that become compliant are classified as maintenance areas. Areas that meet the standards are attainment areas. The Portland metropolitan area is a maintenance area for carbon monoxide and an attainment area for all other pollutants. The EPA recently revised the standards for particulate matter. Based on information collected to date, the Portland area is expected to comply with the new standards.

Air Quality Conformity Finding

The project is located in the Portland carbon monoxide maintenance area. The project must be included in a conforming RTP and Metropolitan Transportation Improvement Program with no substantive changes in design concept or scope, and a hot spot analysis must be completed to determine that local carbon monoxide impacts would not occur.

The 2035 RTP includes the following task descriptions for the proposed Sunrise Project: acquire right-of-way from I-205 to SE 172nd Avenue, perform preliminary engineering, and construct new highway facility from I-205 to SE 122nd Avenue interim connection. The conformity analysis for the 2035 RTP included the full build alternative from I-205 to SE 172nd Avenue with six lanes, no tolls, to be completed by 2017. and the U.S. Department of Transportation has issued a determination that regional emissions resulting from the 2035 RTP (and, therefore, including the six-lane project) would conform to the carbon monoxide emissions budgets. A local hot spots analysis was performed for the alternatives and design options for the expected year of opening and the design year and no violations of the NAAQS were predicted. The analyses show that the full build alternative with six lanes, no toll from I-205 to SE 172nd Avenue, and constructed by 2017 would conform to the State Implementation Plan.

Mobile Source Air Toxics

The Clean Air Act Amendments of 1990 identify 188 air toxins (defined as pollutants that cause cancer or may cause other serious health effects). Based on the EPA rulemaking, FHWA identified six toxins as the priority Mobile Source Air Toxics: benzene, formaldehyde, acetaldehyde, diesel exhaust (particulate matter/diesel exhaust organic gases), acrolein, and 1,3-butadiene. There are no national standards for Mobile Source Air Toxics, and there are no established criteria for determining when emissions should be considered a significant issue. There is guidance for qualitative analysis. A qualitative analysis for the SDEIS is recommended.

State Regulations

ODEQ has established state ambient air quality standards that are more stringent than the national standards. State law on "Transportation Conformity" establishes criteria and procedures for determining conformity of transportation plans and programs with State Implementation Plans to meet the national ambient air quality standards. The conformity regulations are applicable to projects within nonattainment or maintenance areas.

Biology

OAR Division 415 635-415-000 through 635-415-0025 Fish and Wildlife Habitat Mitigation Policy

The Oregon Department of Fish and Wildlife can require or recommend mitigation for loss of fish and wildlife habitat resulting from development actions.

Fish and Wildlife Coordination Act of 1958 (Public Law 85-624)

The Act requires that any plans to impound, divert, control, or modify any stream or other body of water must be coordinated with the U.S. Fish and Wildlife Service and the state fish and wildlife agency through consultation directed toward the prevention of fish and wildlife losses.

Endangered Species Act of 1973 (Public Law 93-205)

The ESA provides for the protection of animal and plant species currently in danger of extinction (endangered) and those species that may become so in the near future (threatened).

Endangered Species Act, Section 7 Consultation and Biological Assessment

Section 7 of the ESA directs all federal agencies to ensure that any actions they fund, permit, or authorize are not likely to jeopardize a listed species or destroy or adversely modify critical habitat. Consultation with the federal agencies (NMFS and USFWS) regarding potential project impacts to listed species would be necessary.

Migratory Bird Treaty Act

Under the Act, taking, killing, or possessing migratory birds is unlawful unless permitted by regulations. During construction, migratory birds would be protected.

Federal Clean Water Act Section 404

Any alternative involving work below the Ordinary High Water Mark of a stream or within a wetland would require a Federal Clean Water Act Section 404 permit. The Federal 404 Wetland Removal Fill permit also requires that stormwater management be addressed. Issuance of the 404 permit would require "Water Quality Certification" by the ODEQ, indicating that their stormwater management standards are met (per the federal Clean Water Act, Section 401). Because ESA-listed fish are present in the API, USACE requires concurrence from NMFS regarding the appropriate management of stormwater.

Removal/Fill Law

State of Oregon Removal/Fill law requires a permit for impacting waters of the State of Oregon. The Removal/Fill permit is administered by the Oregon Department of State Lands.

Stormwater

Stormwater runoff from new impervious areas would require permits from Clackamas County. The proposed project would require a Clackamas County Service District No. 1 permit for the stormwater system. The permit would require water quality treatment and potential detention of runoff from the new roadway. For construction activities, the ODEQ has designated Clackamas County as its agent for the review, issuance, and enforcement of National Pollutant Discharge Elimination System (1200-C) permits. This permit identifies the activities required if construction disturbs more than one acre of land, in order to ensure an acceptable standard of water quality.

Wetlands

Federal Clean Water Act Section 404 Permit

USACE administers the 404 permit, which is processed by one of two paths: Individual Permit or Regional General Permit, depending on project design and the area and volume of waterway impact. Because of the estimated project impacts, the proposed project would most likely require an individual permit. If federally listed threatened or endangered species may be affected by the proposed project, consultation with the USFWS and/or the NMFS would likely be required before a permit can be issued by the USACE.

State of Oregon Removal/Fill Permit

The Removal/Fill permit is administered by the Oregon Department of State Lands and is processed by one of two paths: Individual Permit or General Authorization, depending on project design and the area and volume of waterway impact.

The Joint Permit Application is the application form for both the Section 404 permit and the Removal/Fill Permit. Copies of the application form, project plans, and resource plans are sent to the USACE and DSL.

Geology and Soils

Site preparation permits for grading, erosion, blasting, and air and noise emissions from ODEQ, ODOT, local cities, and Clackamas County would be required. A Pre-Construction Assessment for in-water work from the DSL and the USACE would also be needed.

Cultural Resources

Archaeological Resources

State of Oregon Archaeological Permits, issued by the State Historic Preservation Office, would be required for any excavations in known archaeological sites or for exploratory excavations to determine if archaeological deposits are present on lands owned by local or state agencies.

Historic Resources

While no permits would be required for this project with regard to historic resources, the project is subject to review under Section 106 of the NHPA and Section 4(f) of the Department of Transportation Act (see 4(f) section of the SDEIS).

As stated earlier, Section 106 Determination of Eligibility forms were prepared for each of six resources affected by the project, with three recommended for eligibility and three recommended as not eligible.

If SHPO agrees with a Section 106 recommendation that a resource is not eligible, then the Section 106 requirements for that resource are satisfied. If SHPO agrees with a recommendation for eligibility, then a Section 106 Finding of Effect form must be prepared for that resource. This form is used to determine the effect a project would have on an NRHP-eligible resource. These effects are categorized into three possible findings. A “No Historic Properties Affected” finding means that there are no historic properties present in the project area. A “No Historic Properties Adversely Affected” finding means that the project effects are not adverse. A “Historic Properties Adversely Affected” finding means that there are historic properties present and they would be affected.

Hazardous Materials

For the federal- or state-listed sites, coordination with the Environmental Protection Agency and/or the Oregon Department of Environmental Quality would be required to assure that ongoing investigations and/or long-term operations and maintenance and monitoring continue. Consultations with both agencies would determine site-specific restrictions and considerations for construction within or near those sites.

The proposed handling and disposing of contaminated soils should be coordinated with ODEQ prior to construction.

If ODOT acquires land for right-of-way where there is a known hazardous materials issue, ODOT would coordinate with the EPA and/or the ODEQ. Agreements between ODOT and property owners could be used to avoid or limit liability for ODOT. However, the ODEQ generally requires that the purchaser do some cleanup to provide a public benefit that balances the state’s elimination of long-term liability.

Utilities

Coordination with public and private utilities and agencies are required throughout the project process. Some relocation efforts may require a land use application submittal.

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Plan Map – Clackamas County GIS System, used internally by county staff and updated weekly by county GIS staff

Clackamas County Staff Land Use Inventory Data

The following information was collected by county staff either in the field or from internal county sources. 2006.

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GLOSSARY

303(d), water quality limited waters	This is a Clean Water Act classification for waters where application of best management practices or technology-based controls are not sufficient to achieve designated water quality standards. Under Section 303(d) of the 1972 Clean Water Act, states, territories, and authorized tribes are required to develop a list of water quality limited segments. Waters on the 303(d) list do not meet water quality standards, even after the minimum required levels of pollution control technology have been installed at the point sources of pollution.
Access management	Access management seeks to protect the function of a transportation facility by restricting access to it from driveways and cross-streets.
Affordable housing	Affordable housing generally refers to housing that persons in the "low to moderate" income category can afford, meaning that they earn 80 percent or less of the area's median family income.
Alluvium	Alluvium is soil or sediments deposited by a river or other running water.
Anadromous	Anadromous refers to fish that hatch in fresh water, spend their adult lives in salt water, and return to fresh water to spawn.
Archaeological site	This term refers to those sites that are eligible for or are listed on the National Register (historic properties), as well as those that do not qualify for the National Register. The commonly used term, cultural resource, does not have a consistent or legal definition. The Oregon State Historic Preservation Office (SHPO) generally defines an archaeological site as: A) Ten or more artifacts likely to have been generated by patterned cultural activity within a surface area reasonable to that activity; or B) The presence of any archaeological feature, with or without associated artifacts. Examples of features include peeled trees, cache pits, hearths, housepits, rockshelters, cairns, historic mining ditches, petroglyphs, or dendroglyphs.
Attainment and Maintenance Areas	Attainment and Maintenance Areas refer to a region's ability to meet National Ambient Air Quality Standards and to maintain them over time.
Background	Background in the context of visual impact analysis is the area farthest from the viewer where distance effects are primarily explained by aerial perspective (i.e., emphasis is primarily on outlines or edges).
Best Management Practice(s) (BMPs)	BMPs, typically state-of-the-art technology, are designed to prevent or reduce impacts. They represent physical, institutional, or strategic approaches to environmental problems.
British thermal unit (Btu)	To compare energy use from different sources such as diesel, gasoline, and electricity, energy is often expressed in British thermal units (Btu) which assigns a common value to the energy used.
Census block groups	Census block groups are a collection of census blocks within a census tract, sharing the same first digit of their four-digit identification numbers.
Census tracts	Census tracts are small statistical subdivisions of counties, generally having stable boundaries and, when first established, were designed to have relatively homogeneous demographic characteristics.
Colluvium	Colluvium is sediment that has been deposited or built up at the bottom of a low-grade slope or against a barrier on that slope, transported by gravity.
Comprehensive Environmental Response (CERCLIS)	The CERCLIS list is a database of known and potentially hazardous waste facilities reported to the Environmental Protection Agency by state and local agencies and the general public in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). It is one of the databases associated with identifying potential hazardous materials sites or risks.
Cumulative effects	Cumulative effects are the result of incremental impacts of an action, when added to other past, present, and reasonably foreseeable future actions, regardless of which agency (federal or nonfederal) or person undertakes such actions.
dBA	The term dBA stands for A-weighted decibels. For comparative purposes, human breathing is approximately 10 dBA, a calm room ranges 40-50 dBA, normal talking ranges 40-60 dBA, typical television setting is about 60 dBA at 10 feet, and a passing car is 60-80 dBA at 50 feet.
Detention	A water detention pond is designed to temporarily detain stormwater runoff from impervious surfaces and to release the runoff at a desired rate.

Direct effects	Direct effects are caused by an action and occur at the same time and place as the action.
Endangered Species Act (ESA)	The ESA provides for the protection of animal and plant species currently in danger of extinction (endangered) and those species that may become so in the near future (threatened).
Energy use	Energy use is calculated using the number of average daily vehicles, the average distance those vehicles travel, and fuel consumption rates.
Environmental Cleanup Site Information System (ESCI) & Confirmed Release List	The ECSI system includes facilities entered into the Oregon Department of Environmental Quality database pursuant to the site discovery requirements of Oregon Revised Statutes 466.560. The list includes facilities where there has been a confirmed release of hazardous substances, facilities where investigation or cleanup has been initiated, and facilities suspected of a release of hazardous substances. It is one of the databases associated with identifying potential hazardous materials sites or risks.
Environmental Impact Statement (EIS, DEIS, SDEIS, FEIS, SFEIS)	An EIS is a statement of the potential environmental effects of a proposed action and alternatives to it. A Draft EIS (DEIS) is released to the public and other agencies for review and comment. A Final EIS (FEIS) is issued after consideration of public comments. Supplemental EISs (SEIS, SDEIS) are EISs issued after a DEIS has been published and address new aspects of a project, new regulations, or new impacts not previously addressed.
Expressway	Expressways are generally high-speed, limited-access facilities whose function is to move inter- and intra-urban traffic. Expressways often serve as major freight corridors and may be located on a designated freight route.
Folded diamond interchange	An interchange is a system of interconnecting roadways in conjunction with one or more grade separations that provides for the movement of traffic between two or more roadways or highways on different levels (grade-separated). Diamond interchanges have numerous possible configurations, a common one has on-ramps and off-ramps angling away from the main highway, forming a diamond shape. A folded diamond has one or more of the ramps looped inside another ramp, so that one side or quadrant has both the on- and off-ramp. A folded diamond can be used to limit the amount of right-of-way needed.
Foreground	Foreground in the context of visual impact analysis is the area closest to the viewer, which can be designated with clarity and simplicity because the observer is a direct participant.
Habitat classes	Metro ranks upland habitat and riparian corridors as low, medium, or high based on their value for protecting fish and wildlife (Class A, B, and C for upland habitats and Class 1, 2, and 3 for riparian habitat). This classification scheme provided the basis for mapping wildlife habitat within the Sunrise Project area.
High capacity transit (HCT)	This term refers to fixed rail light rapid transit or high-speed rapid bus.
Historic resource	A historic property (or historic resource) is defined in the national Historic Preservation Act (NHPA) [16 U.S.C. 470w(5)] as any “prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on, the National Register, including artifacts, records, and material remains related to such a property or resource.”
Historical significance	The significance of a property refers to its ability to meet one of the four National Register criteria. Integrity is the ability of the property to convey this significance through physical features and context. Historic properties are significant because they do meet these criteria and have integrity.
Impervious surface	Impervious surfaces are mainly constructed surfaces such as rooftops, sidewalks, roads, and parking lots, covered by impenetrable materials such as asphalt or concrete. These materials seal surfaces, repel water, and prevent precipitation from infiltrating soils. Soils compacted by urban development can also be highly impervious.
Indirect effects	Such effects are impacts on the environment that are caused by the action and occur later in time or farther removed in distance but are still reasonably foreseeable.
In-stream flow	In-stream flow is water in its natural setting (as opposed to waters diverted for “off-stream” uses such as industry or agriculture).
Intactness	Intactness in the context of visual impact analysis looks at the integrity of visual order and how much the view is free from encroaching features.
Lead agency	The agency or agencies that have the primary responsibility for preparing the environmental impact statement.

Level of service (LOS)	LOS is a qualitative measure to describe how a road is operating in terms of performance measures related to speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. The levels range from A (least congested) to F (most congested).
Limited access	Limited access generally means that access to, from, and across a highway is limited to intersections or interchanges.
Liquefaction	Liquefaction describes the behavior of loose saturated sands, which go from a solid state to the consistency of a heavy liquid, or reach a liquefied state.
Low-income	Low-income persons are defined as residing in households with an income between the federal poverty guidelines and an amount two times greater than those guidelines.
Microtopography	As it relates to wetlands, microtopography refers to small-scale changes in elevation, typically of a few feet or less.
Middleground	Middleground in the context of visual impact analysis is where parts of the landscape may be seen to join together (e.g., where trees become a forest) or revealed as either comfortable or conflicting with the landscape.
Minorities	Minorities are defined as Black (or African American, having origins in any of the black racial groups of Africa); Hispanic (of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race); Asian American (having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands); or American Indian and Alaskan Native.
Mitigation	Mitigation measures are designed to counteract environmental impacts or to make such impacts less severe.
Mobile Source Air Toxics	Mobile Source Air Toxics refers to several hazardous air pollutants that cause or may cause cancer or other serious health effects.
National Ambient Air Quality Standards (NAAQS)	These standards are used to measure air quality, expressed as concentrations of pollutants averaged over fixed time periods.
National Environmental Policy Act (NEPA)	This federal legislation establishes environmental policy for the nation. It provides an interdisciplinary framework for federal agencies to prevent environmental damage and contains "action-forcing" procedures to ensure that federal agency decision-makers take environmental factors into account.
National Historic Preservation Act (NHPA)	In 1966, NHPA established a National Register of Historic Places and the Advisory Council on Historic Preservation.
National Priority List (NPL)	The NPL (Superfund) database is a subset of CERCLIS properties and identifies over 1,200 facilities for priority cleanup under the Superfund Program. It is one of the databases associated with identifying potential hazardous materials sites or risks.
National Register of Historic Places	The official list of sites, districts, buildings, structures, and objects significant in the nation's history or whose artistic or architectural value is unique.
No build alternative	This designation represents the most likely condition expected to exist in the future if current policies, plans, and programs were to continue unchanged.
No Further Action (NFA)	NFA is a term used by the Oregon Department of Environmental Quality (ODEQ) for a cleanup site where sufficient cleanup has been done to reduce the hazard of potential exposure of contamination in soil and/or groundwater to human health and environmental receptors to acceptable standards. NFAs are so worded that the ODEQ has the ability to reclassify a site if changes occur such as a change in land use, buildings are removed that covered the contamination, and/or excavations expose buried contamination.
Noise impacts	Noise impacts occur when traffic noise levels exceed the Oregon Department of Transportation (ODOT) impact criteria or if levels increase by 10 dBA or more over existing levels.

Palustrine emergent (PEM)	Palustrine emergent wetlands are a subset of palustrine wetlands and are dominated by erect, rooted, herbaceous hydrophytic (i.e., water tolerant) vegetation, excluding mosses and lichens (Cowardin et al. 1979). This vegetation is present for most of the growing season in most years. These wetlands are often dominated by perennial plants.
Palustrine forested (PFO)	Palustrine forested wetlands are a subset of palustrine wetlands and include areas dominated by woody vegetation that is 6 m (20 feet) tall or taller (Cowardin et al. 1979).
Palustrine scrub-shrub (PSS)	Palustrine scrub-shrub wetlands are a subset of palustrine wetlands and include areas dominated by woody vegetation less than 6 m (20 feet) tall (Cowardin et al. 1979).
Palustrine wetlands	Palustrine wetlands consist of vegetated wetlands traditionally called by such names as marsh, swamp, bog, fen, and prairie, which are found throughout the United States (Cowardin et al. 1979).The Palustrine wetland type is distinguished from other wetland types where areas of open water are typically greater than the area occupied by vegetation (i.e. riverine [river systems], lacustrine [lakes]).
Record of Decision (ROD)	A public document that reflects the agency's final decision, rationale behind that decision, and commitments to mitigation.
Remedial Investigation (RI)	Remedial Investigation is a term commonly associated with an EPA or ODEQ required site investigation to characterize contamination at a site. The original use of RI came through the EPA Superfund Program, where one was required to do a Remedial Investigation/Feasibility Study (RI/FS) for contaminated property. The ODEQ also uses the term for state regulated cleanup sites that are managed under ODEQ's Voluntary Cleanup Program.
Resource Conservation, and Recovery Act (RCRA)	The RCRA list identifies facilities that have obtained identification numbers from the Environmental Protection Agency (EPA), which designate these businesses as generators, transporters, or storers/disposers of hazardous waste. It is one of the databases associated with identifying potential hazardous materials sites or risks.
Right-of-way	This term applies to land acquired by reservation, dedication, prescription, or condemnation and intended to be occupied by a road, crosswalk, railroad, electric transmission line, oil or gas pipeline, water line, sanitary or storm sewer, or other similar use.
Riparian	Riparian areas have distinctive soil and vegetation between a stream or other body of water and the adjacent upland, including wetlands.
Salmonid	Salmon and trout species that are born in freshwater streams, live in the ocean during maturity, and return to the streams of their birth to spawn and die.
Screenline	Screenlines represent imaginary lines drawn across a series of parallel roadways that are used to evaluate traffic demand changes.
Section 106	Section 106 of the NHPA requires federal agencies to "take into account" the effects of their undertakings on historic properties and to provide the Advisory Council on Historic Preservation a "reasonable" opportunity to comment.
Single-point diamond interchange (SPUI)	A SPUI is a form of a diamond interchange with a single signalized intersection through which all left turns utilizing the interchange must travel. All right turns into and out of ramp approaches are generally free-flowing.
Species of concern	Species of concern are those that might be in need of conservation action, ranging from a need for periodic monitoring of populations and threats to the species and their habitat to the necessity for listing as threatened or endangered.
Subsidized Rental Housing (Section 8)	Section 8, or the Housing Choice Voucher Program, is a federal housing program that provides housing assistance to low-income renters and home owners.
Threatened/endangered species	Endangered – an animal or plant species in danger of extinction throughout all or a significant portion of its range. Threatened – an animal or plant species likely to become endangered within the foreseeable future.
Unity	Unity in the context of visual impact analysis looks at the degree to which the visual resources of the landscape form a coherent, harmonious visual pattern and the compositional harmony or compatibility between landscape elements.
Upland habitat	Non-riparian areas that provide wildlife with food, shelter, and corridors for moving from one habitat area to another.

Underground storage tank (UST) and leaking underground storage tank (LUST)	An underground storage tank (UST) system is a tank and any underground piping connected to the tank that has at least ten percent of its combined volume underground. Federal UST regulations apply only to underground tanks and piping storing either petroleum or certain hazardous substances. An LUST is a leaking underground storage tank.
Very low-income	Very low-income persons who are defined as people residing in households with income below the federal poverty guidelines. Poverty guidelines are determined for households by household size.
Vividness	Vividness in the context of visual impact analysis is the memorability of the visual impression received from contrasting landscape elements as they combine to form a striking and distinctive visual pattern and looks at: landform, vegetation, water, and man-made development.
Volume/capacity ratio (v/c)	The v/c ratio illustrates how many vehicles are using the roadway compared to the room available for them.
Weaving sections	Weaving sections are highway segments where the pattern of traffic entering and leaving at contiguous points of access results in vehicle paths crossing each other.
Wetland	In general, wetlands are areas soaked by surface water or groundwater frequently enough to support vegetation that requires saturated soil conditions for growth and reproduction.
Wildlife corridor	A wildlife corridor provides a link for wildlife to travel between habitats.

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LIST OF PREPARERS

Name	Company/Agency	Role	Education	Experience
Ann Shankland	Ann Shankland	Technical Editor	B.A. English Literature	28 years
Jason M. Allen	Archaeological Investigations Northwest, Inc.	Architectural Historian	M.A.	7 years
David V. Ellis	Archaeological Investigations Northwest, Inc.	Archaeologist	M.P.A.	35 years
Elizabeth J. O'Brien	Archaeological Investigations Northwest, Inc.	Architectural Historian	Bachelor of Architecture	28 years
Nicholas J. Smits	Archaeological Investigations Northwest, Inc.	Archaeologist	M.A.	7 years
Larry Conrad, AICP	Clackamas County Department of Transportation and Development	Principal Author, Land Use and Socioeconomics Technical Reports	B.S. Geography-Urban Studies, 1976, University of Oregon Urban Studies Certificate, 1977, Portland State University MURP, 1983, Portland State University	31 years
Maggie Dickerson, AICP	Clackamas County Department of Transportation and Development	Principal Author, Socioeconomics	B.S. General Social Science, Portland State University Urban Studies Certificate, Portland State University	29 years
Lorraine Gonzales	Clackamas County Department of Transportation and Development	Principal Author Utilities Technical Report	Master of Urban Planning, University of Washington Design Certificate Degree, University of Washington B.S. Urban Planning, Pacific University	13 years
Pam Hayden	Clackamas County	Clackamas County Historic Resources Project Manager	M.A. Landscape Architecture	24 years
Martha Nix	Clackamas County	Clackamas County Planner	B.A. Mathematics	9 years
Kay Pollack	Clackamas County	Principal Author, Land Use Technical Report	Master of Urban and Regional Planning, 1985, Portland State University	20 years
Kath Rose	Clackamas County	Senior Right-of-way Agent	Some college; Oregon State University	20+ years
Bob Storer	Clackamas County	Water Environment Services Environmental Policy Specialist	B.S., Water Resources Management and Fish & Wildlife Management	28 years
Andrew Swanson	Clackamas County	Water Quality Analyst	B.S. Biology, University of Oregon	13 years
Ron Weinman	Clackamas County	Clackamas County Principal Transportation Planner, Project Manager	M.S. Geography	26 years
Josh Anderson, EIT	David Evans and Associates, Inc.	Transportation Technical Report	B.S. Civil Engineering, University of Arizona	2 years
Leslie Anderson	David Evans and Associates, Inc.	Copy Editor, SDEIS	B.S. Geography, 1987, Portland State University	15 years
Richard Attanasio, PE	David Evans and Associates, Inc.	Water Quality Technical Report	B.S. Civil Engineering, State University of New York at	22 years

Name	Company/Agency	Role	Education	Experience
			Buffalo M.S. Environmental Engineering, University of California at Davis	
Mike Baker, PE	David Evans and Associates, Inc.	Deputy Consultant PM Transportation Team Leader Transportation Technical Report	Masters in Civil Engineering, University of Washington B.S. Civil Engineering, Oregon State University	16 years
David Bissell	David Evans and Associates, Inc.	Water Quality Technical Report	BCE, MSCE	10 years
Paul Dailey	David Evans and Associates, Inc.	Real Estate and Right-of-Way Cost Estimates	Masters Degree, Public Administration, Portland State University; Bachelors Degree, Business Administration, University of Oregon	15 years
Melissa Foltz	David Evans and Associates, Inc.	Graphics and maps	B.S. Horticulture Science/Landscape Design, 2000, Montana State University	7 years
Scott Harmon, PE	David Evans and Associates, Inc.	Transportation Technical Report	B.S. Civil Engineering, University of Washington	8 years
Christine Higgins, PE	David Evans and Associates, Inc.	Water Quality Technical Report	B.S. Civil Engineering, 1993, Union College	14 years
Mara Krinke	David Evans and Associates, Inc.	Planner	M.A. Public Affairs; B.A, Botany; B.A. Economics	12 years
Carl E. Long	David Evans and Associates, Inc.	Real Estate and Right-of-Way	MBA, University of Oregon B.S., Oregon State University	30 years
John Macklin	David Evans and Associates, Inc.	Biology Technical Report, Fish Section	M.S. Forest Ecology, 1988, University of Washington	18 years
Kristine Marshall	David Evans and Associates, Inc.	Biology Technical Report, Wildlife Section	B.S. Oregon State University	17 years
Kevin O'Hara	David Evans and Associates, Inc.	Biology Technical Report	M.S. Forest Management	22 years
C. Scott Richman, AICP	David Evans and Associates, Inc.	Technical Documents Coordinator and Reviewer	Bachelor of Environmental Design, 1990, University of Colorado	16 years
Jennifer Riehl, EIT	David Evans and Associates, Inc.	Transportation Technical Report	B.S. Environmental Engineering	3 years
Ethan Rosenthal	David Evans and Associates, Inc.	Wetlands Technical Report	M.S. Environmental Science, Indiana University	9 years
Susan Serres, PE	David Evans and Associates, Inc.	Energy Technical Report	B.S. Civil Engineering, 1991, Seattle University	17 years
Gillian Zacharias, AICP	David Evans and Associates, Inc.	Principal Author: SDEIS	M.A. International Relations	15 years
Michelle Eraut	Federal Highway Administration	FHWA Environmental Program Manager	M.P.A. Public Administration	12 years
Jeff Graham, PE	Federal Highway Administration	Operations Engineer	B.S. Civil Engineering	18 years
Virginia Tsu	Federal Highway Administration	Right of Way / Civil Rights Manager	M.Ed. Education	20 years

Name	Company/Agency	Role	Education	Experience
Travis Nguyen, PE	Kleinfelder West, Inc.	Principal Author Soils / Geology Technical Report	B.S. Civil Engineering	16 years
Randall A. Reid, AHERA	Kleinfelder West, Inc.	Principal Author, Hazardous Materials Technical Report	B.S. Business Administration	19 years
Arlan Rippe, PE	Kleinfelder West, Inc.	Principal Reviewer for Soils / Geology Technical Report	B.S. Civil Engineering M.S. Soil Mechanics and Foundation Engineering	41 years
Peter Stroud, CEG	Kleinfelder West, Inc.	Principal Reviewer, Hazardous Materials Technical Report	B.A. Geology	24 years
Tim Collins	Metro	Senior Transportation Planner	B.S. Economics	20 years
Leslie Howell, AICP	Howell Consulting	SDEIS Task Leader and Reviewer	B.A. Geography and Environmental Studies	27 years
Magnus Bernhardt	Oregon Department of Transportation	ODOT Landscape Architect	B.S. Landscape Architecture 1992	13 years
Claire Carder	Oregon Department of Transportation	ODOT Wetlands Specialist	B.S. Geography, Bachelor of Landscape Architecture	23 years
Simon Eng, PE	Oregon Department of Transportation	ODOT Traffic Analysis Team Leader	B.S. Civil Engineering	18 years
Jane Estes	Oregon Department of Transportation	Utility Specialist	B.S. Geology	14 years
Miguel Estrada	Oregon Department of Transportation	ODOT Biologist	MS Biology (Lakes) MS Environmental Sciences (Stream Ecology)	11 years
William Fletcher	Oregon Department of Transportation	ODOT Water Resources Program Coordinator	B.S. Geology, Cand. Real Physical Geography	24 years
Damon Fordham	Oregon Department of Transportation	ODOT Sustainability Program Manager	LEED™ Accredited Professional Masters in Civil Engineering, M.A. in Interdisciplinary Studies	5 years
David Goodwin	Oregon Department of Transportation	ODOT Senior Acoustical Specialist	Some college; Oregon State University	30 years
Michelle Guay	Oregon Department of Transportation	ODOT Biologist	B.S. Wildlife Biology, M.S. Environmental Studies	13 years
Fred Gullixson	Oregon Department of Transportation	ODOT Engineering Geology Team Leader	B.S. Earth Science, M.S. Geology	26 years
Bob Hadlow	Oregon Department of Transportation	ODOT Senior Historian	Ph.D. US/Public History	25 years
Andrew Johnson	Oregon Department of Transportation	ODOT Senior Planner	Master of Urban and Regional Planning	8 years
Emily Moshofsky	Oregon Department of Transportation	ODOT Environmental Project Manager	B.A. Geography	9 years
Marina Orlando	Oregon Department of Transportation	ODOT Air Quality Program Coordinator	A.S. Civil-Structural Engineering, Transportation	25 years
Jim Orr	Oregon Department of Transportation	ODOT Hazardous Materials Geologist	Oregon Registered Geologist	21 years

Name	Company/Agency	Role	Education	Experience
Thomas Picco	Oregon Department of Transportation	ODOT Principal Planner. ODOT Sunrise Project Manager	M.U.P. Urban Planning	28 years
Kurt Roedel	Oregon Department of Transportation	ODOT Archaeologist	M.A.	8 years
Darlene Rose	Oregon Department of Transportation	ODOT Right-of-Way Project Manager	B.S. Civil Engineering	11 years
Melinda Trask	Oregon Department of Transportation	ODOT Environmental Project Manager	M.S. Plant Ecology	15 years
Susan Whitney	Oregon Department of Transportation	ODOT Senior Environmental Project Manager	B.A. Humanities. M.A. Art History	29 years
Scott Polzin	Parsons Brinckerhoff	Supervising Environmental Planner, Visual Technical Report Reviewer	M.A. Community and Regional Planning B.S. Finance	12 years
Stephanie Sprague	Parsons Brinckerhoff	Visual Quality Technical Report	M.S. Natural Resource Policy, B.S. Microbiology	7 years
Vince Carrow	TW Environmental, Inc.	Air Quality Technical Report	B.S. General Science; Oregon State University	24 years
Martha Moore, P.E.	TW Environmental, Inc.	Air Quality Technical Report review, Principal Author Noise Technical Report	B.S. Environmental Resources, Humboldt State University	23 years
Jessica Stark, P.E.	TW Environmental, Inc.	Noise Technical Report review	B.S. Environmental Resources, Humboldt State University	10 years

APPENDIX A. MEMBERS OF THE PAC, PRC, CETAS

Project Advisory Committee (PAC) Roster

The Project Advisory Committee, composed of citizens representing neighborhoods, business and civic advocacy groups, emergency services, and other stakeholder agencies throughout the Sunrise Project area, is the central focus of the public involvement effort.

Representative	Representing	Email
George Allen	Rock Creek CPO	gallen@abiteq.com
Rick Hall	Clackamas CPO	no55mph@comcast.net
Greg DeGrazia	North Clackamas Chamber of Commerce	info@gregdegrazia.com
Edwar Ghores	Bluff Drive Neighbor	edwar@ghoresenterprises.com
Joel Halloran	Fred Meyer Distribution Center	joel.halloran@fredmeyer.com
Dave Rouse	Damascus Neighbor (Community Coordination Committee)	dave.rouse@ci.gresham.or.us
Ed Kirchoffer	Clackamas County Fire District	edkir@ccfd1.com
Ted Kyle	Clackamas County Water Environment Services	tedkyl@co.clackamas.or.us
Renate Mengelberg	Clackamas County Business & Economic Development Team	renatem@co.clackamas.or.us
Bob Minor	Ped/Bike Advisory Committee (former member)	bminor@warn.com
Bear Morris	Environmental Justice issues	tbibear@netzero.net
Darrell Neet	Camp Withycombe	Darrell.Neet@or.ngb.army.mil
Phil Selinger	TriMet	SelingeP@trimet.org
Dick Shook	Friends of Kellogg and Mt. Scott Creeks	dicksallyshook@juno.com
Brian Bishop	Lawnfield Area	brian@bishoptrust.com
Pat Russell	North Clackamas CPO	flanagan112@hotmail.com
Martha Waldemar	Sunnyside CPO	mellowmartha@aol.com
Rob Wheeler	City of Happy Valley	robwheelerhv@comcast.net
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Thomas Picco	ODOT	Thomas.J.PICCO@odot.state.or.us
Tim Collins	Metro	collinst@metro.dst.or.us
Michelle Eraut	FHWA (non-voting)	michelle.eraut@fhwa.dot.gov

Policy Review Committee (PRC) Members

The Policy Review Committee has participated in the development of evaluation criteria for the alternatives, considered public comments, and considered Project Advisory Committee recommendations. All members sit at the table and participate in discussions. Although the group typically operates through consensus, each jurisdiction officially has one vote, which will be given by the decision-making body representative when present. Meetings may not always call for participation by the decision-making body representatives. The Policy Review Committee's final task will be to recommend a Preferred Alternative to the official decision-making bodies: the Board of County Commissioners for Clackamas County, Metro, Damascus City Council, Happy Valley City Council, ODOT, and FHWA.

Partner Jurisdiction	Representative of Decision-making Body	Staff Representative
Clackamas County	Lynn Peterson, County Commissioner	Cam Gilmour, Director of Dept. of Transportation and Development
ODOT	Jason Tell, Region Manager	[TBD: Windsheimer or Fred Eberle]
FHWA (non-voting)	Phillip Ditzler, Oregon Division Administrator	Emily Lawton, Assistant Division Administrator
Metro	Carlotta Collette, Metro Council, District 2 (including Clackamas area) Rod Park, Metro Council, District 1 (including Rock Creek interchange area)	Andy Cotugno, Planning Director
City of Damascus	Dee Westcott, Mayor (Councilor Jim Wright is alternate)	James Bennett, City Manager
City of Happy Valley	Rob Wheeler, Mayor	Cathy Daw, City Manager
City of Milwaukie (ex officio, does not officially have jurisdiction within the corridor)	Jim Bernard, Mayor	

CETAS

The **Collaborative Environmental and Transportation Agreement for Streamlining** (**CETAS**) was signed by Oregon's state and federal transportation and environmental agencies in 2001 to support environmental stewardship and advance procedural improvements to streamline the environmental review process for ODOT's major transportation projects. The goal of this group 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.

CETAS member agencies are:

- Federal Highway Administration (FHWA)
- National Marine Fisheries Service (NMFS)
- Oregon Department of Land Conservation and Development (DLCD)
- Oregon Department of Environmental Quality (ODEQ)
- Oregon Department of Fish and Wildlife (ODFW)
- Oregon Department of State Lands (DSL)
- Oregon Parks and Recreation Department, State Historic Preservation Office (SHPO)
- Oregon Department of Transportation (ODOT)
- U.S. Army Corps of Engineers (USACE)
- U.S. Environmental Protection Agency (EPA)
- U.S. Fish and Wildlife Service (USFWS)

http://www.oregon.gov/ODOT/HWY/GEOENVIRONMENTAL/cetas.shtml

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APPENDIX B. CONSULTATION WITH TRIBES AND KEX RADIO STATION

Tribal Consultation

At the start of the Sunrise Project SDEIS effort contact was initiated with Native American tribal representatives with historic interests in the project area of Clackamas County. Three tribes were contacted: Confederated Tribes of the Grand Ronde Community, Confederated Tribes of Siletz Indians, and Confederated Tribes of Warm Springs. Contact was initiated to apprise them of the proposed project and upcoming environmental process; ascertain what their specific issues and concerns might be; and determine how they might wish to engage in the on-going EIS process.

All tribes expressed their involvement in a number of major on-going projects that would likely limit their direct involvement in the Sunrise Project SDEIS. They all indicated interest in the results and recommendations of the SDEIS and FEIS, particularly on potential project impacts to natural and cultural resources in the project area. While recognizing that the proposed project traversed a largely urbanized area that had already experienced significant degradation, they expressed concerns that the project team provide as much protection as possible to existing riparian and wildlife habitat in the corridor. A specific concern raised by representatives of the Grande Ronde tribe was for a tribal representative to be present on-site during any ground disturbing fieldwork by project consultant archaeologists.

The project team endeavored to accommodate the concerns raised by the tribal representatives. Alternative alignments and design options were developed to avoid or minimize impacts to natural and cultural resources, particularly riparian and wildlife habitat. A Wildlife Corridor Habitat Enhancement and Mitigation Strategy was developed by ODOT and ODFW staff for the Sunrise Project, to protect, enhance, and mitigate wildlife and wetlands habitats in the corridor; to preserve and enhance connections in the corridor for wildlife passage; and, to assess conditions for habitat enhancement and wildlife passage, as an integrated component of preserving connections to the larger regional habitat system.

Some miscommunication occurred between the project consultant archaeologists (AINW) and tribal representatives of the Grand Ronde, regarding advance notice being provided to the tribe to allow tribal representatives to participate in shovel-probe fieldwork and the discovery of any potential archaeological discoveries. Site field work occurred without notification being provided to appropriate tribal representatives. Dennis Griffin, State Archaeologist with the State Historic Preservation Office (SHPO) determined that a permit violation did not occur. This issue was discussed further with Grand Ronde tribal representatives by State Archaeologists Kurt Roedel and Mollie Manion, and efforts made to improve communication and prevent similar oversights.

Kurt Roedel, ODOT GeoEnvironmental Unit, Archaeology Specialist, is the primary contact with tribal representatives. Thomas Picco, ODOT Project Manager for the Sunrise Project, coordinates with Kurt Roedel on current developments in the project SDEIS, in advance preparation for his periodic meetings with tribal representatives. These periodic meetings with tribal representatives provide an effective supplement to the direct correspondence provided the tribes on the project progress (newsletters, milestones, decision points, release of DEIS materials, etc.).

A more detailed chronology of consultation with tribal representatives on the Sunrise Project SDEIS follows.

Key 12454, Sunrise Corridor, I-205–172nd Section Project, Region 1

Kurt Roedel, GeoEnvironmental, Archaeology Specialist, [KR]

Thomas Picco, Region 1 Major Projects, Sunrise Project Manager [TP]

Project Start – Initiation of Contact with Tribes

- 9/09/04 [TP]: Initiated contact with Steve Harry, Region 1 Community Affairs Manager to solicit contact names of representatives of the Grand Ronde and Warm Springs Indian Tribes.
- 9/16/04 [TP]: Steve Harry spoke with Matt Garrett, Region 1 Manager, and identified designated contact persons for the two tribes: Justin Martin (Grande Ronde), and Louie Pitt (Warm Springs)
- 9/20/04 [TP]: Initiated telephone contact with tribal contacts, on behalf of Matt Garrett. County staff was unable to speak directly with either contact, and left voice messages describing project, requesting a call-back to assess their level of interest in continued involvement.
- 10/05/04 [TP]: Mailed letter to each of the tribal contacts, providing a brief overview of project, process, and schedule, and listing various ways for them to stay abreast of the study, including project website address. They were added to project mailing list.
- 1/07/05 [TP]: Having not received any response to my enquiries from representatives of the two tribes, initiated additional efforts to make contact. Spoke to Julie Shablitsky, ODOT Cultural Resources staff, a principal Agency contact with Native American tribes in Oregon, for assistance in making contact with Grande Ronde and Warm Springs Tribes.
- 1/14/05 [TP]: Julie Shablitsky responded with names and telephone numbers of additional contact persons at Warm Springs (Sally Bird) and Grande Ronde (Khani Schultz).
- 1/19/05 [TP]: Telephoned both contacts but was unable to make direct contact. Left voice messages.
- 1/27/05 [TP]: Having not received any callback from tribal representatives, contacted Julie Shablitsky to ask if she could assist in making contact.
- 1/28/05 [TP]: Julie Shablitsky stated that she would be meeting with Khani Schultz (Grande Ronde) on 1/31/05 and she would discuss my interest in contacting her, as well as forward project information to Sally Bird (Warm Springs). E -mailed Julie S. letters addressed to both contacts, as well as the most recent project newsletter, providing a brief overview of project, process and schedule, and listing various ways for them to stay abreast of the study, including project website address.
- 7/17/06 [TP]: Contacted Kurt Roedel by e-mail, ODOT Geo-Environmental Unit, Archaeology Specialist, and principal ODOT contact with tribes, to apprise him of project objectives, and background, and to solicit assistance in communicating with tribes. Kurt R. chairs quarterly tribal meetings on projects/issues of interest to tribes in Oregon. Henceforth, Kurt R. to serve as principal contact with tribes.

Confederated Tribes of the Grand Ronde Community of Oregon

- 1/31/05 [TP]: Received telephone call from Khani Schultz (Grande Ronde). We held a 15-minute conversation in which I provided a further description of the project, and requested the level of tribal interest in tracking the Sunrise Project. Khani S. indicated that the tribe was very busy responding/tracking various projects, so

were unlikely to wish to be too directly involved, but would like to keep abreast of the project through newsletter and e-mail updates. She indicated she would also track the project periodically through the Sunrise Project website. She stated they would be interested in the results and recommendations of the SDEIS and FEIS, when final design alternatives were selected. Her interest would be focused on impacts of project to natural and cultural resources, recognizing that the Sunrise Project, I-205 to Rock Creek Junction, traversed a largely urbanized area that had already been significantly degraded by development. They would be interested in providing as much protection as possible to existing riparian and wildlife habitat in the corridor. She was to reply by e-mail with her mailing and e-mail address. I stated we would add her addresses to the project mailing and e-mail lists.

- 11/22/05 [TP]: E-mailed Range of Alternatives materials to Khani Schultz (Grande Ronde).
- 11/28/05 [TP]: E-mail received from Khani Schultz (Grande Ronde) acknowledging receipt of 11/22/05 e-mail, and recommending, in regard to cultural resource portion of the SDEIS, "that the summary of alternatives include wording that will include consultation with appropriate Tribes regarding any issues on cultural resources." Further, "1.) Avoid impacting cultural sites and resources where practicable. Where impacts are unavoidable, consult with appropriate tribes to provide recordation, salvage, and/or mitigation as appropriate." And " 2.) Look for and consider opportunities to incorporate enhancements to existing natural and cultural resources within the project area."
- As noted in the opening discussion of project tribal consultations at the beginning of this appendix, although it was the intent of project team to engage tribal representatives in consultation on impacts to cultural resources, some miscommunication occurred regarding advance notification of tribes of cultural field work planned by project staff. The difficulty in initially engaging tribal representatives in the project start did not allow these comments to be fully incorporated into the Project and Need Statement/Goals and Objectives (CETAS Concurrence occurred 9/21/04). However Goal 4, Objective 4 stated its intent to "Avoid impacting cultural sites and resources where practicable. Where impacts are unavoidable, provide recordation, salvage, and/or mitigation as appropriate."
- All subsequent planned cultural/archaeological field work will include prior contact with tribal representatives, and provide full opportunity for consultation on impacts to cultural resources.
- Although timely input by tribal representatives in the formation of the project Goals and Objectives did not occur, project team objectives to "avoid impacting cultural sites and resources where practicable" are consistent with stated tribal objectives. Alternative alignments and design options were developed to avoid or minimize impacts to natural and cultural resources, particularly riparian and wildlife habitat.
- A Wildlife Corridor Habitat Enhancement and Mitigation Strategy was developed by ODOT and ODFW staff for the Sunrise Project as a pro-active plan for avoiding or minimizing impacts to wildlife.
- 6/22/06 [TP]: E-mailed update of Sunrise Project SDEIS to Khani Schultz, with following attachments: Project Schedule, Range of Alternatives, Wetlands Technical Memo (CC). Also included ODOT ftp site link for current maps, and Wildlife Corridor

Strategy Report (MT). Noted that newsletter would likely be forthcoming shortly.

- 7/12/06 [KR]: E-mailed Khani Schultz (Khani), Cultural Protection Specialist, with project information and maps.
- 7/13/06 [KR]: Khani e-mailed, requesting a Tribal representative be on site during any ground disturbing fieldwork.
- 9/15/06 [TP]: Provided Kurt Roedel, ODOT, an update on Sunrise Project in preparation for his periodic meeting with Native American tribal representatives. Informed him of upcoming Open House to focus on the eastern segment of the Sunrise Project, from Rock Creek through transition area to SE 172nd Avenue. Provided project website address with latest design option maps.
- 12/6/06 [KR]: Meeting with Khani. Provided project information and maps.
- 5/14/07 [TP]: Provided Kurt Roedel, ODOT, an update on Sunrise Project in preparation for his periodic meeting with Native American tribal representatives. Informed him of changes in project organizational/committee structure (*expanded PRC*); initiation of parallel planning studies (toll pricing study; lane evaluation/performance; phasing and design strategies; Interchange Area Management Plans); and revised project schedule.
- 7/13/07 [KR]: E-mailed Khani with results of AINW's fieldwork. Khani e-mailed, stated she believes that she placed conditions on the archaeological permit to be notified of any prehistoric discovery. E-mailed Khani with the archaeological site numbers where AINW placed shovel probes. Khani e-mailed, stating that she reviewed her phone and calendar records for September and October 2006. Permit AP920 was issued in October with conditions that she would receive a call with a prehistoric discovery and would send representation as needed. Khani continued that she had no record of any contact from AINW for this project.
- In conversations regarding the permit violation with Mollie Manion, Archaeologist, and Dennis Griffin, State Archaeologist, State Historic Preservation Office (SHPO), Dennis Griffin stated that a permit violation did not occur. Mollie Manion stated she would follow up with Khani regarding this matter.
- 10/10/07 [TP]: Provided Kurt Roedel, ODOT, an update on Sunrise Project in preparation for his periodic meeting with Native American tribal representatives. Updated him on work to date on parallel planning studies (toll pricing study; lane evaluation/performance; phasing and design strategies; Interchange Area Management Plans). Provided him the PowerPoint presentation used at the 10/3/07 PRC meeting; a revised project schedule, and preliminary phasing strategies. Apprised him of the findings of forecast noise impacts to residents along the "bluff", and the difficulties encountered in trying to identify feasible and reasonable noise mitigation measures.
- 11/26/07 [KR]: Meeting with Eirik Thorsgard (Eirik), Cultural Protection Specialist. Provided project information and maps.
- 12/11/07 [TP]: Provided Kurt Roedel, ODOT, a Powerpoint slide show presented to 12/5/07 PRC meeting summarizing the environmental impacts/findings from the 15 DEIS Technical Reports, in preparation for his periodic meeting with Native American tribal representatives. Informed him that these impact findings will be compiled in the Supplemental Draft EIS document, to be published/released in March/April, 2008.
- 12/12/07 [KR]: E-mailed Eirik, with results of Environmental Summary Impacts (including archaeology). Eirik e-mailed, requesting a copy of AINW's Cultural Resources Report. Also asked if a mitigation plan has been

considered in relation to impacts to cultural resources. E-mailed Eirik with the archaeology portion of AINW's report.

- 12/13/07 [KR]: Eirik e-mailed, requesting to be informed after additional fieldwork is completed and mitigation impacts are discussed.
- 12/14/07 [KR]: E-mailed Eirik, stating that I would keep him updated as project progressed.

Confederated Tribes of Siletz Indians

- 7/12/06 [KR]: E-mailed Robert Kentta (Robert), Cultural Resources Director, with project information and maps.
- 11/2/06 [KR]: Meeting with Robert. Provided project information and maps.
- 5/14/07 [TP]: Provided Kurt Roedel, ODOT, an update on Sunrise Project in preparation for his periodic meeting with Native American tribal representatives. Informed him of changes in project organizational/committee structure (*expanded PRC*); initiation of parallel planning studies (toll pricing study; lane evaluation/performance; phasing and design strategies; Interchange Area Management Plans; and revised project schedule).
- 7/13/07 [KR]: E-mailed Robert with results of AINW's fieldwork.
- 10/10/07 [TP]: Provided Kurt Roedel, ODOT, an update on Sunrise Project in preparation for his periodic meeting with Native American tribal representatives. Updated him on work to date on parallel planning studies (toll pricing study; lane evaluation/performance; phasing and design strategies; Interchange Area Management Plans). Provided him the PowerPoint presentation used at the 10/3/07 PRC meeting; a revised project schedule, and preliminary phasing strategies. Apprised him of the findings of forecast noise impacts to residents along the "bluff", and the difficulties encountered in trying to identify feasible and reasonable noise mitigation measures.
- 11/20/07 [KR]: Meeting with Robert. Provided project information and maps.
- 12/11/07 [TP]: Provided Kurt Roedel, ODOT, a Powerpoint slide show presented to 12/5/07 PRC meeting summarizing the environmental impacts/findings from the 15 DEIS Technical Reports, in preparation for his periodic meeting with Native American tribal representatives. Informed him that these impact findings will be compiled in the Supplemental Draft EIS document, to be published/released in March/April, 2008.
- 12/12/07]KR]: E-mailed Robert with results of Environmental Summary Impacts (including archaeology).

Confederated Tribes of Warm Springs

- 11/22/05 [TP]: E-mailed Range of Alternatives materials to Sally Bird (Warm Springs).
- 6/22/06 [TP]: E-mailed update of Sunrise Project SDEIS to Sally Bird, with following attachments: Project Schedule, Range of Alternatives, Wetlands Technical Memo (CC). Also included ODOT ftp site link for current maps, and Wildlife Corridor Strategy Report (MT). Noted that newsletter would likely be forthcoming shortly.
- 7/12/06 [KR]: E-mailed Sally Bird (Sally), Cultural Resources Manager, with project information and maps.
- 9/15/06 [TP]: Provided Kurt Roedel, ODOT, an update on Sunrise Project in preparation for his periodic meeting with Native American tribal representatives. Informed him of upcoming Open House to focus on

the eastern segment of the Sunrise Project, from Rock Creek through transition area to SE 172nd Avenue. Provided project website address with latest design option maps.

- 5/14/07 [TP]: Provided Kurt Roedel, ODOT, an update on Sunrise Project in preparation for his periodic meeting with Native American tribal representatives. Informed him of changes in project organizational/committee structure (*expanded PRC*); initiation of parallel planning studies (toll pricing study; lane evaluation/performance; phasing and design strategies; Interchange Area Management Plans); and revised project schedule.
- 7/13/07 [KR]: E-mailed Sally B. with results of AINW's fieldwork.
- 10/10/07 [TP]: Provided Kurt Roedel, ODOT, an update on Sunrise Project in preparation for his periodic meeting with Native American tribal representatives. Updated him on work to date on parallel planning studies (toll pricing study; lane evaluation/performance; phasing and design strategies; Interchange Area Management Plans). Provided him the PowerPoint presentation used at the 10/3/07 PRC meeting; a revised project schedule, and preliminary phasing strategies. Apprised him of the findings of forecast noise impacts to residents along the "bluff", and the difficulties encountered in trying to identify feasible and reasonable noise mitigation measures.
- 12/11/07 [TP]: Provided Kurt Roedel, ODOT, a Powerpoint slide show presented to 12/5/07 PRC meeting summarizing the environmental impacts/findings from the 15 DEIS Technical Reports, in preparation for his periodic meeting with Native American tribal representatives. Informed him that these impact findings will be compiled in the Supplemental Draft EIS document, to be published/released in March/April, 2008.
- 12/12/07 [KR]: E-mailed Sally B., with results of Environmental Summary Impacts (including archaeology).

KEX Towers

Initial contact with KEX Radio occurred in late 1991, regarding potential impacts to the KEX facility and radio signal from construction of proposed Sunrise Corridor Project, during the preparation of a Draft Environmental Impact Statement (DEIS) on the Sunrise Corridor Project, I-205 to US 26. Numerous discussions and correspondence occurred between ODOT and KEX throughout the process leading to the adoption of the 1993 DEIS, and in the subsequent preparation of the 1996 Final EIS, I-205 to Rock Creek Junction (not adopted). The DEIS was published 1993, and the FEIS initiated in 1996.

KEX concerns during the preparation of the DEIS were primarily focused on one of the project alignments (Central Alignment), and the potential for adverse impacts on the KEX radio signal clarity and range. At that time, there was acknowledgement by both KEX Radio and ODOT that there was no predictive computer model available to quantify and assess the impacts to KEX's signal from the proposed highway construction. KEX and ODOT staff engaged in continuing discussions throughout the DEIS and FEIS to resolve these issues.

In March 1996, understandings were reached between ODOT and KEX Radio on how the concerns and issues raised by KEX would be addressed in the EIS process. In a letter to KEX, ODOT committed to include in the FEIS a comprehensive discussion of the issues and potential mitigation measures, as follows:

1) Probable Adverse Effects. It was agreed by all parties that the Central Alignment as proposed in the DEIS (7/95) would significantly disrupt the KEX signal

2) Appropriate Mitigation Measures. It was agreed by all parties that design and material

modifications were not likely to significantly mitigate impacts to KEX's signal.

It was acknowledged that there was a scarcity of 40- to 50-acre flat sites within the Portland metropolitan area, and it was unlikely that a new site could be found for relocation of KEX's 50,000 watt transmitter facility.

3) Procedural safeguards. In order to maintain the viability of KEX's signal before, during and after construction of the Central Alignment, ODOT agreed to hire a radio expert and recognized real estate appraiser to determine the value and compensable impacts to KEX's property at the time of property acquisition for the project.

4) Regional Significance of KEX. It was acknowledged that KEX was a unique resource because it was the only radio station licensed to provide area-wide service to the Portland area. KEX's regional significance qualifies it as a "wide-area" radio station.

5) Probable Costs. Costs to relocate the KEX three tower directional array and transmitter facility on-site, in order to accommodate the Central Alignment, were estimated to be $1M–$2M, excluding wetlands mitigation costs. Relocation off-site would be approximately $3M–$5M, excluding land costs.

Representatives of KEX stated in an April 1996 letter to ODOT, that they were satisfied with the acknowledgements and mitigation measures outlined above.

The initiation in 2004 of the Sunrise Project Supplemental Draft EIS, I-205 to Rock Creek Junction, also prompted the resumption of conversations with KEX on potential adverse impacts to their facility. The commitments proposed by ODOT in 1996 were revisited, and reconfirmed. Additional issues regarding new design options (the extension of SE 97th Avenue from Lawnfield Road to Sunnybrook Boulevard) have been raised, and discussions have continued between ODOT, Clackamas County, and KEX representatives to address these concerns.

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APPENDIX C. SHPO CONCURRENCE LETTERS AND LIST OF HISTORIC PROPERTIES

Oregon
Theodore R. Kulongoski, Governor

Department of Transportation
Region 1
123 NW Flanders
Portland, OR 97209-4019
(503) 731-8200
FAX: (503) 731-8259

RECEIVED
JUL 21 2008
STATE HISTORIC
PRESERVATION OFFICE

July 18, 2008

File Code:

Christine Curran, Associate Deputy SHPO
Oregon State Historic Preservation Office
725 Summer Street NE, Suite C
Salem, OR 97301

Subject: Historic Resources
Sunrise Corridor, Interstate 205—Rock Creek Junction
Clackamas County, Oregon
ODOT Key No. 12454
Federal-Aid No. C005(46)PN

Dear Chrissy,

I am writing to summarize the meeting you had with me and Emily Moshofsky on June 30, 2008, to discuss historic resources on the Sunrise Corridor Project, principally Camp Withycombe and the Haberlach House/Silverthread Kraut and Pickle Works.

We discussed whether the historically significant resources at Camp Withycombe were stand-alone properties or contributing features of a historic district. You recommended that they comprised a historic district. As for possible ways to resolve a Section 106 Adverse Effect on Camp Withycombe, we discussed HABS/HAER recordation, creating interpretive material for the Camp museum, and publishing interpretive materiai about the Camp on the web.

13002 SE Hwy 212 / SE 130th? or same

In discussing the Haberlach House and the Silverthread Kraut and Pickle Works, you concurred that the two buildings comprised one historic property. This is because they are on a single tax lot and both have connections to Frank Haberlach. One build option on the project calls for acquiring perimeter strips of land from the parcel. This action would remove some parking from around the Haberlach House, which is currently a restaurant. A No Adverse Effect finding would be conditioned on provisions to provide for alternate parking for the restaurant and for re-landscaping between the Haberlach House and SE 130th Ave.

Thank you, again, for meeting with us to discuss resources on this project.

Sincerely,

Robert W. Hadlow, Ph.D.
Interim Environmental Manager, Region 1

cc: Emily Moshofsky

SHPO concurrence with the points addressed in this letter.

Christine Curran 8/6/2008

Christine Curran, Associate Deputy SHPO
Oregon State Historic Preservation Office

Oregon Department of Transportation

REQUEST FOR DETERMINATION OF ELIGIBILITY

Property Name Camp Withycombe **Date of Construction** 1909-1920

Address S.E. Clackamas Road **County** Clackamas

Primary Significance National Defense/Early Rifle Range



Description: Camp Withycombe, located on a 50 acre parcel at the foot of Mt. Talbert, is a collection of National Defense facilities dating from 1903 to the late 1930s. Camp Withycombe has served as a rifle range and training ground for the Oregon National Guard for more than 80 years. The rifle range, a 24-station, 500 yard facility, first opened in 1907. Seven of the buildings on the grounds were constructed prior to 1930. These include the Mess Hall, ca. 1912 (Bldg. 200), the Storage Building, 1910(Bldg. 206), the Feed Barn, 1910 (Bldg. 305), two Storage Buildings, 1910 (Bldg. 308,310), the Supply Building, 1920 (Bldg. 450), and a Barn, c. 1903 (Bldg. 525). The Adjutant General's House, built in the Colonial Style in 1938, was constructed by the WPA. Some of the other buildings were also reportedly built by the WPA.

Significance/Context: See Page 2 **Location: See Attached Map**

In my opinion, the property X meets ___ does not meet the criteria for listing in the National Register of Historic Places.

Signature of Certifying SHPO Official/Title — Date 7.21.94

Signature of Agency Representative/Agency — Date

Comments/Request for Additional Information:

Significance: Camp Withycombe is significant under Criterion A as the site of the earliest organized firing range in the state and as a developed landscape with various architectural features, all with the common theme of National Defense. Camp Withycombe has served as a rifle range and training ground for the Oregon National Guard for more than 80 years. Land for the camp was purchased by the U.S. Government in the spring of 1909 and the range opened for the season on May 15, 1909.

The original 234 acre parcel of land was first named Camp Benson after the Governor at the time, however was renamed Camp Withycombe during World War I for James Withycombe, the Governor during that time. The camp was also commonly referred to as the Clackamas Rifle Range. Upon opening, the rifle range was described as the most "thoroughly modern and fully equipped rifle range available". The site was hailed as "ideal for the purposes of rifle practice and competitions." It was the first on the west coast to employ a 1000 to 1500 feet shooting range and one of the first in the country with this feature. At that time only the newest service rifles had a shooting range of this distance. The layout of the range was also carefully considered as wind and sun played an important part in target practice. Mt. Talbert, to the east and north, provided some protection against the northwest wind thus minimizing any fishtailing effects. The mountain also provided a safe backdrop for the range and the flat land at the base of the mountain provided an ideal flat firing range. The range was cited as having the "perfect environment" upon its opening.

Troops from all over the state came to the town of Clackamas by the Southern Pacific Railroad and then walked to the camp where they stayed for seasonal rifle practice. The range was also the site of state competitions. The Oregon Company, to Third Infantry, received honor in the country's rifle shooting competition. The competitions were held every year and Oregon started sending their competitors in 1905. That year they placed twenty-first out of thirty-seven teams. By 1913, the Oregon Infantry placed third out of forty three which was attributed to the excellent rifle range facility at Camp Withycombe.

During the early years, the camp personnel was housed in tents; it was not until the depression that many of the building were constructed with the help of the Work Projects Administration. However, some of the buildings (the storage shed and feed barn) were previously on the site prior to the government's purchase and subsequently utilized by the guard.

During World War I the camp was used to receive enlistees as well as a rifle range and also was the site where troops were mobilized at the start of the war. It served as an important headquarters for the National Guard during World War I, serving as a central supply depot and training center for the guard. During the subsequent years, buildings were constructed to facilitate the needs of the guard. Only seven of the buildings on the grounds were constructed prior to 1930. These include the Mess Hall, ca. 1912 (Bldg. 200), the Storage Building, 1910(Bldg. 206), the Feed Barn, 1910 (Bldg. 305), two Storage Buildings, 1910 (Bldg. 308,310), the Supply Building, 1920 (Bldg. 450), and a Barn, c. 1903 (Bldg. 525).
During the 9130's the camp developed as a supply depot for the guard. Some of the buildings designed were reportedly built by the WPA. Adjutant General's House, built in the Colonial Style in 1938, was constructed during this time period by the WPA. The two and one half story house is in excellent condition and was determined preliminary eligible for the National Register. A period garage is located north of the residence.

The camp still serves as rifle range, a supply depot, and repair facility for equipment used by the National Guard and the rifle range used for target practice by various agencies such as the State Police. The rifle range retains its original layout with modifications only in the structures which shelter the close range target area. A portion of a rock retaining wall and a stone drinking foundation are located near the range, dating from the historic period.

Context: The Camp Withycombe rifle range is one of the oldest National Defense ranges in the western part of the United States. At the time it was constructed, the Camp Withycombe rifle range was described as the most "thoroughly modern and fully equipped rifle range available". The site was hailed as "ideal for the purposes of rifle practice and competitions." It was the first on the west coast to employ a 1000 to 1500 feet shooting range and one of the first in the country with this feature. At that time only the newest service rifles had a shooting range of this distance. The layout of the range was also carefully considered as wind and sun played an important part in target practice. Mt. Talbert, to the east and north, provided some protection against the northwest wind thus minimizing any fishtailing effects. The mountain also provided a safe backdrop for the range and the flat land at the base of the mountain provided an ideal flat firing range. The range was cited as having the "perfect environment" upon its opening.

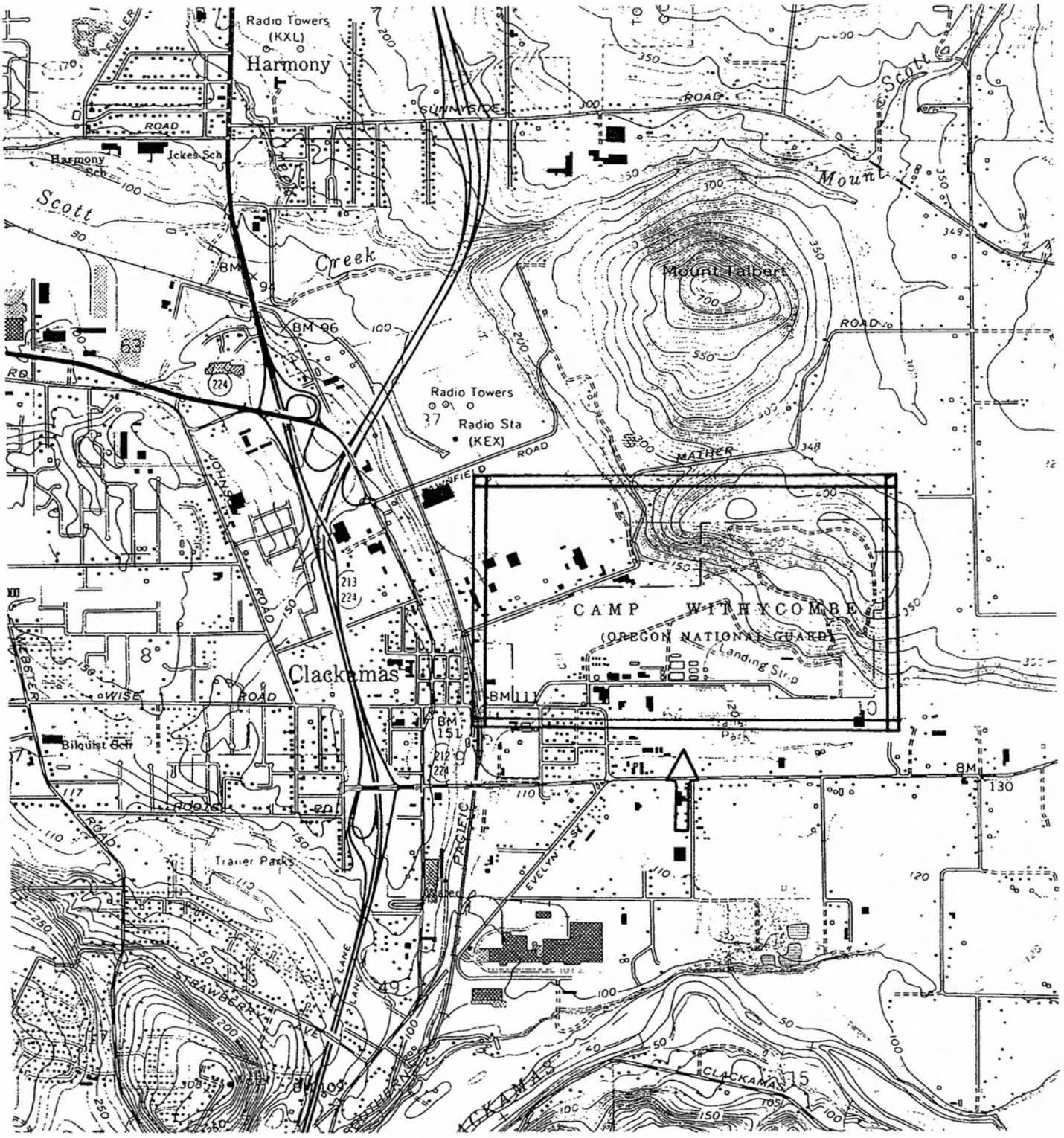
Sources:

Donovan, Sally. Cultural Resource Evaluation of the Proposed Sunrise Corridor Project, Clackamas County, Oregon, (Final Technical Report), Dames and Moore, November 1991.

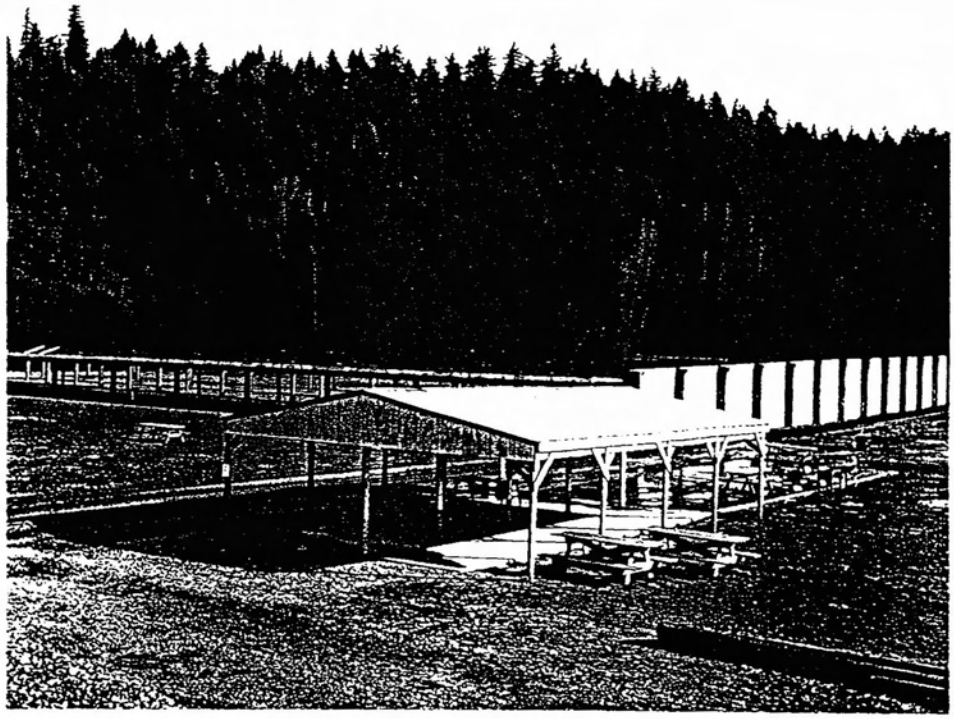
Researcher: James Norman, Cultural Resources Specialist, ODOT Date April 1994

LOCATION OF PROPERTY

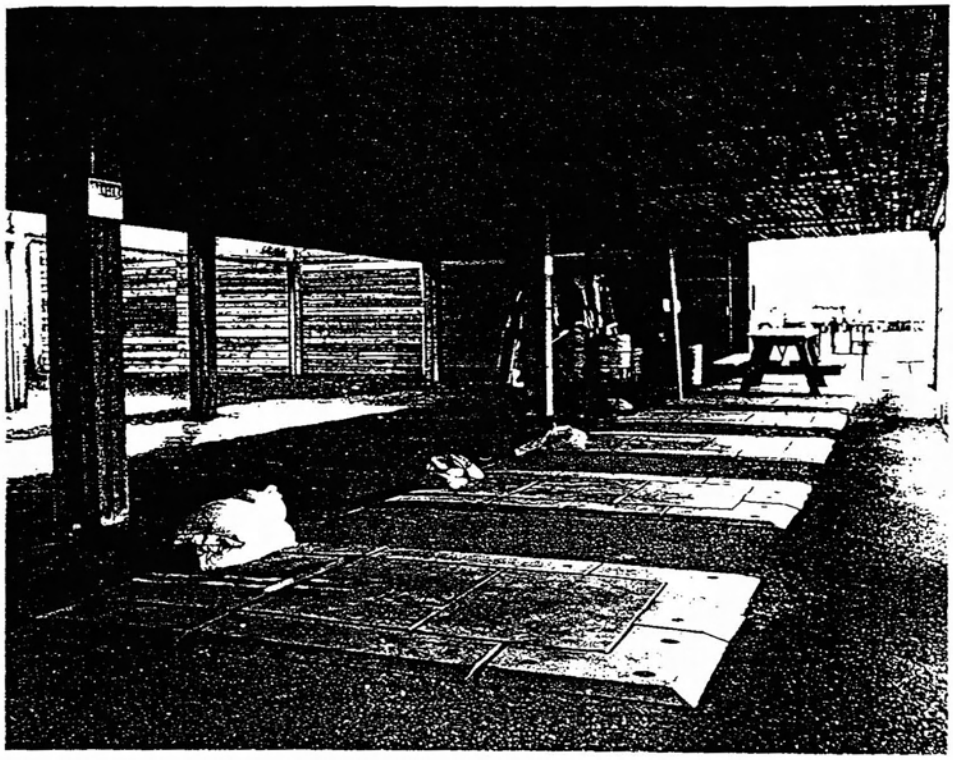
Camp Withycombe



Gladstone Quadrangle, Clackamas County, Oregon
7.5 Minute Series, USGS



Rifle Range, View to Northeast



Rifle Range, View of Firing Stations



Mess Hall, ca. 1912



Adjutant General's Residence, ca. 1938



Feeding Barn, ca. 1910



Barn, ca. 1903

Oregon

DEPARTMENT OF
TRANSPORTATION

TECHNICAL SERVICES
Environmental Services
Administration
Engineering Unit
Project Management Unit
Research Unit

FILE CODE:

January 12, 1998

James M. Hamrick
Deputy State Historic Preservation Officer
State Historic Preservation Office
1115 Commercial Street, NE
Salem, OR 97310-1001

RECEIVED
JAN 20 1998
STATE PARKS AND
RECREATION DEPARTMENT

Request for Concurrence on Level of Effect
Camp Withycombe
Sunrise Corridor
I-205 to US Highway 26
Clackamas County

James

Attached for your review is a detail map showing the proposed location for the construction of a portion of the new Sunrise Corridor alignment near I-205 in southeast Portland in Clackamas County. The proposed new alignment will require the use of land from a National Register-eligible resource – Camp Withycombe. Camp Withycombe, a collection of National Defense facilities, comprises a variety of individual resources dating from 1903 to the late 1930s. Of note is the Rifle Range (1909), one of the oldest in the western United States, and the first range on the west coast to offer range distances up to 1500 feet. The route of the new Sunrise Corridor alignment will bisect the original configuration of the camp, and will isolate the Rifle Range from the remainder of the camp facilities. ODOT is working to continue access availability to the range for use by State Police and National Guard forces. No other resources located on the Camp Withycombe property will be affected by the project.

Preliminary application of the Section 106 criteria of effect and adverse effect [refer, 36 CFR 800.9 (c)(2)] indicates a Finding of Adverse Effect on Camp Withycombe resulting from the right-of-way acquisition and construction of the new Sunrise Corridor alignment.

We request your concurrence on this finding. If you have any questions, please call me or James Norman at the number below.

Sincerely,

Pieter Dykman, Research Supervisor
Environmental Section

The State Historic Preservation Office concurs with a **Finding of Adverse Effect** on this resource.

JAN 26 1998

SHPO Official — Date

Attachment

cc: James Norman
Mark Wigg

Form 734-2239 (2-97)

1158 Chemeketa St. NE
Salem, OR 97310
(503) 986-3477
FAX (503) 986-3524

Oregon
Theodore R. Kulongoski, Governor

Department of Transportation
Transportation Building
355 Capitol St. NE
Salem, Oregon 97301

FILE CODE:

July 18, 2008

Roger Roper
Deputy State Historic Preservation Officer
Assistant Director, Heritage Programs
Oregon State Historic Preservation Office
725 Summer Street NE, Suite C
Salem, OR 97301

Attn: Sarah Jalving

Subject: **Section 106 Coordination**
Sunrise Corridor, Interstate 205—Rock Creek Junction
Clackamas County, Oregon
ODOT Key No. 12454
Federal-Aid No. C005 (46) PN

Dear Mr. Roper,

Please find the enclosed Determination of Eligibility for the circa 1920 Frank A. Haberlach House and the Silverthread Kraut and Pickle Works, located at the southeast corner of Oregon 212/224 and SE 130th Avenue (formerly Haberlach Road). In 1984, and again in 1990, Clackamas County recorded the Frank A. Haberlach House and Silverthread Kraut and Pickle Works Building as a landmark historic property (SHPO No. 1037). The buildings are remnants of the Haberlach farm that operated from the early 1900s into the 1960s. They are significant for their associations with the Haberlach family. In addition, the pickle works is one of the few known agricultural processing plants to remain in Clackamas County. The two buildings continue to maintain integrity and are recommended to be eligible for listing in the National Register of Historic Places as a grouping.

Your prompt attention to this coordination request is appreciated. If you have any questions or need further information, please contact Robert W. Hadlow, in our Region 1 headquarters, at (503) 731-8239.

Sincerely,

James B. Norman
Environmental Planning Unit Manager

OREGON INVENTORY OF HISTORIC PROPERTIES

SECTION 106 DOCUMENTATION FORM

Individual Properties

Agency/Project: Oregon Department of Transportation/Sunrise Project I-205 to Rock Creek Junction	
Property Name: Frank A. Haberlach House and Silverthread Kraut and Pickle Works K12454	
Street Address: 13002 SE Highway 212/224	City, County: Clackamas, Clackamas
USGS Quad Name: *Gladstone, Oregon* 7.5-minute	Township: 2 South Range: 2 East Section: 11
This property is part of a ☐District ☒Grouping/Ensemble (see instructions) Name of District or Grouping/Ensemble: Frank A. Haberlach House and Silverthread Kraut and Pickle Works Building	
Number and Type of Associated Resources in Grouping/Ensemble: 1 house, 1 garage, 1 processing building	

Current Use: Restaurant and feed store	Construction Date: Ca. 1920
Architectural Classification / Resource Type: Craftsman Bungalow	Alterations & Dates: Ca. 1980
Window Type & Material: Multi-light-over-single-light wood sashes	Exterior Surface Materials: Primary: Horizontal board Secondary: Shingle Decorative: N/A
Roof Type & Material: Side gable / asphalt composition shingle	
Condition: ☐Excellent ☒Good ☐Fair ☐Poor	Integrity: ☐Excellent ☒Good ☐Fair ☐Poor



The Frank A. Haberlach House north façade and west elevation. The view is to the southeast.

Preliminary National Register Findings: ☐**National Register listed**

☒**Potentially Eligible:** ☒Individually ☐As part of District

☐**Not Eligible:** ☐In current state ☐Irretrievable integrity loss ☐Lacks Distinction ☐Not 50 Years

State Historic Preservation Office Comments:

☑**Concur** ☐**Do Not Concur:** ☐Potentially Eligible Individually ☐Potentially Eligible as part of District ☐Not Eligible

Signed _____ Date 7/31/08

Comments:

Surveyor/Agency: Elizabeth O'Brien, B. Architecture
Archaeological Investigations Northwest, Inc.

Date Recorded: May 2008

OREGON INVENTORY OF HISTORIC PROPERTIES

SECTION 106 DOCUMENTATION FORM

Individual Properties

Agency/Project: Oregon Department of Transportation/Sunrise Project I-205 to Rock Creek Junction	
Property Name: Frank A. Haberlach House and Silverthread Kraut and Pickle Works K12454	
Street Address: 13002 SE Highway 212/224	City, County: Clackamas, Clackamas
USGS Quad Name: *Gladstone, Oregon* 7.5-minute	Township: 2 South Range: 2 East Section: 11
This property is part of a ☐District ☒Grouping/Ensemble (see instructions) Name of District or Grouping/Ensemble: Frank A. Haberlach House and Silverthread Kraut and Pickle Works Building	
Number and Type of Associated Resources in Grouping/Ensemble: 1 house, 1 garage, 1 processing building	

Current Use: Restaurant and feed store	Construction Date: Ca. 1920
Architectural Classification / Resource Type: Craftsman Bungalow	Alterations & Dates: Ca. 1980
Window Type & Material: Multi-light-over-single-light wood sashes	Exterior Surface Materials: Primary: Horizontal board Secondary: Shingle Decorative: N/A
Roof Type & Material: Side gable / asphalt composition shingle	
Condition: ☐Excellent ☒Good ☐Fair ☐Poor	Integrity: ☐Excellent ☒Good ☐Fair ☐Poor



The Frank A. Haberlach House north façade and west elevation. The view is to the southeast.

Preliminary National Register Findings: ☐**National Register listed**

☒**Potentially Eligible:** ☒Individually ☐As part of District

☐**Not Eligible:** ☐In current state ☐Irretrievable integrity loss ☐Lacks Distinction ☐Not 50 Years

State Historic Preservation Office Comments:

☐**Concur** ☐**Do Not Concur:** ☐Potentially Eligible Individually ☐Potentially Eligible as part of District ☐Not Eligible

Signed _____ Date _____

Comments:

Property Name: Frank A. Haberlach House and Silverthread Kraut and Pickle Works	
Street Address: 13002 SE Highway 212/224	City, County: Clackamas, Clackamas
Architect, Builder or Designer (if known): Unknown	Owner: ☒Private ☐Local Government ☐State ☐Federal ☐Other

Description of Property (including exterior alterations & approximate dates), Significance Statement, and Sources. (Use continuation sheets if necessary):

The circa 1920 Frank A. Haberlach House (13002 SE Highway 212/224) is located at the southeast corner of Highway 212/224 and SE 130th Avenue (former Haberlach Road), oriented north towards Highway 212/224 and approximately one mile north of the Clackamas River. Originally built for Frank A. Haberlach, the Craftsman Bungalow was home to the Haberlach family and is currently occupied by the Harmony House Restaurant. Directly behind and south of the house is the former dill pickle processing building known as the Silverthread Kraut and Pickle Works. The Pickle Works building is oriented east-to-west and access is presently from the south elevation off present-day SE 130th Avenue. The Haberlach House/restaurant has asphalt parking on the west, south, and east sides with landscaping buffering the front from highway traffic. A graveled parking area is located south of the former pickle processing building.

Frank A. Haberlach House

The Frank A. Haberlach house is a one-and-one-half story wood-framed building covered by beveled wood siding with wood shingle siding on the second floor. The building is supported by a poured concrete foundation. The side-gable roof has deep overhanging eaves, corbelled wood bracing, plain bargeboards, and a front gable dormer. Windows consist of groupings of multi-light-over-single-light wood sashes.

Access from the north-facing façade is by a full-width porch and concrete stairways, sheltered by the sloping gable roof. The porch roof is supported by truncated boxed posts on a brick knee wall. Stucco covered segmental arch openings adorn the porch side openings. The deep overhanging eaves are supported by corbelled wood beams. A square bay window covered by a shed roof with exposed rafters projects from the west elevation. There is an exterior brick chimney on the east elevation that is painted at the first floor, with unpainted tan brick above. An interior chimney is found in the rear.

The garage, which appears contemporary to the house (circa 1920), is partially attached at the house's southwest corner and has been converted into the restaurant kitchen. It has a new poured concrete foundation, siding modifications and aluminum sliding windows. The exposed rafters, corbelled wood beams, wood shingle siding in the gable ends, and overhanging roof remain intact.

Modifications include the addition of an exterior wood-framed stair on the east elevation, a second floor exterior exit door, and the conversion of the garage into a commercial kitchen. Overall, the residence maintains its historic integrity.

Silverthread Kraut and Pickle Works Building

The circa 1920 Silverthread Kraut and Pickle Works Building was built as a dill pickle processing plant and was one of three large buildings used as part of the pickle and sauerkraut processing plant that was operated by the Haberlach family up to the 1960s. The other two buildings no longer remain. The pickle building is a one-story, rectangular utilitarian wood-framed building that has a longitudinal east-to-west orientation. The original west facing entry is covered by plywood and the primary access is from the south elevation. The double-beveled siding and cornerboard trim remains intact and the gable roof is covered by corrugated metal. Two horizontal window bays flank the former west entry bay; one has a grouping of multi-lights in a repeating Union-Jack design; the other is replaced with a single fixed light. Clackamas Feed and Pet Supply presently occupies the building.

Significance

The Frank A. Haberlach House and Silverthread Kraut and Pickle Works Building were previously recorded in 1984 and in 1990 by Clackamas County as a landmark historic property (SHPO No. 1037) [see attached form]. The ca. 1920s buildings are remnants of the Haberlach farm that operated from the early 1900s into the 1960s. The buildings are significant for their associations with the Haberlach family, and the processing building is one of the few known agricultural processing plants to remain in Clackamas County (Koler and Morrison 1990). The two buildings continue to maintain integrity and are recommended to be eligible for listing in the National Register of Historic Places as a grouping. A house purchased circa 1933 by Frank's son, Frank W. Haberlach, is located south of the south edge of the Haberlach farm and is now the Sah-Hah-Lee Golf Club house

Property Name: Frank A. Haberlach House and Silverthread Kraut and Pickle Works	
Street Address: 13002 SE Highway 212/224	City, County: Clackamas, Clackamas

Historical Background

Frank A. Haberlach came from Prussia circa 1881 along with his father (Gustav) and mother (Augusta). The Haberlach family lived in Michigan until circa 1890, and for a while in McCloud, California, where Gustav worked as a carpenter before moving to Oregon. Upon coming to Oregon, Gustav worked as a carpenter building houses in Oregon City and Clackamas. In 1900, U.S. Census records show that the entire family lived on a farm in the Clackamas precinct. At that time, the family was comprised of the parents, Gustav and Augusta, and the six surviving children: Frank A. (1878, Germany), Carl G. (1879, Germany), Willie F. (1882, Michigan), Katie C. (1885, Michigan), Gustav Jr. (1888, Michigan), Emma M (1881[sic], Oregon). This farm was located north of Highway 212/224 slightly west of the subject property. This farm was called for a time the Zigzag Farm because of the road that zigzagged up the hill next to the farm from the present-day Highway 212/224 (Bill Haberlach, personal communication 2008).

Gustav's son Carl later moved to Tillamook and proved to be an astute businessman. Trained to be a lawyer, he is noted for organizing a Tillamook creamery cooperative that was established in 1909 as the Tillamook Cheese's Tillamook County Creamery Association. He was instrumental in establishing the cooperative's high quality standards and made early efforts to market their cheese. Carl married Amanda who hailed from a large Swedish family from Tillamook. When Frank A. decided to marry, his brother Carl introduced him to Amanda's sister, Anna. Frank and Anna married circa 1905 and by 1910 they were farming land near Gustav's farm in the Clackamas vicinity (US Bureau of Census 1900; US Bureau of Census 1910; Bill Haberlach, personal communication 2008; Dudlicek 2005; Tillamook County Historical Society 2008).

Frank A. and Anna acquired farmland south of Frank's father's farm. Their first home was located south of the subject buildings on 130th Avenue, where SE Capps Road curves westward. This home was later destroyed by fire. Frank A. experimented with several crops over time including orchards, sheep, and truck farming, and began processing sauerkraut and pickles in 1905. As the business proved successful, they moved the operation and constructed the subject house closer to the main road (circa 1920). Their new home was a sign of their hard work and growing success.

The new home and processing plant was constructed on land purchased by Frank and Anna Haberlach in 1919 from William O. Capps, the son of the original donation land claim owner, Isaac Capps. Prior research found that the Capps family and the Haberlachs were listed in the 1907-08 Gazetteer and Business Directory as operating a grocery store (Koler and Morrison 1990). A descendant believes this may be Gustav's son William Haberlach who owned a grocery store in Clackamas. He also had a distribution plant for Standard Oil and a trucking business for hauling dynamite (Bill Haberlach, personal communication 2008; Herbert Haberlach, personal communication 2008.)

Frank A. and Anna's pickle and sauerkraut operation was contained within several buildings south of their new house. The subject building housed the dill pickle processing operation. Two separate buildings (no longer standing) housed the sweet pickle and sauerkraut processing. The products, traditional accompaniments to meat, were generally peddled in bulk to meat markets and sausage makers. Produce for their products was both grown and purchased by the Haberlachs. Cabbages were generally grown on the fertile lowland near the Clackamas River and many of the cucumbers were purchased from other farmers. The outer cabbage leaves not used in making sauerkraut were used on other Haberlach farms for animal feed (Herbert Haberlach, personal communication 2008). A cannery was later introduced and their canned products were sold during the Depression, providing many families with affordable and nutritious food. During World War II, their sauerkraut was sold to the US Army (Bill Haberlach, personal communication 2008).

The Haberlach family owned several large land parcels on either side of Highway 212/224. The older farm north of Highway 212/224 was later farmed by Gustav Jr. and his son Herbert. They had 8 acres of apple trees and typically farmed grain and hay (Herbert Haberlach, personal communication 2008). Frank W. and his family lived in a house they purchased circa 1933 near the Clackamas River, the present golf club house for the Sah-Hah-Lee Golf Course. In 1937 Frank Haberlach owned a long strip of land from Highway 212/224 south along the roadway; another parcel spread over the north Clackamas River bank and land on the opposite side of the road. Gustav (presumably Jr.) had land generally west of SE 135th Avenue to the east of Frank A.'s land. After Frank A.'s death in 1940, his wife Anna and son Frank W. continued the pickle operation into the 1960s, until business fell off and their health declined. Anna and Frank W. started selling off the land in the 1960s (Bill Haberlach, personal communication 2008; Metskers Maps 1928; 1937). Descendents of Gustav and Augusta Haberlach still live in the area, but no longer occupy the family farm property, which has been subdivided and developed into a mix of commercial, industrial, and recreational uses.

Property Name: Frank A. Haberlach House and Silverthread Kraut and Pickle Works	
Street Address: 13002 SE Highway 212/224	City, County: Clackamas, Clackamas

Sources

Dudlicek, James
2005 "Process Progress: Dairy Field has watched manufacturing make great strides in technology over the past century." *Dairy Field,* February Edition. Available from http://www.dairyfield.com/content.php?s=DF/2005/02&p=10; accessed 30 April 2008.

Koler, Julie and Jane Morrision
1990 Frank Haberlach House and Silverthread Kraut and Pickle Works Building. Clackamas County Historic Landmark, file No. Z1246-90. On –file, Oregon State Historic Preservation Office, Salem, Oregon.

Metsker Maps
1928 *Metsker's Atlas of Clackamas County, Oregon*. Charles F. Metsker, Portland and Tacoma.
1937 *Metsker's Atlas of Clackamas County, Oregon*. Charles F. Metsker, Portland and Tacoma.

Tillamook County Historical Society
2008 *Early Tillamook*. Electronic Document. Available from http://www.tcpm.org/docs/tchs_early_tillamook.pdf; accessed 30 April 2008.

United States Bureau of Census
1900 *Manuscript Population Census of the United States*. State of Oregon, Clackamas County. On file, Multnomah County Library, Portland, Oregon.
1910 *Manuscript Population Census of the United States*. Thirteenth Census of the United States. State of Oregon, Clackamas County. Copy on file, Multnomah County Library, Portland, Oregon.
1920 *Manuscript Population Census of the United States*. Fourteenth Census of the United States. State of Oregon, Clackamas County. Copy on file, Multnomah County Library, Portland, Oregon.
1930 *Manuscript Population Census of the United States*. Fifteenth Census of the United States. State of Oregon, Clackamas County. Copy on file, Multnomah County Library, Portland, Oregon.

Property Name: Frank A. Haberlach House and Silverthread Kraut and Pickle Works	
Street Address: 13002 SE Highway 212/224	City, County: Clackamas, Clackamas



View: The Frank A. Haberlach House north façade and west elevation. The view is to the southeast.



View: The Frank A. Haberlach House east elevation and north façade. The view is to the southwest.

Property Name: Frank A. Haberlach House and Silverthread Kraut and Pickle Works	
Street Address: 13002 SE Highway 212/224	City, County: Clackamas, Clackamas



View: The Frank A. Haberlach House west and south elevations, including the garage converted into a kitchen. The view is to the northeast.



View: The Haberlach's dill pickle processing building west façade and south elevation. The view is to the northeast.

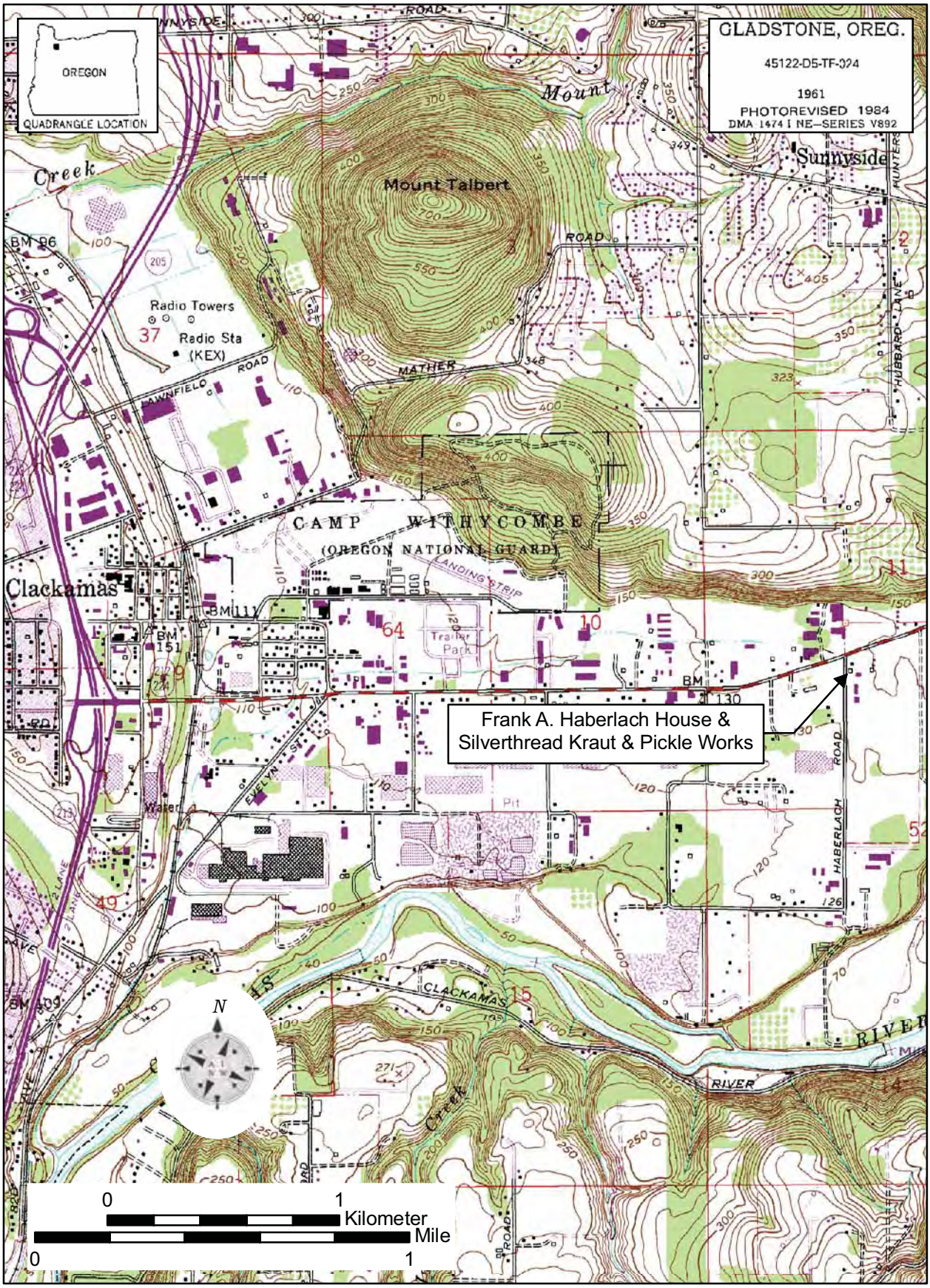
Property Name: Frank A. Haberlach House and Silverthread Kraut and Pickle Works	
Street Address: 13002 SE Highway 212/224	City, County: Clackamas, Clackamas

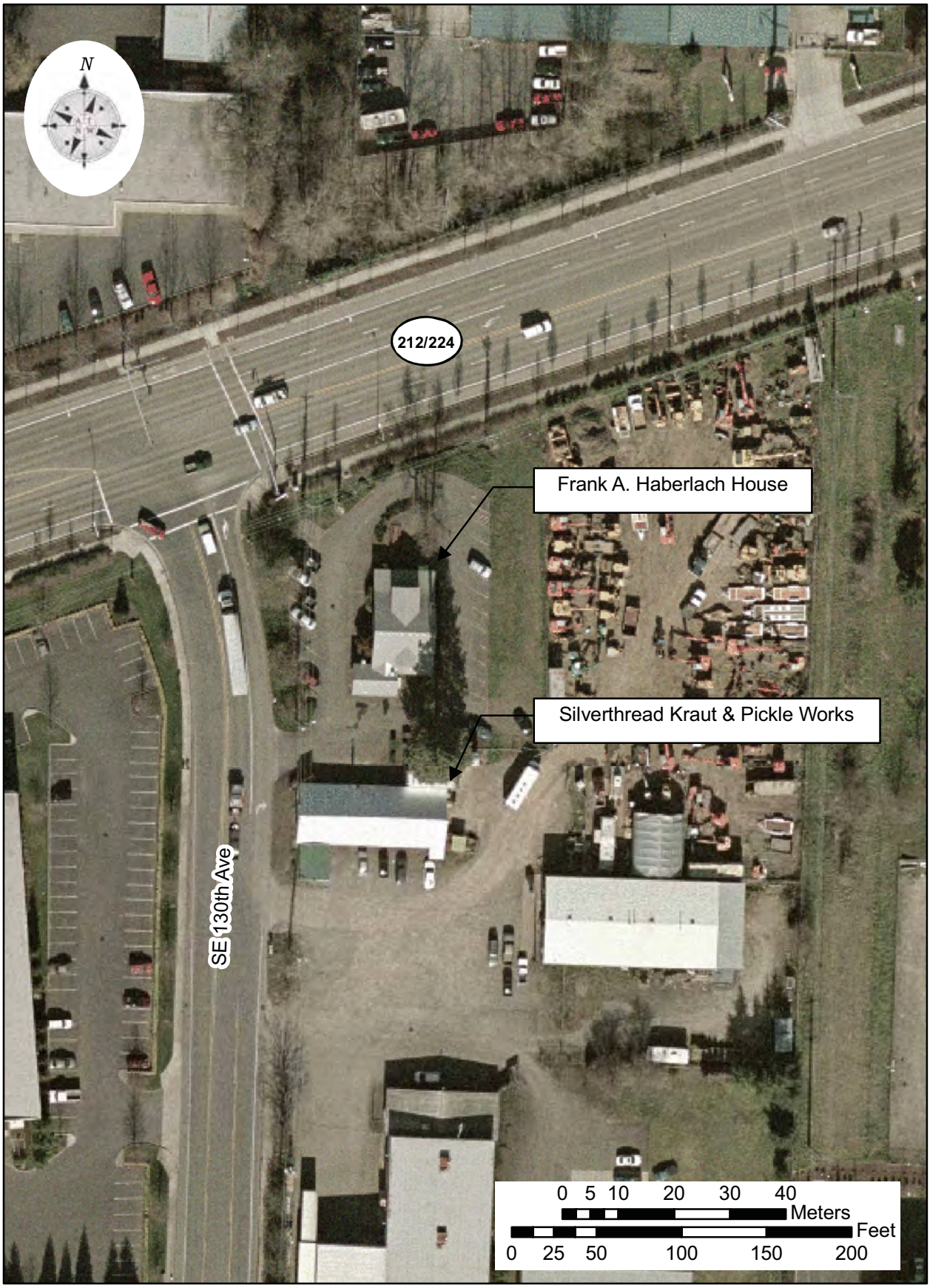


View: The dill pickle processing building west façade. The view is to the southeast.



View: The dill pickle processing building north elevation and west façade. The view is to the southeast.


GLADSTONE, OREG.
45122-D5-TF-024
1961
PHOTOREVISED 1984
DMA 1474 I NE—SERIES V892
OREGON
QUADRANGLE LOCATION
Mount Talbert
Sunnyside
Radio Towers
Radio Sta (KEX)
MATHER
CAMP WITHYCOMBE
(OREGON NATIONAL GUARD)
LANDING STRIP
Clackamas
Trailer Park
Pit
Frank A. Haberlach House & Silverthread Kraut & Pickle Works
HABERLACH ROAD
EVELYN ST
CLACKAMAS
RIVER
Creek
N
0
1
Kilometer
Mile
0
1


N
212/224
Frank A. Haberlach House
Silverthread Kraut & Pickle Works
SE 130th Ave
0 5 10 20 30 40
Meters
Feet
0 25 50 100 150 200

Cultural Resource Survey Form:

CLACKAMAS COUNTY

I.D. NUMBER ____

PHOTO INFORMATION:
ROLL: LXXXV
FRAME: 20

STUDY AREA: HV-D
LEGAL: T. 2S R. 2E SEC. 11D
TAX (LOTS): 2312
ZONE 1-2 SIZE 2.36 ~~2.63~~

IDENTIFICATION:

COMMON/HISTORICAL NAME: F. HABERLACK RESIDENCE
ADDRESS: 13002 S. E. Highway 212 AREA: Clackamas
CURRENT OWNER: W. NELS SMITH & ASSOC. USE: Residence
OWNER'S ADDRESS: 17464 S. Steiner Road, Beavercreek
ORIGINAL OWNER: FRANK G. HABERLACH USE: Residence
AREA OF SIGNIFICANCE: TOWN: ____ COUNTY: X CITY: ____ NATION: ____

HISTORIC INTEREST:

THEME: Architecture - 20th Century DATE: ca. 1916
DESCRIPTION: Frank Haberlach was the son of German immigrant Gustav Haberlach. The Haberlach family owned much of the valley along Highway 212. Frank's brother, Carl, founded the Tillamook Cheese Co-op.

ARCHITECTURAL INTEREST:

STYLE: Bungalow STORIES: 1½
DATE: ca. 1916 CONDITION: Good ARCHITECT: ____
SIDING: Bevel with shingles on second story.
ROOF: Gable
DOORS: Arts and Crafts
WINDOWS: Double-hung with small, multilight in upper sash, many in groups, rectangular bay window.
MAIN ENTRANCE: Gable roof extends over front porch supported by massive, battered posts set on brick bases and balustrade.

NOTES: Gable dormer with exposed rafters, wide overhanging eaves and multilight casement windows. End wall chimney.



BIBLIOGRAPHY:
0

DATE: August ~~1984~~
RECORDER: Altier/Hayden

CLACKAMAS COUNTY HISTORIC LANDMARK

File #: Z1246-90

CLACKAMAS COUNTY

HISTORIC RESOURCES INVENTORY 1989-90

HISTORIC NAME: **HABERLACH, FRANK, HOUSE AND SILVERTHREAD KRAUT AND PICKLE WORKS BUILDING**
COMMON NAME:
PROPERTY ADDRESS: 13002 S.E. Highway 212
OWNER:
OWNERS ADDRESS:
RESOURCE TYPE: Building
PRESENT USE: Commercial
ORIGINAL USE: Residential and Industrial
THEME: Culture; agriculture
ARCHITECT/BUILDER: Unknown
COUNTY: Clackamas
QUAD: Gladstone
T/R/S: 2S/2E/11D
TAX LOT: 2312
ADDITION: N/A
BLOCK: N/A
LOT: N/A
LOT SIZE: 2.36
ZONE: I-2, Light Industrial

SETTING: The Haberlach House and Silverthread Kraut and Pickle Works Building are located on the south side of Highway 212-224. The area is rapidly developing into an area of industrial use.

NOTEWORTHY LANDSCAPE FEATURES: None

NON-CONTRIBUTING FEATURES: None

RECORDED BY: Koler/Morrison
DATE: January 1990

SHPO NO.: 1037



HOUSE

DATE BUILT: c. 1920
STYLE: Bungalow/Craftsman
PLAN TYPE/SHAPE: Asymmetrical
NO.OF STORIES: 1 1/2
FOUNDATION MATERIAL: Concrete
BASEMENT: No
ROOF FORM AND MATERIALS: Low-pitched gable
WALL CONSTRUCTION/STRUCTURAL FRAME: Wood/stud
PRIMARY WINDOW TYPE: Double-hung sash; casement
EXTERIOR SURFACING MATERIALS: Shingles; lap w/ corner boards
DECORATIVE FEATURES: Massive brackets; belt course; segmental arched openings and elephantine porch supports; bargeboards
OTHER: Full-width, shed roof porch w/ enclosed balustrade, n. elev.; paneled and glazed door; gabled ell, n. and s. elev.; rectangular window bay, w. elev.; interior chimney
CONDITION: Good
EXTERIOR ALTERATIONS (DATE): Exterior staircase added, e. elev. (n.d.); window and door to ell altered (n.d.)
NOTEWORTHY LANDSCAPE FEATURES: None

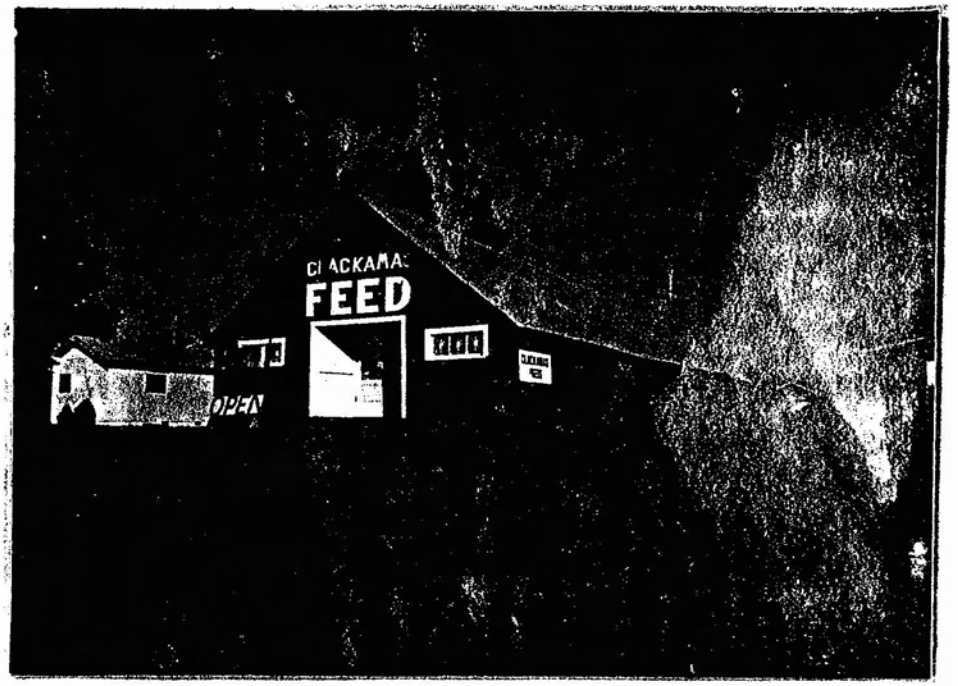
SHPO NO.: 1037

NO PHOTO IN FLOODED RECORDS.

GARAGE

DATE BUILT: c. 1920
STYLE: Bungalow/Craftsman
PLAN TYPE/SHAPE: Rectangular
NO.OF STORIES: 1
FOUNDATION MATERIAL: Unknown
BASEMENT: No
ROOF FORM AND MATERIALS: Gable w/ composition shingles
WALL CONSTRUCTION/STRUCTURAL FRAME: Wood/stud
PRIMARY WINDOW TYPE: None
EXTERIOR SURFACING MATERIALS: Wood siding
DECORATIVE FEATURES: None
OTHER: End-wall door
CONDITION: Good
EXTERIOR ALTERATIONS (DATE): Unknown

SHPO NO.: 1037



SILVERTHREAD KRAUT AND PICKLE WORKS BUILDING

DATE BUILT: Unknown
STYLE: Vernacular
PLAN TYPE/SHAPE: Rectangular
NO.OF STORIES: 1
FOUNDATION MATERIAL: Unknown
BASEMENT: No
ROOF FORM AND MATERIALS: Gable w/ sheet metal
WALL CONSTRUCTION/STRUCTURAL FRAME: Wood w/stud
PRIMARY WINDOW TYPE: None
EXTERIOR SURFACING MATERIALS: Double bevel
DECORATIVE FEATURES: None
OTHER: Overhead sliding door, e. elev.; paired doors, w. elev.
CONDITION: Good
EXTERIOR ALTERATIONS (DATE): Unknown

SHPO NO.: 1037

STATEMENT OF SIGNIFICANCE

Address: 13002 S. E. Hwy. 212
Historic Name: **HABERLACH, FRANK, HOUSE AND SILVERTHREAD KRAUT AND PICKLE WORKS BUILDING**

The Haberlach House and Silverthread Kraut and Pickle Works Building are located two miles east of Clackamas, on Highway 212-224--an old wagon road. The resource may be evaluated as an early 20th century dwelling and an agricultural-product processing facility.

HISTORICAL BACKGROUND

Early development of the Happy Valley-Damascus area can be attributed to the proximity of the Barlow Road; the westernmost link of the Oregon Trail. The northern alignment of the Barlow Road, established by the 1850s, followed the north side of the Clackamas River and entered Oregon City via the present city of Gladstone. Early settlers were few and widely scattered and included Issac Capps and Chevalier Richardson, who settled claims in the Rock Creek and Damascus areas, respectively.

Despite the seemingly heavy traffic through the study area, few early pioneers filed donation land claims. However, by the 1870s pioneers began to settle in the Happy Valley-Damascus area. Three factors are believed to have caused this development pattern. Oregon City held a strong attraction; many people stayed in this "urban" place and worked in the commercial or industrial establishments there. Pioneers interested in farming sought arable and accessible land near and along the navigable waterways, which were more dependable thoroughfares than the muddy, rutted roads of the period. Lastly, the topography of the Happy Valley area is hilly and therefore not well suited to the common agricultural practices of the mid-19th century. The population of the county at this time was primarily made of English, Irish and German emigrants, many of whom had lived in the Missouri, Mississippi or Ohio river valleys prior to moving westward to Oregon. These settlers chose first the level land and later developed the more hilly uplands areas.

Mid-19th century dwellings were often of log or simple wood-frame construction. Many buildings exhibited an influence of the Classical Revival style of architecture, although generally this influence was limited to symmetrical facade arrangements, and suggestions of a cornice at the eave line and corner boards.

Like their residential counterparts, agricultural buildings from the period were generally simple buildings. Due to the nature of farming practices, barns and sheds were low-profile, broad buildings.

After the Civil War (1865-1883), the area experienced slow but steady growth. The Barlow

Road continued to be an important roadway, operating as a toll road through the first decade of the 20th century. Phillip Foster's Place, at present-day Eagle Creek, east of the study area, was an important point on the Barlow Road. Foster, who was a partner in the Barlow Road enterprise, sheltered traveling pioneers on the last leg of the trip. The road connecting Foster's Place with the road to the Columbia River, present day 82nd Avenue, as well as Milwaukie and Portland was established during the mid-19th century.

Communities sprung up along the early roadways throughout the historic period. Damascus, at the intersection of the Barlow Road and the road to Foster's Place, was one of those towns. The name Damascus apparently has biblical roots. A post office was established in Damascus in 1867 by Henry Pedigo. John S. Fisher was the first postmaster.
During the period following the Civil War, the construction of the Oregon-California Railroad may be considered the single most important event in the Happy Valley-Damascus area. In the late 1860s two factions set out to construct the line from Portland to Sacramento. One group selected the east side of the Willamette and the other took the west side. Whichever group reached the upper Willamette Valley first was to win the right to complete the line south. The east side line ran from Portland southward, skirting around Milwaukie and continuing south toward Oregon City, through the present community of Clackamas. The east side group won the competition and completed the line over the latter decades of the 19th century.

The town of Clackamas, originally named Marshfield, was platted in 1869-1870. The town grew up around the railroad stop and featured a post office and a number of businesses that catered to the farmers who populated the hinterlands.

During this period subsistence farming was the norm throughout the county, as well as in the Happy Valley-Damascus vicinity. Livestock and cereal grains were raised. Lumber complemented the rural economy. Kitchen gardens were essential. Towards the end of the period oats began to surpass wheat as the number one crop and potatoes attained the rank of number three crop. Increasing numbers of livestock corresponded with an increase in hay production. The total number of acres in cultivation tripled during the period. Further, improvements in farm practices and building technology caused changes to agricultural buildings.

Dwellings from the period were simple wood-frame buildings; many showed an influence, albeit watered down, from the Gothic Revival style of architecture. This type is commonly referred to as the Vernacular or Western Farmhouse style. In contrast to earlier dwellings the buildings of this period had a vertical emphasis; windows were taller and roof pitch was steeper. Drop siding was the most popular exterior wall material although some buildings were clad with the more primitive lap siding. Windows had multiple lights or panes. The windows of earlier buildings (circa 1860) typically had six lights or panes in each sash. As window glass became more readily available panes became larger and the number became fewer. By the end of the period four lights per sash were common.

In general agricultural building continued to be low, broad buildings. However, beginning in the 1870s barns began to be taller to accommodate machinery, such as hay fork lifts.

During the Progressive Era (1884-1913) the population of Clackamas County tripled from 9,260 to almost 30,000, pushing the new comers to develop the hilly land well away from the river and the Barlow Road. By the turn-of-the-century wagon roads or "market roads" crossed the county, facilitating the transference of farm products to loading points along the railroad or to urban markets.
Interurban railroads also sought to fill the demand for better commuter and freight transportation, and entrepreneurs took advantage of the situation. Boring, named for the long time resident W.H. Boring, was one of towns which was established along an interurban railroad line. Boring Junction was platted in 1903, the year the interurban railroad line was constructed between Portland and Estacada. Estacada, located east of the Happy Valley-Damascus study area, was billed as a recreational spot, as well as the site of the power company dam on the Clackamas River.

While the Vernacular style continued to be the most popular architectural style in the Happy Valley-Damascus area between 1883 and 1913, in rare instances more elaborate styles were constructed. Some rural folk adapted modest forms of the highly decorative eclectic styles, such as the Queen Anne and Eastlake, popular in cities during the latter years of the 19th century. The availability of machine made ornament, such as turned posts and balustrades, jigsawn brackets, and patterned shingles, allowed a modicum of decorative treatments to be used on even the most remote farmhouse.

At the turn-of-the-century innovative American styles, such as the Craftsman-Bungalow, of architecture originated. The designers of this type rejected the machine-made ornament of the late Victorian period and instead, embraced a hand-crafted appearance and a more natural use of materials. This building type became the most popular through the early decades of the 20th century.

Agricultural buildings changed dramatically during the Progressive Era. By the turn-of-the-century barns had become quite tall. Most barns were equipped with devices to raise hay to a second or third floor or loft. Barns were designed in a variety of shapes, including Gambrel and Gothic Gambrel.

During the Motor Age (1914-1940) transportation improvements and growth in population continued to fuel agricultural activity. By the 1920s specialized crops, such as fruit and nut cultivation, and dairying began to supplant general farming in the Happy Valley-Damascus vicinity.

Another interurban railroad line effected the development of the Happy Valley-Damascus study area in the early years of the 20th century. In 1915, Stephen S. Carver began to promote an interurban railroad line from Oregon City to south side of the Clackamas River.

At the point the line crossed the river, Carver platted a town named for himself. This river crossing, known during the 19th century as Baker's Ferry, later Baker's Bridge and still later as Stone, became the Carver's townsite.

Horace Baker held the donation land claim for the area south of the river and operated the ferry until the early 1880s. The derivation of the name Stone has been explained two ways. According to Lewis McArthur, noted historical geographer, the name was established because of large boulders in the river. Another legend suggests that the place was named for Livingston Stone, first supervisor of the fish hatchery established here in the latter part of the 19th century. The fish hatchery was the first in Oregon and the second in the United States. In 1903, the hatchery was relocated to a point on the river south of Clackamas.

Throughout the county the Craftsman-Bungalow style continued to be the most popular style, although some period revival styles buildings were constructed. After World War I, it was the influence of European architecture that inspired architects and builders to construct in the English Cottage and Tudor Revival styles. Concurrently, the Colonial Revival gained popularity. This style, as the name suggests, illustrated a strong sense a national pride.

Changes in agricultural buildings continued. Large barns were still constructed, but the most notable change was the introduction of buildings for large-scale specialized farming, such as dairying.

During the Depression the population remained constant and the towns remained as agricultural centers, but little construction occurred. Summer houses, built on the banks of the Clackamas River are the notable exception to the rule.

Since World War II, the Happy Valley-Damascus area has witnessed dramatic changes. Most noteworthy is the conversion of agricultural land to suburban residential subdivisions. The construction of the Interstate 205 freeway on the eastern periphery of the study area and the construction of the Clackamas Town Center/Promenade, etc. have stimulated a host of suburban development.

SUBJECT PROPERTY

The Frank Haberlach House and Silverthread Kraut and Pickle Works building was part of the Isaac Capps Donation Land Claim. Capps, a farmer, was born in Tennessee in 1809. The subject property remained in the Capps family until 1919 when William O. Capps, son of Issac, sold the property to Frank and Anna Haberlach, who presumably built the subject Bungalow style dwelling ca. 1916.

The Capps and Haberlach families ran a grocery business together in Clackamas according to a listing in the 1907-08 Gazetteer and Business Directory.

Frank Haberlach was the son of German immigrant Gustav Haberlach (see SHPO #1036). The Haberlach family owned much of the valley along Highway 212.

Frank and family operated the Silverthread Kraut and Pickle Works. Following Frank's death in 1940, his wife Anna, and son Frank Jr. continued to operate the business for over 20 years. Frank's brother, Carl, founded the Tillamook Cheese Co-op. The subject dwelling remained in the Haberlach family well beyond the historic period.

The Haberlach House is significant as a fine example of the Bungalow style, a style commonly built in Clackamas County during the early years of the 20th century. It has few alterations, principally on the rear elevation. The house has been converted into a restaurant. Behind the house is a garage that appears to have been built at the same time as the house.

The pickling building is located south of the house and garage. It has had few alterations, although it has been converted to another use: a feed store. The pickling building is the only known agricultural goods processing facility in the county, and is significant as such.

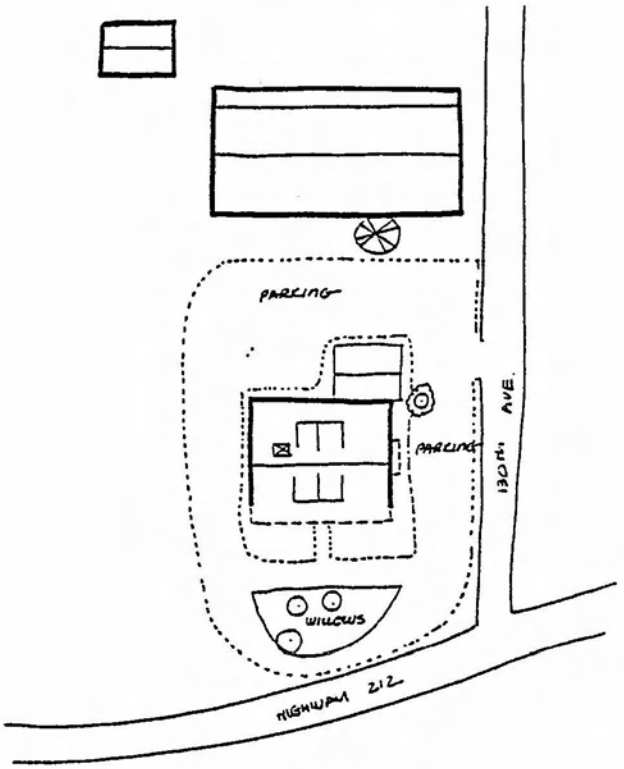
Bibliography:

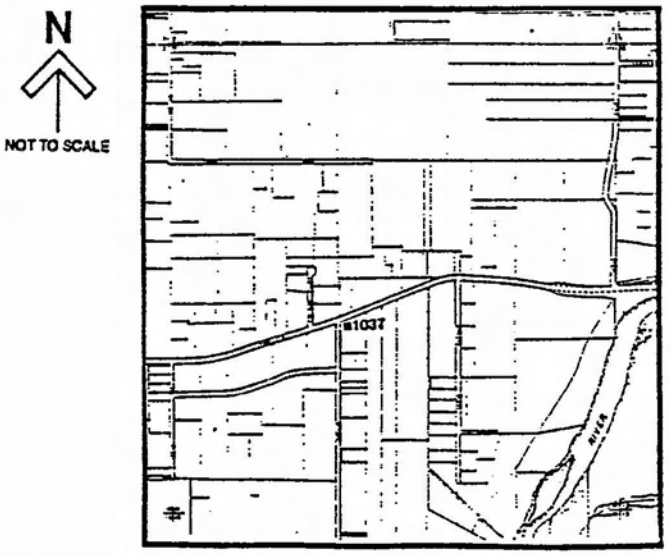
Clackamas County Cultural Resource Inventory, 1984.
Gazetteer and Business Directory for Oregon, Washington and Idaho, Polk & Co., 1907-08.
Haberlach, Anna, obit., Oregonian 3/29/71.
Ticor Title Company, Oregon City, OR.
U.S. Census, Clackamas County, 1860.

SHPO NO.: 1037

SITE PLAN AND VICINITY MAP

Address: 13002 S.E. Highway 212
Historic Name: **HABERLACH, FRANK, HOUSE AND SILVERTHREAD KRAUT AND PICKLE WORKS BUILDING**





SHPO NO.: 1037

Oregon
Theodore R. Kulongoski, Governor

Department of Transportation
Transportation Building
355 Capitol St. NE
Salem, Oregon 97301

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FILE CODE:

July 18, 2008

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JUL 2 1 2008
STATE HISTORIC
PRESERVATION OFFICE

Roger Roper
Deputy State Historic Preservation Officer
Assistant Director, Heritage Programs
Oregon State Historic Preservation Office
725 Summer Street NE, Suite C
Salem, OR 97301

Attn: Sarah Jalving

SHPO CASE# 08-1209

Subject: **Section 106 Coordination**
Sunrise Corridor, Interstate 205—Rock Creek Junction
Clackamas County, Oregon
ODOT Key No. 12454
Federal-Aid No. C005 (46) PN

Dear Mr. Roper,

Please find the enclosed Determination of Eligibility for the circa 1920 Frank A. Haberlach House and the Silverthread Kraut and Pickle Works, located at the southeast corner of Oregon 212/224 and SE 130th Avenue (formerly Haberlach Road). In 1984, and again in 1990, Clackamas County recorded the Frank A. Haberlach House and Silverthread Kraut and Pickle Works Building as a landmark historic property (SHPO No. 1037). The buildings are remnants of the Haberlach farm that operated from the early 1900s into the 1960s. They are significant for their associations with the Haberlach family. In addition, the pickle works is one of the few known agricultural processing plants to remain in Clackamas County. The two buildings continue to maintain integrity and are recommended to be eligible for listing in the National Register of Historic Places as a grouping.

Your prompt attention to this coordination request is appreciated. If you have any questions or need further information, please contact Robert W. Hadlow, in our Region 1 headquarters, at (503) 731-8239.

Sincerely,

James B. Norman
Environmental Planning Unit Manager

SHPO concurs with ODOT's D.O.E.

Oregon
Theodore R. Kulongoski, Governor

Department of Transportation
Transportation Building
355 Capitol St. NE
Salem, Oregon 97301

FILE CODE:

April 18, 2008

Roger Roper
Deputy State Historic Preservation Officer
Assistant Director, Heritage Programs
Oregon State Historic Preservation Office
725 Summer Street NE, Suite C
Salem, OR 97301

Attn: Sarah Jalving

Subject: **Section 106 Coordination**
Sunrise Corridor, Interstate 205—Rock Creek Junction
Clackamas County, Oregon
ODOT Key No. 12454
Federal-Aid No. C005(46)PN

Dear Mr. Roper,

Please find the enclosed Cultural Resources Technical Report for the Sunrise Corridor. We have included separate printed Section 106 documentation forms for six properties (see Appendix C) and findings of effect for two properties (see Appendix D) for signature. These documents are supplemental to work carried out several years ago during the original Sunrise Corridor environmental process. The proposed project will address congestion and safety problems in the five-mile-long Oregon 212/224 corridor between its interchange with Interstate 205 and Rock Creek Junction, and to serve the growing demand for regional travel and access to the state highway system.

Three of the six resources addressed in the documentation forms are recommended to be eligible for listing in the National Register of Historic Places. They are the Southern Pacific Railroad Willamette Valley Main Line, the Clackamas Elementary School, and the KEX Transmitter Facility. Section 106 Findings of Effect have been prepared for the railroad and the school. The finding for the KEX facility will be transmitted to you separately.

The Southern Pacific Railroad Willamette Valley Main Line is recommended eligible for listing in the NHPA under Criterion A as a historic linear district that draws its significance through its association with the development of railroads in Oregon and the Pacific Northwest. Contributing elements include the historical alignment of the railroad and its continued use as the primary rail line through the Willamette Valley.

The Clackamas Elementary School, located at 15301 SE 92nd Avenue in Clackamas, Oregon, is recommended eligible for listing in the NRHP under Criterion C as a relatively well-preserved, intact example of a late 1930s/1940s school building. A 1953/58 classroom annex and recreational fields associated with the school are not considered to be contributing features to the historic Clackamas Elementary School.

Two build alternatives and one design option will affect the rail line and the school. An application of the Criteria of Adverse Effect indicates findings of no adverse effect for this undertaking for both historic properties. In addition, ODOT believes that a Section 4(f) *De Minimis* Finding for impacts to the school is consistent with Section 6009(A) of SAFETEA-LU. The FHWA will consider the SHPO's concurrence with the Finding of Effect on the Mortuary in reaching its decision regarding the applicability of *de minimis* Section 4(f) on this project. Under this provision, a Section 4(f) avoidance alternative analysis is not required.

Your prompt attention to this coordination request is appreciated. If you have any questions regarding the use of *de minimis* Section 4(f) for the project area, or need further information, please contact Robert W. Hadlow, in our Region 1 headquarters, at (503) 731-8239, or Michelle Eraut, with FHWA, at (503) 587-4716.

Sincerely,

James B. Norman
Environmental Planning Unit Manager

Attachments:

Cultural Resources Report, Sunrise Corridor, Interstate 205—Rock Creek Junction, 2007

Copies to:

Robert W. Hadlow, Ph.D., ODOT Region 1 Interim Environmental Manager
Emily Moshofsky, ODOT Region 1 Environmental Project Manager
Michelle Eraut, FHWA—Oregon Division Environmental Program Manager
Key No. 12454, File Type E: Cultural Resources

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OREGON INVENTORY OF HISTORIC PROPERTIES

SECTION 106 DOCUMENTATION FORM

Individual Properties

Agency/Project: Clackamas County, ODOT/Sunrise Project: I-205 to Rock Creek Junction (Highway 212/224)	
Property Name: Southern Pacific Railroad Willamette Valley Main Line	
Street Address: Willsburg Junction (MP 765.2) to Eugene (MP 647.3)	City, County: Clackamas, Clackamas
USGS Quad Name: *Gladstone, Oregon* 7.5-minute	Township: 2 South Range: 2 East Section: 4,9
This property is part of a ☒District ☐Grouping/Ensemble (see instructions) Name of District or Grouping/Ensemble: Southern Pacific Railroad Willamette Valley Main Line Linear District	
Number and Type of Associated Resources in Grouping/Ensemble: Historic alignment	

Current Use: Railroad	Construction Date: 1868-1869
Architectural Classification / Resource Type: N/A/Linear district	Alterations & Dates: 1871
Window Type & Material: N/A	Exterior Surface Materials: Primary: rock ballast Secondary: steel tracks Decorative:
Roof Type & Material: N/A	
Condition: ☒Excellent ☐Good ☐Fair ☐Poor	Integrity: ☒Excellent ☐Good ☐Fair ☐Poor



Southern Pacific Railroad Willamette Valley Main Line Linear District viewed to the north from Highway 212/224 overpass.

Preliminary National Register Findings: ☐**National Register listed**

☒**Potentially Eligible:** ☐Individually ☒As part of District

☐**Not Eligible:** ☐In current state ☐Irretrievable integrity loss ☐Lacks Distinction ☐Not 50 Years

State Historic Preservation Office Comments:

☒**Concur** ☐**Do Not Concur:** ☐Potentially Eligible Individually ☐Potentially Eligible as part of District ☐Not Eligible

Signed Sarah Johnson Date 5/21/2008

Comments:

OREGON INVENTORY OF HISTORIC PROPERTIES
SECTION 106 DOCUMENTATION FORM
Individual Properties

Property Name: Southern Pacific Railroad Willamette Valley Main Line		
Street Address: Willsburg Junction (MP 765.2) to Eugene (MP 647.3)	City, County: Varies	
Architect, Builder or Designer (if known): Oregon Central Railroad Co.	Owner: ☒Private ☐Local Government ☐State ☐Federal ☐Other	

Description of Property (including exterior alterations & approximate dates), Significance Statement, and Sources. (Use continuation sheets if necessary):

Physical Description

The Southern Pacific (SP) Railroad Willamette Valley Main Line generally runs south from southeast Portland (Willsburg Juction [MP 765.2]) to Eugene (MP 647.3). Within the project area it approaches from the northwest, crosses beneath I-205, then extends south parallel to I-205, east of the highway in Clackamas, Oregon. The Willamette Valley line corridor essentially remains intact except for minor changes. The tracks have been upgraded over time and more recently are 136-pound steel (Austin and Dill 1987:69). There are three sets of main tracks on a flat bed of rock ballast. The former railroad stop at Clackamas was moved and later demolished. The immediate setting within the project area is mostly a mix of commercial and industrial uses.

Significance Statement

The Southern Pacific Railroad Willamette Valley Main Line is recommended to be eligible for listing in the National Register of Historic Places under Criterion A for its association with the economic development of the Willamette Valley, and as the first railroad to service the major cities of Portland, Oregon City, Salem, and Eugene. Expansion of the railroad to California and connections with eastern transcontinental lines ensured Oregon's place in the competitive economic marketplace.

The historic alignment of the 1869 railroad corridor remains intact. In the project area, the line has been upgraded with modern overpasses and other features, and the setting has changed from rural to industrial/suburban.

Historical Background

The SP Main line was established by the Oregon Central Railroad Company as one of the first rail lines built in Oregon. Construction began in 1868 with two competitive lines; one on the west side of the Willamette River by the Westside Company and another on the east side of the Willamette River by the Eastside Company. The eastside line, the subject of this form, began in southeast Portland and continued towards the Clackamas River and onward to Salem and Eugene. The project nearly collapsed until the work was taken on by businessman Ben Holladay. He rallied to gather cash and the support of the Oregon Legislature to make the project feasible, and competed against Joseph Gaston's westside line to win the land grant, which was necessary to operate the railroad legitimately. To succeed, Holladay had to complete the first twenty miles of his eastside line and be operational. Holladay accomplished this by completing the railroad to New Era, south of Oregon City, in 1869, despite losing the Clackamas River railroad bridge to flooding and having to replace it.

Holladay's claim to the Oregon Central Railroad Company was challenged in court, and so it was reorganized as the Oregon and California Railroad Company in 1870. This maneuver allowed him to clear his rights to the land grants. In that same year he had also taken over Gaston's Westside Railroad Company.

By 1871, Holladay's eastside railroad extended from Portland to Eugene, and by 1872 within 160 miles of the California border (Austin and Dill 1987:10-14). After Holladay's financial situation had deteriorated, Henry Villard took over the control of the Oregon and California Railroad Company and continued the line to Ashland near the California border in 1884. Southern Pacific acquired the railroad in 1887, since then continual improvements and upgrades to the line have been made (Austin and Dill 1987:15, 69).

Sources

Austin, Ed, and Tom Dill
1987 *The Southern Pacific in Oregon.* Pacific Fast Mail, Edmonds, Washington.

OREGON INVENTORY OF HISTORIC PROPERTIES

SECTION 106: FINDING OF EFFECT

Agency/Project: Clackamas County, Oregon Department of Transportation/ Sunrise Project: I-205 to Rock Creek Junction (Highway 212/224)	
Property Name: Southern Pacific Railroad Willamette Valley Main Line	
Street Address: N/A	City, County: Clackamas, Clackamas

Preliminary Finding of Effect:

☐ No Historic Properties Affected ☒ No Historic Properties Adversely Affected ☐ Historic Properties Adversely Affected

State Historic Preservation Office Comments:

☒ Concur ☐ Do Not Concur: ☐ No Historic Properties Affected ☐ No Historic Properties Adversely Affected ☐ Historic Properties Adversely Affected

Signed Sarah Jahnsen Date 5/21/2008

Comments:

Provide written description of the project, and its potential effects on the subject property per 36 CFR 800. Include maps, drawings, and photographs as necessary to effectively describe and discuss the project. Use continuation sheets as needed.

Introduction

This statement of finding addresses the effect of the proposed road improvements and new highway interchange between Highways 212/224 and I-205 (and associated access ramps, etc.) on the Southern Pacific Railroad Willamette Valley Main Line in the vicinity of Clackamas, Clackamas County (Figure 1 in Appendix A). The Southern Pacific Railroad Willamette Valley Main Line (Oregon & California Railroad, 1870) has been determined to be eligible for listing in the National Register of Historic Places (NRHP) by the Oregon Department of Transportation (ODOT), and concurrence by the Oregon State Historic Preservation Office (SHPO) is pending (refer to Section 106 Documentation Form in Appendix A).

It is the finding of ODOT that the project will have No Adverse Effect on the Southern Pacific Railroad Willamette Valley Main Line. This statement of finding is made pursuant to the requirements of the National Historic Preservation Act of 1966 (36CFR800), Executive Order 11593, and the National Environmental Policy Act.

Project Description

The proposed project is located in the western, urbanized portion of Clackamas County in the vicinity of State Highway 212/224 (see Figure 1, Project Vicinity, and Figure 2, Project Area). The project limits extend approximately 4.9 miles from SE Johnson Road to SE 172nd Avenue, just beyond Rock Creek Junction where Highways 212 and 224 diverge. The purpose of this project is to effectively address congestion and safety problems in the Highway 212/224 corridor between its interchange with Interstate 205 (I-205) and Rock Creek Junction, and to serve the growing demand for regional travel and access to the state highway system.

The proposed action will provide a new limited-access expressway between I-205 and the Rock Creek Junction. The facility would be comprised of six lanes, plus auxiliary lanes, and would include an improved interchange at I-205. This new expressway would become the designated State Highway 212/224, with the existing route reverting to a county arterial.

While no preferred alternative has yet been selected for this project, two Build Alternatives and one Design Option are proposed for the vicinity of the Southern Pacific Railroad Willamette Valley Main Line. The overall Sunrise Project: I-205 to Rock Creek Junction (Highway 212/224) is divided into four geographical zones. The zone in which the Southern Pacific Railroad Willamette Valley Main Line is found is Zone A, which is defined as the westernmost portion of the corridor and represents the I-205 Interchange Area and the Lawnfield Business Area, with a western terminus aligned with SE Johnson Road and an eastern terminus bisecting Camp Withycombe. The north and south boundaries extend from Clackamas Town Center to SE Jennifer Street.

Build Alternatives 2 and 3 are identical in the area of the Southern Pacific Railroad Willamette Valley Main Line. Both Build Alternatives include the construction of ten new overpasses and one expansion of an existing overpass carrying automobile traffic over the Southern Pacific Railroad Willamette Valley Main Line. These include (from south to north):

Agency/Project: Clackamas County, Oregon Department of Transportation/ Sunrise Project: I-205 to Rock Creek Junction (Highway 212/224)	
Property Name: Southern Pacific Railroad Willamette Valley Main Line	
Street Address: N/A	City, County: Clackamas, Clackamas

- Expansion of an existing overpass (built in 2004) carrying traffic east and west bound on the present Highway 212/224 over the Southern Pacific Railroad Willamette Valley Main Line;
- New two-lane overpass carrying traffic from southbound SE 82nd Avenue to the eastbound lanes of the proposed realignment of Highway 212/224 (this new overpass is the southernmost of two new overpasses on this proposed connector);
- New two-lane overpass carrying traffic from southbound I-205 to the eastbound lanes of the proposed realignment of Highway 212/224 (this new overpass is the southernmost of two new overpasses on this proposed connector);
- New six-lane overpass carrying traffic eastbound (3 lanes) and westbound (3 lanes) on the proposed realignment of Hwy 212/224;
- New one-lane overpass carrying traffic from the westbound realignment of Highway 212/224 to northbound SE 82nd Avenue;
- New one-lane overpass carrying traffic from the westbound realignment of Highway 212/224 to northbound I-205;
- New two-lane overpass carrying traffic from southbound I-205 to the eastbound lanes of the proposed realignment of Highway 212/224 (this new overpass is the northernmost of two new overpasses on this proposed connector);
- New one-lane overpass carrying traffic from southbound I-205 to the westbound realignment of Highway 212/224;
- New two-lane overpass connecting SE Ambler Road south of the Southern Pacific Railroad Willamette Valley Main Line with SE Ambler Road north of the Southern Pacific Railroad Willamette Valley Main Line, creating a connection between SE 84th Avenue and SE 82nd Drive (via SE Ambler Road);
- New three-lane (one northbound, one southbound, plus one northbound on-ramp lane) overpass carrying traffic from the westbound realignment of Highway 212/224 to northbound SE 82nd Avenue;
- New single-lane overpass carrying traffic from southbound SE 82nd Avenue to the eastbound realignment of Highway 212/224 (this new overpass is the northernmost of two new overpasses on this proposed connector).

Design Option A-2, if selected, will introduce one additional overpass, extending SE Tolbert Street to the east, and carrying eastbound and westbound local traffic over the Southern Pacific Railroad Willamette Valley Main Line. The east end of this proposed extension of SE Tolbert Street will connect to SE Industrial Way.

Description And Significance Of The Historic Property

The Southern Pacific Railroad Willamette Valley Main Line is a standard-gauge railroad extending along the east side of the Willamette River from Portland, south through Clackamas, Oregon City, Woodburn, Salem, and Albany before crossing to the west side of the Willamette River between Harrisburg and Junction City, then continuing on south to Eugene, Cottage Grove, Roseburg, Grants Pass, Medford, and Ashland, and California.

The Southern Pacific Railroad Willamette Valley Main Line, established by the Oregon Central Railroad Company, was one of the first railroads built in Oregon and became one of the first two main lines of the Southern Pacific Railroad. The two lines began construction in 1868; one on the west side of the Willamette River, the Westside Company, and another on the east side of the Willamette River, the Eastside Company. The eastside line began in southeast Portland and was to continue towards the Clackamas River and onward to Salem and Eugene. The project nearly collapsed until the work was taken over by businessman Ben Holladay. He rallied to gather cash and the support of the Oregon Legislature to make the project work while he competed against Joseph Gaston's west side line to win the land grant, which was necessary to operate the railroad legitimately. To succeed, Holladay had to complete the first twenty miles of line and be operational.

Agency/Project: Clackamas County, Oregon Department of Transportation/ Sunrise Project: I-205 to Rock Creek Junction (Highway 212/224)	
Property Name: Southern Pacific Railroad Willamette Valley Main Line	
Street Address: N/A	City, County: Clackamas, Clackamas

Holladay succeeded by completing the railroad to New Era (south of Oregon City) in 1869, despite losing the Clackamas River railroad bridge to flooding and having to replace it. Gaston and Holladay continued to compete for land rights for other segments of rail line through Oregon. Holladay's claim to the Oregon Central Railroad Company was challenged in court, and so it was reorganized as the Oregon and California Railroad Company in 1870. This maneuver allowed Holladay to clear his rights to the land grants and in that same year, he took control of Gaston's Westside Railroad. By 1871, the railroad extended from Portland to Eugene, and by 1872 within 160 miles of the California border (Austin and Dill 1987:10-14).

Holladay's financial situation had deteriorated, and Henry Villard took over the control of the Oregon and California Company, continuing the line to California in 1884 and expanding the railroad throughout Oregon. Villard's connections to the Oregon and California Railroad Company ended in 1884, and the Southern Pacific acquired the railroad in 1887 (Austin and Dill 1987:15). In 1996, Southern Pacific merged with Union Pacific Railroad under the UP name, and that company continues to operate this active line today (Union Pacific 2004).

The Southern Pacific Railroad Willamette Valley Main Line is eligible for listing in the National Register of Historic Places (NRHP) under Criterion A through its association with the historical development of railroads in Oregon and the subsequent economic development of the state. This railroad alignment represents a portion of the first railroad built in the State of Oregon, the Oregon & California Railroad (1870), which ran along the east side of the Willamette River from Portland to northern California. It continues to follow its original alignment through this portion of the Willamette Valley.

Avoidance Alternatives Considered

The Southern Pacific Railroad Willamette Valley Main Line has been determined eligible for listing in the NRHP (Appendix A). To meet all the project objectives, two Build Alternatives, one Design Option, and a No-Build Alternative are being considered. None have yet been selected as the preferred alternative. Both build alternatives would include an improved interchange at I-205 and a folded diamond interchange at Rock Creek Junction. The alignment of the facility would generally follow a natural bluff-line. Associated improvements to address local circulation are also included.

Build Alternative 2: Build with Midpoint Interchange
This alternative is distinguished by the inclusion of a midpoint interchange in the vicinity of SE 122nd Avenue, which would connect the expressway to the existing Highway 212/224. Implementation of Build Alternative 2 would result in the introduction of eleven new vehicular overpasses spanning the Southern Pacific Railroad Willamette Valley Main Line. In terms of effects to the historic resource, Build Alternative 2 is identical to Build Alternative 3.

Build Alternative 3: Build with No Midpoint Interchange
In contrast to Alternative 2, this alternative would not have a midpoint interchange, resulting in no access to the expressway between I-205 and Rock Creek Junction. Implementation of Build Alternative 3 would result in the introduction of eleven new vehicular overpasses spanning the Southern Pacific Railroad Willamette Valley Main Line. In terms of effects to the historic resource, Build Alternative 3 is identical to Build Alternative 2.

Design Option A-2: Modified 1996 Design
This Design Option A-2 is identical to Build Alternatives 2 and 3, except that it provides for the extension of SE Tolbert Street to the east, connecting to SE Industrial Way. This provision would include the construction of one additional overpass (for a total of twelve).

No-Build Alternative
The National Environmental Policy Act (NEPA), ODOT, and Federal Highway Administration (FHWA) guidelines require that a no-build option be evaluated as an alternative. The no-build alternative would maintain the existing roadway except for committed improvements scheduled in ODOT's six-year Statewide Transportation Improvement Program (STIP) and Metro's Financially Constrained Projects listed in the Regional Transportation Plan (RTP). These listed projects include widening SE 82nd Drive (Lawnfield Road to Highway 212/224), extension of the climbing lane on Highway 212 (Rock Creek Junction to SE 172nd Avenue), and widening SE 172nd Avenue (Foster Road to Highway 212). None of these planned improvements would affect the historic resource Southern Pacific Railroad Willamette Valley Main Line.

Evaluation Of Effects

An application of the criteria of effect indicates a finding of No Adverse Effect on the integrity of the Southern Pacific Railroad Willamette Valley Main Line. The Southern Pacific Railroad Willamette Valley Line in the vicinity of the project area draws its historical significance from the continued use of the original alignment for rail transportation, and the project will not affect the

Agency/Project: Clackamas County, Oregon Department of Transportation/ Sunrise Project: I-205 to Rock Creek Junction (Highway 212/224)	
Property Name: Southern Pacific Railroad Willamette Valley Main Line	
Street Address: N/A	City, County: Clackamas, Clackamas

ability of the railroad to continue to do so. Although the setting of the railroad will be impacted through the implementation of any of the proposed Build Alternatives or the Design Option, the setting around the resource in this area has already been heavily compromised through the development of I-205 in the mid-1960s, and the introduction of four overpasses currently carrying traffic over the railroad within the project area. This part of Clackamas continues to be developed for industrial and commercial use, further compromising the historic setting of the railroad in this area.

Conclusion

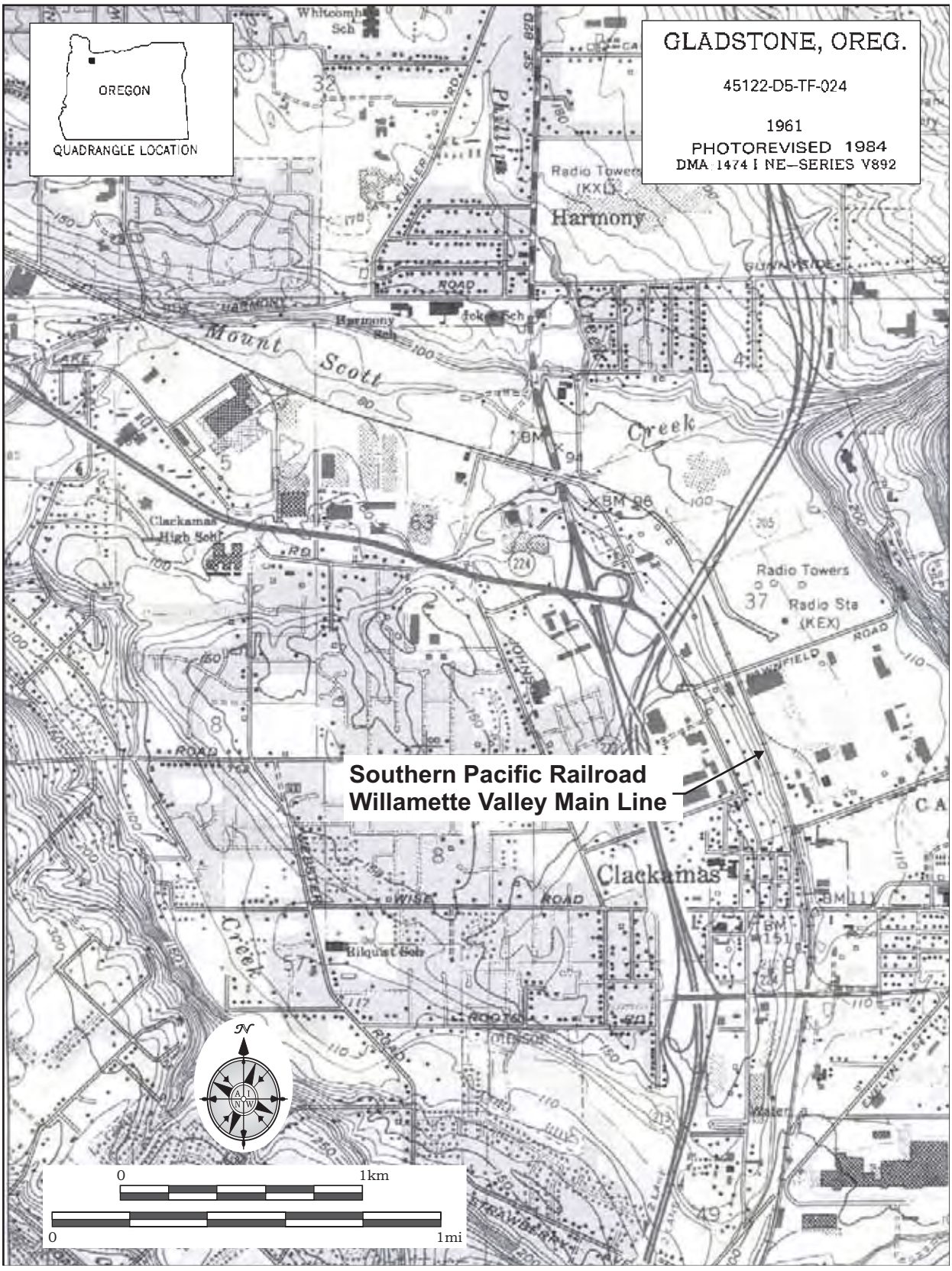
It is the determination of ODOT that the project would not adversely affect the Southern Pacific Railroad Willamette Valley Line, an historic linear resource determined eligible for listing in the NRHP in 2006. An application of the Criteria of Effect results in a finding of "No Historic Properties Adversely Affected."

Sources

Austin, Ed, and Tom Dill
1987 *The Southern Pacific in Oregon.* Pacific Fast Mail, Edmonds, Washington.

Union Pacific Railroad Company
2004 *Union Pacific Railroad Chronological History.* Electronic document, http://www.uprr.com/aboutup/history/uprr-chr.shtml, accessed November 26, 2004.


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Southern Pacific Railroad
Willamette Valley Main Line
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OREGON INVENTORY OF HISTORIC PROPERTIES

SECTION 106 DOCUMENTATION FORM

Individual Properties

Agency/Project: Clackamas County, ODOT/Sunrise Project: I-205 to Rock Creek Junction (Highway 212/224)		
Property Name: KEX Transmitter Facility		
Street Address: 9415 SE Lawnfield Road	City, County: Clackamas, Clackamas	
USGS Quad Name: *Gladstone, Oregon* 7.5-minute	Township: 2S Range: 2E Section: 4	
This property is part of a ☐District ☒Grouping/Ensemble (see instructions) Name of District or Grouping/Ensemble: KEX Radio Transmitter Facility		
Number and Type of Associated Resources in Grouping/Ensemble: One transmitter building, 3 transmission towers, 3 equipment sheds		

Current Use: Radio Transmitter Facility	Construction Date: 1947
Architectural Classification / Resource Type: Moderne/Building, Structures	Alterations & Dates: New interior transmitter - 1992
Window Type & Material: Multi-light, steel	Exterior Surface Materials: Primary: Concrete Secondary: Decorative:
Roof Type & Material: Flat with eaves, unknown material	
Condition: ☐Excellent ☒Good ☐Fair ☐Poor	Integrity: ☐Excellent ☒Good ☐Fair ☐Poor



KEX Transmitter Building, south elevation. The view is to the north.

Preliminary National Register Findings: ☐**National Register listed**

☒**Potentially Eligible:** ☒Individually ☐As part of District

☐**Not Eligible:** ☐In current state ☐Irretrievable integrity loss ☐Lacks Distinction ☐Not 50 Years

State Historic Preservation Office Comments:

☒**Concur** ☐**Do Not Concur:** ☐Potentially Eligible Individually ☐Potentially Eligible as part of District ☐Not Eligible

Signed [signature] Date 5/21/2008

Comments:

Attachments:

Determination of Eligibility for the Haberlach House and the Silverthread Kraut and Pickle Works

Copies to:

Robert W. Hadlow, Ph.D., ODOT Region 1 Interim Environmental Manager
Emily Moshofsky, ODOT Region 1 Environmental Project Manager
Michelle Eraut, FHWA—Oregon Division Environmental Program Manager
Key No. 12454, File Type E: Cultural Resources

Property Name: KEX Transmitter Facility		
Street Address: 9415 SE Lawnfield Road		City, County: Clackamas, Clackamas
Architect, Builder or Designer (if known):	Owner: ☒Private ☐Local Government ☐State ☐Federal ☐Other	

Description of Property (including exterior alterations & approximate dates), Significance Statement, and Sources. (Use continuation sheets if necessary):

Physical Description

The KEX Radio Transmitter Facility is located at 9415 SE Lawnfield Road in Clackamas, Oregon east of the Southern Pacific Railroad right-of-way and southeast of Interstate 205. The facility is located in an open, grassy bottomland at the west foot of Mount Talbert. The generally vicinity is lightly populated with mixed commercial and industrial uses.

The KEX transmitter building is low in profile, and essentially square in plan. It was designed in the Streamlined-Moderne style which emphasized low profiles, flat roofs, minimalist detailing (usually in relief), stream-lined motifs, and smooth exterior surfaces. The body of the building is sheltered by a low-pitched shed roof with shallow overhanging eaves. A pent roof abuts the upper façade wall, which breaks the wall into two horizontal elements. The pent roof shelters a small segment of the main mass. Scoring on the smooth-surfaced masonry walls between the vertical multi-light steel sashes create a horizontal band which wraps around the east and south elevations (which are visible from the street). The west elevation makes use of glass block in the windows, also a common feature of this style of architecture. The horizontal band is contrasted with the entry, which forms a square made up of double doors and a glass-block side light. Three small square lights are stacked vertically on each double door. Signage consists of the original block letters “KEX” placed above the entry along the setback upper wall. The building’s exterior retains historic integrity as does its immediate setting, consisting of open grassy fields.

Three radio towers are spaced in a line approximately 151.5 meters (m) (500 feet [ft]) north of the transmitter building. The radio towers, installed in 1947, are the original the Blaw-Knox Vertical Radiator towers. The steel lattice towers are four-legged square radiators that are secured by guy wires attached at the mast midpoint and anchored to the ground. This center-guyed tower style is fairly rare; there are no others known to be in use in the Portland area (Nielsen 2006). The steel lattice towers connect to concrete bases by means of pivot attachments, and each is electrically insulated from the ground (Hairston 2006). Tuning houses (equipment sheds) are found at the base of each tower to monitor the tower’s operation. The underground copper grid, essential for AM ground radio-wave conductivity, remains in place beneath the surface of the property.

Significance Statement

The KEX transmitter building and tower ensemble is recommended to be eligible for listing in the National Register of Historic Places under Criterion C, for having distinctive characteristics of a type of architectural technology. The ensemble is an intact AM radio transmitting facility which includes a radio transmitter building and three radio towers (each with a small equipment shed at its base). The KEX transmitter building and tower ensemble retain their historic integrity and setting. The facility remains in use by the original radio station for which it was built in 1947. The current KEX radio transmitting facility is the third transmitting site used by KEX. The first KEX transmitter building is no longer extant. KEX next shared the older KGW radio transmitter building (1931), which was recently demolished, as were its associated vertical radiator towers.

The 1947 KEX transmitter building is one of the oldest, intact Moderne style transmitter buildings in the state. The ensemble retains the original Blaw-Knox vertical radiator towers, also built in 1947. The three towers are examples of the center-guyed style radiator, rare in the Portland area and possibly in the Pacific Northwest (Neilson 2006). The towers are intact and are significant as rare examples of the center-guyed tower. In addition, the underground copper grid, required for AM transmission, remains in place, and is a contributing element. As an intact ensemble, the KEX facility is an excellent example of AM radio transmission technology.

Historical Background

Broadcast radio technology began in the late nineteenth century, but public radio broadcasting did not begin in earnest until after World War I, when a ban on amateur broadcasts was lifted. The first licensed public broadcasting station was KDKA in Pennsylvania in 1920. By the end of 1922, there were 500 to 600 licensed stations in the United States. This was the year of the “great radio boom” (Douglas 1987:69), when KGW in Portland began broadcasting as the twelfth licensed station on the west coast (Chapman, Ellis, and Evans-Hatch 1998:1-3).

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Most of the early stations were run by newspapers, department stores, colleges and municipalities. Broadcasts were made from homes, schools or stores. The transmission equipment and antennas were typically in or near the broadcast station. Some of the stations began building separate transmission buildings and antennas between the 1920s and 1940s (Chapman, Ellis, and Evans-Hatch 1998:1-3).

KEX radio station entered into the broadcasting world before radio broadcasting's "Golden Age" (generally between 1930 and 1950). It was established in 1926 by the Western Broadcasting Company, which was owned by Vincent I. Kraft's Northwest Radio Supply Company in Seattle. The station went on-air in late December, 1926, operating on 670 kiloHertz wavelength with 2,500 watts of broadcasting power. Initially, the radio station was located in downtown Portland at the Terminal Sales Building and the transmitter was positioned fives miles east on NE Glisan St. and 122nd Avenue. The brick transmitter building (no longer standing) was probably the first building in Portland specifically constructed for a large radio transmitter (Chapman, Ellis and Evans-Hatch 1998:17). Although the station was authorized to operate, it had not yet obtained a license because new radio laws were pending regarding the government's control of radio broadcasting. Due to this gap in government authority, the station was able to pick the optimal wave-length location at 670 kiloHertz. The station operated only several hours a day, and was unable to sell commercial time. Other difficulties centered on complaints that the station's broadcasts interfered with other station's broadcast frequencies and the station was suspected of using more power than it was authorized to use. The KEX frequency was changed many times in the next several years (Patillo 1994:1-4).

Probably the most prominent and nationally recognized KEX radio personality was Mel Blanc. He and his wife Estelle produced a popular radio program on KEX between 1933 and 1935 called "Cobwebs and Nuts." Because of a limited program budget, Blanc performed most of the characters on the show. He later credited the program for bolstering his repertoire of voices and characters. Blanc moved to Hollywood in 1935 and eventually achieved fame as the "man of a thousand voices" in radio and television broadcasting, and cartoons (Los Angeles Times 1989).

As the radio industry expanded and evolved, KEX station ownership, its broadcast frequency, and affiliations changed. The Oregonian Publishing Company acquired the station in 1933 as a sister station to their KGW radio station. As a part of the acquisition, KEX radio station was moved to the Oregonian Building, and the radio transmitter was moved to the North Portland transmitter station site used by KGW (recently demolished). The radio's transmission frequency was changed to 1190 kiloHertz due to frequency relocations resulting from the 1941 North American Radio Broadcasting Agreement (NARBA) treaty (Patillo 1994:1-4).

Oregonian Publishing Company sold KEX to Westinghouse Radio Stations, Inc. in 1944 and plans were started to build a new transmitting facility. A 46-acre parcel was purchased in Clackamas, Oregon in 1944, located on flat, wet ground to facilitate conductivity for the underground copper grid required for AM transmission. The intent was to convert the 5,000-watt station into a 50,000-watt, full-time directional broadcasting operation. Westinghouse had the building constructed in 1947, and all new Westinghouse equipment was installed including a Westinghouse (type 50-HG) transmitter. The original transmitter was replaced by a Harris DX 50 transmitter in 1992 (Weiss 2006).

To operate at the higher power, three Blaw-Knox 455 foot guy-wired towers were erected. Blaw-Knox towers such as the ones at the KEX transmitting facility were designed and fabricated by the Blaw-Knox company based in Pittsburgh, Pennsylvania. The Blaw-Knox company introduced towers to the market in 1927 and many were installed in the 1930s as the radio broadcasting industry expanded. The KEX towers are Blaw-Knox Vertical Radiators and they were erected by Tower Sales and Erecting Company of Portland, Oregon (Patillo 1-4:1994; Wikipedia 2006: Neilson 2006).

KEX continues to generate in the Clackamas location, using the original building and radiator towers. KEX is the only station in the Portland area that operates at 50,000 watts during the day and night, which categorizes it as a Class A radio station. The center tower functions 50,000 watts during the day, and all three are used at night. KPOJ also uses the towers; the end towers operate at 25,000 watts during the day and the center and east towers transmit KPOJ broadcasts during the night (Nielsen 2006).

Sources

Chapman, Judith S., David V. Ellis, and Gail Evans-Hatch
1998 *Cultural Resources Investigations for A Proposed New Multnomah County Correctional Facility, Portland, Oregon*. Archaeological Investigations Northwest, Inc. Report No. 155. Prepared for Adolfson Associates, Inc. and Multnomah County, Portland, Oregon.
1999

Property Name: KEX Transmitter Facility	
Street Address: 9415 SE Lawnfield Road	City, County: Clackamas, Clackamas

Sources, continued

Douglas, George H.
1987 *The Early Days of Radio Broadcasting*. McFarland & Company, Jefferson, North Carolina, and London.

Hairston, W. Watt
2006 *Blaw-Knox Diamond Radio Towers.* Electronic document. Available, http://hawkins.pair.com/blaw-know.html, accessed October 31, 2006.

Los Angeles Times [Los Angeles, California]
1989 Mel Blanc Obituary. 11 July. Los Angeles, California.

Patillo, Craig
1994 *History of Portland Radio Stations*. Ms. on file, Multnomah County Library, Portland, Oregon.

Wikipedia
2006 *Blaw-Knox tower*. Electronic document. Available, http://en.wikipedia.org/wiki/Blaw_Knox_Tower, accessed October 31, 2006.

Property Name: KEX Transmitter Facility	
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View: Transmitter Building (1947), south (left) and east (right) elevations. The view is to the northwest.

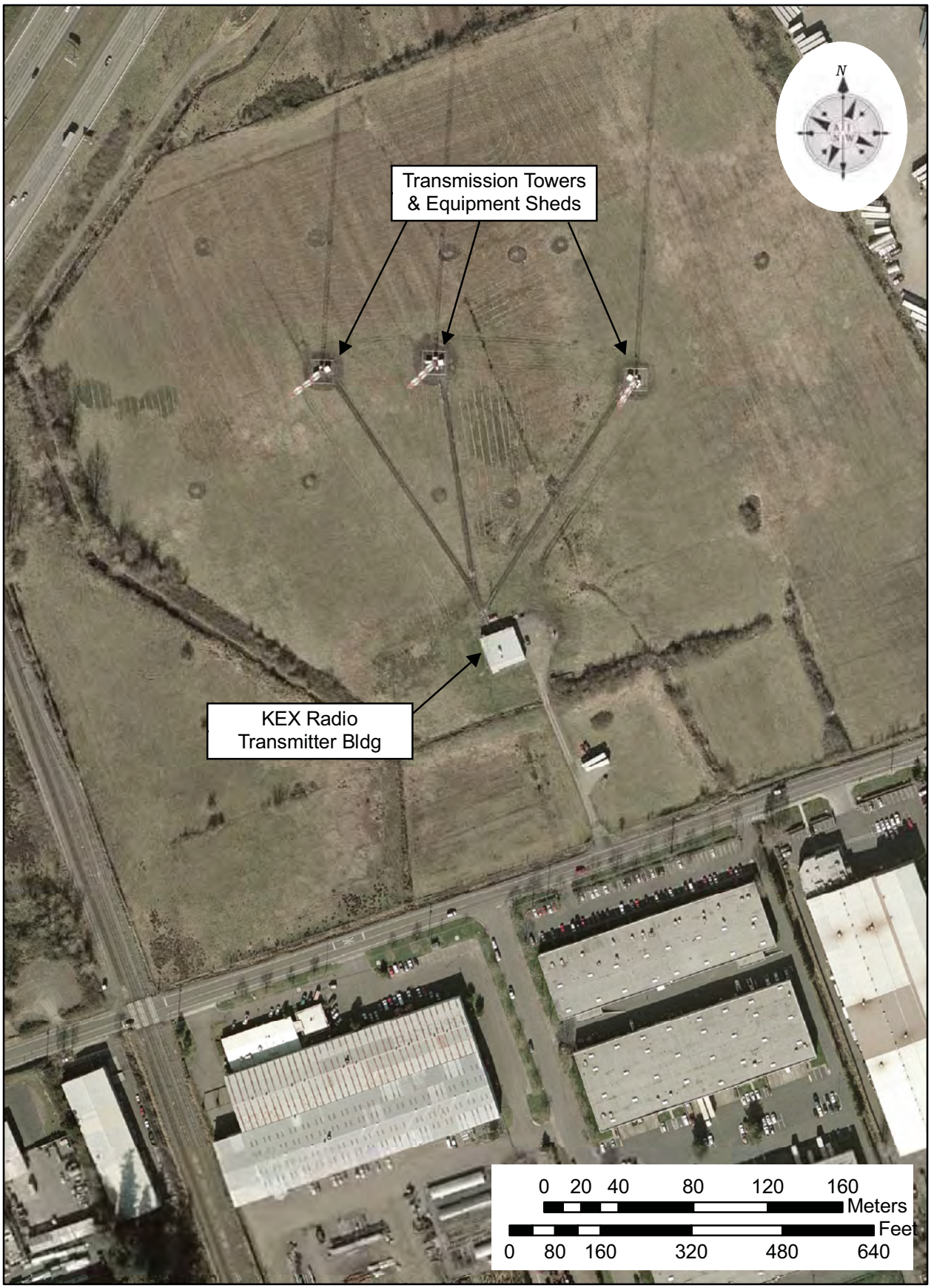


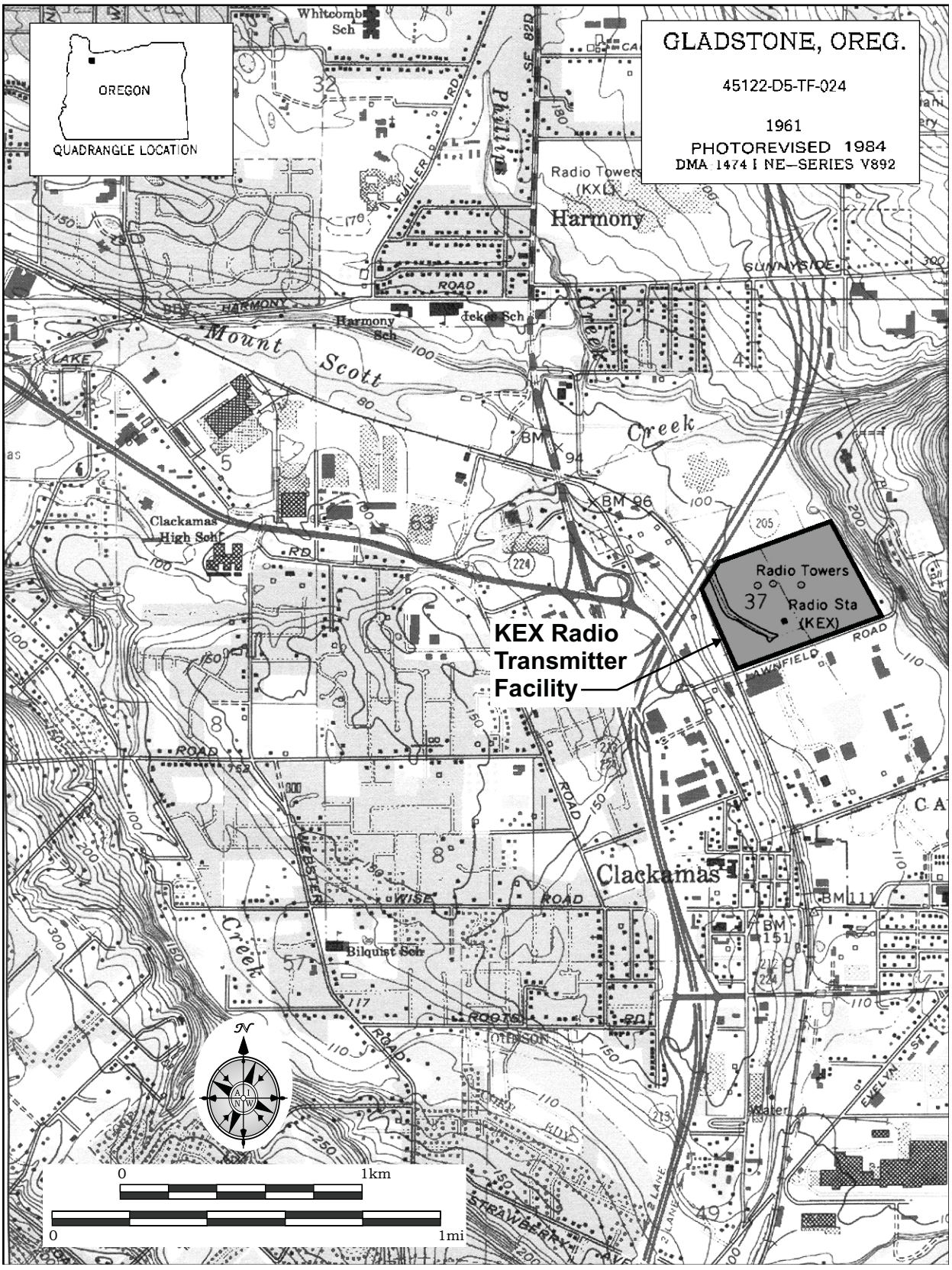
View: Three KEX Blaw-Knox vertical radiator towers (1947), view to the northwest.

Property Name: KEX Transmitter Facility	
Street Address: 9415 SE Lawnfield Road	City, County: Clackamas, Clackamas



View: Equipment sheds at bases of transmission towers. The view is to the northwest.


N
Transmission Towers
& Equipment Sheds
KEX Radio
Transmitter Bldg
0 20 40 80 120 160
Meters
Feet
0 80 160 320 480 640


GLADSTONE, OREG.
45122-D5-TF-024
1961
PHOTOREVISED 1984
DMA 1474 I NE—SERIES V892
OREGON
QUADRANGLE LOCATION
KEX Radio Transmitter Facility
Radio Towers
Radio Sta (KEX)
Harmony
Clackamas
Mount Scott
Phillips Creek
Mt Scott Creek
Clackamas High Sch
Harmony Sch
Bilquist Sch
Whitcomb Sch
Jefferson
Water A
0
1km
0
1mi

OREGON INVENTORY OF HISTORIC PROPERTIES

SECTION 106 DOCUMENTATION FORM

Individual Properties

Agency/Project: Clackamas County, ODOT/Sunrise Project: I-205 to Rock Creek Junction (Highway 212/224)	
Property Name: Dryden's Super Service Texaco Station	
Street Address: 13565 SE Highway 212	City, County: Clackamas, Clackamas
USGS Quad Name: *Gladstone, Oregon* 7.5-minute	Township: 2 South Range: 2 East Section: 11
This property is part of a ☐District ☐Grouping/Ensemble (see instructions) Name of District or Grouping/Ensemble: N/A	
Number and Type of Associated Resources in Grouping/Ensemble: N/A	

Current Use: Storage	Construction Date: Ca. 1955
Architectural Classification / Resource Type: Moderne/Building	Alterations & Dates: Moved 1969 - 1979
Window Type & Material: Multi-light sash/wood	Exterior Surface Materials: Primary: enameled steel Secondary: Decorative:
Roof Type & Material: Flat with parapet/unknown	
Condition: ☐Excellent ☒Good ☐Fair ☐Poor	Integrity: ☐Excellent ☒Good ☐Fair ☐Poor



Dryden's Super Service Texaco Station, south façade, 2006. The view is to the north.

Preliminary National Register Findings: ☐**National Register listed**

☐**Potentially Eligible:** ☐Individually ☐As part of District

☒**Not Eligible:** ☐In current state ☒Irretrievable integrity loss ☐Lacks Distinction ☐Not 50 Years

State Historic Preservation Office Comments:

☒**Concur** ☐**Do Not Concur:** ☐Potentially Eligible Individually ☐Potentially Eligible as part of District ☐Not Eligible

Signed Sarah Johnson Date 5/21/2008

Comments:

Property Name: Dryden's Super Service Texaco Station		
Street Address: 13565 SE Highway 212	City, County: Clackamas, Clackamas	
Architect, Builder or Designer (if known): Unknown	Owner: ☒Private ☐Local Government ☐State ☐Federal ☐Other	

Description of Property (including exterior alterations & approximate dates), Significance Statement, and Sources. (Use continuation sheets if necessary):

Physical Description

Dryden's Super Service Texaco Station (circa 1955) is located east of Clackamas, Oregon and north of Highway 212 near a 1920s bungalow residence. The station was moved to this location sometime in the 1970s and was discontinued in use as a filling station. The station is shaded by mature deciduous trees, and is east of a modern industrial business building, situated on a fenced lot that is currently used for vehicle storage. The station is hidden from the street by surrounding buildings, trees, and parked vehicles.

The one-story, concrete building is clad with white enameled steel and has a flat roof and parapet. Outstanding features (typical to Texaco service stations) include the smooth-surfaced white exterior walls, green stripes creating a horizontal band along the parapet, and red stars spaced above the green striped band. The office space is lit by the original picture window panes, which appear intact. The service garage space, contained within the building's east half has a double-bay opening with vertical panel sliding steel doors, each lit by a single-pane, fixed window. The overall exterior of the building remains intact and is in good condition. Street signage is no longer present, and the service canopy (if one existed) has been removed.

Significance Statement

Dryden's Super Service Texaco Station, moved to its present location in the 1970s, is recommended to be not eligible for listing in the National Register of Historic Places. The setting has been impacted by a modern commercial/industrial building on the west, a vehicle storage canopy on the north, and the current use of the station's parcel as a vehicular storage yard. The service station building retains historic integrity and represents the new type of streamlined-box gasoline station architecture that was introduced after World War II. Texaco used standardized corporate designs in a Moderne style with horizontal forms, smooth surfaces, and spare ornamentation, except for the Texaco corporate-identity graphic elements such as the green horizontal bands and reds stars.

Historical Background

Limited information was discovered about the Dryden Super Service Texaco Station. Older aerial photographs show that the service station was not at the current location in 1969. Since it appears on the next available aerial map from 1979, it is apparent that the building was moved sometime between these years (United States Army Corps of Engineers 1969, 1979). The former location and history of the Texaco Station were not uncovered during the historical research process.

The first filling station in the United States began when a Seattle Standard Oil Co. sales manager assembled a gas pump using a water heater on a platform, a garden hose, and a glass gauge. At that time motorists had to seek out gas and oil in grocery stores, livery stables or blacksmith shops (Chevron 2000-2005).

Texas Oil Company's (Texaco) first gas station was established in Brooklyn, New York in 1911. Initially municipalities resisted the idea of gas stations because of the fire hazard and their potential unsightliness. The public was soon swayed by their convenience and the gas stations multiplied quickly. "Service stations" were born with the addition of free air and water. Other services were added to attract customers such as clean restrooms, drinking fountains, oil checks, and windshield washing (Chevron 2000-2005b; Chevron 2000-2005).

Filling station designs took on many forms especially in the teens and twenties; the styles were individualized based on the region, prevailing styles, or the owner's sense of humor. During the Depression the gas companies sought ways to draw customers to their company stations, and began offering more standardized station designs with a pleasing look and more services. It was at this time that Texaco hired Walter Dorwin Teague, today known as a noted industrial designer and one of the fathers of the industrial design industry, to infuse Texaco gas stations with a new look. His designs incorporated elements of the Streamlined-Moderne style, which he also masterfully incorporated into many of his product designs such as airplanes for Boeing, appliances and cameras (Chevron 2000-2005; Chevron 2006). Texaco's filling station designs incorporated smooth, white surfaced walls of porcelain-enameled metal panels or masonry, green stripes forming a horizontal band at the cornice, red stars spaced above the band, and starting in the 1950s, flood lighting (Chevron 2006).

Property Name: Dryden's Super Service Texaco Station	
Street Address: 13565 SE Highway 212	City, County: Clackamas, Clackamas

Sources

Chevron
2000-2005a The History of Chevron – Service Stations. Electronic document, http://www.chevron.com/products/learning_center/history/topic/service_stations/, accessed November 8, 2006.
2000-2005b Texaco, Facts and Figures. Electronic document, http://www.texaco.com/about/facts_figures.asp, accessed November 8, 2006.
2006 CALTEX, History, Service Stations. Electronic document, http://www.caltex.com/corp/en/HistoryServiceStations.asp, accessed November 8, 2006.

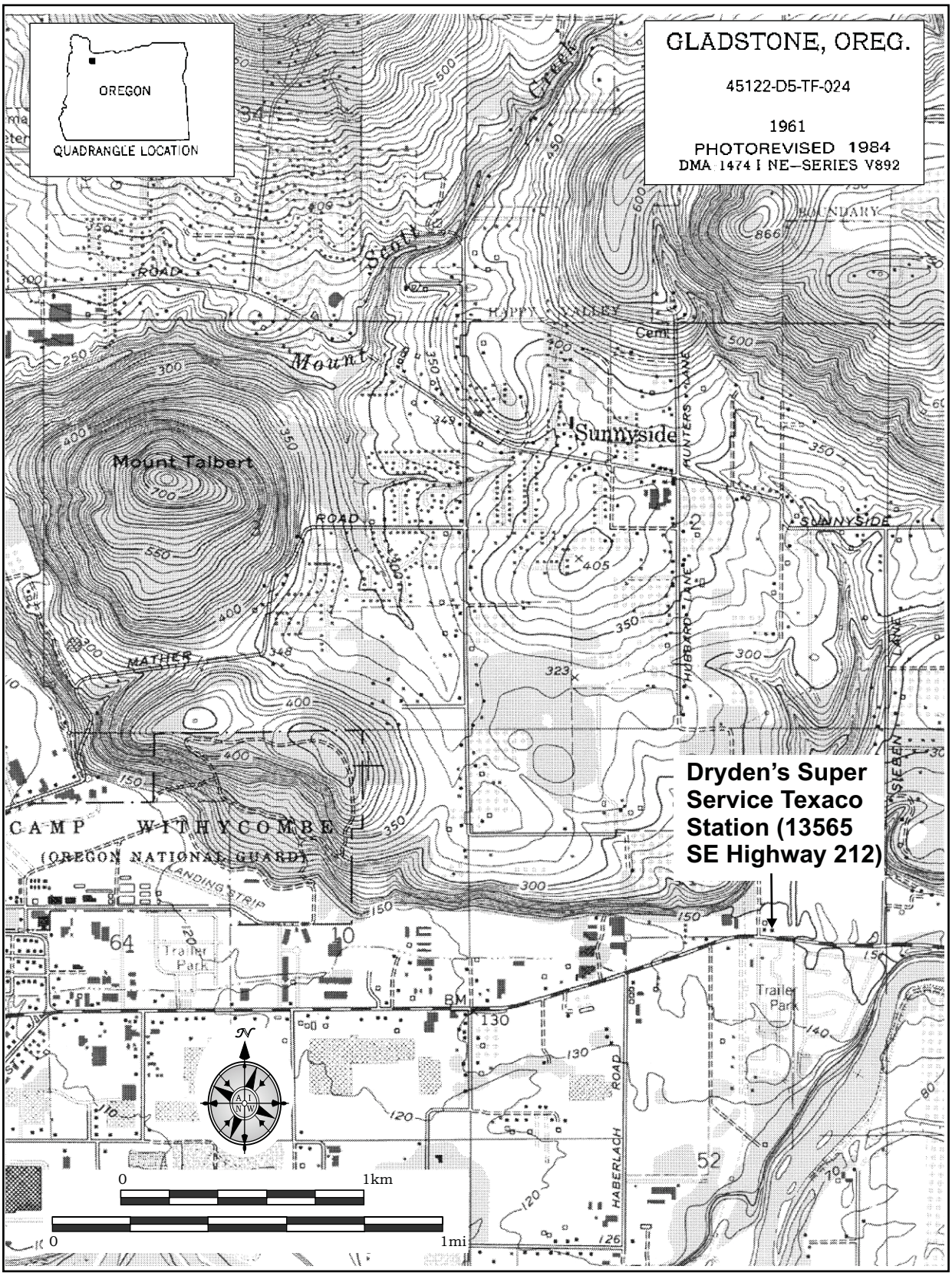
United States Army Corps of Engineers [USACE]
1969 Aerial Photograph No. 69 – 173, Clackamas County, February 18, 1969. On file, U.S. Army Corps of Engineers, Portland District, Portland, Oregon.
1979 Aerial Photograph No. 79 – 1674, Clackamas County, September 11, 1979. On file, U.S. Army Corps of Engineers, Portland District, Portland, Oregon.

Property Name: Dryden's Super Service Texaco Station	
Street Address: 13565 SE Highway 212	City, County: Clackamas, Clackamas



View: Dryden's Super Service Texaco Station's southeast corner. The view is to the northwest.


N
Dryden's Super Service Texaco Station (13565 SE Highway 212)
Hubbard Lane
Highway 212
0
100 ft
0
25 m


GLADSTONE, OREG.
45122-D5-TF-024
1961
PHOTOREVISED 1984
DMA 1474 I NE—SERIES V892
OREGON
QUADRANGLE LOCATION
Mount Talbert
Sunnyside
CAMP WITHYCOMBE
(OREGON NATIONAL GUARD)
Dryden's Super Service Texaco Station (13565 SE Highway 212)
Trailer Park
Trailer Park
HABERLACH ROAD
HUBBARD LANE
HUNTERS LANE
SUNNYSIDE
MATHES
ROAD
0 1km
0 1mi

OREGON INVENTORY OF HISTORIC PROPERTIES

SECTION 106 DOCUMENTATION FORM

Individual Properties

Agency/Project: Clackamas County, ODOT/Sunrise Project: I-205 to Rock Creek Junction (Highway 212/224)	
Property Name: Svendsen-Brown-Robbins Farmstead	
Street Address: 16409 SE Highway 212	City, County: Clackamas, Clackamas
USGS Quad Name: *Damascus, Oreg.* 7.5-minute	Township: 2 South Range: 3 East Section: 7
This property is part of a ☐District ☒Grouping/Ensemble (see instructions) Name of District or Grouping/Ensemble: Svendsen-Brown-Robbins Farmstead	
Number and Type of Associated Resources in Grouping/Ensemble: 1 residence; 11 agricultural buildings	

Current Use: Residence	Construction Date: Ca. 1910
Architectural Classification / Resource Type: Vernacular/building	Alterations & Dates: Porch alterations, ca. 1930s-1950s
Window Type & Material: 1-over-1 sashes/wood	Exterior Surface Materials: Primary: Wood drop siding Secondary: Wood shingles Decorative:
Roof Type & Material: Side gable/asphalt composition	
Condition: ☐Excellent ☐Good ☒Fair ☐Poor	Integrity: ☐Excellent ☐Good ☒Fair ☐Poor



Svendsen-Brown-Robbins farmhouse. The view is to the north.

Preliminary National Register Findings: ☐**National Register listed**

☐**Potentially Eligible:** ☐Individually ☐As part of District

☒**Not Eligible:** ☐In current state ☒Irretrievable integrity loss ☒Lacks Distinction ☐Not 50 Years

State Historic Preservation Office Comments:

☒**Concur** ☐**Do Not Concur:** ☐Potentially Eligible Individually ☐Potentially Eligible as part of District ☐Not Eligible

Signed Sarah Jahnig Date 5/21/2008

Comments:

Property Name: Svendsen-Brown-Robbins Farmstead	
Street Address: 16409 SE Highway 212	City, County: Clackamas, Clackamas
Architect, Builder or Designer (if known): Unknown	Owner: ☒Private ☐Local Government ☐State ☐Federal ☐Other

Description of Property (including exterior alterations & approximate dates), Significance Statement, and Sources. (Use continuation sheets if necessary):

Physical Description

The Svendsen-Brown-Robbins farmstead is on approximately 20 acres of agricultural land located two miles north of Carver, Oregon and north of Highway 212 in Clackamas County. The Svendsen-Brown-Robbins farmhouse (circa 1910) is an altered one-and-one-half story, Vernacular-style residence with Craftsman detailing. The house is oriented south, approximately 117 meters (m) (385 feet [ft]) north of Highway 212 at the edge of a grove of mature deciduous and conifer trees. Open fields extend on three sides to the south, east and west. The domestic yard and farm buildings extend north, defined on the west by a presently piped drainage that originates at a spring in a grove of trees on a slope approximately 61 m (200 ft) north of the farmstead ensemble. The yard surrounding the farmhouse is partially defined by a rock wall that begins in the front yard, projects east, and then extends north along the yard's eastern edge. A tended back-yard lawn is edged by mature shrubs, trees, and a concrete fish pond.

The farmstead, as it appears today, consists of buildings which range in date from circa 1910 to the 1980s, constructed by three different owners. The farm complex consists of the farmhouse (circa 1910) and twelve outbuildings including a cow barn/shed (circa 1920s), garage (circa 1920s), pumphouse (1920s), chicken house/caretaker's house (circa 1920/1969) with the remainder dating from the modern-period ownership of the Murray and Edith Robbins family. These buildings include a chicken house (circa 1965), pole barn (1973), green house (1975), well house (1978), tractor shed (1981), and two portable skid sheds (circa 1980s).

Historic-period Buildings

Farmhouse (circa 1910)

The one-and-one-half story house has a side-gabled roof with a rear gabled attachment, and the house rests upon a concrete foundation. The roof exhibits Craftsman-inspired details in the exposed rafters, knee braces, overhanging eaves, the bellcast gabled dormer, and the contrasting exterior wall-material textures. The exterior wall materials are narrow, beveled drop siding and wood shingles at the second floor level. Windows consist primarily of 1-over-1 wood sashes, six-light casements, a later (circa 1930s) picture window with a multi-light transom and multi-light sidelights, and horizontally-scaled multi-light windows at the front porch. A one-story gabled addition projects from the east wall flush with the façade, and a porch enclosure was added at the juncture of the wing' southeast corner. The wing has an exterior brick chimney and is flanked by single six-light casement windows. Originally the front porch extended the length of the façade recessed under the second floor. The porch was enclosed by Fred Brown, the second owner, mostly likely in the 1930s, and the living room was extended into the enclosed space. Part of the porch is enclosed by multi-light glass panes, and it has a door. This main entry is accessed by concrete steps and a wrought-iron railing. A small shed-roof porch (which is thought to have been added by Fred Brown) is found on the north elevation. When the Robbins' purchased the house, they found the second floor to be roughly finished; they added a second floor half-bath. The farmhouse is in good condition, and although the modifications to the house are within the historic-period, it does not retain sufficient historic integrity to be eligible for listing in the NRHP, especially given the lack of architectural distinction.

Garage

The historic-period garage (circa 1920s) is located approximately 23 m (75 ft) to the north of the house. It has a side-gable roof and a façade that is three bays wide with two car openings and a human-scale door. Six-light windows with simple surrounds light the east elevation. The garage is fairly original including the wood drop siding, four-light door, windows, and exposed rafters There are modern overhead retractable garage doors.

Chicken house/caretaker's house

The chicken house/caretaker's house (circa 1920s) appears to be contemporary with the garage, although from the front, it looks like a 1970s Ranch-style home. Viewing the building from the rear (north elevation) it can be discerned by regularly spaced, square four-light windows near the floor line that it likely was a chicken house. The original drop siding remains intact on the north elevation and a wide, five-panel wood door, which appears original, is located on the east elevation. Fred Brown reportedly used it as a caretaker's house and the building was updated by Russ Robbins in 1969 for use as a residence. At that time it was modified with T-1-11 siding on three elevations, high horizontal sliding windows along the facade, and a concrete foundation. Because of the extensive modifications made in 1969, the building no longer retains architectural integrity.

Property Name: Svendsen-Brown-Robbins Farmstead	
Street Address: 16409 SE Highway 212	City, County: Clackamas, Clackamas

Cow shed
Near the rear of the farmyard is a circa 1920s-1930s one-story, wood-framed cow-shed with exterior walls of horizontal and vertical wood planks. The roof is a low-pitched gable. This building has not been used by the Robbins (current owners), and is partially collapsed.

Pumphouse
The old pumphouse, which is located approximately 25 ft from the farmhouse's southeast corner, is a representation of a Dutch windmill. It is clad in wood shingles with wood trim. Although the well is no longer used, the pumphouse remains in good condition and retains its historic integrity.

Modern outbuildings
Eight of the outbuildings post-date the historic period and were constructed by the Robbins family; these include a chicken house (ca. 1965), pole barn (1973), green house constructed of corrugated fiberglass (1975), well house with a shed roof and clad with T-1-11 siding (1978) tractor shed, a garage building moved to the farm (1981), and two portable skid sheds (ca. 1980s).

Significance Statement
The Svendsen-Brown-Robbins farmstead is recommended to be not eligible for listing in the NRHP due to a loss of integrity to its historic setting by the addition of eight modern agricultural outbuildings and due to the modifications to the two main buildings, the farmhouse and the chicken house/caretaker's house. Although the modifications to the farmhouse were made within the historic period, these additions do not distinguish the farmhouse as an outstanding example of an early twentieth century farmhouse. These modifications included enclosing the original front porch, extending the living room (the gabled extension), and other porch alterations (circa 1930s to 1950s).

Historical Background

The Svendsen-Brown-Robbins farmstead is a twenty-acre farm property that was originally part of the 173.09-acre land grant of William C. Wilson. Wilson obtained the land claim in 1862. Previously, according to the 1860 Census records, he and his family lived in the Milwaukie precinct where he worked as a blacksmith. Wilson's land claim was proved in 1871 and he continued farming until circa 1875, when the farm was sold to Gustav Bauman. The land was sold to several others, then parceled to become part of a 40-acre tract in 1888. The farm was sold to Sven and Rasmine (Mina) Svendsen as a 20-acre parcel in 1909 (Property Title of Fred Brown 1928, in possession of Edith Robbins). Judging by the farmhouse's historic features, it is likely that the house was constructed for use by the Svendsens, or at least they were one of the earliest owners. The current owners were told by the former owner Fred Brown that there was an old log cabin at one time located below the spring near the north end of the property. Sven L. and Mina Svendsen both hailed from Denmark; Sven arrived in 1888 and Mina followed the next year. Before settling in Oregon, they lived in Nebraska. Svendsen engaged in general farming during his tenure on the property. A 1916 photograph in the possession of the current owners shows that the original barn existed behind the house. At that time the porch was intact and the garage and chicken house were not yet constructed.

By the time Sven L. and Mina Svendsen had arrived in the Carver area (circa 1909), the county was experiencing an economic boom and rural areas once remote were now connected to urban and market centers. In the early 1900s, interurban railroads expanded into the outlying areas, which encouraged small communities to develop near the rail stops. These rail lines brought the rural community within easy reach of the markets.

The automobile was introduced circa 1910 and quickly became the preferred travel mode. The use of autos and trucks necessitated an improved road network. The Market Road Act of 1920 (amended 1925) funneled state funds to counties to improve the farm to market road network. Highway 212 in the project vicinity was noted in the Oregon State Highway Commission Report of 1925-1926 as Market Road 16-Rock Creek Bridge to Mt. Hood Loop (Oregon State Highway Commission 1925-1926:476). The improved roads allowed farmers to transport goods to market and drew commuting workers to the country, such as the second property owner, Fred M. Brown.

Fred M. and Emma Brown purchased the farm from the Svendsens in December 1928. Brown made a number of modifications to the house and the farm, including the planting of a number of trees on the property. Brown's primary occupation was as the chief switchkeeper for a telephone company, and his farm land was typically leased to neighboring farmers. Brown most likely converted the chicken house into a caretaker's residence; he also made most of the modifications to the residence by enclosing the front porch, expanding the living room eastward into the porch, and adding an exterior brick fireplace (circa 1930s). He also added a bathroom next to the kitchen and enclosed a rear porch and created a sunroom (circa 1940s-1950s). The garage may have been constructed by Brown (circa 1920s). Although Brown

Property Name: Svendsen-Brown-Robbins Farmstead	
Street Address: 16409 SE Highway 212	City, County: Clackamas, Clackamas

did not farm the entire property, he did raise rosebushes in the front section. The Browns occupied the property until 1961, when it was purchased by Murray and Edith Robbins (Edith and Russ Robbins, personal communication 2006).

The Robbins family has occupied the farm since it was purchased by them in 1961. Murray Robbins and his son Russ have added a number of buildings to the farm to accommodate the production of different crops. In the early years they raised cows, horses, rabbits, and hay. They constructed a chicken house (ca. 1965) and rabbit shed (demolished). The caretaker's house was updated circa 1969 by Russ and his father, for use by his young family; it later functioned as a rental. The pole barn was constructed by the Robbins in 1973 and the green house in 1975 by Russ for his mother. In the mid-1970s, Murray Robbins began growing strawberries and Russ took over the operation in the 1980s, which he continued for several years. The skid sheds were brought in at that time for use in the fields and for selling the strawberries. Most of the farm land is currently leased to the Siri Brothers farming operation (Edith and Russ Robbins, personal communication 2006).

Sources

Labbe, John T.
1982 *Fares, Please! Those Portland Trolley Years*. The Caxton Printers, Caldwell, Idaho.

Oregon State Highway Commission
1926 Seventh Biennial Report of the Oregon State Highway Commission Covering the Period December 1, 1924, to November 30, 1926. State Printing Department, Salem.

United States Bureau of the Census
1860 *Manuscript Population Census of the United States*. Eighth Census of the United States. State of Oregon, Clackamas County, Rock Creek Precinct. Microfilm copy on file, Oregon Historical Society Regional Research Library, Portland, Oregon.
1870 *Manuscript Population Census of the United States*. Ninth Census of the United States. State of Oregon, Clackamas County, Rock Creek Precinct. Microfilm copy on file, Oregon Historical Society Regional Research Library, Portland, Oregon.
1910 *Manuscript Population Census of the United States*. Eleventh Census of the United States. State of Oregon, Clackamas County, Damascus Precinct. Microfilm copy on file, Oregon Historical Society Regional Research Library, Portland, Oregon.
1920 *Manuscript Population Census of the United States*. Fourteenth Census of the United States. State of Oregon, Clackamas County, Damascus Precinct. Microfilm copy on file, Oregon Historical Society Regional Research Library, Portland, Oregon.
1930 *Manuscript Population Census of the United States*. Fifteenth Census of the United States. State of Oregon, Clackamas County, Carver Precinct. Microfilm copy on file, Oregon Historical Society Regional Research Library, Portland, Oregon.

Property Name: Svendsen-Brown-Robbins Farmstead	
Street Address: 16409 SE Highway 212	City, County: Clackamas, Clackamas



View: The farmhouse's west elevation and south façade. The view is to the northeast



View: The farmhouse's south façade and east elevation. The view is to the northwest.

Property Name: Svendsen-Brown-Robbins Farmstead	
Street Address: 16409 SE Highway 212	City, County: Clackamas, Clackamas



View: The garage's north and west elevations. The view is to the southeast.



View: The chicken house/caretaker's house modernized south façade. The view is to the northwest.

Property Name: Svendsen-Brown-Robbins Farmstead	
Street Address: 16409 SE Highway 212	City, County: Clackamas, Clackamas



View: The chicken house/caretaker's house north elevation. The view is to the southwest.



View: The cow shed near the pole barn. The view is to the northwest.

Property Name: Svendsen-Brown-Robbins Farmstead	
Street Address: 16409 SE Highway 212	City, County: Clackamas, Clackamas



View: The old pumphouse that is located in the farmhouse's front yard. The view is to the north.



View: The modern well house is to the left and the tractor shed that was moved to the farm in 1981 is to the right. The view is to the south.

Property Name: Svendsen-Brown-Robbins Farmstead	
Street Address: 16409 SE Highway 212	City, County: Clackamas, Clackamas



View: The modern pole barn and the adjacent cow shed. The view is to the northwest.



View: The modern chicken house. The view is to the west.

Property Name: Svendsen-Brown-Robbins Farmstead	
Street Address: 16409 SE Highway 212	City, County: Clackamas, Clackamas

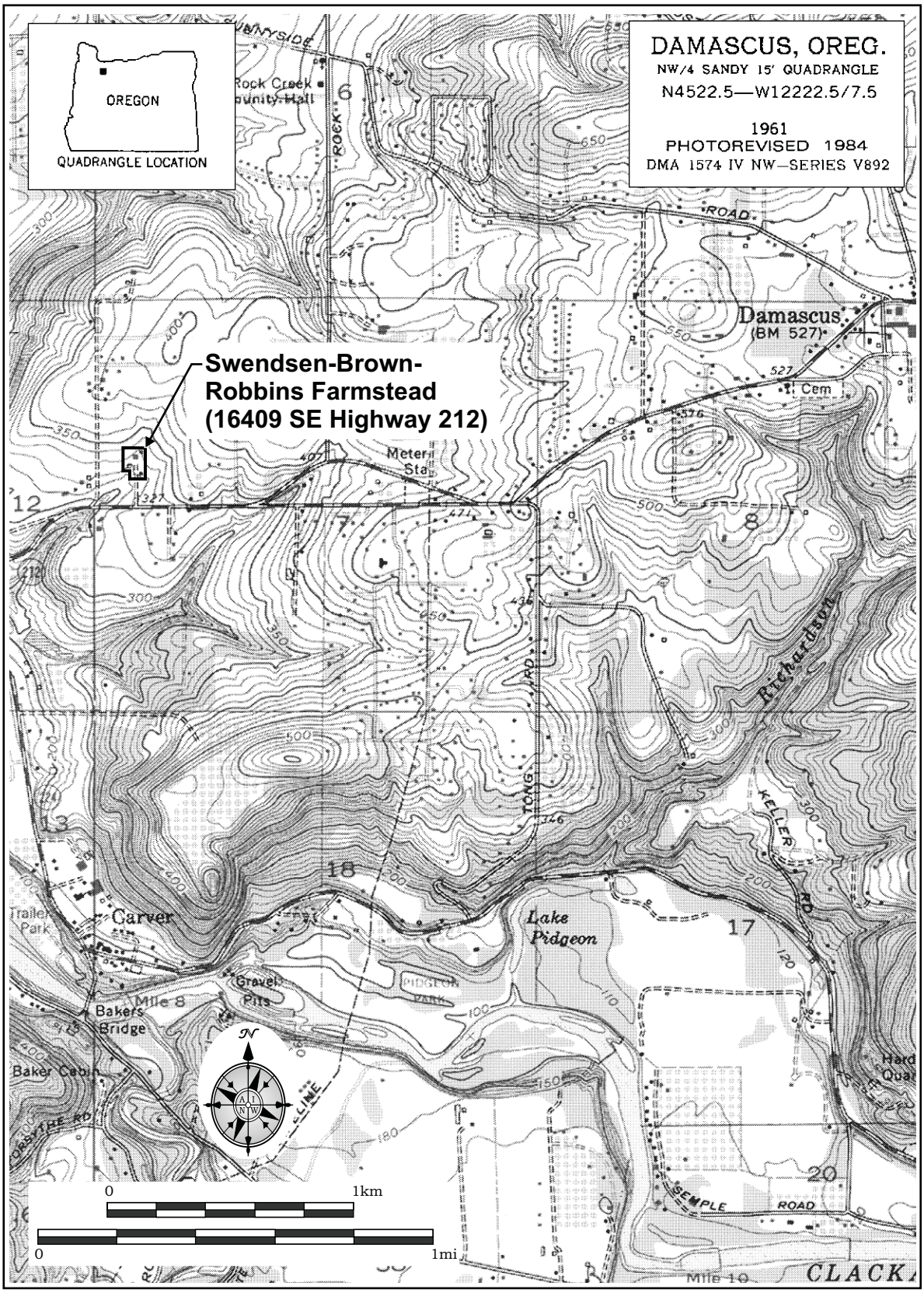


View: The rock wall and greenhouse that are located east of the farm house. The view is to the west.



View: An overall view of the Svendsen-Brown-Robbins farmstead. The view is to the east.


Spring
Approximate Location of Former Log Cabin
Skid Shed
Cow Shed
Pole Barn
Chicken House
Chicken House/ Caretaker's House
Tractor Shed
Well House
Garage
Greenhouse
Swendsen-Brown-Robbins Farmhouse (16409 SE Highway 212)
0
100 ft
0
50 m
Highway 212


DAMASCUS, OREG.
NW/4 SANDY 15' QUADRANGLE
N4522.5—W12222.5/7.5
1961
PHOTOREVISED 1984
DMA 1574 IV NW—SERIES V892
OREGON
QUADRANGLE LOCATION
Swendsen-Brown-
Robbins Farmstead
(16409 SE Highway 212)
Damascus
(BM 527)
Cem
Meter Sta
Carver
Trailer Park
Lake Pidgeon
Gravel Pits
Mile 8
Bakers Bridge
Baker Cabin
ROCK
ROAD
TONG RD
KELLER RD
SEMPLE ROAD
LINE
Mile 10
0
1km
0
1mi

OREGON INVENTORY OF HISTORIC PROPERTIES

SECTION 106 DOCUMENTATION FORM

Individual Properties

Agency/Project: Clackamas County, ODOT/Sunrise Project: I-205 to Rock Creek Junction (Highway 212/224)	
Property Name: Mirrell Newell Farmstead	
Street Address: 16631 SE Highway 212	City, County: Clackamas, Clackamas
USGS Quad Name: *Damascus, Oreg.* 7.5-minute	Township: 2 South Range: 3 East Section: 7
This property is part of a ☐District ☒Grouping/Ensemble (see instructions) Name of District or Grouping/Ensemble: Mirrell Newell Farmstead	
Number and Type of Associated Resources in Grouping/Ensemble: 1 residence; 1 agricultural outbuilding	

Current Use: Residence	Construction Date: ca. 1925 (House); ca. 1963 (Barn)
Architectural Classification / Resource Type: Craftsman Bungalow/Building	Alterations & Dates: 1) Rear addition to house, ca. 1935 2) Alteration to front porch, ca. 1970s-1990s
Window Type & Material: 1-over-1 wood	Exterior Surface Materials: Primary: Wood drop siding Secondary: Wood shingle siding Decorative:
Roof Type & Material: Side gable/ Asphalt composition shingle	
Condition: ☐Excellent ☐Good ☒Fair ☐Poor	Integrity: ☐Excellent ☐Good ☒Fair ☐Poor



South façade of the farmhouse, 2006. The view is to the northwest.

Preliminary National Register Findings: ☐**National Register listed**

☐**Potentially Eligible:** ☐Individually ☐As part of District

☒**Not Eligible:** ☐In current state ☐Irretrievable integrity loss ☒Lacks Distinction ☐Not 50 Years

State Historic Preservation Office Comments:

☒**Concur** ☐**Do Not Concur:** ☐Potentially Eligible Individually ☐Potentially Eligible as part of District ☐Not Eligible

Signed Sarah Jahnig Date 5/21/2008

Comments:

Property Name: Mirrell Newell Farmstead		
Street Address: 16631 SE Highway 212	City, County: Clackamas, Clackamas	
Architect, Builder or Designer (if known): Unknown	Owner: ☒Private ☐Local Government ☐State ☐Federal ☐Other	

Description of Property (including exterior alterations & approximate dates), Significance Statement, and Sources. (Use continuation sheets if necessary):

Physical Description

The Mirrell Newell farmstead (consisting of a house and one agricultural outbuilding) is located approximately two miles north of Carver, Oregon, at 16631 SE Hwy 212. The semi-rural setting consists of a mix of farmland and modern residential subdivisions. The house is on an embankment north of Highway 212 in a landscape of mature trees, overgrown shrubs, and tall grasses. It is accessed by a gravel drive on the east side of the house. The agricultural outbuilding is located approximately 30 m (100 ft) northeast of the house.

The Mirrell Newell farmstead consists of a modest circa 1925 Craftsman bungalow-style residence and a circa 1963 outbuilding. The residence is a one-and-one-half story Craftsman-style bungalow with a side-gable roof, a shed-roof front dormer, and on a concrete basement foundation. The roof has deep, overhanging eaves supported by jigsaw-ornamented knee braces and exposed rafters. The roof is clad in asphalt composition shingles. The façade is asymmetrically composed with (from west to east across the south elevation) triple one-over-one, wood-sash windows, original entry door, and smaller fixed wood-sash window adjacent to the door way. The concrete-slab porch extends the façade's full width, and the porch roof is supported by wooden box posts. The body of the house is covered with beveled drop siding, and the dormer walls are sheathed in wood shingles. All windows on the house are one-over-one, wood-sash windows with lamb's tails. The rear of the house has a small, circa 1935 pyramidal-roofed addition, sided in coved-shiplap wood siding, with windows that match the rest of the house. A small fruit orchard stands to the north of the house.

The circa 1963 agricultural outbuilding associated with this house is a single-story, front-gabled structure with three bays. Each bay has a sliding door on the west elevation. The building is sided with wood (generally plywood). The roof is sheathed with corrugated sheet steel. The outbuilding replaced the original barn that collapsed in the 1962 Columbus Day storm.

Significance Statement

The Mirrell Newell farmstead is recommended to be not eligible for listing in the NRHP, due to a lack of architectural integrity and a lack of historical distinction. The Mirrell Newell house is in the Craftsman bungalow style. The Craftsman style was the dominant residential style in this part of Oregon during the early decades of the 1900s, and as a result, there are many similar houses in Clackamas County that retain better integrity, and are better examples of this style. The farmstead is not associated with any person of transcendent historical importance, and includes no unusual architectural or engineering merit. One of the key architectural features of the Craftsman style is full-width porch on the front elevation. The porch of the Mirrell Newell house, while retaining what may be the original box posts, has been replaced with a large, solid concrete porch deck and stairs. There is no rail, and the porch does not match the aesthetic qualities of the rest of the house. Integrity loss due to alteration is also seen by the addition of a single-room attachment at the rear elevation.

Historical Background

Mirrell Newell and his wife Beatrice occupied this small farm in the 1920s and 1930s and were likely its original owners. Mirrell Newell had not moved far to build his own home having been raised nearby in the home of his parents Austin and Mary Ellen Newell. Like his father on his nearby land, Mirrell practiced general farming on this property (Metsker Maps 1928:18; U.S. Bureau of the Census 1920).

Through the end of the nineteenth century, the Clackamas area was only lightly populated, and was generally in agricultural production. In the early 1900s, interurban railroads expanded into the outlying areas, which encouraged small communities to develop near the rail stops. These rail lines brought the rural community within easy reach of the markets. By 1910, Clackamas County was experiencing an economic boom and once-remote rural areas were becoming better connected to urban and market centers, facilitating suburban development. The increased use of autos and trucks made clear the need for an improved road network. The Market Road Act of 1920 (amended in 1925) funneled state funds to counties to improve their farm to market road network. Highway 212 in this vicinity was noted in the Oregon State Highway Commission Report of 1925-1926 as Market Road 16-Rock Creek Bridge to Mt. Hood Loop (Oregon State Highway Commission 1926:476). The improved road network further accelerated the development of this area.

Property Name: Mirrell Newell Farmstead	
Street Address: 16631 SE Highway 212	City, County: Clackamas, Clackamas

As the population continued to expand and the roadways improved, the lower basin of the Clackamas River has become a bedroom community for the Portland area. The development of I-205 construction beginning in 1968, coupled with rail connections, led Clackamas to become an industrial and commercial center, with former residential areas redeveloped for that purpose. As the population shifted away from the old community core of Clackamas, former agricultural areas in the vicinity of the Newell Farmstead have begun to be redeveloped for residential use.

Sources

Labbe, John T.
1982 *Fares, Please! Those Portland Trolley Years*. The Caxton Printers, Caldwell, Idaho.

Metsker Maps
1928 *Metsker's Atlas of Clackamas County, Oregon*. Charles F. Metsker, Portland and Tacoma.

Oregon State Highway Commission
1926 Seventh Biennial Report of the Oregon State Highway Commission Covering the Period December 1, 1924, to November 30, 1926. State Printing Department, Salem.

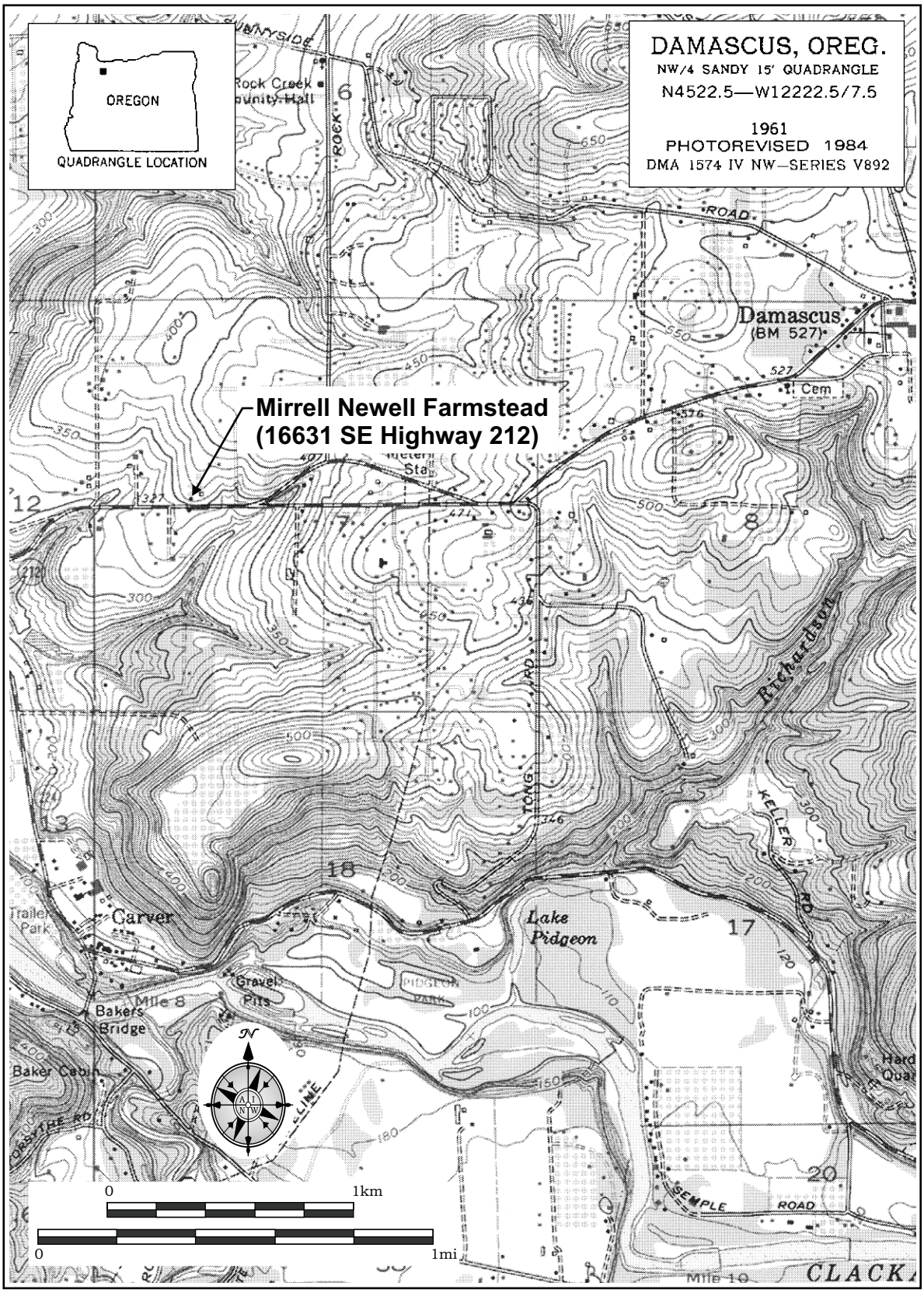
United States Bureau of the Census
1920 *Manuscript Population Census of the United States*. Fourteenth Census of the United States. State of Oregon, Clackamas County, Damascus Precinct. Copy on file, Multnomah County Library, Portland, Oregon.

Property Name: Mirrell Newell Farmstead	
Street Address: 16631 SE Highway 212	City, County: Clackamas, Clackamas



View: West elevation of the agricultural building. The view is to the northeast.


N
Agricultural Outbuilding
Mirrell Newell Farmhouse (16631 SE Highway 212)
Highway 212
0
100 ft
0
25 m


OREGON
QUADRANGLE LOCATION
DAMASCUS, OREG.
NW/4 SANDY 15' QUADRANGLE
N4522.5—W12222.5/7.5
1961
PHOTOREVISED 1984
DMA 1574 IV NW—SERIES V892
Mirrell Newell Farmstead
(16631 SE Highway 212)
Damascus
(BM 527)
Cem
ROAD
ROCK
TONG RD
Richardson
KELLER RD
Carver
Trailer Park
Lake Pidgeon
PIDGEON PARK
Gravel Pits
Mile 8
Bakers Bridge
Baker Cabin
LINE
SEMPLE ROAD
Mile 10
0
1km
0
1mi

OREGON INVENTORY OF HISTORIC PROPERTIES

SECTION 106 DOCUMENTATION FORM

Individual Properties

Agency/Project: Clackamas County, ODOT/Sunrise Project: I-205 to Rock Creek Junction (Hwy 212/224)	
Property Name: Clackamas School	
Street Address: 15301 SE 92nd Ave	City, County: Clackamas, Clackamas
USGS Quad Name: *Gladstone, Oreg.*	Township: 2 South Range: 2 East Section: 9
This property is part of a ☐District ☐Grouping/Ensemble (see instructions) Name of District or Grouping/Ensemble:	
Number and Type of Associated Resources in Grouping/Ensemble:	

Current Use: School	Construction Date 1939:
Architectural Classification / Resource Type: Tudor Style/Building	Alterations & Dates: 1947 addition, 1953 and 1958 classroom annexes
Window Type & Material: 6-over-6 wood sash	Exterior Surface Materials: Primary: concrete Secondary: none Decorative: none
Roof Type & Material: Hipped/asphalt shingle	
Condition: ☒Excellent ☐Good ☐Fair ☐Poor	Integrity: ☐Excellent ☒Good ☐Fair ☐Poor



Clackamas Elementary School, front (east) entrance. The view is to the west.

Preliminary National Register Findings: ☐**National Register listed**

☒**Potentially Eligible:** ☒Individually ☐As part of District

☐**Not Eligible:** ☐In current state ☐Irretrievable integrity loss ☐Lacks Distinction ☐Not 50 Years

State Historic Preservation Office Comments:

☒**Concur** ☐**Do Not Concur:** ☐Potentially Eligible Individually ☐Potentially Eligible as part of District ☐Not Eligible

Signed Sarah Jahnings Date 5/21/2008

Comments:

OREGON INVENTORY OF HISTORIC PROPERTIES
SECTION 106 DOCUMENTATION FORM
Individual Properties

Property Name: Clackamas School		
Street Address: 115301 SE 92nd Avenue	City, County: Clackamas, Clackamas	
Architect, Builder or Designer (if known): Unknown	Owner: ☐Private ☒Local Government ☐State ☐Federal ☐Other	

Description of Property (including exterior alterations & approximate dates), Significance Statement, and Sources. (Use continuation sheets if necessary):

Physical Description:
Clackamas Elementary School is a single-story school with Tudor-style design elements, including the castellated entryway with crenellated parapet and Tudor-arched doorway. The main portion of the school, built in 1939 and expanded in 1947, is "H" shaped with a centered wing on the rear elevation. The rear portions between the end wings and center rear wing have been infilled with later construction. Attached to the northwest corner of the original building, is a 1953 classroom annex, connected to the main structure by a glassed-in breezeway and extended to the west in 1958 (Krumm 2007).

The main portion of the building has a hipped roof, both over the main mass and over the projecting end wings, all clad with asphalt shingle. The building is constructed in concrete with incised seams, giving the building the appearance of large-block, ashlar-finish masonry construction. The windows are intact, 6-over-6, wood sash windows. The open spaces at the rear of the building, between the wings and the center rear wing, were infilled at an unknown date, but are not visible from the east (front), north or south elevations.

The 1953/1958 classroom annex attached to the rear of the north wing is a single-story classroom wing built in two episodes. The roof across the entire structure is a low-pitched, gable roof clad in asphalt shingle. The walls are clad in concrete with a stucco finish. The eastern 1953 portion of the addition has fixed, steel-framed windows. Above the windows and doors are steel-framed, multi-light windows with frosted lights. The western 1958 portion of the addition has large, fixed steel-framed windows with small, operable lower sashes. This portion does not carry the upper frosted-glass windows.

Statement of Significance:
The Clackamas Elementary School is recommended to be eligible for listing in the NRHP under Criterion C as a relatively well-preserved, intact example of a late 1930s school building with well-matched 1940s additions, originally built by the Public Works Administration (PWA) (Shearer 1979:20). The 1953/1958 classroom annex and the recreational fields associated with the school are not considered to be contributing elements to the historic Clackamas Elementary School.

Following a fire that destroyed the previous structure, the PWA was engaged to construct a new school to serve the community of Clackamas. The original building was rectangular and contained four classrooms, with two grades located in each. In 1947, the school was expanded to accommodate additional students due to a merger with the East Clackamas School. The additional six classrooms were added at the north and south ends (3 classrooms in each) in the form of projecting wings (Shearer 1979:21). Established design motifs and window designs were carried into the new wings, creating a near seamless transition between the 1939 and 1947 build events. In 1953, the expanding student population led to the construction of three new classrooms in a single-story classroom annex, attached to the rear of the north wing. In 1958, this annex was extended to the west, adding an additional three classrooms (Clackamas Elementary School 1974:52).

Because the alterations were all done during the historic period and during a relatively short timespan (19 years between original construction and final, current layout), and because the 1953/1958 classroom annex is attached to the original building through a glass-enclosed breezeway allowing for easy differentiation between older construction and more recent construction, the additions do not diminish the integrity of the school to the point as to render it ineligible. The main portion of the school maintains good integrity, with intact, original design elements and intact, original windows dating to the 1939 construction of the original school and the 1947 expansion.

The Clackamas Elementary School (originally known as Clackamas School) was built in 1939 to serve the primary-school children in the town of Clackamas. Prior to the 1972 formation of the North Clackamas School District, Clackamas Elementary School was a part of Clackamas District No. 64, which included Bilquist School, Carver School, and McLoughlin Junior High School (Krumm 2007).

Property Name: Clackamas School	
Street Address: 15301 SE 92nd Avenue	City, County: Clackamas, Clackamas

Sources

Clackamas Elementary School fourth Grade Class
1974 *Clackamas, Oregon.* Prepared by the Fourth Grade Class of Clackamas Elementary School. Self published.

Krumm, Joe
2007 Person communication by telephone with Jason M. Allen, June 6, 2007.

Shearer, Margaret [editor]
1979 *Clackamas, Oregon II: A Walking Tour for Teachers and Students.* Instruction Materials Laboratory, North Clackamas School District #12, Clackamas, Oregon.

Property Name:	
Street Address:	City, County:

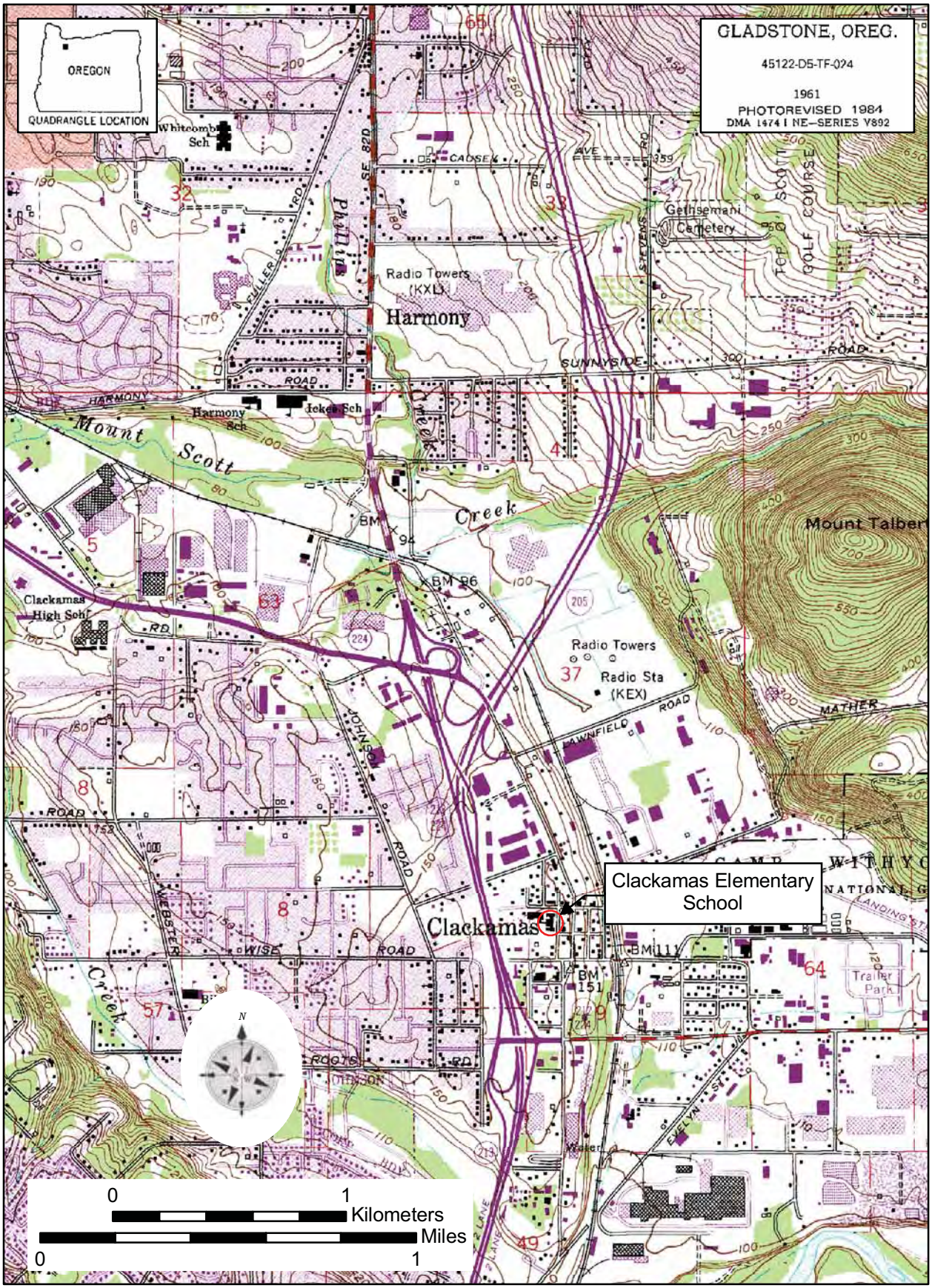


View: Clackamas Elementary School. The 1939 portion is visible at center, the 1947 north wing is at right. The view is to the southwest.



View: Clackamas Elementary School, 1947 south wing. The view is to the northwest.


SE 82nd Drive
SE Tolbert Street
Clackamas Elementary School
SE 92nd Ave
SE Church Street
SE Clackamas Road
0 15 30 60 90 120
Meters
Feet
0 60 120 240 360 480


GLADSTONE, OREG.
45122-D5-TF-024
1961
PHOTOREVISED 1984
DMA 1474 I NE—SERIES V892
OREGON
QUADRANGLE LOCATION
Clackamas Elementary School
Harmony
Mount Scott
Mount Talbert
Clackamas
Radio Towers (KXL)
Radio Towers
Radio Sta (KEX)
Gethsemani Cemetery
Clackamas High Sch
Harmony Sch
Ickes Sch
Whitcomb Sch
Trailer Park
0
1
Kilometers
Miles
0
1

OREGON INVENTORY OF HISTORIC PROPERTIES

SECTION 106: FINDING OF EFFECT

Agency/Project: Clackamas County, Oregon Department of Transportation/ Sunrise Project: I-205 to Rock Creek Junction (Highway 212/224)	
Property Name: Clackamas School	
Street Address: 15301 SE 92nd Avenue	City, County: Clackamas, Clackamas

Preliminary Finding of Effect:

☐ No Historic Properties Affected ☒ No Historic Properties Adversely Affected ☐ Historic Properties Adversely Affected

State Historic Preservation Office Comments:

☒ Concur ☐ Do Not Concur: ☐ No Historic Properties Affected ☐ No Historic Properties Adversely Affected ☐ Historic Properties Adversely Affected

Signed Sarah Jahnig Date 5/21/2008

Comments:

Provide written description of the project, and its potential effects on the subject property per 36 CFR 800. Include maps, drawings, and photographs as necessary to effectively describe and discuss the project. Use continuation sheets as needed.

Introduction

This statement of finding addresses the effect of the proposed road improvements and new highway interchange between Highways 212/224 and I-205 (and associated access ramps, etc.) on the Clackamas Elementary School, located at 15301 SE 92nd Avenue, Clackamas, Clackamas County (Figure 1 in Appendix A). The Clackamas Elementary School has been determined to be eligible for listing in the National Register of Historic Places (NRHP) by the Oregon Department of Transportation (ODOT), and concurrence by the Oregon State Historic Preservation Office (SHPO) is pending (refer to Section 106 Documentation Form in Appendix A).

It is the finding of ODOT that the project will have No Adverse Effect on the Clackamas Elementary School. This statement of finding is made pursuant to the requirements of the National Historic Preservation Act of 1966 (36CFR800), Executive Order 11593, and the National Environmental Policy Act.

Project Description

The proposed project is located in the western, urbanized portion of Clackamas County in the vicinity of State Highway 212/224 (see Figure 1, Project Vicinity, and Figure 2, Project Area). The project limits extend approximately 4.9 miles from SE Johnson Road to SE 172nd Avenue, just beyond Rock Creek Junction where Highways 212 and 224 diverge. The purpose of this project is to effectively address congestion and safety problems in the Highway 212/224 corridor between its interchange with Interstate 205 (I-205) and Rock Creek Junction, and to serve the growing demand for regional travel and access to the state highway system.

The proposed action will provide a new limited-access expressway between I-205 and the Rock Creek Junction. The facility would be comprised of six lanes, plus auxiliary lanes, and would include an improved interchange at I-205. This new expressway would become the designated State Highway 212/224, with the existing route reverting to a county arterial.

While no preferred alternative has yet been selected for this project, two Build Alternatives and one Design Option are proposed for the vicinity of the Southern Pacific Railroad Willamette Valley Main Line. The overall Sunrise Project: I-205 to Rock Creek Junction (Highway 212/224) is divided into four geographical zones. The zone in which the Southern Pacific Railroad Willamette Valley Main Line is found is Zone A, which is defined as the westernmost portion of the corridor and represents the I-205 Interchange Area and the Lawnfield Business Area, with a western terminus aligned with SE Johnson Road and an eastern terminus bisecting Camp Withycombe. The north and south boundaries extend from Clackamas Town Center to SE Jennifer Street.

- Build Alternatives 2 and 3 are identical in the area of the Clackamas Elementary School. Both Build Alternatives include the construction of a new northbound ramp connecting I-205 to Highway 212/224 via a new signaled interchange. The new ramp would pass between the current alignment of I-205 and the Clackamas Elementary School, requiring the taking of a small piece of land in the southwest corner of the grounds associated with the school.

Agency/Project: Clackamas County, Oregon Department of Transportation/ Sunrise Project: I-205 to Rock Creek Junction (Highway 212/224)	
Property Name: Clackamas School	
Street Address: 15301 SE 92nd Avenue	City, County: Clackamas, Clackamas

- Design Option A-2, which differs from Design Option A-1 (incorporated in both Build Alternatives 2 and 3) only by introducing a direct connection between Lawnfield Road and Tolbert Street, would have the same effect on the Clackamas Elementary School as Design Options 2 and 3.

Description And Significance Of The Historic Property

Clackamas Elementary School is a single-story school with Tudor-style design elements, including the castellated entryway with crenellated parapet and Tudor-arched doorway. The main portion of the school, built in 1939 and expanded in 1947, is "H" shaped with a centered wing on the rear elevation. The rear portions between the end wings and center rear wing have been infilled with later construction. Attached to the northwest corner of the original building, is a 1953 classroom annex, connected to the main structure by a glassed-in breezeway and extended to the west in 1958 (Krumm 2007).

The main portion of the building has a hipped roof, both over the main mass and over the projecting end wings, all clad with asphalt shingle. The building is constructed in concrete with incised seams, giving the building the appearance of large-block, ashlar-finish masonry construction. The windows are intact, 6-over-6, wood sash windows. The open spaces at the rear of the building, between the wings and the center rear wing, were infilled at an unknown date, but are not visible from the east (front), north or south elevations.

The 1953/1958 classroom annex attached to the rear of the north wing is a single-story classroom wing built in two episodes. The roof across the entire structure is a low-pitched, gable roof clad in asphalt shingle. The walls are clad in concrete with a stucco finish. The eastern 1953 portion of the addition has fixed, steel-framed windows. Above the windows and doors are steel-framed, multi-light windows with frosted lights. The western 1958 portion of the addition has large, fixed steel-framed windows with small, operable lower sashes. This portion does not carry the upper frosted-glass windows.

The Clackamas Elementary School is eligible for listing in the NRHP under Criterion C as a relatively well-preserved, intact example of a late 1930s school building with well-matched 1940s additions, originally built by the Public Works Administration (PWA) (Shearer 1979:20). The 1953/1958 classroom annex and the recreational fields associated with the school are not considered to be contributing elements to the historic Clackamas Elementary School.

Following a fire that destroyed the previous structure, the PWA was engaged to construct a new school to serve the community of Clackamas. The original building was rectangular and contained four classrooms, with two grades located in each. In 1947, the school was expanded to accommodate additional students due to a merger with the East Clackamas School. The additional six classrooms were added at the north and south ends (3 classrooms in each) in the form of projecting wings (Shearer 1979:21). Established design motifs and window designs were carried into the new wings, creating a near seamless transition between the 1939 and 1947 build events. In 1953, the expanding student population led to the construction of three new classrooms in a single-story classroom annex, attached to the rear of the north wing. In 1958, this annex was extended to the west, adding an additional three classrooms (Clackamas Elementary School 1974:52).

Because the alterations were all done during the historic period and during a relatively short timespan (19 years between original construction and final, current layout), and because the 1953/1958 classroom annex is attached to the original building through a glass-enclosed breezeway allowing for easy differentiation between older construction and more recent construction, the additions do not diminish the integrity of the school to the point as to render it ineligible. The main portion of the school maintains good integrity, with intact, original design elements and intact, original windows dating to the 1939 construction of the original school and the 1947 expansion.

The Clackamas Elementary School (originally known as Clackamas School) was built in 1939 to serve the primary-school children in the town of Clackamas. Prior to the 1972 formation of the North Clackamas School District, Clackamas Elementary School was a part of Clackamas District No. 64, which included Bilquist School, Carver School, McLoughlin Junior High School (Krumm 2007).

Agency/Project: Clackamas County, Oregon Department of Transportation/ Sunrise Project: I-205 to Rock Creek Junction (Highway 212/224)	
Property Name: Clackamas School	
Street Address: 15301 SE 92nd Avenue	City, County: Clackamas, Clackamas

Avoidance Alternatives Considered

The Clackamas Elementary School has been determined eligible for listing in the NRHP (Appendix A). To meet all the project objectives, two Build Alternatives, one Design Option, and a No-Build Alternative are being considered. None have yet been selected as the preferred alternative. The placement of the proposed ramp between northbound I-205 and Hwy 212/224 is limited by the existing alignment of I-205 and existing development in the town of Clackamas along the east side of I-205.

Build Alternative 2: Build with Midpoint Interchange
This alternative is distinguished by the inclusion of a midpoint interchange in the vicinity of SE 122nd Avenue, which would connect the expressway to the existing Highway 212/224. Implementation of Build Alternative 2 would result in the introduction of a new northbound ramp connecting I-205 to Highway 212/224 via a new signaled interchange. The new ramp would pass between the current alignment of I-205 and the Clackamas Elementary School, requiring the taking of a small piece of land in the southwest corner of the grounds associated with the school. In terms of effects to the historic resource, Build Alternative 2 is identical to Build Alternative 3.

Build Alternative 3: Build with No Midpoint Interchange
In contrast to Alternative 2, this alternative would not have a midpoint interchange, resulting in no access to the expressway between I-205 and Rock Creek Junction. Implementation of Build Alternative 2 would result in the introduction of a new northbound ramp connecting I-205 to Highway 212/224 via a new signaled interchange. The new ramp would pass between the current alignment of I-205 and the Clackamas Elementary School, requiring the taking of a small piece of land in the southwest corner of the grounds associated with the school. In terms of effects to the historic resource, Build Alternative 3 is identical to Build Alternative 2.

Design Option A-2: Modified 1996 Design
This Design Option A-2 is identical to Build Alternatives 2 and 3, except that it provides for the extension of SE Tolbert Street to the east, connecting to SE Industrial Way. In terms of effects to the historic resource, Design Option A-2 is identical to Build Alternatives 2 and 3.

No-Build Alternative
The National Environmental Policy Act (NEPA), ODOT, and Federal Highway Administration (FHWA) guidelines require that a no-build option be evaluated as an alternative. The no-build alternative would maintain the existing roadway except for committed improvements scheduled in ODOT's six-year Statewide Transportation Improvement Program (STIP) and Metro's Financially Constrained Projects listed in the Regional Transportation Plan (RTP). These listed projects include widening SE 82nd Drive (Lawnfield Road to Highway 212/224), extension of the climbing lane on Highway 212 (Rock Creek Junction to SE 172nd Avenue), and widening SE 172nd Avenue (Foster Road to Highway 212). None of these planned improvements would affect the historic resource Clackamas Elementary School.

Evaluation Of Effects

An application of the criteria of effect indicates a finding of No Adverse Effect on the integrity of the Clackamas Elementary School. The Clackamas Elementary School draws its historical significance from the design and integrity of the main portion of the building (1939-1947 build episodes), and the project will not affect these qualities. Although the setting of the school will be impacted through the implementation of any of the proposed Build Alternatives or the Design Option, the setting around the resource in this area has already been heavily compromised through the development of I-205 in the mid-1960s.

Conclusion

It is the determination of ODOT that the project would not adversely affect the Clackamas Elementary School, an historic building determined eligible for listing in the NRHP in 2007. An application of the Criteria of Effect results in a finding of "No Historic Properties Adversely Affected."

Agency/Project: Clackamas County, Oregon Department of Transportation/ Sunrise Project: I-205 to Rock Creek Junction (Highway 212/224)	
Property Name: Clackamas School	
Street Address: 15301 SE 92nd Avenue	City, County: Clackamas, Clackamas

Sources

Clackamas Elementary School Fourth Grade Class
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Krumm, Joe
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Inventory of Historic Properties

(Excerpted from Cultural Resources Technical Report, with updates based on SHPO consultation)

IDENTIFIED HISTORIC RESOURCES WITHIN THE SUNRISE PROJECT APE

Map ID	Property Name/Address	Map/Tax Lot	Construction Date/Resource Type	National Register Status	Photograph of Resource
1	16300 SE McKinley Avenue	22E09CD/ 01500	*1947 Ranch-style house	Not eligible due to a lack of architectural distinction	
2	16220 SE McKinley Avenue	22E09CD/ 01401	*1945 Vernacular house	Not eligible due to a lack of architectural distinction, and loss of integrity	
3	8790 SE Roots Road	22E09CC/ 00800	*1928 Bungalow	Not eligible due to a lack of architectural distinction, and loss of integrity	
4	8785 SE Roots Road	22E09CC/ 00700	*1947 Cape Cod-style house	Not eligible due to a lack of architectural distinction, and loss of integrity	
5	16035 SE McKinley Avenue	22E09CC/ 00100	*1960 Ranch-style house	Not eligible due to a lack of architectural distinction	

* = Clackamas County Tax Assessor Date

DOE = Determination of Eligibility
FOE = Finding of Effect

IDENTIFIED HISTORIC RESOURCES WITHIN THE SUNRISE PROJECT APE

Map ID	Property Name/Address	Map/Tax Lot	Construction Date/Resource Type	National Register Status	Photograph of Resource
6	8734 SE Jefferson Street	22E09CC/ 00200	*1959 Ranch-style house	Not eligible due to a lack of architectural distinction, and loss of integrity	
7	8725 SE Hood Street	22E09CB/ 04800	*1951 World War II-era cottage	Not eligible due to a lack of architectural distinction, and loss of integrity	
8	15815 SE McKinley Avenue	22E09CB/ 04700	*1951 Minimal Traditional-style house	Not eligible due to a lack of architectural distinction	
9	15805 SE McKinley Avenue	22E09CB/ 04600	*1955 Ranch-style house	Not eligible due to a lack of architectural distinction	
10	15765 SE McKinley Avenue	22E09CB/ 04401	*1955 Minimal Traditional-style house	Not eligible due to a lack of architectural distinction	

IDENTIFIED HISTORIC RESOURCES WITHIN THE SUNRISE PROJECT APE

Map ID	Property Name/Address	Map/Tax Lot	Construction Date/Resource Type	National Register Status	Photograph of Resource
11	15745 SE McKinley Avenue	22E09CB/ 04400	Ca. 1900 Vernacular/Late Queen Anne	**Possibly eligible for listing in the NRHP** **Clackamas County Historic Inventory** **Will not be affected; no further work needed**	
12	15661 SE McKinley Avenue	22E09CB/ 04402	*1930 Vernacular house	Not eligible due to a lack of architectural distinction, and loss of integrity	
13	15651 SE McKinley Avenue	22E09CB/ 00201	*1912 Vernacular house	Not eligible due to a lack of architectural distinction, and loss of integrity	
14	15631 SE McKinley Avenue	22E09CB/ 00200	*1920 Vernacular house	Not eligible due to a lack of architectural distinction, and loss of integrity	
15	8631 SE Jannsen Road	22E09BC/ 00800	*1900 Vernacular house	Not eligible due to a lack of architectural distinction, and loss of integrity	

IDENTIFIED HISTORIC RESOURCES WITHIN THE SUNRISE PROJECT APE

Map ID	Property Name/Address	Map/Tax Lot	Construction Date/Resource Type	National Register Status	Photograph of Resource
16	8650 SE Janssen Road	22E09BC/ 02802	*1949 Minimal Traditional-style house	Not eligible due to a lack of architectural distinction, and loss of integrity	
17	7924 SE Lake Road	22E05DD/ 00701	Ca. 1915 Craftsman Bungalow-style house	Not eligible due to a loss of integrity	
18	14180 SE Johnson Road	22E05DD/ 00500	*1955 Ranch-style house	Not eligible due to a lack of architectural distinction	
19	14288 SE Johnson Road	22E05DD/ 00400	*1957 Ranch-style house	Not eligible due to a lack of architectural distinction	
20	14302 SE Johnson Road	22E05DD/ 00300	*1947 Minimal Traditional-style house	Not eligible due to a loss of integrity and lack of architectural distinction	

IDENTIFIED HISTORIC RESOURCES WITHIN THE SUNRISE PROJECT APE

Map ID	Property Name/Address	Map/Tax Lot	Construction Date/Resource Type	National Register Status	Photograph of Resource
21-25	Camp Withycombe	N /A	Historic District	**Eligible**	See below.
21	Structure 6720, Machine Gun Range/Camp Withycombe	N/A	1940 Machine Gun Range; Contributing feature	**Previously determined eligible for listing in the NRHP**	
22	Structure 6706, Multnomah Range/Camp Withycombe	N/A	Storage Building on Gun Range; Contributing feature	Previously determined not eligible for listing in the NRHP by the SHPO	 
23	Structure 6705/ Military Pistol Range/Camp Withycombe	N/A	1938 Range shelter; Contributing feature	**Previously determined eligible for listing in the NRHP**	 

IDENTIFIED HISTORIC RESOURCES WITHIN THE SUNRISE PROJECT APE

Map ID	Property Name/Address	Map/Tax Lot	Construction Date/Resource Type	National Register Status	Photograph of Resource
24	1,000-yard Rifle Range/Camp Withycombe	N/A	1912 open range; Contributing feature	**Previously determined eligible for listing in the NRHP**	   
25	500-inch Small Bore Range/Camp Withycombe	N/A	1938 open range; Contributing feature	**Previously determined eligible for listing in the NRHP**	
26	Clackamas Cemetery/ SE Ambler Road	22E04CB/ 01000	1850 Pioneer cemetery	**Possibly eligible for listing in the NRHP** **Will not be affected; no further work needed**	

IDENTIFIED HISTORIC RESOURCES WITHIN THE SUNRISE PROJECT APE

Map ID	Property Name/Address	Map/Tax Lot	Construction Date/Resource Type	National Register Status	Photograph of Resource
27	13831 SE Ambler Lane	22E04CB/ 01200	Ca. 1945 World War II Era Cottage	Not eligible due to a loss of integrity and lack of architectural distinction	 
28	KEX Transmitter building towers and copper grid system/9415 SE Lawnfield Road	22E04D/ 00700 00702	1947-48 Art Deco-Moderne Commercial building	**Recommended to be eligible for listing in the NRHP** **Section 106 DOE complete**	
29	8810 SE Jannsen Road	22E09BD/ 03400	*1950 Minimal Traditional duplex house	Not eligible due to a loss of integrity and lack of architectural distinction	
30	14900 SE 82nd Drive	22E09AB/ 00400	Ca. 1920 Bungalow	Not eligible due to a loss of architectural integrity	

IDENTIFIED HISTORIC RESOURCES WITHIN THE SUNRISE PROJECT APE

Map ID	Property Name/Address	Map/Tax Lot	Construction Date/Resource Type	National Register Status	Photograph of Resource
31	Clackamas Community Club/15711 SE 90th Avenue	22E09CA/ 01000	Ca. 1950 Minimal Traditional house	Not eligible due to a loss of integrity and lack of architectural distinction	
32	Walter D. Hickey House/15605 SE 90th Avenue	22E09CA/ 00800	Ca. 1900 Vernacular house	Not eligible due to a loss of integrity Clackamas County Historic Inventory No further work needed	
33	Clackamas Computer/ 15791 SE 90th Avenue	22E09CA/ 01100	Ca. 1960 Ranch-style house	Not eligible due to a loss of integrity and lack of architectural distinction	
34	Columbia Body Manufacturing/ 10037 SE Mather Road	22E09A/ 00400	Ca. 1960 Industrial building	Not eligible due to a lack of architectural distinction	
35	16121 SE 122nd Avenue	22E10D/ 02300	Ca. 1960 Ranch-style house	Not eligible due to a lack of architectural distinction	

IDENTIFIED HISTORIC RESOURCES WITHIN THE SUNRISE PROJECT APE

Map ID	Property Name/Address	Map/Tax Lot	Construction Date/Resource Type	National Register Status	Photograph of Resource
36	15981 SE 122nd Avenue	22E10D/ 02100	Ca. 1950 Ranch-style house	Not eligible due to a lack of architectural distinction	
37	Emmert International/ 12441 SE Highway 212	22E10D/ 01703	Stored collection of moved houses, varying in age from ca. 1920 to modern	Not eligible due to a loss of architectural integrity	 
38	Silverthread Kraut and Pickle Works Building/ 15734 SE 130th Avenue	22E11D/ 02302	Ca. 1920 Agricultural processing facility	**Eligible for listing in the NRHP (with Resource # 39)** **Clackamas County Historic Inventory** **Clackamas County Landmark** **Section 106 DOE complete**	

IDENTIFIED HISTORIC RESOURCES WITHIN THE SUNRISE PROJECT APE

Map ID	Property Name/Address	Map/Tax Lot	Construction Date/Resource Type	National Register Status	Photograph of Resource
39	Frank Haberlach House/15730 SE Highway 212	22E11D/ 02312	Ca. 1916 Craftsman-style Bungalow	**Eligible for listing in the NRHP (with Resource # 38)** **Clackamas County Landmark** **Clackamas County Historic Inventory** **Section 106 DOE complete**	
40	Cascade Phillips Company/12215 SE Highway 212	22E11C/ 01500	Ca. 1950 Industrial building	Not eligible due to a lack of architectural distinction	
41	Cascade Phillips Company/12211 SE Highway 212	22E11C/ 01400	Ca. 1920 Craftsman-style house	Not eligible due to a loss of integrity and lack of architectural distinction	
42	Southern Pacific Railroad Willamette Valley Main Line	N/A	1868-1869; now operated by Union Pacific Company	**Eligible for listing in the NRHP** **Section 106 DOE and FOE complete**	

IDENTIFIED HISTORIC RESOURCES WITHIN THE SUNRISE PROJECT APE

Map ID	Property Name/Address	Map/Tax Lot	Construction Date/Resource Type	National Register Status	Photograph of Resource
43	Dryden's Super Service Texaco Station/13565 SE Highway 212	22E11AC/ 02590	Ca. 1945 Service Station	**Not eligible for listing in the NRHP** **Section 106 DOE complete** **No further work needed**	
44	13565 SE Highway 212	22E11AC/ 03000	Ca. 1920 Bungalow	Not eligible due to a loss of integrity and lack of architectural distinction	
45	13499 SE Highway 212	22E11AC/ 03100	Ca. 1960 Industrial building	Not eligible due to a lack of architectural distinction	
46	13171 SE Highway 212	22E11C/ 00100	Ca. 1960 Ranch-style house	Not eligible due to a lack of architectural distinction	
47	13163 SE Highway 212	22E11C/ 00101	Trailer housing, circa 1950s to 1970s	Not eligible due to a lack of architectural distinction	

IDENTIFIED HISTORIC RESOURCES WITHIN THE SUNRISE PROJECT APE

Map ID	Property Name/Address	Map/Tax Lot	Construction Date/Resource Type	National Register Status	Photograph of Resource
48	15203 SE 142nd Avenue	22E12B/ 03100	Ca. 1920 Bungalow	Not eligible due to a loss of integrity and lack of architectural distinction	
49	15251 SE 142nd Avenue	22E11A/ 00700	*1945 Cape Cod-style house	Not eligible due to a loss of integrity and lack of architectural distinction	
50	14801 SE Morning Way	22E12B/ 03601	*1957 Minimal Traditional-style house	Not eligible due to a lack of architectural distinction	
51	15431 SE 152nd Drive	22E12B/ 03800	*1925 Vernacular house	Not eligible due to a loss of integrity and lack of architectural distinction	
52	15481 SE 152nd Drive	22E12B/ 03900	*1948 Vernacular house	Not eligible due to a loss of integrity and lack of architectural distinction	

IDENTIFIED HISTORIC RESOURCES WITHIN THE SUNRISE PROJECT APE

Map ID	Property Name/Address	Map/Tax Lot	Construction Date/Resource Type	National Register Status	Photograph of Resource
53	John Donaldson House/ 15221 SE Highway 212	22E12A/ 00800	*1930 English Cottage-style house	**Previously determined not eligible for listing in the NRHP** **Clackamas County Historic Inventory** **No further work needed**	
54	14489 SE Highway 212	22E12B/ 03501	Ca. 1960 Ranch-style house	Not eligible due to a loss of integrity and lack of architectural distinction	
55	15278 SE Highway 224	22E12/ 00201	*1935 Bungalow	Not eligible due to a lack of architectural distinction	
56	15302 SE Highway 224	22E12/ 00102	*1936 English Cottage-style house	Not eligible due to a lack of architectural distinction	
57	Martin Lehman House/15690 SE Highway 212	22E12D/ 00700	*1926 English Cottage-style house	**Previously determined not eligible for listing in the NRHP** **No further work needed**	

IDENTIFIED HISTORIC RESOURCES WITHIN THE SUNRISE PROJECT APE

Map ID	Property Name/Address	Map/Tax Lot	Construction Date/Resource Type	National Register Status	Photograph of Resource
58	Svendsen-Brown Farmstead/ 16409 SE Highway 212	23E07B/ 01001	Ca. 1910 Vernacular house	**Not eligible for listing in the NRHP** **Section 106 DOE form complete** **No further work needed**	
59	Mirrell Newell House/16631 SE Highway 212	23E07B/ 01400	*1925 Craftsman-style Bungalow	**Not eligible for listing in the NRHP** **Section 106 DOE form complete** **No further work needed**	
60	15528 SE Anderegg Parkway	23E07CA/ 08100	Ca. 1920 Bungalow	Not eligible due to a loss of architectural integrity	
61	17746 SE Highway 212	23E07DA/ 00900	*1959 Vernacular house	Not eligible due to a loss of integrity and lack of architectural distinction	

IDENTIFIED HISTORIC RESOURCES WITHIN THE SUNRISE PROJECT APE

Map ID	Property Name/Address	Map/Tax Lot	Construction Date/Resource Type	National Register Status	Photograph of Resource
62	17780 SE Highway 212	23E07DA/ 00800	*1925 Bungalow	Not eligible due to a loss of integrity and lack of architectural distinction	
63	17900 SE Highway 212	23E07DA/ 00600	Ca. 1930 Vernacular garage and modern modular house	Not eligible due to a loss of integrity and lack of architectural distinction	
64	17920 SE Highway 212	23E7DA/ 00400	*1930 Colonial Bungalow	Not eligible due to a loss of integrity and lack of architectural distinction	
65	17981 SE Highway 212	23E7AD/ 00600	*1954 Vernacular house	Not eligible due to a loss of integrity and lack of architectural distinction	
66	17785 SE Armstrong Circle	23E07AD/ 00900	*1925 Vernacular house	Not eligible due to a loss of integrity and lack of architectural distinction	
67	17141 SE Armstrong Circle	23E07B/ 01500	*1945 Vernacular house	Not eligible due to a loss of architectural integrity	

IDENTIFIED HISTORIC RESOURCES WITHIN THE SUNRISE PROJECT APE

Map ID	Property Name/Address	Map/Tax Lot	Construction Date/Resource Type	National Register Status	Photograph of Resource
68	9500 SE Mather Rd.	22E09AC/ 00100	Ca. 1950 industrial warehouses	Not eligible due to a loss of integrity and lack of architectural distinction	
69	15571 to 15615 SE 82nd Drive	22E09CA/ 00100 and 22E09CA/ 00203	Ca. 1950 Commercial building	Not eligible due to a loss of integrity and lack of architectural distinction	
70	15951 SE 212 Highway	22E12D/ 00200	Ca. 1900 Vernacular house	Not eligible due to a lack of integrity and architectural distinction	
71	Clackamas Elementary School/15301 SE 92nd Avenue	22E0BD/ 04900	1939 public school building	**Eligible for listing in the NRHP** **Section 106 DOE and FOE complete**	

APPENDIX D. BRIEFING PAPER: ODOT'S EFFORTS ON CLIMATE CHANGE

Working Draft

INTRODUCTION

Climate Change mitigation encompasses activities devised to reduce the emission of greenhouse gases and thereby limit associated climate change. Climate change adaptation includes actions that would be implemented to respond to the effects of climate change. In its recent background document on climate change and transportation, the Federal Highway Administration listed the 4 primary climate change mitigation strategies to reduce greenhouse gas emissions from transportation. They are: (1) vehicle technology, (2) low carbon fuels, (3) vehicle miles traveled, and (4) systems efficiencies. The first two strategies are not directly affected by most ODOT activities. The second two mitigation strategies however, can be directly affected by ODOT and along with adaptation strategies characterize the efforts discussed in this document.

The purpose of this paper is to provide a quick topical listing of ODOT's current climate change efforts to brief both internal parties (managers and staff groups) and external constituents (legislators, various stakeholders, those involved in transportation funding discussions, and others with sufficient background and understanding of ODOT to quickly grasp the summary's context). Following this Introduction, the paper is organized into three major subgroups of climate change efforts:

- those **INTERNAL AND EXTERNAL EFFORTS** which are **PROCESS-RELATED**,
- those which are about ODOT's **INTERNAL OPERATIONS EFFORTS**,
- and those which are about the **EXTERNAL TRANSPORTATION SYSTEM EFFORTS**.

Following the 3 sections in the body of the paper are two Appendices that list **POLICY MANDATES RELATED TO INTERNAL OPERATIONS** and **POLICY MANDATES RELATED TO THE TRANSPORTATION SYSTEM**.

INTERNAL AND EXTERNAL PROCESS-RELATED EFFORTS

- ODOT has a Sustainability Program Manager, who reports to ODOT's Chief of Staff and interacts regularly with ODOT's Director, the Governor's Sustainability Advisor, and the Oregon Sustainability Board. Climate Change is one of many topics within the scope of ODOT's Sustainability Program which assists staff in carefully managing activities and assets so that the agency can sustain access to essential goods and services, economic opportunities, transportation choices, livable communities and healthy natural resources for all Oregonians.
- ODOT has a Sustainability Council, comprised of mid- to senior-level managers representing a variety of functional and geographic backgrounds. The Council provides high-level direction, approves and monitors sustainability work items, and recommends policy and practice changes to ODOT's Director.
- ODOT has a Climate Change Executive Group comprised of senior executive staff, the purpose of which is to provide overall direction within ODOT regarding the interrelationship of greenhouse gas production, global climate change and the planning and operation of Oregon's transportation systems. This group will provide a forum for discussion as to the work and activities of other internal committees and the impacts it has on the agency and their responsibilities.
- ODOT has a Climate Change Technical Advisory Committee the purpose of which is to develop an understanding of the implications of climate change initiatives to the agency and its work. Their purpose also includes providing credible technical advice regarding the interrelationship of greenhouse

gas production, global climate change and the planning and operation of Oregon's transportation systems, as well as the potential impacts of climate change on transportation infrastructure.

- The 2006 Oregon Transportation Plan (OTP) lays the policy foundation for addressing climate change. The OTP has seven broad goals, one of which is focused on sustainability. The sustainability goal has policy statements relating to environmental responsibility, energy, and creation of communities. Specific strategies are listed under each policy, some of which relate directly to climate change. In addition, climate change is discussed as one of the major challenges for the state's transportation systems.
- ODOT representatives participate in a number of key groups:
    - Governor's Climate Change Integration Group (CCIG) – through completion of Group's final report to the Governor, provided staff support, gave transportation and ODOT perspective, and reviewed report drafts.
    - Western Climate Initiative (WCI) – attend meetings and provide input.
    - Department of Environmental Quality Mandatory Greenhouse Gas Reporting Rulemaking – give transportation and ODOT perspective, member of the mobile source subcommittee.
    - The Governor's Transportation Committees including the Vision Committee and the Environmental Working Group – attend meetings and provide input.
    - The Global Warming Commission (GWC) - attend meetings and provide input.
    - The Transportation and Land Use Committee (T&LUC) of the GWC– provide staff support, attend meetings, and provide input.
    - The Modeling Subcommittee of the T&LUC – provide staff support, attend meetings, and have individuals that participate as full technical members.
    - The Big Look Task Force – attend meetings and provide input.
- ODOT is a member of the Oregon Natural Step Network, the Columbia Willamette Clean Cities Coalition, and will be a major sponsor of the Oregon Environmental Council 2008 Forum for Business and Environment.

INTERNAL OPERATIONS EFFORTS

- ODOT undertakes annual reporting of its own greenhouse gas emissions to the Department of Administrative Services (DAS) and the Governor's Office:
    - ODOT actively participated in the State of Oregon Greenhouse Gas Tracking interagency team (along with the Department of Environmental Quality, the Oregon Department of Energy, the Oregon University System, and the Department of Administrative Services) to develop the methodology for agencies to track their own emissions.
    - Three sources are included: building energy use, fleet fuel use, and solid waste generation.
    - Internal processes are being updated to enable more accurate and efficient data tracking and reporting.
- ODOT's Facilities Section is a leader in state government:
    - All new major facilities throughout the State are built to Leadership in Energy and Environmental Design (LEED) green building Silver standards at a minimum.
    - The Request for Proposals for the Transportation Building renovation targets LEED Gold as the desired level. This is justified by a cost-benefit study which showed that when lifecycle impacts are considered, a high performance environmentally friendly renovation of the Transportation Building would save about $90 million over 20 years (compared to a market-rate renovation).
    - ODOT is actively working to meet the Governor's energy goals through conservation measures and initiatives such as lighting switch-outs.
- ODOT's Fleet Section is a leader in state government:

  - In fiscal year 2007, 13% of the diesel fuels ODOT purchased were B20 biodiesel. In October 2007, the amount had increased to 22%, and ODOT is on track to meet the Governor's goal of 25% by July 2010.
  - Prioritizing hybrids and more efficient sedans over SUV's.
  - Switching out truck and message board lights to LED's to save energy and limit truck idling.
  - Beginning a project to convert an older Toyota Prius to a plug-in electric vehicle, aiming for 100 mpg.
  - Testing idle reduction technology on some of its heavy equipment.
- ODOT strives to reduce energy consumption by its highway lighting systems:
  - ODOT's Region 1 annual electric bill was over $1.2 million of which 50% came from signals and flashers. Region 1 has retrofitted 95% of its signals and flashers with power-saving LEDs resulting in energy consumption reductions equivalent to the annual power needed for over 140 Oregon homes. This has saved ODOT $110,000 per year on its electric bill.
- ODOT encourages alternative employee commute practices:
  - ODOT and/or DAS provide free transit passes to employees who work more than half time and more than 6 months a year at Region 1 headquarters in Portland and all employees who work within the Salem Capitol Mall area.
  - Employees who work outside Region 1 headquarters or the Capitol Mall but within mass transit districts have the ability to purchase transit passes on a pre-tax basis via payroll deduction.
  - ODOT encourages participation in the Bike Commute Challenge, a competition between businesses to increase bicycle use.
  - ODOT Policy PER 18 (Telecommuting) endorses telecommuting as a work option for selected employees; the policy states that "when appropriately applied, such practice can benefit both the Department and the employee in improved employee performance, enhanced employee morale, reduced commuting miles, and reduced air pollution and traffic congestion." ODOT's Virtual Private Network allows employees access to their files and email from home and other remote locations.
  - ODOT employs technology solutions such as video conferencing, tele-conferencing, and web casts (I-link) to allow employees to participate remotely in meetings and conferences and avoid excessive travel.
  - Inside ODOT articles promote ways to save fuel and other resources during work-related travel and employee commutes.
- Conservation and Alternative Resource Teams (CART) are small "green teams" of interested employees at major ODOT offices who help educate employees about work-related conservation efforts such as recycling, energy saving and commuting options. CART members have their supervisor's approval to spend a few hours a month on CART activities.

EXTERNAL TRANSPORTATION SYSTEM EFFORTS

Land Use and Planning

- ODOT provides financial and technical support to local governments and Metropolitan Planning Organizations in the development of plans under the Transportation Planning Rule (TPR) and Statewide Planning Goal 12. Oregon's TPR requires reduced reliance on Single Occupant Vehicles (SOV) and local actions encouraging the development and use of reasonable alternatives such as transit and ridesharing. Statewide Planning Goal 12 requires that transportation systems, to the fullest extent possible, should be planned to use existing facilities and rights-of-way provided that such use is not inconsistent with the environmental, energy, land-use, economic or social policies of the state.

- The Oregon Highway Plan (establishes long-range policies and investment strategies for the State Highway System) written in 1999 and amended as recently as January 2006, includes goals, policies, and actions associated with Land Use and Transportation Policies, Travel Alternatives, and Environmental Resources among others. Climate change is addressed through the associated goals and policies about Access Management, Transportation Demand Management (TDM), and actions that protect Air Quality.
- The Transportation and Growth Management (TGM) Program supports community efforts to expand transportation choices for people. By linking land use and transportation planning, TGM works in partnership with local governments to create vibrant, livable places in which people can walk, bike, take transit or drive where they want to go.
- ODOT's Transportation Planning Analysis Unit is developing the GreenSTEP model, a sketch-book planning tool to estimate greenhouse gas emissions from the surface portions of the transportation sector and to assist in determining how the transportation sector can meet the statewide emissions targets in future years.
- ODOT is a key participant in the Oregon Modeling Steering Committee (OMSC) formed to improve the state-of-the-practice and promote state-of-the-art land use-transportation modeling in the state of Oregon and serve as a consensus forum and support group to coordinate the land use-transportation modeling efforts of federal, state, regional and local agencies. The OMSC serves as a technical resource and peer reviewer of land use and transportation planning tools developed for greenhouse gas emission analysis.

Multi-Modal System

- ODOT's Public Transit Division assists communities with the development of alternative transportation options, including rideshare programs, park and ride lots, telecommuting programs, and information and incentive programs to encourage the use of alternatives to driving alone:
    - In 2005 ODOT worked with local jurisdictions to conduct individualized marketing pilot projects in Portland, Salem/Keizer, Eugene, and Bend. The program called TravelSmart uses innovative individualized marketing to encourage environmentally-friendly ways to travel.
    - In February 2006 ODOT, Metro, TriMet, City of Vancouver and other public and private partners launched the Drive Less/Save More Campaign in February 2006. The Drive Less/Save More Campaign seeks to reduce single-person car trips by promoting travel options like public transit, car pooling, biking and walking and encouraging drivers to trip chain or combine multiple errands into single trips.
    - ODOT Region 2 sponsors the Commuter Solutions Group in Lane County
    - ODOT is a key sponsoring agency for the Central Oregon Commute Options program, including the Central Oregon Rideshare & Transportation Demand management Program.
    - ODOT Regions dedicate a portion of their Statewide Transportation Improvement Program requests for funding capital investments in transit.
    - In 2004 ODOT Public Transit Division used flexible federal funds to initiate a small program to assist urban transit providers to replace older mass transit vehicles. The program started with $1 million annually and has been increased to $2 million annually, replacing roughly eight large buses each year.
    - ODOT encourages public transit providers to use alternative fuels where possible. Some providers are increasing the amount of biofuels they use, as well as experimenting with improved engines and hybrid options in their fleets.
    - ODOT Public Transit Division has used increases in federal funds for rural and intercity bus service to fund new or expanded service in Welches, Sandy, Yamhill County, Curry County, Linn County, Hood River, The Dalles, Columbia County and other areas of Oregon.

  - ODOT Transit Division and Rail Division have collaborated to improve and increase bus/rail connections. Service and schedules have been coordinated to connect additional Amtrak choices in Portland. Currently ODOT is testing productivity for weekend express bus/rail connections for Eugene and University of Oregon students.
  - ODOT Transit Division and the Governor's Office are collaborating in the "Governor's Commute Challenge". A 2008 summer activity challenging State Capital Mall employees to reduce drive-alone trips and save greenhouse gas emissions.
- The ODOT Rail Division represents and advocates for customers of railroads, both passenger and freight, to ensure a safe, efficient and reliable rail transportation system. ODOT supports Amtrak rail service from Eugene to Portland, increasing to five trains and four Amtrak Thruway bus connections to trains per day.
- The ODOT Bicycle and Pedestrian Program provides direction to ODOT in establishing pedestrian and bicycle facilities on state highways and provides support to local governments, governmental and non-governmental organizations and private citizens, in planning, designing and constructing pedestrian and bicycle facilities.
  - The Transportation Enhancements program pays for millions of dollars of sidewalk and streetscape improvements, bicycle lanes, and multi-use pathways projects each year.
  - Safe Routes to School program will fund Oregon Schools and School Districts with over $3 million for education and enforcement projects designed to encourage and enable easier and healthier ways for children to walk and bike to and from school safely, reducing the need to drive.
- The Congestion Mitigation and Air Quality (CMAQ) Improvement Program provides approximately $14 million per year of funds across Oregon for Transportation Demand Management (TDM), Transit, and Bicycle/Pedestrian facilities projects
- *Connect*Oregon is a lottery bond based initiative to invest in air, rail, marine and transit infrastructure to ensure Oregon's multi-modal transportation system is strong, diverse, and efficient.
  - *Connect*Oregon I, approved in the 2005 legislative session, has 40 projects all of which are underway, many of which are complete. It was a significant success with even non-funded applicants praising the process. Associated projects included the Portland Streetcar Lowell Extension, the Lane Transit District Pioneer Parkway Bus Rapid Transit Project, the City of Bend Public Transit Operations and Maintenance Center, and the Community Connection of Northeast Oregon multimodal Transit Consolidation and Improvement Project.
  - A bill for *Connect*Oregon II was successful in the 2007 Legislature. The Oregon Transportation Commission has recently approved the selection of projects for *Connect*Oregon II. Selected projects for include a Columbia County Public Transit Facility, the Lane Transit District Veneta Transit Center, the Salem-Keizer Transit District Keizer Transit Center, the City of Bend Central Oregon Inter-modal Transit Center, the City of Prineville Multi-modal Railroad/Freight Depot, and the Union County Alicel Inter-modal Rail Logistics Center.
- ODOT is a key partner with other public agencies in financing transit expansions in the Portland Metro area:
  - ODOT allocated $7 million of federal Surface Transportation Program funds and provided right-of-way at a significant below-market value to support the expansion of TriMet light rail along the I-205 corridor.
  - ODOT Financial Services is assisting with the sale of $250 million of lottery backed bonds that will assist in capital construction of the TriMet light rail expansion and ODOT Public Transit is administering the distribution of $20 million in lottery backed bonds for the purchase of streetcars to enable streetcar system expansion.

Freight

- ODOT Motor Carrier's Green Light program helps truckers save time and money and reduce emissions by "preclearing" trucks so they don't have to stop at Oregon weigh stations – saving an estimated 113,000 hours and $13 million for truckers in 2006.
- TDD's Freight Mobility Section is conducting Oregon's first statewide freight planning effort, to ensure freight planning at local, statewide and regional levels reflects Oregon's sustainability as well as economic goals and strategies.
- In 2006, ODOT provided a $3 million loan to the non-profit organization Cascade Sierra Solutions (CSS) to fund heavy-duty truck efficiency and idle reduction programs that reduce fuel consumption and greenhouse gas emissions. CSS operates in the States of Washington, Oregon and California with a primary focus on the Interstate 5 corridor. This loan was unprecedented and ODOT worked closely with FHWA to make the money available. The loan funds purchases of fuel-saving equipment like auxiliary power units which CSS then leases to small truck operators.
- ODOT participated in a 2005 Oregon Solutions project to promote truck stop electrification, and a number of truck plazas in Oregon have invested in electrified hookups. These are used to power refrigeration trucks and cab heat and air conditioning systems so that truck operators do not have to idle their diesel engines overnight.
- In light of the significant impact to the renewable energy sector and economic development in the state, ODOT accelerated decision-making processes to allow oversized vehicles on I-84 for shipping wind turbines.

Optimizing the System

- ODOT participated in the City of Portland's grant from the Climate Trust to improve signal coordination on 3 ODOT corridors in the Portland Metro area. The retiming was completed in 2005. It was estimated that the retiming would offset more than 33,000 metric tons of CO2 in the first year alone, with declining benefits after that. The grant paid for equipment to allow better signal coordination.
- ODOT's Region 1 has implemented adaptive ramp metering control systems. The ramp signals are optimized to keep the freeway traffic moving as well as possible depending on the level of congestion. This limits stopping and starting on the ramps and helps to reduce vehicular emissions and fuel consumption.
- Under the previous system the meters were pretimed and would stop vehicles on the ramps even when there was no congestion. Since 2004, ODOT has added a number of Intelligent Transportation System (ITS) technologies including cameras, variable message signs, highway advisory radio and weather stations to our inventory for operating the system. We have made improvements to our traveler information systems such as adding better information about public transportation options to TripCheck, delivering traveler information better formatted for wireless devices through our TripCheck Mobile system, and delivering traveler information to cable TV in several locations around the state. These technologies help optimize the use of the systems and ease peak demand.

Innovative Pilot Projects

- With direction from the legislatively mandated Road User Fee Task Force, ODOT developed an electronic mileage fee collection system that could support congestion pricing. This system, which would enable ODOT to disconnect its revenues from the consumption of fossil fuels, was tested in a year long study that ended in March 2007 and included a congestion pricing element.
- The Oregon Solar Highway Initiative – ODOT has initiated a project to demonstrate the viability of locating solar arrays along state highway rights of way. The first demonstration project is located at the interchange of I-5 and I-205 and will be operational before year's end. Funding for the project comes

through a public-private partnership with Portland General Electric (see http://www.oregon.gov/ODOT/HWY/OIPP/docs/solar_factsheet.pdf for details on the financing). ODOT will not own the array and is not responsible for operating or maintaining it. Instead ODOT will purchase the green power generated from the array at the same rate it would pay for grid energy – essentially getting caviar for the price of trout eggs. This is significant because unlike other state (General Fund) agencies, ODOT cannot purchase "green tags" or renewable energy certificates in order to secure green electricity, due to current interpretation of the constitutional limitations on the Highway Fund. ODOT can only get green energy by generating its own. This single installation will reduce annual carbon emissions by 38.9 metric tons of CO2e (carbon dioxide equivalent) compared to electricity purchased from the Pacific Northwest Regional Energy Grid. Future installations will include other ODOT properties, including roof tops, facility ground mounts, and right of way installations.

- ODOT Alternative Fuels Corridor - The Department is leading an effort to incubate the distribution of alternative fuels and/or solar powered charging stations for plug-in electric hybrid vehicles along the I-5 corridor to help increase the market demand for alternative fuel vehicles, by developing partnerships with the private sector and/or other public partners.
- ODOT's Innovative Partnership Program is working with Portland General Electric and other partners on a demonstration project which will design standards for charging stations and develop a public awareness campaign to prepare for mass adoptions of plug-in cars over the next two to five years. For ODOT, the project is part of a larger effort that will investigate a variety of methods for funding, installing, and managing a network of charging stations.
- The Oregon Transportation Commission set aside $8 million in Operations Program funding to be utilized in a competitive project selection process to identify innovative concepts for reducing congestion and/or improving freight mobility on the state highway system. The program will fund the projects that best demonstrate innovative system operations and management strategies and technologies and that have the highest potential for improving the state of the practice for transportation operations. Project funding recommendations from the selection committee will be presented to the OTC in October 2008 for approval.

Highway Construction Projects

- The Columbia River Crossing project in the Portland area, undertook an analysis of greenhouse gas impacts as part of the Draft Environmental Impact Statement alternatives analysis.
- Various aspects of ODOT's innovative Context Sensitive and Sustainable Solutions (CS^3) approach to the OTIA III bridge program support greenhouse gas reductions:
    - The OTIA III Access/Staging Performance Standard limits truck idling to five minutes, except in extreme cold weather or when needed for other reasons.
    - The OTIA III Materials Procurement and Use Performance Standard requires contractors to use ultra-low sulfur fuel, bio-diesel, or EPA-verified fuel additives in vehicles and equipment where possible and available, or a minimum of highway grade fuel where alternative fuels are not possible.

APPENDIX 1: POLICY MANDATES RELATED TO INTERNAL OPERATIONS

ORS 276.900 states that "It is the policy of the State of Oregon that facilities to be constructed or purchased by authorized state agencies be designed, constructed, renovated and operated so as to minimize the use of nonrenewable energy resources and to serve as models of energy efficiency."

A goal of 20% energy reduction by state agencies by 2010 (over a 2000 baseline) is mandated by Executive Order 06-02; energy savings are required to come from both new and existing buildings and other metered electricity use.

When siting state office locations, Executive Order 94-07 "Siting State Offices in Oregon's Community Centers" requires preferential consideration be given to locations within central business districts and conveniently close to transit in communities that have transit service. Other areas of mixed use development that are highly accessible to the public, have a fully developed pedestrian circulation system, have high quality transit service (in those communities with transit service), and are designated as urban centers in the applicable comprehensive plan may also be given priority consideration.

OAR 330-130 prescribes procedures to minimize energy use in new and renovated facilities designed and constructed by state agencies; guidelines for implementing these procedures are given in the State Energy Efficient Design (SEED) Program Guidelines.

Governor Kulongoski has stated his desire for state agencies to purchase 100% of their energy from renewable sources by 2010.

Oregon's Renewable Energy Action Plan (REAP) mandates the following use of biofuels: 10% of the gasoline used by state government's fleet vehicles will be E-85 by 2010, increasing to 25% by 2025; 10% of the diesel used by state government's fleet vehicles will be B-20 by July 2007, increasing to 25% by July 2010 and 100% 2025.

DAS Policy 125-6-010 "Sustainable Facilities Standards and Guidelines" requires:

- Building decisions must consider the full life of materials. The review must include life cycle assessment and life cycle cost factors.
- New state-owned buildings shall be designed to meet the point equivalent of a Leadership in Energy and Environmental Design (LEED™) Silver rating.
- Renovations of state-owned or build-to-suit leased buildings shall be designed to meet the point equivalent of a LEED™ Certified rating.

DAS Policy 107-009-0050 "Sustainable Acquisition and Disposal of Electronic Equipment" requires the use of Electronic Products and Acquisition Technology (EPEAT) environmental and energy criteria for the purchase of computer equipment such as desktops, computer laptops, computer monitors, and input or output devices.

APPENDIX 2: POLICY MANDATES RELATED TO THE TRANSPORTATION SYSTEM

OTP[1] Policy 1.1 – It is the policy of the State of Oregon to plan and develop a balanced, integrated transportation system with modal choices for the movement of people and goods.

OTP Policy 2.1 – It is the policy of the State of Oregon to manage the transportation system to improve its capacity and operational efficiency for the long term benefit of people and goods movement.

OTP Policy 4.2 – It is the policy of the State of Oregon to support efforts to move to a diversified and cleaner energy supply, promote fuel efficiencies and prepare for possible fuel shortages.

OHP[2] Policy 4B – It is the policy of the State of Oregon to advance and support alternative passenger transportation systems where travel demand, land use, and other factors indicate the potential for successful and effective development of alternative passenger modes.

OHP Policy 4D – It is the policy of the State of Oregon to support the efficient use of the state transportation system through investment in transportation demand management strategies.

ORS 469.010 states that "It is the goal of Oregon to promote the efficient use of energy resources and to develop permanently sustainable energy resources" and includes the following policy: "energy-efficient modes of transportation for people and goods shall be encouraged, while energy-inefficient modes of transportation shall be discouraged."

House Bill 3543 (The Climate Change Integration Act) created specific greenhouse gas emissions reduction goals for the state:

1. By 2010, arrest the growth of Oregon's greenhouse gas emissions and begin to reduce them.
2. By 2020, achieve greenhouse gas levels that are 10 percent below 1990 levels.
3. By 2050, achieve greenhouse gas levels that are at least 75 percent below 1990 levels.

ORS 366.514 requires that wherever highways, roads, or streets are being constructed, reconstructed, or relocated, footpaths and bicycle trails will be built as part of these projects. The amount expended by ODOT shall never in any one fiscal year be less than one percent of the funds received from the Highway Fund.

[1] *Oregon Transportation Plan, 2006*

[2] *Oregon Highway Plan, 1999*

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APPENDIX E. LIST OF RECIPIENTS

The following is a list of agencies, organizations, and persons to whom copies of the Draft Supplemental Environmental Impact Statement (SDEIS) were sent. In addition to the agencies and organizations listed below, every individual on the PAC and PRC received a copy of the SDEIS. These persons (including agency or organizational affiliation) are listed in Appendix A.

Federal Agencies

U.S. Department of Transportation, Federal Highway Administration, Oregon Division, Salem, OR
U.S. Department of Transportation, Federal Highway Administration, Legal Department, San Francisco, CA
U.S. Army Corps of Engineers, Portland District, Portland, OR
U.S. Department of Commerce, National Marine Fisheries Service, Northwest Regional Office, Portland, OR
U.S. Department of the Interior, Washington, DC
U.S. Environmental Protection Agency, Region 10, Seattle, WA
U.S. Environmental Protection Agency, Headquarters, Washington, DC
U.S. Fish and Wildlife Service, Region 1, Pacific Region, Portland, OR

State Agencies

Oregon Department of Land and Conservation and Development, Salem, OR
Oregon Department of Environmental Quality, Salem, OR
Oregon Department of Fish and Wildlife, Salem, OR
Oregon Department of State Lands, Salem, OR
Oregon Department of Transportation, Geo-Environmental, Salem, OR
Oregon Department of Transportation, Region 1, Environmental, Planning, Portland, OR
Oregon Department of Transportation, Region 1, Maintenance District 2B, Clackamas, OR
Oregon Department of Transportation, Tribal Liaison, Salem, OR
Oregon Military Department-Camp Withycombe, Clackamas, OR
Oregon State Library, Salem, OR
Oregon Parks and Recreation Department, State Historic Preservation Office, Salem, OR

Local Agencies

Clackamas County, Department of Transportation and Development, Clackamas, OR
Clackamas County Department of Transportation and Development, Planning Division, Clackamas OR
Clackamas County Department of Transportation and Development, Engineering Division, Clackamas, OR
Clackamas County Development Agency, Clackamas OR
Clackamas County Board of County Commissioners, Oregon City OR
Clackamas County Sheriff's Office, Oregon City OR
Clackamas County Special Service District: Water Environment Services, Clackamas, OR
Clackamas County Special Service District: North Clackamas Parks and Recreation District, Clackamas, OR
City of Damascus, Planning Department, Damascus OR
City of Happy Valley, Economic and Community Department, Happy Valley, OR
City of Milwaukie, Community Development Department, Milwaukie, OR
Metro Regional Center, Planning and Development, Portland, OR
North Clackamas School District #12, Superintendent's Office, Milwaukie, OR
Clackamas Fire District #1, Administration Division, Clackamas, OR

Tribes

Confederated Tribes of the Warm Springs, Attn: Natural Resources, Warm Springs, OR
Confederated Tribes of the Grand Ronde, Grand Ronde, OR
Confederated Tribes of Siletz, Siletz, OR

Organizations

Clackamas Corner Library, Happy Valley, OR
Multnomah County Library, Central Library, Portland, OR
North Clackamas Chamber of Commerce, Milwaukie, OR

Other Interested Parties

Copies of the SDEIS were sent out to other interested businesses, individuals, and organizations as requested. ODOT sent post-card and email notifications of the publication and availability of the SDEIS to the interested party mailing list established for the project.