



Sunrise Project, I-205 to Rock Creek Junction

Final Environmental Impact Statement


December 2010



**Sunrise Project: I-205 to Rock Creek Junction
Clackamas County, Oregon
ODOT Key # 12454, Federal Aid # C005(046)
Final Environmental Impact Statement**

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


for Jason Tell, ODOT Region 1 Manager
12/15/2010
Date of Approval


Phillip A. Ditzler, Division Administrator, FHWA
DECEMBER 16, 2010
Date of Approval

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

Thomas Picco
Principal Planner/Project Manager
Oregon Department of Transportation, ODOT Region 1
123 NW Flanders Street
Portland, OR 97209-4012
(503) 731-8230

Michelle Eraut
Environmental Program Manager
Federal Highway Administration
530 Center Street NE, Suite 100
Salem, OR 97301
(503) 587-4716

The Oregon Department of Transportation (ODOT) and Clackamas County plan 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, Oregon. A Draft Environmental Impact Statement (DEIS)—*Sunrise Corridor OR 212/224 (I-205 to US 26)*—was published in 1993. A Supplemental Draft Environmental Impact Statement (SDEIS) published October 10, 2008, evaluated two build alternatives, a no build alternative, and six design options.

The Sunrise Project **Preferred Alternative** will 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 highway will have six through-lanes plus two auxiliary lanes. The Sunrise Project will become the designated OR 212/224, with the existing OR 212/224 becoming a county arterial.

Major benefits from the project are significantly slowing the growth of traffic congestion and improving safety on I-205 and OR 212/224. Building the project will support planned growth in the northwest area of Clackamas County. Key issues in building the project are protecting a significant wildlife corridor and addressing noise impacts to a large residential area. Major environmental impacts from the **Preferred Alternative** include conversion of approximately 500 acres of land to highway use; relocation of about 80 businesses and 53 residences; creation of noise impacts to 241 residential properties after implementation of abatement measures; removal of about 94 acres of wildlife habitat; impacts to 23 acres of wetlands; and creation of 114 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 acres of the recreation field at Clackamas Elementary School, addressed as a Section 4(f) *de minimis* finding.

Construction is planned to begin in 2013 and total project costs (consisting of right-of-way acquisition and construction costs) are estimated to be \$1.49 billion (in 2013 dollars). Project construction is likely to be phased.

This page intentionally left blank.

.

TO THOSE WHO HAVE EXPRESSED INTEREST IN THE

Sunrise Project, I-205 to Rock Creek Junction

Final Environmental Impact Statement

Clackamas County, Oregon

Oregon Department of Transportation Key No. 12454

Federal Aid Number: C005(046)

Thank you for your interest in the **Sunrise Project**. The Federal Highway Administration, Oregon Department of Transportation, and Clackamas County have completed **the Final Environmental Impact Statement (FEIS)**. If a federal Record of Decision is published, it will be no sooner than 30 days from the publication of this FEIS.

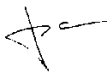
Comments may be sent to:

Thomas Picco
ODOT Principal Planner and ODOT Sunrise Project Manager
Oregon Department of Transportation, Region 1
123 NW Flanders Street
Portland, OR 97209-4012
(503) 731-8230
Thomas.J.PICCO@odot.state.or.us

Michelle Eraut
Environmental Program Manager
Federal Highway Administration
530 Center Street NE, Suite 100
Salem, OR 97301
(503) 587-4716
Michelle.Eraut@dot.gov

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

Thank you for your participation,



Jason Tell
ODOT Region 1 Manager

This page intentionally left blank.

NOTICE OF AVAILABILITY

This Final EIS is available for review at the following locations:

Clackamas County Planning Department
Development Services Building
150 Beaver Creek 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

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

Metro Regional Center
600 NE Grand Avenue
Portland, OR 97232

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

ODOT Maintenance Building
9200 SE Lawnfield Road
Clackamas, OR 97015

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

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

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/>

This page intentionally left blank.

ACRONYMS AND ABBREVIATIONS

AADT	Annual Average Daily Traffic	ESA	Endangered Species Act
ADT	Average Daily Traffic	FEIS	Final Environmental Impact Statement
APE	Area of Potential Effect	FHWA	Federal Highway Administration
API	Area of Potential Impact	gsf	gross square feet
BG	Block Group (Census)	GHG	Greenhouse gas
BP	Business Park	GIS	Geographic Information System
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	HCT	High Capacity Transit
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System	HPA	High-probability area
CETAS	Collaborative Environmental and Transportation Agreement for Streamlining	I-205	Interstate 205
CFR	Code of Federal Regulations	L _{eq}	Hourly Equivalent Noise Level
CO	Carbon monoxide	LOS	Level of Service
CO ₂	Carbon dioxide	LUST	Leaking Underground Storage Tank
CT	Census Tract	Metro	Metropolitan Service District (Portland)
dBA	A-weighted decibels	mph	miles per hour
DEIS	Draft Environmental Impact Statement	MSATs	mobile source air toxics
DSL	Department of State Lands	NAAQS	National Ambient Air Quality Standards
ECSI	Environmental Cleanup Site Information System	NAC	Noise Abatement Criteria
EFU	Exclusive Farm Use zoning designation	NEPA	National Environmental Policy Act
EIS	Environmental Impact Statement	NFA	No Further Action
EJ	Environmental Justice	NHPA	National Historic Preservation Act
EPA	Environmental Protection Agency	NMFS	National Marine Fisheries Service
		NO _x	nitrogen oxides
		NPL	National Priority List
		NRHP	National Register of Historic Places
		OAR	Oregon Administrative Rule

OCS	Oregon Conservation Strategy	T&E	Threatened and Endangered
ODEQ	Oregon Department of Environmental Quality	TCM	Transportation Control Measure
ODOT	Oregon Department of Transportation	TDM	Transit/Transportation Demand Management
ORNHIC	Oregon Natural Heritage Information Center	TSM	Transit/Transportation System Management
OTC	Oregon Transportation Commission	UGB	Urban Growth Boundary
OTIA	Oregon Transportation Investment Act	UIC	Underground injection control
PAHs	polycyclic aromatic hydrocarbons	UPRR	Union Pacific Railroad
PATA	Portland Air Toxics Assessment	USACE	U.S. Army Corps of Engineers
PCBs	Polychlorinated Biphenyls	USFWS	U.S. Fish and Wildlife Service
PEM	palustrine emergent wetland	UST	Underground Storage Tank
PFO	palustrine forested wetland	v/c	Volume-to-capacity
POM	polycyclic organic matter	VHD	Vehicle Hours of Delay
PSS	palustrine scrub-shrub wetland	VMT	vehicle miles traveled
ROD	Record of Decision	vpd	vehicles per day
RCRA	Resource Conservation and Recovery Act	VOC	Volatile Organic Compound
RTP	Regional Transportation Plan (Metro)	WVC	Wildlife Vehicle Collision
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		

CONTENTS

NOTICE OF AVAILABILITY	iii
ACRONYMS AND ABBREVIATIONS	v
HOW TO USE THIS DOCUMENT	xvii
FEIS.....	xvii
EXECUTIVE SUMMARY AND CHAPTERS 1-6	xvii
APPENDICES.....	xviii
TECHNICAL REPORTS	xviii
EXECUTIVE SUMMARY	ES-1
THE PROBLEM	ES-1
PROPOSED ACTION FROM THE SDEIS	ES-1
PREFERRED ALTERNATIVE IDENTIFIED IN THE FEIS	ES-5
PROJECT PURPOSE AND NEED	ES-5
<i>Project Purpose</i>	ES-5
<i>Project Need</i>	ES-5
PROJECT ALTERNATIVES CONSIDERED IN THE SDEIS	ES-6
<i>Preferred Alternative Identified in this FEIS</i>	ES-8
PRELIMINARY PROJECT COSTS	ES-8
WITHOUT THE SUNRISE PROJECT: ALTERNATIVE 1—NO BUILD.....	ES-23
PREVIOUS AND RELATED WORK.....	ES-23
NEPA HISTORY	ES-23
<i>Purpose and Need in 1993 and 2005</i>	ES-24
<i>Purpose of the SDEIS</i>	ES-24
<i>Purpose of the Final EIS</i>	ES-25
SUMMARY OF IMPACTS AND MITIGATION.....	ES-25
PERMITS AND APPROVALS NEEDED	ES-50
CHARACTERISTICS OF A GOOD SOLUTION.....	ES-53
PUBLIC AND AGENCY INVOLVEMENT	ES-58
<i>Public Involvement Activities from 2004 to the Publication of this FEIS</i>	ES-58
<i>Project Schedule</i>	ES-59
NEXT STEPS	ES-59
CHAPTER 1. PURPOSE AND NEED.....	1
THE PROBLEM	1
PROJECT PURPOSE	1
PROJECT NEED	1
PROPOSED ACTION FROM THE SDEIS	2
PREFERRED ALTERNATIVE	2
PROJECT BACKGROUND AND SETTING	2
THE PROBLEM IN DETAIL.....	3
<i>Congestion</i>	3
<i>Safety</i>	4
<i>Traffic Flow</i>	4
<i>Projected Demand for an Expanded Transportation System</i>	5
PUBLIC AND AGENCY INVOLVEMENT	5
<i>Public Involvement before 2004</i>	7
<i>Public Involvement Activities from 2004 to Publication of this FEIS</i>	7
<i>How to Comment on this FEIS</i>	10

CHAPTER 2. ALTERNATIVES AND ALTERNATIVES DEVELOPMENT	11
ALTERNATIVE SOLUTIONS	11
<i>How a Range of Alternatives Was Developed</i>	11
<i>Alternatives Considered but Dismissed</i>	12
<i>Alternatives Carried Forward</i>	17
ALTERNATIVES EVALUATED IN THE SDEIS	17
<i>Alternative 1 – No Build</i>	17
<i>Alternative 2 – Limited-Access Highway with Midpoint Access</i>	19
<i>Alternative 3 – Limited-Access Highway with No Midpoint Access</i>	19
<i>Design Options</i>	20
PREFERRED ALTERNATIVE EVALUATED IN THIS FEIS	21
<i>I-205 Interchange Area</i>	22
<i>Midpoint Area</i>	22
<i>Rock Creek Area</i>	22
<i>Transit, Bikeway, and Pedestrian Improvements</i>	23
<i>How New Connections Would Be Made</i>	23
SELECTION OF THE PREFERRED ALTERNATIVE	25
<i>Other Project Refinements</i>	27
CONSIDERATION OF CONCERNS AND ISSUES RAISED DURING THE PUBLIC COMMENT PERIOD	28
<i>Comparison of Alternatives and Design Options</i>	31
PRELIMINARY PROJECT COSTS	31
<i>Alternatives 2 and 3</i>	31
<i>Preferred Alternative</i>	31
<i>Funding</i>	32
CHAPTER 3. AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND MITIGATION MEASURES	45
TRANSPORTATION	45
<i>Planned Growth</i>	45
<i>Congestion</i>	45
<i>Safety</i>	46
<i>The 2030 Transportation System</i>	47
<i>I-205 Interchange Design Option A-2</i>	51
<i>Impacts of the Midpoint Interchange</i>	52
<i>Rock Creek Junction Design Options</i>	53
<i>Consistency with Transportation Plans and Policies</i>	53
<i>Mitigation Measures for the Preferred Alternative</i>	54
LAND USE	67
<i>Right-of-Way Impacts</i>	67
<i>Comparison of Land Use Impacts by Alternative</i>	68
<i>Impacts to Unique Land Uses</i>	71
<i>Compatibility with Land Use Plans and Policies</i>	72
<i>Land Use Approvals and Planned Development</i>	73
<i>Driveway Impacts</i>	73
<i>Indirect Effects</i>	74
<i>Mitigation Measures for the Preferred Alternative</i>	74
PARKS AND RECREATION	85
<i>Existing Recreation Facilities</i>	85
<i>Planned Recreation Facilities</i>	85
<i>Alternatives 2 and 3 and the Preferred Alternative</i>	90
<i>Indirect Effects</i>	90
<i>Mitigation Measures for the Preferred Alternative</i>	90
BUSINESS AND COMMUNITIES	95
<i>Businesses and the Economy</i>	95
<i>Right-of-Way Impacts to Businesses</i>	95

Significant Economic Issues.....	97
Population and Households.....	97
Affordable Housing	98
Community Character	98
Schools	100
Changes to Travel Patterns	101
Property Values and Tax Revenues	105
Indirect Effects.....	105
Mitigation Measures for the Preferred Alternative.....	105
ENVIRONMENTAL JUSTICE.....	109
Finding for EO 12898.....	110
Data.....	112
Low-Income Populations.....	114
Other Groups.....	114
Residential Displacement Impacts	115
Community Resources.....	116
Travel Patterns and Accessibility.....	116
Noise Impacts.....	116
Air Quality Impacts.....	117
Determining Environmental Justice Effects.....	117
Indirect Effects.....	122
Mitigation Measures for the Preferred Alternative.....	122
VISUAL CHARACTER AND RESOURCES.....	127
Visual Quality Scoring	127
Viewers and Viewer Sensitivity.....	128
Simulation Views.....	133
New Views.....	134
Indirect Effects.....	134
Mitigation Measures for the Preferred Alternative.....	134
NOISE.....	147
Project Area Noise Modeling.....	147
Project Area Impacts	148
Indirect Effects.....	152
Noise Abatement Measures for the Preferred Alternative.....	156
AIR QUALITY	165
Project Area Impacts	165
Alternatives 2 and 3	165
Preferred Alternative Project-Level Conformity Statement.....	166
Mobile Source Air Toxics Impact Analysis	166
Regional Conformity for the Preferred Alternative	171
Indirect Effects.....	171
Mitigation Measures for the Preferred Alternative.....	171
GREENHOUSE GAS IMPACTS AND GLOBAL CLIMATE CHANGE.....	173
Oregon Strategies	174
Mitigation Measures for the Preferred Alternative.....	174
ENERGY	175
Project Area Impacts.....	175
Indirect Effects.....	176
Mitigation Measures for the Preferred Alternative.....	176
BIOLOGY	177
Wildlife Habitat	177
Fish Habitat	183
Water Quality.....	186
Noxious Weeds.....	188
Threatened or Endangered Fish, Terrestrial Wildlife, and Plants.....	189

<i>Indirect Effects</i>	190
<i>Mitigation Measures for the Preferred Alternative</i>	190
WETLANDS.....	235
<i>Wetlands in the Project Area</i>	235
<i>Amount of Wetlands Affected</i>	236
<i>Wetland Functions</i>	237
<i>Floodplains</i>	242
<i>Indirect Effects</i>	244
<i>Wetland Avoidance, Minimization, and Mitigation Measures for the Preferred Alternative</i>	244
GEOLOGY AND SOILS	251
<i>Geology</i>	251
<i>Soils</i>	251
<i>Earthquakes</i>	254
<i>Indirect Effects</i>	255
<i>Mitigation Measures for the Preferred Alternative</i>	255
CULTURAL RESOURCES.....	263
<i>Section 106 Finding for the Preferred Alternative</i>	263
<i>Archaeological Resources</i>	264
<i>Historic Resources</i>	266
HAZARDOUS MATERIALS	277
<i>Alternative 1—No Build</i>	278
<i>Alternatives 2 and 3</i>	279
<i>Preferred Alternative</i>	282
<i>Indirect Effects</i>	283
<i>Mitigation Measures for the Preferred Alternative</i>	283
UTILITIES.....	291
<i>Alternative 1—No Build</i>	291
<i>Alternatives 2 and 3 and the Design Options</i>	291
<i>Preferred Alternative</i>	292
<i>Indirect Effects</i>	292
<i>Mitigation Measures for the Preferred Alternative</i>	292
CHAPTER 4. ADDITIONAL IMPACTS (CONSTRUCTION, CUMULATIVE, AND UNAVOIDABLE) AND PERMITS/APPROVALS NEEDED	297
CONSTRUCTION IMPACTS	297
<i>Alternative 1—No Build</i>	297
<i>Build Alternatives</i>	297
<i>Relationship between Short-term Use of the Environment and Long-term Productivity</i>	299
CUMULATIVE IMPACTS.....	302
<i>General Historic Overview</i>	302
<i>Major Decisions of the 1970s</i>	302
<i>Past, Present, and Foreseeable Future Actions</i>	304
UNAVOIDABLE IMPACTS	317
<i>Irretrievable and Irreversible Commitment of Resources</i>	317
<i>Summary of Unavoidable Impacts</i>	318
PERMITS AND APPROVALS NEEDED FOR THE PREFERRED ALTERNATIVE	319
CHAPTER 5. COMMENTS AND RESPONSES.....	323
COMMENTS FROM PUBLIC AGENCIES.....	324
<i>Federal Agencies</i>	325
<i>State Agencies</i>	326
<i>Local Agencies</i>	327
COMMENTS FROM BUSINESSES AND ORGANIZATIONS.....	328
<i>Preferences of Businesses and Organizations</i>	328
<i>Business and Organizational Individualized Responses</i>	331

COMMENTS FROM INDIVIDUALS	338
<i>Individualized Responses (Individuals)</i>	345
CHAPTER 6. UPDATES FOLLOWING PUBLICATION OF THE SDEIS	357
LIST OF PREPARERS.....	361
LIST OF RECIPIENTS	375
<i>Federal Agencies</i>	375
<i>State Agencies</i>	375
<i>Local Agencies</i>	375
<i>Tribes</i>	376
<i>Organizations</i>	376
<i>Other Interested Parties</i>	376
GLOSSARY	377

Digital versions of the FEIS Appendices are on a DVD attached to the back cover of this document. The Sunrise Project Technical Reports are available on request as paper or digital copies from Thomas Picco, ODOT Project Manager: Thomas.J.PICCO@odot.state.or.us. An Archaeology Report that supports the Cultural Resources Technical Report contains confidential information and is not available for public review.

APPENDICES

Appendix A. Agency and Public Comments

Appendix B. Cultural Resource Documentation

- December 2010, Memorandum of Agreement among the FHWA, Oregon SHPO, and ODOT for Identifying and Evaluating Archaeological Sites in the Oregon 212/224: Sunrise Project (Interstate 205—Rock Creek)
- June 1, 2010, SHPO Concurrence Letter, Finding of No Adverse Effect on Historic Properties (Archaeology)
- July 26, 2010, SHPO Concurrence Letter, Finding of No Adverse Effect on Historic Resources
- SHPO Concurrence Letters for:
 - Mather-Foster House (No Historic Properties Adversely Affected)
 - Clackamas Cemetery (No Historic Properties Affected)
 - KEX Transmitter Facility (No Historic Properties Adversely Affected with Boundary Adjustment)
 - Southern Pacific Railroad Willamette Valley Main Line (No Historic Properties Adversely Affected)
 - Clackamas Elementary School (No Historic Properties Adversely Affected)
 - Camp Withycombe Historic District (Not Eligible)
- Tribal Consultation
- Traditional Cultural Properties

Appendix C. Section 4(f) Documentation

- Clackamas Elementary School Recreation Field: De Minimis Findings and Attachments
- Camp Withycombe Section 106 Document and SHPO Concurrence
- Planned Trails Section 4(f) Supporting Documents

Appendix D. Supporting Documents for Chapter 3

- Air Quality Findings
- ODOT and FHWA Efforts on Climate Change
- Table D-1: SDEIS Land Use Impacts
- SDEIS Land Use Impact Maps, Alternatives 2 and 3
- Biological Assessment Letter of Submittal to National Marine Fisheries Service
- National Marine Fisheries Service Biological Opinion
- No Effect Memorandum for USFWS species
- U.S. EPA December 2, 2009 letter related to the Northwest Pipe & Casing site
- Easement and Equitable Servitudes and Consent Decree for Northwest Pipe and Casing site
- Table D-2: Evaluation of Noise Impact Mitigation Measures along Bluff
- SE 82nd Avenue Floodplain Impacts Memo
- Trillium Creek Floodplain Impacts and Culvert Analysis Memorandum

Appendix E. References

Appendix F. Public Involvement Materials

- Members of the PRC, PAC, and CETAS
- Public Involvement Materials
- ODOT Record of Contact with KEX Radio

Appendix G. Agency Consultations

TABLES

TABLE 1. CONSTRUCTION AND RIGHT-OF-WAY COST ESTIMATES FOR BUILD ALTERNATIVES (MILLIONS).....	ES-10
TABLE 2. SUMMARY OF IMPACTS.....	ES-26
TABLE 3. MITIGATION COMMITMENTS FOR THE SUNRISE PROJECT.....	ES-44
TABLE 4. APPROVALS AND PERMITS STILL NEEDED FOR PREFERRED ALTERNATIVE.....	ES-51
TABLE 5. GOALS, OBJECTIVES, AND EVALUATION MEASURES.....	ES-54
TABLE 6. SUMMARY OF ALTERNATIVES CONSIDERED.....	13
TABLE 7. TRANSPORTATION EFFECTS, 2030.....	48
TABLE 8. VOLUME-TO-CAPACITY RATIOS FOR SELECT ROADWAYS (BY NORTH/SOUTH AND EAST/WEST PARALLEL ROADWAYS).....	49
TABLE 9. TRAVEL TIMES BETWEEN SELECT DISTRICTS (MINUTES, 2030).....	53
TABLE 10. ESTIMATED RIGHT-OF-WAY IMPACTS TO EXISTING LAND USE.....	69
TABLE 11. SUMMARY OF SELECTED COMPARATIVE DEMOGRAPHICS.....	113
TABLE 12. EVALUATION OF ENVIRONMENTAL IMPACTS OF THE PREFERRED ALTERNATIVE ON ENVIRONMENTAL JUSTICE.....	125
TABLE 13. EXISTING VISUAL QUALITY RATING FOR THE SUNRISE PROJECT AREA.....	127
TABLE 14. COMPARISON OF VISUAL QUALITY (VQ) SCORES BY ALTERNATIVE AND DESIGN OPTION.....	128
TABLE 15. NUMBER OF SITES MEETING OR EXCEEDING THE NAC FOR EXISTING CONDITIONS AND ALTERNATIVES 1, 2, AND 3 AND DESIGN OPTIONS (WITHOUT/WITH ABATEMENT).....	149
TABLE 16. COMPARISON OF NUMBER OF NOISE UNITS MEETING OR EXCEEDING THE NAC, BY TYPE OF RECEPTOR.....	151
TABLE 17. SUMMARY OF PROPOSED WALLS FOR NOISE ABATEMENT.....	157
TABLE 18. GREENHOUSE GAS EMISSIONS (ALL ALTERNATIVES).....	174
TABLE 19. ENERGY USE FOR CONSTRUCTION AND OPERATION BY ALTERNATIVE (MILLION GALLONS OF GASOLINE).....	176
TABLE 20. WILDLIFE IMPACTS BY HABITAT TYPE BY ALTERNATIVE AND DESIGN OPTION.....	179
TABLE 21. NEW IMPERVIOUS SURFACE ADDED TO DRAINAGE BASINS (IN ACRES).....	184
TABLE 22. ANALYSIS OF MAXIMUM IMPACT FROM IMPERVIOUS SURFACE: ALTERNATIVE 2 WITH DESIGN OPTIONS B-2, C-3, AND D-3.....	186
TABLE 23. PREFERRED ALTERNATIVE: IMPERVIOUS SURFACE CHANGES IN ACRES WITHIN PROJECT AREA BY DRAINAGE BASIN.....	187
TABLE 24. NEW IMPERVIOUS AREA ADDED TO EACH DRAINAGE BASIN - PREFERRED ALTERNATIVE.....	188
TABLE 25. WETLAND ACREAGE LOSS, TOTAL AND BY WETLAND CLASSIFICATION.....	236
TABLE 26. SUMMARY OF ACREAGE IMPACTS ON WETLANDS FUNCTIONS (PERCENT).....	238
TABLE 27. INDIVIDUAL WETLAND IMPACTS (IN ACRES) FOR THE PREFERRED ALTERNATIVE.....	241
TABLE 28. POTENTIALLY AFFECTED KNOWN AND POTENTIALLY ELIGIBLE ARCHAEOLOGICAL RESOURCES AS OF 2006 (ELIGIBILITY UPDATES IN 2009).....	264
TABLE 29. POSSIBLE EFFECTS OF ALTERNATIVES 2 AND 3 AND DESIGN OPTIONS ON SIGNIFICANT ARCHAEOLOGICAL SITES.....	265
TABLE 30. PREFERRED ALTERNATIVE: SUMMARY OF IMPACTS TO ARCHEOLOGICAL RESOURCES AS OF 2010.....	265
TABLE 31. ELIGIBLE HISTORIC RESOURCES POTENTIALLY AFFECTED BY ALTERNATIVES 2 AND 3.....	267
TABLE 32. PREFERRED ALTERNATIVE: EFFECTS TO ELIGIBLE HISTORIC RESOURCES.....	269
TABLE 33. SUMMARY OF CUMULATIVE IMPACTS FROM THE PREFERRED ALTERNATIVE.....	314
TABLE 34. PERMITS OR APPROVALS NEEDED FOR THE PREFERRED ALTERNATIVE.....	320
TABLE 35. COMMENT CODE DEFINITIONS.....	324
TABLE 36. INDEX OF AGENCY COMMENTS.....	325
TABLE 37. INDEX OF BUSINESS AND ORGANIZATIONAL COMMENTS.....	329
TABLE 38. EXPRESSION OF PREFERENCES FOR PROJECT ELEMENTS.....	330
TABLE 39. STATEMENTS AGAINST PROJECT ELEMENTS.....	331
TABLE 40. INDEX OF INDIVIDUAL PUBLIC COMMENTS.....	339
TABLE 41. EXPRESSION OF PREFERENCES FOR PROJECT ELEMENTS.....	342
TABLE 42. STATEMENTS AGAINST PROJECT ELEMENTS.....	344

FIGURES

FIGURE 1. PROJECT VICINITY.....	ES-2
FIGURE 2. PROJECT AREA.....	ES-3
FIGURE 3. ALTERNATIVE 1 - NO BUILD	ES-11
FIGURE 4. ALTERNATIVE 1 - NO BUILD PEDESTRIAN AND BICYCLE SYSTEMS	ES-12
FIGURE 5. ALTERNATIVES 2 AND 3.....	ES-13
FIGURE 6. COMPARISON OF OPTIONS FOR I-205 INTERCHANGE AREA	ES-14
FIGURE 7. COMPARISON OF OPTIONS FOR MIDPOINT AREA.....	ES-15
FIGURE 8. COMPARISON OF OPTIONS FOR MIDPOINT AREA (EAST END)	ES-16
FIGURE 9. COMPARISON OF OPTIONS FOR ROCK CREEK JUNCTION AREA.....	ES-17
FIGURE PA-1. PROJECT AREA	ES-18
FIGURE PA-2. I-205 INTERCHANGE AREA – NORTH.....	ES-19
FIGURE PA-3. I-205 INTERCHANGE AREA.....	ES-20
FIGURE PA-4. MIDPOINT AREA.....	ES-21
FIGURE PA-5. ROCK CREEK JUNCTION AREA.....	ES-22
FIGURE 10. CHANGES TO TRAVEL PATTERNS, ALTERNATIVES 2 AND 3	33
FIGURE 11. CHANGES TO TRAVEL PATTERNS, DESIGN OPTION A-2	34
FIGURE 12. CHANGES TO TRAVEL PATTERNS, ALTERNATIVE 2 MIDPOINT AREA	35
FIGURE 13. CHANGES TO TRAVEL PATTERNS, DESIGN OPTION B-2	36
FIGURE 14. CHANGES TO TRAVEL PATTERNS, ALTERNATIVE 3 MIDPOINT AREA	37
FIGURE 15. CHANGES TO TRAVEL PATTERNS, DESIGN OPTIONS C-2 AND C-3	38
FIGURE 16. CHANGES TO TRAVEL PATTERNS, ALTERNATIVES 2 AND 3 ROCK CREEK JUNCTION AREA	39
FIGURE 17. CHANGES TO TRAVEL PATTERNS, DESIGN OPTIONS D-2 AND D-3.....	40
FIGURE PA-6. TRAVEL PATTERNS, I-205 INTERCHANGE AREA.....	41
FIGURE PA-7. TRAVEL PATTERNS, MIDPOINT AREA	42
FIGURE PA-8. TRAVEL PATTERNS, ROCK CREEK JUNCTION AREA	43
FIGURE 18. EXISTING CONGESTION (2004) 7:00 – 8:00 AM	56
FIGURE 19. EXISTING CONGESTION (2004) 4:30 – 5:30 PM	57
FIGURE 20. ALTERNATIVE 1 PROJECTED CONGESTION (2030) 7:00 – 8:00 AM	58
FIGURE 21. ALTERNATIVE 2 PROJECTED CONGESTION (2030) 7:00 – 8:00 AM	59
FIGURE 22. ALTERNATIVE 3 PROJECTED CONGESTION (2030) 7:00 – 8:00 AM	60
FIGURE PA-9. PREFERRED ALTERNATIVE PROJECTED CONGESTION (2030) 7:00 – 8:00 AM.....	61
FIGURE 23. ALTERNATIVE 1 PROJECTED CONGESTION (2030) 4:30 – 5:30 PM.....	62
FIGURE 24. ALTERNATIVE 2 PROJECTED CONGESTION (2030) 4:30 – 5:30 PM.....	63
FIGURE 25. ALTERNATIVE 3 PROJECTED CONGESTION (2030) 4:30 – 5:30 PM.....	64
FIGURE PA-10. PREFERRED ALTERNATIVE 3 PROJECTED CONGESTION (2030) 4:30 - 5:30 PM	65
FIGURE 26. EXISTING LAND USE (FEBRUARY 2010)	76
FIGURE 27. CLACKAMAS COUNTY ZONING DESIGNATIONS.....	77
FIGURE 28. UNIQUE LAND USES AND FEATURES.....	78
FIGURE PA-11. ESTIMATED RIGHT-OF-WAY IMPACTS AND MAP KEY.....	79
FIGURE PA-12. ESTIMATED RIGHT-OF-WAY IMPACTS, I-205 AREA (NORTH).....	80
FIGURE PA-13. ESTIMATED RIGHT-OF-WAY IMPACTS, I-205 AREA (SOUTH)	81
FIGURE PA-14. ESTIMATED RIGHT-OF-WAY IMPACTS, MIDPOINT AREA.....	82
FIGURE PA-15. ESTIMATED RIGHT-OF-WAY IMPACTS, ROCK CREEK AREA	83
FIGURE PA-16. EXISTING AND PROPOSED PARKS AND TRAILS IN PROJECT AREA	93
FIGURE 29. COMMUNITY FEATURES.....	107
FIGURE 30. BUSINESS DISTRICTS	108
FIGURE 31. ENVIRONMENTAL JUSTICE AREAS OF CONCERN	123
FIGURE 32. I-205 INTERCHANGE AREA VIEWSHEDS.....	139
FIGURE 33. WEST HALF OF MIDPOINT AREA VIEWSHEDS.....	140
FIGURE 34. EAST HALF OF MIDPOINT AREA VIEWSHEDS.....	141
FIGURE 35. ROCK CREEK JUNCTION AREA VIEWSHEDS.....	142

FIGURE 36. SIMULATION VIEWSHEDS	143
FIGURE PA-17. I-205 INTERCHANGE AND MIDPOINT AREA (WEST END) MITIGATION LOCATIONS	144
FIGURE PA-18. MIDPOINT AREA (EAST END) AND ROCK CREEK JUNCTION AREA MITIGATION LOCATIONS	145
FIGURE 37. NOISE IMPACT SITES, ALTERNATIVES 2 AND 3	159
FIGURE 38. NOISE WALLS	160
FIGURE PA-19. PREFERRED ALTERNATIVE NOISE IMPACT SITES AND NOISE WALLS, I-205 INTERCHANGE AREA	161
FIGURE PA-20. PREFERRED ALTERNATIVE NOISE IMPACT SITES AND NOISE WALLS, MIDPOINT AREA	162
FIGURE PA-21. PREFERRED ALTERNATIVE NOISE IMPACT SITES AND NOISE WALLS, ROCK CREEK JUNCTION AREA	163
FIGURE 39. HABITAT TYPES/PLANT COMMUNITIES	195
FIGURE 40. WETLANDS AND STREAMS	196
FIGURE 41. DESCRIPTIONS OF WILDLIFE HABITATS AND IMPACTS (I-205 AND MIDPOINT AREA)	197
FIGURE 42. DESCRIPTIONS OF WILDLIFE HABITATS AND IMPACTS (MIDPOINT AREA AND ROCK CREEK JUNCTION)	198
FIGURE 43. HABITAT IMPACTS FOR ALTERNATIVES 2 AND 3	199
FIGURE 44. HABITAT IMPACTS, I-205 INTERCHANGE AREA OPTIONS	200
FIGURE 45. HABITAT IMPACTS, MIDPOINT AREA OPTIONS, ALTERNATIVE 2	201
FIGURE 46. HABITAT IMPACTS, MIDPOINT AREA (EAST END) OPTIONS	202
FIGURE 47. HABITAT IMPACTS, ROCK CREEK JUNCTION AREA OPTIONS	203
FIGURE PA-22. PREFERRED ALTERNATIVE VS. ALTERNATIVE 2 IMPACT AREA	204
FIGURE PA-23. COMPARISON OF HABITAT IMPACTS - PREFERRED ALTERNATIVE VS. ALTERNATIVE 2 IMPACT AREA (I-205 INTERCHANGE)	205
FIGURE PA-24. COMPARISON OF HABITAT IMPACTS - PREFERRED ALTERNATIVE VS. ALTERNATIVE 2 IMPACT AREA (ROCK CREEK JUNCTION)	206
FIGURE PA-24A. PLANT COMMUNITIES AND NOXIOUS WEEDS, PREFERRED ALTERNATIVE	207
FIGURE PA-25. FEMA FLOODPLAIN IMPACTS	208
FIGURE PA-25A. FEMA FLOODPLAIN IMPACTS, SE 82 ND AVENUE	209
FIGURE PA-25B. FEMA FLOODPLAIN IMPACTS, ROCK CREEK	210
FIGURE PA-26. LOCATION OF IMPERVIOUS SURFACE TREATMENT AREAS-WEST END	211
FIGURE PA-27. LOCATION OF IMPERVIOUS SURFACE TREATMENT AREAS-EAST END	212
FIGURE PA-27A. IMPERVIOUS SURFACE REMOVAL, PREFERRED ALTERNATIVE	213
FIGURE PA-28. LAWNFIELD TREATMENT AREAS 15E, F, G	214
FIGURE PA-29. INDUSTRIAL WAY TREATMENT AREA 15D	215
FIGURE PA-30. TOLBERT ROAD AREAS 15A, B	216
FIGURE PA-31. NORTH I-205 AREAS 12A, B, 13A, AND 17D	217
FIGURE PA-32. INDUSTRIAL WAY AREAS 10A-D, 11A-F, 17A	218
FIGURE PA-33. I-205 INTERCHANGE AREAS 9A-L	219
FIGURE PA-34. MILWAUKIE EXPRESSWAY AREAS 7C, D	220
FIGURE PA-35. DEER CREEK/JOHNSON ROAD AREAS 7A-C	221
FIGURE PA-36. 82 ND AVENUE AND I-205 AREAS 6A, B, D, AND 8A	222
FIGURE PA-37. SE 82 ND DRIVE AREAS 5F, G, H	223
FIGURE PA-38. SOUTH I-205 AREAS 5A-E, 5I, 14A	224
FIGURE PA-39. SE 122 ND AVENUE AREAS 4D-G	225
FIGURE PA-40. WEST OF 122 ND AREAS 4A-C	226
FIGURE PA-41. SE 142 ND AVENUE AREAS 3A-C	227
FIGURE PA-42. ROCK CREEK JUNCTION AREA 2C-D	228
FIGURE PA-43. ROCK CREEK JUNCTION AREAS 2A, B, E	229
FIGURE PA-44. SE 172 ND AVENUE AREAS 1A-B	230
FIGURE PA-45. CONTRIBUTING AREA AND UNTREATED AREA	231
FIGURE PA-45A. ADDITIONAL WATER QUALITY TREATMENT AREA #1	232
FIGURE PA-45B. ADDITIONAL WATER QUALITY TREATMENT AREA #2	233
FIGURE PA-45C. ADDITIONAL WATER QUALITY TREATMENT AREA #3	234
FIGURE 48. WETLANDS AND OTHER WATERS IN THE AREA OF PROJECT IMPACT (AERIAL)	247
FIGURE 49. WETLAND IMPACTS FOR ALTERNATIVE 2 AND ALTERNATIVE 3	248
FIGURE 50. COMPARISON OF WETLAND IMPACTS FROM DESIGN OPTIONS	249
FIGURE PA-46. WETLANDS AND OTHER WATERS AND IMPACTS IN PA-API	250
FIGURE 51. GEOLOGIC MAP, ALTERNATIVES 2 AND 3	257

FIGURE 52. SURFACE SOILS MAP, ALTERNATIVES 2 AND 3	258
FIGURE 53. FAULT LOCATION MAP	259
FIGURE PA-47. GEOLOGIC MAP	261
FIGURE PA-48. SURFACE SOILS MAP	262
FIGURE 54. LOCATION OF HISTORIC RESOURCES (USGS MAP)	271
FIGURE 55. LOCATION OF HISTORIC RESOURCES (AERIAL)	272
FIGURE PA-49. SECTION 106 AREA OF POTENTIAL EFFECT	273
FIGURE PA-50. HISTORIC RESOURCES IDENTIFIED WITHIN THE I-205 INTERCHANGE AREA OF THE PREFERRED ALTERNATIVE.....	274
FIGURE PA-51. HISTORIC RESOURCES IDENTIFIED WITHIN THE MIDPOINT AREA OF THE PREFERRED ALTERNATIVE	275
FIGURE PA-52. HISTORIC RESOURCES IDENTIFIED WITHIN THE ROCK CREEK JUNCTION AREA OF THE PREFERRED ALTERNATIVE	276
FIGURE 56. HAZARDOUS MATERIAL SITES IN PROJECT AREA – ALTERNATIVE 2.....	285
FIGURE 57. HAZARDOUS MATERIAL SITES IN PROJECT AREA – ALTERNATIVE 2, LAWNFIELD AREA DETAIL MAP.....	287
FIGURE PA-53. HAZARDOUS MATERIAL SITES AFFECTING THE PREFERRED ALTERNATIVE	289
FIGURE 58. SEWER AND WATER SYSTEMS.....	293
FIGURE 59. MAJOR ELECTRIC POWER SYSTEM (PORTLAND GENERAL ELECTRIC)	294
FIGURE 60. NATURAL GAS SERVICE	295
FIGURE 61. TELECOMMUNICATIONS AND CABLE LINES	296

HOW TO USE THIS DOCUMENT

In this FEIS and the supporting technical reports, new information and new analysis conducted for the **Preferred Alternative** are presented in a green color. Information from the SDEIS that remains substantively unchanged remains in black. Minor edits to SDEIS text, such as corrections of typos, or rewording to clarify meaning, are not shown in green.

FEIS

This document includes an Executive Summary, Chapters 1 through 6, and a set of Appendices. The appendices contain the public comments and responses on the SDEIS, the Section 4(f) Documentation, and other supporting documentation for the chapters. Digital versions of the FEIS Appendices are on a DVD attached to the back cover of this document.

Executive Summary and Chapters 1-6

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

After the Executive Summary are six chapters, as follows:

- Chapter 1. Purpose and Need
- Chapter 2. Alternatives and Alternatives Development
- Chapter 3. Affected Environment, Environmental Consequences, and Mitigation Measures
- Chapter 4. Additional Impacts (Construction, Cumulative, and Unavoidable) and Permits/Approvals Needed
- Chapter 5. Comments and Responses
- Chapter 6. Updates Following Publication of the SDEIS
- List of Preparers
- List of Recipients
- Glossary

This FEIS:

- Identifies the Preferred Alternative.
- Presents the project's Purpose and Need.
- Describes the details of the alternatives evaluated, and summarizes the analysis of the alternatives contained in the supporting technical reports.
- Combines a discussion of the affected environment and direct environmental consequences rather than discussing those sections separately and focuses on the conclusions of the analysis of alternatives.

To aid in finding where impacts are discussed by individual alternatives and design options, the names of the alternatives and design options 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 topic section.

Appendices

Appendix A. Agency and Public Comments

Appendix E. References

Appendix B. Cultural Resource Documentation

Appendix F. Public Involvement Materials

Appendix C. Section 4(f) Supporting Documents

Appendix G. Agency Consultations

Appendix D. Supporting Documents for Chapter 3

Technical Reports

Technical studies on 15 topics were produced and are available on request from Thomas Picco, ODOT Project Manager, (503) 731-8230, Thomas.J.PICCO@odot.state.or.us. An Archaeology Report that supports the Cultural Resources Technical Report contains confidential information and is not available for public review. The technical reports support this FEIS with detailed information about the methodology, existing conditions, and results of the analysis of all of the alternatives, **No Build Alternative**, **Alternatives 2 and 3**, and **the Preferred Alternative**. Because the analysis for **the Preferred Alternative** was done separately from the initial analysis of **Alternatives 2 and 3**, the analysis and mitigation are presented in separate sections. Below is a list of the 15 technical reports and the corresponding FEIS sections they support.

Technical Report	Corresponding FEIS Section(s)
Transportation	— Transportation
Land Use	— Land Use
Right-of-Way	— Land Use
Socioeconomics	— Business and Communities
Socioeconomics	— Environmental Justice
Visual Resources	— 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

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, Chapter 3.)

Between 2005 and 2030, the Portland Metro region is expected to accommodate about 50 percent more households and up to 72 percent more new jobs,¹ 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.²

The planned population and employment growth by 2030 will worsen existing problems. The duration of congestion and the extent of queuing are 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.

¹ The household and jobs forecasts here were provided by Metro in 2005. In April 2009 Metro published the 20 and 50 year Regional Population and employment range forecasts (April 2009 draft) for the Portland-Beaverton-Vancouver Primary Metropolitan Statistical Area as defined by the federal Office of Management and Budget (the counties of Multnomah, Clackamas, Washington, Yamhill, Columbia, Clark, and Skamania). The 2009 medium and high household projections to 2030 are higher than the projections in 2005, with expected growth of 55 and 63 percent, respectively. Projected job growth rate in the high range is 72 percent, the same as in 2005. The medium range is lower than projected in 2005, with medium growth rate projected at 50 percent to 2030.

² 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.

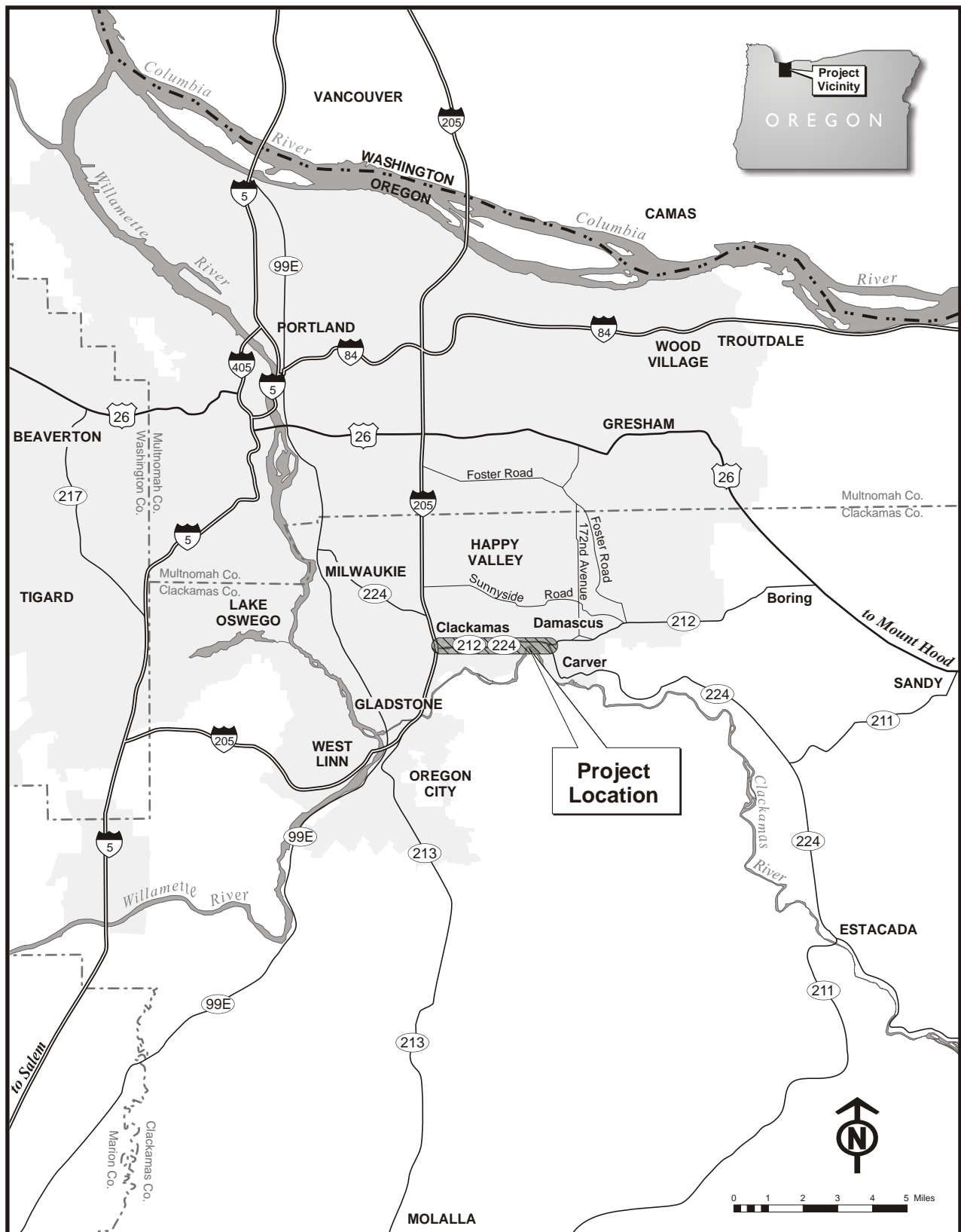
Project Location and Study Area

The general location of the new facility, named the proposed Sunrise Project, is depicted in Figure 1, Project Vicinity. The proposed Sunrise Project would extend approximately five miles between I-205 and Rock Creek Junction. Under **Alternatives 2 and 3**, the west end transition to existing roadways would be to SE Johnson Road and under the **Preferred Alternative** would be to SE Webster Road. The project would extend to SE 172nd Avenue on the east end. Figure 2 shows the project area. The project is often discussed by subarea. Three subareas are outlined on Figure 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.

Proposed Action from the SDEIS

The Oregon Department of Transportation (ODOT) and Clackamas County proposed 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 and Figure 2, Project Area. 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.



Legend

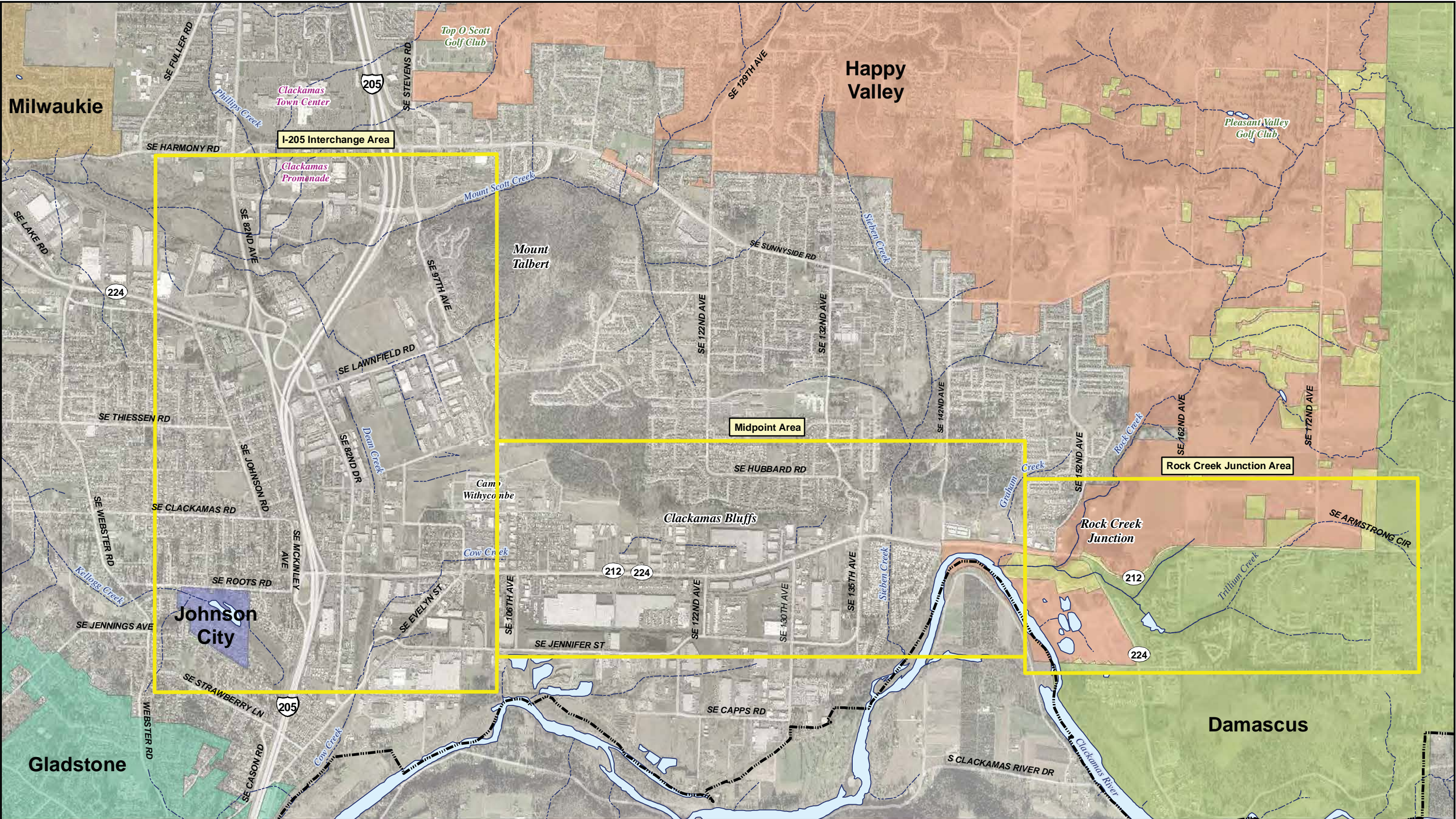
- County Boundary
- Project Location
- Rivers
- . - . State Boundary
- Urban Growth Boundary


INCORPORATED CITY
Unincorporated Community

- Interstate
- U.S. Highway
- State Highway
- Other Major Roads


Figure 1

Project Vicinity





2,000 0 2,000 Feet



Sources:
ODOT and Metro, Portland OR

Legend

- Urban Growth Boundary (UGB)
- Project Subareas
- River
- Streams


Local Jurisdictions

- Clackamas Co.
- Damascus
- Gladstone

- Happy Valley
- Johnson City
- Milwaukie

Figure 2

Project Area

 Sunrise Project, I-205 to Rock Creek Junction

This page left intentionally blank

Preferred Alternative Identified in the FEIS

The **Preferred Alternative** in this FEIS is **Alternative 2** as studied in the SDEIS coupled with **Design Options C-2 and D-3** and a portion of **Design Option A-2** (Tolbert overcrossing). Additionally, the **Preferred Alternative** includes several minor design modifications based on both stakeholder input and additional preliminary design refinement related to analysis of traffic performance and avoidance of environmental resources. For more detail, see the descriptions of alternatives in Chapter 2.

Project Purpose and Need

Project Purpose

The purpose of the 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 statements 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.³

³ 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

- 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.⁴
- Both the northbound and southbound weave sections of I-205 between SE 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 SE 82nd Drive.⁵
- OR 212/224 near I-205 is ranked in the top 10 percent of state routes for vehicle crash rate. Over 500 vehicle collisions [between I-205 and Rock Creek Junction] 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.⁶

same roadway is expected to experience about nine hours of congestion. See Chapter 6 of Sunrise Project Transportation Technical Report.

⁴ Based on growth projections from Metro 2004 data which was available for the development of the Purpose and Need. Technical analysis for the Transportation Technical Report used Metro's updated 2005 model to develop projections for 2030. This resulted in predicted jobs growth of 87 percent and household growth of 97 percent.

⁵ Based on 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.

⁶ Based on analysis summarized in Section 5.9 of Sunrise Project Transportation Technical Report.

A safety analysis was conducted in September 2010 to reflect more recent crash data provided by the ODOT Crash Analysis and Reporting Unit for years 2005 through 2009. OR 212/224 near I-205 continues to be ranked in the top 10 percent of the State's safety ranking index within the ODOT's safety ranking index (Safety Priority Index System or "SPIS") for 2010. Over 500 vehicular collisions were reported between I-205 and Rock Creek Junction during the five-year period of 2005 through 2009. In addition, safety performance from 2007 through 2009 has placed segments of OR 212 east of Rock Creek Junction, I-205 between milepoints 12.0 and 15.0, and Milwaukie Expressway near I-205, in the top 10 percent of the State's safety ranking index.

- 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.⁷

The Transportation Technical Report 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 this FEIS (Chapter 3) also discusses the key issues of planned growth, congestion, and safety.

Project Alternatives Considered in the SDEIS

Three alternatives and six design options were considered in the SDEIS. **Alternative 1—No Build** (Figures 3 and 4 on pages ES-11 and ES-12) is

⁷ Based on truck counts from 2004/5 at specific locations within the OR 212/224 corridor. See Section 5.7 of Sunrise Project Transportation Technical Report.

required by National Environmental Policy Act (NEPA), as well as ODOT's Federal Highway Administration (FHWA) guidelines.

Alternatives 2 and 3 (Figure 5, page ES-13) proposed 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 were additional design options that provided modifications or variations on different segments of these alternatives.

Alternative 1—No Build. Alternative 1 maintained the existing roadway system 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):

- SE 82nd Drive, widen from existing three lanes to five lanes between SE Lawnfield Road and OR 212/224 (RTP #5106, 2026-2035).
- SE 102nd Avenue, SE Clackamas Road, and SE Industrial Way, improve all to Mather Road for improved truck access, with better intersection/roadbed conditions for trucks turning and wider shoulders (Clackamas County project, 2008-2017. Phase 1 OR 212 to Mather Road under construction 2010-2011; Phase 2 planned for 2012).
- New arterial, construct four- and five-lane arterial, north and east from Rock Creek Junction Interchange to SE 162nd Avenue. (Clackamas County project. Phase 1 between OR 212 and Sunnyside completed in 2010.)
- Sunnybrook West Extension, construct a three-lane facility extending from SE 82nd Avenue (OR 213N) to Harmony Road near Fuller Road (Clackamas County project, 2012-2017).
- SE 172nd Avenue, widen from existing two lanes to four and five lanes between

SE Foster Road and SE Sunnyside Road (RTP #7000, by 2017).

- OR 224, widen from existing two lanes to five lanes between Rock Creek Junction and Carver Bridge (2018).
- OR 212, Rock Creek to Damascus, add climbing lane (RTP#5007).
- 242nd Avenue, OR 212 to Palmquist, widen from 2 lanes to 5 lanes (future Damascus project).
- OR 212, Rock Creek to 257th Avenue, widen from 2 or 3 lanes to 5 lanes (future Damascus project).
- Sunnyside Road extension, 172nd Avenue to 242nd Avenue, widen to 5 lanes (future Damascus project).
- 232nd Avenue extension, OR 212 to Borges Road, widen from 2 lanes to 3 lanes (future Damascus project).
- 190th Avenue extension, Tillstrom Road to 172nd Avenue, 5 lanes (part of RTP project #7000 and future Damascus project).

Projects assumed in the model to be added to RTP or local transportation system plan and built by 2030:

- Carver Bridge, widen to five lanes (2025).
- Gronlund Road, widen from 2 lanes to 5 lanes.
- Bradley Road, widen from 2 lanes to 3 lanes.
- Forsythe Road, widen from 2 lanes to 5 lanes.
- Holcomb Boulevard, widen from 2 lanes to 3 lanes.
- Clackamas River Drive, widen from 2 lanes to 3 lanes.
- A new crossing of the Clackamas River connecting the I-205/Gladstone interchange with Clackamas River Drive (5 lanes).

Transit improvements included under **Alternative 1** were limited to those identified in Metro's RTP and include primarily modest increases in service hours. Bicycle and pedestrian improvements were those already planned for the area, as shown on Figure 4, **Alternative 1—No Build** Pedestrian and Bicycle Systems.

Alternative 2—Build with Midpoint

Interchange. **Alternative 2** provided 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 connected 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 had six lanes plus auxiliary lanes. East of Rock Creek Junction, the highway narrowed to six lanes with no auxiliary lanes until SE 172nd Avenue, where it narrowed to five lanes.

Alternative 3—Build with No Midpoint

Interchange. **Alternative 3** was the same design as **Alternative 2**, but with no midpoint interchange.

Design Options. Figures 6 through 9 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 could have been substituted for a comparable segment alignment (such as **Design Option C-2** or **C-3** instead of **Alternative 2** in that segment). All design options except **B-2** and **C-3** could have been 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** provides access to/from SE 82nd Drive and the Lawnfield industrial area via an overcrossing of Union Pacific Railroad (UPRR) tracks to SE Tolbert Street. It does not extend SE Lawnfield Road to the north. This design option was available under both build alternatives. It was intended to provide local access to/from the Lawnfield Road industrial area and I-205 without the adverse impacts that would result from extending SE Lawnfield Road to the north.
- **Design Option B-2** applies only to **Alternative 2** and incorporates 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 have been considered with **Design Option A-2** and/or **Design Option C-2**. However, it was not compatible with the design of the curves in **Design Option C-3**, so those two options could not be combined.

- **Design Option C-2** locates the Sunrise Project alignment farther south than the **Alternative 2** or **3** alignment and could have been substituted for the comparable segment in **Alternative 2** or **3**, and for **Design Option C-3**.
- **Design Option C-3** locates the Sunrise Project alignment farther north than the **Alternative 2** or **3** alignment and could have been 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** provides a different type of interchange design than under **Alternative 2** or **3** at the OR 212/224 split, reducing the interchange footprint slightly on the north side. It could have been substituted for the comparable segment in **Alternative 2** or **3**, and for **Design Option D-3**.
- **Design Option D-3** provides 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 could have been substituted for the comparable segment in **Alternative 2** or **3**, and for **Design Option D-2**.

Transit, Pedestrian, and Bicycle Network. New and more frequent local transit service planned and provided by TriMet would occur under the build alternatives, along with new express bus service along the proposed Sunrise Project. Although the Sunrise Project will not be providing express bus service, the service that will be provided by TriMet would not be feasible without the new facility.

The build alternatives proposed new multi-use path improvements that connect to the existing I-205 trail system, filling in gaps in the non-motorized system. Choice of design options did not affect provision of the multi-use path improvements. Figures 5 through 7 show the planned location of the multi-use path and its connections.

Preferred Alternative Identified in this FEIS

The **Preferred Alternative** is **Alternative 2** with the Tolbert overcrossing from **Design Option A-2**, and incorporates the alignment of **Design Option C-2** and the SPUI interchange of **Design Option D-3**. Accordingly, the **Preferred Alternative** derives from various elements discussed in the SDEIS. Additionally, the **Preferred Alternative** includes several modifications based on both stakeholder input and additional design refinement related to analysis of traffic performance and avoidance of environmental resources. Figures PA-1 through PA-5 show the **Preferred Alternative** from west to east. The **Preferred Alternative** will 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 will 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 will have six lanes plus auxiliary lanes. East of Rock Creek Junction, the highway will narrow to six lanes with no auxiliary lanes until SE 172nd Avenue, where it will narrow to five lanes. For more detail, see the alternatives' descriptions in Chapter 2.

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 (2009) 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).

Alternatives 2 and 3. Depending on the alternatives and design options selected, the total cost of the proposed project was estimated to range from \$1.31 billion to \$1.61 billion (2013 dollars) for **Alternatives 2 and 3** with the various design options when the SDEIS was published.

Preferred Alternative. The Preferred Alternative is estimated to cost \$1.49 billion (2013 dollars), of which \$216 million is for right-of-way acquisition. Right-of-way acquisition costs estimates are higher in the FEIS than those in the SDEIS because the SDEIS estimates did not include the costs of administration, demolition, or contingency items and the FEIS estimates do.

Currently, ODOT, Metro, and Clackamas County have estimated that \$428 million are available for the project over the next 20 years. The commitment of \$428 million is included in the Metro 2035 RTP financially-constrained list of projects. 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 a Financial Plan, mechanisms for managing such large projects. ODOT is currently preparing those plans. The project would likely be constructed in phases, with funding anticipated from multiple sources over time.

Funding currently committed to the project totals \$200.55 million: \$143.87 million in committed funding, and \$56.68 million in value of surplus ODOT and County properties available for project right-of-way. Specific funding derives from the following sources: 2009 State Legislation (Jobs & Transportation

Act – State Gas Tax) (\$100 million); ODOT Oregon Transportation Investment Act (OTIA) III (\$20 million); ODOT surplus properties for project right-of-way (\$35.07 million); Clackamas County Development Agency – surplus properties for project right-of-way (\$21.61 million); Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) federal reauthorization earmark (\$18 million); State Transportation Improvement Program (STIP – State Gas Tax) (\$3 million); Surface Transportation Program federal appropriations earmarks (\$1.1 million); ODOT contributions (\$909,000); and Clackamas County contributions (\$860,000).

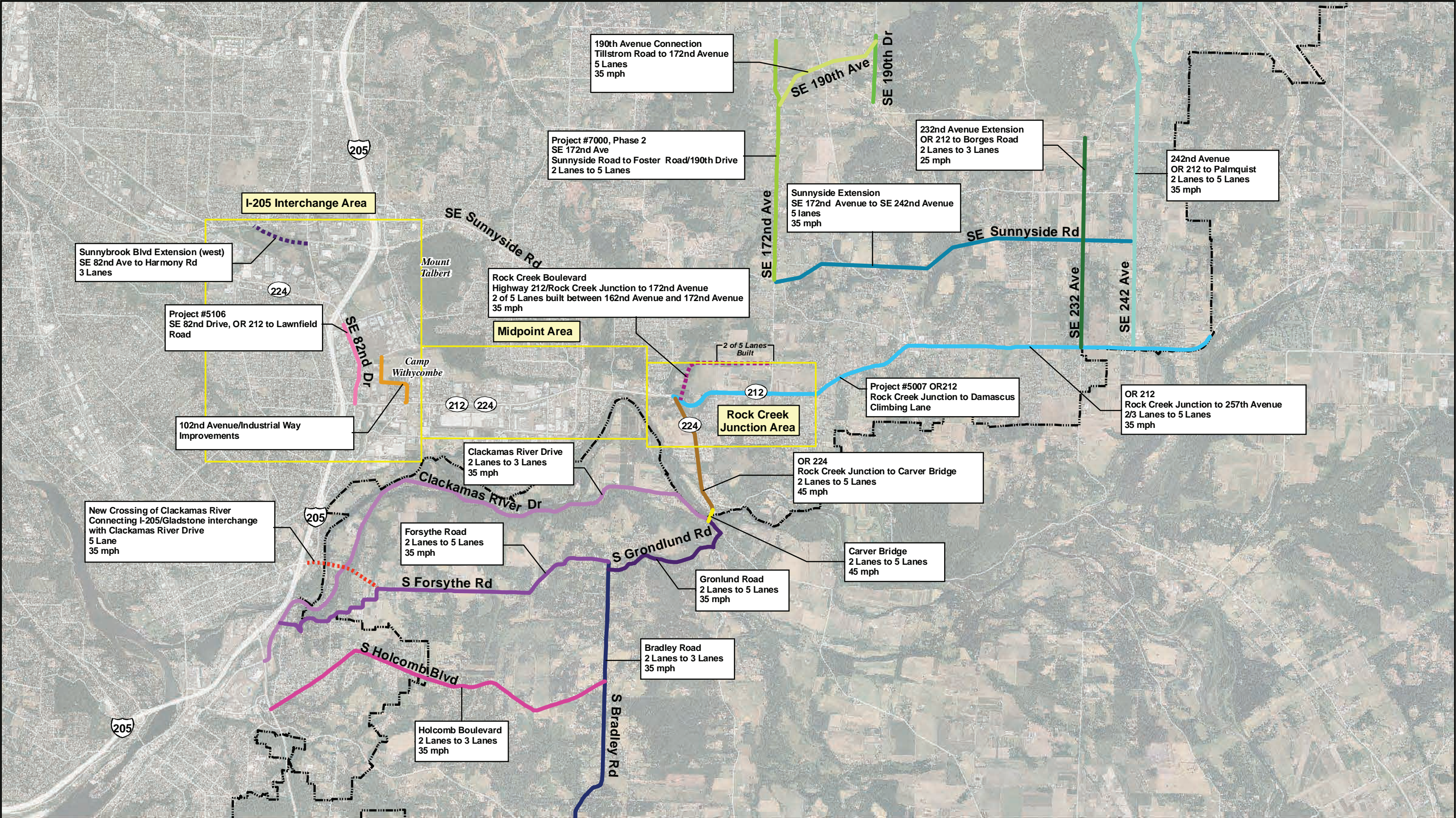
The type and source of likely future funding would include the following: annual ODOT Region 1 Modernization fund allocations; 2015, 2021, and 2027 federal reauthorization program funds; 2011 state legislative program for Projects of Statewide Significance; and possible tolling revenue. The Oregon Transportation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

Table 1. Construction and Right-of-Way Cost Estimates for Build Alternatives (millions)

Alternative/Design Option	2009 Estimated Project Costs (from 2008 SDEIS)			Project Costs in 2013 ¹
	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	\$1,084	\$170	\$1,254	\$1,445
w/Design Option A-2	\$1,070	\$173	\$1,243	\$1,432
w/Design Option B-2	\$1,185	\$174	\$1,359	\$1,568
w/Design Option C-2	\$961	\$173	\$1,134	\$1,303
w/Design Option C-3	\$1,093	\$177	\$1,270	\$1,463
w/Design Option D-2	\$1,078	\$172	\$1,250	\$1,441
w/Design Option D-3	\$1,097	\$170	\$1,267	\$1,461
Alternative 3—Build without Midpoint Interchange	\$1,026	\$160	\$1,186	\$1,368
w/Design Option A-2	\$1,013	\$163	\$1,176	\$1,355
w/Design Option C-2	\$1,030	\$161	\$1,191	\$1,373
w/Design Option C-3	\$1,036	\$163	\$1,199	\$1,382
w/Design Option D-2	\$939	\$166	\$1,105	\$1,270
w/Design Option D-3	\$1,040	\$152	\$1,192	\$1,376
Preferred Alternative	\$1,085	\$216	\$1,301	\$1,493

¹Dollars are inflated to anticipated year of construction.

Construction costs were adjusted assuming 4.3% annual inflation through 2011 and 4% inflation between 2011 and 2013. Right-of-way costs were assumed to remain stable over the planning period.



5,000 0 5,000 Feet

Sources:
ODOT and Metro, Portland OR

Legend

Urban Growth Boundary (UGB)

Project Subareas

Future Funded Projects

Sunnybrook Boulevard

Rock Creek Boulevard

82nd Drive

102nd Avenue

OR 224

Carver Bridge

Damascus Pre-RTP Roads

172nd & 190th Connection

172nd Avenue

190th Drive

232nd Avenue

242nd Avenue

OR 212

South of Clackamas River Roads

Bradley Road

Clackamas River Drive

Forsythe Road

Grondlund Road

Holcomb Boulevard

New River Crossing

OR 212 Climbing Lane

Sunnyside Extension

Figure 3

Alternative 1 - No Build

File: P:\O\ODOT\0000648\06000\INFO\GS\arcmap\FEIS_Transportation\Fig03_Alt_1_NoBuild_08242010_v2.mxd
Printing Date: Tuesday, October 12, 2010 3:41 PM

Existing Pedestrian Facilities



Legend:

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

- Bus Stop
- Highway

- School
- Park

* Demand paths are created by people walking where no formal facility exists.

Existing and Planned Bicycle Facilities



Legend:

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

- Highway
- School
- Park

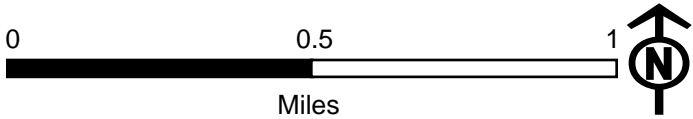
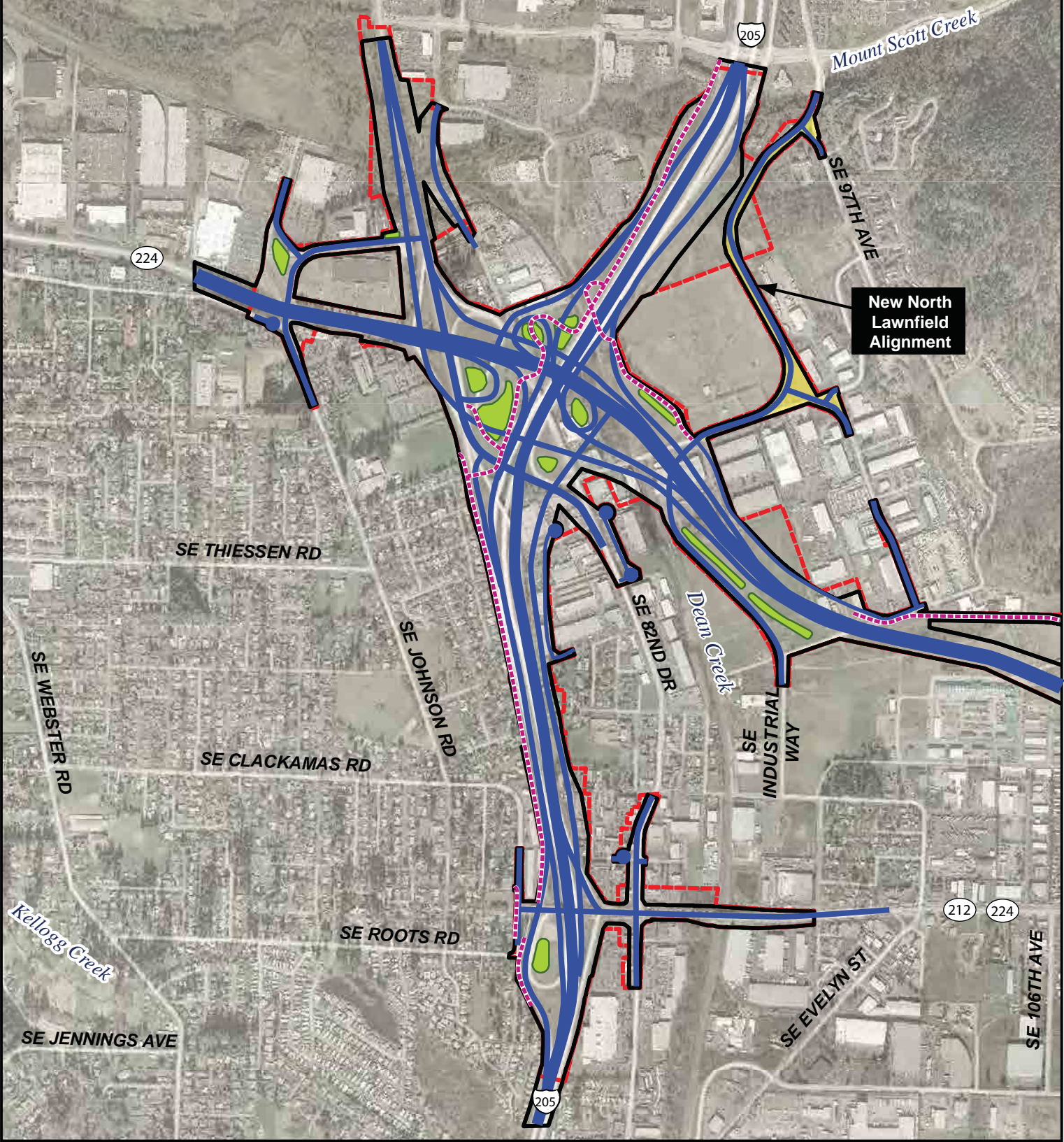


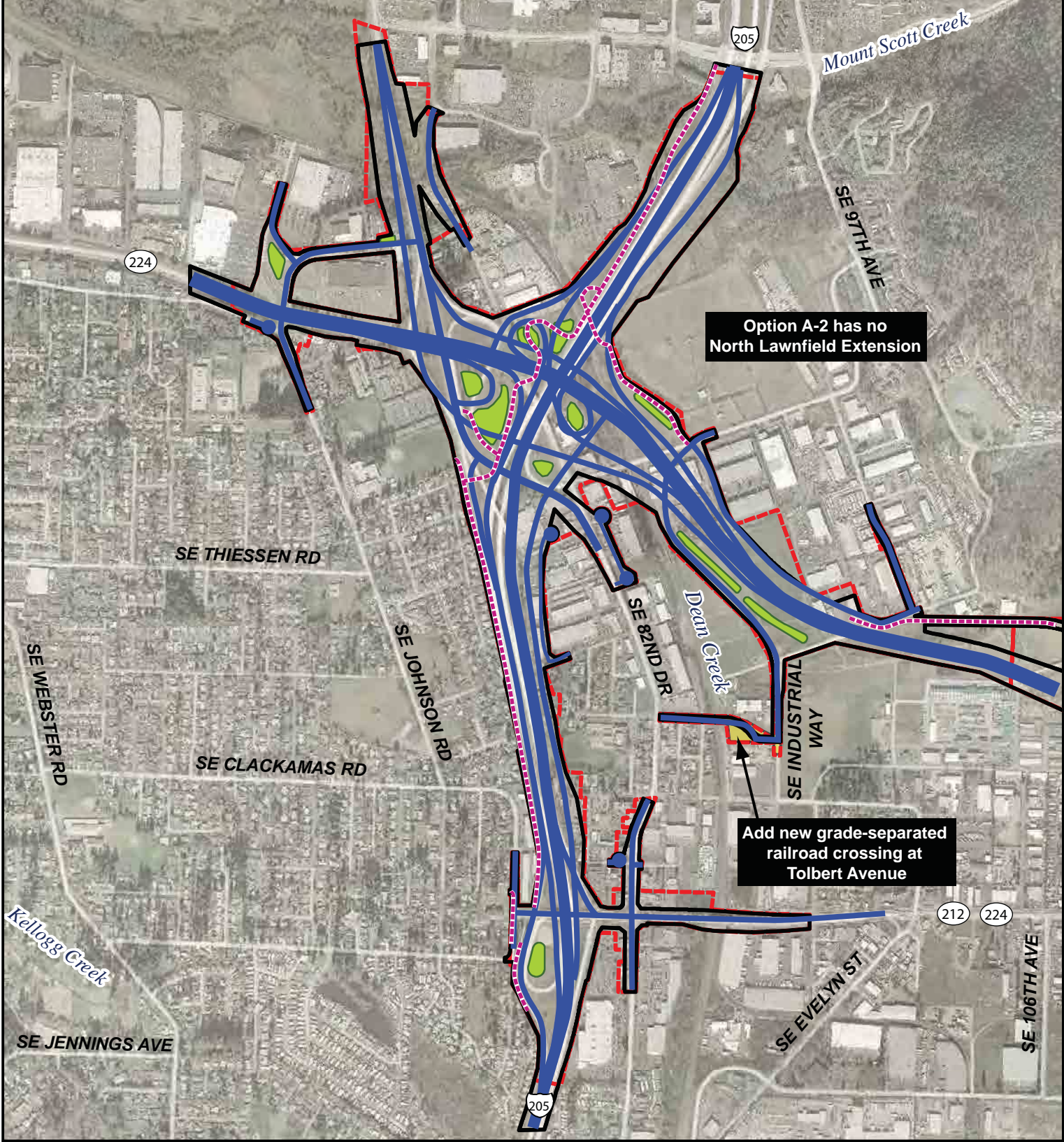
Figure 4

Alternative 1 - No Build
Pedestrian and Bicycle Systems

Alternatives 2 and 3



Alternatives 2 and 3 with Design Option A-2



1 500 0 1 500 feet

Legend

- Area of Potential Impact
- Right-of-Way
- Potential Stormwater Facilities
- Proposed Roadway
- Proposed Multi-Use Path

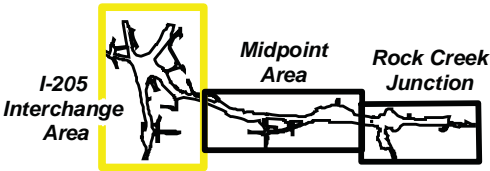
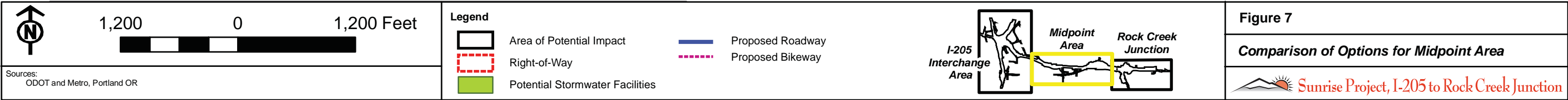
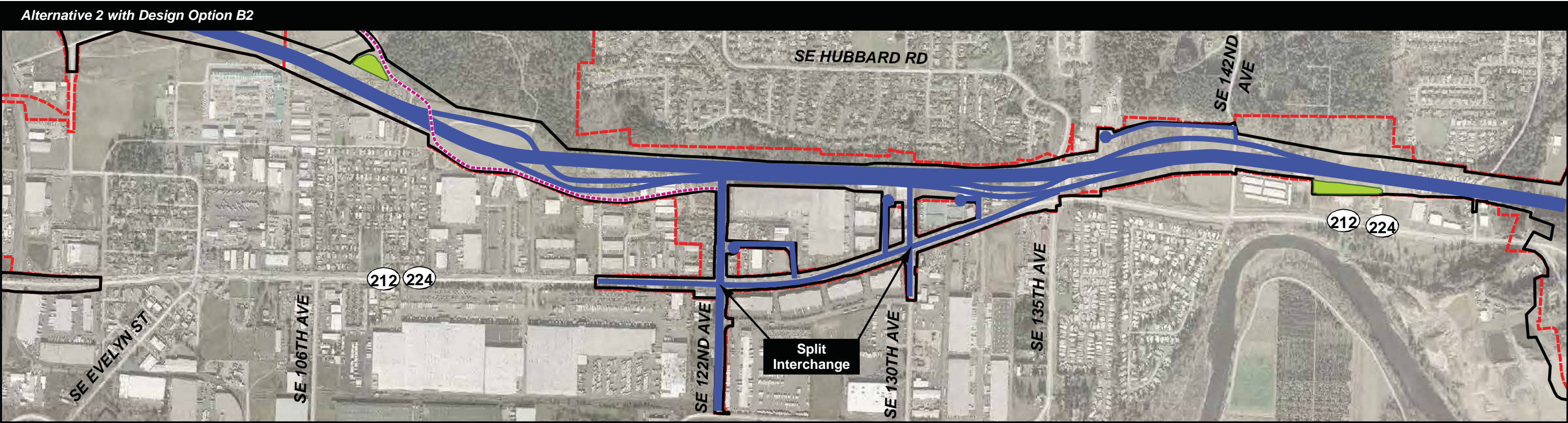
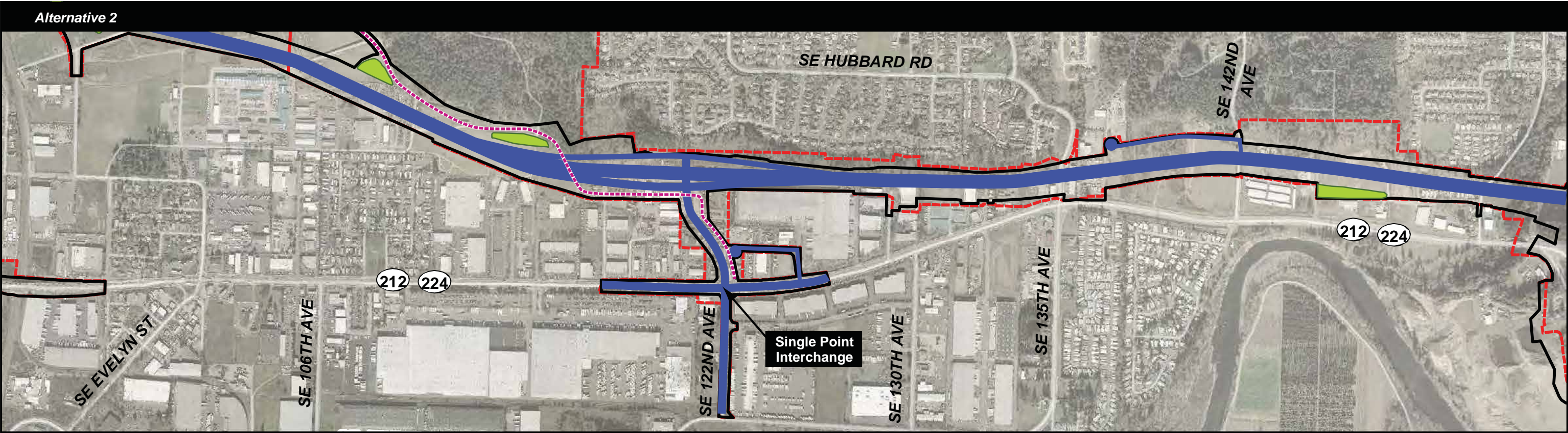
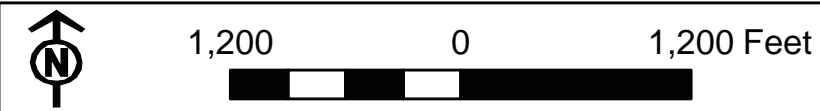
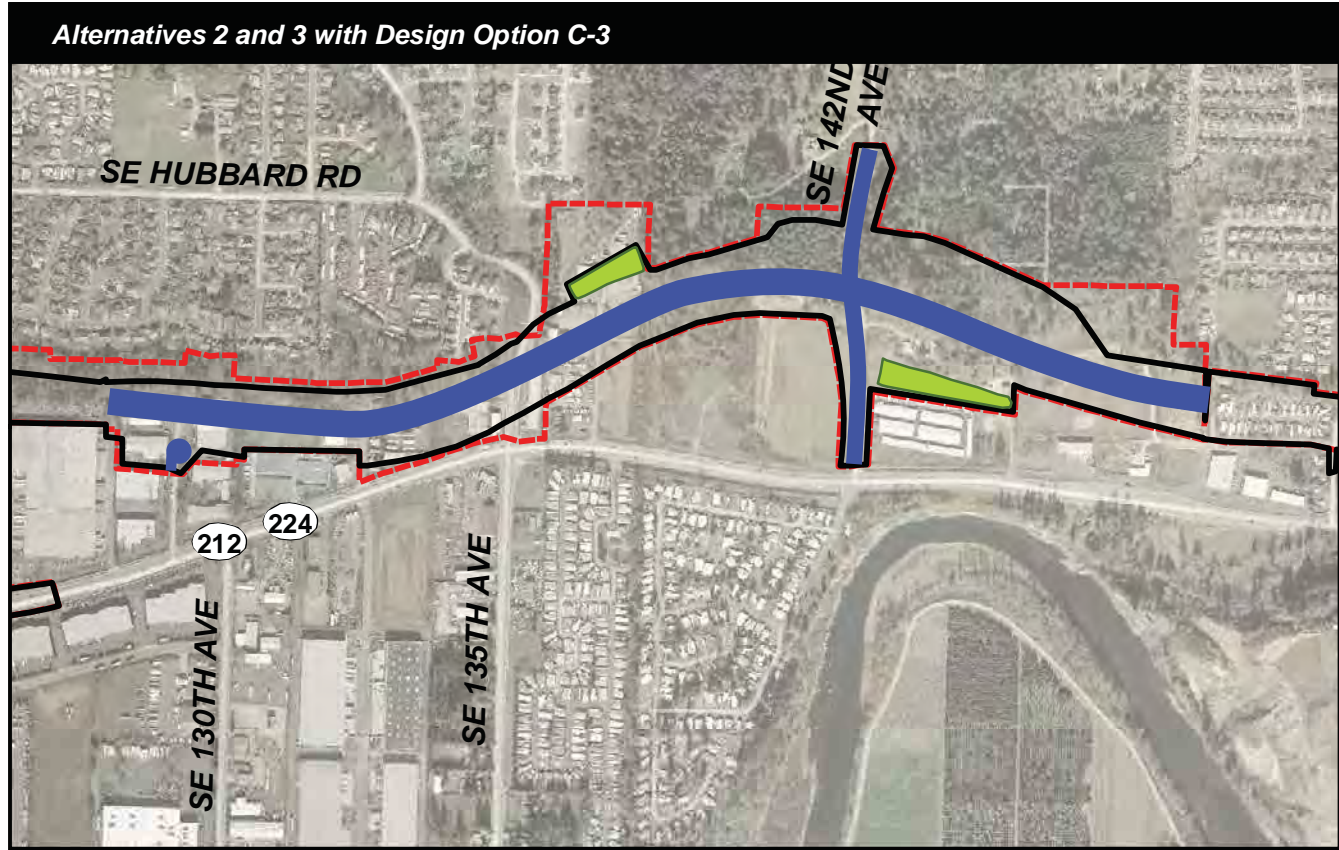
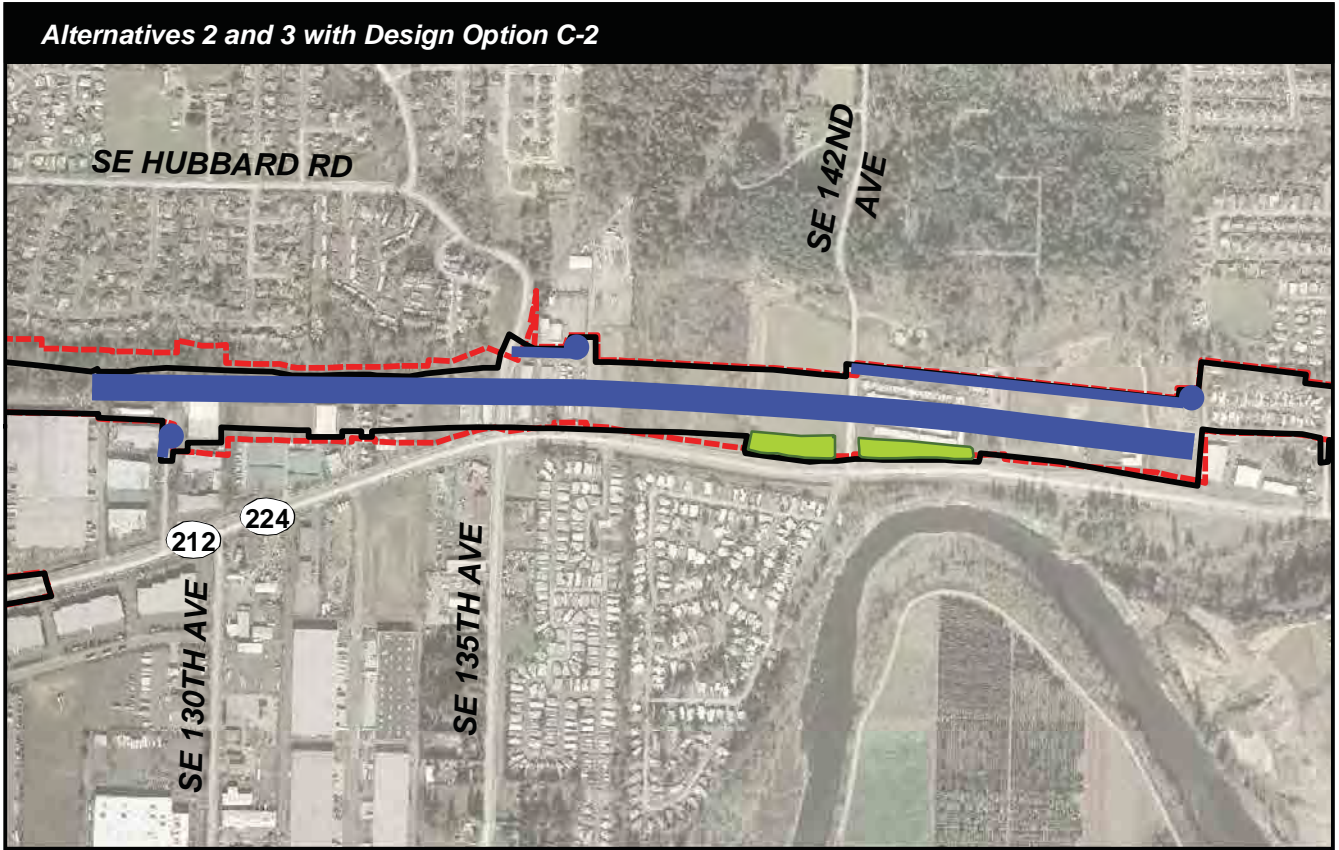
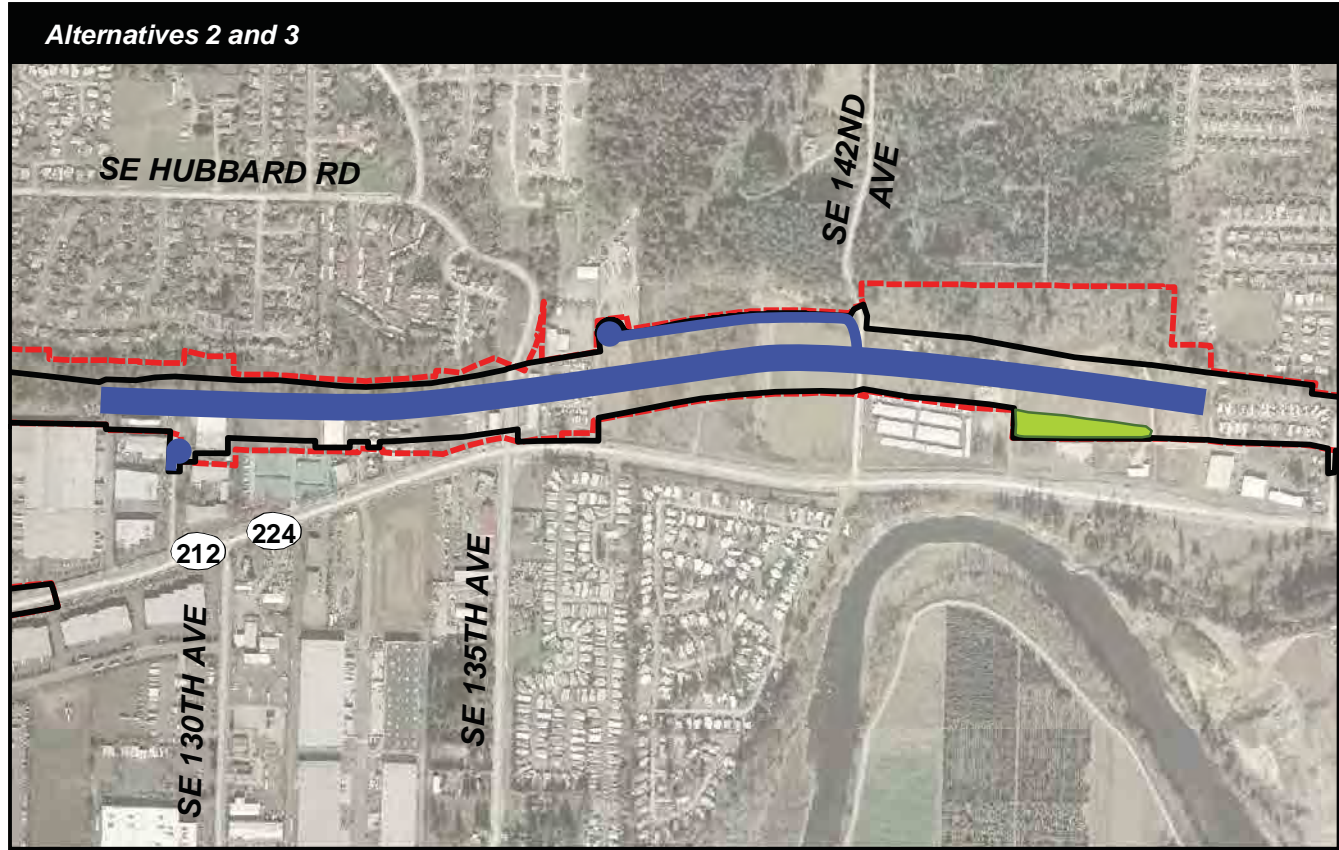


Figure 6

Comparison of Options for I-205 Interchange Area





Sources:
ODOT and Metro, Portland OR

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

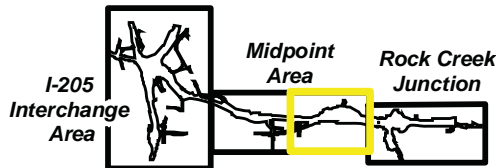
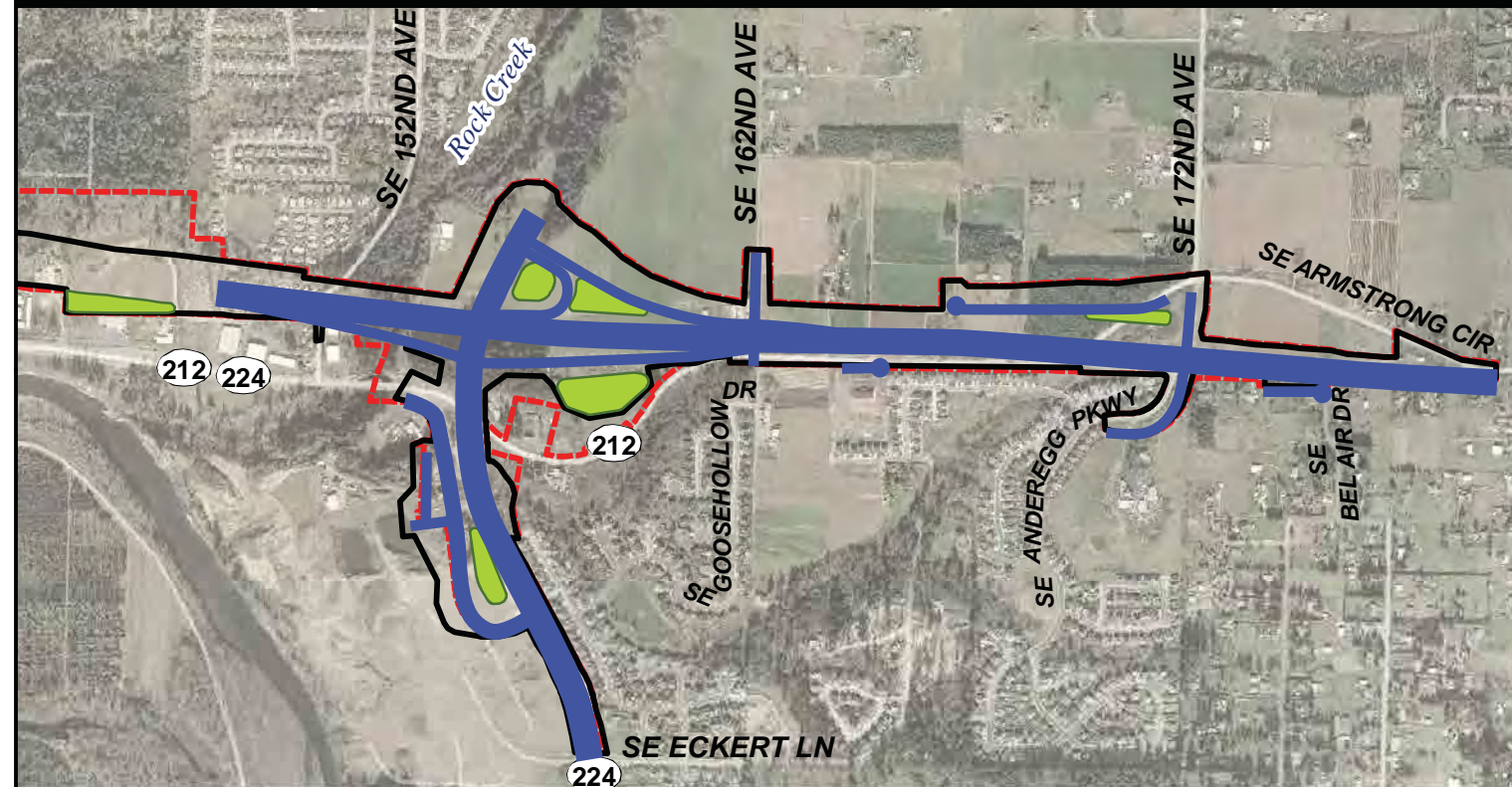


Figure 8

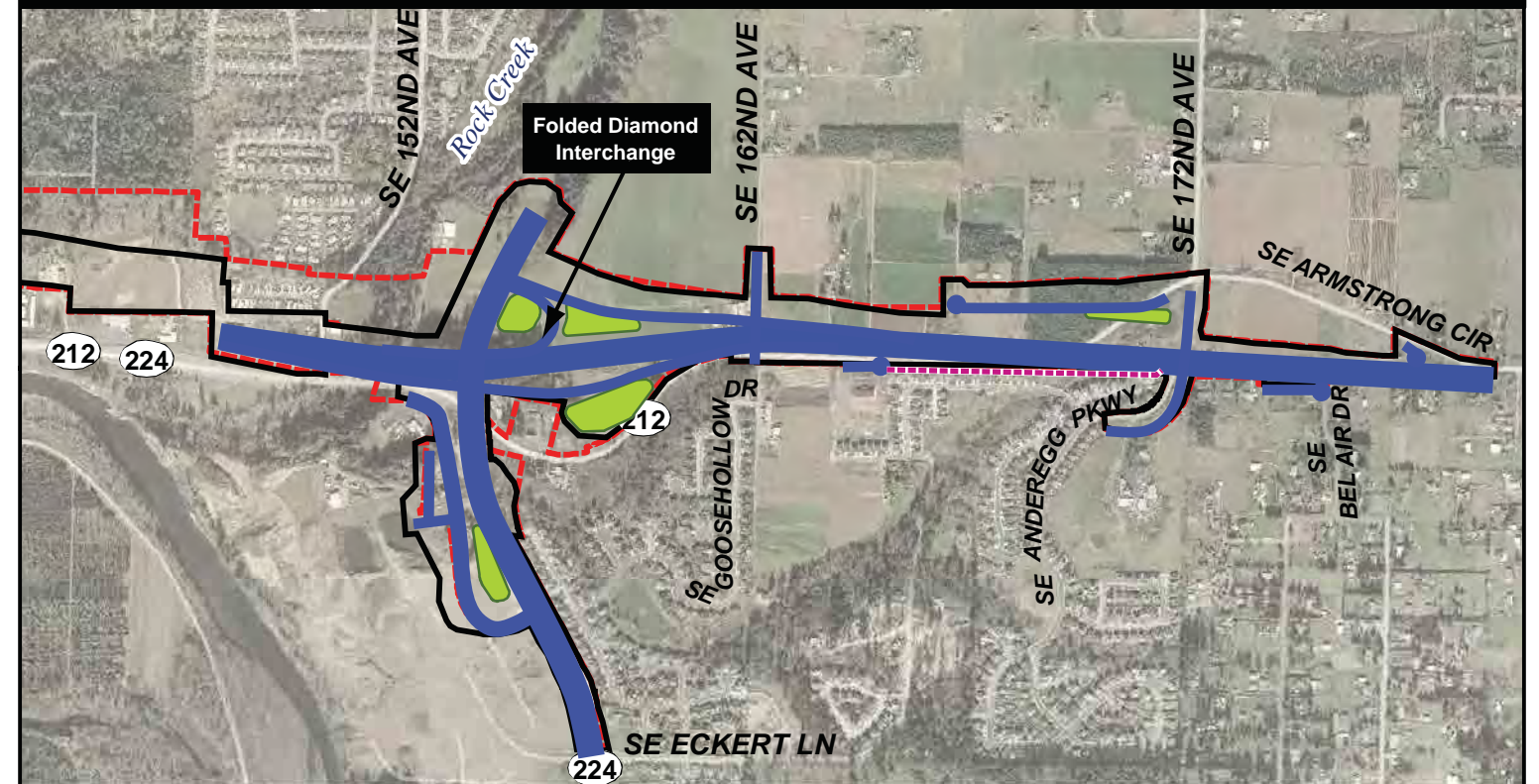
Comparison of Options for Midpoint Area (East End)

Sunrise Project, I-205 to Rock Creek Junction

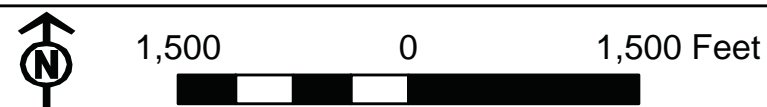
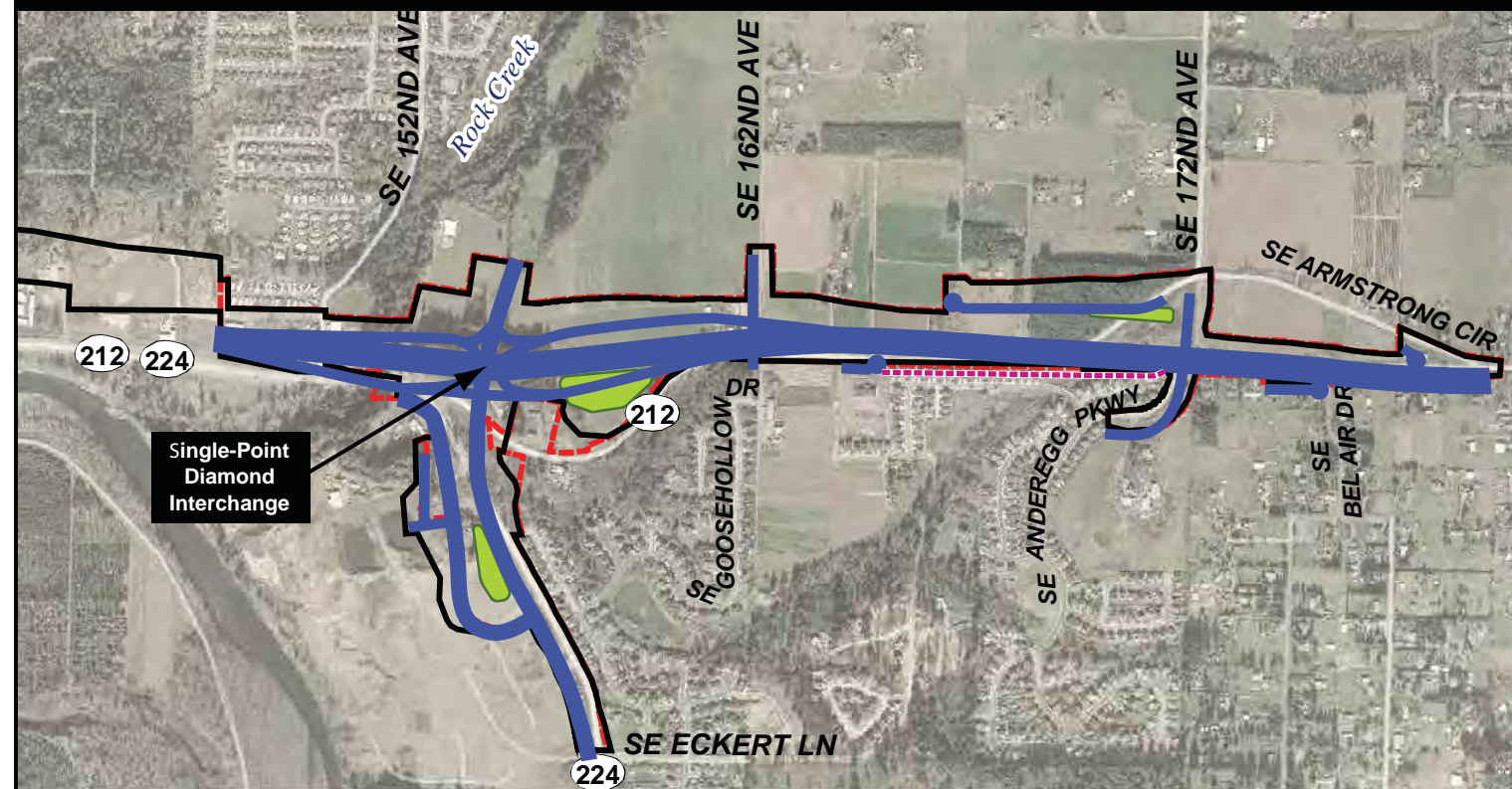
Alternatives 2 and 3



Alternatives 2 and 3 with Design Option D-2



Alternatives 2 and 3 with Design Option D-3



- Legend**
- Area of Potential Impact
 - Right-of-Way
 - Potential Stormwater Facilities
 - Proposed Roadway
 - Proposed Multi-Use Path

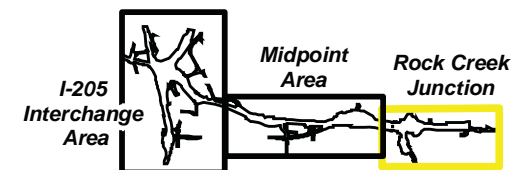
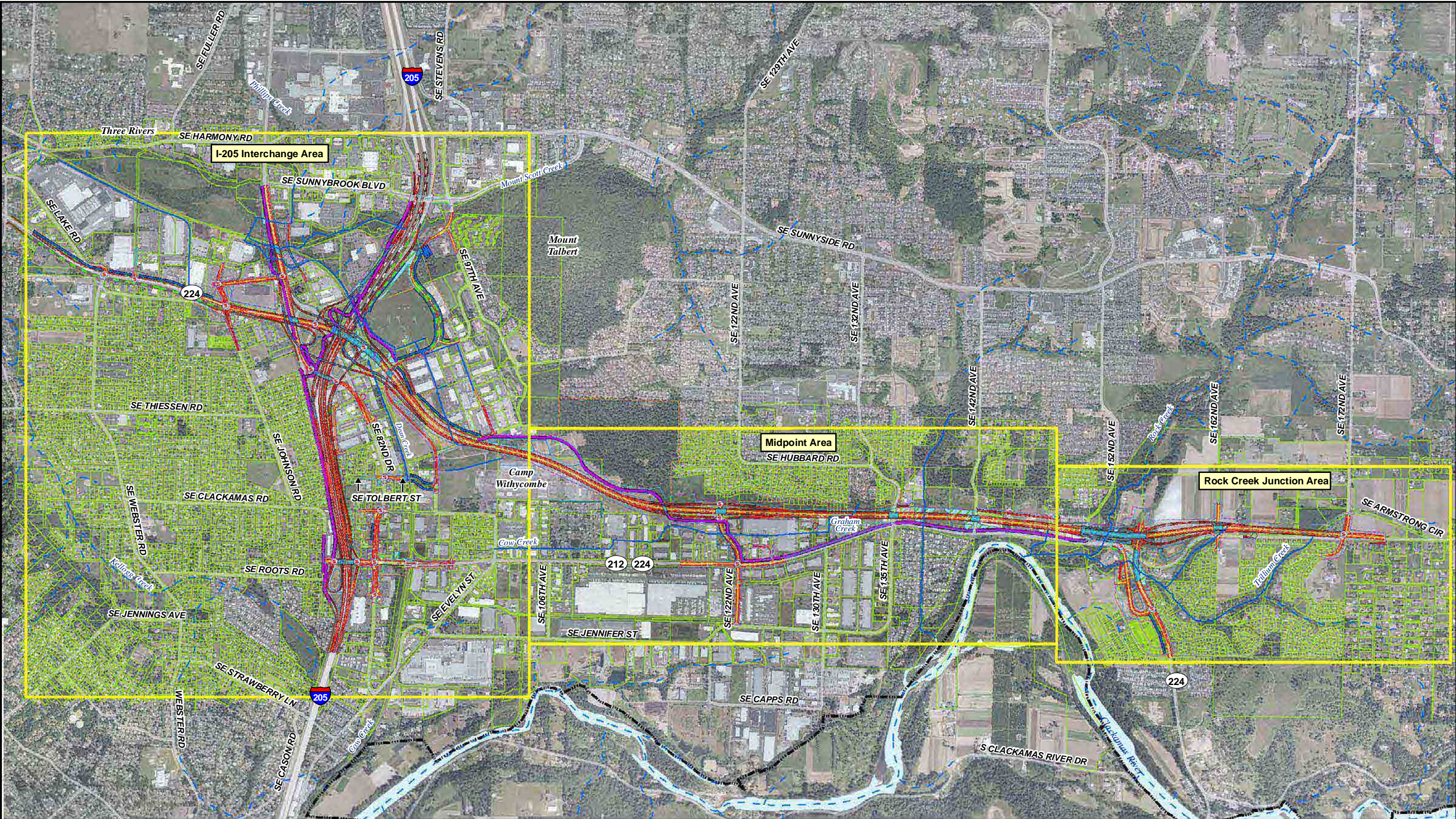



Figure 9
Comparison of Options for Rock Creek Junction Area
Sunrise Project, I-205 to Rock Creek Junction





2,00002,000 Feet

Access Closure

Bridge Structure

Bridge Footing

Construction Impact Line

Edge of Pavement (with curb)

Edge of Pavement (with no curb)

Lane Line

Lane Striping

Median

Multi-Use Path

Proposed Right-of-Way Line

Retaining Wall

Sound Wall

Traffic Signal

Taxlots

Urban Growth Boundary (UGB)

Storm Water Treatment/Detention

Flood Plain Mitigation Site

Bioslope

Swale


ODOT Verified Wetlands

Streams

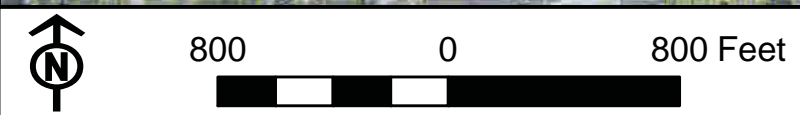
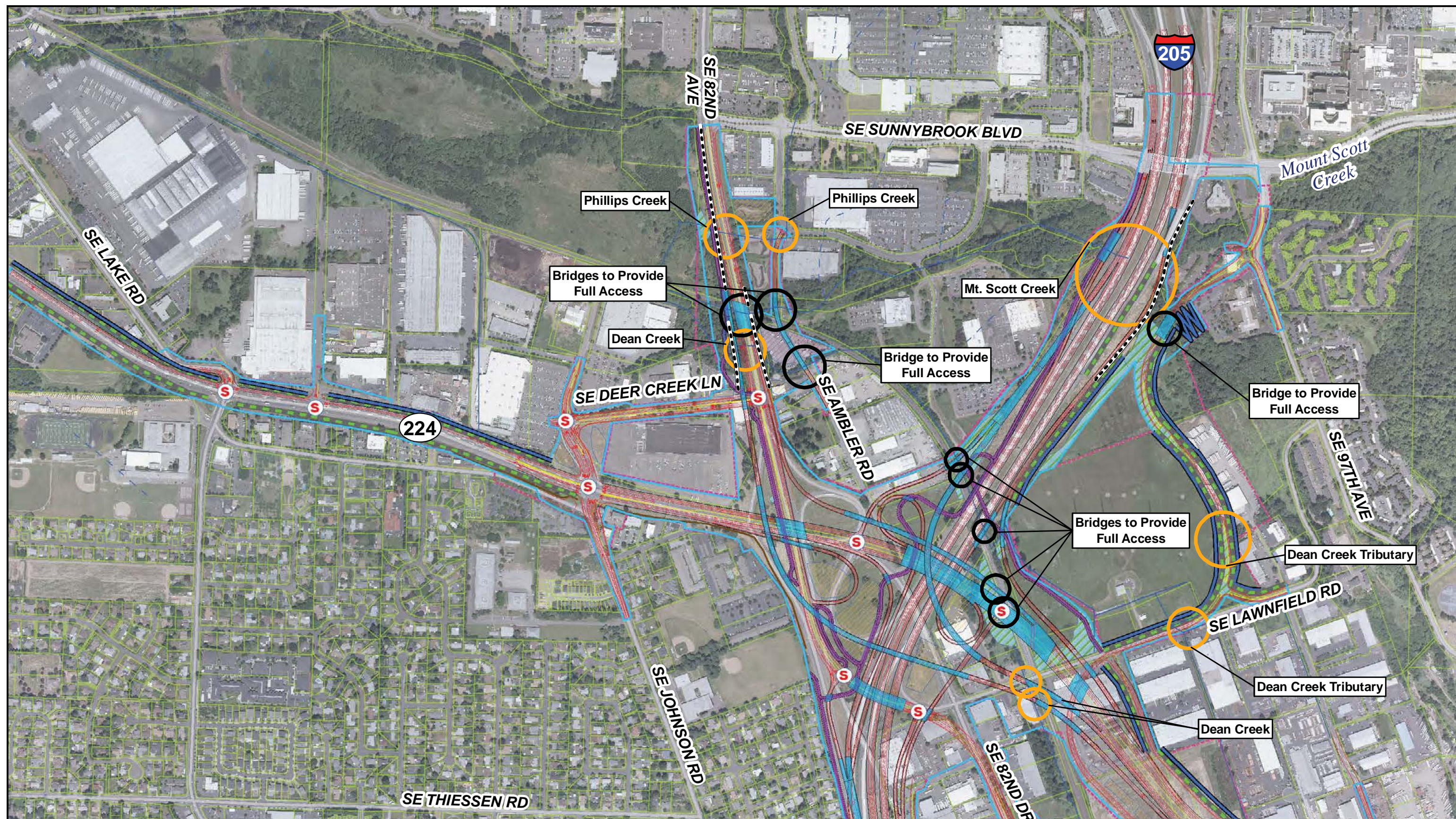
Metro Non-Verified

ODOT Verified


Figure PA-1
Project Area

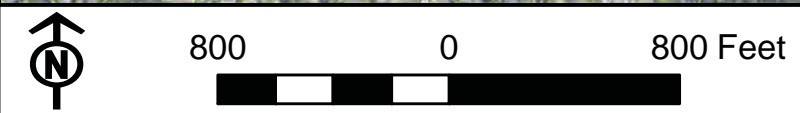
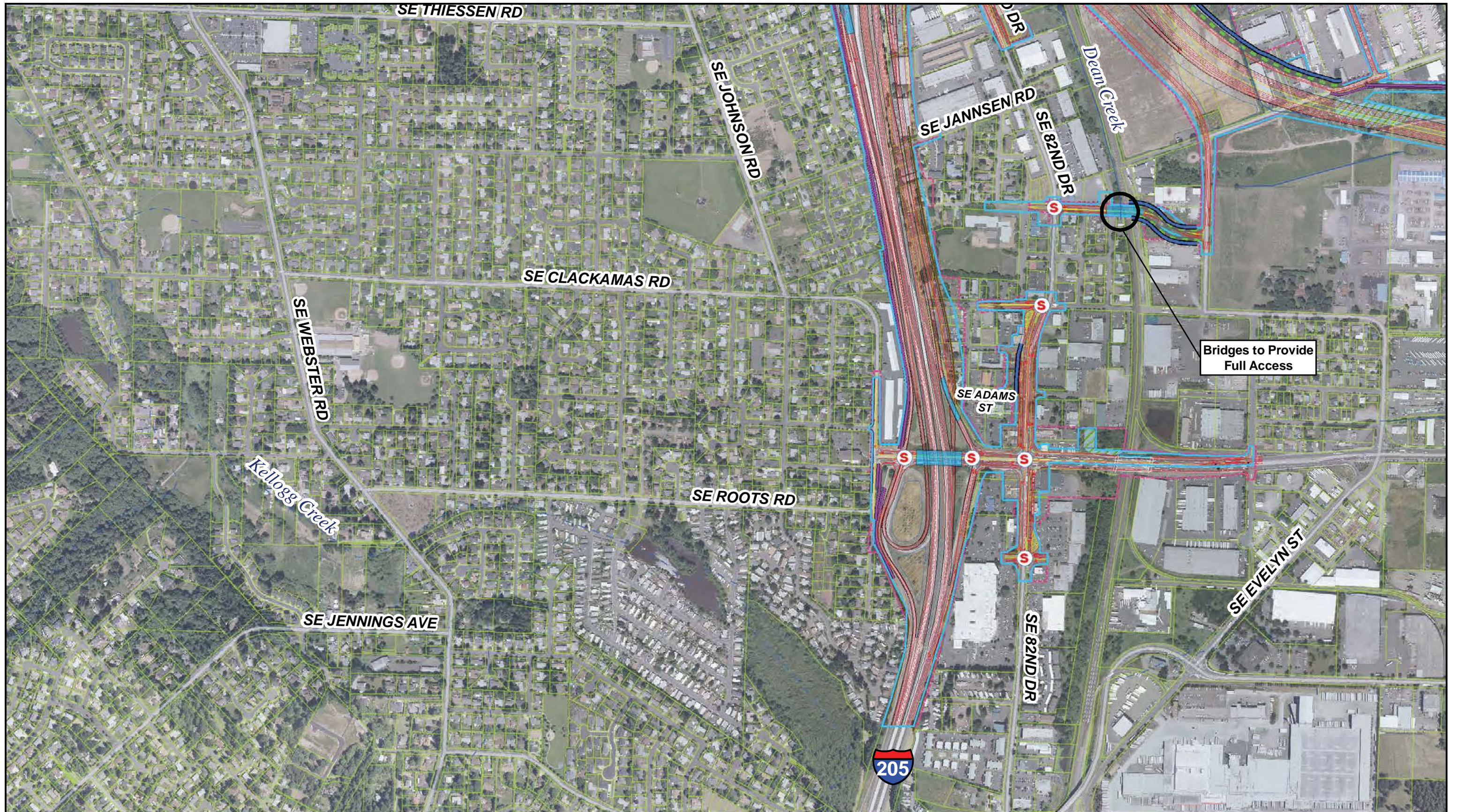
 **Sunrise Project, I-205 to Rock Creek Junction**

Printing Date:
File: P:\O\DOT\00000648\0600\INFO\GIS\arcmap\FEIS_Preliminary_Design\Preliminary_Design_Vicinity_08172010.mxd



Legend <ul style="list-style-type: none"> Access Closure Bridge Structure Bridge Footing Construction Impact Line Edge of Pavement (with curb) Edge of Pavement (with no curb) 	<ul style="list-style-type: none"> Lane Line Lane Striping Median Multi-Use Path Proposed Right-of-Way Line Retaining Wall Sound Wall 	<ul style="list-style-type: none"> Traffic Signal Taxlots Urban Growth Boundary (UGB) Exclusionary Fencing 	<ul style="list-style-type: none"> Storm Water Treatment/Detention Flood Plain Mitigation Site ODOT Verified Wetlands Bioslope Swale 	<ul style="list-style-type: none"> Streams <ul style="list-style-type: none"> Metro Non-Verified ODOT Verified Future Bridges & Culverts/Wildlife Passages <ul style="list-style-type: none"> Medium Full Access
--	--	--	---	--

Figure PA-2
I-205 Interchange Area - North
 **Sunrise Project, I-205 to Rock Creek Junction**



Sources:
ODOT and Metro, Portland OR (2008-09)




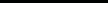





















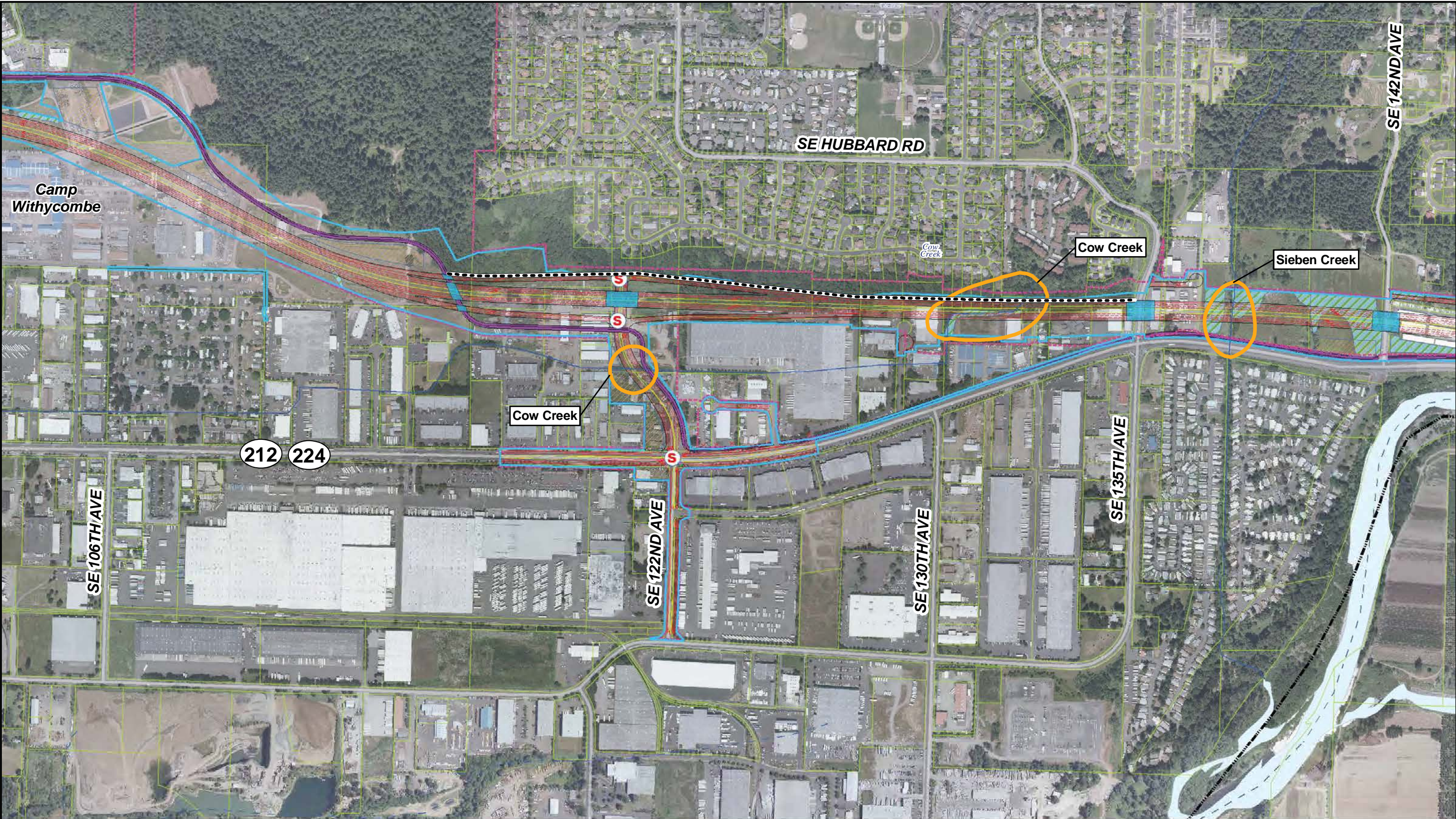

Legend									
	Access Closure		Lane Line		Traffic Signal		Storm Water Treatment/Detention	<i>Streams</i>	
	Bridge Structure		Lane Striping		Taxlots		Flood Plain Mitigation Site		Metro Non-Verified
	Bridge Footing		Median		Urban Growth Boundary (UGB)		ODOT Verified Wetlands		ODOT Verified
	Construction Impact Line		Multi-Use Path				Bioslope	<i>Future Bridges & Culverts/ Wildlife Passages</i>	
	Edge of Pavement (with curb)		Proposed Right-of-Way Line				Swale		Full Access
	Edge of Pavement (with no curb)		Retaining Wall						
	Edge of Pavement (with no curb)		Sound Wall						


Figure PA-3
I-205 Interchange Area - South
 Sunrise Project, I-205 to Rock Creek Junction

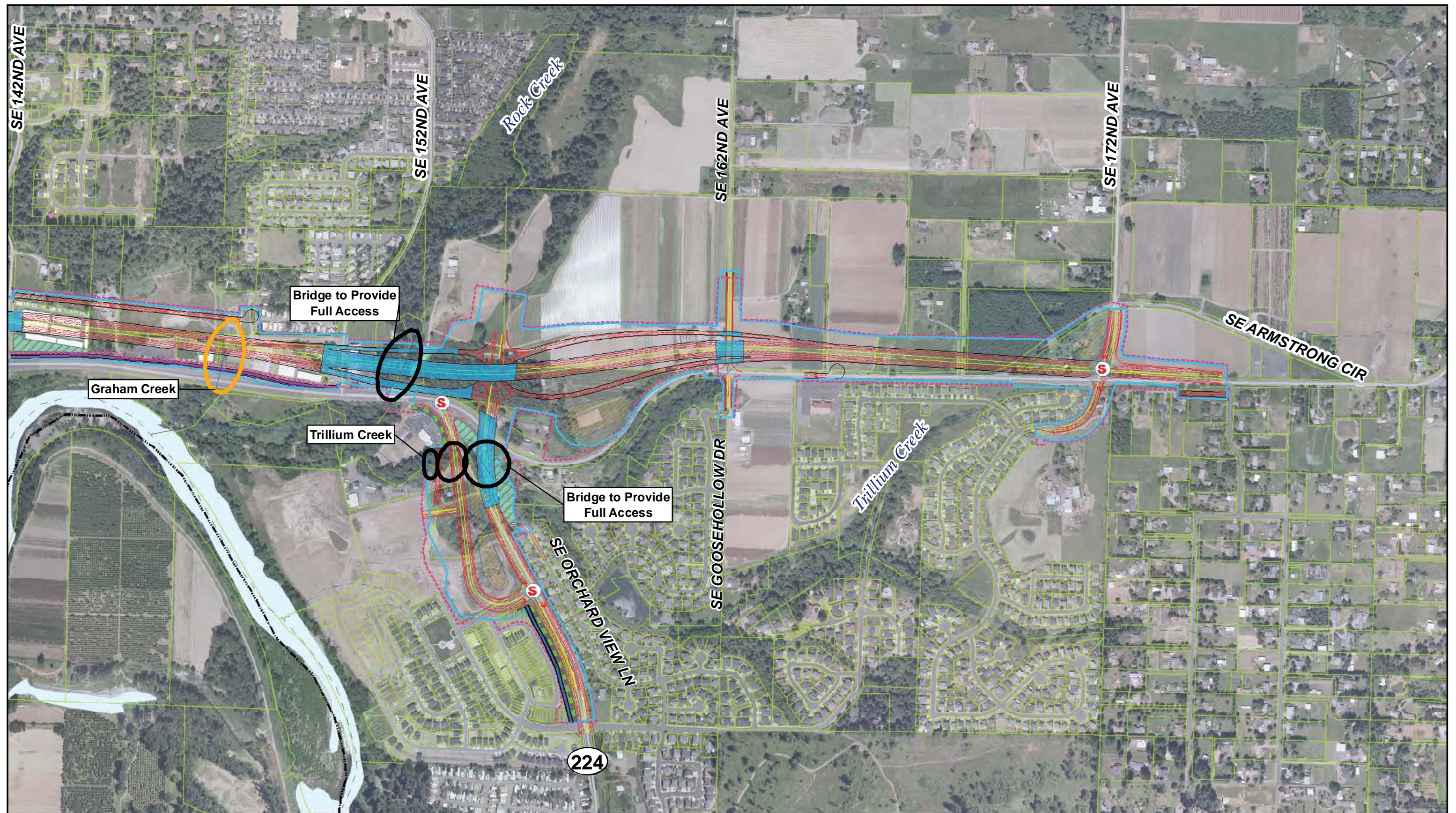




8000800 Feet

Legend <ul style="list-style-type: none">Access ClosureBridge StructureBridge FootingConstruction Impact LineEdge of Pavement (with curb)Edge of Pavement (with no curb)	<ul style="list-style-type: none">Lane LineLane StripingMedianMulti-Use PathProposed Right-of-Way LineRetaining WallSound Wall	<ul style="list-style-type: none">Traffic SignalTaxlotsUrban Growth Boundary (UGB)Exclusionary Fencing	<ul style="list-style-type: none">Storm Water Treatment/DetentionFlood Plain Mitigation SiteODOT Verified WetlandsBioslopeSwale	Streams <ul style="list-style-type: none">Metro Non-VerifiedODOT Verified Future Bridges & Culverts/ Wildlife Passages <ul style="list-style-type: none">Medium
--	--	---	---	--

Figure PA-4
Midpoint Area
 **Sunrise Project, I-205 to Rock Creek Junction**



<p>Legend</p> <ul style="list-style-type: none"> Access Closure Bridge Structure Bridge Footing Construction Impact Line Edge of Pavement (with curb) Edge of Pavement (with no curb) Lane Line Lane Striping Median Multi-Use Path Proposed Right-of-Way Line Retaining Wall Sound Wall 	<ul style="list-style-type: none"> Traffic Signal Taxlots Urban Growth Boundary (UGB) Storm Water Treatment/Detention Flood Plain Mitigation Site ODOT Verified Wetlands Bioslope Swale 	<p>Streams</p> <ul style="list-style-type: none"> Metro Non-Verified ODOT Verified <p>Future Bridges & Culverts/ Wildlife Passages</p> <ul style="list-style-type: none"> Medium Full Access 	<p>Figure PA-5</p> <p>Rock Creek Junction Area</p> <p>Sunrise Project, I-205 to Rock Creek Junction</p>
--	---	--	--

Without the Sunrise Project: Alternative 1—No Build

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**) 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 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 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 US 26 (Highway 26). Unit 1 extended from I-205 to Rock Creek Junction and Unit 2 extended from Rock Creek Junction to US 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.

NEPA History

The SDEIS, published on October 13, 2008, built 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 was needed because existing conditions had changed substantially since 1993; ODOT's approach to the problems of the Sunrise Corridor had changed since 1993; and the 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 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 Section 6002's environmental review process.

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 F.

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 was 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 (2005) Purpose and Need (see page ES-5) 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 the SDEIS was to help decision-makers and the public decide whether the project should be built, evaluate project changes, and determine how adverse impacts should be mitigated.

The SDEIS disclosed the potential impacts of the proposed action by ODOT and Clackamas County and presented 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 were provided copies of the SDEIS to review and were offered opportunities to comment on its content and analysis.

Purpose of the Final EIS

This FEIS accomplishes a number of different tasks. One of its purposes is to present the comments received on the SDEIS and the lead agencies' responses to substantive comments. That process is documented in Chapter 5 of this FEIS and in Appendices A and F (Public and Agency Comments and Public Involvement Materials).

Another purpose is to identify the **Preferred Alternative** and to disclose additional analysis completed following the publication of the SDEIS. The format of this FEIS incorporates the original SDEIS and adds sections evaluating the **Preferred Alternative** where appropriate. Documentation of that analysis is in Chapters 3 and 4.

This FEIS documents the environmental laws, Executive Orders, and other requirements that apply to the Sunrise Project. Many requirements are required to be met prior to publication of the FEIS or Record of Decision. The section titled "Permits and Approvals Needed for **Preferred Alternative**" and Table 34 list the permits and approvals that will be obtained after the Record of Decision.

Finally, this FEIS establishes and documents the mitigation measures that the partnering agencies intend to commit to in the Record of Decision.

Summary of Impacts and Mitigation

Tables 2 and 3 summarize the potential impacts and committed mitigation. Table 2 summarizes the anticipated impacts from the Sunrise Project. The columns summarizing **Alternatives 2 and 3** exclude impacts from the design options, which are listed separately. Table 3 outlines the committed mitigation measures for the **Preferred Alternative**.



Table 2. Summary of Impacts

	Alternative 1—No Build	Alternative 2	Alternative 3	Design Options	Preferred Alternative (Alternative 2 + Tolbert overcrossing + Design Options C-2 + D-3)
Transportation	OR 212/224 would accommodate 4,380 vehicles during the PM peak hour	Sunrise Project would accommodate 12,400 vehicles during PM peak hour	Sunrise Project would accommodate 11,600 vehicles during PM peak hour	Design options would not measurably change capacity	Same as Alternative 2: Sunrise Project would accommodate 12,400 vehicles during PM peak hour
	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	Same as Alternative 2: 4 hours of total congestion in AM and PM
	With midpoint interchange, faster travel times to midpoint area from the east and the west of the midpoint area	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, and other design options would not measurably affect travel times	With midpoint interchange, faster travel times to midpoint area from the east and the west of the midpoint area Has least queuing and most capacity of all alternatives studied as result of adding Tolbert overcrossing (of Design Option A-2) to Alternative 2, restricted turn movements at SE 82 nd and OR 212/224 and adding a lane at the west end transition
	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	Consistent with state, regional, and local transportation plans identifying a need for improved freight movement
	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	Bike and pedestrian system would be enhanced more than Alternatives 2 and 3: would extend multi-use path from SE 122 nd Ave to Rock Creek Junction and new multi-use path improvements connecting to existing I-205 trail system



Table 2. Summary of Impacts

	Alternative 1—No Build	Alternative 2	Alternative 3	Design Options	Preferred Alternative (Alternative 2 + Tolbert overcrossing + Design Options C-2 + D-3)
Land Use					
No conversion of existing land uses to highway use		514 acres of various uses/zoning designations converted to highway use 39 acres residential land 133 acres employment land 342 acres of other uses, including (and mostly) vacant land	495 acres of various uses/zoning designations converted to highway use 39 acres residential land 117 acres employment land 339 acres of other uses, including (and mostly) vacant land	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 (+11 acres)	496 acres of various uses/zoning designations converted to highway use 25 acres residential land 156 acres employment land 315 acres of other uses, including (and mostly) vacant land
No residential displacements		72 dwelling units displaced 14 single family 24 multi family 34 manufactured homes	72 dwelling units displaced 14 single family 24 multi family 34 manufactured homes	C-2 would have fewest residential displacements (43) All other design options would result in displacement of 72 to 75 dwelling units	53 dwelling units displaced 26 single family 24 multi-family 3 manufactured homes
No changes to driveways		132 driveways affected	91 driveways 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)	188 driveways affected
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)	\$216 million (estimated)



Table 2. Summary of Impacts

	Alternative 1—No Build	Alternative 2	Alternative 3	Design Options	Preferred Alternative (Alternative 2 + Tolbert overcrossing + Design Options C-2 + D-3)
Land Use, continued	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	Would implement local, regional, and state policies for a through-route for freight Generally consistent with planned land uses by supporting future development
Businesses and Communities	No changes to community cohesion or character	No isolation of neighborhoods but encroachment or removal: <ul style="list-style-type: none">• Old Clackamas neighborhood affected by loss of several multi-family units, convenience commercial, and changes to driveway approaches 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 isolation of neighborhoods but encroachment or removal: <ul style="list-style-type: none">• Old Clackamas neighborhood affected by loss of several multi-family units, convenience commercial, and changes to driveway approaches to SE 82nd Drive• Six-unit manufactured home park community affected by removal of 3 units, remaining 3 units isolated



Table 2. Summary of Impacts

	Alternative 1—No Build	Alternative 2	Alternative 3	Design Options	Preferred Alternative (Alternative 2 + Tolbert overcrossing + Design Options C-2 + D-3)
Businesses and Communities, continued	Impacts to Orchard Summit Park No change to other community cohesion factors	0.18 acres of right-of-way acquisition of recreation field at Clackamas Elementary School Displaced dwellings in Clackamas and Oregon Trail Elementary school attendance areas Post office circulation to SE 82 nd would change 1 church impact	Same as Alternative 2	Same as Alternative 2	0.18 acres of right-of-way acquisition of recreation field at Clackamas Elementary School Displaced dwellings in Clackamas and Oregon Trail Elementary school attendance areas Post office circulation to SE 82 nd from driveway on Adams would change because Adams would be a cul-de-sac 1 church impact from change in local circulation to OR 212
	No change to businesses except indirect impacts from congestion could slow employment growth No jobs displaced	About 60 businesses affected 923 jobs displaced Conversion of employment land would reduce new job potential by 5,100 jobs	Would displace 2-3 fewer businesses than Alternative 2 920 jobs displaced Other impacts similar to Alternative 2	C-2 would displace 11 additional businesses compared to Alternatives 2 and 3 and design options A-2: 923 jobs displaced with Alternative 2 and 920 jobs with Alternative 3 B-2: 1,072 jobs displaced with Alternative 2 C-2: 946 jobs displaced with Alternative 2 and 943 with Alternative 3 C-3: 947 jobs displaced with Alternative 2 and 944 jobs with Alternative 3 D-2: 923 jobs displaced with Alternative 2 and 920 jobs with Alternative 3 D-3: 954 jobs displaced with Alternative 2 and 951 jobs with Alternative 3	About 80 businesses affected 1,037 jobs displaced Conversion of employment land would reduce new job potential by 3,563 jobs Greater impacts on businesses than Alternatives 2 and 3. Preferred Alternative uses Design Option C-2, which avoids residences, but displaces more businesses than Alternatives 2 or 3 or the other design options. Project design refinements include a wider SE 82 nd Avenue to improve function, causing more business displacements.



Table 2. Summary of Impacts

	Alternative 1—No Build	Alternative 2	Alternative 3	Design Options	Preferred Alternative (Alternative 2 + Tolbert overcrossing + Design Options C-2 + D-3)
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 in this table 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 82 nd Drive; and between SE 97 th Avenue, OR 212/224, and driveways 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 212, and access OR 212/224 via the new "jug handle" Differences of other design options to alternatives are minimal	Shorter out-of-direction travel routes than Alternatives 2 and 3 between the SE 97 th Avenue residential areas and Lawnfield to regional highway system with Tolbert overcrossing Two additional access points added to regional system at SE Orchard View Lane and SE 162 nd Avenue to offset the closure of Goosehollow at OR 212
	No changes to property tax revenues	Property tax revenues lost by conversion of land to non-taxable use estimated at just over \$42 million	Slightly less than Alternative 2, \$40 million	B-2 would have greatest impact A-2 and D-3 would have least impact	Property tax revenues lost by conversion of land to non-taxable use estimated at just over \$42 million



Table 2. Summary of Impacts

Environmental Justice	Alternative 1—No Build	Alternative 2	Alternative 3	Design Options	Preferred Alternative (Alternative 2 + Tolbert overcrossing + Design Options C-2 + D-3)
	No change	Impacts would not be disproportionately borne by EJ populations because: there are only slightly higher ratios of EJ populations in the corridor; where EJ populations are disproportionately represented, the adverse impacts of displacement and noise will be mitigated; and there will be benefits of improved safety, mobility, and transit access I-205 area has somewhat higher ratios of people below the poverty line in two US Census block groups (25% and 18%; state ratio is 12%) Other block groups north of OR 212/224 have somewhat higher ratios of non-white persons compared to the state Displacement is expected to affect 195 people of which 26 (14%) are likely to be minorities and 22 (11%) are likely to be low-income; the state ratio of minorities is 13% and of low-income people is 12% Mitigation for displacement and noise impacts will reduce impacts so they will not be high and adverse Benefits of improved mobility for all travel modes would accrue to all users	Same as Alternative 2	C-2 would have least impacts on EJ populations	Impacts would not be disproportionately borne by EJ populations because of one or more of the following conditions: there are only slightly higher ratios of EJ populations in the corridor; where EJ populations are disproportionately represented, the adverse impacts of displacement and noise will be mitigated; and there will be benefits of improved safety, mobility, and transit access I-205 area has somewhat higher ratios of people below the poverty line in two US Census block groups (25% and 18%; state ratio is 12%) Other block groups north of OR 212/224 have somewhat higher ratios of non-white persons compared to the state Displacement is expected to affect 143 people of which 12 (9%) are likely to be minorities and 21 (15%) are likely to be low-income; the state ratio of minorities is 13% and of low-income people is 12% Mitigation for displacement and noise impacts will reduce impacts so they will not be high and adverse Benefits of improved mobility for all travel modes would accrue to all users



Table 2. Summary of Impacts

	Alternative 1—No Build	Alternative 2	Alternative 3	Design Options	Preferred Alternative (Alternative 2 + Tolbert overcrossing + Design Options C-2 + D-3)
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 (retaining or noise); 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: <ul style="list-style-type: none">• A-2: from 3 to 2• B-2: from 4 to 2.5 (average for midpoint)• C-2: from 4 to 3• C-3: from 4 to 2• D-2: from 5 to 2• D-3: from 5 to 2	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 retaining or noise walls; new signals and lights; more headlight glare



Table 2. Summary of Impacts

	Alternative 1—No Build	Alternative 2	Alternative 3	Design Options	Preferred Alternative (Alternative 2 + Tolbert overcrossing + Design Options C-2 + D-3)
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) SDEIS analysis: 246 units with noise levels above the ODOT noise abatement criteria (NAC) FEIS analysis: 262 units above the NAC (because the Preferred Alternative's footprint is slightly larger than that of Alternatives 2 and 3, additional monitoring sites were modeled)	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 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	Most increases in noise levels predicted in range of 1 to 7 dBA over existing conditions, max. increase of 21 dBA, similar locations as Alternatives 2 and 3 Reductions up to 8 dBA in some areas Pref. Alt. - 416/241* total noise impacts Note: Because the Preferred Alternative's footprint is slightly larger than that of Alternatives 2 and 3, additional monitoring sites and impacts were modeled); FEIS modeling of existing, No Build, and Pref. Alt. levels were based on new project footprint *Before / after abatement



Table 2. Summary of Impacts

	Alternative 1—No Build	Alternative 2	Alternative 3	Design Options	Preferred Alternative (Alternative 2 + Tolbert overcrossing + Design Options C-2 + D-3)
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 about 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 2030 ADT of 93,500 vehicles 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 2030 ADT of 95,700 vehicles indicate a low potential for 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	20 percent VMT increase over Alternative 1 No exceedance of National Ambient Air Quality Standards 2030 ADT of 90,700 indicate a low potential for mobile source air toxics impacts according to FHWA guidance Future emission controls will result in emissions consistent with or lower than existing conditions Note: Pref. Alt. analysis used the updated EPA standards for lead, NO ₂ , and ozone (revised in 2008) and the addition of naphthalene to the list of compounds treated as Mobile Source Air Toxics



Table 2. Summary of Impacts

	Alternative 1—No Build	Alternative 2	Alternative 3	Design Options	Preferred Alternative (Alternative 2 + Tolbert overcrossing + Design Options C-2 + D-3)
Energy	Annual fuel use for operations only: 10.5 million gallons (gals.) of fuel	Annual fuel use for operations: 13.1 million gals. of fuel Construction energy: 59.1 million gals. of fuel	Annual fuel use for operations: 14.3 million gals. of fuel Construction energy: 56.3 million gals. of fuel	All options under Alternative 2 would increase fuel use in the range of 0.8 to 2.7 million gals.; under Alternative 3, only C-3 would increase fuel use, by 0.07 million gals. Construction energy with Alternative 2 (Alternative 3): <ul style="list-style-type: none">• A-2: -0.7 (-0.7) million gals.• B-2: +6.3 million gals.• C-2: +0.1 (+0.2) million gals.• C-3: +0.9 (+0.9) million gals.• D-2: +2.0 (+2.1) million gals.• D-3: +2.5 (+2.5) million gals.	Annual fuel use for operations: 14.56 million gals. of fuel Construction energy: 54.7 million gals. of fuel
Greenhouse Gas	The transportation sector is the second largest source of total greenhouse gas (GHG) in the U.S., and the largest source of CO ₂ emissions—the predominant GHG. In 2005, total statewide annual VMT (all roads) was 35.3 billion miles, and the Sunrise Project Corridor had an estimated 185,000 VMT, 0.00052 percent of the state total. FHWA is working with other modal administrations through the Department of Transportation Center for Climate Change and Environmental Forecasting to develop strategies to reduce transportation's contribution to greenhouse gases – particularly CO ₂ emissions - and to assess the risks to transportation systems and services from climate changes. Additional information on FHWA strategies being pursued at a national level and strategies being pursued by the State of Oregon is contained in Appendix D.				



Table 2. Summary of Impacts

	Alternative 1—No Build	Alternative 2	Alternative 3	Design Options	Preferred Alternative (Alternative 2 + Tolbert overcrossing + Design Options C-2 + D-3)
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)	94 acres of wildlife habitat affected



Table 2. Summary of Impacts

	Alternative 1—No Build	Alternative 2	Alternative 3	Design Options	Preferred Alternative (Alternative 2 + Tolbert overcrossing + Design Options C-2 + D-3)
Biology, continued	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, Mount 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, Mount 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)	113.3 acres net new impervious surface 135.8 acres new impervious surface, minus 21.5 acres old impervious surface removed (see Figure PA-27A) Beneficial impacts are new culverts for fish passage in significant habitat areas; all new structures will be fish-passable and any retrofitting of crossings will be made fish passable
	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 impacts on water quality from new impervious surface because stormwater treatment/detentions ponds and low impact developments will (LID) treatment options will mitigate for slightly more impervious surface area than will be created PA analysis included 7 drainage basins (3 more than were analyzed for Alts 2 and 3) because more detailed topographical and design information was available for the PA analysis



Table 2. Summary of Impacts

	Alternative 1—No Build	Alternative 2	Alternative 3	Design Options	Preferred Alternative (Alternative 2 + Tolbert overcrossing + Design Options C-2 + D-3)
Biology, continued	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	No impacts to Threatened or Endangered terrestrial wildlife or plants Indirect effects from runoff from additional impervious surface in critical fish habitat likely to adversely affect Lower Columbia River steelhead trout, Chinook salmon, and coho salmon, requiring formal ESA consultation with NMFS NMFS issued a Biological Opinion (BO) that the project may affect, likely to adversely affect the Lower Columbia River steelhead trout, Chinook salmon, and Coho salmon. The BO found that the action will not result in destruction or adversely modify designated critical habitat for Lower Columbia River steelhead trout or Chinook salmon. Conservation measures are included in the BO in Appendix D and in Chapter 3, Biology section.



Table 2. Summary of Impacts

	Alternative 1—No Build	Alternative 2	Alternative 3	Design Options	Preferred Alternative (Alternative 2 + Tolbert overcrossing + Design Options C-2 + D-3)
Wetlands	Possible minor impacts on roadside ditches from planned projects	32 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 PEM 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	23 total acres of wetland removed, primarily east of I-205 and north of Lawnfield Road, at Camp Withycombe, and between SE 135 th Avenue and Rock Creek (Figure PA-46): <ul style="list-style-type: none">16.2 acres of palustrine emergent (PEM) wetland4.0 acres palustrine forested/palustrine scrub-shrub (PFO/PSS) wetland0.9 acre of PFO wetland0.5 acre of PSS wetland1.4 acres of PSS/PEM wetland
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	More cut into hillside near landslide area similar to Alternative 2; dewatering would be required during construction and/or permanently, potentially changing adjacent underground hydrology



Table 2. Summary of Impacts

	Alternative 1—No Build	Alternative 2	Alternative 3	Design Options	Preferred Alternative (Alternative 2 + Tolbert overcrossing + Design Options C-2 + D-3)
Cultural Resources	No effects on archaeological resources	Three identified archaeological resources affected but eligibility was unknown in 2007. In 2009 and 2010, further investigation and review by SHPO resulted in a determination of eligibility for one of the sites and no eligibility for the other two sites	Same as Alternative 2	A-2 would affect two resources B-2 would affect two resources C-2 and C-3 would each affect one resource	On June 1, 2010, SHPO concurred with a “Finding of No Adverse Affect for Historic Properties (Archaeology)” . Subsequent to the finding, a Memorandum of Agreement (MOA) was executed among FHWA, SHPO, and ODOT to resolve a Section 106 “Adverse Effect” because of incomplete survey work at an identified archaeological site, and lack of access to several properties. Appendix B has the June 2010 SHPO concurrence on the finding and the MOA. The eligible portion of one identified archaeological resource will be avoided and monitored.
Cultural Resources, continued	No effects on historic resources	One resource would be directly affected Two resources would be indirectly 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 A-2 would indirectly affect one resource	No direct effect on historic resources; SHPO concurrence of No Adverse Effect on “Section 106 Level of Effect for Historic Resources” dated July 26, 2010 attached in Appendix B Direct impacts identified for Alternatives 2, 3, and Design Option B-2 were avoided Non-adverse indirect effect on four resources (changes to setting)



Table 2. Summary of Impacts

	Alternative 1—No Build	Alternative 2	Alternative 3	Design Options	Preferred Alternative (Alternative 2 + Tolbert overcrossing + Design Options C-2 + D-3)
Hazardous Materials	Less risk of exposure due to no displacements	Following numbers of facilities identified as having some regulatory status: <ul style="list-style-type: none">• 1 CERCLIS (NPL)• 5 CERCLIS-NFRAP• 1 CORRACTS• 22 ECSI• 34 LUST Previous agricultural uses and older buildings could pose hazards to workers	Following numbers of facilities identified as having some regulatory status: <ul style="list-style-type: none">• 1 CERCLIS (NPL)• 3 CERCLIS-NFRAP• 0 CORRACTS• 19 ECSI• 32 LUST Previous agricultural uses and older buildings could pose hazards to workers	A-2 would not avoid impacting contaminated sites compared to Alternatives 2 and 3 Otherwise no particular advantage to other design options	Following numbers of facilities identified as having some regulatory status: <ul style="list-style-type: none">• 1 CERCLIS (NPL)• 4 CERCLIS-NFRAP• 1 CORRACTS• 21 ECSI• 23 LUST Previous agricultural uses and older buildings could pose hazards to workers

Note: NPL, CERCLIS, CERCLIS-NFRAP, CORRACTS are databases maintained by the Environmental Protection Agency. CERCLIS lists reported known and potentially hazardous waste facilities. NPL is a subset of CERCLIS consisting of priority sites for clean-up under the Superfund Program. CERCLIS-NFRAP are CERCLIS sites where no further remedial action is planned. CORRACTS lists known producers, storers, or handlers of hazardous materials for which corrective action is being undertaken. ECSI and LUST lists are maintained by the Oregon Department of Environmental Quality. The ECSI list includes facilities where a release of hazardous substances has been confirmed, where investigation or cleanup has been initiated, and where a release of hazardous substances is suspected. The Oregon Department of Environmental Quality (ODEQ) Leaking Underground Storage Tanks (LUST) database lists belowground releases from petroleum tanks underground or reportable surface spills. The list also includes aboveground releases to water that result in a surface sheen. Some sites are on multiple lists.



Table 2. Summary of Impacts

	Alternative 1—No Build	Alternative 2	Alternative 3	Design Options	Preferred Alternative (Alternative 2 + Tolbert overcrossing + Design Options C-2 + D-3)
Utilities	No impacts	Numerous utilities would be affected and require relocation Costs to project currently estimated to be a minimum of \$9.9 to \$14.9 million	Same impacts as Alternative 2	No important differences between design options or between design options and Alternatives 2 and 3	Numerous utilities would be affected and require relocation Costs to project estimated to be a minimum of \$7.7 to \$28 million Would avoid a natural gas distribution station and intends to avoid impacts to the Comcast hub station, reducing costs by \$6 to \$8 million compared to Alternative 2 or 3 Note: Estimates of costs from impacts to the Clackamas River Water District's system are included in the total for the Preferred Alternative, but were not available in 2008 for Alternatives 2 and 3
Construction	No construction impacts	Potential lane closures and detour routes would delay some travel movements, and affect driveways 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	Potential lane closures and detour routes would delay some travel movements, and affect driveways for local residences and businesses Additional localized construction-related traffic, noise, dust, and visual effects



Table 2. Summary of Impacts

	Alternative 1—No Build	Alternative 2	Alternative 3	Design Options	Preferred Alternative (Alternative 2 + Tolbert overcrossing + Design Options C-2 + D-3)
Project Costs (2013 dollars)	N/A	\$1.48 billion, includes right-of-way, mitigation, and construction costs	\$1.41 billion, includes right-of-way, mitigation, and construction costs	Cost of Alternative 2 with: <ul style="list-style-type: none">• A-2 or D-2: \$1.4 billion• B-2: \$1.6 billion• C-2: \$1.3 billion• C-3 or D-3: \$1.5 billion Cost of Alternative 3 with: <ul style="list-style-type: none">• A-2, C-2, C-3, D-2: \$1.4 billion• D-2: \$1.3 billion	\$1.49 billion, includes right-of-way, mitigation, and construction costs Right-of-way estimate includes administration, demolition, donated public land values, and contingency costs that were not included in the SDEIS estimates for Alternatives 2 and 3 and the design options

Mitigation measures in Table 3 include measures that rectify the potential impact by: repairing, rehabilitating, or restoring the affected environment; reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and compensating for the impact by replacing or providing substitute resources or environments.

The mitigation measures in Table 3 are required by federal or state regulations and are in addition to the avoidance and

minimization measures already incorporated into the **Preferred Alternative**. All of the committed mitigation measures have been reviewed and approved by ODOT designers, the ODOT District 2B (Lawnfield) Maintenance Manager, and the ODOT Region 1 Operations Manager. Cost estimates for the committed mitigation measures have been incorporated into the total project cost estimates, either in conjunction with development of **Preferred Alternative**, or within a 40 percent project cost contingency factor.

Table 3. Mitigation Commitments for the Sunrise Project

Transportation

Measures to address potential local access and circulation impacts from the **Preferred Alternative** include the following design refinements:

- SE 162nd Avenue will be extended south of OR 212 to connect with Goosehollow Drive to mitigate the closure of Goosehollow Drive at OR 224.
- A right-out (northbound) only exit from the Orchard Lake neighborhood on Orchard View Lane adds another access point to mitigate the closure of Goosehollow Drive at OR 224.
- To avoid lengthy queues of westbound traffic on the Sunrise Project/OR 224 between the I-205 interchange and Webster Road, a third westbound lane will be added.
- The intersection of SE Johnson Road and Deer Creek Lane will be revised by maintaining the existing intersection location and roadway alignments to minimize impacts to local businesses.
- New frontage roads with driveways will be built for local businesses along OR 224 (south of Rock Creek Junction), near 125th Court, and near SE 82nd Drive. The frontage roads mitigate for closures or turning movement restrictions that will occur at those locations.
- Bike and pedestrian access will be built between SE Adams and SE 82nd Drive to better accommodate the high demand of bicyclists and pedestrians accessing the post office from SE 82nd Drive.
- A connection between SE Ambler Road and SE Jasmine Lane will be built on a structure over the rail corridor to improve circulation for businesses in that area. This allows for the businesses west of I-205 and east of SE 82nd Avenue to have access to their properties. Building the connection on a structure avoids impacting the rail corridor.
- Construction of cul-de-sacs at several locations near Hubbard Road, SE 142nd Avenue, SE 162nd Avenue, and SE 82nd Drive will be provided as parts of new access roads and will mitigate either closure of existing accesses, or provide turn-around points due to closure of existing intersections or roadways.
- A local circulation road will be constructed between SE Adams and SE St. Helens along SE 82nd Drive to mitigate for turning movement restrictions or closures of some driveways and intersections on SE 82nd Drive.
- Prior to construction, traffic analysis will be conducted to determine if signal warrants will be met at SE 82nd Drive at SE Janssen Road.

Land Use

Direct property acquisition and relocation impacts would be mitigated through financial compensation regulated in accordance with the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act) 42 U.S.C. 4601 et. seq., 49 CFR Part 24, Oregon Revised Statutes, Oregon Department of Transportation guidance, and Federal Highway Administration Federal Aid Policy Guide. Tax lots that would become land-locked as a result of the project removing the existing driveway will either receive a new driveway or will be acquired outright.

ODOT and KEX/Clear Channel jointly acknowledge existing technology does not allow for the forecasting/modeling of potential future impacts to the radio station signals from construction of elements of the Sunrise Project before construction. Therefore, the mitigation measures reflect commitments to pursue an agreed-upon strategy for assessing potential impacts to Clear Channel radio station signal viability from construction of the Sunrise Project.

Table 3. Mitigation Commitments for the Sunrise Project

Prior to FHWA authorization of construction of major structures near the KEX/Clear Channel transmission site:

- ODOT will retain a radio expert to assess impacts to transmission signal attributable to the construction of the Sunrise Project.
- If adverse impacts on radio transmission signal strength and coverage are realized from project construction, on-site mitigation efforts to address these impacts will be pursued first. (On-site mitigation efforts are estimated to cost approximately \$3.5 million to \$7.0 million, and are included in the total project cost estimate.)
- If such on-site mitigation efforts do not prove feasible, appropriate off-site mitigation efforts will be pursued. (Off-site mitigation efforts are estimated to cost approximately \$15 million to \$25 million, and are included in total project cost estimate.)

Parks and Recreation

Three mitigation measures will minimize the impacts on the Clackamas Elementary School recreation field, as follows: (1) move the softball backstop playing area to the east, (2) move the jogging trail to the east, and (3) build a sound wall to buffer the site from the noise of I-205. The combined effect of these measures will minimize the impacts to the school recreation field and improve the quality of the recreational experience overall.

Businesses and Communities

Temporary Construction Impacts

A construction management plan will be developed that supports the continued operation of business districts and the livability of neighborhoods.

Relocation

Mitigation will be provided to individual businesses and residents by purchase and relocation. This purchase and relocation must follow the requirements of the Uniform Act. The Uniform Act provides protections and assistance for people affected by the acquisition, rehabilitation, or demolition of real property for federal or federally-funded projects. The law helps ensure that people whose real property is acquired, or who move as a direct result of projects receiving federal funds, are treated fairly and equitably, and receive assistance in moving from the property they occupy. Federal law also addresses partial takes of property, addressing how payment and assistance to reconfigure the business and residence must take place.

Business and Neighborhood Access

Multiple mitigation measures related to access have been incorporated into the project; see proposed measures under Transportation, above.

Community Cohesion

The change in access to Sunnyside Community Church will be mitigated by installing two directional signs on OR 212/224.

Environmental Justice

No mitigation measures suggested beyond the assistance already provided under federal law and mitigation measures suggested for relocation under Land Use and Businesses and Communities and for noise impacts under Noise. All households will be provided relocation assistance if they are renters and purchase and relocation assistance if they are owners. Sound walls E205N-3 and E205S-5 proposed for the east side of I-205 (see Noise section) will reduce the noise levels in the neighborhood below their current levels after the Sunrise Project is completed. These block groups have higher than state levels of poverty.

Visual Character and Resources

I-205 Interchange Area

Mitigation Location A (Figure PA-17): Because a noise wall is planned in this location, no mitigation measures are proposed for visual impacts.

Midpoint Area

Mitigation Locations D and E (Figure PA-18): In these locations, vegetation will be planted to screen residential viewers from direct vehicle light and glare. The planting will be done in an appropriate manner consistent with ODOT's Roadside Development Design Manual (ODOT 2006).

Rock Creek Junction Area

Mitigation Location F (Figure PA-18): No noise wall is planned in this location.

Thus, as much as possible existing vegetation would be retained in order to maintain the vegetative screen between viewers and the new interchange.

Mitigation Location G (Figure PA-18): In this location, vegetation would be planted to screen residential viewers from direct vehicle light and glare. The planting would be done in an appropriate manner consistent with ODOT's Roadside Development Manual (ODOT 2006) and bridge design will be consistent with ODOT's Bridge Design and Drafting Manual (ODOT 2004).

Mitigation Locations H and J (Figure PA-18): In these locations, vegetation will be planted to screen residential viewers from direct vehicle light and glare. The planting will be done in an appropriate manner consistent with ODOT's Roadside Development Manual (ODOT 2006).

Note: There are no mitigation measures proposed for locations B, C, and I. See Visual Character and Resources section in Chapter 3 for visual conditions at those locations.

Table 3. Mitigation Commitments for the Sunrise Project

Noise
<p>The project will comply with the construction noise abatement measures contained in ODOT's Standard Specifications, Section 00290.32.</p> <p>Permanent noise impacts will be mitigated through construction of noise walls where they meet ODOT's reasonable and feasible criteria. Based on existing modeling and current design for the Preferred Alternative, the following noise walls are proposed (as shown in Figures PA-19 through PA-20):</p> <ul style="list-style-type: none"> • Noise Wall W-2 • Noise Wall J-1 • Noise Wall J-2 • Noise Wall E205N-3 • Noise Wall W205S-4 • Noise Wall E205S-5 • Noise Wall ZM-6 <p>If during final design conditions have substantially changed, noise abatement may not be necessary. The final decision of the noise abatement will be made upon: (1) completion of the project design, which occurs following the ROD and (2) the completion of the public involvement processes as outlined in ODOT's Noise Manual.</p>
Air Quality
<p>No long-term mitigation is required or included. Construction contractors are required to comply with Division 208 of OAR 340 which addresses visible emissions and nuisance requirements and with and ODOT standard specifications, Section 290.30 (c) for air emissions during construction, including new 2008 controls on diesel-powered vehicles.</p>
Greenhouse Gas
<p>No long- or short-term mitigation is required or included.</p>
Energy
<p>No long- or short-term mitigation is required or included.</p>
Biology
<p><u>Wildlife</u></p> <p>To minimize long-term wildlife access impacts and reduce animal-vehicle collisions:</p> <p>a. Where 'full wildlife access' (meaning access to all species, regardless of size) is specified in the bulleted lists below and on Figures PA-2 through PA-5, it will have a minimum 10-foot-wide horizontal and vertical clearance (or greater, with some bridges), with adjacent exclusionary fencing (either along the highway and/or connected to wing walls of crossings) that will 'direct' wildlife away from the highway and towards crossings.</p> <p>b. Where culverts to allow for 'medium wildlife (e.g., smaller than deer) passage' are specified in the bulleted lists below and on Figures PA-2 through PA-5, they will be culverts with a dry bench (earthen, concrete, or metal grate; above two-year flood elevation) at least three feet wide and tall, or an adjacent dry culvert at least three feet in diameter. They will include a 'ramp' sufficient for access onto the bench or into the dry culvert.</p> <p>See Figures PA-2 and PA-3 for locations of exclusionary fencing and wildlife passage locations in the I-205 area.</p> <p><u>SE 82nd Avenue (OR 213)/Mount Scott Creek and Railroad Bridge</u></p> <ul style="list-style-type: none"> • Exclusionary fencing along SE 82nd Avenue and the freeway will be installed. <p><u>SE 82nd/Ambler Road/Dean Creek Culverts</u></p> <ul style="list-style-type: none"> • New culverts (including replacement or extended culverts) will allow for medium wildlife passage. • New culverts longer than 80 feet will have roadbed grates for natural light and ventilation. • Exclusionary fencing along SE 82nd Avenue and the freeway will be installed. <p><u>I-205/Dean Creek Crossing</u></p> <ul style="list-style-type: none"> • The crossing will provide for full wildlife access. <p><u>I-205/Mount Scott Culvert and Vicinity</u></p> <ul style="list-style-type: none"> • The interior of the existing culvert will be modified to include a bench (concrete or metal grate) that allows medium wildlife passage through the culvert above the two-year flood elevation, including a sufficient 'ramp' for access onto the bench. • Existing right-of-way fencing along the south side of I-205 between Dean and Mount Scott Creeks will be removed and new right-of-way fencing will allow for full wildlife access.

Table 3. Mitigation Commitments for the Sunrise Project

See Figures PA-4 and PA-5 for exclusionary fencing and wildlife passage in the Midpoint and Rock Creek Junction areas.

Clackamas Bluffs (Camp Withycombe to Rock Creek)

- Maintain full wildlife access, along the northern right-of-way of the new highway.
- Avoid right-of-way fencing along the northern right-of-way boundary to maintain connectivity with existing forested habitat.
- Direct highway lighting away from the forested bluffs.

Culverts at Sieben, Graham, and Trillium Creeks

- New culverts (including any replacements for existing culverts) shall be designed to allow for medium wildlife passage.
- New culverts longer than 80 feet will have roadbed grates for natural light and ventilation.

Rock Creek Bridge

- The bridge and embankments underneath the bridge will be designed to span the existing terraced landscape along west side of the stream.
- Full wildlife passage will be ensured through the two bridged crossings in the Rock Creek area (OR 212/224 and OR 224) by one or more of the following measures: minor hand-grading to create a path (where geologically stable and where does not require tree removal), clearing invasive weeds, revegetation with native plants or shrubs to help prevent re-growth of weeds.

Plants

Because there are no sensitive plant impacts, no mitigation measures related to sensitive plants are proposed.

To address noxious weeds, as part of construction and post-construction landscaping, the contractor will be required to remove invasive weeds and landscape with natives to discourage infestation of weeds.

Fish Habitat

Project will comply with all terms and conditions of the NMFS Biological Opinion.

Water Quality

Best management practices in accordance with ODOT Standard Specifications (in Sections 280 and 290 will be used to control or prevent the movement of sediments.

The project will treat runoff from 247 acres of impervious surface (all but 16 acres of total 263 acres) within the project area including existing and new as well as contributing areas. The project will compensate for 16 acres of untreated on-site stormwater runoff by treating stormwater runoff from equal areas of impervious surface at off-site locations. These proposed off-site locations are two existing segments of I-205 located immediately north of the project area and south of the project area, from which stormwater is not currently collected and treated (see Figures PA-45A through PA-45C).

Endangered Species

The project will implement all terms and conditions from the NMFS Biological Opinion.

Wetlands

Wetland impacts will be mitigated through the purchase of 22.9 credits at an approved wetland mitigation bank. The project area lies entirely within the service area of the Foster Creek Mitigation Bank. The mitigation bank currently has sufficient credits to cover the needs of the project. If available credits from the Foster Creek wetland mitigation bank are insufficient to mitigate all impacts when the project goes to construction, ODOT will identify a site where an ODOT-developed wetland mitigation site will be provided to accommodate mitigation for the Sunrise Project.

Table 3. Mitigation Commitments for the Sunrise Project
Geology and Soils
Groundwater

Where present, impacts to shallow groundwater will be mitigated with dewatering. Dewatering will either be temporary, to accommodate temporary excavations, or permanent with the installation of drainage, in areas where the natural drainage paths are blocked by the addition of embankment fill. Details of any permanent drainage improvements/modifications will be developed during final design with input from the civil engineer.

Erodible Soils

Erosion will be mitigated during construction by compliance with ODOT's Standard Specifications, Section 280 and Clackamas County erosion protections/control requirements.

Stability of Cut Slopes and Excavation

Avoid impact to the toe of the existing slopes at landslide areas (i.e., the Camp Withycombe and Eastern landslides) and local slopes located between Camp Withycombe and SE 135th Avenue (See Figure PA-47). Filling along the toe of the slope may be possible provided further evaluation of the mapped landslides and steep slopes indicates that doing so would improve stability. If grading along the slopes cannot be avoided, slope drainage (dewatering) will be installed, excavation (cut) will be limited to short segments, and temporary and permanent retaining structures, or rock buttresses will be installed. Such measures would require further detailed evaluation of the mapped landslides and steep slopes and development of appropriate mitigation recommendations during preliminary engineering design.

Embankment Fill and Settlement

A site-specific geotechnical investigation will be performed to estimate the potential damage and required mitigation resulting from embankment dead loads.

Soft, compressible soils will be removed or replaced and ground/soil improved with either deep soil mixing or installation of displacement piles or reamed aggregate piers.

Seismically-Induced Liquefaction

Liquefaction settlement, where present, will be mitigated under embankment fills with ground improvement methods such as installation of rammed stone piers, stone columns, and removal and replacement of soft and potentially liquefiable soils. Bridge foundations will be supported on pile foundations bearing on dense gravels that are present beneath potentially liquefiable deposits, as appropriate.

Cultural Resources: Archaeological Resources

The following measures were approved as part of SHPO concurrence (letter dated June 1, 2010) with an evaluation of archaeological site 35CL330. A copy of the documentation for the site is included in Appendix B.

To minimize impacts to site 35CL330, ODOT adjusted the design of the proposed flyover structure to relocate the concrete footings (piers) outside of the portion of the site that is recommended eligible for listing in the NRHP. Two pier locations were moved to the southwest to avoid the significant portion of 35CL330. The proposed piers will be constructed by first drilling deep shafts measuring 1.2 to 1.8-meters (4 to 6-feet) in diameter, which anchor the concrete piers in the ground. The depth of the drilled shafts will depend upon the results of the geotechnical borings. Spoils from the drilling will be placed outside of the eligible portion of site 35CL330, and all equipment necessary for drilling the shafts and constructing the piers will be directed to stay outside of the eligible portion of site 35CL330.

Geotechnical borings will be used to test the soil at site 35CL330 for suitability for construction. The methods of constructing the proposed scaffolding and falsework within the eligible portion of site 35CL330 will depend upon the suitability of the soil. ODOT will direct contractors to develop a falsework plan that does not extend below the ground surface within the eligible portion of site 35CL330. Based on the results of the geotechnical borings, if it is determined that the soil is suitable for being built upon, then one or more of the following options will be used for construction of the falsework:

- Geotextile fabric and a layer of crushed rock could be placed over the eligible portion of site 35CL330 for construction of the falsework. The layer of rock would be later removed.
- An above-ground cribbing plan could be developed to support the falsework.

If soil is not suitable for construction, then the following options would be possible:

- A falsework construction plan, supported by beams that span the site.
- An alternative structure span, possibly steel, to span the eligible portion of site 35CL330.

During construction, the following measures will be implemented for site 35CL330:

- Archaeological monitoring of construction activities; ODOT will notify the Confederated Tribes of the Grande Ronde prior to construction activities so they may elect to have a tribal representative present on-site during any ground disturbing fieldwork by project consultant archaeologists.
- Fencing will be placed outside of the significant portion of the site and will include a 5-meter (16-foot) buffer wherever possible.
- Where vehicles and equipment would travel over the eligible portion of site 35CL330, construction mats and/or geotextile cloth and/or layers of crushed gravel or fill dirt will be installed.
- Development of a vegetation management plan, in consultation with the Confederated Tribes of the Grand Ronde

Table 3. Mitigation Commitments for the Sunrise Project

Community of Oregon, to prevent future disturbance and looting of site 35CL330. Mature plant roots should not extend below a depth of 30 centimeters (12 inches) below the ground surface, which is the depth to which the site has been previously disturbed. Placement of a layer of shallow fill may be another option to allow for deeper plantings.

Surveys on seven privately-owned parcels were not completed. They are near SE 142nd Avenue, SE Morning Way, OR 212, and near or abutting OR 212/224 (west of 152nd Avenue and north of the highway, and west of 122nd Avenue south of the highway). If the parcels are acquired by local or state agencies, a State of Oregon Archaeological Permit, issued by the State Historic Preservation Office, would be necessary to conduct exploratory excavations to determine if buried archaeological deposits are present on public land. A Memorandum of Agreement detailing the requirements for future work is included in Appendix B of the FEIS. No previously-recorded resources are on the unsurveyed parcels.

No mitigation measures are required for the proposed project related to historic resources because no adverse impacts are anticipated to historic resources located on tax lots in or adjacent to the **Preferred Alternative** (see Appendix B for a copy of the letter of concurrence from SHPO, dated July 26, 2010).

Hazardous Materials

Plans and surveys will be developed to mitigate exposure to potential hazardous materials issues during construction, in accordance with ODOT's Standard Specifications, Section 00280 - Erosion and Sediment Control, and Section 00290 - Environmental Protection.

ODOT will prepare site-specific Hazardous Material Assessments (Phase I Environmental Site Assessments) prior to the purchase of private and public land for new right-of-way. The preparation of Hazardous Material Assessments will assist in the identification of environmental liabilities associated with a particular parcel. Additionally, Hazardous Material Assessments are required prior to the purchase of new right-of-way when federal funding is involved and by ODOT internal policy. ODOT will prepare a Phase II Environmental Site Assessment (Phase II ESA) for all properties requiring one, as determined during the Hazardous Materials Assessment site reconnaissance.

Camp Withycombe Contaminated Media Management Plan

Although lead-containing soils have been remediated at Camp Withycombe, the cleanup criterion was 400 mg/kg. It is possible that areas planned for the **Preferred Alternative** construction will involve the disturbance of soil that can contain up to 400 mg/kg lead. Therefore, a Contaminated Media Management Plan that addresses the procedures for proper soil management and proper worker health and safety training with regard to lead-containing soil will be prepared for the construction activities. Pedestrian access to surface soils will be limited (e.g., covering surface with clean fill, installing fencing) where trails cross the areas of lead-containing soils.

Consent Decree and Easement and Equitable Servitude for the Northwest Pipe & Casing Site.

The **Preferred Alternative** crosses a National Priority List facility, Northwest Pipe & Casing, which is currently under a Consent Decree between ODOT and the United States of America. The Consent Decree has established ongoing obligations for the long-term management of this property that include institutional controls, not interfering with the remedy at the site, and retaining the integrity of the remedy at the site. The Easement and Equitable Servitudes agreement was recorded with Clackamas County (Clackamas County Official Records, 2009) and establishes legal requirements for ODOT in relation to the Northwest Pipe & Casing property. In particular, the document references the proposed "Sunrise Corridor Project" where ODOT "shall integrate the Sunrise Corridor Project with investigative and remedial activities initiated or planned by ODEQ or EPA to the maximum extent feasible, as required by Section 6 of the Consent Decree." The reader should refer to the Easement and Equitable Servitudes and the Consent Decree documents attached in Appendix D for details.

In summary, the restrictions on the site are:

- Groundwater use restrictions (does not apply to dewatering activities related to construction, development, or the installation of sewer or utilities at the site).
- Maintaining the functional integrity of the soil cap on Parcel B (map is attached to the Consent Decree, attached in Appendix D).
- Access restrictions (security of groundwater treatment system from damage by third parties).
- Land use restrictions that prohibit residential and agricultural uses.
- New construction and the evaluation of whether vapor intrusion controls must be implemented to prevent migration of site contaminants into on-site buildings.
- Notice of transfer of the site to other parties.
- Development (such as the Sunrise Corridor Project) and written approval after plan and activity review by ODEQ.
- Zoning changes.
- Partition.

Utilities

No short- or long-term mitigation is required or proposed.

Permits and Approvals Needed

This section outlines anticipated permits, approvals, and licenses anticipated when the SDEIS was published. [Table 4 lists approvals and permits needed for the Preferred Alternative.](#)

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 p.m. and 6 a.m.
- 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 Rules.
- Fish and Wildlife Habitat Mitigation Policy.
- Oregon Endangered Species Act.

Oregon Department of State Lands

- Removal/Fill Permit (Joint Permit Application with the Section 404 permit).
- 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 4. Approvals and Permits Still Needed for Preferred Alternative

Issuing Agency	Permit/Approval	Purpose	Conclusion
Federal			
US Army Corps of Engineers	Clean Water Act, Section 404	For placing fill in waters of the U.S.	Prior to bid let Joint Permit Application is the application form for both the Section 404 permit and the DSL Removal/Fill Permit
Federal Emergency Management Agency	(Conditional) Letter of Map Revision (CLOMR/LOMR)	When changes to a floodplain are due to new construction and involve changes to a previously established floodway	Prior to FHWA authorizing construction funding
State			
Oregon Transportation Commission	Interchange Area Management Plan(s) (IAMPs)	Required to plan for land use and access at interchanges. The IAMPs are: <ul style="list-style-type: none"> • Sunrise West IAMP • Midpoint IAMP • Rock Creek Junction IAMP 	Each IAMP will be approved by the OTC prior to the commencement of construction of each interchange
Oregon Department of State Lands	Removal-Fill	For removal or filling in waters of the state	Prior to FHWA authorizing construction funding
	Section 401 Water Quality Certificate	Issued in conjunction with the Corps Clean Water Act, Section 404 permit	Before construction, preferably prior to bid let
Oregon Department of Fish and Wildlife	Fish Passage Consultation	Prior to replacement of culverts, the owner or operator must obtain approval through consultation of a plan for providing fish passage	Prior to FHWA authorizing construction funding
Oregon Department of Environmental Quality	Air Contaminant Discharge Permit	Construction-related activities, such as concrete batch plants and asphalt batch plants	Prior to FHWA authorizing construction funding
Oregon State Historic Preservation Office	State of Oregon Archaeological Permits	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	Before FHWA authorizes construction funding Seven parcels require additional archaeological survey work. ODOT, FHWA, and SHPO developed an MOA to outline the process for this work to occur after the properties are acquired for the project

Issuing Agency	Permit/Approval	Purpose	Conclusion
Local			
Clackamas County, Land Use and Planning Division	Land Development Permit	For any new structures or uses outside of the right-of-way	Before building permit applications
	Habitat Conservation Area District	For proposed modification of land within mapped Habitat Conservation Areas and floodplains; e.g., road crossings of surface waters	Before building permit applications
	Floodplain Permits	Any floodway or flood fringe modification	Before any modifications
	Utilities Permit (no official name)	Some utility relocations may require a land use application submittal	Before building permit applications
Clackamas County, Building Codes Division	Building Permits	For any structures: buildings, bridges, walls, etc. built outside of the current or future public right-of-way	Before construction
	Grading Permit	Grading, site preparation for any grading outside of the right-of-way	Before construction
Clackamas County Service District No. 1	Stormwater Permit	Facilities for water quality treatment and potential detention	Before construction
	Natural Resource Assessment & Buffer Variances	In sensitive areas and buffers to stream, rivers, wetlands, etc., if there are impacts to the resources and/or their buffers	Before construction
Clackamas County (delegated by Oregon Department of Environmental Quality)	NPDES/I200-C	Construction stormwater & erosion control	Before construction
Clackamas County, Engineering Division	Development Permit Application for Site and Road Work	For road work within existing County right-of-way	Before construction
Clackamas County, Sheriff	Noise variance	If construction activities are expected to occur at night between 10 p.m. and 6 a.m.	Before nighttime construction begins
City of Damascus	Rock Junction IAMP	Adoption of IAMP as part of future Comprehensive Plan and Transportation System Plan	Before construction
City of Happy Valley	Sunrise West IAMP Midpoint IAMP Rock Creek Junction IAMP	Adoption of IAMP as part of updates to Comprehensive Plan and Transportation System Plan	Before construction

Characteristics of a Good Solution

There are and will continue to be 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 project committees 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 5 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 this FEIS discusses the evaluation measure in relation to the alternatives and design options. References to sections of the technical reports are provided where more detail on the topic may be desired.

Table 5. 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 in this FEIS
1. Relieve congestion and provide for efficient traffic flow.	a) Volume/capacity ratio of select roadways by project area screenlines	Transportation Section: Table 8, page 49
	b) Average travel time between common origin and destination points	Transportation Section: The 2030 Transportation System, pages 47-51; Table 9, page 53; Technical Report, Section 6.4.3, page 176 and Table 6-3
	c) Vehicle hours of delay (VHD) for project area	Transportation Section: The 2030 Transportation System, pages 47-51; Technical Report, Section 6.4.3, page 176 and Table 6-2
	d) Number of congested lane miles within project area	Transportation Section: The 2030 Transportation System, pages 47-51; Table 7, page 48
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, pages 53-54; Technical Report, Section 3.2.2, page 56
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 47-51; Figures 20-25, PA-9 and PA-10; Technical Report, Section 6.7, page 237
	b) Speed of travel along identified section of I-205	Transportation Section: The 2030 Transportation System, Table 7, page 48; Figures 20-25, PA-9 and PA-10; Technical Report, Section 6.7, page 237
	c) Estimated duration of queuing along this section of I-205	Technical Report, Section 6.5, page 195
	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 47-51; Technical Report, Section 6.12, page 325
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 51; Technical Report, Section 6.13, page 328
	b) Description of new or altered highway facility features and resulting effect on modal connectivity and safety	Transportation Section: The 2030 Transportation System, pages 47-51; Technical Report, Section 6.13, page 328

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 5. 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, pages 50-51; Technical Report, Section 6.14, page 350
	<div> High capacity transit (HCT): fixed rail light rapid transit or high-speed rapid bus </div>	
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 SE Sunnyside Road to the north. A new express bus service would run on the Sunrise Project, see description of transit service for the Preferred Alternative on page 23.
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 9, page 53; Business and Communities Section, Changes to Travel Patterns, pages 101-105; Transportation Technical Report, Section 6.9, page 272
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, pages 72-73
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	Business and Communities Section: Emergency Services, page 101
Goal 2		
Provide transportation improvements that support the viability of the Clackamas area for industrial uses.		
Objectives	Evaluation Measures	Where the measurement is evaluated in this FEIS
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 9, page 53; Business and Communities Section: Businesses and the Economy, page 91, and Changes to Travel Patterns, pages 101-105; Transportation Technical Report, Section 6.9, page 272
2. Minimize construction impacts on local businesses.	a) Number of businesses displaced (wholly and partially)	Land Use Section: Table 10, page 69; Table 2, page ES-29
3. Minimize displacements of businesses and retain as much viable industrial land as possible.	b) Number of jobs (Full-Time-Equivalents) potentially displaced	Socioeconomics Technical Report: Table 2, page 11; Table 2, page ES-29
	c) Acres of industrial/employment zoned land converted to the new highway use	Land Use Section: Right-of-way Impacts, Table 2, page ES-27; and Table 10, page 69

Table 5. 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 in this FEIS
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, PA-9 and PA-10; Technical Report, Section 6.10, page 276
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 47-51, Table 9, page 53, and Figures 20-25 and PA-9 and PA-10; Technical Report, Section 6.4.3, page 176
3. Minimize residential displacements.	Number of residential displacements	Land Use Section: Right-of-way Impacts, pages 67-68, Figures PA-11 through PA-15, and Table 10, page 69
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 15, page 149; Noise Abatement Measures for Preferred Alternative , pages 156-157; and Figure 38, Noise Walls, Figures PA-19, PA-20, and PA-21
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 127-138; Tables 13, 14, pages 127-128
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 128-133, Figures 36, PA-17 & PA-18
7. Minimize loss of affordable housing.	Amount of affordable housing removed by the project	Business and Communities Section: Affordable Housing, page 98; Figure 29, Community Features; and Environmental Justice Section, pages 109-125, Table 12 page 121
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 in this FEIS
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 178-183; Table 20, page 179
	b) Acres of directly affected wildlife corridor	Biology Section: Table 20, page 179, and Figures 39-47, PA-23, PA-24
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 178-183; Table 20, page 179
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 236-237, Table 25, page 236, Table 26, page 238, Table 27, page 241
	b) Affected acres of riparian zone with aquatic T&E in the construction footprint [T&E: federally listed Threatened and Endangered species]	Biology Section: Threatened or Endangered Fish, Terrestrial Wildlife and Plants, pages 189-190
	c) Affected acres of riparian zone without aquatic T&E in the construction footprint	Biology Section: Wildlife Habitat, pages 178-183; Table 20, page 179

Table 5. Goals, Objectives, and Evaluation Measures (continued)

Goal 4 (continued)		
Objectives	Evaluation Measures	Where the measurement is evaluated in this FEIS
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: pages 266-268; Table 29, page 265, Table 30, page 265, Table 31, pages 267-268, Table 32, page 269
	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 264-265; Tables 28, 29, and 30, pages 264-269
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	Biology Section: Mitigation Measures for the Preferred Alternative , pages 190-193, Wetlands, pages 244-245; and Cultural Resources Section: pages 283-284
6. Protect habitat for Threatened and Endangered Species.	Acres of Essential Fish Habitat/Critical Habitat affected	Biology Section: Fish Habitat, pages 183-186; Threatened or Endangered Fish, Terrestrial Wildlife and Plants, pages 189-190
7. Protect water quality.	Net amount of impervious surface created	Biology Section: Water Quality, pages 186-188; Table 22 and Table 23, pages 187-188
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 165-166
	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 165-166; Mobile Source Air Toxics Impact Analysis, pages 166-170

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

NO_x – nitrogen oxides

VOCs – 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 FEIS. 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, and Damascus, and the technical team. The Project Management Team provides day-to-day management and direction for the variety of work products.

The Project Advisory Committee is composed of 18 stakeholders from neighborhoods, businesses, the cities of Happy Valley and Damascus, TriMet, Metro, environmental groups, FHWA (a non-voting member), and service providers. The committee reviews the technical analysis and the public input and advises the Policy Review Committee. The Project Advisory Committee met twelve times between 2004 and the release of the SDEIS. They met another five times to review the SDEIS, to hear a summary of comments, and to develop recommendations on the **Preferred Alternative** to forward to the Policy Review Committee. (For a list of their meeting dates, locations, and topics see the section on “Public and Agency Involvement” in Chapter 1.)

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 reviews technical information from the Project Management Team, recommendations from the Project Advisory Committee and the public input at project milestones. The committee’s final task was to recommend a **Preferred Alternative**.

Appendix F of this FEIS 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.

Public Involvement Activities from 2004 to the Publication of this FEIS

The Project Advisory Committee was a central focus of the public involvement effort. Its meetings were open to the public, and 30 people, on average, regularly attended its meetings.

Public involvement efforts for the proposed Sunrise Project SDEIS began in 2004. Open houses in



Working out design alternatives at an open house

June 2004, October 2005, and September 2006 attracted 100 to 200 attendees. More than 100 people also attended the two-day design workshop held in December 2004. Several focused community meetings were held in different locations in the project area. Six newsletters and three postcards were distributed to approximately 5,000 addresses (in 2004) and more than 9,500 addresses at the end of 2009. Other outreach included flyers, community meetings, and presentations at meetings of the Board of County Commissioners for Clackamas County. Newspaper coverage, a website, and e-mail distribution lists rounded out the public involvement effort. Two public hearings were held in November 2008; 67 people attended on November 12 and 104 people attended on November 13. The public hearings were advertised through a public notice in the Oregonian, as well as display advertisements in the Oregonian, Clackamas Review, and Damascus/Boring Observer during the first

week of November. Clackamas County distributed a press release and hosted information on its website. The project website (www.sunrise-project.org) hosted the chapters of the SDEIS and advertised the hearing dates, as well as the comment period and instruction on how to submit comments. An email was sent to the interested parties email list inviting people to review the SDEIS, attend a public hearing, and submit comments. Newsletters were sent in October with a reminder postcard in November to the mailing list of 9,687 addresses. The newsletter included a mail-back comment form to easily allow people to submit comments.

The public hearings at the open houses consisted of an overview of the project with opportunities to learn more about the SDEIS findings. Members of the Policy Advisory Committee attended the hearings to listen to comments directly. Eighteen people provided oral testimony. All other comments were submitted during the hearings and comment period using the provided comment forms, letter, fax, or email.

ODOT has also conducted targeted outreach to affected tribes. A discussion and log of outreach to tribes are contained in Appendix B of this FEIS. For more information on recent public involvement activities, see the “Public and Agency Involvement” section, Chapter 1.

Project Schedule

The Sunrise Project began in 2004. A first task was defining the scope of analysis for the SDEIS. From 2005 through late 2008, the project activities were the following:

- 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.

- Writing and publishing the SDEIS (October 13, 2008).

Between mid-2008 and 2010, the project activities were the following:

- Two public hearings on November 12 and 13, 2008.
- Reviewing and considering public comments from public hearings, open houses, and other events.
- Developing a **Preferred Alternative**.
- Analyzing the impacts of the **Preferred Alternative** and developing mitigation measures.
- Revising the technical reports.
- Writing this FEIS.

Clackamas County adopted Interchange Area Management Plans (IAMPs) for the interchanges. Clackamas County adopted all three IAMPs (see below) on August 19, 2010. The City of Damascus will adopt the Rock Creek Junction IAMP after the city has an adopted comprehensive plan and transportation system plan. Happy Valley plans to adopt the three IAMPs after the Record of Decision. The three IAMPs are:

- Sunrise West IAMP (two interchanges):
 - I-205/Milwaukie Expressway/Sunrise
 - I-205/OR212-224 (Clackamas)
- Midpoint IAMP
- Rock Creek Junction IAMP

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

Publish FEIS	Winter 2010
FHWA Record of Decision	Winter 2011
Complete final design, permitting, right-of-way acquisition	2011-2013
Begin construction	2013 at the earliest

Next Steps

Following publication of this FEIS, if FHWA publishes a Record of Decision, it will be no

sooner than 30 days from the publication of the FEIS.

The Record of Decision will contain the committed mitigation measures required for the project's implementation. FHWA's signature of the Record of Decision completes FHWA's decision-making process for the Sunrise Project.

The Oregon Transportation Commission will need to approve the IAMPs before construction on each interchange begins.

In addition, FHWA will need to approve an Interchange Modification Request for revised access to I-205 after issuance of the Record of Decision.

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.

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 severe congestion, safety, and traffic flow problems. Residential and business traffic is unacceptably delayed during peak travel periods, with speeds as low as four miles per hour at several locations along OR 212/224. Planned population and employment growth will worsen existing problems. By 2030, the duration of congestion and the extent of vehicle queuing are expected to more than double. 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.⁸

⁸ Based on 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

Project Location and Study Area

The general location of the new facility, named the Sunrise Project, is depicted in Figure 1, Project Vicinity. The Sunrise Project will extend approximately five miles between I-205 and Rock Creek Junction. Under **Alternatives 2 and 3**, the west end transition to existing roadways is to SE Johnson Road and under the **Preferred Alternative** is to SE Webster Road. The project will extend to SE 172nd Avenue on the east end.

Figure 3 (Alternative 1—No Build) shows an aerial view of the Sunrise Project area. The project is often discussed by subarea. Three subareas are outlined on Figure 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.⁹
- Both the northbound and southbound weave sections of I-205 between SE 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 212) heading east on OR 212/224, as well as the reverse direction,

experience about nine hours of congestion. See Chapter 6 of Sunrise Project Transportation Technical Report.

⁹ Based on growth projections from Metro 2004 data for development of the Purpose and Need. Technical analysis for the Transportation Technical Report used Metro's updated 2005 model to develop projections for 2030. This resulted in predicted jobs growth of 87 percent and household growth of 97 percent.

must either use the above section of I-205 or the currently congested SE 82nd Drive.¹⁰

- OR 212/224 near I-205 is ranked in the top 10 percent of state routes for vehicle crash rate. Over 500 vehicle collisions [between I-205 and Rock Creek Junction] 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.¹¹

A safety analysis was conducted in September 2010 to reflect more recent crash data provided by the ODOT Crash Analysis and Reporting Unit for years 2005 through 2009. OR 212/224 near I-205 continues to be ranked in the top 10 percent of the State's safety ranking index within the ODOT's safety ranking index (Safety Priority Index System or "SPIS") for 2010.

- 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.¹²

Proposed Action from the SDEIS

ODOT and Clackamas County proposed to build a new, east-west oriented, limited-access highway

¹⁰ Based on 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.

¹¹ Based on analysis summarized in Section 5.9 of Sunrise Project Transportation Technical Report.

¹² Based on truck counts from 2004/5 at specific locations within the OR 212/224 corridor. See Section 5.7 of Sunrise Project Transportation Technical Report.

between I-205 and Rock Creek Junction (where OR 212 and 224 diverge to the east and south).

Preferred Alternative

The **Preferred Alternative** will 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 will 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 will have six lanes plus auxiliary lanes. East of Rock Creek Junction, the highway will narrow to six lanes with no auxiliary lanes until SE 172nd Avenue, where it will narrow to five lanes. The **Preferred Alternative** is **Alternative 2** with the Tolbert overcrossing from **Design Option A-2**, and incorporates the alignment of **Design Option C-2** and the SPUI interchange of **Design Option D-3**. Additionally, the **Preferred Alternative** includes several modifications based on both stakeholder input and additional design refinement related to analysis of traffic performance and avoidance of environmental resources. See Figures PA-1 through PA-5 in the Executive Summary.

Project Background and Setting

The northwest urban area of Clackamas County has developed rapidly over the last 40 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/ 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 212) is a four-lane expressway that links OR 99E in Milwaukie to I-205 south of the Clackamas Regional Center. OR 212 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

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.¹³ 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 vpd east of Rock Creek to nearly 60,000 vpd 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

¹³ Forecasted congestion is documented in detail in the Transportation Technical Report, for both existing and future conditions.

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, which ranks this facility in the top 10 percent of State's safety ranking index (Safety Priority Index System–SPIS). 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 212/224.¹⁴

In September 2010, a safety analysis was conducted to reflect more recent crash data provided by the ODOT Crash Analysis and Reporting Unit for years 2005 through 2009. ODOT recorded 582 crashes between 2005 and 2009 along OR 212/224 from I-205 to Rock Creek Junction, which continues to place this facility in the top 10 percent of the SPIS ODOT safety ranking index for 2010. This poor safety performance is primarily attributed to severe congestion. Approximately 25 percent of crashes involved injuries, including two fatalities. There has been a moderate reduction since the 1998 through 2002 analysis in injury related crashes throughout the corridor. Approximately 75 percent of crashes were turning or rear-end related, consistent with high-volume, multi-lane, signalized roadways. The intersection of SE 82nd Drive at OR 212/224 continues to operate with a high crash rate, but shows a significant improvement in recent years,

which is likely a result of intersection modifications that have occurred.

In addition, safety performance from 2007 through 2009 has placed segments of OR 212 east of Rock Creek Junction, I-205 between milepoints 12.0 and 15.0, and Milwaukie Expressway (OR 212) near I-205, in the top 10 percent of the SPIS.

Bicycle facilities in the study area are generally rated from “fair” to “good” in terms of condition and availability. Notable exceptions occur along SE McKinley Avenue, SE Mather Road, SE 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 SE Hubbard Road, SE 135th Avenue, SE Jennifer Street, SE Mather Road, and SE 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 report 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.¹⁵ 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.

¹⁴ Section 5.6 of the Transportation Technical Report documents the safety research for this FEIS.

¹⁵ See Chapter 5 of the Transportation Technical Report, Sections 5.5 and 5.6, for a discussion of existing conditions on selected roadways.

Projected Demand for an Expanded Transportation System

While the region as a whole is expected to accommodate approximately 50 percent more households and up to 72 percent more new jobs between 2005 and 2030,¹⁶ 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.¹⁷

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 SE Sunnyside Road, SE Sunnybrook Boulevard, and SE 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

FHWA is the lead federal agency and ODOT is acting as an agent for FHWA in preparing the NEPA documents. 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, Happy Valley, and Damascus, and the technical team. The Project Management Team provided the day-to-day management and direction for the variety of work products. The group also formulated draft recommendations and provided analysis that was presented to the Project Advisory Committee and Policy Review Committee for review, input, or recommendations, as appropriate. The Project Management Team met approximately once a month beginning in 2004.

A stakeholder Project Advisory Committee was also formed and was a central focus of the public involvement effort. It comprised 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 reviewed the work completed by the Project Management Team and provided input on key milestones. The Project Advisory Committee met twelve times between 2004 and the release of the SDEIS. They met another five times to review the SDEIS, to be presented with a summary of comments, and to develop recommendations on the **Preferred Alternative** to forward to the Policy Review Committee.

¹⁶ The household and jobs forecasts here were provided by Metro in 2005 for the Sunrise Project traffic analysis. In April 2009 Metro published the 20 and 50 year Regional Population and employment range forecasts (April 2009 draft) for the Portland-Beaverton-Vancouver Primary Metropolitan Statistical Area as defined by the federal Office of Management and Budget (the counties of Multnomah, Clackamas, Washington, Yamhill, Columbia, Clark, and Skamania). The 2009 medium and high household projections to 2030 are higher than the projections in 2005, with expected growth of 55 and 63 percent, respectively. Projected job growth rate in the high range is 72 percent, the same as in 2005. The medium range is lower than projected in 2005, with medium growth rate projected at 50 percent to 2030.

¹⁷ See Figures 6-6 and 6-7 of the Transportation Technical Report.

Meetings of the Project Advisory Committee were open to the public and an average of 30 people regularly attended. The meetings, dates, locations, and topics were as follows:

PAC Chartering Session / Meeting #1

August 17, 2004 4:00 - 8:00 p.m.

Sunnybrook Service Center Auditorium,
9101 SE Sunnybrook Boulevard

Purpose: Initial meeting to discuss committee charge, develop protocols.

PAC Meeting #2

September 20, 2004 4:00 - 6:30 p.m.

Sunnybrook Service Center Auditorium,
9101 SE Sunnybrook Boulevard in Clackamas

Purpose: refined and made recommendations on Project Goals & Objectives.

PAC Meeting #3

November 15, 2004 4:00 - 6:30 p.m.

Sunnybrook Service Center Auditorium,
9101 SE Sunnybrook Boulevard

Purpose: provided with technical background for the December Design Alternatives Workshop. Heard presentations on modeling, transportation, and environmental constraints.

PAC Meeting #4 (Part of the Design Workshop)

December 6, 2004 11:00 a.m. - 3:30 p.m., OIT

Conference Center 7726 SE Harmony Road
Technical staff review the design ideas (PAC and public may attend)

4:00 - 6:00 p.m. PAC meeting

6:30 - 9:00 p.m. Public meeting with PAC discussion

Purpose: listened to the public discussion and recommended how to move forward with design ideas.

PAC Meeting #5

Tuesday, February 8, 2005 4:00 - 6:00 p.m.

Sunnybrook Service Center, 9101 SE Sunnybrook Boulevard

Purpose: solicited PAC input on the screening criteria and provided an update on how the themes and discussion from the workshop would be used by the engineers to develop some design concepts.

PAC Meeting #6

Thursday, March 31, 2005 4:00 - 6:30 p.m.

Clackamas County Fire District Training Center,
15990 SE 130th Avenue

Purpose: reviewed design option concepts and determined how they met the screening criteria.

PAC Meeting #7 - Design Refinement Worksession

Thursday, May 5, 2005 3:00 - 6:30 p.m.

Clackamas County Fire District Training Center,
15990 SE 130th Avenue

Purpose: (informal worksession) discussed progress of the designs.

PAC Meeting #8

Monday, September 26, 2005 4:30 - 7:00 p.m.

Clackamas County Fire District Training Center,
15990 SE 130th Avenue

Purpose: reviewed and provided feedback on refinement of design alternatives prior to public open house.

PAC Meeting #9

November 7, 2005 4:30 - 7:00 p.m.

Clackamas County Fire District Training Center,
15990 SE 130th Avenue

Purpose: considered public input from the open house and made recommendations on which alternatives would be studied in the EIS.

PAC Meeting #10

June 12, 2006 4:00 - 6:00 p.m.

Clackamas County Fire District Training Center,
15990 SE 130th Avenue

Purpose: received an update on refinement of alternatives for the Supplemental Draft EIS and briefings on next steps in the SDEIS process.

PAC Meeting #11

Monday, November 5, 2007 5:00 - 7:30 p.m.

Clackamas County Fire District Training Center,
15990 SE 130th Avenue

Purpose: received an update on the SDEIS process, briefing on parallel studies (Phasing of Construction, Pricing/Tolling, Lane Performance), and reviewed initial traffic findings

PAC Meeting #12

Tuesday, December 11, 2007 4:30 - 7:00 p.m.
Clackamas County Fire District Training Center
15990 SE 130th Avenue
Purpose: continued review of initial findings /
introduction to SDEIS.

PAC Meeting #13

Tuesday, October 14, 2008 4:30 - 6:30 p.m.
Sunnyside Community Church, 16444 SE Highway
212
Purpose: received an overview of the SDEIS and
preparation for the public hearings and comment
period.

PAC Meeting #14

Tuesday, December 2, 2008 4:30 - 6:30p.m.
Clackamas County Fire District-Lake Road Station
(4), 6600 SE Lake Road
Purpose: discussed management plans for each of
the Sunrise interchange areas.

PAC Meeting #15

Tuesday, February 3, 2009 4:30 - 6:30 p.m.
Clackamas County Fire District-Lake Road Station
(4), 6600 SE Lake Road
Purpose: reviewed public comments on the SDEIS
and to begin to provide direction on the selection
of the **Preferred Alternative**.

PAC Meeting #16

Wednesday April 22, 2009 4:30 - 7:30pm
Milwaukie Center, 5440 SE Kellogg Creek Drive
Purpose: provided initial direction on **Preferred
Alternative** development.

PAC Meeting #17

Tuesday May 19, 2009 5:00 - 8:00pm
Milwaukie Center, 5440 SE Kellogg Creek Drive
Purpose: recommended a **Preferred Alternative**

The Policy Review Committee was 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 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 was to recommend a **Preferred
Alternative**. See Appendix F for a list of the
committee memberships.

In addition to the involvement of state and local
agencies in the Policy Review Committee and
Project Management Team for the project,
Oregon's state and federal transportation and
environmental agencies signed the Collaborative
Environmental and Transportation Agreement for
Streamlining (CETAS) in 2001. This group
collaborates to help each participating agency
realize its mission through sound environmental
stewardship, while providing for a safe and
efficient transportation system. In the case of the
Sunrise Project, the CETAS members provided
concurrence on these four points: (1) purpose and
need statement; (2) the range of alternatives; (3)
criteria for evaluating alternatives and selecting a
Preferred Alternative; and (4) selection of the
Preferred Alternative. See Appendix F, **Public
Involvement Materials**, for a list of CETAS
members.

Public Involvement before 2004

Before 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 before 2004, contact
ODOT at the address provided at the beginning of
this document.

Public Involvement Activities from 2004 to Publication of this FEIS

Public involvement efforts for the proposed
Sunrise Project SDEIS began in 2004. In addition,
public forums were 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 involved hundreds
of area stakeholders. Focused community meetings

were 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.

Six newsletters and three postcards were distributed to a project mailing list. The original list had approximately 5,000 addresses in 2004 and grew to more than 9,500 addresses by the end of 2009. Public information and meeting invitations were sent to site addresses and tax record addresses to ensure that people and businesses in the area received information. Distributing flyers door-to-door was used to share project information in areas around potential interchanges, where public concerns were expressed about changes in access, and in manufactured home communities. Project presentations at over 15 community meetings have occurred, including at the North Clackamas, Sunnyside United Neighbors, and other Clackamas Citizen Participation Organizations; Clackamas County Community Action Board; and the Rotary Club. The Project Management Team regularly presented at Clackamas County Board of County Commissioners' meetings, regional Metro Joint Policy Advisory Committee Transportation meetings, and other standing groups that are open to the public.

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

After Publication of the SDEIS

The SDEIS was distributed to public agencies, tribes, other interested parties, and the public at large beginning October 13, 2008. The SDEIS document was made available online at www.sunrise-project.org and was posted at several locations in and near the project area (see the Notice of Availability [page i], at the front of this document). Appendix F contains copies of newsletters and postcards mailed to the public. The public comment period for the proposed Sunrise Project, I-205 to Rock Creek Junction SDEIS,

was 45 days from its release in October 13, 2008, to November 28, 2008. Written comments were submitted online at the website (see previous paragraph) or sent to the ODOT Environmental Project Manager.

Two public hearings were held on November 12 and 13, 2008, 67 signing in at the first hearing and 104 people signing in at the second hearing. (Some people attended but did not sign in.) The public hearings were advertised through a public notice in The Oregonian, as well as display advertisements in The Oregonian, Clackamas Review, and Damascus/Boring Observer during the first week of November. The county distributed a press release and hosted information on its website. The project website (www.sunrise-project.org) hosted the chapters of the SDEIS and advertised the hearing dates, as well as the comment period and instruction on how to submit comments. An email was sent to the interested parties email list inviting people to review the SDEIS, attend a public hearing, and submit comments. Newsletters were sent in October with a reminder postcard in November to the mailing list of 9,687 addresses. The newsletter included a mail-back comment form to easily allow people to submit comments.

The public hearings consisted of an overview open house with opportunities to learn more about the SDEIS findings. There was opportunity to give written or oral testimony during the hearing. Members of the Policy Advisory Committee—elected officials and management staff—attended the hearings to hear comment directly. Eighteen people provided oral testimony. All other comments were submitted during the hearings and comment period on via the provided comment forms, letter, fax, or email.

Ten federal, state, or local agencies, 33 businesses or organizations, and 123 individuals submitted written or oral comments during the public comment period. All comments on the SDEIS were collected, organized, and distributed to and reviewed by the Project Management Team and technical team.

A summary of written comments was shared with the consensus committees for this project and local decision-makers. All comments are part of the

public record. Responses to the comments can be found in Appendix A of this FEIS.

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 the Socioeconomics Technical Report).

Early in the project, project staff met with or offered to meet with the manufactured home park managers during stakeholder interviews. County staff met with three managers of manufactured home parks and collected some of their issues and concerns. Multiple times during the project, county staff distributed project flyers and meeting invitations door-to-door within the potentially impacted manufactured home parks. Clackamas County will continue to provide opportunities for manufactured home park residents to get information and provide input on the project. This is important because displacement issues are more complex for manufactured home owners and residents.

Project staff offered to hold small group meetings at several of the nearest manufactured home parks to share project information that was in the SDEIS and information about the **Preferred Alternative**. Several managers of manufactured home parks attended the public meetings, including some of the committee meetings, but none chose to host a small group meeting. Several managers of manufactured home parks expressed interest in final design and construction issues, rather than selection of a **Preferred Alternative**. One manufactured home park just east of SE 152nd

Avenue is located very close to the **Preferred Alternative**. Although no residents are shown as displaced, the land owner and the resident manager of Sunrise Mobile Home Park is very concerned about the proximity of the alignment and any construction impacts. The manufactured home park managers expressed interest in being involved during the final design effort.

One census tract has a higher percentage of minority residents—10 percent (census tract 221.03, Figure 31)—who are predominantly Asian Americans, Hawaiians and Pacific Islanders, and mixed-race individuals. Clackamas County has no information indicating that there are language barriers for this census tract. The public involvement program was set up to offer translation or interpretation services during public outreach efforts. None were requested during the SDEIS process.

At the beginning of the project, a seat on the Project Advisory Committee was specifically designated to help the project consider EJ issues and concerns during scoping, alternatives development, and later selection of a **Preferred Alternative**. The committee member was primarily concerned with any loss to housing, specifically units reserved for low-income people and families. She facilitated connections between project staff and various agency resources. Project staff coordinated directly with the Housing Authority of Clackamas County to collect addresses and create maps of all the scattered site housing authority-owned and Section 8 units in the project area prior to alternatives being selected for analysis in the SDEIS. This information was shared with the Project Management Team and the Project Advisory Committee. During early alternatives development, all of these units were able to be avoided. Project information was shared with the Housing Authority and updates were given to the Clackamas County Community Action Board, a group that advises on programs and services for low-income persons. These agencies receive project newsletters/updates.

With the release of the SDEIS document, additional door-to-door outreach and small group meetings,

where applicable, were completed in areas that may have had potential project impacts.

Targeted Outreach to Convey Potential Impacts

From January 2008 to April 2008, one 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 ideas for mitigation. Approximately 50 people attended the large group meeting in January, and 31 neighbors in total attended the five 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 A-weighted decibels (dBA), depending on the location of the home. Because of the topography of the area and the nearness of the homes to the project alignment, ODOT and Clackamas County have not found a solution that will cost-effectively mitigate noise impacts. The meetings helped to convey these issues and initiate discussion with neighbors about other types of mitigation that are not typical noise abatement measures. Table D-2 in Appendix D describes all of the 14 measures that were studied. These neighbors continue to have concerns about the project.

Other issues and potential impacts, such as impacts on driveways and displacement, were shared with stakeholders on a property-by-property basis and at area meetings both before and after the release of the SDEIS.

How to Comment on this FEIS

Written comments on this FEIS can be submitted online at the website or sent to ODOT or FHWA at the addresses below.

Thomas Picco
Principal Planner/Project Manager
Oregon Department of Transportation Region 1
123 NW Flanders Street
Portland, OR 97209-4012
Thomas.J.PICCO@odot.state.or.us
(503) 731-8230

Michelle Eraut
Environmental Program Manager
Federal Highway Administration
530 Center Street NE, Suite 100
Salem, OR 97301
(503) 587-4716

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 5.

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 Project 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.



Looking 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.¹⁸
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 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.

¹⁸ Subsequent to developing this evaluation measure, the regional public transit agency, TriMet, concluded that the appropriate corridor for HCT would be SE Sunnyside Road to the north, rather than along the Sunrise alignment.

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 SE 135th, SE 142nd, and SE 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 6). Four of the 21 alternatives had been originally developed but were eliminated during the 1993 DEIS. Those four were re-evaluated in terms of the screening criteria for the SDEIS.

Table 6. 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, and Transit elements)	Yes
Alternatives Eliminated in 1993 DEIS and Revisited for SDEIS		
2	Widen or Double-Deck Existing OR 212/224	No
3	Alignment across Mount Talbert	No
4	More westerly crossing of Camp Withycombe	No
5	Enhanced Transit, TSM, and TDM	No
Alternatives Considered for Inclusion in SDEIS: New Six-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 98 th Avenue/Sunnybrook Connection	Yes
Midpoint Area		
11	1996 Split Interchange	Yes
12	Single Interchange	Yes
13	Half Interchange	No
14	No Midpoint 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 in the SDEIS.

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, 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 driveways 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 driveway location 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 midsection 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 (driveways 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 (Section 4(f) *de minimis*).

This alternative did not meet the project's Purpose and Need in that this alternative would retain its function as an *arterial*, with numerous conflict points remaining at driveways, ramp terminals, and side streets, rather than providing a limited access highway. This alternative would not effectively meet the project's Purpose and Need of addressing the existing congestion and safety problems along this corridor, or serving the growing demand for regional travel and access to the state highway. This alternative also conflicted with a number of the Sunrise Project's goals and objectives 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, known as the Camp Withycombe and Eastern landslides. The Camp Withycombe Landslide is in the northeastern portion of Camp Withycombe and the Eastern Landslide is between SE 115th and SE 119th avenues (marked "QIs" on Figures 51 and PA-47). 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 Section 4(f) *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-acre 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 would avoid impacting Camp Withycombe, an active, secured military base.

The alignment across Mount Talbert presents a number of design constraints, including steep grades, slower speeds, and lack of a midpoint interchange that would limit its attraction and safety for truck usage, and therefore does not effectively meet the project's Purpose and Need of addressing the existing congestion and safety problems along this corridor. This alignment further conflicts with Goal 2 because it would not support the viability of the Clackamas Industrial Area or Goal 3 to support community livability because of the impacts on residences.

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. Camp Withycombe was identified in 2005 for a base expansion that will increase the assigned military strength of the post from its current strength of 675 personnel to approximately 1,947 by 2011. Associated with that planned increase in personnel has been the extensive construction of additional base facilities in what would be the proposed alignment of this alternative along the northern portion of the base. The Oregon Military Department 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.

This alignment presents a number of design constraints, including substandard design speed, poor angle of approach to the I-205 interchange, and substandard curves that would limit its attraction and safety for truck usage, and therefore does not effectively meet the project's Purpose and Need of addressing the existing congestion and safety problems along this corridor.

4. Alignment south of Camp Withycombe

This more southerly alignment along lower SE 82nd Drive and SE Jennifer Street 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 considered in the SDEIS.

This alignment alternative would completely avoid any impacts to Camp Withycombe, an active and secure military base, by traversing to the south of the camp and then east along SE Jennifer Street, parallel and south of OR 212/224, before resuming the proposed alignments (Alternatives 2 and 3) near SE 142nd Avenue. However, this southerly alignment alternative does not adequately meet the project's Purpose and Need to address congestion and safety conditions in the OR 212/224 corridor or serve the growing demand for regional travel and access to state highway corridor, due to its less central routing to the south of the OR 212/224 corridor and the Clackamas Industrial Area. By connecting to the state highway system (I-205) south of the OR 212/224 corridor at the Gladstone

Interchange, it provides limited congestion relief along the OR 212/224 corridor and I-205, between Milwaukie Expressway and the Clackamas Highway interchange; as well as provides less direct connections to Milwaukie Expressway and I-205 northbound than that provided by the **Preferred Alternative**.

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 of a 4-lane highway was reviewed and modified to assess whether it could accommodate the projected 2030 traffic volumes. The 1996 Design (Modified) did not accommodate traffic movements as well, or as safely, as the new interchange design in **Alternatives 2 and 3**. Therefore, this design did not meet the purpose of the project to serve the growing demand for regional travel, nor Objective 1 of Goal 1, particularly with respect to travel times and congestion.

2. Maintain Lawnfield Road area access

This alternative would maintain access to the Lawnfield Business Area via SE Lawnfield Road and an at-grade rail crossing at the UPRR main line. An at-grade crossing would not meet the Purpose and Need for improved safety. If the grade crossing were separated at the UPRR 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 that could be addressed instead by elevating a crossing on Tolbert Street. The Tolbert overcrossing will provide acceptable access from the Lawnfield Business Area to the regional highway system with lower costs and

complexity than a Lawnfield at-grade or overcrossing.

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, this alternative would provide access to the regional highway system to/from the Clackamas Industrial Area in only one direction. Therefore, this alternative would not meet the Project Need to improve safety. It would not meet Objective 7 of Goal 1 nor Goal 2 that support freight travel because access to the Clackamas Industrial Area would be compromised compared to the full interchange of the **Preferred Alternative**.

4. Move existing OR 212/224 to the north from SE 135th Avenue to the Rock Creek Junction area

This alternative would rebuild the existing OR 212/224, creating potentially adverse impacts to the Rock Creek riparian area, particularly areas designated as Essential Salmonid Habitat. Because the crossing would be at an angle it requires a larger structure and footings in this sensitive section of the creek. The alternative 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. Therefore, this alternative would not meet any of the environmental objectives of Goal 4, creating additional impacts compared to the **Preferred Alternative**.

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 OR 224 would be difficult and extremely costly. Therefore, this alternative

would not meet any of the environmental objectives of Goal 4, nor the visual objective 5 of Goal 3.

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. Therefore, this alternative would not meet Goals 3 and 4 of the Sunrise Project, which are to protect livability of residential areas and avoid impacting streams, wetlands and the wildlife corridor.

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 6). These 11 alternatives were refined into the three alternatives and the six design options considered in the SDEIS.

Alternatives Evaluated in the SDEIS

Three alternatives were under consideration in the SDEIS. **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**, in Executive Summary). The planned transportation project improvements are assumed to have independent utility and are part of the regional transportation modeling assumptions that were 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 was 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 the 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 the SDEIS, Metro adopted an updated RTP in 2008 with a 2035 Financially Constrained Project List that includes all of the assumed major road facilities in the Damascus/Boring UGB expansion area. The City of Happy Valley adopted a comprehensive plan

and a transportation system plan in 2009. The City of Damascus is currently developing a comprehensive land use plan and transportation system plan 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).
- 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 is a list of larger, programmed projects with the years of construction in parentheses, as updated in the recent Metro RTP 2035 Financially Constrained Project List that were considered in the **No Build Alternative**:

- SE 82nd Drive, widen from existing three lanes to five lanes between SE Lawnfield Road and OR 212/224 (RTP #5106, 2026-2035).

- SE 102nd Avenue, SE Clackamas Road, and SE Industrial Way, improve all to Mather Road for improved truck access, with better intersection/roadbed conditions for trucks turning and wider shoulders (Clackamas County Urban Renewal Agency project, 2008-2017. Phase 1 OR 212 to Mather Road under construction 2010-2011; Phase 2 planned for 2012).
- New arterial, construct four- and five-lane arterial north and east from Rock Creek Junction Interchange to SE 162nd Avenue. (Property owner-/developer-driven local project. Phase 1 between OR 212 and Sunnyside completed in 2010).
- Sunnybrook West Extension, construct a three-lane facility extending from SE 82nd Avenue (OR 213N) to Harmony Road near Fuller Road (Clackamas County project, 2012-2017).
- SE 172nd Avenue, widen from existing two lanes to four and five lanes between SE Foster Road and SE Sunnyside Road (RTP #7000, by 2017).
- OR 212, widen from existing two lanes to five lanes between Rock Creek Junction and Carver Bridge (2018).
- OR 212, Rock Creek to Damascus, add climbing lane (RTP#5007).
- SE 242nd Avenue, OR 212 to Palmquist, widen from 2 lanes to 5 lanes (future Damascus project).
- OR 212, Rock Creek to 257th Avenue, widen from 2 or 3 lanes to 5 lanes (future Damascus project).
- Sunnyside Road extension, 172nd Avenue to 242nd Avenue, widen to 5 lanes (future Damascus project).
- SE 232nd Avenue extension, OR 212 to Borges Road, widen from 2 lanes to 3 lanes (future Damascus project).

- SE 190th Avenue extension, Tillstrom Road to SE 172nd Avenue, 5 lanes (part of RTP project #7000 and future Damascus project).

Alternative 1 would implement the planned bicycle and pedestrian improvements, as shown on Figure 4. 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. They include primarily modest increases in service hours. These assumed transit improvements included the following:

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

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**, in Executive Summary). 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.
- 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. An extension of SE Lawnfield Road (referred to as the North Lawnfield extension) would be built northward to create an improved route for trucks climbing the hill to SE Sunnyside Road.

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 212 and OR 224 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 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, in Executive Summary). 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

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 added two additional transit improvements:

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

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 on SE 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 SE Sunnyside Road as the primary east-west, high capacity transit route within the area of 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 (in Executive Summary) show the proposed multi-use path.

Design Options

Six design options were 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, page 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 was 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 this FEIS, 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 Road to the north (see Figure 6, Comparison of Options for I-205 Interchange Area, in Executive Summary) 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 UPRR 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, in Executive Summary) 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 **Design Options B-2** and **C-3** 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], in Executive Summary). The purpose of **Design Option C-2** 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, in Executive Summary). **Design Option**

C-3 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, in Executive Summary).

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, in Executive Summary) and reduce impacts on the site of the proposed medical care complex.

Preferred Alternative Evaluated in this FEIS

The **Preferred Alternative** is **Alternative 2** as studied in the SDEIS with **Design Options C-2** and **D-3** and the Tolbert overcrossing portion of **Design Option A-2**. Additionally, the **Preferred Alternative** includes several modifications based on both stakeholder input and additional design refinement related to analysis of traffic performance and avoidance of environmental resources. The following paragraphs describe the **Preferred Alternative** from west to east.

Figures PA-1 through PA-5 show the **Preferred Alternative** alignment.

I-205 Interchange Area

In the I-205 Interchange Area, the **Preferred Alternative** consists of **Alternative 2** with the addition of the Tolbert overcrossing from **Design Option A-2**. This section includes connecting the existing north and south sections of the I-205 multi-use path, adding a third westbound lane on OR 212/224 from I-205 to SE 98th Court, and closing SE Lake Road with a cul-de-sac at SE Johnson Road. After the publication of the SDEIS, the following modifications were made to the **Preferred Alternative** in the I-205 Interchange Area, based on stakeholder input and refinements based on traffic and environmental analysis:

- The Sunrise Project western transition to the Milwaukie Expressway will be widened to three westbound lanes within the existing right-of-way for OR 224 and will be extended to the west through SE Webster Road. Without the third lane, westbound traffic would be backed up from Webster Road to I-205.
- The North Lawnfield Extension will be shifted to the east to avoid impacts to the KEX site historic resource and other cultural and natural resources in the area between the existing SE Lawnfield Road and SE 97th Avenue.
- A dedicated westbound right-turn lane will be added at SE 82nd Drive and OR 212/224.
- SE 82nd Drive and its intersection with OR 212/224 will be expanded to improve overall mobility by:
 - Restricting all left turns at this intersection and adding a raised median both north and south of the existing intersection.
 - Widening SE 82nd Drive from three to five lanes between the Fred Meyer store and SE Clackamas Road and creating a new signalized intersection at SE 82nd Drive and SE Clackamas Road to accommodate U-turns, including trucks.
 - Widening from three to five lanes and reconfiguring the existing signalized intersection at SE 82nd Drive and the northern Fred Meyer access point to accommodate U-turns, including trucks.

Midpoint Area

In the Midpoint Area, the **Preferred Alternative** consists of **Alternative 2**, the tight diamond interchange with a connection to OR 212/224 at SE 122nd Avenue, and **Design Option C-2**, the southernmost alignment between the Midpoint and Rock Creek interchanges. In response to stakeholder and agency input, the multi-use path will be extended along OR 212/224 to the Rock Creek Interchange.

Rock Creek Area

In the Rock Creek Junction Area, the **Preferred Alternative** consists of **Design Option D-3**, a Single Point Urban Interchange (SPUI). **Design Option D-3** includes the following features, as analyzed in the SDEIS:

- The eastern leg of the SE Goosehollow Drive/OR 224 intersection will be closed.
- Existing OR 212 will become a cul-de-sac just east of SE 162nd Avenue. SE 162nd Avenue will be connected to OR 212 on north side.
- The Sunrise Project eastern transition will reconnect with OR 212 east of the SE 172nd Avenue intersection with OR 212.
- The Sunrise Project southern transition will reconnect with OR 224 at SE Eckert Lane.

Based on stakeholder input and traffic refinements, the following additions to the **Preferred Alternative** were made in the Rock Creek Junction area to provide for reasonable community access:

- A right-out-only access at the end of SE Orchard View Lane to northbound OR 212 will be created. **Alternative 2** had north SE Orchard View Lane as a cul-de-sac, with no access to/from OR 224.

- A connection between SE 162nd Avenue and SE Goosehollow Drive south of OR 212 will be created at the northeast corner of the Orchard Lake neighborhood.

Transit, Bikeway, and Pedestrian Improvements

The **Preferred Alternative** would add new local transit service from Happy Valley to the Springwater area, more frequent service between Damascus and Gresham, and new express bus service along the proposed Sunrise Project between the Clackamas Transit Center and Damascus Town Center. Current regional plans identify SE Sunnyside Road as the east-west transit route within the Sunrise Project area.

The **Preferred Alternative** would provide better accommodations for bicycles and pedestrians by filling in gaps in the system, such as on the I-205 multi-use path between SE 82nd Drive and SE Roots Road. The new multi-use path would parallel the proposed Sunrise Project from I-205 on the north side until SE 122nd Avenue, where it would cross under and follow the existing OR 212/224 to SE 152nd Avenue. The multi-use path would also connect the cul-de-sac of OR 212, just east of SE 162nd Avenue, to SE 172nd Avenue.



Aerial view of Rock Creek Junction

How New Connections Would Be Made

This section describes and depicts in a general way how travelers would get from point to point on the Sunrise Project. Figures 10 through 17 depict the changes to connections that would occur. Figures PA-6 through PA-8 show the changes to connections for the **Preferred Alternative**. There are few differences between the connections for the **Preferred Alternative** and **Alternative 2**; where there are differences they are noted in separate paragraphs for each area of the project.

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, and then turn southeast (Figure 10 and Figure PA-6). 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.
- From southbound on I-205 to westbound Milwaukie Expressway (OR 212) 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 SE 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.

Preferred Alternative

To improve traffic flow and remove conflicts from the intersection of OR 212/224 and SE 82nd Drive, all left-turn movements will be restricted. To accommodate the vehicles that would otherwise make these left-turns, u-turn capabilities (shown on Figure PA-6) are provided to the north and south of the intersection on SE 82nd Drive at SE Clackamas Road (to the north) and the northern Fred Meyer intersection (to the south).

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, and Figure PA-7). 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** (Figure 13) travelers on the proposed Sunrise Project or on OR 212/224 could exit either at SE 122nd Avenue or at SE 130th Avenue.

Preferred Alternative

The connections will be the same as for **Alternative 2** (Figure PA-7) except that two cul-de-sacs would be provided on the north side of the project to make connections for parcels east of SE 135th Avenue and east of SE 142nd Avenue. Under **Alternative 2**, one cul-de-sac provides access to lots west of SE 142nd Avenue.

Connections at Rock Creek Junction

Under **Alternatives 2 and 3** and **Design Option D-2** (Figures 16 and 17) the proposed Sunrise Project would incorporate a folded diamond interchange aligned north of a prominent knoll. 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** (Figure 17) the interchange ramps would lead to a signal underneath the highway, and travelers would use the connecting road under the highway in the same way as described above for **Design Option D-2**.

The connection between OR 212 and OR 224 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.

Preferred Alternative

The configuration of the interchange at Rock Creek Junction is unchanged from that shown for **Design Option D-3** (Figure 17). New access to the Orchard Lake subdivision will be provided via a new access at SE 162nd Avenue south of the new highway. That new access provides mitigation for the closure of SE Goosehollow Drive at OR 212. In addition, a right-out-only connection with OR 224 at SE Orchard View Lane will provide northbound access from the Orchard Lake subdivision. North of the Sunrise Project, local access to properties will be provided by local street improvements contained in the Happy Valley Transportation System Plan.

Selection of the Preferred Alternative

The **Preferred Alternative** is **Alternative 2** as studied in the SDEIS with **Design Options C-2** and **D-3** and the Tolbert overcrossing portion of **Design Option A-2**. Figures PA-1 through PA-5 show the **Preferred Alternative** as a whole and in specific areas.

The only difference between **Alternative 2** and **Alternative 3** is the midpoint interchange and both meet the Purpose and Need for the Sunrise Project. Goal 1 of the project is to provide a highway that meets existing and future safety, connectivity, and capacity needs. **Alternative 2/Preferred Alternative** has slightly better volume-to-capacity ratios during peak hours and slightly fewer congested lane miles than **Alternative 3**. Therefore, **Alternative 2/Preferred Alternative** does slightly better in two out of four evaluation measures of Goal 1, Objective 1 of the screening criteria; the other two evaluation measures have equivalent benefits. The midpoint interchange would reduce volumes on I-205 by about 600 vehicles daily compared to a facility with no midpoint interchange. The **Preferred Alternative's** project refinements result in reduced volume on I-205 of more than 1,000 vehicles compared to **Alternative 3**. Capacity on I-205 is Objective 3 of Goal 1.

Alternative 2/Preferred Alternative supports faster travel times (2 to 3 minutes) and more trips to and from the Clackamas Industrial Areas near SE 122nd Avenue compared to **Alternative 3**, which reflects improved accessibility for businesses, patrons, and employees. Therefore, **Alternative 2/Preferred Alternative** best meets Goal 2 of the project, which is to support the viability of the Clackamas area for industrial uses.

The midpoint interchange provides desired redundant emergency access, so **Alternative 2/Preferred Alternative** also meets Objective 7 and Objective 9 (serving freight travel safely and efficiently) of Goal 1 better than **Alternative 3**.

Objectives 1 and 3 of Goal 2 calls for providing local circulation and access for industrial users and minimizing business displacements and acquisition of industrial land. **Alternative 2** and the **Preferred Alternative** displace more industrial land (133 and 156 acres) than **Alternative 3** (117 acres). **Alternatives 2 and 3** displace a similar number of jobs (60), which is 20 fewer jobs than the **Preferred Alternative** will displace. However, the reason for the additional displacements under the **Preferred Alternative** is primarily the mitigation measures at SE 82nd Drive to alleviate circulation impacts from **Alternative 2** (after adopted as the **Preferred Alternative**), which means other objectives in Goal 1.

The **Preferred Alternative** better meets the objectives that call for fewer noise, affordable housing, residential displacement, and wetland and wildlife corridor impacts than **Alternative 2** and 3 and the build alternatives with design options. Those objectives support Goal 3 (Objectives 2, 3, 4, and 7) and Goal 4 (Objectives 1, 2, and 3).

Although the **Preferred Alternative** will create 127.2 acres of new impervious surface, about 4 acres more than **Alternative 2** and about 16 acres more than **Alternative 3**, all alternatives would support Objective 7 of Goal 4 because all alternatives would need to meet the same water quality standards. Analysis for the **Preferred Alternative** has demonstrated (see Figures PA-26 through PA-45) that water quality treatment can be accommodated.

Public comments supported **Alternative 2** (93 comments) over **Alternative 3** (8 comments). **Design Option A-2** was supported by 33 comments.

The Tolbert overcrossing (**Design Option A-2**) was included in the SDEIS as a way to provide access and mobility to the industrial area without building the North Lawnfield Extension, which as evaluated in the SDEIS, had impacts on the KEX facility as well as wetland impacts.

Since publication of the SDEIS, the North Lawnfield Extension was modified to avoid any

impacts to the historic KEX facility and the copper mats which could affect its radio signal. It also reduces wetland impacts. The **Preferred Alternative** incorporates aspects of **Design Option A-2**, the Tolbert overcrossing, that enhance access to I-205 and Clackamas as well as the North Lawnfield Extension for truck traffic without the impacts of that extension. Fifty-one public comments supported the North Lawnfield Extension based on its ability to rectify the loss of more direct access to I-205, while 32 comments opposed it (without citing a reason).

Public support for **Alternative 2** combined with the benefits of redundant access, mobility within and through the industrial areas and shorter travel times to the core of the Clackamas Industrial Area contributed to the development of the **Preferred Alternative**.

Design Option B-2 was not incorporated into the **Preferred Alternative** because it tended to have the highest impacts in almost every category of environmental impact including the highest cost. For example, the split-diamond interchange requires more right-of-way and displaces more residential and industrial uses compared to the diamond interchange under **Alternative 2**. The larger size of the **Design Option B-2** interchange creates the most impervious surface of all alternatives, and indirectly affects two additional historic resources (Frank A. Haberlach House and Silverthread Kraut and Pickle Works Building)., It further constrains the wildlife corridor compared to **Alternative 2**. One benefit is slightly fewer noise impacts, because traffic is more dispersed. The split-diamond interchange provides a modest benefit to westbound drivers on OR 212/224 when congestion backs up beyond SE 122nd Avenue. One individual comment out of four comments on **Design Option B-2** favored the option, while three opposed it based on the cost and the minimal traffic benefit.

In short, **Design Option B-2** was not recommended as part of the **Preferred Alternative**, because the split-diamond

interchange design has no measurable traffic benefit compared to the **Alternative 2** diamond interchange, and **Design Option B-2** costs more and has a greater impact on environmental and community resources.

Because there is no difference in traffic mobility benefits amongst **Alternative 2**, **Design Option C-2**, and **Design Option C-3**, the selection focused on other trade-offs. The alignment of **Design Option C-2** avoids the residential displacements that occur under **Alternative 2**, but **Design Option C-2** displaces more businesses. **Design Option C-3** was not chosen because while it avoids the business displacements of **Design Option C-2**, it displaces a similar number of residences as **Alternative 2** and has the highest impact on the wildlife corridor. **Alternative 2** has a greater noise impact than the **Design Options C-2** and **C-3**. **Design Option C-3**, on average, is worst for environmental resources because of its highest impacts on the wildlife corridor, the slope, and noise impacts on the bluff. **Design Option C-2** is the best at reducing environmental and community impacts, because it travels in the straightest line with the least amount of impervious surface. Public comments were most in favor of **Design Option C-3** (86).

Design Option C-2 is incorporated into the **Preferred Alternative**, because on average **Design Option C-2** has the fewest residential impacts, has the least amount of impervious surface, is the best option for preserving the wildlife corridor, and has the least impact on wetlands.

Design Option D-2 has a more southerly alignment than **Alternative 2**, thereby reducing impacts on a wildlife corridor and leaving more land to the north available for future development. **Design Option D-3** reduces land use impacts on the Providence property to the north even more than the other alignments, and the interchange design reduces impervious surface and right-of-way needs compared to **Design Option D-2** and **Alternative 2**.

Alternative 2 and **Design Option D-2** have the same traffic impacts; **Design Option D-3** is not

able to serve the same traffic volumes as the other options, but operates similarly under the predicted 2030 demand. **Alternative 2** has the greatest impact on wildlife passage, requires the most right-of-way, and impacts the most local driveways. **Design Option D-3** has fewer noise impacts on residences south of the corridor. Residential and other environmental impacts are similar under all alignments. Public comment preferred **Design Option D-3** (45 in favor) over **Design Option D-2** (39 in favor). Public comments also requested an extension of the multi-use path beyond SE 122nd Avenue to the Rock Creek interchange. This extension has been included in the **Preferred Alternative**.

The **Preferred Alternative** replaces the **Alternative 2** alignment and design with **Design Option D-3**, the single-point Rock Creek Interchange, because of the smaller footprint and southerly alignment, which create fewer impacts on the wildlife corridor and on the industrial property to the north.

Other Project Refinements

While the alternatives and design options were being evaluated, the technical team worked on other project refinements, addressing concerns raised by the public and project partners regarding access and local connectivity. The **Preferred Alternative** includes these project refinements (see Figures PA-6 through PA-8):

- SE 162nd Avenue Extension south of OR 212 to SE Goosehollow Drive – added as another connection for the Orchard Lake neighborhood.
- SE Orchard View Lane Access – added a right-out-only connection to the Goosehollow neighborhood.
- Intersection of SE Johnson Road and SE Deer Creek Lane – revised to address local driveway and circulation issues, by maintaining the existing intersection location and roadway alignments to minimize impacts to local businesses.
- Frontage road driveways for local businesses – these include several modifications including an access road for

businesses along OR 224 southwest of Rock Creek Junction, near SE 125th Court and several near SE 82nd Drive (e.g., St. Helens Street, SE Jannsen Road).

- Cul-de-sac modifications for residences – these include modifications to connections to neighborhoods near Hubbard Road, SE 142nd, SE 162nd Avenue, and SE 82nd Drive.

Consideration of Concerns and Issues Raised during the Public Comment Period

The public's comments at the public hearing and received during the public comment period are presented in Appendix A. How the key concerns were considered or addressed in developing the **Preferred Alternative** is discussed below.

Midpoint interchange. The issue of the Midpoint interchange was the trade-off between improved mobility (with the interchange) and somewhat greater environmental impacts. The public comments supported **Alternative 2** over **Alternative 3** by a wide margin (see Chapter 5). Public support and the benefits of redundant access and shorter travel times to the core of the Clackamas Industrial Area made the midpoint interchange in **Alternative 2** preferable to no midpoint interchange.

Lawnfield Extension and Tolbert overcrossing. There were advocates and opponents for both options in this area of the I-205 interchange, as discussed above under “**Alternative 2** and **Design Option A-2.**” This issue was resolved by keeping both options in the **Preferred Alternative**. As a result, the **Preferred Alternative** maximizes connectivity in the industrial area. Potential adverse impacts to the KEX site and adjacent natural resources from the North Lawnfield Extension were reduced by realigning the extension farther east.

Transportation circulation. Where existing access would be replaced with alternative routes, business and residential commenters expressed concern about longer travel times and consequent cost impacts on businesses. Of particular concern were the cul-de-sac on SE Lake Road, the median on SE Johnson Road, the limited turn movements from cross-streets at SE 82nd Drive, restriction of Lawnfield industrial area access to I-205, SE Deer Creek Lane, the closing of SE Goosehollow Drive at OR 224, and business access blockages from a Tolbert overcrossing. In several cases (access along SE 82nd Drive, SE Deer Creek Lane), the project team was able to adjust the design to improve provision of access. Two access points are provided in the **Preferred Alternative** to the Lawnfield Industrial area in an effort to make sure this area remains viable and has adequate access. SE 162nd Avenue will provide an alternative access to mitigate the closing of access at the intersection of SE Goosehollow Drive and OR 224.

Business impacts. Nine commenters wrote letters addressing concerns about right-of-way, property acquisition, and property values. These ranged from specific concerns about property acquisitions, to questions about timing and compensation from the project.

For parcels that are partially acquired from businesses, the business owners will receive compensation for the fair market value of the land in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act). The compensation would not include any value on revenue streams or how future revenues might be affected by a reduced lot size, ability to expand on a lot, or changes in access.

Land supply in the Clackamas Industrial Area is limited by the urban growth boundary on the south, I-205 on the west, Rock Creek and residential areas on the north and east. It is well accepted that successful industrial areas tend to have clusters of related businesses, such as suppliers to manufacturers. Consequently, the

acquisition of businesses and industrial land may negatively affect the remaining industrial businesses because the land supply is not easily augmented and the loss of land and businesses may reduce the “critical mass” needed to remain a viable industrial area. The eventual impact of those losses on the Clackamas Industrial Area cannot be calculated. However, the loss of industrial land and businesses would not be the only factor that is likely to influence future uses of this area, congestion being another big factor since the distribution sector is a major portion of the industry there. The benefit to the Clackamas Industrial Area of building the Sunrise Project will be to ensure future mobility to and through the industrial area compared to the No Build conditions. The slower growth of congestion may increase the appeal of locating on designated industrial lands in Damascus and redeveloping the remaining industrial lots at higher densities, and may offset the negative impacts of the loss of other businesses.

In addition, Clackamas County will identify and apply community development tools to encourage public-private partnerships that will optimize opportunities for economic development and re-development once the Sunrise Project is complete.

Some of the costs of relocating businesses cannot be compensated for under the Uniform Act, including loss of business during construction or the travel costs for future out-of-direction travel that results from the project. As part of the final design process, ODOT will work with affected businesses to limit the anticipated impacts on business revenues or costs caused by construction and by the new local routes. A construction management plan will be developed that supports the continued operation of business districts and the livability of neighborhoods. The goal is to keep the business nearby or at least in Clackamas County.

KEX Radio. In late 1991, initial contact was made with KEX Radio regarding potential impacts to the KEX facility and radio signal from

the Sunrise Corridor Project. Numerous discussions and much correspondence occurred between ODOT and KEX throughout the process leading to the adoption of the 1993 DEIS and through 1996 as a draft FEIS was being prepared (not adopted).

KEX concerns during the preparation of the 1993 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, both KEX Radio and ODOT acknowledged that there was no predictive computer model available to quantify and assess the impacts to KEX’s signal from the proposed highway construction.

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 SE Lawnfield Road to SE Sunnybrook Boulevard) have been raised, and discussions have continued between ODOT, Clackamas County, and KEX representatives to address these concerns.

ODOT and KEX/Clear Channel continue to jointly acknowledge that existing technology does not allow for the forecasting/modeling of potential future impacts to the radio station signals from construction of elements of the Sunrise Project prior to construction. Mitigation measures in this FEIS have been developed to reflect commitments to pursue an agreed-upon strategy for assessing potential impacts to Clear Channel radio station signal viability from construction of the Sunrise Project.

Noise. About a dozen individuals made formal comments concerning noise impacts on residences on the bluff north of the alignment (roughly between SE 122nd Avenue and SE 135th Avenue), how noise would affect property values, and whether the lack of mitigation and/or compensation was justified. **Design Option B-2** was predicted to have noise impacts

on 111 residences compared to 121 for **Alternative 2** and 118 for **Alternative 3**. The difference is primarily because of small changes in sound levels for properties with predicted levels at the impact criterion of 65 dBA. The slight difference would not offset the other negative aspects of **Design Option B-2** compared to **Alternative 2**. The noise abatement sections of the Noise Technical Report and this FEIS note that several abatement measures for noise impacts on the bluff were evaluated, including slight shifts in alignment. Noise abatement for residences along the bluff was generally found to be either ineffective at reducing sound levels or the costs were too high to meet the ODOT reasonable criterion. At the manufactured home park east of SE 106th Avenue and south of the Sunrise Project, a noise wall was found to meet the effectiveness and reasonableness criteria. In all, 14 abatement measures were evaluated for residents along the bluff. However, none of those measures met ODOT's reasonable and feasible criteria. Because the number and the magnitude of noise impacts varied only slightly by alternative and options available, noise impacts were not a major consideration in the selection of the **Preferred Alternative**.

The potential effects of increased noise levels on wildlife were also noted, but no analysis of those impacts has been done or is planned to be done as part of this project.

Environment. Approximately 14 agencies, businesses or organizations, and individuals commented on the project's encroachment on upland and riparian habitats, wetlands, and the wildlife corridor. The creation of new impervious surface and its impacts on surface water quality was another issue raised during the public comment process. Some commenters said that there was insufficient information or analysis of specific impacts, such as growth pressures and greenhouse gas emissions. In the I-205 Interchange area, the impacts of the **Preferred Alternative** on upland and riparian habitat are lower than those with **Alternative 2** as a result of the realignment of the North Lawnfield Extension further east. Including

Design Option C-2 as part of the **Preferred Alternative** reduces impacts to the wildlife corridor along the bluff compared to **Alternative 2** and **Design Option C-3** in this area. **Design Option D-3** has fewer impacts on a narrow portion of the wildlife corridor than **Alternative 2**.

Residential neighborhoods. Several individuals made comments regarding their concern about the impacts of increased noise levels and lighting, and about the loss of valuable views on livability in the neighborhood. They noted that there was no mitigation or compensation for those impacts. The only alternative that would not have noise, visual, or lighting impacts would be the **No Build Alternative**. The **No Build Alternative** was not recommended as the **Preferred Alternative**, because it does not meet the Purpose and Need of the project. There are minimal differences in impacts to residential neighborhoods between the build alternatives and the design options. Mitigation measures to reduce impacts from light and visual impacts are found in the mitigation summary and the respective sections of Chapter 3.

Property values. Several businesses and individuals expressed concern about how the loss of freeway access will affect the value of industrial or commercial properties. There was concern about inadequate compensation for acquisition of businesses (no compensation for value of a business) and residential properties (lower values due to the economic downturn). Residents are concerned that the lack of mitigation for impacts on residences on the bluff (noise, visual, and access impacts) will diminish property values and lower owners' abilities to sell their homes. Mitigation measures for displacements of residents would occur under the Uniform Act; Federal Law 91.646; the Code of Federal Regulations (CFR 49, Part 24); Oregon Revised Statutes (ORS 281.045 to 281.105); ORS 35.346; and State of Oregon Right-of-way Manual. The Uniform Act requires fair and equitable treatment of all property owners as well as businesses or residents displaced as a direct result of programs or projects. Fair market value is the

basis for all full acquisitions, and speculative increases or decreases to property values generated by the project are not considered in the appraisal process for full acquisitions. For partial acquisitions, damages can be considered as part of the right-of-way appraisal process.

Comparison of Alternatives and Design Options

The **No Build Alternative** is the alternative with the fewest direct impacts to natural resources. However, the **No Build Alternative** does not meet the Purpose and Need of the project. **Alternative 2** has somewhat greater impacts than **Alternative 3**, because the midpoint interchange creates a larger footprint and more impervious surface.

The **Preferred Alternative** avoids and minimizes environmental impacts to the greatest extent practicable. Further mitigation strategies have been developed that will further avoid and minimize impacts.

Public support for **Alternative 2**, combined with the benefits of redundant access and shorter travel times to the core of the Clackamas Industrial Area, outweighed the marginally lower environmental impacts of **Alternative 3**. The recommendation to add the Tolbert overcrossing (**Design Option A-2**) and other local improvements in the I-205 Interchange area to create the **Preferred Alternative** increases impervious surface compared to **Alternative 2** or **Design Option A-2** alone. However, **Alternative 2** and **Design Option A-2** were combined because of the strong local support and the need to maximize connectivity in the industrial area. Some of the potential adverse impacts of the Lawnfield Extension to the KEX site and adjacent natural resources have been reduced by realigning the Lawnfield Extension farther east. The **Preferred Alternative** includes adding a third westbound lane that would lengthen and widen the west end of the project to approximately 1,000 feet west of SE Webster Road, slightly increasing impervious surface over **Alternative 2**. However, there is no habitat for wildlife in the

new areas west of SE Johnson Road. The additional third lane will reduce congestion-related queuing and improve travel times and reliability.

The **Preferred Alternative** alignment in the Midpoint area contains the lowest-impact design option, **Design Option C-2**. In the Rock Creek Junction area, the chosen **Design Option D-3** has the smallest amount of impervious surface and preserves as much as or more of a narrow wildlife corridor as the other options.

Preliminary Project Costs

Preliminary construction and right-of-way cost estimates for all of the build alternatives are presented in Table 1 (Executive Summary). Actual construction costs will 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. Cost estimates are provided for the year 2009 and the expected year of construction, 2013. Estimated 2013 costs are derived using inflation factors of 4.3 percent (2009 – 2011) and 4.0 percent (2012 – 2013).

Alternatives 2 and 3

The total cost of the proposed project depends on the alternative and design option. Table 1, Chapter 1, shows that in 2009 dollars, **Alternative 2** is estimated to cost \$1,254 million, while **Alternative 3** is estimated at \$1,186 million. **Alternative 2 with Design Option B-2** has the highest estimated cost—\$1,359 million—while **Alternative 3 with Design Option D-2** has the lowest estimated cost—\$1,105 million.

Preferred Alternative

The **Preferred Alternative** is estimated to cost \$1,493 million. Much of the difference in the cost compared to **Alternatives 2 and 3** is based on updated and more refined analysis of project

construction and right-of-way acquisition information. For example, the **Preferred Alternative** includes \$216 million in right-of-way costs that were not previously included in the right-of-way estimates for **Alternatives 2 and 3**. The previous right-of-way estimates did not include the costs of administration, demolition, or contingency items. The estimates for the **Preferred Alternative** now do include these administration, demolition, and contingency costs.

Some of the land currently owned by ODOT or Clackamas County within the right-of-way will be donated to the project and is not included in the right-of-way cost estimate provided in this FEIS. In contrast, the estimates for **Alternatives 2 and 3**, in the SDEIS, assumed such public land would be purchased. ODOT's District Office in the Lawnfield area would need to be moved to a new location at a cost of \$20 million. This expense is reflected in the total cost estimate for the **Preferred Alternative** in this FEIS, but was not included in the estimates for **Alternatives 2 and 3** in the SDEIS.

Funding

Currently, ODOT has estimated \$428 million will become available for the project over the next 20 years. The commitment of \$428 million is included in the Metro 2035 RTP financially-constrained list of projects.

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. ODOT is currently preparing those plans.

Funding currently committed to the project totals \$200.55 million: \$143.87 million in committed funding, and \$56.68 million in value of surplus ODOT and County properties available for project right-of-way. Specific funding derives from the following sources:

2009 State Legislation (Jobs & Transportation Act – State Gas Tax) (\$100 million); ODOT Oregon Transportation Investment Act (OTIA) III (\$20 million); ODOT surplus properties for project right-of-way (\$35.07 million); Clackamas County Development Agency – surplus properties for project right-of-way (\$21.61 million); Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) federal reauthorization earmark (\$18 million); State Transportation Improvement Program (STIP – State Gas Tax) (\$3 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; 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 at a later date).

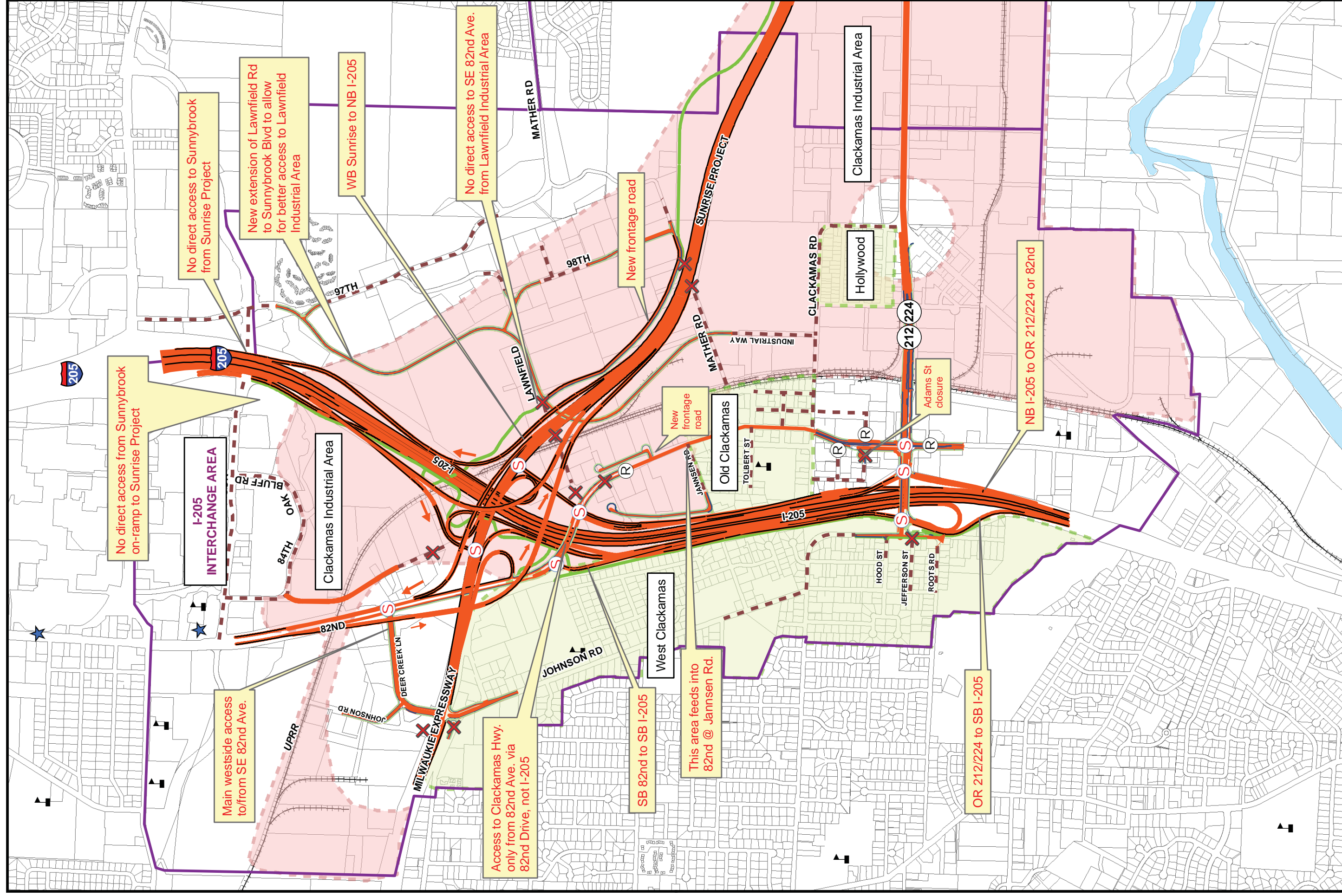
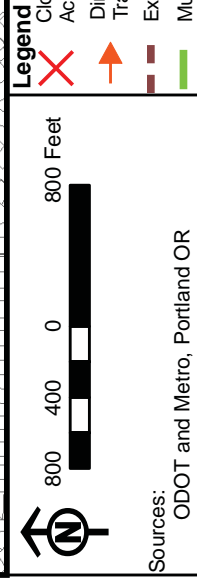


Figure 10

Changes to Travel Patterns, Alternatives 2 and 3



Sunrise Project, I-205 to Rock Creek Junction



Sources:
ODOT and Metro, Portland OR

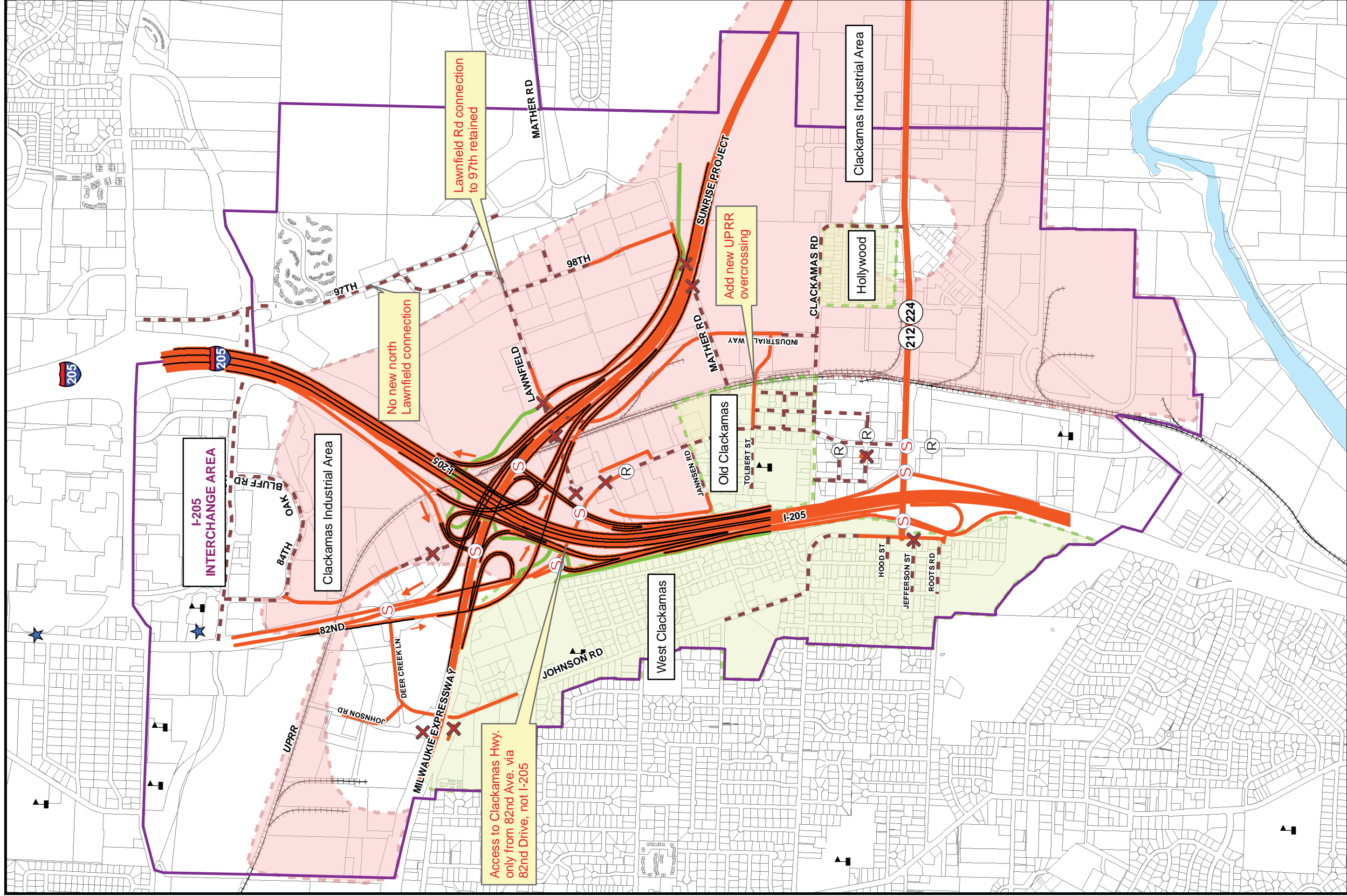


Figure 11
Changes to Travel Patterns,
Design Option A-2

Legend

- Close Existing Access
- Directional Flow
- Existing Street
- Multi-use Path
- Proposed Project
- Business Districts
- Neighborhoods
- Police Station
- Railroad
- Right-in, Right-out
- Schools
- Signal
- Interchange Area Boundary

Sources:
 ODOT and Metro, Portland OR

Sunrise Project, I-205 to Rock Creek Junction

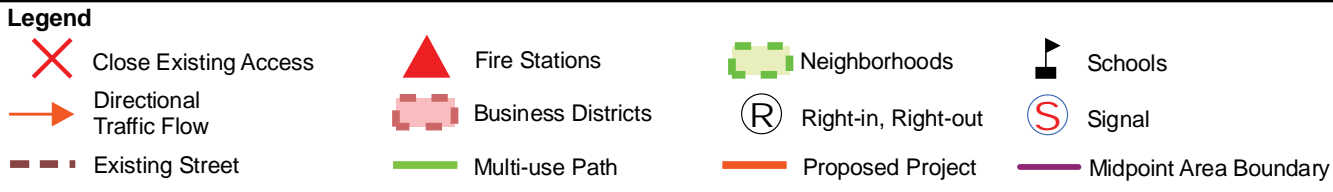
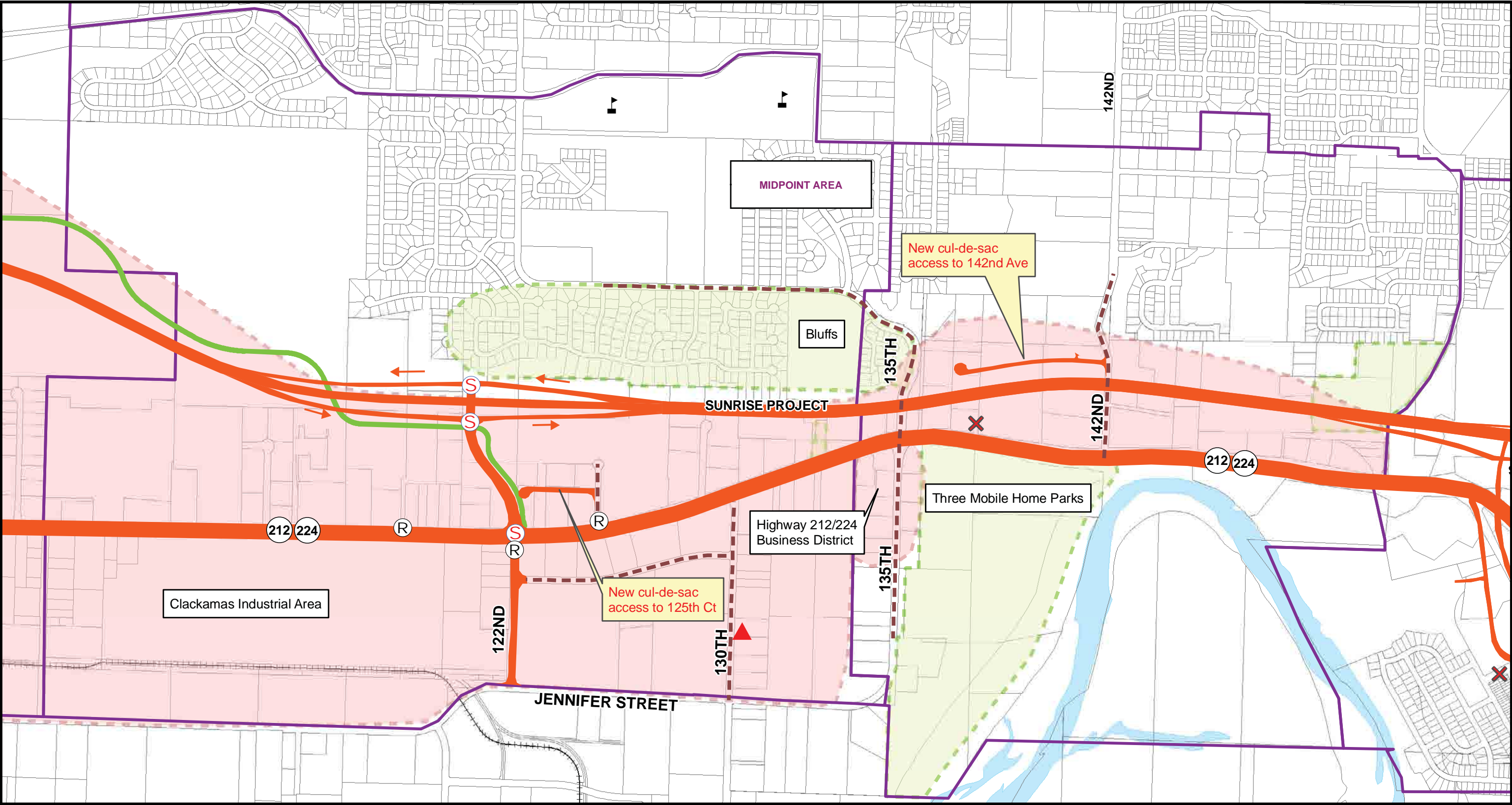
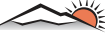


Figure 12
*Changes to Travel Patterns,
Alternative 2 Midpoint Area*

 **Sunrise Project, I-205 to Rock Creek Junction**

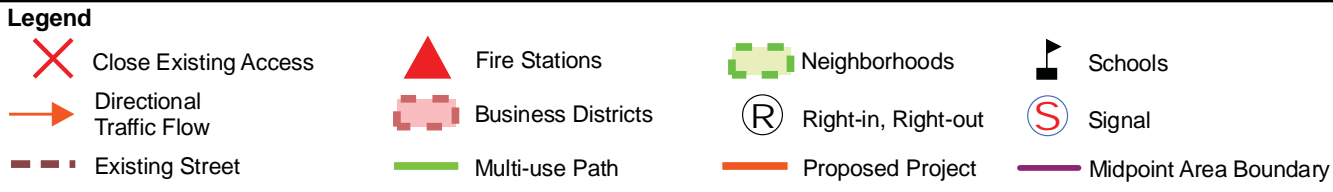
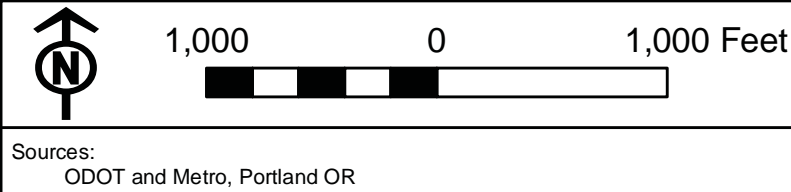
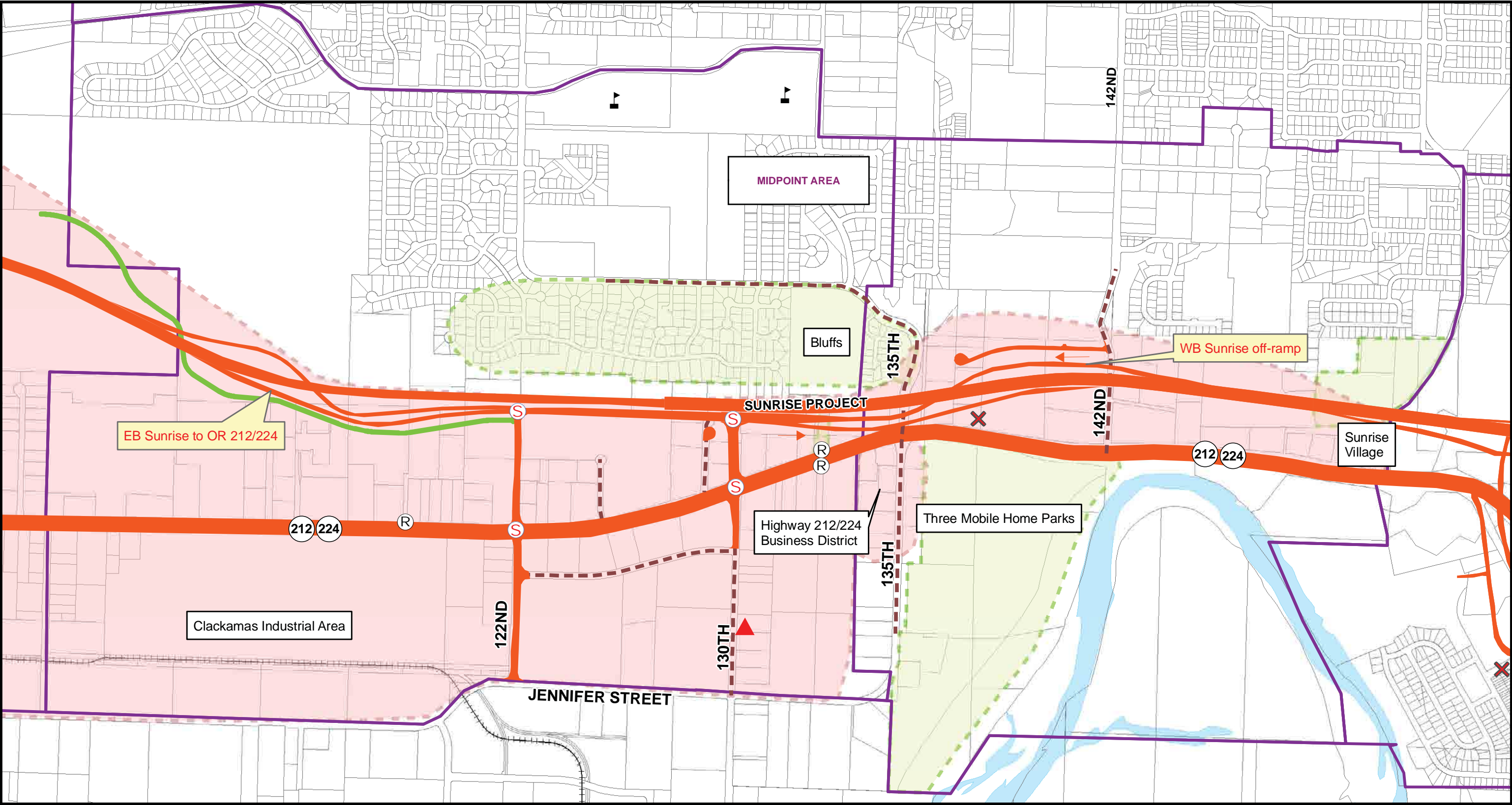

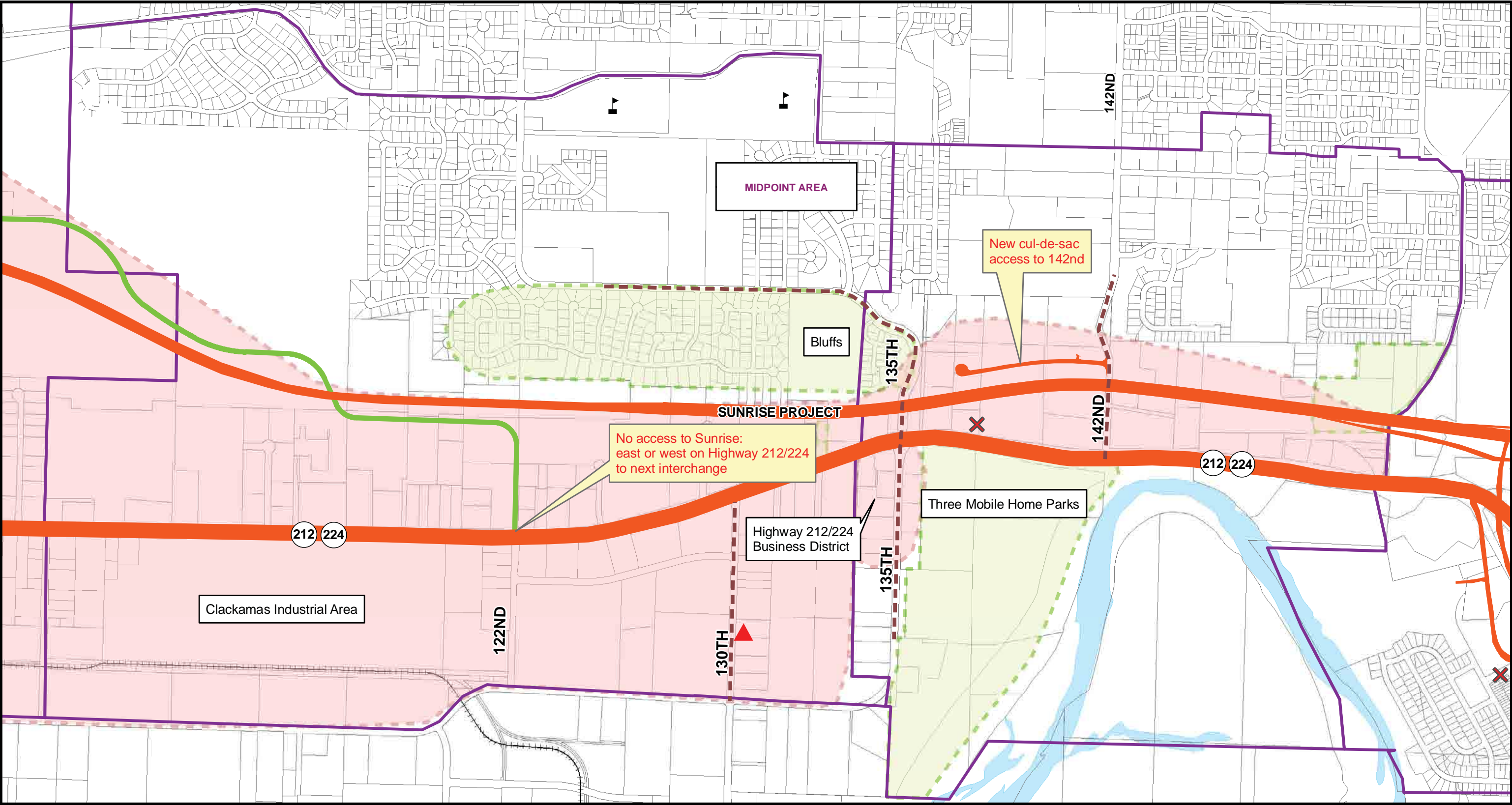
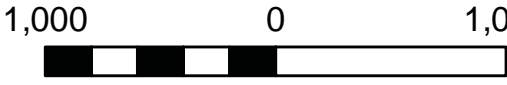





Figure 13
*Changes to Travel Patterns,
 Design Option B-2*
 **Sunrise Project, I-205 to Rock Creek Junction**








Sources:
ODOT and Metro, Portland OR


Close Existing Access


Directional Traffic Flow


Existing Street


Fire Stations


Business Districts


Multi-use Path

Neighborhoods

Right-in, Right-out

Proposed Project

Schools

Signal



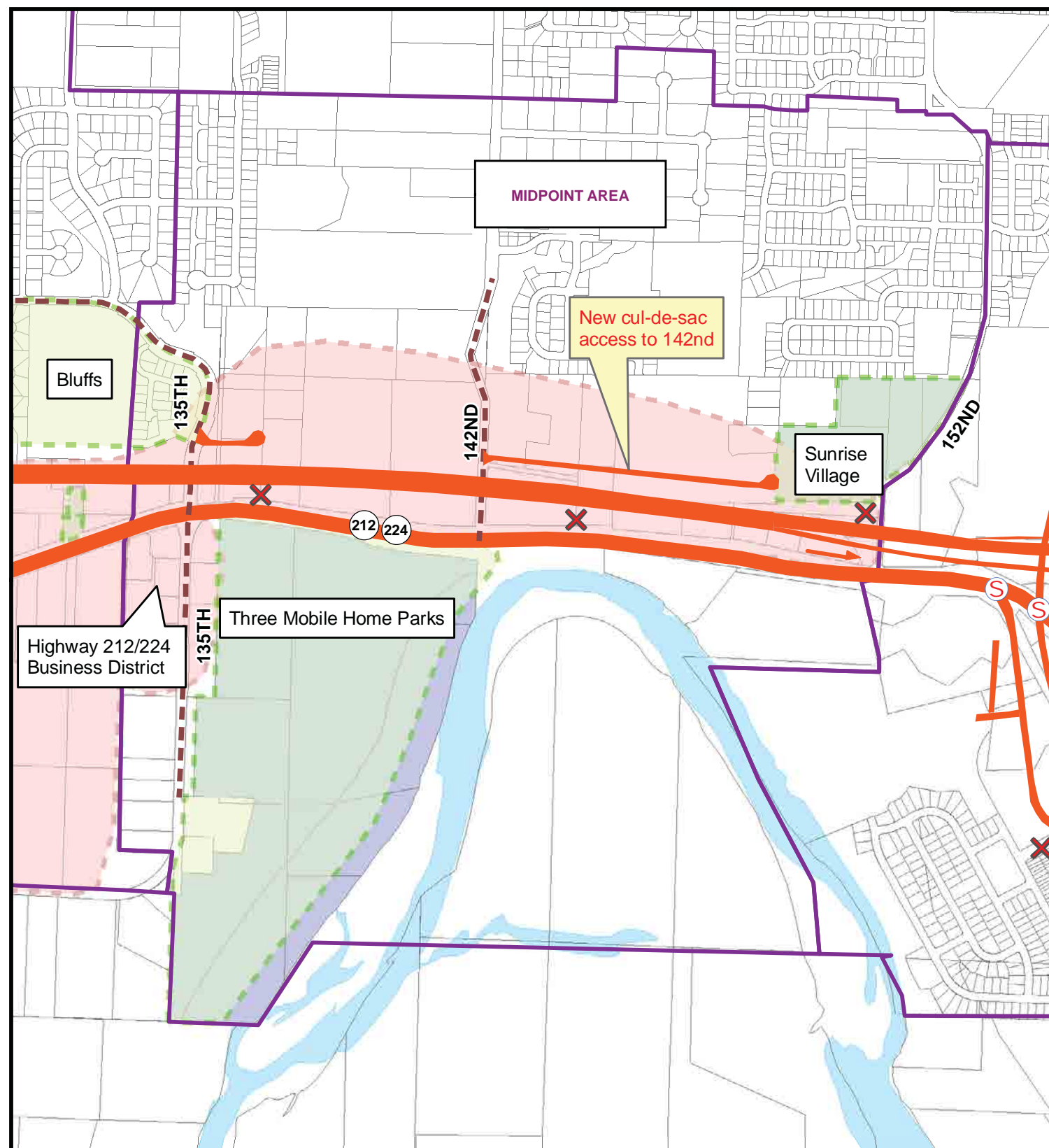
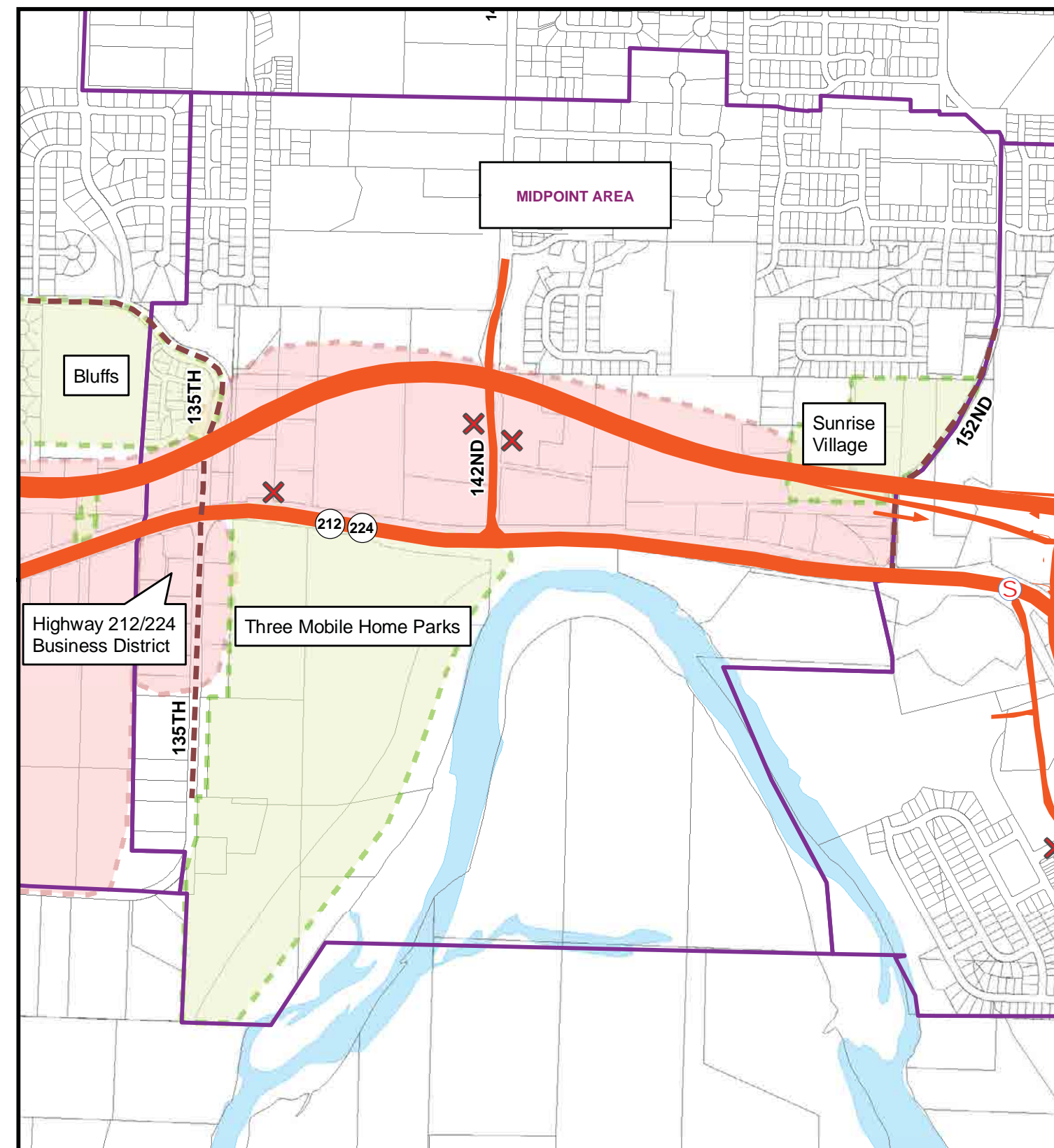
Midpoint Area Boundary

Figure 14
*Changes to Travel Patterns,
Alternative 3 Midpoint Area*

 Sunrise Project, I-205 to Rock Creek Junction



Option C-2: Central Alignment



Option C-3: Modified Follow Tree-line Alignment

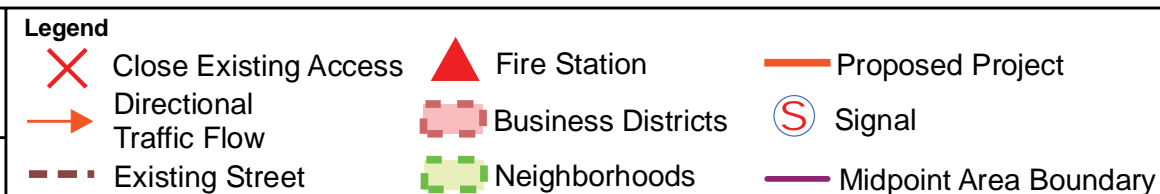
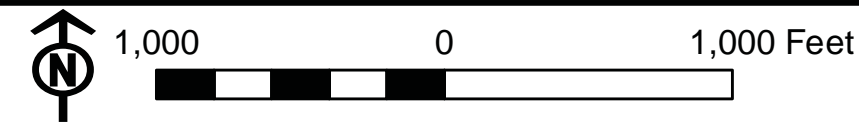
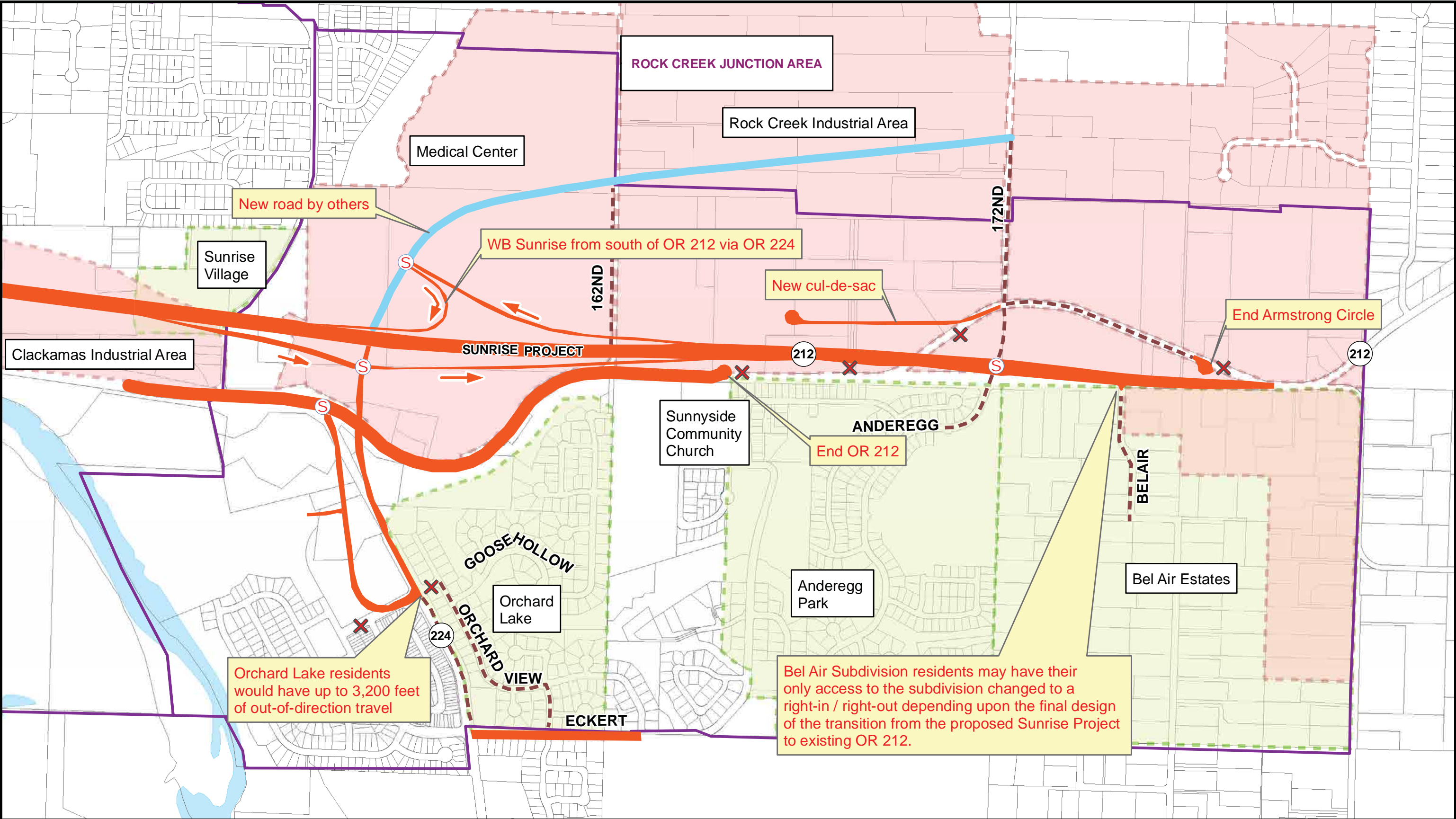


Figure 15

Changes to Travel Patterns,
Design Options C-2 and C-3



Sources:
ODOT and Metro, Portland OR

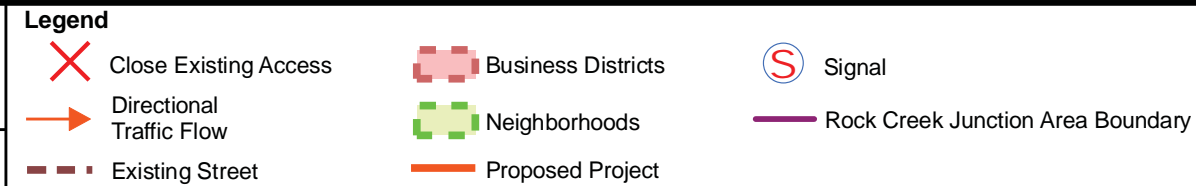
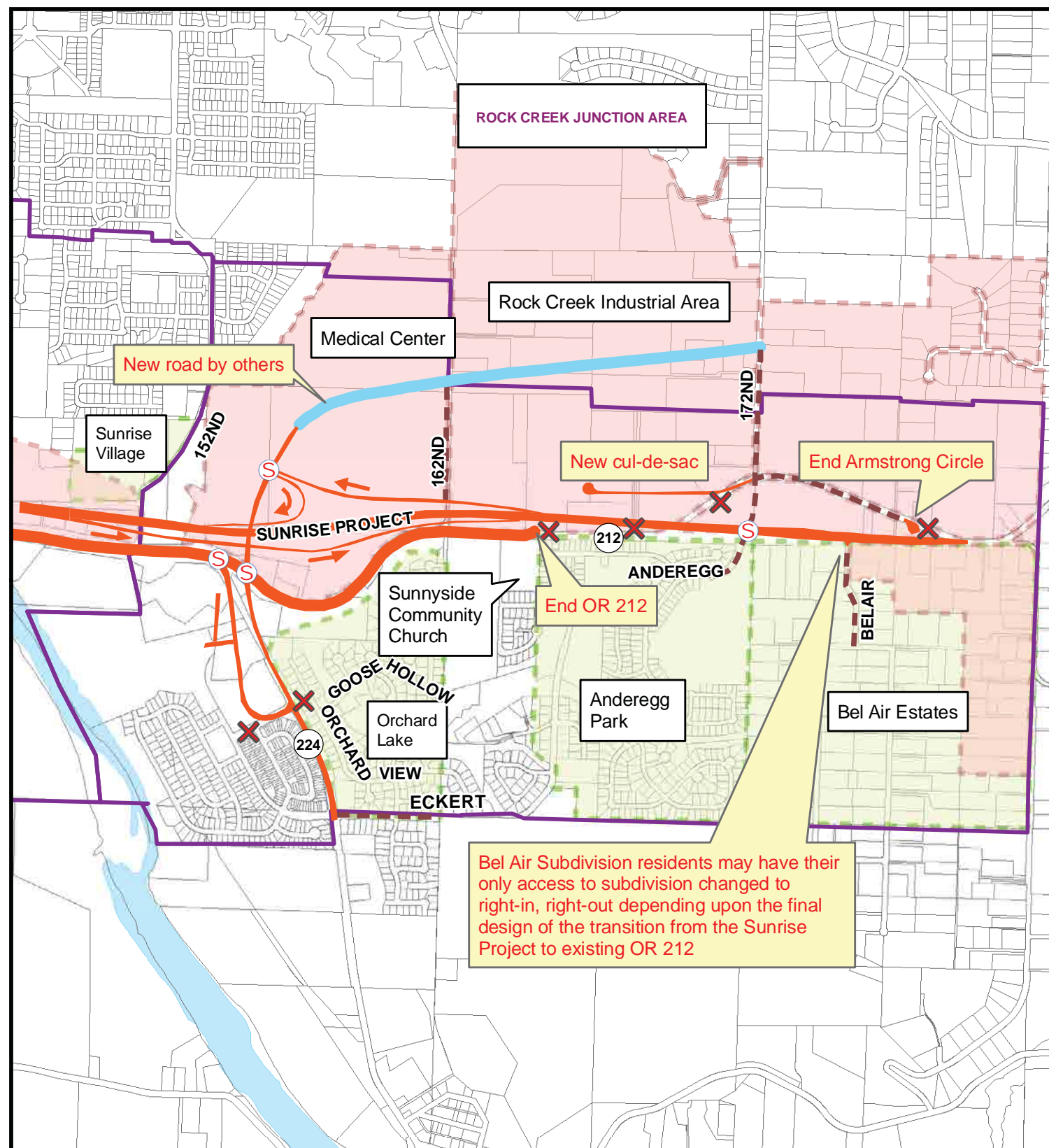
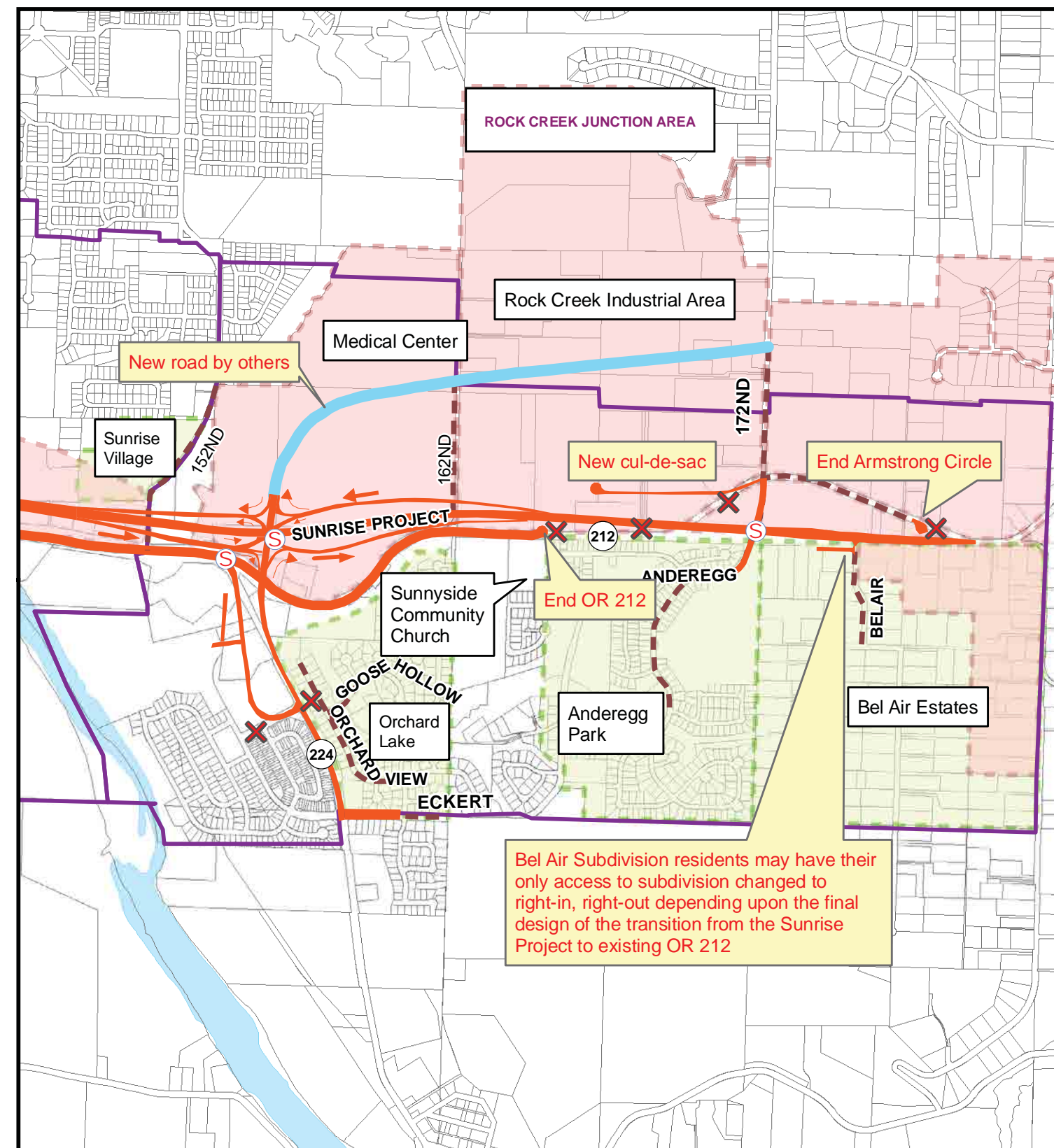


Figure 16
Changes to Travel Patterns,
Alternatives 2 and 3 Rock Creek Junction Area
 Sunrise Project, I-205 to Rock Creek Junction



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



Option D-3: Single-Point Diamond Interchange

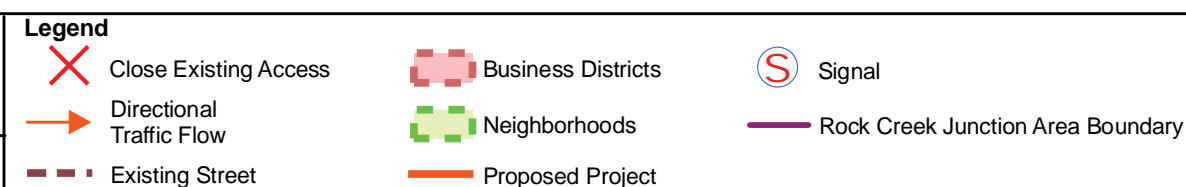
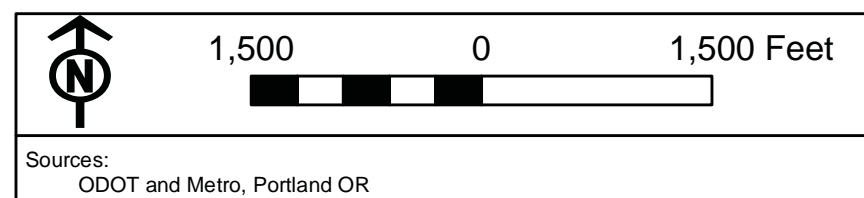
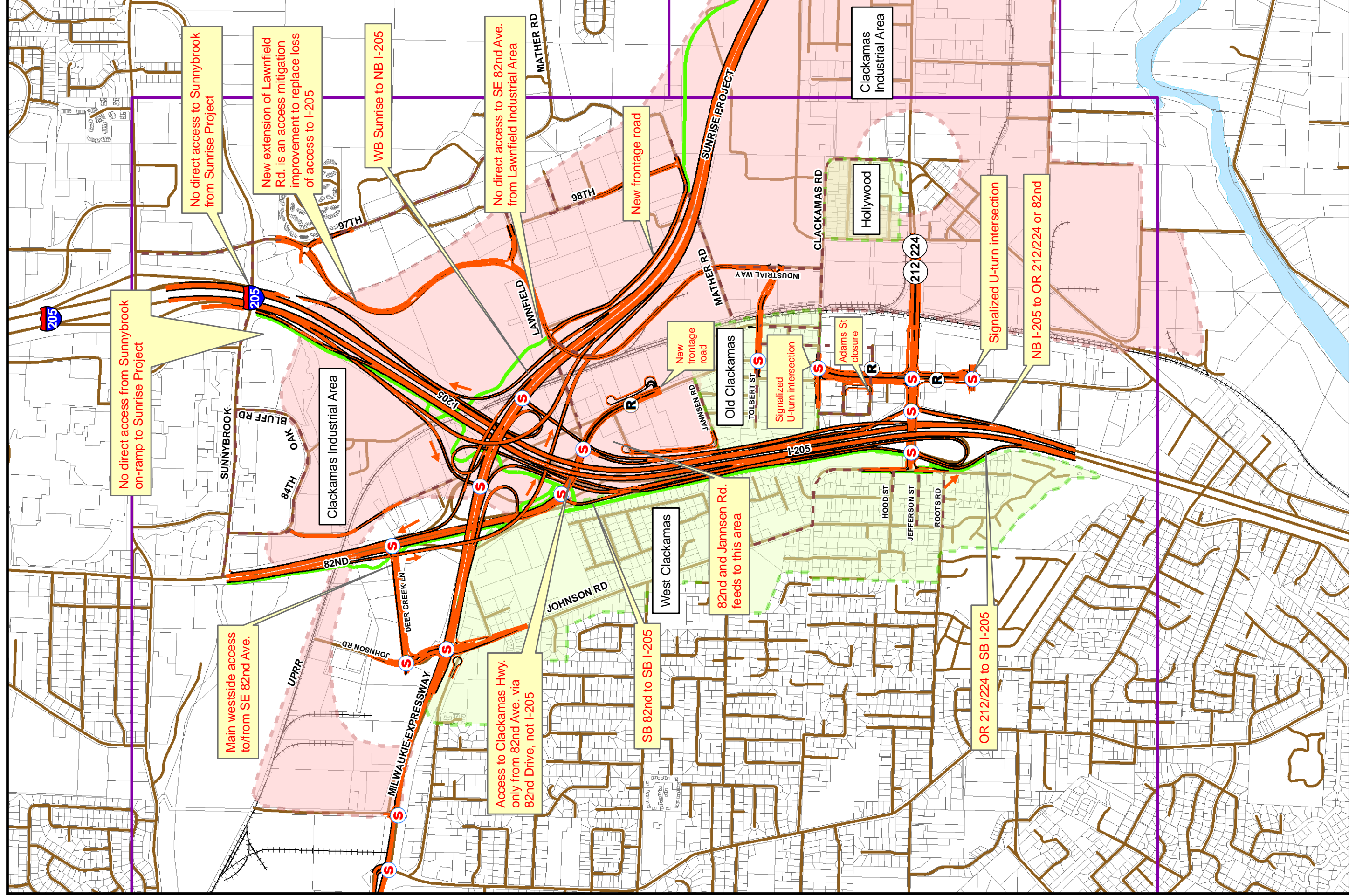


Figure 17

*Changes to Travel Patterns,
Design Option D-2 and D-3*

Sunrise Project, I-205 to Rock Creek Junction



800 400 0 800 Feet

Legend

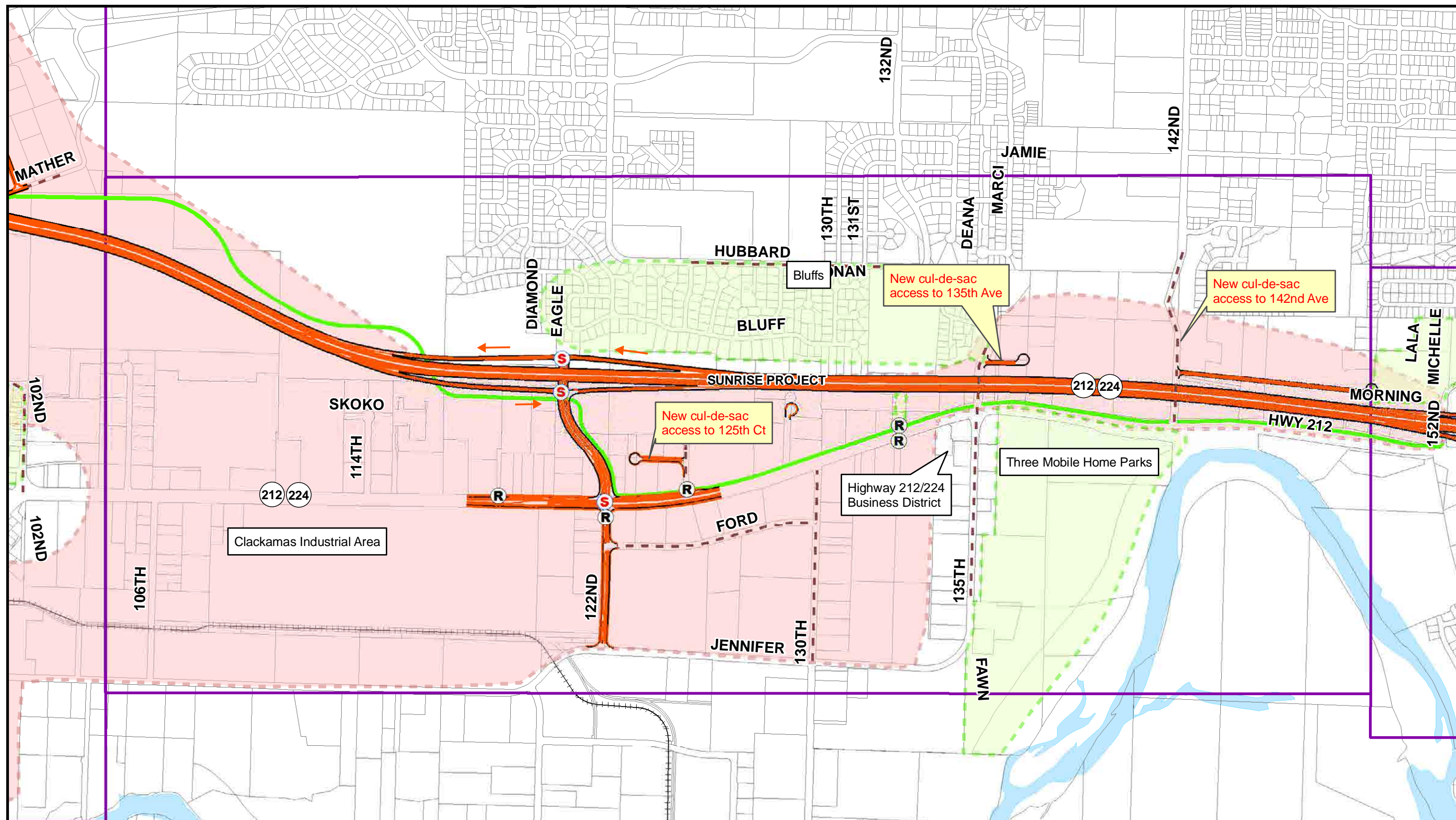
- Directional Traffic Flow
- Existing Street
- Multi-use Path
- Proposed Project
- Business Districts
- Neighborhoods
- Railroad
- Right-in, Right-out
- Interchange Area
- Boundary
- Signal

Figure PA-6

FEIS Preferred Alternative Travel Patterns, I-205 Interchange Area

Sources: ODOT and Metro, Portland OR

Printing Date: 3/24/2010 3:58 PM
 Filename: P:\O\DO\T00000648\0600\INFO\GIS\arcmap\FEIS_AltFigX_Traffic_Circulation_I205IntArea.mxd



1,000 0 1,000 Feet

Legend

- Right-in, Right-out
- Directional Traffic Flow
- Existing Street

- Neighborhoods
- Business Districts
- Midpoint Area Boundary

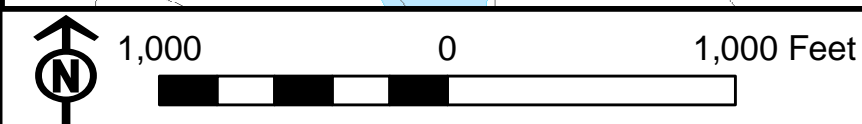
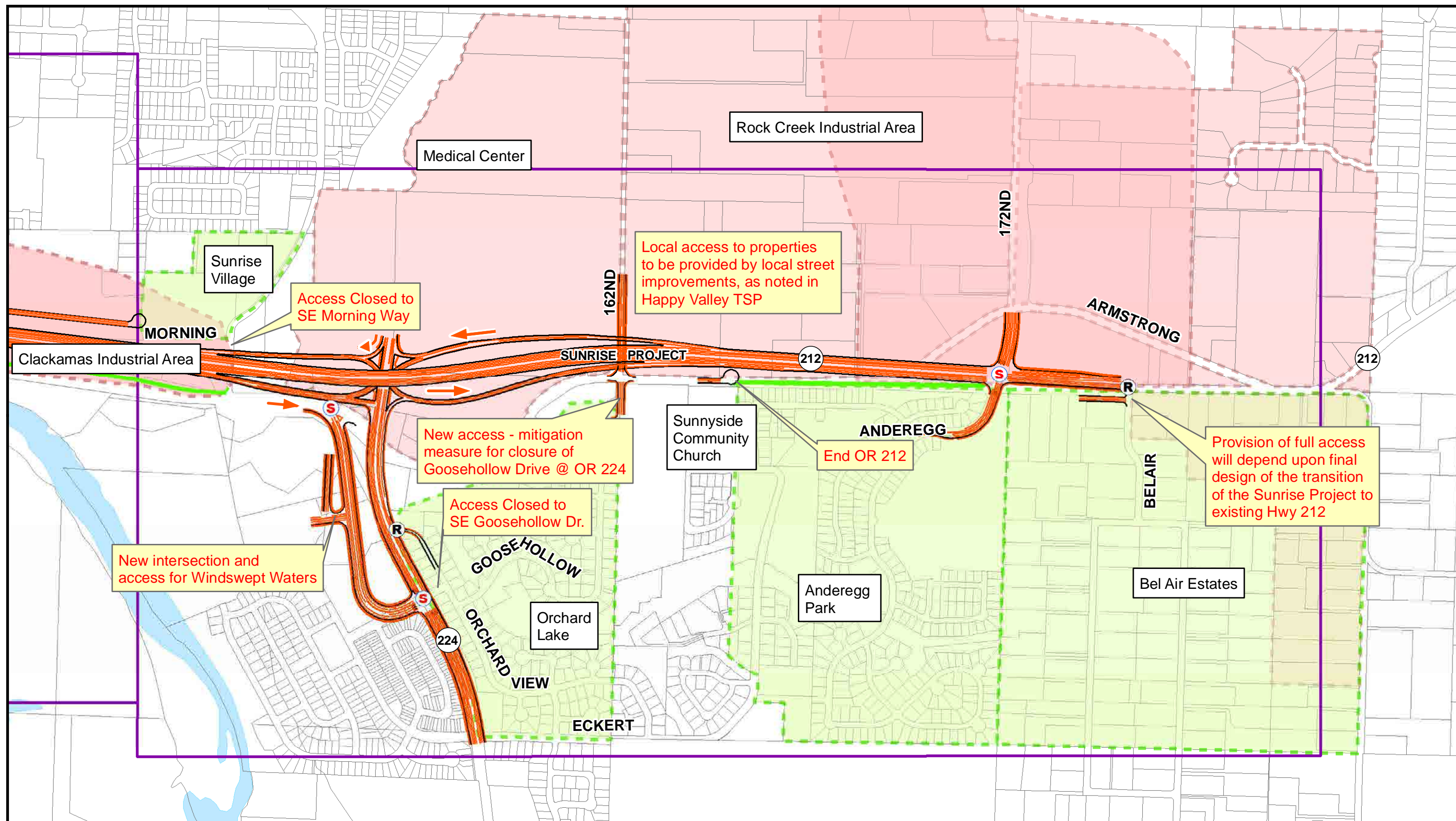
- Multi-use Path
- Proposed Project

- Schools
- Signal

Figure PA-7

Travel Patterns, Midpoint Area

Sunrise Project, I-205 to Rock Creek Junction



Sources:
ODOT and Metro, Portland OR

Printing Date: 4/28/2010 3:36 PM
Filename: P:\ODOT\00000648\0600\INFO\GIS\arcmap\FEIS_A\IFigX_Traffic_Circulation_RockCrkJctArea.mxd

Legend

- Directional Traffic Flow
- Existing Street
- Proposed Project

- Business Districts
- Neighborhoods
- Multi-use Path

- Right-out Only Access
- Signal

- Rock Creek Junction Area Boundary

Figure PA-8

Travel Patterns, Rock Creek Junction Area

Sunrise Project, I-205 to Rock Creek Junction

This page left intentionally blank

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

Transportation

The current traffic conditions and projected growth are driving the need for the 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 by 2030.¹⁹ 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.

The study area for the traffic analysis is larger than the anticipated right-of-way or construction limits of the Sunrise Project. It is bounded by the SE Sunnyside Road I-205 ramp terminals to the north, OR 212 at SE Anderegg Parkway to the east, SE Jennifer Street at SE 82nd Drive to the south, and Milwaukie Expressway (OR 224) at SE Webster Road to the west.

¹⁹ 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.

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

- Transportation study area boundary (Figure 5-1 in the technical report).
- 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.

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 212/224. 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.

OR 212/224 and the parallel roadways, such as SE Sunnyside Road, SE Sunnybrook Boulevard and SE 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 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, and back to free-flowing operations during the night. During a typical weekday, the congestion develops at four primary locations:

- 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).
- OR 212 near SE 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 SE 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 SE Sunnyside Road I-205 ramp terminals to the north, OR 212 at SE Anderegg Parkway to the east, SE Jennifer Street at SE 82nd Drive to the south, and OR 224 at SE 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 intersection of SE Clackamas Road at SE 82nd Drive was a top 10 percent SPIS location for Clackamas County.

SE 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 SE Adams Street from SE 82nd Drive in order to reach the U.S. Post Office on SE 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.

A 2010 safety analysis was conducted to reflect more recent crash data provided by the ODOT Crash Analysis and Reporting Unit for years 2005 through 2009. Along OR 212/224 from I-205 to Rock Creek Junction, 582 crashes were reported from 2005 through 2009.

Approximately 25 percent of crashes involved injuries, including two fatalities. There has been a moderate reduction since the previous (1998 through 2002) analysis in injury-related crashes

throughout the corridor. Approximately 75 percent of crashes were turning or rear-end related, consistent with high-volume, multi-lane, signalized roadways.

The intersection of SE 82nd Drive at OR 212/224 continues to operate with a high crash rate, but shows a significant improvement in recent years, which is likely a result of intersection modifications that have occurred.²⁰

Safety performance from 2007 through 2009 has placed segments of OR 212 east of Rock Creek Junction, I-205 between milepoints 12.0 and 15.0, and Milwaukie Expressway (OR 224) near I-205, in the top 10 percent of the SPIS. However, Clackamas County no longer ranks any of the study area locations on their top SPIS list.

An analysis of bicycle facilities in the study area revealed them generally to be fair to good in terms of their presence and condition. SE McKinley Avenue, SE Mather Road, SE Jennifer Street, and SE 82nd Drive have worse conditions because of intersections that are difficult to navigate, sections that are incomplete, or bike lanes that are too narrow. An analysis of pedestrian facilities in the study area revealed them generally to be fair to good in terms of their presence and condition (see Figure 5, in Executive Summary). SE Hubbard Road, SE 135th Avenue, SE Jennifer Street, SE Mather Road, and SE 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

For **Alternatives 1, 2, and 3**, Figures 20 through 25 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. Figures PA-9 and PA-10 illustrate forecasted traffic congestion under the **Preferred Alternative**.

Table 7 compares the differences in transportation impacts for **Alternatives 1, 2, 3**, and the **Preferred Alternative** using different measurements, such as travel speed, delays, intersections that exceed acceptable volume-to-capacity ratios, 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. For example, over 80 percent of intersections modeled for the **No Build Alternative** would have a “failing” level of service. Figures 20 and 21 illustrate the traffic congestion predicted for 2030 under **Alternative 1** during the peak travel periods, one hour in the morning and one hour in the evening.

Figures 22 through 25 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 8 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 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 9 provides travel times for all trips between selected destinations. Travel

²⁰ Section 5.6 of the Transportation Technical Report documents the safety research for this FEIS.

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). Intersections that are predicted to be at failing levels of service would be over 50 percent of all intersections studied, except for **Alternative 2** in the PM peak hours.

Preferred Alternative

The transportation system features of the **Preferred Alternative** and **Alternative 2** are substantially the same and the transportation

system performance for automobile, freight, and transit users are the same, as summarized in Table 7.

One notable exception, however, is the number of failing intersections predicted. The improvements associated with the **Preferred Alternative** result in roughly half as many intersections operating at a failing level of service than any of the previous three alternatives studied.

Enhanced benefits provided by the **Preferred Alternative** for bicyclists and pedestrians are summarized later in this section.

Table 7. Transportation Effects, 2030

Transportation Measure	Alternative 1—No Build	Alternative 2	Alternative 3	Preferred Alternative
Average Travel Speed	7-8 mph slower than existing	3 mph faster than Alternative 1	3 mph faster than Alternative 1	3 mph faster than Alternative 1
Vehicles in Peak Hour	4,440	12,400	11,600	12,400
Vehicle Hours Delay, AM Peak	+ 130% AM peak compared to existing	- 2% compared to Alternative 1	- 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	- 35% compared to Alternative 1
Congested Hours on Roadway	9	4	5.5	4
Intersections Not Meeting Oregon Highway Standards¹	19 in AM, 20 in PM out of 24 (~81%)	18 in AM, 10 in PM out of 32 (~44%)	20 in AM, 15 in PM out of 30 (~58%)	11 in AM, 4 in PM out of 35 (~43%)
Percent Lane Miles Congested in PM Peak	11%	9%	10%	9%

¹ Overall intersection will operate at LOS F during at least one out of the two hours in the peak period.

**Table 8. 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	SE Jennifer St.	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
		Pref. Alt.	0.33	0.50	0.52	0.44
	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
		Pref. Alt.	0.87	0.77	0.54	0.87
	SE Sunnyside Rd.	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
		Pref. Alt.	1.02	0.52	0.67	1.05
	SE Otty Rd.	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
		Pref. Alt.	0.86	0.32	0.22	0.77
			SB	NB	SB	NB
North/South	SE 82 nd Ave.	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
		Pref. Alt.	0.88	0.85	0.81	0.96
	I-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
		Pref. Alt.	1.04	0.85	0.76	1.02
	SE 129 th Ave.	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
		Pref. Alt.	0.66	0.65	0.56	0.56
	SE 145 th Ave.	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
		Pref. Alt.	1.34	0.60	0.27	1.67
	SE 172 nd Ave.	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
		Pref. Alt.	1.03	0.95	0.85	1.09

Note: Numbers highlighted in Table 8 are v/c ratios that exceed 1.0, indicating a failing condition.

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 SE 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 Sunrise Project will change travel patterns on local roads, as discussed in the description of the alternatives in this FEIS under the heading “How New Connections Will Be Made” (Chapter 2). Figures 10 through 17 illustrate the changes to travel patterns. Rerouting trips from parallel roads could also create localized congestion where the Sunrise Project would link to the existing system, particularly at the end points near SE Johnson Road and Rock Creek Junction.

Preferred Alternative

The **Preferred Alternative** and **Alternative 2** change travel patterns in similar ways. However, the **Preferred Alternative** includes several important refinements that will enhance

local access and mobility compared to **Alternative 2**.

The **Preferred Alternative** has three westbound lanes to provide more capacity in the transition to the Milwaukie Expressway and I-205. SE 82nd Drive and its intersection with OR 212/224 will have a dedicated westbound right-turn lane and all left turns will be restricted. To compensate for that restriction, opportunities for u-turns will be provided north and south of the intersection. Based on stakeholder input and traffic refinements, the following additions to the **Preferred Alternative** were made in the Rock Creek Junction area to provide for reasonable community access:

- A right-out-only access at the end of SE Orchard View Lane to northbound OR 224 will be created. **Alternative 2** had north SE Orchard View Lane as a cul-de-sac, with no access to/from OR 224.
- A connection between SE 162nd Avenue and SE Goosehollow Drive south of OR 212 will be created at the northeast corner of the Orchard Lake neighborhood.

Transit system

Transit improvements under **Alternative 1—No Build** would consist mostly of modest increases in service hours identified in the 2035 financially constrained RTP. Current regional plans identify SE 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 2035 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 SE Sunnyside Road, and new express bus service along the proposed Sunrise Project between the Clackamas Transit Center and Damascus Town Center.

Preferred Alternative

The **Preferred Alternative** will provide the same transit service improvements as those identified for **Alternatives 2 and 3**. Because the **Preferred Alternative** also includes the third westbound lane along OR 224, transit reliability will be enhanced by improving overall westbound traffic flow.

Bicycle and pedestrian system

Under **Alternative 1**, the bicycle and pedestrian system would maintain the existing roadway system except for the planned roadway improvements by ODOT and Metro. Although the roadway widening projects for SE 82nd Drive and SE 172nd Avenue is directly related to the bicycle and pedestrian networks, it is likely that they 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.
- Providing potential connections to the neighborhood directly to the west of I-205.

Preferred Alternative

In addition to the bicycle and pedestrian facilities included in **Alternatives 2 and 3**, the **Preferred Alternative** will extend the Sunrise Project multi-use path from SE 122nd Avenue approximately two miles farther east to Rock Creek Junction.

I-205 Interchange Design Option A-2

Under **Alternatives 2 and 3**, the alignment of the proposed Sunrise Project would sever the connection of SE Lawnfield Road to SE 82nd Drive and eliminate the existing northbound on-ramp to I-205 at SE Lawnfield Road. To replace the loss of this on-ramp, a new North Lawnfield Extension 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 Extension 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.

Preferred Alternative

In the I-205 Interchange area, the **Preferred Alternative** consists of **Alternative 2** with the addition of the Tolbert overcrossing from **Design Option A-2**. The Tolbert overcrossing will directly link the Lawnfield area and SE 82nd Drive corridor businesses. This improvement will allow drivers to avoid out-of-direction travel via OR 212/224 (in comparison to **Alternatives 2 and 3**). Connecting the existing north and south sections of the I-205 multi-use path will provide a continuous and separated pathway, thus alleviating the need for users to transition to use of heavily traveled SE 82nd Drive.

The third westbound lane on OR 212/224 from I-205 to SE 98th Court will enhance westbound mobility by allowing users to better disperse among available travel lanes based on their destination. This improvement will reduce congestion-related queuing and improve travel times.

The **Preferred Alternative's** western transition to the Milwaukie Expressway will be widened to three westbound lanes (in comparison to **Alternatives 2 and 3**) within the existing OR 224 right-of-way. The additional third lane will be

extended to the west through SE Webster Road and result in reduced congestion-related queuing and improved travel times and reliability. Additionally, the project will improve mobility and safety by closing SE Lake Road with a cul-de-sac at SE Johnson Road to address existing access spacing deficiencies at this location.

SE 82nd Drive and its intersection with OR 212/224 will be expanded to improve overall mobility and safety. Restricting all left turns at this intersection, providing u-turn opportunities through signalized intersections north and south of OR 212/224, and adding a raised median will substantially increase intersection capacity and reduce congestion-related queuing, and improve travel times along both corridors (see Table 9, Travel Times, on the following page).

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 SE 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 SE 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 SE Sunnyside Road destined to SE 122nd Avenue at OR 212/224. Under **Alternative 2**, these trips would exit I-205 directly onto a flyover 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 SE Goosehollow 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.

Preferred Alternative

In the Midpoint area, the **Preferred Alternative** consists of **Alternative 2**, the tight diamond interchange at SE 122nd Avenue with a connection to OR 212/224 at SE 122nd Avenue, and **Design Option C-2**, the southernmost alignment between the Midpoint and Rock Creek interchanges. The transportation benefits associated with having a midpoint interchange are the same as those summarized for **Alternative 2**.

Table 9. Travel Times Between Select Districts (Minutes, 2030)

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

Note: Numbers in Table 9 are from the Metro travel demand model and are not directly comparable to the congestion influence diagrams on Figures 20 through 25.

In response to stakeholder input, the **Preferred Alternative** includes an extension of the Sunrise Project multi-use path from SE 122nd Avenue farther east along OR 212/224 to the Rock Creek Interchange. This will allow connection to existing and planned future trails near Rock Creek and accommodates trail users along a dedicated non-motorized pathway separated from automobiles.

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.

Preferred Alternative

In the Rock Creek Junction area, the **Preferred Alternative** consists of **Design Option D-3**, the SPUI. In addition, the eastern leg of the SE Goosehollow Drive/ OR 224 intersection will be closed to improve overall intersection capacity, operations, and safety. This closure will substantially increase intersection capacity and reduce congestion-related vehicle queuing

along OR 224. The **Preferred Alternative** will provide reasonable alternative access into and out of the Orchard Lake neighborhood by providing:

- A right-out-only access at the end of SE Orchard View Lane to northbound OR 224.
- A connection between SE 162nd Avenue and SE Goosehollow Drive south of OR 212 at the northeast corner of the Orchard Lake neighborhood.

Consistency with Transportation Plans and Policies

Alternatives 1, 2, and 3

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 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 East Happy Valley Comprehensive Plan and the Happy Valley Transportation System Plan.

Preferred Alternative

The **Preferred Alternative** is consistent with the adopted state, regional, and local plans and policies, as described above for **Alternatives 2 and 3**.

Mitigation Measures for the Preferred Alternative

Design Refinements

Several refinements were added to the **Preferred Alternative** to mitigate for predicted impacts that were not addressed by **Alternative 2** and the design options alone. These refinements are presented below.

To reduce queuing of westbound traffic that is otherwise predicted to occur from SE Webster Road to I-205, the western transition to the Milwaukie Expressway will have three westbound lanes instead of two and extend to the west through SE Webster Road.

A dedicated westbound right-turn lane will be added at SE 82nd Drive and OR 212/224.

SE 82nd Drive and its intersection with OR 212/224 will be expanded and circulation reconfigured to improve overall mobility. All left turns will be eliminated. To accommodate those restricted left turns, drivers will turn north or south at the intersection and make U-turns (including trucks) on SE 82nd Drive to head in the direction they intend.

SE 82nd Drive will be widened from three to five lanes between the Fred Meyer store and SE Clackamas Road and a new signal installed at the intersection of SE 82nd Drive and SE Clackamas Road for the U-turn movement there.

SE 162nd Avenue will be extended south of OR 212 to connect with SE Goosehollow Drive

to mitigate the closure of SE Goosehollow Drive at OR 224.

A right-out (northbound) only exit from the Orchard Lake neighborhood on SE Orchard View Lane adds another access point to mitigate the closure of SE Goosehollow Drive at OR 224.

To avoid lengthy queues of westbound traffic on the Sunrise Project/OR 224 between the I-205 interchange and SE Webster Road, a third westbound lane will be added.

The intersection of SE Johnson Road and Deer Creek Lane will be revised by maintaining the existing intersection location and roadway alignments to minimize impacts to local businesses.

New frontage roads with driveways will be built for local businesses along OR 224 (south of Rock Creek Junction), near 125th Court, and near SE 82nd Drive. The frontage roads mitigate for closures or turning movement restrictions that will occur at those locations.

Bike and pedestrian access will be built between SE Adams and SE 82nd Drive to better accommodate the high demand of bicyclists and pedestrians accessing the post office from SE 82nd Drive.

A connection between SE Ambler Road and SE Jasmine Lane will be built on a structure over the rail corridor to improve circulation for businesses in that area. This allows for the businesses west of I-205 and east of SE 82nd Avenue to have access to their properties. Building the connection on a structure avoids impacting the rail corridor.

Cul-de-sacs constructed at several locations—Hubbard Road, SE 142nd Avenue, SE 162nd Avenue, and SE 82nd Drive—will become parts of new access roads and will mitigate either closure of existing accesses, or provide turn-around points due to closure of existing intersections or roadways.

A local circulation road will be constructed between SE Adams and SE St. Helens along SE

82nd Drive to mitigate for turning movement restrictions or closures of some driveways and intersections on SE 82nd Drive.

Traffic analysis will be conducted to determine if signal warrants will be met at SE 82nd Drive at SE Jannsen Road prior to construction.

Exceptions

While the **Preferred Alternative** provides the highest degree of capacity, access, and travel performance, some locations will not operate within ODOT's mobility standards (based on v/c ratio). Similar to **Alternatives 2** and **3**, specific design exceptions (albeit a smaller number of them) will be required by ODOT where the **Preferred Alternative** will not meet mobility standards. ODOT has the list of likely design exceptions and FHWA and ODOT would need to approve any design exceptions.

The established ODOT design exception process followed during the planning/EIS-level stage of project development entails informal coordination with ODOT Technical Services Division (Salem), and FHWA staff (as appropriate). The emphasis at this stage of planning and preliminary design (5-25 percent-complete engineering) is primarily intended to identify potential constraints (topographic, avoidance of environmental resources, etc.), related to issues of geometry and safety, that may require a future design exception.

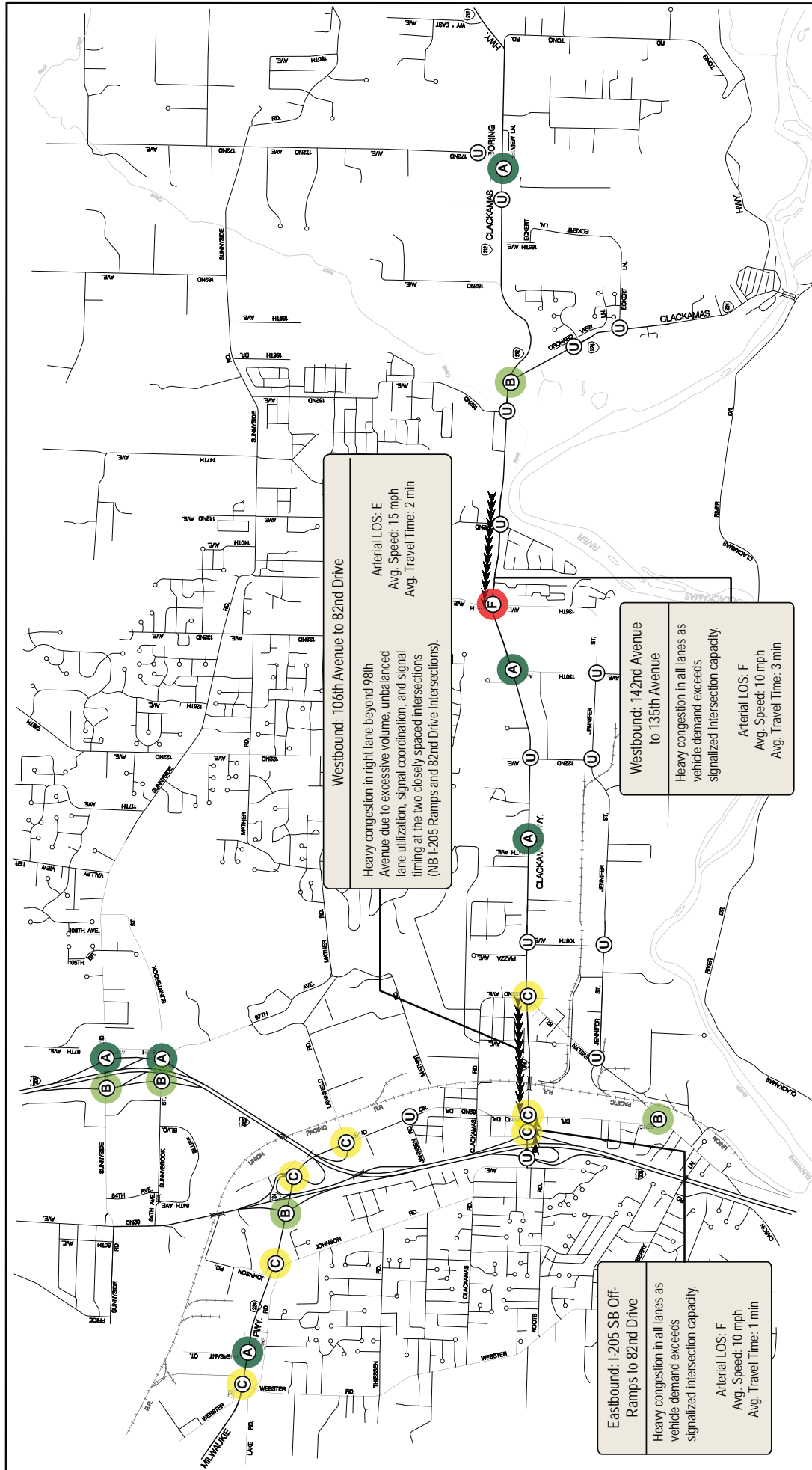
This process entails the following steps:

- ODOT project designers identify a package of possible/potential design exceptions;
- The package of potential design exceptions is submitted to Technical Services Division for discussion;
- ODOT Technical Services Division staff may discuss selected design exceptions with FHWA for further informal discussion; and
- The package of potential design exceptions is on file at ODOT Region 1 for later review during project development.

The package of potential design exceptions has been reviewed by Ed Fischer, State Traffic Roadway Engineer, and selected design

exceptions discussed informally with FHWA (Jeff Graham).

Mobility exceptions are a function of operational performance (volume/capacity ratio, queuing, delay, etc.) of the new facility and its interface with existing roadway network. The project team has identified a number of mobility exceptions associated with the Sunrise Project—on the Sunrise Project and adjacent, existing facilities. The mobility exceptions are identified in Appendix N of the Transportation Technical Report.



LEGEND:

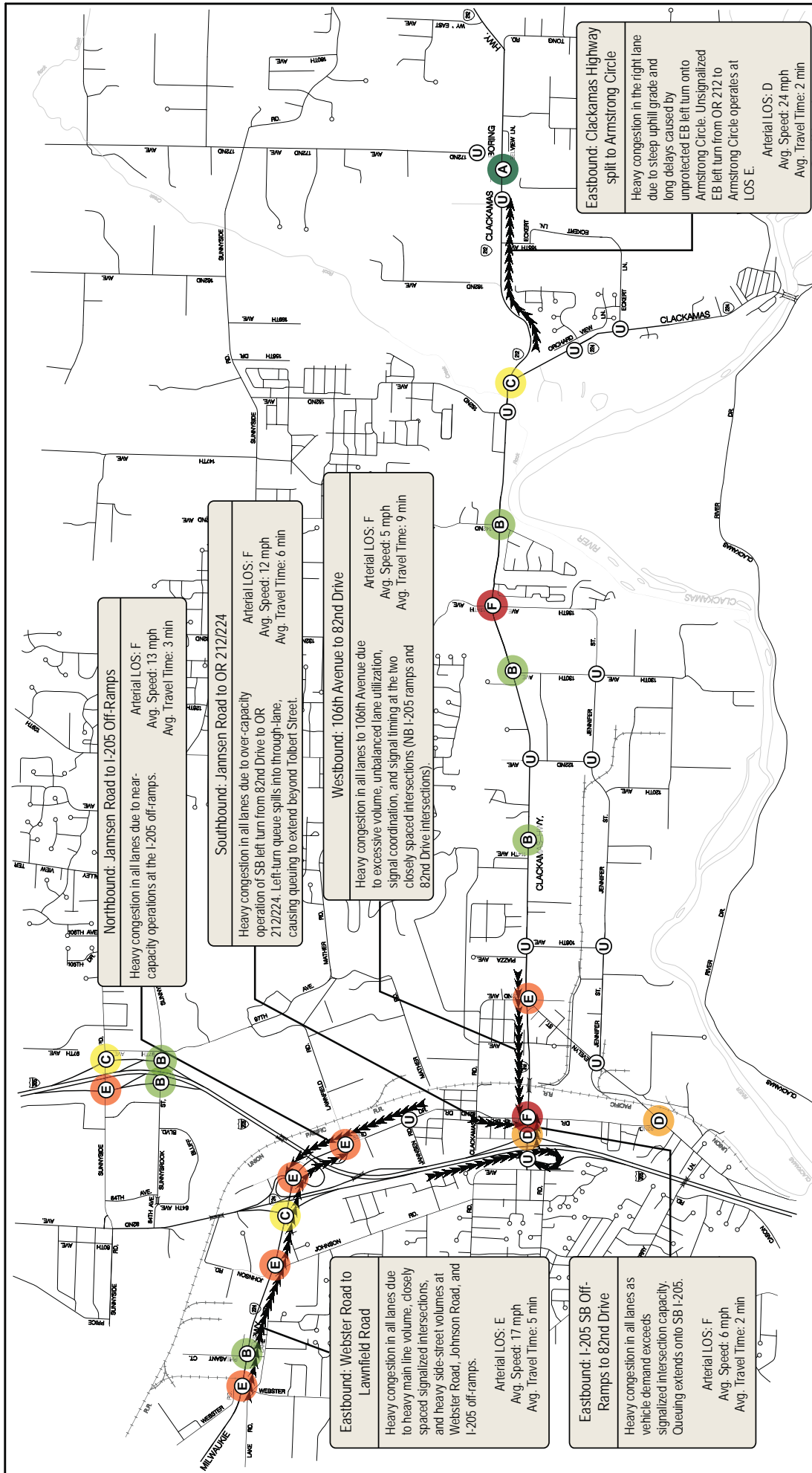
- Congested Travel Direction
- Secondary Congestion
- Unsignalized Intersection

Signalized Intersection Level of Service (LOS)



Figure 18

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



LEGEND:

- Congested Travel Direction
- Secondary Congestion
- Unsignalized Intersection
- Signalized Intersection Level of Service (LOS) A
- Signalized Intersection Level of Service (LOS) B
- Signalized Intersection Level of Service (LOS) C
- Signalized Intersection Level of Service (LOS) D
- Signalized Intersection Level of Service (LOS) E
- Signalized Intersection Level of Service (LOS) F

Figure 19

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

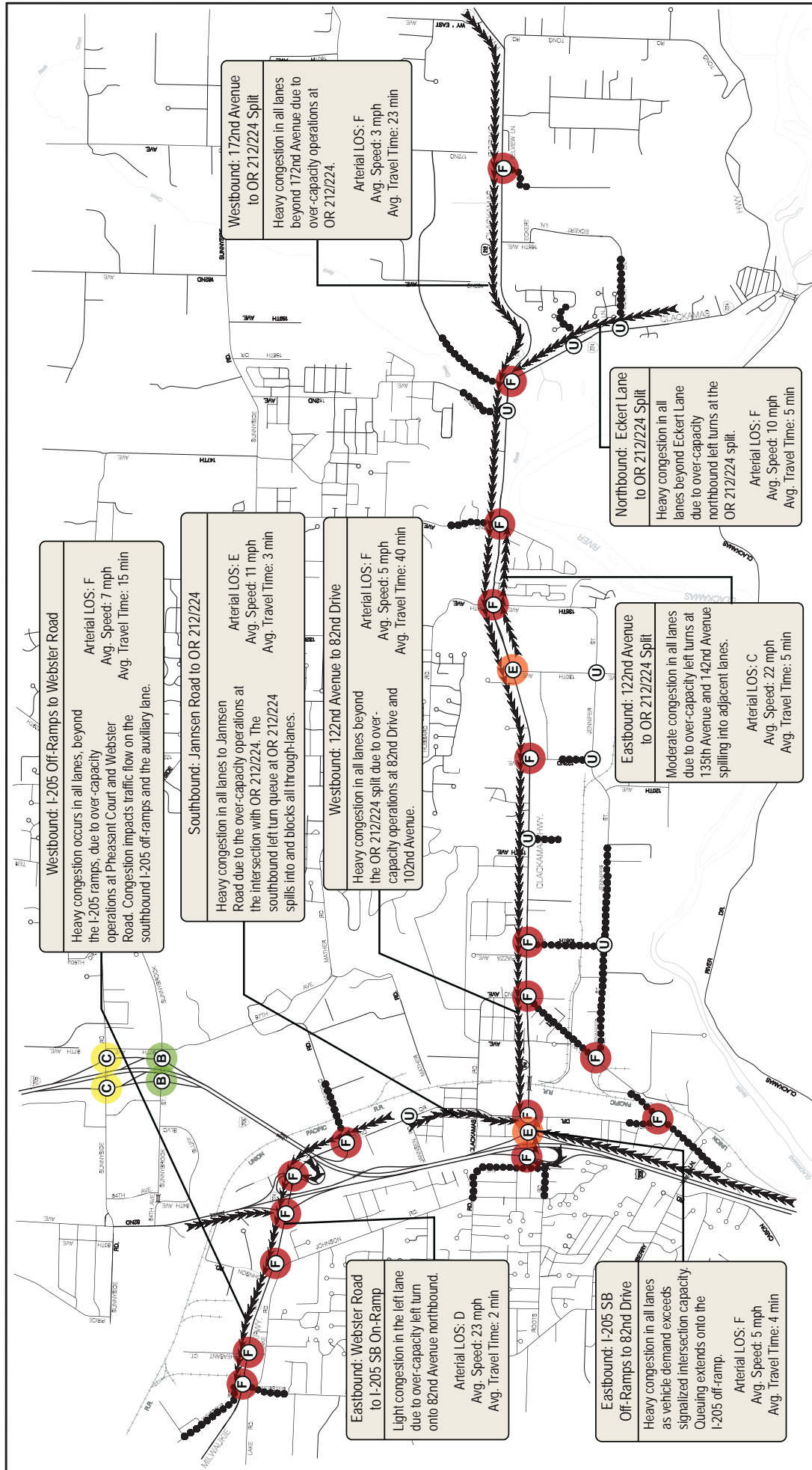


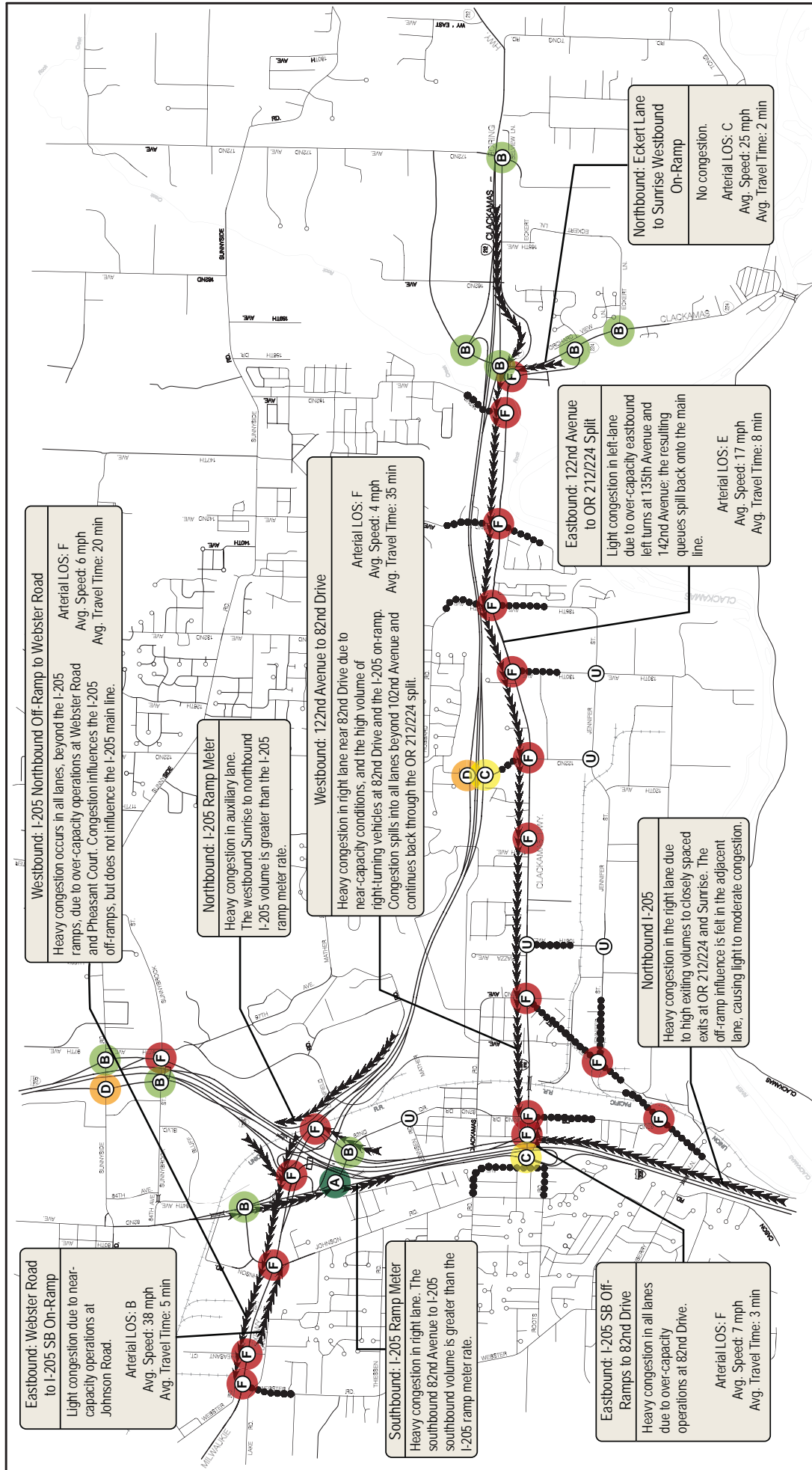
Figure 20

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

LEGEND:

Signalized Intersection Level of Service (LOS)

Congested Travel Direction
 Secondary Congestion
 Unsignalized Intersection



LEGEND:

- Congested Travel Direction
- Secondary Congestion
- Unsignalized Intersection

Signalized Intersection Level of Service (LOS)

- A
- B
- C
- D
- E
- F

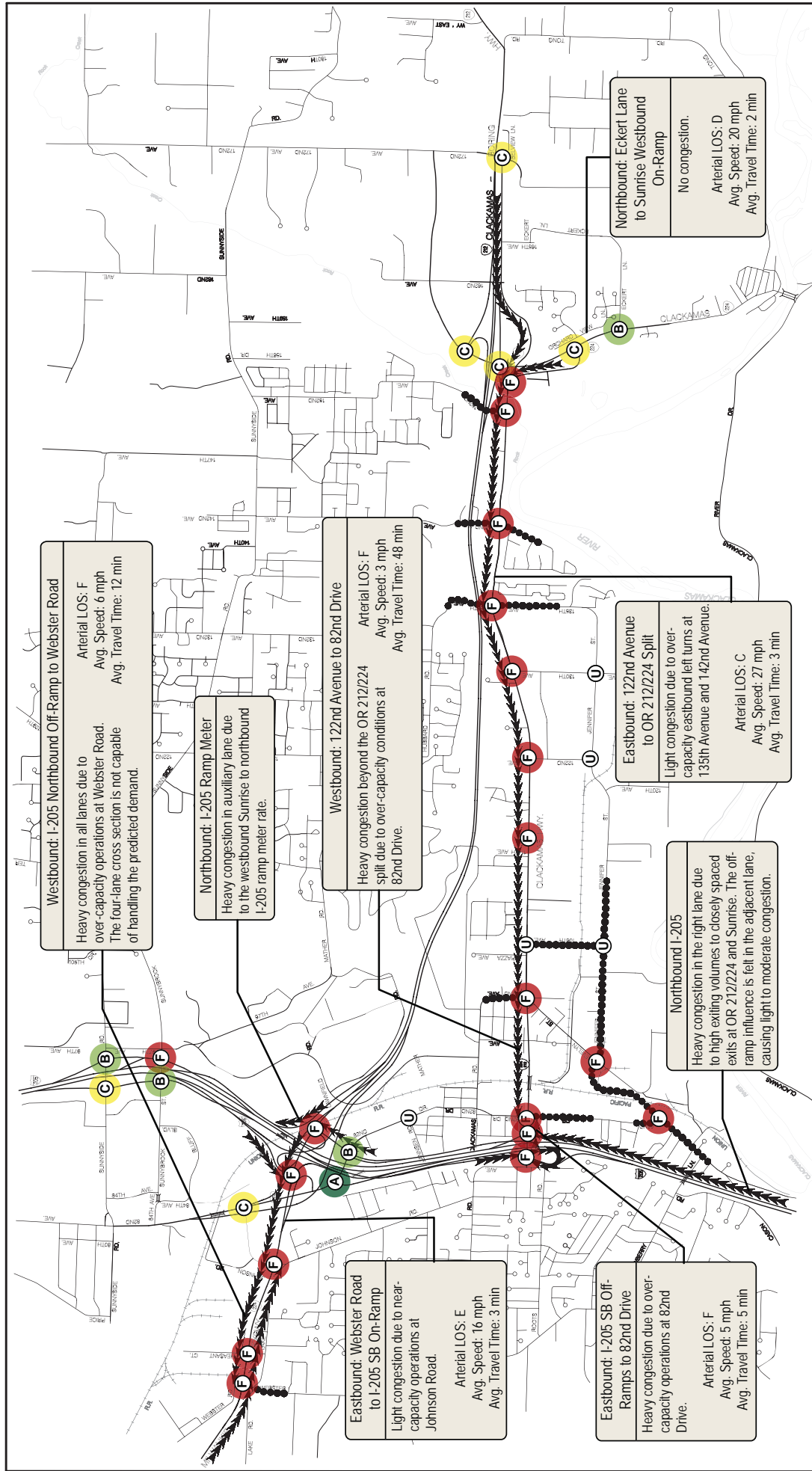
Figure 21

Alternative 2

Projected Congestion (2030)

7:00 - 8:00 AM

Sunrise Project, I-205 to Rock Creek Junction



LEGEND:

- Congested Travel Direction
- Secondary Congestion
- Unsignalized Intersection

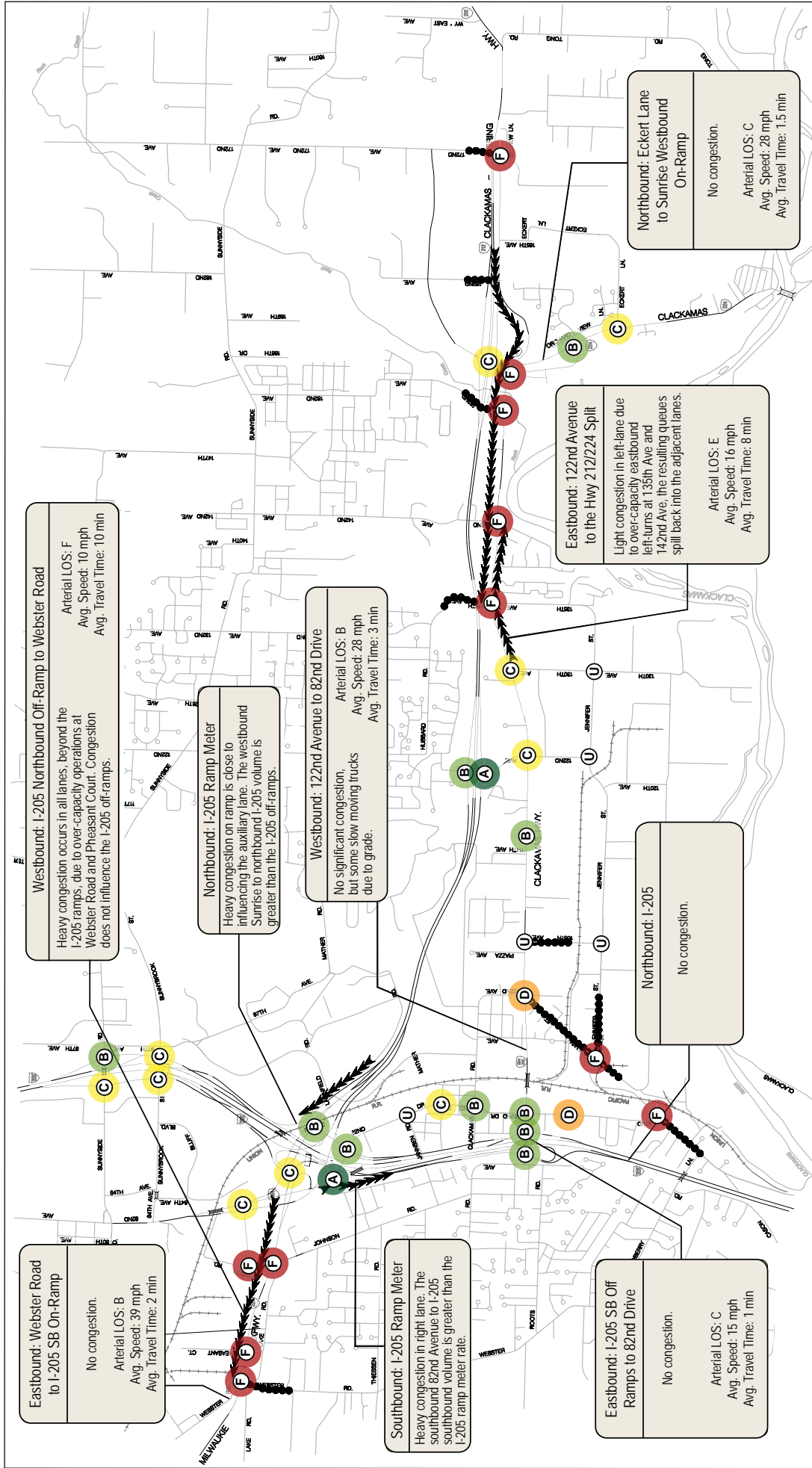
Signalized Intersection Level of Service (LOS)

- A
- B
- C
- D
- E
- F

Figure 22

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

Sunrise Project, I-205 to Rock Creek Junction



LEGEND:

- Congested Travel Direction
- Secondary Congestion
- Unsignalized Intersection
- Signalized Intersection Level of Service (LOS)

Figure PA-9

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

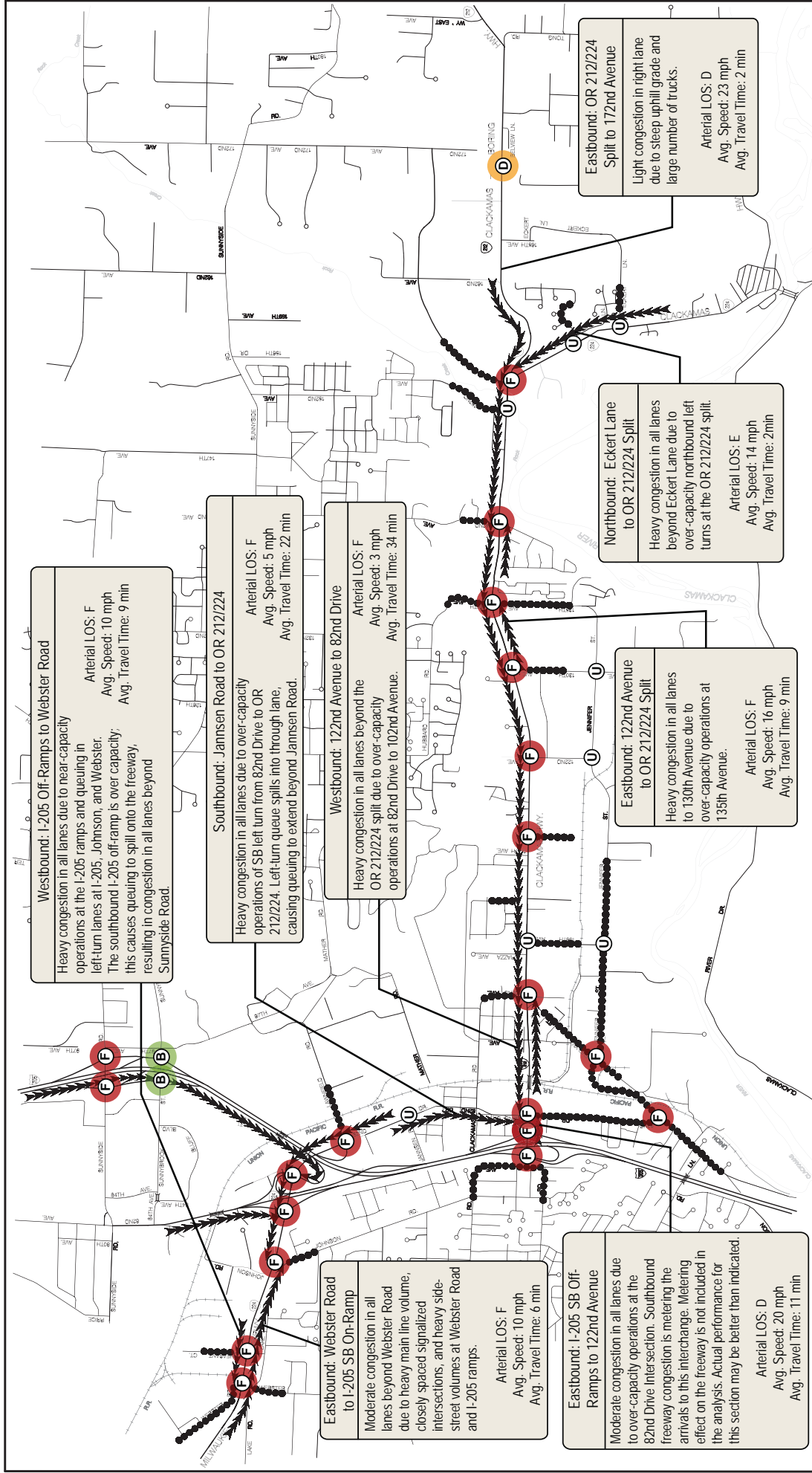


Figure 23

Alternative 1

Projected Congestion (2030)

4:30 - 5:30 PM

Signalized Intersection Level of Service (LOS)

A B C D E F

LEGEND:

➔ Congested Travel Direction

●●● Secondary Congestion

U Unsignalized Intersection

Note:

Average speed rounded to the nearest mile per hour.

Travel time rounded to the nearest 15 seconds.

Sunrise Project, I-205 to Rock Creek Junction

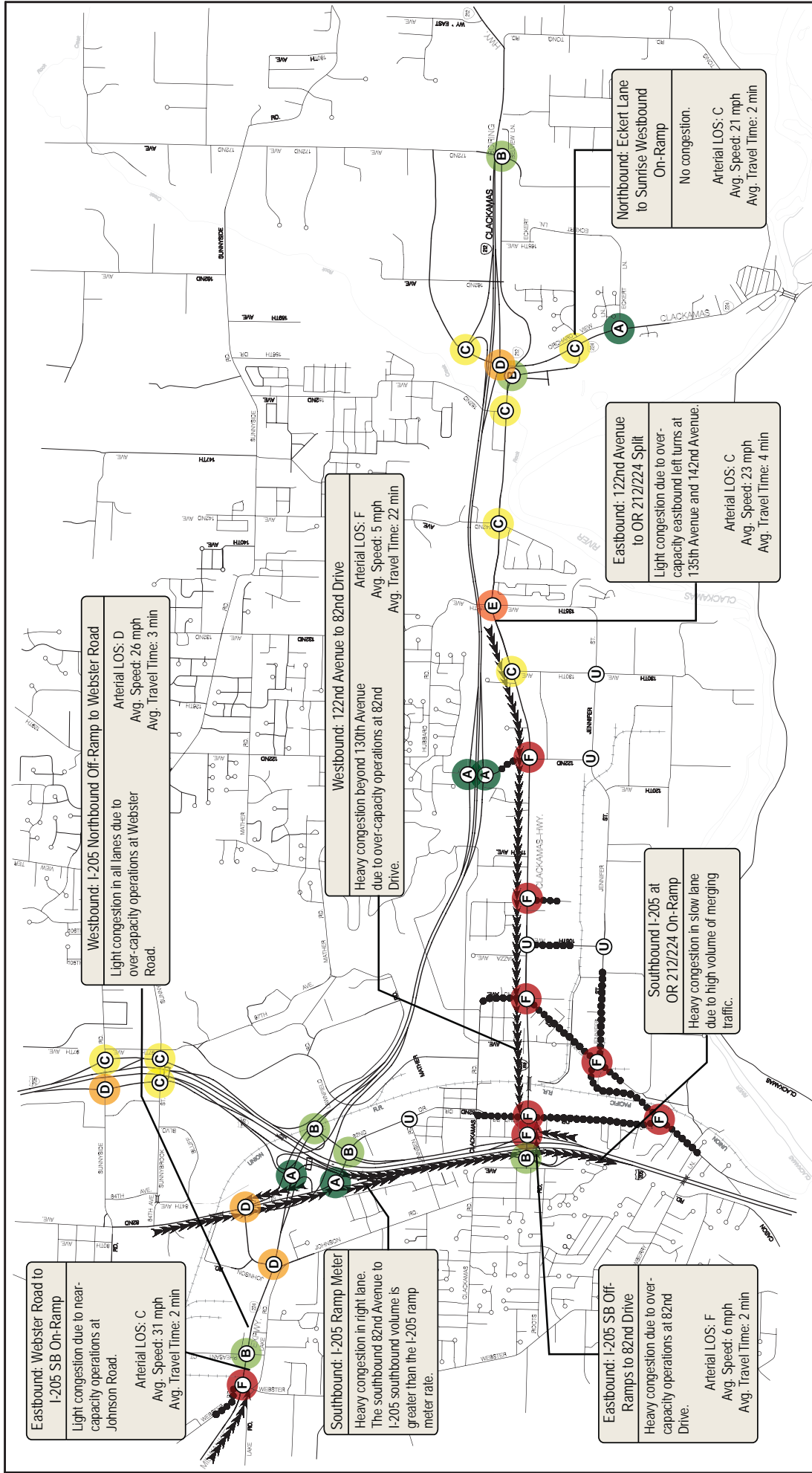


Figure 24

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

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

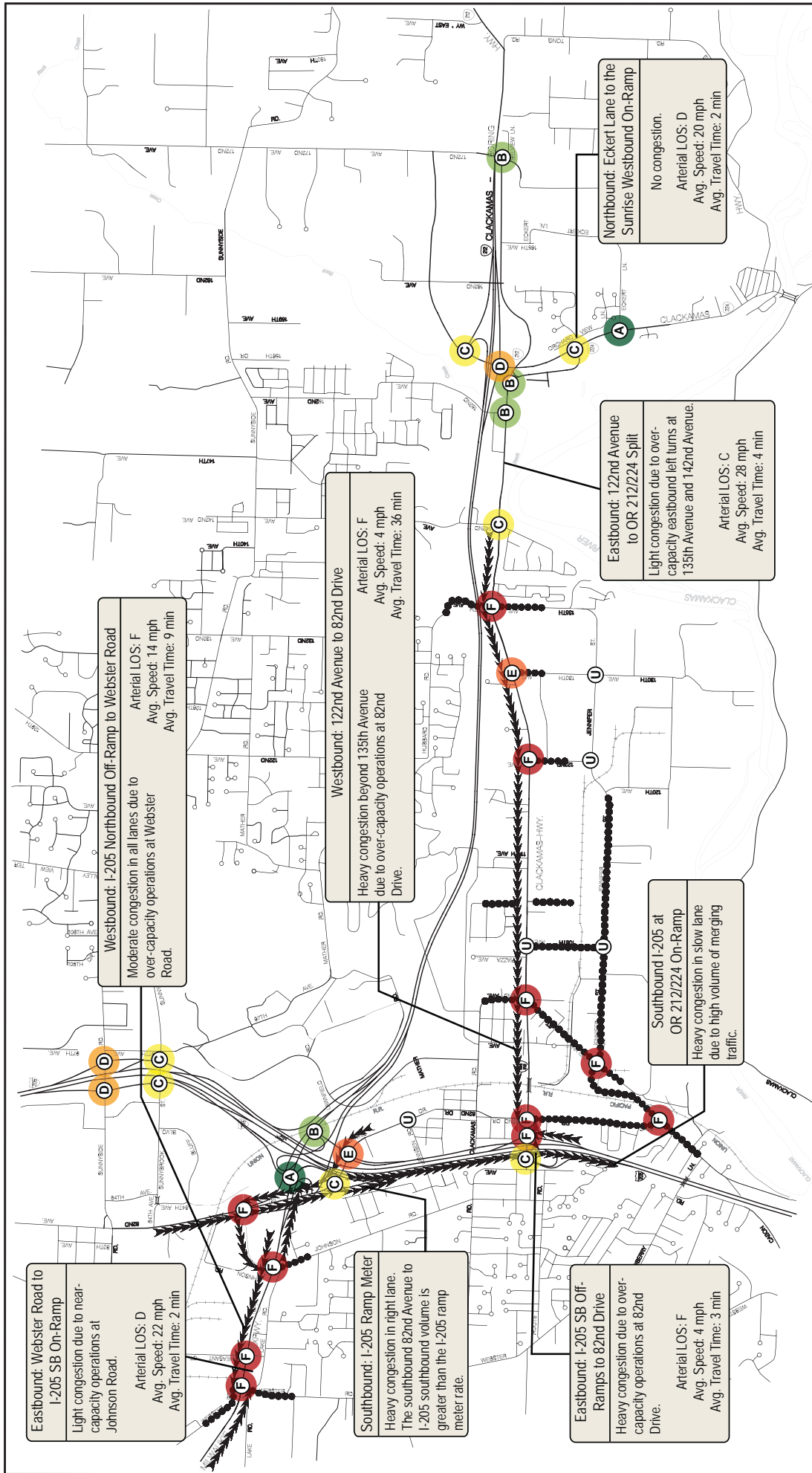


Figure 25

Alternative 3

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

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



Sunrise Project, I-205 to Rock Creek Junction

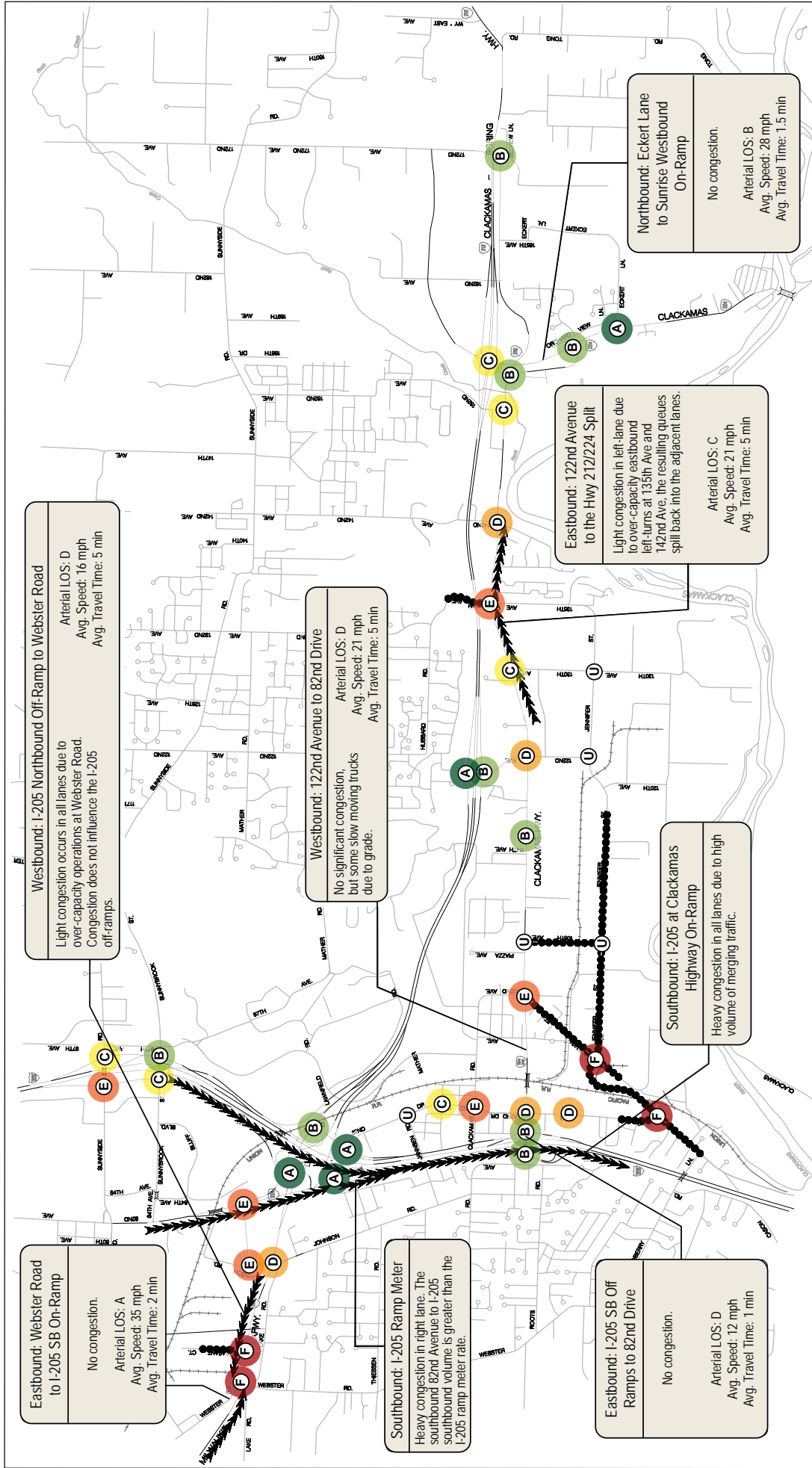


Figure PA-10

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

LEGEND:

- Congested Travel Direction
- Secondary Congestion
- Unsignalized Intersection
- Signalized Intersection Level of Service (LOS)

This page intentionally left blank.

Land Use

Constructing the 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.

Existing land uses are shown on Figure 26 and the zoning designations on Figure 27. An inventory of existing land uses in and adjacent to the project area grouped land uses into four general land use categories: residential, employment, vacant, and other (e.g., agricultural, public facilities). The inventory revealed that employment uses dominate, with 32 percent of the land area in industrial, office, and warehouse uses, primarily in the I-205 Interchange and Midpoint areas.²¹ Dispersed throughout the corridor, multi-family 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 of the study area, 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.

Generally, the existing land uses in the 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

²¹ 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.

The Land Use and Right-of-Way technical reports 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.

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

Out of 5,735 dwelling units in the land use study area, the build alternatives would displace from 43 to 75 dwelling units. From 57 to 80 businesses would be displaced (see Business and Communities Section). Table 10 presents a summary of information on potential land use impacts. Figures PA-11 through PA-15 show the lots that are expected to be impacted by the **Preferred Alternative**. In Appendix D, Figures 28 to 39 and the land use impacts table (Table D-1) provide estimates of specific impacts by tax lot. The property ID numbers on

the Figures correspond to the ID numbers in Table D-1. Information is the best available at this current stage of preliminary design, and the specific amount of right-of-way acquisition and the lots impacted will be more precise following completion of final design.

The Sunrise Project build alternatives were developed to minimize impacts on the communities and the businesses in 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 are relatively modest when compared to a land use study area that contains about 4,400 acres and 5,345 residential units. For example, the total amount of land converted to right-of-way would be between 12 percent and 15 percent of the land in the land use study area. The range of housing units displaced is from 53 to 75 or under 1.5 percent of the total housing units in the study area.

Comparison of Land Use 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**.

Alternatives 2 and **3** would displace 72 dwelling units—14 single-family, 24 multi-family, and 34 manufactured home units. Table 10 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 **Alternative 2** and **3** 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 **Alternatives 2** and **3**, 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, 342 acres were in the 'other' land use category, most of which were vacant.

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

- Most of the impacts from **Alternatives 2** and **3** are in the I-205 Interchange area, where most of the employment land is.
- Overall, **Alternative 2** would remove 133 acres of employment zoned land (11 percent) for right-of-way and **Alternative 3** would remove 117 acres (10 percent) of employment zoned land.
- The differences in the impacts between **Alternatives 2** and **3** are in the Midpoint area, where **Alternative 2** would remove about 20 percent of employment land and **Alternative 3** would remove about 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**.



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

	Alt. 2	Alt. 3	Pref. Alt. ¹	A-2 ² Diff to Alt. 2	A-2 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	496	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	53	No difference		3 more units	29 fewer units		2 more units		1 more unit			
Number of Single- Family Units Displaced	14	14	26	No difference			1 more unit		2 more units		1 more unit			
Number of Multi- family Units Displaced	24	24	24					No difference						
Number of Manufactured Home Units Displaced	34	34	3	No difference		2 more units	30 fewer units				No difference			
Number of Acres of Residential Land Converted to Right-of- Way	39	39	25	No difference			8 fewer acres		5 more acres		No difference			
Number of Acres of Employment Land Converted to Right-of- Way	133	117	156	1 fewer acre		5 more acres	8 more acres		5 more acres		1 more acre		1 fewer acre	
Number of Acres of Other ¹ Land Converted to Right-of-Way	342	339	315	6 fewer acres		3 more acres	14 fewer acres		No difference		7 fewer acres		13 fewer acres	
Right-of-Way Costs (\$ in millions)	\$170	\$160	\$216	+\$3	+\$3	+\$2	+\$3	+\$5	+\$7	+\$3	+\$2	+\$6	No differ- ence	-\$8

Fewer acres / units / buildings

More acres / units / building

Note: Three land use categories were used in this table to compare impacts on land uses: residential, employment, and other (e.g., vacant, agricultural, public facilities).

¹The Preferred Alternative impact summary includes the Tolbert overcrossing of Design Option A-2, and Design Option C-2, and Design Option D-3.²Design Option A-2 includes the Tolbert overcrossing, which is an alternative to the North Lawnfield Extension under Alternatives 2 and 3.

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 with a manufactured home park (MR1).

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 general industrial (I3)-zoned 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 land zoned for Exclusive Farm Use (EFU) 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 residential property driveways (see discussion below).

Preferred Alternative

The **Preferred Alternative** will convert about 496 acres of land to right-of-way.

Probably the most important difference between the **Preferred Alternative** and **Alternatives 2 and 3** is the **Preferred Alternative's** lower impact on residential units (53 compared to 72). While the **Preferred Alternative** will displace more single-family

units (26 instead of 14), the number of multi-family units will be the same (24 units) and the number of manufactured homes is much lower, down to 3 from 34. The number of dwelling units displaced amounts to about one percent of all units in the study area.

Greater impacts on employment land and businesses are the trade-off for fewer impacts on residential units under the **Preferred Alternative**. Similar to **Alternatives 2 and 3**, most of the impacts are in the I-205 Interchange area, but the overall impact in that area is slightly higher, at 87 acres compared to over 73 acres for **Alternative 2**. In addition to commercial and industrial displacements reported in the SE Ambler Road, SE 82nd Avenue, SE Lawnfield Road, and SE Mather Road areas, there will be additional displacements from widening SE 82nd Drive at OR 212/224. In the Midpoint area, **Alternative 2** would remove 46 acres of employment land, while the **Preferred Alternative** will remove 68 acres. In the Rock Creek Area, the **Preferred Alternative** will remove about 6.3 acres of employment land, compared to 4.4 acres under **Alternatives 2 and 3**.

The **Preferred Alternative's** interchange design (SPUI) at Rock Creek Junction will have the lowest adverse acquisition impacts on the planned Providence Medical Center.

The overall impacts of the **Preferred Alternative** on vacant land are moderate. Of the 1,420 acres of vacant land in the study area, 290 acres will be used for the facility (20 percent).

The **Preferred Alternative** will impact the following planned developments by removing land for right-of-way:

- Windswept Waters Subdivision/Rivers Rim Townhouses (under construction).
- Future commercial development between SE 137th Avenue and SE 142nd Avenue.
- Oregon Iron Works' planned streetcar and test tracks facility located at 9885 SE Mather Road.

Impacts to Unique Land Uses

Unique land uses are shown on Figure 28. 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, as described in the SDEIS, were anticipated to 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 have affected those sites.

When the SDEIS was published, the KEX Transmitter Facility site would have been affected by the highway right-of-way crossing the southwest corner of the site, while the new North Lawnfield extension would have affected the southern and eastern boundaries. The North Lawnfield extension would have impacted the ground mat of copper wires for tower number 3 when it passed within 350 feet of the tower. A reduction in the area containing the ground mat of wires would have resulted 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 have affected the viability of the radio operations. **Design Option A-2** would reduce those impacts by approximately one-half, because the North Lawnfield extension would not be built.

KEX Radio and its owner, Clear Channel, remain concerned about the potential for the addition of concrete structures to affect transmission.

ODOT and KEX/Clear Channel jointly acknowledge existing technology does not allow for the forecasting or modeling of potential future impacts to the radio station signals from construction of elements of the Sunrise Project, prior to construction. Therefore, these

mitigation measures reflect commitments to pursue an agreed-upon strategy for assessing potential impacts to Clear Channel radio station signal viability from construction of the Sunrise Project.

Prior to FHWA's authorization of construction for major structures near the KEX/Clear Channel transmission site:

- ODOT will retain a radio expert to assess impacts to transmission signal attributable to the construction of the Sunrise Project.
- If adverse impacts on radio transmission signal strength and coverage are realized from project construction, on-site mitigation efforts to address these impacts will be pursued first. (On-site mitigation efforts are estimated to cost approximately \$3.5 million to \$7.0 million, and are included in the total project cost estimate.)
- If such on-site mitigation efforts do not prove feasible, appropriate off-site mitigation efforts will be pursued. (Off-site mitigation efforts are estimated to cost approximately \$15 million to \$25 million, and are included in total project cost estimate.)

The Sunrise Project transition to OR 212 would have encroached on the Williams Pipeline gate station property by 75 feet. If the Sunrise Project alignment was located as proposed under **Alternatives 2 and 3**, the gate station would have needed 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 SE Ambler Road. The build alternatives have been specifically designed to avoid encroaching on this historic property.

Preferred Alternative

With respect to unique land uses, in the I-205 Interchange area, the **Preferred Alternative** would have less impact than either **Alternative 2** or **3**. The original North Lawnfield extension alignment (shown as part of **Alternative 2**) will be shifted to not adversely affect the KEX site historic resource and other cultural and natural resources. Impacts in the Midpoint area will be the same as under **Alternative 2**. In the Rock Creek Junction area, the transition of the **Preferred Alternative** from the project limits to OR 212 will avoid substantial costs and disruption by not impacting the southern approximately 75 feet of the Williams Pipeline Gas Distribution Facility site (as **Alternatives 2** and **3** would have). However, the NW Natural gas transmission line that runs from the Williams Gas Distribution Facility along OR 212/224 to the west will still be affected, similar to the other build alternatives.

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 Sunrise Project is a planned project contained in the adopted regional and local plans and therefore complies with the state's planning goals. See the 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).
- 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 because of the traffic congestion that would result under this alternative. This alternative is not expected to stop future planned development in the long term, but the **No Build Alternative** 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 212/224 corridor between I-205 and US 26. It should be noted that the Cities of Happy Valley and Damascus assumed responsibility for comprehensive planning in most of the land added to the UGB in 2002. Damascus incorporated in 2004 and the Draft Comprehensive Plan is scheduled for adoption in November 2010. Happy Valley annexed much of the east Happy Valley Area in 2006 through 2008. The East Happy Valley Plan was adopted in 2009. Since Metro adopted the 2035 RTP in 2010, Happy Valley will have to ensure that its transportation system plan is consistent with the RTP by 2012. Currently the Happy Valley TSP includes RTP #5021 (Sunrise Project) but does not designate any freight routes. Damascus does not have a transportation system plan. It is assumed that the requirements for the through freight corridor will be included in the new and revised plans due to the requirement for local plan consistency with the Regional Transportation System Plan.

Preferred Alternative

The **Preferred Alternative** will meet the local, regional, and state transportation policies that

plan for the creation of a through-route for freight in the OR 212/224 corridor between I-205 and US 26. The **Preferred Alternative** will also be compatible with adopted local land use and transportation plans.

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 planned by the North Clackamas Parks and Recreation District (NCPRD) and Metro. The status of planned parks and trails is addressed in the Parks and Recreation Section of this FEIS.

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.

In August 2009 Oregon Ironworks announced plans to build a test track at their facility at 9885 SE Mather Road. The planned location of this facility could be accommodated by both **Alternatives 2 and 3**.

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 27 net acres of buildable land.

Preferred Alternative

As with **Alternatives 2 and 3**, the **Preferred Alternative** will need to acquire right-of-way from Oregon Iron Works' property. Neither the street car manufacturing facility nor the majority of the street car test track west of the mainline (planned construction 2010-2011) will be affected. However, the **Preferred**

Alternative will impact the tract that connects those two facilities and the new maintenance facility.

The **Preferred Alternative** will affect the planned Providence Medical Center and Hospital to the east of Rock Creek by removing three acres of land for right-of-way. Providence has stated they require 30 acres. The Sunrise Project will leave 27 acres for the Providence development. The **Design Option D-3** alignment incorporated into the **Preferred Alternative** reduces the negative impacts on that site more than any other option.

Driveway Impacts

In addition to displacements, approaches or driveways 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 driveway may be affected. **Alternative 1** would have no direct impact on property driveways. As shown on Table 9 **Alternative 2** would affect 132 properties. **Alternative 3** would impact approaches 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 driveways (70). New driveways would be required on many properties. **Alternative 3 with Design Option A-2** would require the least, 55 new driveways, while **Alternative 2 with Design Option D-3** would require the most, 114 new driveways.

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 in Chapter 2. Those changes are discussed in the Business and Communities Section of this chapter. Some of the more notable residential driveway changes would be where driveways on major streets are connected instead to frontage roads or where currently full turning movements would be limited to right-in/right-out only. These would generally be the same for **Alternatives 2 and 3**

and apply primarily to some sections of SE Johnson Road (south of Milwaukie Expressway), SE 82nd Drive, SE 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 driveway approach relocated 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 a driveway directly on SE 142nd Avenue would have the driveway moved to the cul-de-sac frontage road located north of the Sunrise Project and connecting to SE 142nd Avenue.

Preferred Alternative

The **Preferred Alternative** will have impacts to 188 driveway connections to streets, compared to 132 (**Alternative 2**) and 91 (**Alternative 3**). The larger number of driveway impacts is due to the improvements at the intersection of SE 82nd Drive and OR 212/224 that were not included as part of **Alternatives 2 and 3**. The benefits of the changes in that area are increased mobility and safety in the vicinity of the intersection. Without the improvements under the **Preferred Alternative**, there would be significant delay and back-ups due to the high volume of traffic using the intersection.

The driveway impacts will be most heavily concentrated in the I-205 Interchange area (117). Driveways will either be closed, modified (from rebuilding the connection between the road and the driveway to a change to right-in/right-out movements), or relocated. Tax lots that would become land-locked as a result of the project removing the existing driveway will either receive a new driveway or will be acquired outright.

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 section of the FEIS). Congestion would increase travel times for trucks moving freight through the area and for customers and jobs 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 forecasted development and congestion could support more transit service than is currently assumed as part of this analysis. However, if future transit service is bus transit, it would also be negatively impacted by congestion under **Alternative 1**.

Alternatives 2 and 3, and the **Preferred Alternative** 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.

Mitigation Measures for the Preferred Alternative

Direct property acquisition and relocation impacts will be mitigated through financial compensation regulated in accordance with the Uniform Act, Oregon Revised Statutes, and Oregon Department of Transportation guidance. Displaced residents would be relocated to decent, safe, and sanitary housing within their financial means.

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

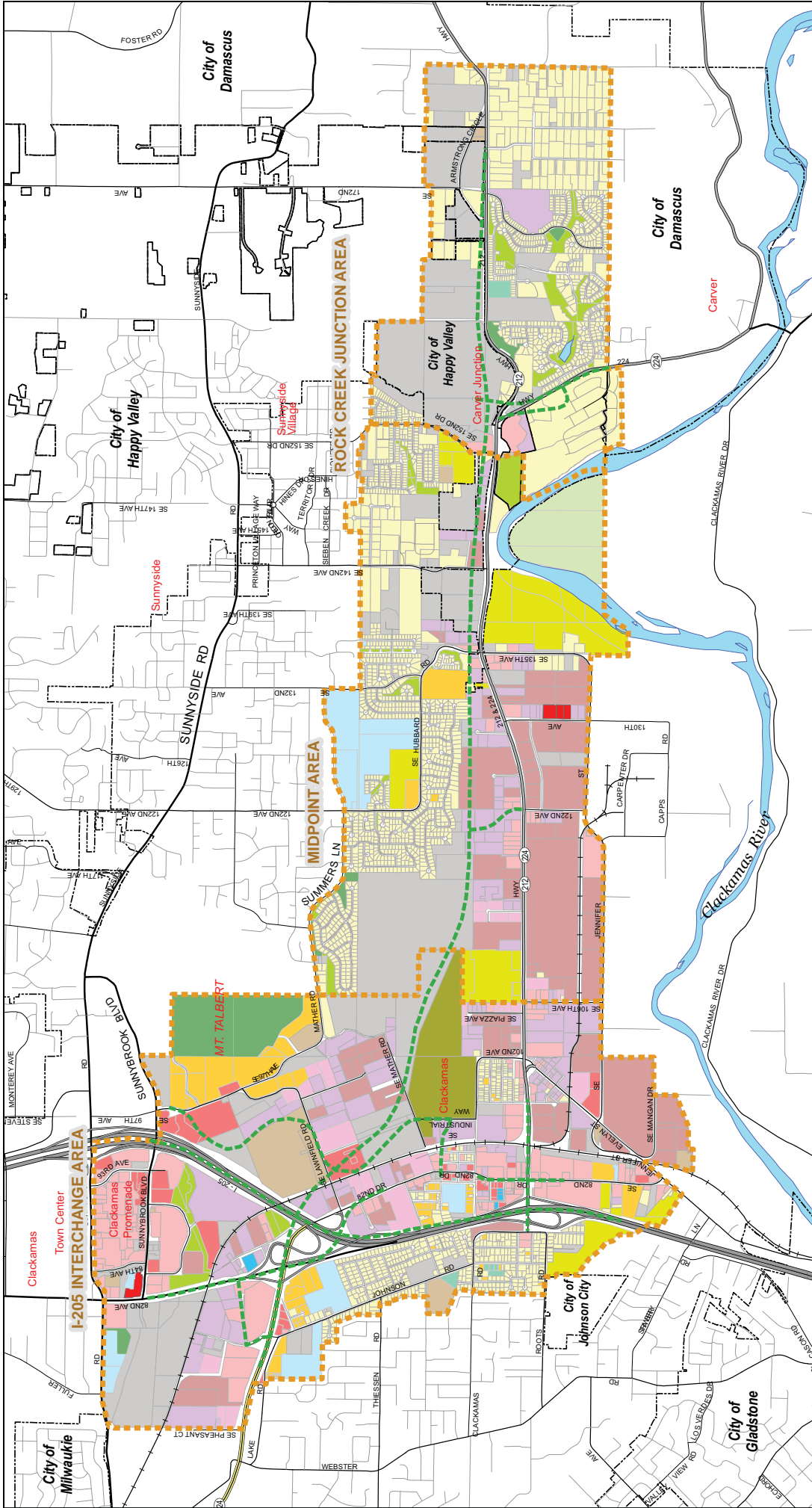
At the KEX site, the **Preferred Alternative** will avoid impacts to the copper mats. The remaining concern is impacts of additional concrete structures on transmission signals. ODOT will continue to consult with KEX into the future and commits to the following mitigation strategy.

Prior to FHWA's authorization of construction for major structures near the KEX/Clear Channel transmission site:

- ODOT will retain a radio expert to assess impacts to transmission signal attributable to the construction of the Sunrise Project.
- If adverse impacts on radio transmission signal strength and coverage are realized from project construction, on-site mitigation efforts to address these impacts will be pursued first. (On-site mitigation efforts are estimated to cost approximately \$3.5 million to \$7.0 million, and are included in the total project cost estimate.)
- If such on-site mitigation efforts do not prove feasible, appropriate off-site mitigation efforts will be pursued. (Off-site mitigation efforts are estimated to cost approximately \$15 million - \$25 million, and are included in total project cost estimate.)

Tax lots that would become land-locked because the project will remove an existing driveway will either receive a new driveway or will be acquired outright.

Several transportation mitigation measures will address access changes in the Clackamas area and are presented in the transportation mitigation section.



Sunrise Project Alignment
FEIS Land Use Study Area

- LAND USE CATEGORY**
- Ag Lands
 - Open Space
 - Park
 - Single Family Dwelling

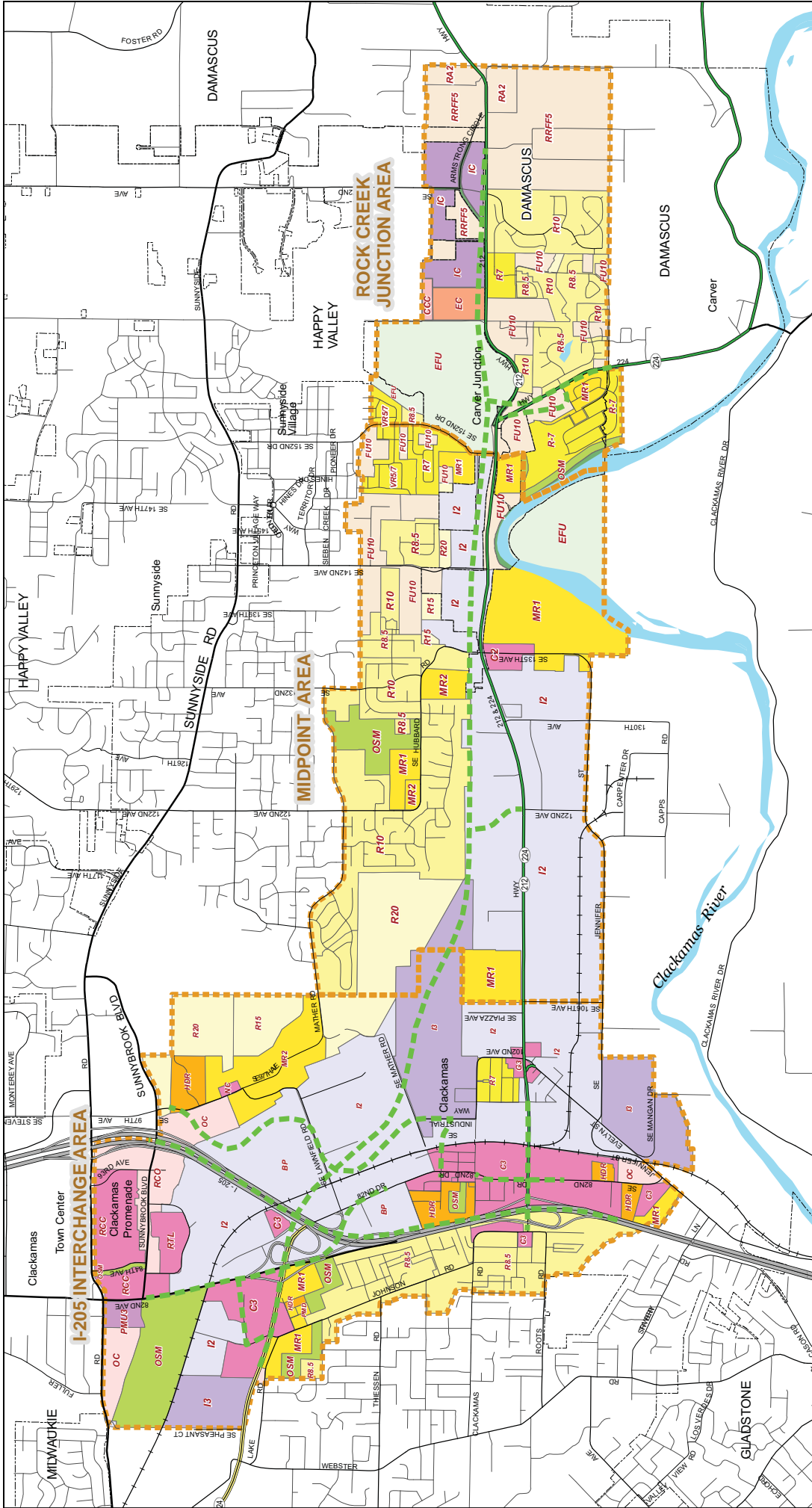
- Mobile Home Park
- Multi Family Dwellings
- Schools
- Community Uses
- Church


- Commercial
- Office
- Emergency Services
- Industrial
- Office Warehouse

- Warehouse
- Military
- Utilities
- Vacant
- (Not Included in Study)

Figure 26
Existing Land Use (February 2010)

1:24,000






CLACKAMAS COUNTY
PLANNING & COMMUNITY DEVELOPMENT
10000 NE CLACKAMAS AVENUE, SUITE 200
CLACKAMAS, OR 97015
503.646.3000
WWW.CLACKAMASCOUNTY.ORG

Figure 27

Clackamas County Zoning Designations

 Sunrise Project, I-205 to Rock Creek Junction

ZONING DESIGNATIONS

	Low Density Residential (R10, R15, R20)		High Density Residential (HDR)
	Medium Density Residential (R7, R8.5)		Community Commercial (C2)
	Village Residential (VR57)		General Commercial (C3)
	Planned Medium Density Residential (PMD)		Neighborhood Commercial (NC)
	Planned Mixed Use (PMU3)		Office Commercial (OC)
	Medium Density Residential (MR1, MR2)		Regional Center Commercial (RCC)

Business Park (BP) || | Regional Center Office (RCO) |
	Retail Commercial (RTL)
	Light Industrial (I2)
	General Industrial (I3)

Open Space Management (OSM) || | Exclusive Farm Use (EFU) |
	Rural Res/Farm/Forest (RRFF5)
	Future Urban (FU10)
	Rural Single Family Residential (RA2)

FEIS Alignment || | FEIS Study Area |

North Arrow || | Scale 1:24,018 |

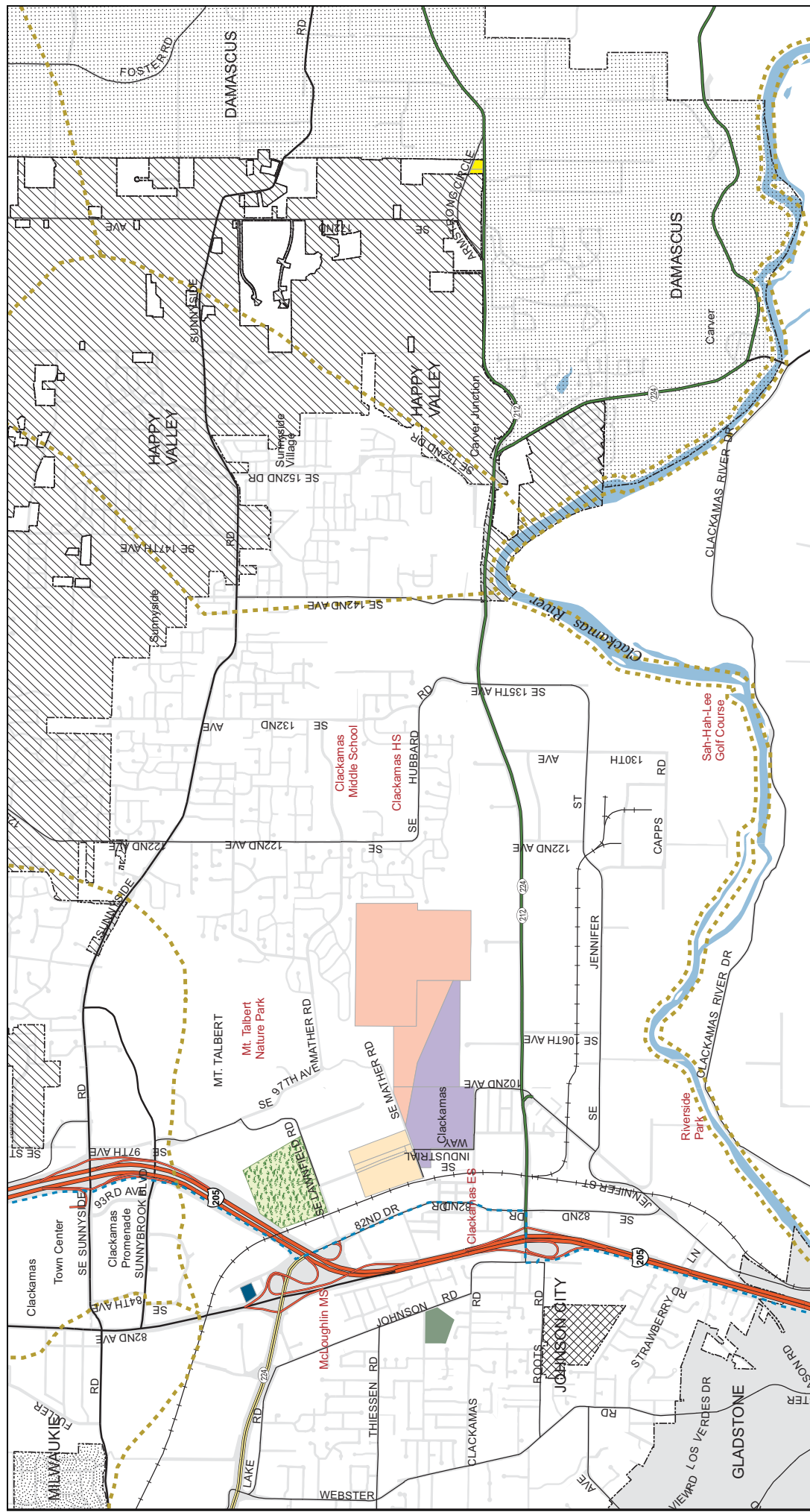


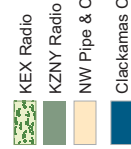
Figure 28

Unique Land Uses and Features



Unique Land Uses

■■■■■ Sunrise Project Alignment



 Camp Withycombe - Military Dept.
 Camp Withycombe - ODOT
 Williams Pipeline Gas Distribution F




1:24.003








NOTE: The right-of-way shown on the following maps represent an estimate of the right-of-way assumed to be needed by the Sunrise Project. The final amount of right-of-way needed will not be known until further development of the final design. The final right-of-way areas may differ slightly than depicted in this report.







8000800 Feet


Sources:
ODOT and Metro, Portland OR (2008-09)

Legend

 Urban Growth Boundary (UGB)
 Construction Impact Line
 Right-of-Way Line

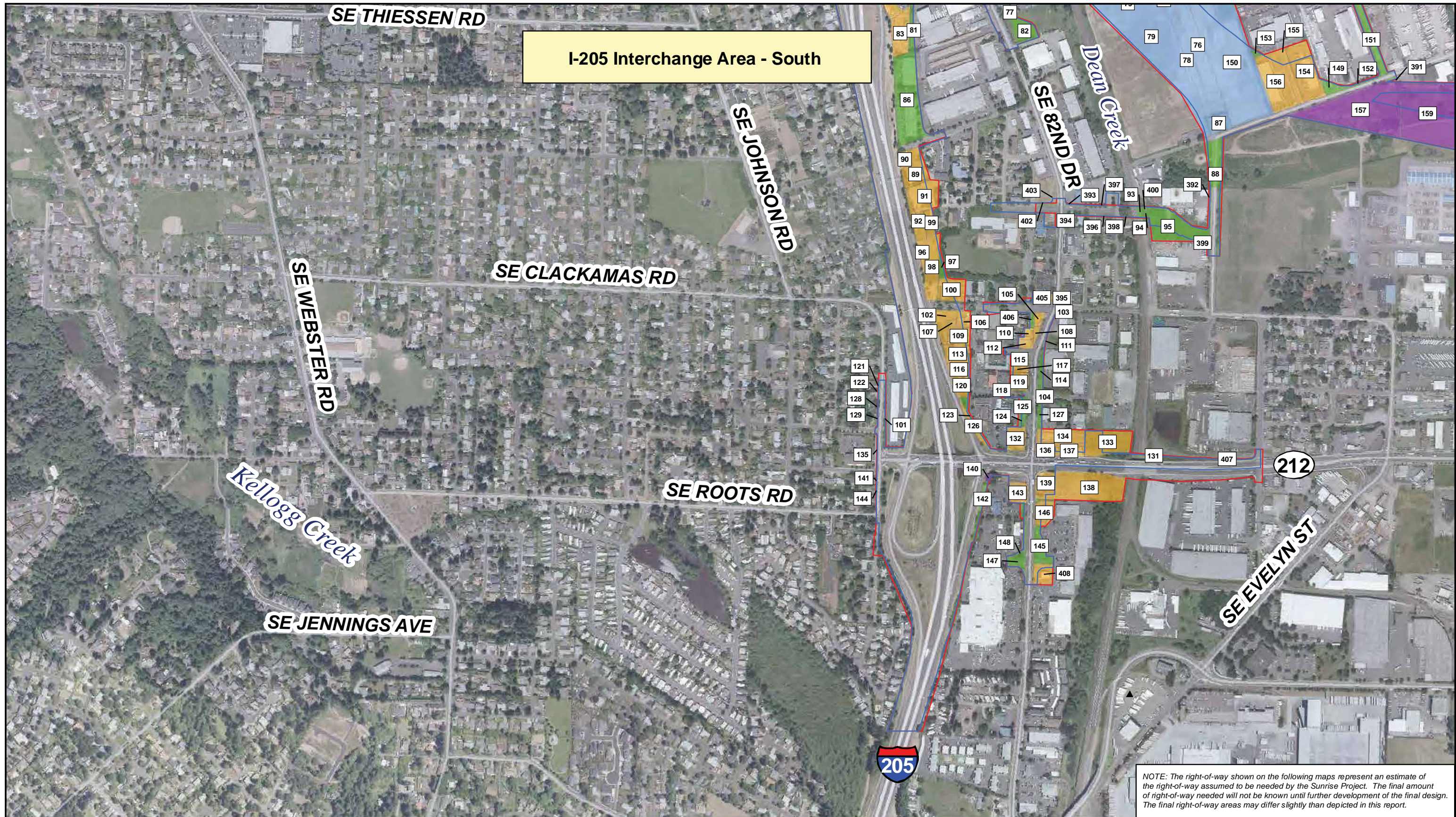
 ODOT Property within ROW Footprint to be Donated to the Project
 County Property within ROW Footprint to be Donated to the Project

 Full Property Acquisition (other owners)
 Partial Property Acquisition (other owners)

 Map Number (Referenced to Table 2 in Right-of-way Technical Report)

FEIS Preferred Alternative
Figure PA-12, Estimated Right-of-way Impacts

 Sunrise Project, I-205 to Rock Creek Junction



NOTE: The right-of-way shown on the following maps represent an estimate of the right-of-way assumed to be needed by the Sunrise Project. The final amount of right-of-way needed will not be known until further development of the final design. The final right-of-way areas may differ slightly than depicted in this report.



800 0 800 Feet

Legend

- Urban Growth Boundary (UGB)
- Construction Impact Line
- Right-of-Way Line

- ODOT Property within ROW Footprint to be Donated to the Project
- County Property within ROW Footprint to be Donated to the Project

- Full Property Acquisition (other owners)
- Partial Property Acquisition (other owners)

- Map Number (Referenced to Table 2 in Right-of-way Technical Report)


FEIS Preferred Alternative

Figure PA-13, Estimated Right-of-way Impacts





NOTE: The right-of-way shown on the following maps represent an estimate of the right-of-way assumed to be needed by the Sunrise Project. The final amount of right-of-way needed will not be known until further development of the final design. The final right-of-way areas may differ slightly than depicted in this report.



8000800 Feet

Sources:
ODOT and Metro, Portland OR (2008-09)

Legend

- Urban Growth Boundary (UGB)
- Construction Impact Line
- Right-of-Way Line

- ODOT Property within ROW Footprint to be Donated to the Project
- County Property within ROW Footprint to be Donated to the Project

- Full Property Acquisition (other owners)
- Partial Property Acquisition (other owners)

- Map Number (Referenced to Table 2 in Right-of-way Technical Report)

FEIS Preferred Alternative
Figure PA-14, Estimated Right-of-way Impacts

 Sunrise Project, I-205 to Rock Creek Junction



NOTE: The right-of-way shown on the following maps represent an estimate of the right-of-way assumed to be needed by the Sunrise Project. The final amount of right-of-way needed will not be known until further development of the final design. The final right-of-way areas may differ slightly than depicted in this report.

<div> </div> <div> <p>800 0 800 Feet</p> </div> <div> <p>Sources: ODOT and Metro, Portland OR (2008-09)</p> </div>	<div> <p>Legend</p> </div> <div> <table border="0"> <tr> <td> <div> Urban Growth Boundary (UGB) </div> <div> Construction Impact Line </div> <div> Right-of-Way Line </div> </td> <td> <div> ODOT Property within ROW Footprint to be Donated to the Project </div> <div> County Property within ROW Footprint to be Donated to the Project </div> </td> <td> <div> Full Property Acquisition (other owners) </div> <div> Partial Property Acquisition (other owners) </div> </td> <td> <div> Map Number (Referenced to Table 2 in Right-of-way Technical Report) </div> </td> </tr> </table> </div>	<div> Urban Growth Boundary (UGB) </div> <div> Construction Impact Line </div> <div> Right-of-Way Line </div>	<div> ODOT Property within ROW Footprint to be Donated to the Project </div> <div> County Property within ROW Footprint to be Donated to the Project </div>	<div> Full Property Acquisition (other owners) </div> <div> Partial Property Acquisition (other owners) </div>	<div> Map Number (Referenced to Table 2 in Right-of-way Technical Report) </div>	<div> <p>FEIS Preferred Alternative</p> <p>Figure PA-15, Estimated Right-of-way Impacts</p> Sunrise Project, I-205 to Rock Creek Junction </div>
<div> Urban Growth Boundary (UGB) </div> <div> Construction Impact Line </div> <div> Right-of-Way Line </div>	<div> ODOT Property within ROW Footprint to be Donated to the Project </div> <div> County Property within ROW Footprint to be Donated to the Project </div>	<div> Full Property Acquisition (other owners) </div> <div> Partial Property Acquisition (other owners) </div>	<div> Map Number (Referenced to Table 2 in Right-of-way Technical Report) </div>			

This page left intentionally blank

Parks and Recreation

Existing Recreation Facilities²²

The North Clackamas Parks and Recreation District (NCPRD) owns and operates two parks close to the Sunrise Project in the land use study area, North Clackamas Aquatic Park and Mount Talbert Nature Park. North Clackamas Aquatic Park and Harmony Road Neighborhood Park are on the south side of Harmony Road (see Figure PA-16). Mount Talbert Park has 185 acres of natural area jointly owned by Metro and the NCPRD. Mount Talbert provides a greenspace, trail system, and wildlife corridor. The Sunrise Project would have no impacts on the North Clackamas Aquatic Park, Mount Talbert Nature Park, or Harmony Road Neighborhood Park.

Hood View Park was created in 2009 on SE 162nd Avenue north of OR 212. It currently features several playing fields. Future planned facilities would be within the existing designated park area. The Sunrise Project would have no impacts on this park.

The Clackamas County Parks Department provides nine large regional parks in rural areas. A boat ramp and small park is south of the Carver River Bridge. Barton Park is on the Clackamas River approximately 6 miles east of the terminus of the Sunrise Project. The Sunrise Project would have no impacts on those parks.

The Clackamas River Water District operates Riverside Park on a property it owns on the Clackamas River. This park is well outside the Sunrise Project footprint and the Preferred Alternative will have no impacts on the park.

In the North Clackamas School District and NCPRD, school fields are used as community recreation facilities. School recreation sites include:

The Socioeconomics Technical Report provides details on the park and recreation sites near the Sunrise Project.

- Clackamas Elementary School, 15302 SE 92nd Avenue. FHWA made a Section 4(f) *de minimis* finding on September 1, 2010 for use of 0.18 acres of the recreation field. Mitigation measures can be found at the end of this section.
- Sabin-Schellenberg center, 14211 SE Johnson Road.
- Clackamas High School, 14486 SE 122nd Avenue.
- Sunrise Middle School, 14331 SE 132nd Avenue.

All of the alternatives would remove 0.18 acres of land from the Clackamas Elementary School recreation field. The removal of the 0.18 acres of land from the Clackamas Elementary School recreation field has been documented in a Section 4(f) *de minimis* finding, included in Appendix C. The Sunrise Project would have no impacts on recreation facilities at the Sabin-Schellenberg center, Clackamas High School, or Sunrise Middle School.

The Sunrise Project would impact the recreation field at Clackamas Elementary School, but no other existing parks or trails would be affected. Mitigation measures associated with the Clackamas Elementary School Section 4(f) *de minimis* finding are summarized in the mitigation portion of this Parks and Recreation Section. No mitigation is required or proposed for the other existing parks or trails.

Planned Recreation Facilities

The North Clackamas Parks and Recreation District *Parks and Recreation Master Plan* identifies a number of planned parks and trails in or close to the land use study area for the Sunrise Project.

Planned Parks

Planned parks within the area of the Sunrise Project include the North Clackamas District Park, a future urban natural area park intended

²² Information and analysis in this section was presented in the SDEIS. It is printed in green in the FEIS because the parks and recreation discussion now has its own section and has been reorganized to improve readability.

for land along Mount Scott Creek between SE 82nd Avenue and SE Harmony Road. This site has several hazardous materials issues associated with the property including an industrial solvent groundwater plume (TCE, trichloroethylene). Remediation will be challenging and costly. Funds have not been identified to completely remediate the hazardous materials issues associated with this site. Based on this information, FHWA finds that this planned park does not rise above a mere level of expression or desire for a future park, is not a significant recreational resource, and therefore Section 4(f) does not apply.

Orchard Summit Park, near SE 162nd Avenue south of OR 212, is described in the North Clackamas Parks and Recreation District *Parks and Recreation Master Plan* as a possible future neighborhood park and natural resources park. This park is well outside the Sunrise Project footprint. The **Preferred Alternative** will not affect plans for this park.

Highland Summit Park, near Mather Road, includes open space sites previously managed by a homeowners' association. Two of the open spaces are owned by the park district, and will be managed as natural areas. This park is well outside the Sunrise Project footprint and will not be affected by the **Preferred Alternative**.

A future neighborhood park is planned for the Anderegg Park subdivision. This park is well outside the Sunrise Project footprint and will not be affected by the **Preferred Alternative**.

Planned Trails

The North Clackamas Parks and Recreation District *Parks and Recreation Master Plan* (2004) identifies a number of planned trails in or close to the land use study area for the Sunrise Project.

Metro *Regional Trails & Greenways* (2003) document also identifies planned trails. Many of the trails from these two documents are in similar locations.

Extent of Planning Efforts. To assist in visualization of planned trails for publication of the SDEIS and FEIS for the Sunrise Project, Figure PA-16 was developed from source maps from the North Clackamas Parks and Recreation District *Parks and Recreation Master Plan* and the Metro *Regional Trails & Greenways* document. The trail planning maps from these documents depict alignments that are conceptual in nature. By producing a high quality map of the planned trails to aid in the readability of the NEPA documents, Figure PA-16 may inaccurately provide an impression of a higher level of trail planning than has actually been completed. The source maps from the Metro *Regional Trails & Greenways* and the North Clackamas Parks and Recreation District *Parks and Recreation Master Plan* are included in Appendix C.

The Metro *Regional Trails & Greenways* document states that a future "master planning process" is necessary "before decisions are made about trail alignment and appropriate use," further indicating the limited level of trail planning efforts to date.

Metro and NCPRD documents were developed independently which has led to similar trails planned for similar locations. These planning efforts are not coordinated to a high degree. Metro and NCPRD acknowledged that there is not a need for two parallel trails in many of the locations shown on Figure PA-16. The agencies recognize in some cases the trails are redundant. A plan between the agencies to resolve duplication and discrepancies is not in place, nor on the horizon.

Private and Public Land Ownership. Neither NCPRD nor Metro have acquired land for any of the trails that are designated in their documents. In some instances other public agencies own land upon which the trails have been designated; however, the majority of trails are located on private property.

FHWA Section 4(f) Policy Paper, Question 14, answer B, states, "Section 4(f) does not apply to trails on privately owned land." Question 17 of the Policy Paper states that, "Section 4(f)

applies when the land is one of the enumerated types of publicly owned lands and *the public agency that owns the property has formally designated and determined it to be significant for park, recreation area, wildlife or waterfowl refuge purposes*” (emphasis added).

In the case of the trails designated by NCPRD and Metro, the agencies that have planned the trails do not own the land upon which trails are planned.

Coordination Efforts. ODOT held meetings with Metro and NCPRD on January 13, 2010; March 22, 2010; and April 29, 2010 to better understand the level of planning, land ownership, and intent of the documents identifying these planned trails and to discuss Section 4(f) applicability. As a result of these meetings, it was confirmed that trail plans are only conceptual in nature and consist only of approximate alignments. No property has yet been acquired for any of the planned trails, and most of the proposed alignments are on property that is currently privately owned. Despite the conceptual nature of the trails, ODOT indicated to parks staff that the proposed Sunrise Project would not preclude future construction of all proposed trails in the project area.

The coordination effort among Metro, NCPRD, and ODOT is summarized in an April 2010 letter from ODOT to Metro and NCPRD stating, among other facts, that Section 4(f) does not apply to the planned trails. NCPRD and Metro countersigned the letters and returned them to indicate a shared understanding between ODOT, NCPRD, and Metro, that Section 4(f) does not apply to the planned trails. The two letters are contained in Appendix C.

In addition to these coordination efforts, each planned trail is evaluated in this FEIS to discuss how construction of the Sunrise Project does not preclude the future potential construction of the trails envisioned in the Metro and NCPRD documents. Construction of the Sunrise Project will not prohibit the future development of any of these planned trails.

These coordination efforts and evaluation of the future trail construction are consistent with the FHWA Section 4(f) Policy Paper, Appendix A that states that if a project can be constructed to preserve a trail, then no “use” of the trail by the project would occur.

US Department of the Interior Comments. The US Department of the Interior submitted comments on the SDEIS regarding Section 4(f) applicability to planned trails. This Parks and Recreation Section is now a separate section in the FEIS and includes additional discussion of the Section 4(f) analysis and applicability determination. Complete responses to the Department of the Interior comments are provided in Appendix A.

FHWA Finding Regarding Section 4(f)

Applicability to Trails. Based on the above information and supplementary information in Appendix C, FHWA finds that the status of these planned trails does not rise above a mere expression of interest or desire to qualify as Section 4(f) resources and that the majority of the planned trails are on privately owned land. Of the small portion of planned trails that are proposed to be on publicly owned land, the public agency owning the property is not the agency that has designated a future trail on that land.

Through ODOT’s efforts of coordination with Metro and the NCPRD, FHWA and ODOT have made every reasonable effort to provide for the future construction of these planned trails. Those efforts include opportunities for the planned trails to cross the Sunrise Project alignment via planned undercrossings designed to accommodate local roads at SE 82nd Avenue, SE 122nd Avenue, SE 135th Avenue, SE 142nd Avenue, SE 152nd Avenue, and SE 162nd Avenue.

Sunrise Project Multi-Use Paths and New Trail Connections. The Sunrise Project will provide for a new multi-use path parallel to the new alignment of the project and will also provide for an improved connection between Sunnybrook Boulevard and OR 212/224 on the I-205 multi-use path. The Sunrise Project will also improve bicycle and pedestrian

connections in the I-205 and Sunrise Project interchange area. The **Preferred Alternative** will provide a new connection between the I-205 multi-use path and existing bicycle and pedestrian facilities at SE 82nd Avenue/OR 213N.

This multi-use path that will parallel the new Sunrise Project will provide the function of the proposed Camp Withycombe Trail from approximately Mather Road east to SE 135th Avenue, and will also provide the function of the proposed Clackamas Bluffs Trail from approximately Mather Road to SE 152nd Avenue. The Sunrise Project multi-use paths are depicted on Figure PA-16.

Additional details of each planned trail are provided in the following section.

Individual Planned Trails

Planned trails are shown generally on Figure 29, “Community Features”, and PA-16, “Existing and Planned Parks and Trails”. This figure combines facilities included in two planning documents: NCPRD’s *Parks and Recreation Master Plan* and Metro’s *Regional Trails & Greenways* document. The source maps are included in Appendix C in the subsection titled “Planned Trails Section 4(f) Supporting Documents.” For the most part the trails included in the Metro *Regional Trails & Greenways* document match or are very similar to the trails included in the NCPRD *Parks and Recreation Master Plan*.

Clackamas Bluffs Trail

The Clackamas Bluffs Trail is a planned trail that would begin at Mount Talbert Nature Park and extend south and east along the bluffs of the Clackamas River and would join the Clackamas River Greenway at its confluence with Rock Creek.

The Sunrise Project multi-use path could serve the function of this planned trail between Mather Road and SE 152nd Avenue. The planned Clackamas Bluffs Trail would be roughly north of the Sunrise Project, while the Sunrise multi-use path will be located south of the Sunrise Project beginning near SE 120th Avenue. The

concept for the Clackamas Bluffs Trail is to cross the Sunrise Project from north to south to gain access to the Clackamas River Greenway. The Sunrise Project multi-use path will cross the Sunrise Project from north to south at approximately SE 120th Avenue. Additional crossings are possible at SE 122nd Avenue, SE 135th Avenue, SE 142nd Avenue and SE 152nd Avenue.

The land upon which this trail is planned is not owned by either Metro or NCPRD. Construction of the Sunrise Project does not preclude the future potential development of this trail.

Camp Withycombe Trail

The NCPRD *Parks and Recreation Master Plan* does not have details about this trail. Overall, NCPRD’s goal is to connect significant community places and bus lines via trails. The plan shows one portion of this trail connecting Mount Talbert Nature Park with Clackamas High School and Sunrise Middle School via a southerly route that would parallel the Sunrise Project before turning north towards the schools. The planned trail as shown would traverse a 100-foot-tall bluff. A less-challenging and probable alternate route to the schools could be via SE 135th Avenue.

A different segment of the planned trail would travel southwesterly through Camp Withycombe (across the Sunrise Project) along SE Jennifer Street towards a planned Unnamed Trail and a planned I-205 trail to the Unnamed Trail, as depicted in Figure PA-16. The NCPRD *Parks and Recreation Master Plan* shows this trail crossing the Sunrise Project Preferred Alternative mainline through Camp Withycombe. However, the location of Camp Withycombe, a secure military facility, will preclude a crossing of the Sunrise Project as shown on existing maps. SE 122nd Avenue is a more reasonable and logical crossing for the planned trail. Following the crossing of the Sunrise Project at SE 122nd Avenue the planned trail could continue towards the intended destination.

The Sunrise Project multi-use path can likely function as the portion of the planned Camp

Withycombe Trail that is envisioned to parallel the Sunrise Project from approximately Mather Road to SE 135th Avenue.

The land upon which this trail is planned is not owned by either Metro or NCPRD. Construction of the Sunrise Project will not preclude the future potential development of this trail.

Clackamas River Greenway and Clackamas River Greenway Trail

This trail appears in both the NCPRD *Parks and Recreation Master Plan* and the Metro *Regional Trails & Greenways* document, with very similar names and very similar functions. The alignment along the Clackamas River as described in both documents is for all practical purposes identical.

The Metro Clackamas River Greenway borders the north side of the Clackamas River. This trail is outside the project construction footprint and would not be impacted by the Sunrise project. With the exception of the two additional segments discussed below, the NCPRD's Clackamas River Greenway Trail is in an identical location to the Metro Clackamas River Greenway. The Sunrise project has no potential to impact this segment of the trail.

The NCPRD planned trail also includes two additional planned segments in the eastern end of the Sunrise Project area. One planned segment envisions a connection between the Clackamas River and the Sieben Creek area across and to the north of the Sunrise Project. Topographical limitations will likely preclude the construction of this trail as shown. However, this planned segment could cross the Sunrise Project at the nearby NE 142nd Avenue undercrossing.

Another planned segment envisioned by NCPRD travels eastward from a bend in the Clackamas River, roughly paralleling the Sunrise Project and OR 212 on the south side to the Anderegg Park subdivision, approximately paralleling Trillium Creek. This planned trail segment could be accommodated through the undercrossing at Trillium Creek under realigned OR 224. Given the existing transportation system, the planned

trail will not be able to easily avoid an at-grade crossing of the arterial facility which provides a connection between OR 224 and existing OR 212.

The land upon which this trail is planned is not owned by either Metro or NCPRD. Construction of the Sunrise Project will not preclude the future potential development of this trail.

Scouters Mountain Trail

This planned trail is envisioned to begin at the Clackamas River Greenway and continue all the way to the Springwater Corridor (off Figure PA-16 to the north). The **Preferred Alternative** undercrossing at SE 152nd Avenue can provide a future route for this trail to make the planned connection to the Clackamas River Greenway across the Sunrise Project.

The land upon which this trail is planned is not owned by either Metro or NCPRD. Construction of the Sunrise Project will not preclude the future potential development of this trail.

Mount Scott Trail

The Mount Scott Trail would extend north from Mount Talbert Nature Park to join the Springwater Corridor near Powell Butte. This planned trail is completely outside of the Sunrise Project footprint. The Sunrise Project has no potential to impact this planned trail.

North Clackamas Greenway North Clackamas Greenway Trail

These trails are in approximately similar locations, serving approximately similar functions. Construction of either trail would fulfill the planning vision of both Metro and NCPRD. This trail would generally travel from Mount Talbert Nature Park, along Mount Scott and Kellogg Creeks to the Willamette River.

This trail could be provided for through the 82nd Avenue and Ambler Road undercrossing to cross OR 213N. The North Clackamas Greenway Trail is depicted crossing OR 213N at Sunnybrook at grade. A crossing of I-205 could occur at the Sunnybrook Interchange.

East Buttes Powerline Corridor Trail

Portions of the planned East Buttes Powerline Corridor trail are also known as the planned Sieben Creek Trail. This planned trail would travel across the Sunrise Project from the Clackamas River Greenway, north along SE 142nd Avenue, crossing Sunnyside Road and then follow the power line northwest to the Springwater Corridor. A connection for this trail across the Sunrise Project can be made at the SE 142nd Avenue undercrossing.

The land upon which this trail is planned is not owned by either Metro or NCPRD. Construction of the Sunrise Project will not preclude the future potential development of this trail.

Phillips Creek Trail

This planned trail would travel from the intersection of 82nd Avenue (OR 213) and the North Clackamas Greenway. The map currently shows two crossings of SE 82nd Avenue.

This planned trail is on the northern border of the Sunrise Project, outside of the construction footprint. Construction of the Sunrise Project will not have any impact on the planned trail and will not preclude the future potential development of this trail.

I-205 Trail to Unnamed

This planned trail would begin east of I-205 near the Jennifer Street overpass and travel east to connect to the planned Camp Withycombe Trail (southern segment) and planned Unnamed Trail.

The planned trail is at the southern border of the Sunrise Project on the west end, adjacent to the construction footprint. Construction of the Sunrise Project will not have any impact on the planned trail and will not preclude the future potential development of this trail.

Unnamed Trail

This planned trail would begin where the planned I-205 Trail to Unnamed Trail and the planned Camp Withycombe Trail (southern segment) join.

This planned trail is near the southern border of the Sunrise Project on the west end, well outside of the construction footprint.

Construction of the Sunrise Project will not have any impact on the planned trail and will not preclude the future potential development of this trail.

Clackamas River Trail

This planned trail would follow the Clackamas River on the south side of the Clackamas River for a long distance, including the length of the Sunrise Project.

This planned trail is south of the Sunrise Project, well outside of the construction footprint. Construction of the Sunrise Project will not have any impact on the planned trail and will not preclude the future potential development of this trail.

Alternatives 2 and 3 and the Preferred Alternative

Alternatives 2 and 3 would not preclude the future completion of the proposed Metro trail system or the future completion of the proposed NCPRD 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.

Similar to **Alternatives 2 and 3**, the **Preferred Alternative** does not prevent future completion of the planned trails by NCPRD and Metro within the Sunrise Project area. Additionally, construction of a multi-use path as a component of the Sunrise Project will partially address the regional plan for a trail in this area.

Indirect Effects

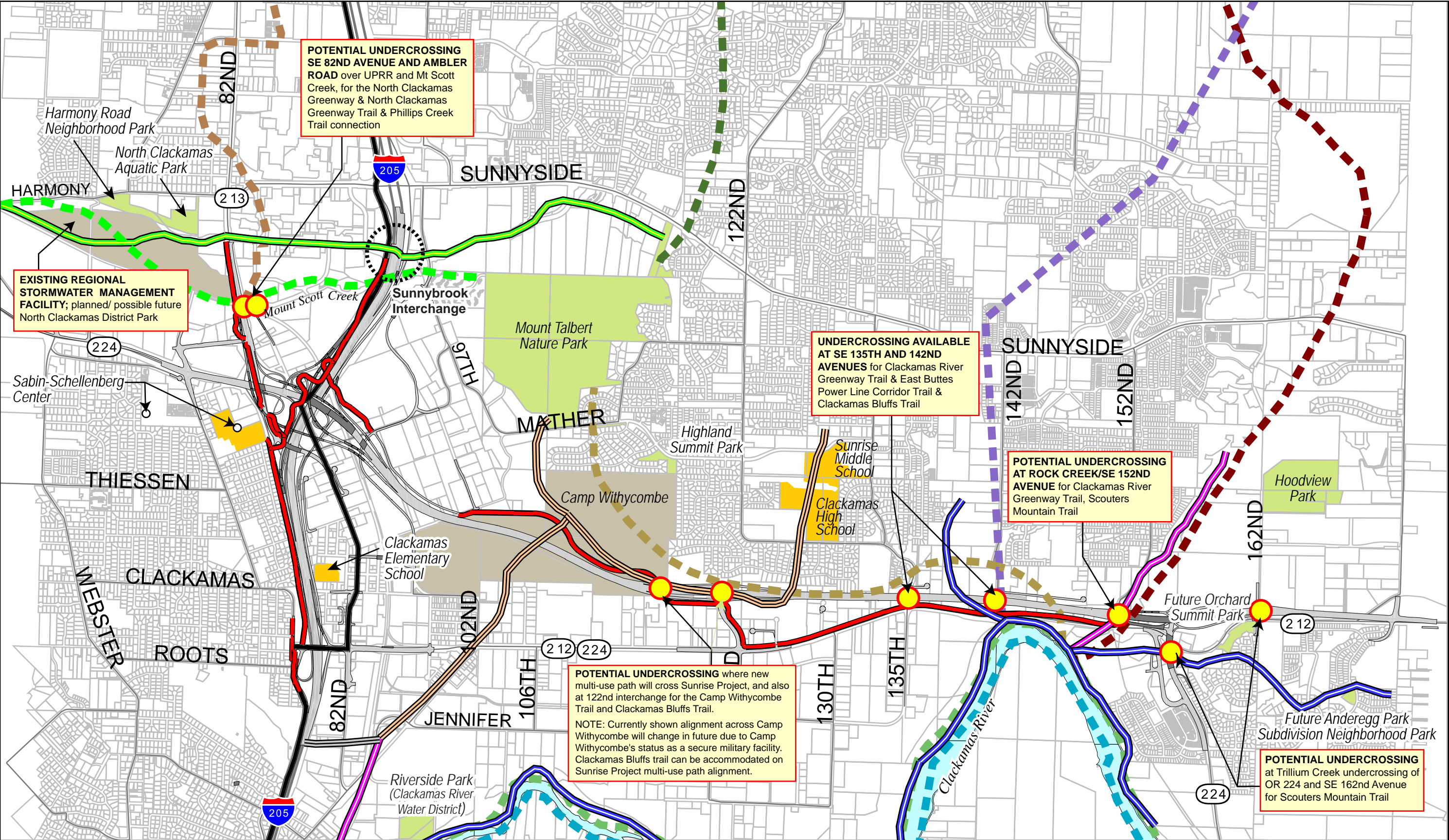
There will be no indirect effects on park and recreation facilities.

Mitigation Measures for the Preferred Alternative

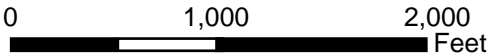
There are three mitigation measures to minimize the impacts of the Sunrise Project on the Clackamas Elementary School recreation field. The combined effect of these measures results in a reduction in existing and forecast impacts to the school recreation field from the current level as well as overall improvement in the quality of the recreational experience. These proposed mitigation measures are to (1) move the softball backstop playing area to the east, (2) move the jogging trail to the east, and (3) build a sound wall to buffer the site from the noise of I-205.

There is enough space on the Clackamas Elementary School recreation field to move the jogging trail and the softball backstop and playing area to the east without impacting the other uses of the site. Sunrise Project noise modeling has indicated that a sound abatement wall would reduce noise levels below those currently present on the recreation field. A noise abatement wall has been recommended for inclusion in the project.

This page intentionally left blank.



Note: The source documents for the creation of this map are the trail planning maps from the *Metro Regional Trails & Greenways* document and North Clackamas Parks and Recreation District *Parks and Recreation Master Plan* and are included in Appendix C.



Legend:

- | | | | | |
|---------------------------------|-------------------------------|---------------------------------|--------------------------------------|--------------------------|
| Bridges | Public Recreation Areas | NCPRD Proposed Trails | Clackamas Bluffs Trail | North Clackamas Greenway |
| Preferred Alternative | School Recreation Facilities | Clackamas River Greenway Trail | Clackamas River Greenway | Phillips Creek Trail |
| Potential Trail Undercrossing | Existing I-205 Corridor Trail | I-205 Trail to Unnamed | Clackamas River Trail | Scouters Mountain Trail |
| Sunrise Project Multi-Use Paths | Unnamed Trail | Sunrise Project Multi-Use Paths | East Buttes Powerline Corridor Trail | |
| | | | Mount Scott Trail | |

Figure PA-16

Existing and Planned Parks and Trails

This page left intentionally blank

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 Figures 29 and 30, are described below.

Businesses and the Economy

The land use study area for the 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 concentration in urban Clackamas County east of the Willamette River.

Oregon State Employment Division data (2004) indicate there are 893 business establishments and 17,576 jobs in the land use study area. Metro's model for a traffic analysis area that covers the Sunrise Project land use study area projects job growth of 74 percent, to more than 50,000 by 2030.²³ The

²³ 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)

The Socioeconomics Technical Report 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.

annual payroll is more than \$600 million dollars, and the average payroll per job is \$36,053.²⁴

Right-of-Way Impacts to Businesses

Alternatives 2 and 3

Roughly the same amount of existing employment would be displaced under these 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.²⁵

There are a number of existing or planned business districts in the study area (see Figure 30)—Clackamas Industrial Area, the Clackamas Business District, the future Rock

Creek Employment Area, and the future medical care complex. **Alternatives 2 and 3 and design options** would affect those areas by removing

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 Socioeconomics Technical Report.

Level for 1,358 such zones. The land use study area used was slightly different from the transportation study area.

²⁴ Oregon Employment Department, *Covered Employment and Wages at the State, MSA, and County levels for 2004*.

²⁵ See Table 5 of the Socioeconomics Technical Report.

some existing employment uses in order to convert the land to highway use. At the same time, the new facility would enhance mobility for the remaining businesses and would assist in the development of planned development in Rock Creek Junction.

Building the proposed Sunrise Project under **Alternative 2** or **3** would displace 60 businesses in the land use study area. Some businesses would be relocated while 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 2030.²⁶ 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 these alternatives.²⁷ 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.

²⁶ See Table 7 of the Socioeconomics Technical Report. Source is Metro travel model data for 1,358 transportation analysis zones, May 30, 2006.

²⁷ 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.

Alternative 1—No Build would have an adverse impact on this area because the amount of congestion forecasted with **Alternative 1** 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 jobs 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 those businesses and their employees.

Preferred Alternative

Business and employment impacts of the **Preferred Alternative** will be greater than those of **Alternative 2**. The impacts on business districts in the I-205 Interchange area of the study area will be most intense in the Clackamas Business Area and the Lawnfield area. An estimated 80 businesses will be

displaced, 30 percent more than under the other build alternatives and representing about 9 percent of existing businesses in the land use study area. Higher impacts on businesses will be the trade-off for fewer impacts on residential units, which was the result of incorporating **Design Option C-2** into the **Preferred Alternative** and design refinements for better functioning of the intersection of SE 82nd Drive and OR 212/224.

The **Preferred Alternative** will affect 146 driveways to business properties. The larger number of impacts under the **Preferred Alternative** reflects the additional improvements needed at SE 82nd Drive.

The **Preferred Alternative** will displace about 100 more jobs (a total of 1,037) than **Alternative 2** or **3** (with the exception of **Alternative 2 with Design Option B-2**). It will equate to 6 percent of all jobs and 6.5 percent of payroll in the study area.

The right-of-way for the **Preferred Alternative** will remove currently undeveloped or underdeveloped employment land. The future employment capacity represented by that land is estimated to be 3,563 jobs, about 30 percent less than under **Alternatives 2** and **3**. The **Preferred Alternative** interchange at Rock Creek Junction will have the least effect on future employment in that area of all the interchange options.

Significant Economic Issues

Several infrastructure issues are directly related to the economic viability of Clackamas 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 workforce, marketing, and providing utility infrastructure.

Both of the original **Alternatives 2** and **3** and the **Preferred Alternative** 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.

Clackamas County provides business retention services through its County Business and Economic Development Team. Clackamas County Business and Development will work with businesses to help them relocate. The County's intent is to keep affected businesses near the project area or at least within Clackamas County.

Clackamas County and the Portland metropolitan region have a limited supply of employment and industrial land with access to services. All build alternatives would impact the economy through the loss of developable land, which in turn reduces the future capacity for job creation. Building the 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 Sunrise Project would improve access and transportation capacity so that businesses may be able to use their land more intensively and accommodate more jobs than anticipated. Improved mobility provided by the Sunrise Project is consistent with the county's Economic Development Plan.

Population and Households

In 2005, the land use study area for the 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 (multi-family) 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 Clackamas 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.

The vacancy rate for multi-family housing in the Clackamas County/Oregon City/Milwaukie market was 5.60 percent, compared to a regional average of 4.66 percent according to Norris Beggs and Simpson (Third Quarter 2009 Report). The rate in downtown Portland was 5 percent, and the rate in Wilsonville was 5.41 percent. The rates in Beaverton/Aloha, Hillsboro and Gresham, by comparison, were around 4.43. Lake Oswego reported a 3.61 percent vacancy rate. The increase in the vacancy rate is a change from the first quarter 2008 and could make finding suitable multi-family units easier in this area of the region than in other areas.

Home sales declined through most of 2008 and remained relatively flat throughout 2009. Since the availability of single-family homes for sale has increased dramatically from 2006 and the number of homes for sale is six times the number of houses on the market during the same period in 2006, finding single-family residences for relocating residents in Clackamas County is likely to remain very feasible when right-of-way acquisition begins (2012 or later).

If relocated, residents are entitled to be moved into homes that are comparably affordable. In the single-family, detached house market, the median sale price has continued to decline from the first quarter of 2008, from \$295,000 to \$236,000 in the third quarter of 2009.

Affordable Housing

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.

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 31) 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 SE Johnson Road. None of these affordable housing units would be displaced by any alternative or design option.

Community Character

The Sunrise Project impacts residences and community facilities located in several neighborhoods (see Figure 29). The 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 Sunrise Project is built.

Alternative 1—No Build would have no direct impacts to travel patterns or acquisition, so no

impacts to community cohesion would be expected.

I-205 Interchange area

Alternative 2 has moderate impacts on this subarea. **Alternative 2** would remove 11 percent of the total land area for right-of-way and one percent of dwelling units (27 units).

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 Sunrise Project would further that trend. Clackamas County can identify and apply community development tools to encourage public-private partnerships to help maintain the Clackamas Business District and Old Clackamas Neighborhoods after the Sunrise Project has been built.

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**.

Preferred Alternative

The **Preferred Alternative** will have moderate impacts on neighborhoods and housing in the I-205 Interchange area. It will remove 9.8 percent of the total land area for right-of-way (compared to 11 percent under **Alternative 2** with or without **Design Option A-2**) displacing only 1.3 percent of the dwellings (28 units) in the area (compared to one percent or 27 units under **Alternative 2** with or without **Design Option A-2**).

Other aspects of the impacts of the **Preferred Alternative** to neighborhoods and housing in the I-205 Interchange area will be substantially the same as the impacts of **Alternative 2** in this area.

Midpoint area

Alternative 2 has moderately-high impacts on the overall subarea, removing 21 percent of the land area for right-of-way between the boundary of the I-205 subarea and SE 122nd Avenue. However, only four dwelling units or less than one percent of the housing stock would be removed.

East of SE 122nd Avenue, **Alternative 2** would remove 11 percent of the total land area for right-of-way and one percent or 27 dwelling units.

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 29) 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.

Preferred Alternative

In the Midpoint area, fewer manufactured home units will be removed north of OR 212/224 under the **Preferred Alternative** (three of the six existing units). Other than that difference, impacts will be the same as those for **Alternative 2** with **Design Option C-2**, and the Sunrise Village manufactured home park will not be removed.

Rock Creek Junction area

Alternative 2 would have moderate impacts removing 13 percent of the land area for right-of-way. It would remove seven units or one percent of the dwelling units.

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. 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 relocated in 2004 as a result of the widening of SE Sunnyside Road. It would be further affected at this new location by changes to travel patterns under all alternatives (see discussion regarding travel patterns in the Rock Creek Junction area below).

Preferred Alternative

Impacts to community character in the Rock Creek Junction area will be similar to those for **Alternatives 2 and 3**. After stakeholder input, the design of **Alternative 2** in this area was changed under the **Preferred Alternative** to provide new access out of the Orchard Lake neighborhood via a right-turn northbound on OR 224 from SE Orchard View Lane south of the new highway. That new access provides mitigation for the closure of SE Goosehollow Drive at OR 224 and helps to alleviate concerns that excessive out-of-direction travel could affect community livability.

Schools

Four schools are in the land use study area: Sabin-Schellenberg Skills Center, Clackamas

Elementary School, Clackamas High School, and Rock Creek Middle School (which opened in September 2010 to replace the Sunrise Middle School at SE 132nd Avenue and SE Summer Lane). No school buildings would be affected by the proposed Sunrise Project. About 0.18 acre located at the southwest corner of the 6-acre recreation field at Clackamas Elementary School would be needed for right-of-way (see Parks and Recreation section). 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.

Preferred Alternative

In terms of school impacts, more dwelling units within affected school districts would be displaced under the Preferred Alternative than under Alternative 2.

Emergency Services

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. Oregon State Police have an office on Deer Creek Lane near the I-205 interchange.

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 Sunrise Project could be a disadvantage during an earthquake.

Preferred Alternative

Impacts of the Preferred Alternative on emergency services are the same as the impacts of Alternative 2.

Changes to Travel Patterns

Figures 10 through 17 (Chapter 2) in the section titled “How New Connections Would Be Made” (page 23) illustrate changes to access from Alternatives 2 and 3 and the Preferred Alternative. 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 Sunrise Project would require out-of-direction travel from some locations, but would make travel through the area more efficient.

All build alternatives

The build alternatives would create three major access changes to the primary road system that affect both businesses and neighborhoods.

Together the Sunrise Project and the Milwaukie Expressway would provide a significant east-west access corridor. The connection between this east-west corridor and I-205 is improved by the new I-205/Sunrise Project interchange.

The primary route connecting I-205, OR 212/224, and the Milwaukie Expressway to the Clackamas Regional Center would be modified. The new route would primarily use SE 82nd Avenue and SE Deer Creek Lane to make this connection, using the routes described below:

- Sunrise Project westbound traffic and Milwaukie Expressway eastbound traffic will access the Clackamas Regional Center by way of ramps to SE 82nd Avenue.

Southbound traffic from the Clackamas Regional Center will access the Sunrise Project via SE 82nd Avenue and SE Deer Creek Lane/SE Johnson Road to its intersection with the Milwaukie Expressway.

- Sunrise Project westbound traffic will be able to connect to I-205 northbound by a direct ramp; however, the first available I-205 off-ramp northbound will be at the SE Johnson Creek Boulevard Interchange. This will have the effect of channeling access from the Sunrise Project to the Clackamas Regional Center onto SE 82nd Avenue. There will still be access from I-205 at SE 82nd Avenue, SE Sunnybrook Boulevard, and SE Sunnyside Road.
- Sunrise Project westbound traffic will be able to connect to I-205 southbound by a direct ramp; however, the first available I-205 off-ramp located southbound will be at the Gladstone Interchange.
- There will be no direct access from the Sunrise Project and Milwaukie Expressway via I-205 to the rebuilt OR 212/224 Interchange or to the SE Sunnybrook Boulevard/SE Sunnyside Road Interchange.

A 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. Because there would be no direct connection via I-205 between these areas, SE 82nd Avenue/Drive would be the primary connection between these two employment areas.

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 by **Design Option A-2**.

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

Access from the industrial uses on SE 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.

SE Lake Road would end in a cul-de-sac at SE Johnson Road. Residential and business traffic would have to travel to SE Webster Road to access the regional network. The intersection of SE Webster and SE Johnson roads currently performs poorly at LOS E (with LOS F being the worst). Driveways on SE Johnson Road south of OR 224, including access to the Sabin-Schellenberg Skills Center and business driveways, would be restricted to right-in/right-out only. The changes would require out-of-direction travel and could create more congestion at the SE Lake Road/SE 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. SE Jefferson Street would be closed at SE McKinley Avenue and all traffic rerouted to SE Hood Street or SE Roots Road, causing minor out-of-direction travel.

The existing access to I-205 from SE Lawnfield Road would be eliminated, and access to SE 82nd Drive from SE Lawnfield Road would be lost when the SE Lawnfield Road at-grade railroad crossing is closed. East-west travel on SE Mather Road would be closed at the Sunrise Project. Closing the SE Lawnfield Road at-grade railroad crossing would end a direct connection between the multi-family 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 SE 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 Sunrise Project would have a beneficial impact on businesses overall.

More truck traffic would be expected on the roads around the Hollywood neighborhood as a result of rerouting of traffic down the SE Industrial Way extension.

Design Option A-2 would keep the existing connection to SE Lawnfield Road. A new connection between SE Tolbert Street and SE 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**.

The current access of SE Herbert Court 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 SE Herbert Court to the west end of SE 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 SE Jannsen Road and SE Clackamas Road would be moderately affected by the closure of St. Helens, Adams, and Herbert streets at SE 82nd Drive. SE Clackamas Road and SE 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 SE 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 as the midpoint interchange in **Alternative 2** would. 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 OR 212/224 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 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 driveways 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 would 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 Sunrise Project, but this would be offset to some extent by improved east-west traffic mobility through the area.

Closing SE Goosehollow Drive at OR 224 would affect an estimated 120 residences in the Orchard Lake neighborhood. Traffic would access OR 224 at SE Eckert Lane instead of SE Goosehollow Drive. Traveling from the

intersection of SE Goosehollow Drive and SE Orchard View Lane south via SE Eckert Lane, then north to SE Goosehollow 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 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 driveways of the four residences currently fronting OR 212 to the west of SE Bel Air Drive would be rerouted to SE 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 SE Goosehollow Drive. The new connection would close some individual driveways 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.

Preferred Alternative

The changes to travel patterns under the **Preferred Alternative** will be substantially the same as under **Alternative 2**, with two important exceptions. Under **Alternative 2**, businesses and residents in the northeast quadrant of the I-205 Interchange area will lack direct access to I-205 and SE 82nd Drive and will travel out of direction to access Old Clackamas. By including the Tolbert overcrossing of **Design Option A-2** with the North Lawnfield Extension of **Alternative 2**, the **Preferred Alternative** will provide access across the UPRR mainline and more direct connection to I-205 and SE 82nd Drive.

The second improvement to travel patterns under the **Preferred Alternative** will be the new access for residents south of the Sunrise Project in the Orchard Lake neighborhood. Under **Alternative 2**, SE Goosehollow Drive at OR 224 will be closed and SE Eckert Lane will provide an alternative full access intersection with OR 224, but further south. The **Preferred Alternative** will provide two additional access points, a right-out only on SE Orchard View Lane and a north-south access at SE 162nd Avenue. Thus the **Preferred Alternative** will avoid some of the longer out-of-direction travel that would have been required under **Alternative 2**.

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 nontaxable highway use. The impacts range between about \$40 million to \$45 million annually in 2006 dollars. Building **Alternative 3 with Design Options A-2 and D-3** would remove the least taxable value, about \$40 million. **Alternative 2 with 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 Sunrise Project. However, these potential increases cannot be accurately projected.

Preferred Alternative

Right-of-way acquisition for the **Preferred Alternative** will reduce local tax revenues when properties that are currently privately-owned and paying property taxes are purchased by the public for a nontaxable highway use.

Between 2006, when the calculations were performed for **Alternatives 2 and 3**, and 2010,

land divisions have altered the land use tax base. As a result, a direct comparison between the **Preferred Alternative** of 2009 and the other build alternatives cannot be made. However, it can be estimated to be an amount similar to **Alternative 2** since the **Preferred Alternative** is essentially the same land use impacts as **Alternative 2**, with minor location variations at SE 82nd Drive and the west end of the project and a slight reduction in total acreage impacts. Therefore, the annual property tax impact in 2006 dollars is estimated to be just over \$42 million.

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. The same is true for the **Preferred Alternative**.

Mitigation Measures for the Preferred Alternative

A construction management plan will be developed that supports the continued operation of business districts and the livability of neighborhoods.

Relocation

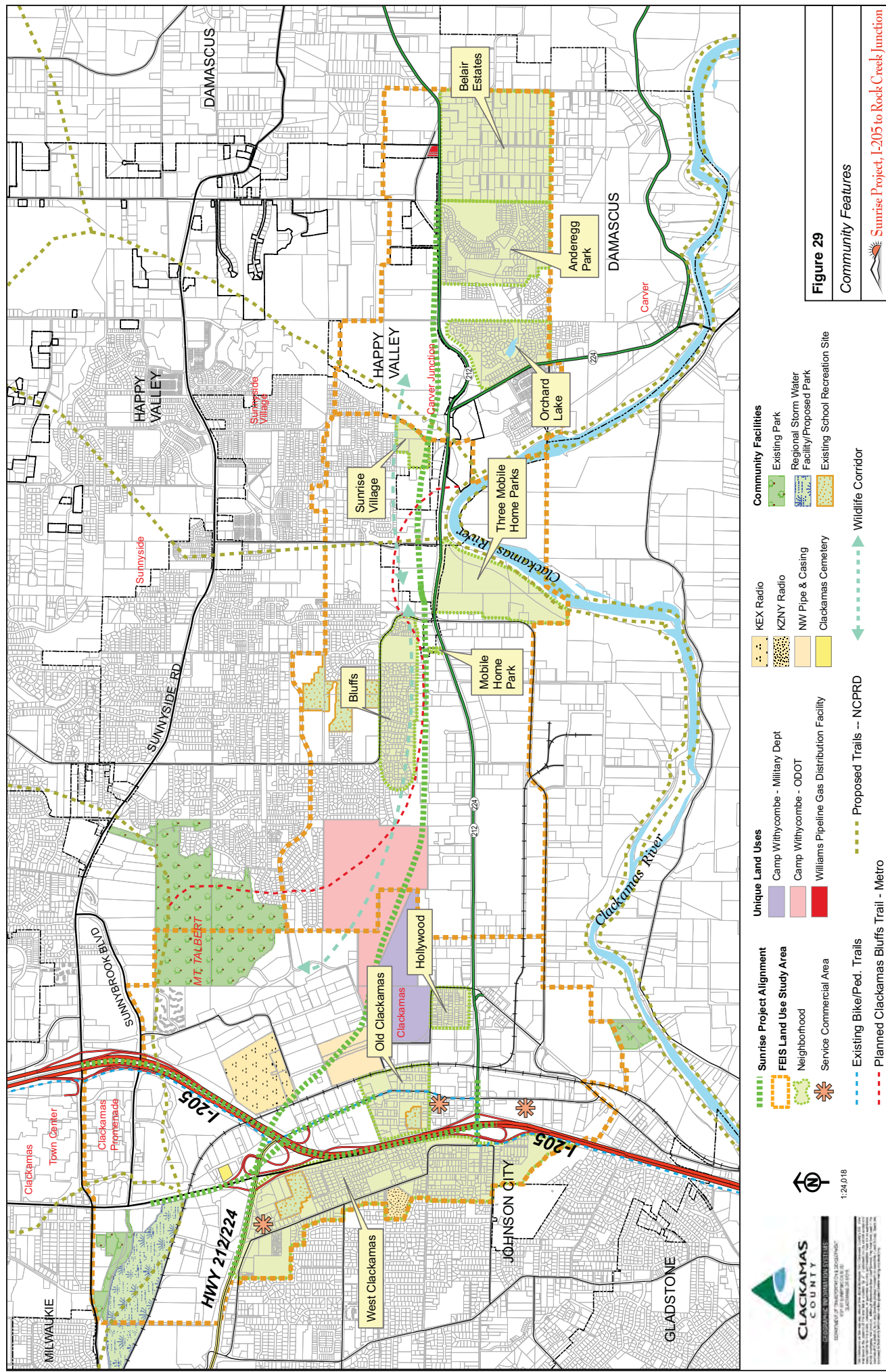
Mitigation will be provided to individual businesses and residents by purchase and relocation. This purchase and relocation must follow the requirements of the Uniform Act. The Uniform Act provides protections and assistance for people affected by the acquisition, rehabilitation, or demolition of real property for federal or federally funded projects. This law helps ensure that people whose real property is acquired, or who move as a direct result of projects receiving federal funds, are treated fairly and equitably and

receive assistance in moving from the property they occupy. Federal law also addresses partial takes of property, addressing how payment and assistance to reconfigure the business and residence must take place.

Business and neighborhood access

Several transportation mitigation measures (see Transportation mitigation section) address access and circulation impacts.

Up to two directional signs on OR 224 will be installed to improve the visibility of access to the Sunnyside Community Church.



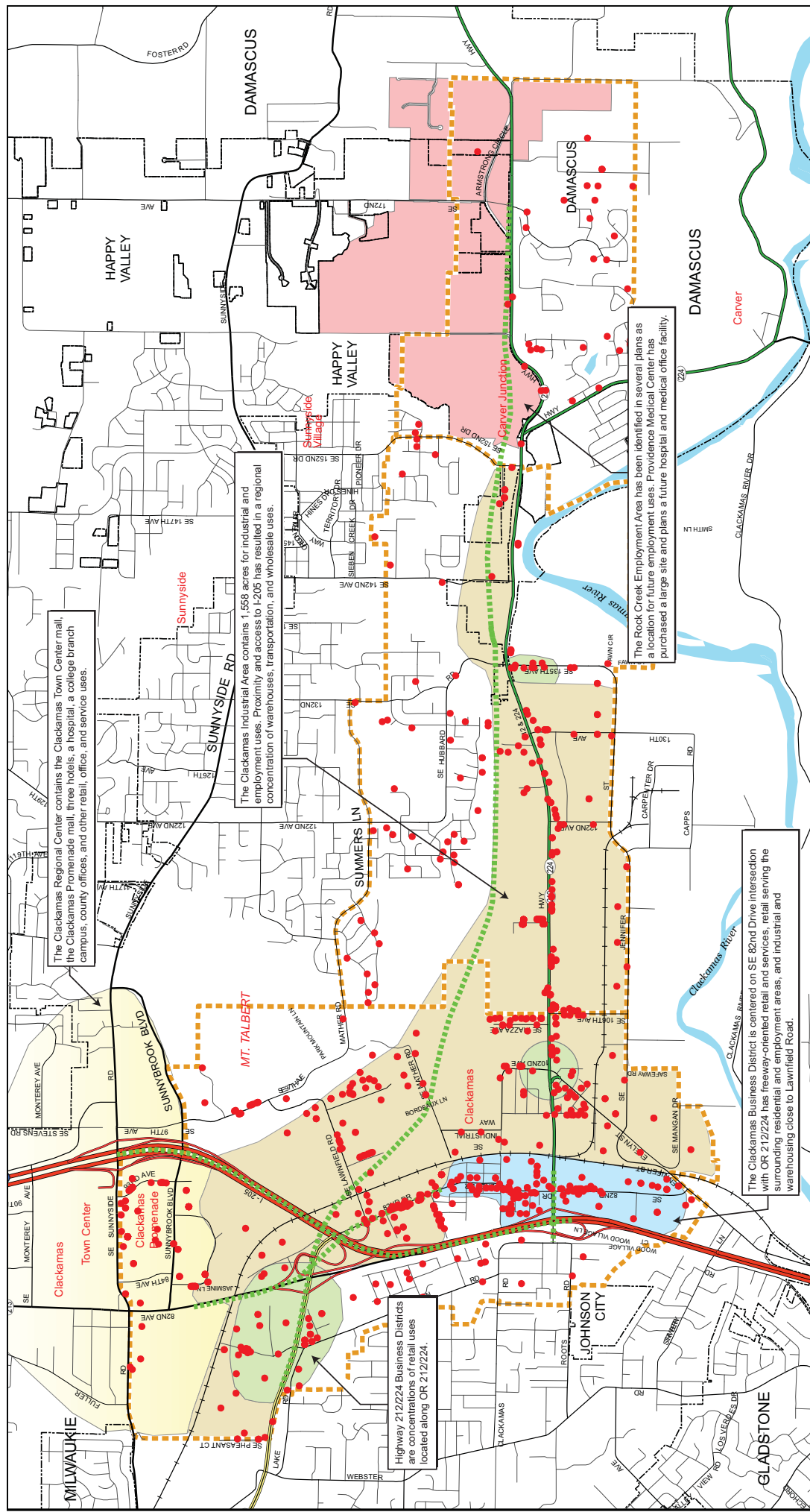







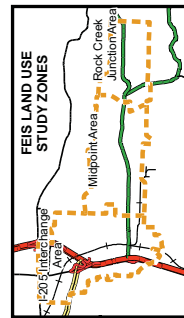


Figure 30

Business Districts



 Sunrise Project Alignment
 Employer Locations
 Clackamas Business District
 Clackamas Industrial Area
 Clackamas Regional Center
 Hwy 212/224
 Rock Creek Employment Area



1:24,000



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 or 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.
- Prevent denial or delay of the receipt of benefits by the protected populations.

The U.S. Department of Transportation defines a “disproportionately high and adverse effect” as an adverse effect that is predominately borne by a minority population and/or a low-income population; or will be suffered by one of those populations and the impact is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority or non-low-income populations, within a given area.²⁸ This analysis compares data for US Census 2000 block groups to the county and state statistics.

The term “adverse effects” includes a wide range of environmental and social impacts, such as displacement of residents and businesses, impacts resulting from increased air and water pollution, noise levels, visual disruption of a neighborhood, and environmental damage or risk to human health from hazardous materials.

²⁸ DOT Final Justice Order, published in the Federal Register on April 15, 1997.

The Socioeconomics Technical Report 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.

Low-Income households are defined by FHWA guidance as households with an income at or below the Department of Health and Human Services poverty guidelines. The Census Bureau uses poverty thresholds. This analysis uses the Census Bureau’s poverty statistics based on its calculation of people below the poverty line threshold (also referred to as “very low income”, since it can be more easily attributed to a geographical area.

Census Tracts are small statistical subdivisions of counties, generally having stable boundaries and, were originally 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. Blocks are geographic subsets of Block Groups.

Mitigation and offsetting benefits to affected populations can be taken into account when determining whether a project will have disproportionately high and adverse effects on minority and low-income populations.

More information about these populations in the Sunrise Project area is presented in the Socioeconomics Technical Report.

Finding for EO 12898

The Sunrise Project's **Preferred Alternative** will not have disproportionately high and adverse effects on minority and low-income populations. This finding is based on US Census 2000 data and methodology from the "Draft National Guidance for Conducting Environmental Justice Analyses" (EPA, 1998). While EJ populations do exist in the study area, and while there will be adverse effects from the project, adverse effects on minority and low-income populations will not be borne disproportionately by those populations and adverse impacts will be mitigated. In addition, the potential benefits compared to the future **No Build** conditions include lower noise levels for some areas, improved access to the regional transportation network, shorter travel times for personal, business, transit, and emergency vehicles, and enhanced safety (fewer accidents).

The study area contains nine block groups, of which, six contain minority and low-income populations in larger concentrations than are found at the state level (see Figure 31). Based on methodology from the "Draft National Guidance for Conducting Environmental Justice Analyses" (EPA, 1998), meaningfully greater is used to mean more than 1.2 times the state ratios. (Clackamas County data are provided on Figure 31 and in the Socioeconomic Technical Report for context.)

Minorities in the Study Area

Four block groups in the study area have meaningfully greater concentrations of minority (non-white/Hispanic or Latino) individuals than the state's ratios of 13 percent (non-white) and 8 percent (Hispanic/Latino).

These block groups include:

CT 221.03:

- BG 1 (between 135th and 152nd Avenues north of OR 212/224), 20 percent of Asian, Other

CT 221.04:

- BG 1 (East of I-205 and south of Jennifer Street), 9 percent Hispanic/Latino
- BG 4 (East of I-205, north of Mather Road), 18 percent African American, Asian, Other and/or Hispanic/Latino
- BG 5 (Industrial Way to 132nd Avenue north of OR 212/224), 16 percent African American, Asian, Other and/or Hispanic/Latino

Low-Income Population in the Study Area

Two block groups in the study area have meaningfully greater concentrations of low-income individuals than the state's 12 percent. The EJ areas of concern for low-income individuals are:

CT 221.04:

- BG 1 (East of I-205 and south of Jennifer Street), 18 percent below the federal poverty line.
- BG 2 (East of I-205, north of Mather Road), 25 percent below the federal poverty line.

Impacts

The potential adverse impacts from the Sunrise Project consist of residential and business displacements, increased noise levels, and habitat, stormwater, and wetland impacts. The potential benefits compared to the future **No Build** conditions include lower noise levels for some areas, improved access to the regional transportation network, shorter travel times for personal, business, transit, and emergency vehicles, and enhanced safety (fewer accidents).

Displacement Impacts

Residential displacements will occur in four of the nine block groups within the study area, as follows:

- BG 1 (CT 221.03)
- BG 2 (CT 221.04)

- BG 5 (CT 221.04)
- BG 3 (CT 232.02)

The first three of the block groups have ratios of minorities or low-income persons higher than the state level. The fourth, in CT 232.02, has a ratio of Hispanic/Latino persons equivalent to the state (8 percent) and a ratio of low-income persons (3 percent) well below that of the state (12 percent). Because there are minorities and low-income persons in that block group, it is included in the displacement analysis.

BG 1 and BG 4 of CT 221.04 (block groups with potential EJ populations) will not have any residential displacements caused by the Sunrise Project.

The known number of displacements in the four block groups were multiplied by the average number of persons per household (PPH) in that block group, which resulted in a total estimated number of people that are expected to be displaced. This total was then multiplied by the ratio of minority or low-income persons for that block group to determine the probable number of protected persons who would be displaced. Those totals were then compared to the total number of people (residents) expected to be displaced by the whole project based on the average PPH.

The analysis predicts that under **Alternatives 2 and 3** with any of the design options, up to 28 minority persons would likely be displaced out of a total of up to 203 persons displaced (14 percent). Up to 22 low-income persons would likely be displaced (11 percent). The ratios of minority and low-income displaced persons are not disproportionate when compared to the ratio of minority persons (13 percent) and low-income persons (12 percent) in the state.

Under the **Preferred Alternative**, the analysis predicts that 12 minority persons would likely be displaced out of a total of 143 persons displaced (8 percent). Twenty-one low-income persons would likely be displaced (14 percent). The ratios of minority and low-income displaced persons are not disproportionate when compared to the ratio of minority persons (13

percent) and low-income persons (12 percent) in the state.

Therefore, displacement impacts are not likely to be borne disproportionately by minority or low-income persons.

Impacts on the Natural Environment

Habitat, stormwater, and wetland impacts as they relate to EJ, primarily have to do with ensuring that the impacts on the resources do not adversely affect protected populations who depend on those habitats in some way. An example would be a population using habitat to supplement their diet. Most of the habitat and wetlands are within urban areas and are not known to be used by protected populations in a different way than non-protected populations. Therefore, the impacts will be spread across all populations in the study area.

Noise Impacts

The two block groups abutting I-205 to the east have higher ratios of low-income populations and currently experience noise levels above the NAC. Under **Alternative 1—No Build** noise levels would be slightly higher. Under the **Preferred Alternative** with mitigation (noise walls E205N-3 and E205S-5) noise levels for those adjacent to I-205 will be 8 to 10 dBA lower than existing or future **No Build** conditions. Therefore, those EJ populations will have a benefit from the Sunrise Project.

Conclusion

In conclusion, the project will not create high and adverse impacts disproportionately on Environmental Justice populations for one or more of the following reasons:

- 1) the adverse displacement impacts will be mitigated through the Uniform Act (providing relocation benefits)
- 2) noise abatement measures will decrease noise levels in the low-income area east of I-205 (north of OR 212/224) compared to existing conditions; and,

3) the project will have offsetting mobility and safety benefits that accrue to all people in the study area.

Table 11 presents the data used in this analysis. The following discussion presents the data and analysis used to support the finding.

Data

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 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. Clackamas 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 the Environmental Justice analysis. During the analysis process, other local review was conducted, including the location of known low-income housing projects, manufactured home parks, 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 31, Environmental Justice Areas of Concern, 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 data with the county and state percentages of minorities and low-income populations.

The following Census Block Groups were identified as containing environmental justice communities based on having meaningfully greater ratios of minorities or low-income persons than the state ratios:

CT 221.03:

- BG 1 (between 135th and 152nd Avenues north of OR 212/224), 20 percent of Asian, Other.

CT 221.04:

- BG 1 (East of I-205 and south of Jennifer Street), 18 percent below the poverty line.
- BG 2 (East of I-205, north of OR 212/224), 25 percent below the poverty line.
- BG 4 (East of I-205, north of Mather Road), 18 percent African American, Asian, Other and/or Hispanic/Latino.
- BG 5 (Industrial Way to 132nd Avenue north of OR 212/224), 16 percent African American, Asian, Other and/or Hispanic/Latino.

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 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.

The third population is the resident population remaining after the 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—improved mobility, safety, and noise abatement—to the resident protected populations outweigh the negative impacts of the improvements.

Table 11 provides a summary of selected comparative demographics for the Census Block

Groups in the Sunrise Project study area, in Clackamas County, and in the state of Oregon.

The following general statements can be made about the racial composition of the study area, Clackamas 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 Clackamas County.
- The ratio of Asian American population to the whole population in the study area is higher than in Clackamas County and the state, but less than in the Portland metropolitan area.

Table 11. Summary of Selected Comparative Demographics

U.S. Census, 2000 Population by Race	CT 221.03 BG 1	CT 221.04 BG 1	CT 221.04 BG 2	CT 221.04 BG 4	CT 221.04 BG 5	CT 232.02 BG 3	Block Group Study Area¹	Clackamas County	State of Oregon
Minority Data									
Total Population	4,013	997	775	3,547	5,548	1,880	23,613	338,391	3,421,399
White Alone	3,211	924	731	2,946	4,681	1,731	25,145	308,512	2,961,623
Percent of Total	80%	93%	94%	83%	84%	92%	88%	91%	87%
Black Alone	70	31	0	72	104	0	333	2,184	55,662
Percent of Total	2%	3%	0%	2%	2%	0%	1%	1%	2%
Asian Alone	386	0	0	191	373	0	1,251	8,114	101,350
Percent of Total	10%	0%	0%	5%	7%	0%	4%	2%	3%
Hispanic/Latino of Any Race	156	88	34	254	229	142	1,293	17,021	275,314
Percent of Total	4%	9%	4%	7%	4%	8%	5%	5%	8%
All Other	346	42	44	338	390	149	1,884	19,581	302,764
Percent of Total	9%	4%	6%	10%	7%	8%	7%	6%	9%
Low-Income Data									
Total Population²	3,977	984	775	3,547	5,523	1,870	28,325	335,122	3,347,667
Below Poverty Line	196	176	193	372	208	47	1,825	21,969	388,740
Percent of Total	5%	18%	25%	11%	4%	3%	6%	7%	7%
Displacements?	Yes	No	Yes	No	Yes	Yes			
Minority (M) or Low Income (LI) Communities?	M	LI	LI	M	M	-			

¹See Figure 31, page 121.

² Total Population is different because economic census data is from 1999.

- 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 Clackamas County overall.
- The ratio of Hispanic population to the whole population is about the same in the study area and Clackamas County but lower than in the state as a whole.
- The ratio of Hispanic or Latino residents in the study area is generally similar to, or lower than, the populations in Clackamas County and in the state. Three block groups have ratios that are higher by a few percentage points.
- Block Group 1 of Census Tract 221.03 and Block Groups 4 and 5 of Census Tract 221.04 have a somewhat higher proportion of Asian American residents than Clackamas County and the 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 one percent higher ratios of African Americans (3 percent) and Hispanics/Latinos (9 percent) than the state's ratios of 2 and 8 percent.

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, Clackamas County, and the state.

- Block Groups 1, 2, 3, and 4 of Census Tract 221.04 have median household incomes lower than the state median.
- Block Groups 1 and 2 of Census Tract 221.04 have double the proportion of persons in poverty compared with the state. The residential area of BG 2 is east of I-205 from about Lawnfield Road south to about SE Beaverlake Street. BG1 is mostly outside any proposed direct impacts from

the build alternatives, but its northwest corner abuts I-205, where the Sunrise Project will transition to the existing highway.

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

Other Groups

Within the block groups surrounding the Sunrise Project area, there are higher concentrations of children, the elderly, and the disabled than are found at the census tract level. Though their protection may be important to the community, they are not specifically named in 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 Clackamas County and the state, because it is the location of a manufactured 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 Clackamas 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.

Affordable housing in the land use study area consists of 74 subsidized rental housing units (Section 8) (see Figure 31) units and a number of units operated by the Clackamas County Housing Authority. None of these affordable housing units would be displaced by any alternative or design option.

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

Residential Displacement Impacts

The number of residential displacements (in the four affected block groups) were multiplied by the average number of persons per household (PPH), which resulted in a total estimated number of residents that are expected to be displaced. This total was then multiplied by the ratio of minority or low-income persons for that block group to determine the probable number of minority and non-minority persons who would be displaced. The totals for all affected block groups were then converted to ratios and compared to the state ratios of minority and low-income persons.

BG 1 (CT 221.03):

Under **Alternatives 2 and 3**, 33 residential units would be removed. In those units, 95 people on average reside, of which 19 would probably be minorities (20 percent [all decimals rounded to a whole number]). With **Design Option C-2**, 4 units would be removed, in which 12 people would be expected to reside. Of those, two would likely be minorities. With **Design Option C-3**, 35 units would be removed, affecting 101 people, of which 20 would likely be minorities, approximately the same impact as **Alternatives 2 and 3**.

Under **Alternatives 2 and 3**, 22 people would probably be low-income (25 percent). With **Design Option C-2**, one person would likely be a minority person and none would be low-income. With **Design Option C-3**, four would likely be low-income.

Under the **Preferred Alternative**, four residential units would be removed, affecting 12 persons. Of those, two people are likely to be minorities and one person is likely to be below the poverty line.

BG 2 (CT 221.04):

Under **Alternatives 2 and 3**, 27 residential units would be removed. In those units, 70 people on average reside, of which 4 would probably be

minorities (7 percent) and 17 would probably be below the poverty line.

Adoption of **Design Option A-2** would not affect the totals.

Under the **Preferred Alternative**, 28 residential units would be removed. In those units, 75 people on average reside, of which 5 would probably be minorities (7 percent) and 19 would probably be below the poverty line.

BG 5 (CT 221.04):

Alternatives 2 and 3, four residential units would be removed. In those units, 11 people on average reside, of which two would probably be minorities (16 percent). Under **Design Option B-2**, three additional residences would be removed, affecting 19 people, of which three would probably be minorities.

Zero persons below the poverty line are likely to be displaced in this block group because the rate of poverty is relatively low, at 4 percent.

Under the **Preferred Alternative**, four residential units would be removed, so the impacts would be the same as under **Alternatives 2 and 3**.

BG 3, CT 232.02:

Alternatives 2 and 3, seven residential units would be removed. In those units, 19 people on average reside, of which two people would probably be minorities (8 percent). With **Design Option D-2**, eight units would be removed, in which 22 people would be expected to reside. Of those, two persons would likely be a minority. **Design Option D-3** would have the same impacts as **Design Option D-2**.

The ratio of persons below the poverty line is lower in this block group (3 percent) than in the state. Only one person is likely to be displaced under any of the alternatives with any design option except C-2, in which case no low-income people are likely to be displaced.

Under the **Preferred Alternative**, 17 residential units would be removed, affecting 46 persons. Of those, four persons are likely to be minorities. One is likely to be low-income.

The analysis predicts that under **Alternatives 2 and 3** with any of the design options, up to 28 minority persons would likely be displaced out of a total of up to 203 persons displaced (14 percent). Up to 22 low-income persons would likely be displaced (11 percent). The ratios of minority and low-income displaced persons are not disproportionate when compared to the ratio of minority persons (13 percent) and low-income persons (12 percent) in the state.

Under the **Preferred Alternative**, the analysis predicts that 12 minority persons would likely be displaced out of a total of 143 persons displaced (9 percent). Twenty-one low-income persons would likely be displaced (15 percent). The ratios of minority and low-income displaced persons are not disproportionate when compared to the ratio of minority persons (13 percent) and low-income persons (12 percent) in the state. Therefore, displacement impacts are not likely to be borne disproportionately by minority or low-income persons.

The displacement impacts are adverse but the mitigation available in accordance with the Uniform Relocation Act, and high existing vacancy rates reduces those impacts.

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 and Parks and Recreation Section of this Chapter (see Figure 29, Community Features) 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 the existing community

centers in manufactured home parks and apartment complexes. Therefore, no high and adverse impacts to community services will occur under the **Preferred Alternative**.

Travel Patterns and Accessibility

According to Census 2000 data, between 89 and 91 percent of people in the study area and in Clackamas 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 percentage in Clackamas County.

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.

The **Preferred Alternative** will benefit minority and low-income people in the entire project area by increasing mobility and resulting in greater transit service, including an express bus. Therefore, there will not be high and adverse impacts borne disproportionately by those populations.

Noise Impacts

The Sunrise Project study area has a number of locations that have been affected by noise from I-205 since it was constructed in the 1970s. The residential areas with the greatest existing noise levels are east of I-205 from the Lawnfield

Road area to south of OR 212/224. The Old Clackamas neighborhood in CT 221.04, BGs 1 and 2 have been identified as low-income areas and BG 1 has slightly higher concentrations of Hispanic/Latinos and African Americans.

The proposed sound walls associated with the Sunrise Project build alternatives (Walls E205N-3 and E205S-5) will mitigate noise levels. In Old Clackamas neighborhood, the levels will be below their current levels after the Sunrise Project is completed. South of OR 212/224, the noise wall will provide mitigation for a small mobile home park. This area is designated for commercial use in the Clackamas County Comprehensive Plan but Clackamas County staff anticipates that the area would remain in residential use through 2017 to 2023. After the noise wall is built, the area would still have noise levels above the NAC (68 dBA), but that noise level will be lower than existing conditions (76-78 dBA) and future conditions under **Alternative 1—No Build** (78-79 dBA).

The noise abatement benefits in those areas would be enjoyed by all residents. Similar circumstances exist at several points along the Sunrise Project alignment to the east of Camp Withycombe. Therefore, noise impacts will not be high and adverse in the area identified as having higher levels of low-income people.

Air Quality Impacts

There are no identified air quality impacts from the Sunrise Project build alternatives. Therefore, there are no high and adverse air quality impacts that could negatively affect environmental justice communities or the larger residential community.

Determining Environmental Justice Effects

There are three fundamental elements of environmental justice:

1. Full and fair participation by all potentially affected communities.

2. Prevention of the denial of, reduction in, or significant delay in the receipt of benefits by environmental justice communities.
3. Avoidance, minimization, or mitigation of disproportionately high and adverse human health, environmental, social, or economic effects on environmental justice communities.

The first and second elements are addressed in the same way for all alternatives, below. The third element is addressed for **Alternatives 2 and 3** in narrative format, and in Table 12 for the **Preferred Alternative**.

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

The Sunrise Project public involvement program made an extra effort to address environmental justice communities, as previously discussed in the Executive Summary. 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, the project tried to identify potential project benefits and adverse impacts as they are perceived by the communities. Mitigation opportunities were also expected to be suggested by the communities.

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 many manufactured home communities in the area, 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 identified in Executive Order 12898.

Element 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 a small portion of the total number of residences in the study area. The Sunrise Project land use study area contains a total of 5,345 residential units—2,400 single-family residential units, 1,832 multi-family 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 manufactured home park at SE 152nd Avenue that is within the physically constrained corridor between the Clackamas River and the Clackamas River 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 within a census geography with somewhat higher percentages of people living below the poverty line 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 Act, determine the standards and procedures for providing 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 the relocation impacts to residences, businesses, and public facilities. Eligibility and terms of relocation assistance would be determined by a real estate team after the NEPA process has been completed.

Displacement of residents and community resources would be mitigated by first exploring relocation options within their neighborhoods, which 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 provides affordable housing options in the area.

During the planning and alternatives development 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 were 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.
- 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- or moderate income residents who are unable to find suitable, comparable replacement housing, particularly for 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 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 Sunrise Project, then the use of housing of last resort would be considered. The residential relocations made under the Uniform Act, 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 (multi-family 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 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.

Element 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 from the project could be disproportionately high and adverse, the environmental justice analysis answers five questions, as follows:

- a) How does the project directly impact EJ areas of concern?*
- b) Would high and adverse effects be predominately borne by an EJ-sensitive population?*
- c) Would high and adverse effects suffered by an EJ-sensitive population be appreciably more severe or greater in magnitude than those suffered by the non-sensitive population?*
- d) Would adverse impacts occur to community resources that are particularly important to EJ-sensitive populations?*
- e) Are there project benefits that would accrue to EJ-sensitive populations?*

Alternative 1 would not have any direct impacts to environmental justice populations in the project land use study area. There are no high and adverse impacts associated with this alternative.

Questions ‘a’ through ‘e’ are addressed for **Alternatives 2** and **3** in the paragraphs below. Question ‘d’ is addressed for the **Preferred Alternative** below as well. Evaluation of the **Preferred Alternative** addressing questions ‘a’, ‘b’, ‘c’, and ‘e’ is contained in Table 12 at the end of this section.

Question a: How does the project directly impact environmental justice areas of concern?

Would it impact minority or very low-income 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. Direct impacts consist primarily of displacement, noise impacts, and changes to access, as described on the preceding pages.

Displacement Impacts

Displacements will occur in four of the nine block groups within the study area. Three of the four block groups can be considered areas of concern for EJ. The fourth block group has higher ratios of white alone people and a lower poverty ratio than the state or county. Two block groups have higher ratios of minorities (20 and 16 percent) than in the state (13 percent) and county (9 percent). One of those also has higher ratios of low-income persons (11 percent) than the state and county (7 percent).

The “Displacement” section, above, presents the analysis of the probability that displacement impacts will not be borne disproportionately by minority and low-income people. The analysis predicts that under **Alternatives 2 and 3** with any of the design options, up to 28 minority persons would likely be displaced out of a total of up to 203 persons displaced (14 percent). Up to 22 low-income persons would likely be displaced (11 percent). The ratios of minority and low-income displaced persons is not disproportionate when compared to the ratio of minority persons (13 percent) and low-income persons (12 percent) in the state.

The **Preferred Alternative** is addressed in Table 12.

Other than displacements, there are no other identified adverse impacts that would affect the EJ areas of concern. Noise, air quality and

habitat impacts have been addressed above in this section.

Question b: Would the project result in high and adverse effects that would be predominantly borne by a sensitive population?

As described in the response to Question ‘a’, above, adverse displacement impacts under **Alternatives 2 and 3** with the design options are expected to affect up to 28 minority persons in the study area, out of a potential 203, or 14 percent. Impacts will probably affect up to 22 low-income residents. Therefore, the displacement impact, while adverse, will not be predominantly borne by a sensitive population.

Notably, none of the known affordable housing in the land use study area (74 subsidized rental housing units) would be displaced by any alternative or design option.

While displacement is considered an adverse impact, the severity of displacement will be mitigated by the provision of comparable housing. No units that have been identified specifically for affordable housing or as subsidized units will be displaced.

The **Preferred Alternative** is addressed in Table 12.

Question c: 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 displacement impacts will be the same for all displaced units in the sense that the process for relocation and providing mitigation will be the same for all residents and will be equivalently mitigated in compliance with the Uniform Act.

However, it is important to note that relocating manufactured home parks 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. Where existing housing is substandard, comparable replacement housing may require providing a better quality of accommodation.

Building the 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.

Therefore, the impacts from **Alternatives 2 and 3** would not be appreciably more severe or greater in magnitude than the effect that would be suffered by the non-sensitive population.

The **Preferred Alternative** is addressed in Table 12.

Question d: Would the project result in adverse impacts to community resources that are particularly important to environmental justice populations?

No community resources would be displaced. **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 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.

The **Preferred Alternative** will have the same impacts on community resources as those discussed above for **Alternatives 2 and 3**. The **Preferred Alternative** would not impact any religious or fraternal organizations, service centers for low-income populations, or similar facilities that are necessarily associated with environmental justice populations.

Question e: Are there project benefits that would accrue to environmental justice populations?

The benefits of increased mobility with the Sunrise Project (for all modes) would generally accrue to all area residents, including environmental justice populations. Increased transit service could be expected to benefit the block groups in the project area with less access to private vehicles.

Noise walls in the I-205 area will decrease noise levels in some locations, creating a potential benefit to a low-income area (BG 2, CT 221.04). Therefore, there are benefits from the Sunrise Project that would accrue to an environmental justice population.

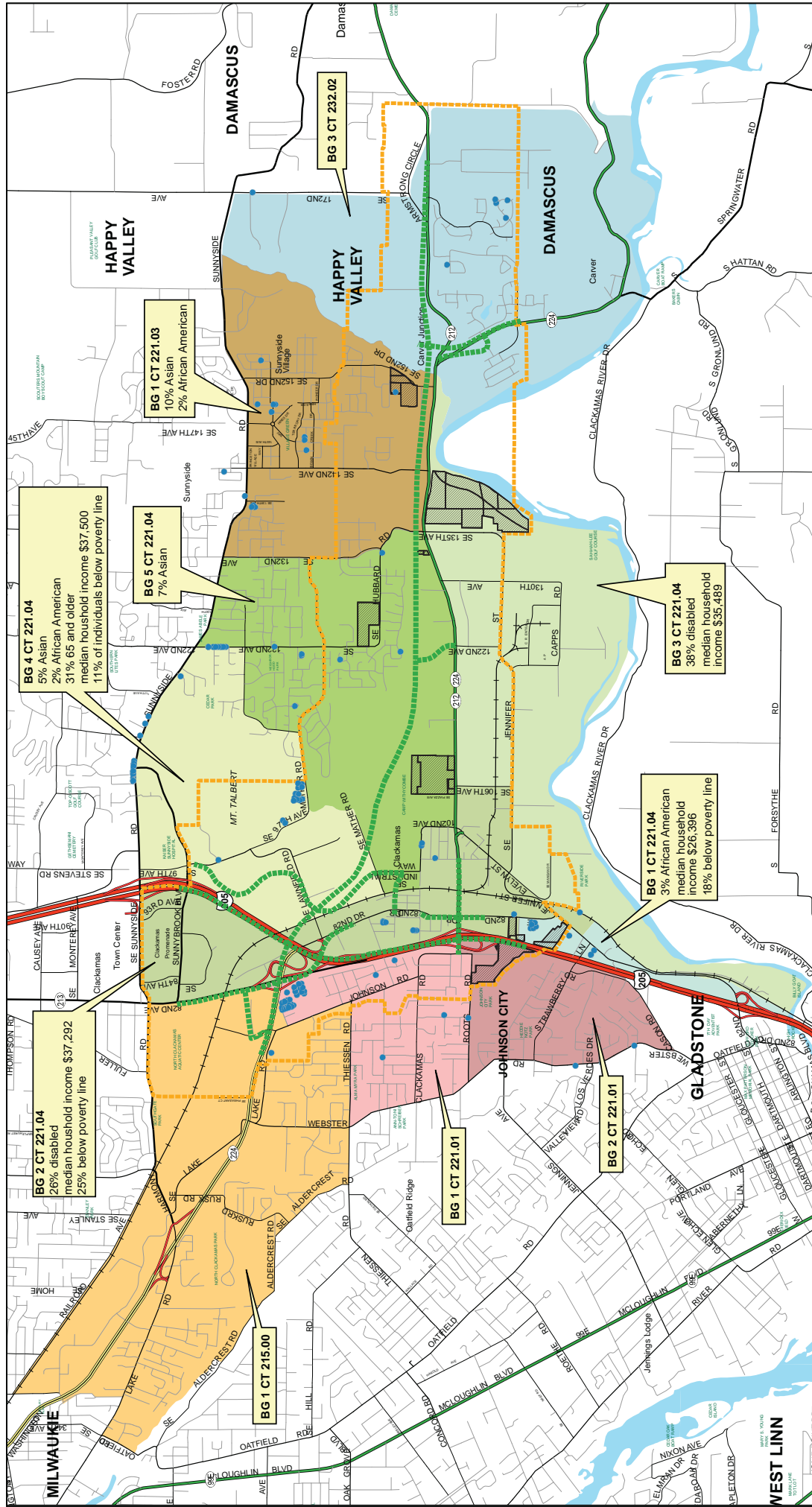
The **Preferred Alternative** is addressed in Table 12.

Indirect Effects

The indirect effects on environmental justice communities include changes to views, additional noise levels, increased stormwater runoff, and potential exposure to air emissions and hazardous materials. Table 12 highlights these impacts.

Mitigation Measures for the Preferred Alternative

No additional mitigation measures will occur beyond the assistance already committed to: under the federal Uniform Act for relocation assistance; walls for noise abatement; and measures required for relocation under Land Use and Business and Communities. Displaced EJ households will be provided relocation assistance if they are renters and purchase and relocation assistance if they are owners.



County:

- 91% White alone
- 2% Asian
- 1% African American
- 11% 65 and older
- 14% disabled
- median household income \$52,080
- 7% below poverty line

State:

- 87% White alone
- 3% Asian
- 2% African American
- 12% 65 and older
- 17% disabled
- median household income \$40,916
- 12% below poverty line

Legend:

- Sunrise Project Alignment
- Land Use Study Area
- Section 8 Housing Site
- Mobile Home Parks

Scale:

1:32,850

Figure 31

Environmental Justice Areas of Concern

Sunrise Project, I-205 to Rock Creek Junction

This page intentionally left blank.

Table 12. Evaluation of Environmental Impacts of the Preferred Alternative on Environmental Justice

	Question a. How does the project directly impact EJ areas of concern? Would it impact minority or very low or low income populations in these areas?	Question b. Would the project result in high and adverse effects that would be predominately borne by an EJ sensitive population? Question c. Would the project result in high and adverse effects that would be suffered by an EJ sensitive population that would be appreciably more severe or greater in magnitude than the effect that would be suffered by the non-sensitive population?	Question e. Are there project benefits that would accrue to EJ sensitive populations?
Air Quality/ Health Effects	There are no identified air quality impacts from the Preferred Alternative that will cause a high adverse effect on the community at large or on EJ communities because the Preferred Alternative will not cause exceedance of the National Ambient Air Quality Standards (NAAQS).	The Preferred Alternative will not cause exceedance of the National Ambient Air Quality Standards (NAAQS). Therefore, the Preferred Alternative will not cause high and adverse air quality impacts that will be predominantly suffered by an EJ population.	No potential air quality benefits from the project were modeled. The forecasted reduction in congestion at specific intersections along OR 212/224 under the Preferred Alternative (compare Figures 20-25 and PA-9 and PA-10) will likely result in better air quality by 2030 than under Alternative 1. This benefit would be experienced by all people in the study area.
Noise	The Preferred Alternative will cause noise effects throughout the project area. With noise abatement walls, identified low-income populations within the I-205 Interchange area on the east side of I-205 are expected to experience noise increases of from 2 to 5 dBA over existing levels and by 2 to 3 dBA over the no build conditions. This increase will not be perceived by most individuals and is not a substantial increase under ODOT criteria. Therefore, the Preferred Alternative is not likely to impact any EJ area of concern.	In general EJ populations are not expected to bear high and adverse impacts at a greater magnitude than would be suffered by non-EJ populations. Increased noise from the Preferred Alternative in the I-205 Interchange area will not be perceived by most individuals and is not a substantial increase under ODOT criterion. However, because current noise levels in the Old Clackamas neighborhood already exceed ODOT criteria, the Preferred Alternative will include the construction of a new sound wall along much of the western edge of this neighborhood. In general, noise impacts in this area can be expected to be well mitigated. Therefore, the Preferred Alternative will not result in high and adverse effects that will be predominantly borne by EJ populations in this area, nor will the EJ population be expected to experience greater adverse noise affects than other populations in this area.	The proposed sound wall along the eastern side of I-205 will improve noise conditions in this area, potentially to the point where noise is lower than it is currently. This area includes the Old Clackamas neighborhood, which has been identified as an EJ area of concern and currently has noise levels from I-205 that exceed the ODOT NAC.
Visual	Adverse impacts to visual quality will worsen from west to east through the project area. Therefore the greatest impacts are expected where no identified EJ populations reside. Residents closest to OR 212/224 in the Three Mobile Home Parks Neighborhood may be affected more than others in this area because they will be below and across the street from the facility which will be 30 feet in the air rather than above it like the bluff residents. To the extent that the manufactured homes nearest that corner contain lower income households, EJ populations will experience negative visual impacts, but not high and adverse impacts because the views are already affected by adjacent industrial development the OR 212/224 facility, and any views toward the main natural amenity, Rock Creek, would be unaffected.	Because the greatest decreases in visual quality will be on the eastern end of the project area, and no EJ populations have been identified in this area, no EJ population will disproportionately bear visual impacts. The impacts at the west end are more moderate than at the east end, therefore, the Preferred Alternative is not likely to cause high and adverse effects that will be predominantly suffered by an EJ population.	The Preferred Alternative is not expected to result in any benefits with respect to visual quality.
Residential Displacement	A total of 53 residential units are expected to be removed for new right-of-way, which represents less than 1% of the total residences in the project area. In those units, 143 people on average reside, of which 12 would likely be minorities (9 percent) and 21 would likely be below the poverty line (15 percent). Therefore, EJ populations are expected to be affected by the residential displacement, but not disproportionately.	The Preferred Alternative will cause displacements, which without mitigation could be considered a high and adverse impact. Mitigation will be provided equally under each alternative to compensate displaced property owners and residents in accordance with the Uniform Act. After mitigation, and considering the overall benefits of the project, the Preferred Alternative will not cause high and adverse effects that will be predominantly suffered by an EJ population.	No benefits from relocation are expected, except where existing housing is substandard then comparable replacement housing may require providing better quality of accommodation.
Economics/ Businesses	A total of 80 businesses in the project area, representing approximately 9% of the total, will be displaced by the Preferred Alternative . These displacements will affect workers of all income levels and occupations, both the general population and EJ populations.	The Preferred Alternative will displace a large number of individual businesses, affecting the businesses, the employees and the business environment. There are no known EJ businesses that might cater to EJ populations. There is no information available to determine if potentially displaced businesses employ a large number of low income or minority persons.	The Preferred Alternative will reduce congestion and improve access to the regional transportation system so that existing business and business districts would be supported, and employment opportunities will increase. 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, and existing employment areas are expected to intensify over time due to the cumulative effects of a more efficient and convenient transportation system. Therefore, there will be benefits from the project that could accrue to low-income populations such as increased job opportunities and better access to jobs via the new highway whether on public transit or in private vehicles.

Note: Question d. is addressed in the text before Table 12.

This page intentionally left blank.

Visual Character and Resources

The 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 of representative views shown on Figures 32 through 35.

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 human-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 13.

Table 13. Existing 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 Resources Technical Report 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 Sunrise Project on those views are presented on Figures 32 through 35.

Viewers and Viewer Sensitivity

Evaluations of views also consider 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 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-range 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 14**, 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 14. Comparison of Visual Quality (VQ) 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	Preferred Alternative
I-205 Interchange Area								
Viewer Sensitivity ¹	Moderately low	Moderately low						Moderately low
Existing VQ	3	3						3
Proposed VQ	2	2						2
Midpoint Area								
Viewer Sensitivity	Moderately high		Moderately high/ high	Moderately high	High ²			Moderately high
Existing VQ	4		4	4	4			4
Proposed VQ	3		3/22	3	2			3
Rock Creek Junction Area								
Viewer Sensitivity	High ³					High ³	High ³	High ³
Existing VQ	5					5	5	5
Proposed VQ	2					2	2	2

¹Represents 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 the SDEIS, 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. For each view, the photo on the left shows existing conditions, and the photo on the right is the project simulation. Figure 36 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, the visual resources blend into vivid, intact, and unified views while in other places, substantial encroachment from the human-made development causes views to appear less unified, less memorable, and less organized.

Alternatives 2 and 3 would cause the visual quality of the I-205 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.

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.

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.

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 Extension 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 of the 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 Sunrise Project would cause visual change along the southern edge of the bluff; however, trees on the bluff would mostly shield residents'

views. However, some ambient light and glare from the freeway would be visible. 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 because 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 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

The View S3 simulation, looking east from just north of Oak Acres manufactured 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**.

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 none of the brake lights and 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**.

Design Option B-2 would cause slightly more impacts to visual quality than 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 those of **Alternative 2**.

Under **Design Option C-3**, the scores would be the same for View 13 as under **Alternative 2**, but lower than under **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 the two-lane highway corridor. There are a variety of visual resources, but commercial and industrial development influences views less than in the 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 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: the Riverbend manufactured home park, the Orchard Lake neighborhood, and the Windswept Waters development. Riverbend 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 once it is completed.

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 Riverbend 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 nonresidential 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.

Preferred Alternative

A quantitative assessment, including existing and proposed visual quality scores, was completed for the **Preferred Alternative**. The **Preferred Alternative** will have substantially the same impacts to visual resources and visual quality as **Alternative 2** (see Table 14).

I-205 Interchange area

Overall, the impacts to visual character, visual resources, specific views, and viewer sensitivity will be substantially the same as those discussed above under **Alternative 2** and **Design Option A-2**. The design modifications included in the **Preferred Alternative** that will be in addition to **Alternative 2** and **Design Option A-2** will result in minor impacts to visual resources such as terrain modification, vegetation removal, minor increases in light and glare (particularly from headlights and taillights of vehicles using newly created road connections), and increased or decreased views of paved roads.

The addition of sound walls proposed along the south side of the Milwaukie Expressway west of I-205, along the east side of I-205 north of OR 212/224, and along both sides of I-205 will change views in the southern end of the project area. Foreground views for those immediately behind the sound walls will consist of vegetation that is retained or planted and/or a solid, linear wall. The sound walls (see Noise Section) could benefit residents by helping to shield direct sources of light (headlights, taillights) from foreground views, but these residents are expected to have higher sensitivity to visual change due to the obstruction of their current long-range views. Viewers in those areas consist of employees, residents, school children, and teachers (Clackamas Elementary). Residential viewers in the southern end of the project area near I-205

are expected to have high sensitivity to visual change.

Midpoint area

The visual quality scores for individual views under the **Preferred Alternative** are the same as those for **Alternative 2** and **Design Option C-2**.

The addition of a proposed sound wall along the northern boundary and northeastern corner of the Oak Acres manufactured home park will change views from this neighborhood. The impacts of the sound wall to that view are included below in the discussion of Simulation Views section (View S3).

The location of the roadway north of the Riverbend manufactured home park will not affect the visual quality scores but will change views. Ambient spillover light and glare coming from vehicles on the new facility will be evident to residents of the Riverbend mobile home park, particularly in the night sky. Viewers in this area include residents, who will likely have high sensitivity to visual change because of their stationary and long-range views.

Rock Creek Junction area

The change in visual quality in this area will be the same under the **Preferred Alternative** as under **Design Option D-3**, changing from 5 (moderately high) to 2 (low).

Simulation Views

New photo simulations were not created for the **Preferred Alternative**, because the **Preferred Alternative** is similar to the other build alternatives and design options. The paragraphs below discuss the similarities and differences to the other alternatives.

View S1. This view simulated **Alternative 2**, but the foreground and background views of the **Preferred Alternative** will be similar to those depicted in the photo simulation for View S1. Under the **Preferred Alternative**, a proposed sound wall in the middleground of this view will partially obstruct views toward the new facility.

Some of the lower-level light and glare impacts will be reduced under the **Preferred Alternative**, but light and glare from the elevated structures of the interchange will still be visible.

View S2. This view simulated **Alternative 2**. Although slight refinements were made to the Lawnfield area for the **Preferred Alternative**, particularly to avoid impacts to the KEX underground copper mat, these refinements would not be evident in this photo simulation.

View S3. This view simulated **Alternative 2**, **Design Option B-2**. The **Preferred Alternative** will incorporate the design of **Alternative 2** in this area but the view will be similar to that depicted by the photo simulation for View S3. Ambient light will be visible to some extent all along the new facility alignment.

View S4. This view simulated **Alternative 2** with **Design Option B-2**. The main difference between this simulation and the **Preferred Alternative** is that there are no on- or off-ramps in this view of the **Preferred Alternative**. The form of the structure and walls will not be as wide or as tall as depicted in the simulation. However, the impacts to visual quality and visual resources in the foreground, middleground, and background are likely similar to **Design Option B-2**, only to a slightly lesser degree because of the narrower footprint of the highway facility in this area.

View S5. The simulation in View S5 is based on **Design Option D-2**. The **Preferred Alternative** will incorporate **Design Option D-3** and will have similar impacts to those described by the photo simulation for View S5. While **Design Option D-3** has a smaller footprint than **Design Option D-2**, the difference between these two interchange types will not be discernable in View S5 because of the approximate one-mile distance between the viewer and the interchange. The different interchange designs will not change the type of impact that will occur: vegetation removal, terrain modification (cuts and fills), and the addition of a multi-lane

highway facility through the center of the view in the middleground and background.

View S6. The simulation in View S6 is based on **Design Option D-2**, but the **Preferred Alternative** will have similar impacts. Although there will be a substantial change to the landscape in the Rock Creek Junction area, in this view the main effects will be removal of the knoll formation and associated vegetation, as well as increased light and glare, particularly at night. None of the new project elements will be visible in the middleground. The foreground trees immediately behind the houses will remain, because they are outside of the construction impact area. The trees will provide a shielding benefit.

View S7. The simulation shown in View S7 is based on **Design Option D-2**, but the **Preferred Alternative** will have similar impacts. From the viewer's perspective, the construction impact extent will be the same, and any slight difference between the two will not be visible because of screening by the structures and vegetation, and the extensive distance between the viewer and the new highway facility.

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 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.

Mitigation Measures for the Preferred Alternative

Construction impacts will be mitigated by setting up construction staging areas in locations that are either out of sight from a majority of viewers and/or in locations that are less visually sensitive, if feasible. Construction lighting will be shielded or focused on work areas to minimize ambient spillover of incandescent or halogen light into adjacent areas, if feasible. To the extent reasonable and safe, traffic stoppage and lane shifts or detours associated with construction will be limited to off-peak travel hours so that fewer viewers are affected and congestion is minimized.

ODOT's project commitments for mitigating permanent effects to visual resources and visual quality are described below. Potential mitigation areas are shown on Figures PA-17 and PA-18. These project commitments focus on mitigating effects to residents, pedestrians, and bicyclists who are expected to be more sensitive to visual impacts than motorists or employees. The project commitments were formulated by considering project impacts and public comments on the SDEIS, and by analyzing what project commitments are reasonable and feasible and will mitigate for direct project impacts.

Mitigation Location A (Figure PA-17): Because a sound wall will be constructed in this location,

no mitigation measures are proposed for visual impacts.

Mitigation Location B (Figure PA-17): A sound wall will be installed along the boundary of the mobile home park. There will not be enough room between the mobile homes and the sound wall for plantings so no mitigation for visual impacts will occur.

Mitigation Location C (Figure PA-17, PA-18): The planting of new trees is not warranted on the south or east sides of the bluff because a vast majority of vegetation, particularly trees near the top of the bluff and closest to residences, will be retained. The project will comply with ODOT's Roadside Development Design Manual (ODOT 2006).

Mitigation Location D (Figure PA-18): In this location, vegetation will be planted to screen residential viewers from direct vehicle light and glare. The planting will be done in an appropriate manner consistent with ODOT's Roadside Development Design Manual (ODOT 2006). Earth work activities will be done to visually blend the slopes of the new highway into the existing landscape, to the extent practicable. The vertical height of the roadway will be minimized, to the extent practicable, to reduce visibility of the new highway, particularly to residential viewers looking toward it.

Mitigation Location E (Figure PA-18): In this location, vegetation will be planted to screen residential viewers from direct vehicle light and glare. The planting will be done in an appropriate manner consistent with ODOT's Roadside Development Design Manual (ODOT 2006). Earth work activities will be done to visually blend the slopes of the new highway into the existing landscape, to the extent practicable. The vertical height of the roadway will be minimized, to the extent practicable, to reduce visibility of the new highway, particularly to residential viewers looking toward it.

Mitigation Location F (Figure PA-18): As much as possible of the existing vegetation will be

retained in order to maintain the vegetative screen between viewers and the new interchange.

Mitigation Location G (Figure PA-18): Vegetation will be planted to screen residential viewers from direct vehicle light and glare as described for Location D. The vertical height of the roadway will be minimized, to the extent practicable, to reduce visibility of the new highway, particularly to residential viewers looking toward it.

Mitigation Location H (Figure PA-18): In this location, vegetation will be planted to screen residential viewers from direct vehicle light and glare. The planting will be done in an appropriate manner consistent with ODOT's Roadside Development Manual (ODOT 2006). Earth work activities will be done to visually blend the slopes of the new highway into the existing landscape, to the extent practicable. The vertical height of the roadway will be minimized, to the extent practicable, to reduce visibility of the new highway, particularly to residential viewers looking toward it.

Mitigation Location I (Figure PA-18): Residents requested that a road be constructed to improve their neighborhood's connectivity to the local street system and mitigation measures will not be warranted.

Mitigation Location J (Figure PA-18): In this location, vegetation will be planted to screen residential viewers from direct vehicle light and glare. The planting will be done in an appropriate manner consistent with ODOT's Roadside Development Manual (ODOT 2006). Earth work activities will be done to visually blend the slopes of the new highway into the existing landscape, to the extent practicable. The vertical height of the roadway will be minimized, to the extent practicable, to reduce visibility of the new highway, particularly to residential viewers looking toward it.



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).



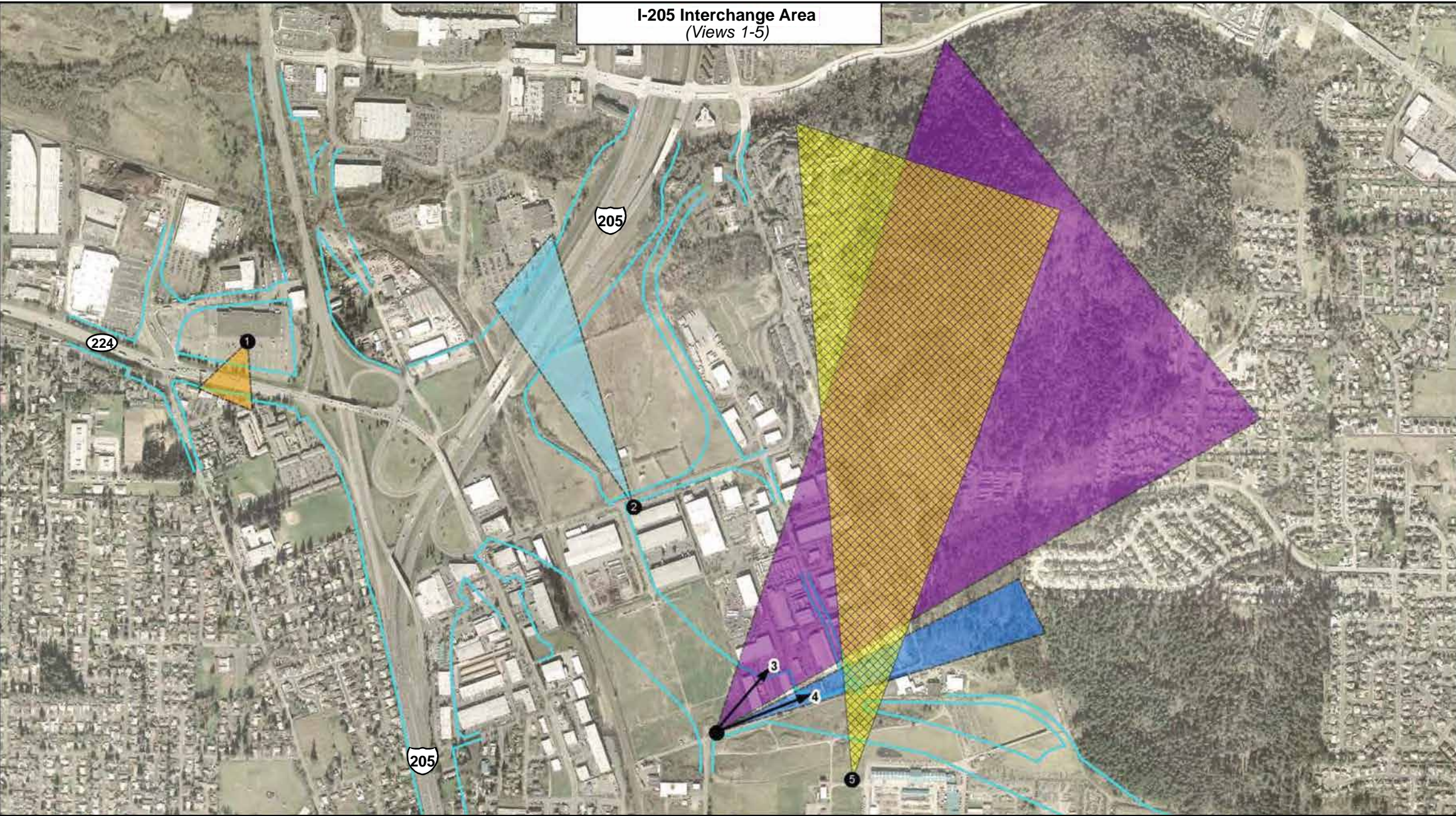
View S5 shows how **Design Option D-2** could decrease visual quality from residences on Hubbard Terrace neighborhood — existing (left), project simulation (right).



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).



I-205 Interchange Area
(Views 1-5)




Sources:
ODOT, Metro, Portland OR and Parsons Brinckerhoff

- Legend:
- View
 - Viewshed 1 (yellow triangle)
 - Viewshed 2 (light blue)
 - Viewshed 3 (purple)
 - Viewshed 4 (blue)
 - Viewshed 5 (yellow cross-hatch)
 - Project Corridor * (light blue line)

*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 32
I-205 Interchange Area Viewsheds
 Sunrise Project, I-205 to Rock Creek Junction



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

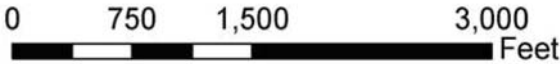
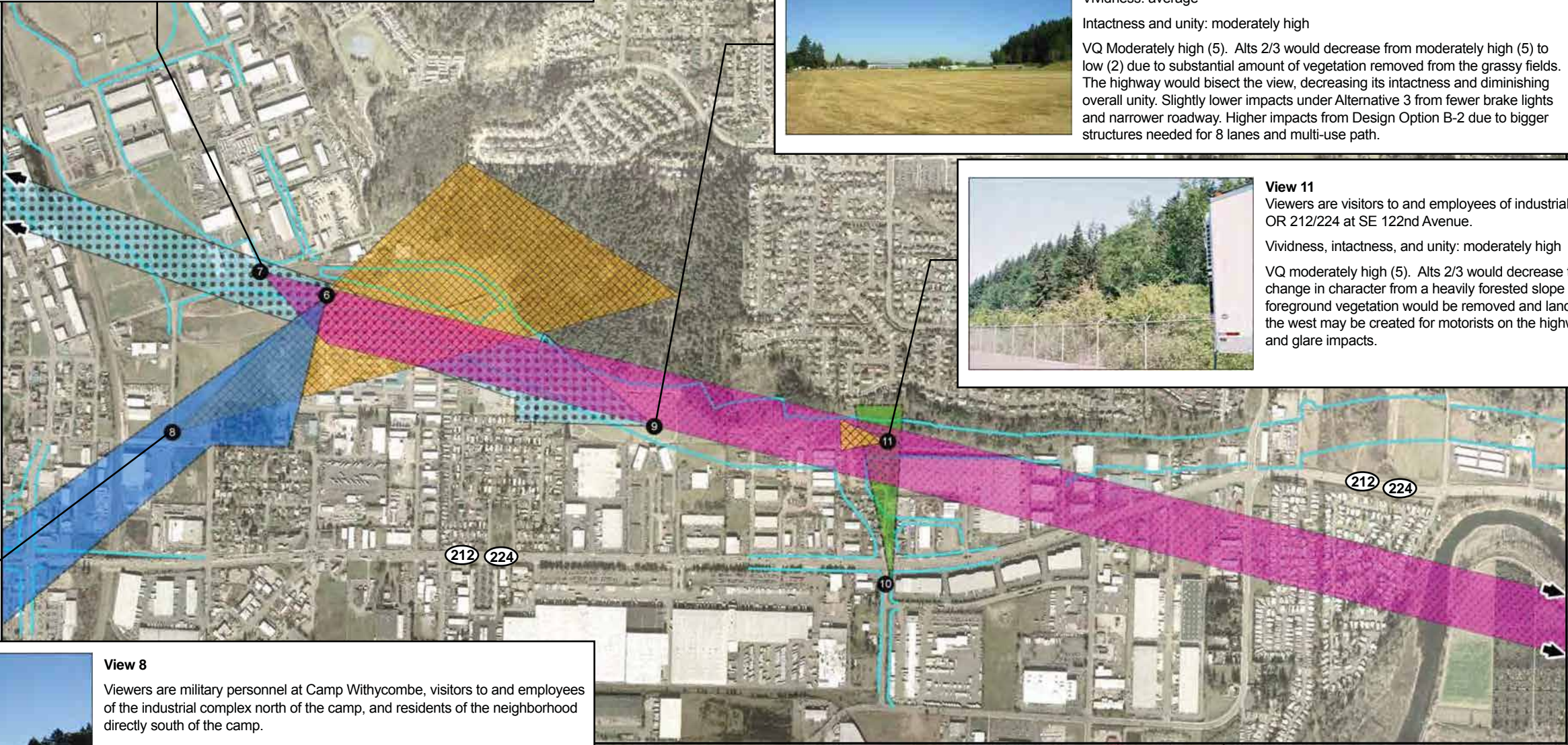
Viewers are military personnel at Camp Withycombe, visitors to and employees of the industrial complex north of the camp, and residents of the neighborhood directly south of the camp.

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.

**West Half of Midpoint Area
(Views 6-11)**



Sources:
ODOT, Metro, Portland OR and Parsons Brinckerhoff

Legend:

- View
- Viewshed 6
- Viewshed 7*
- Viewshed 8
- Viewshed 9*
- Viewshed 10
- Viewshed 11
- Project Corridor **

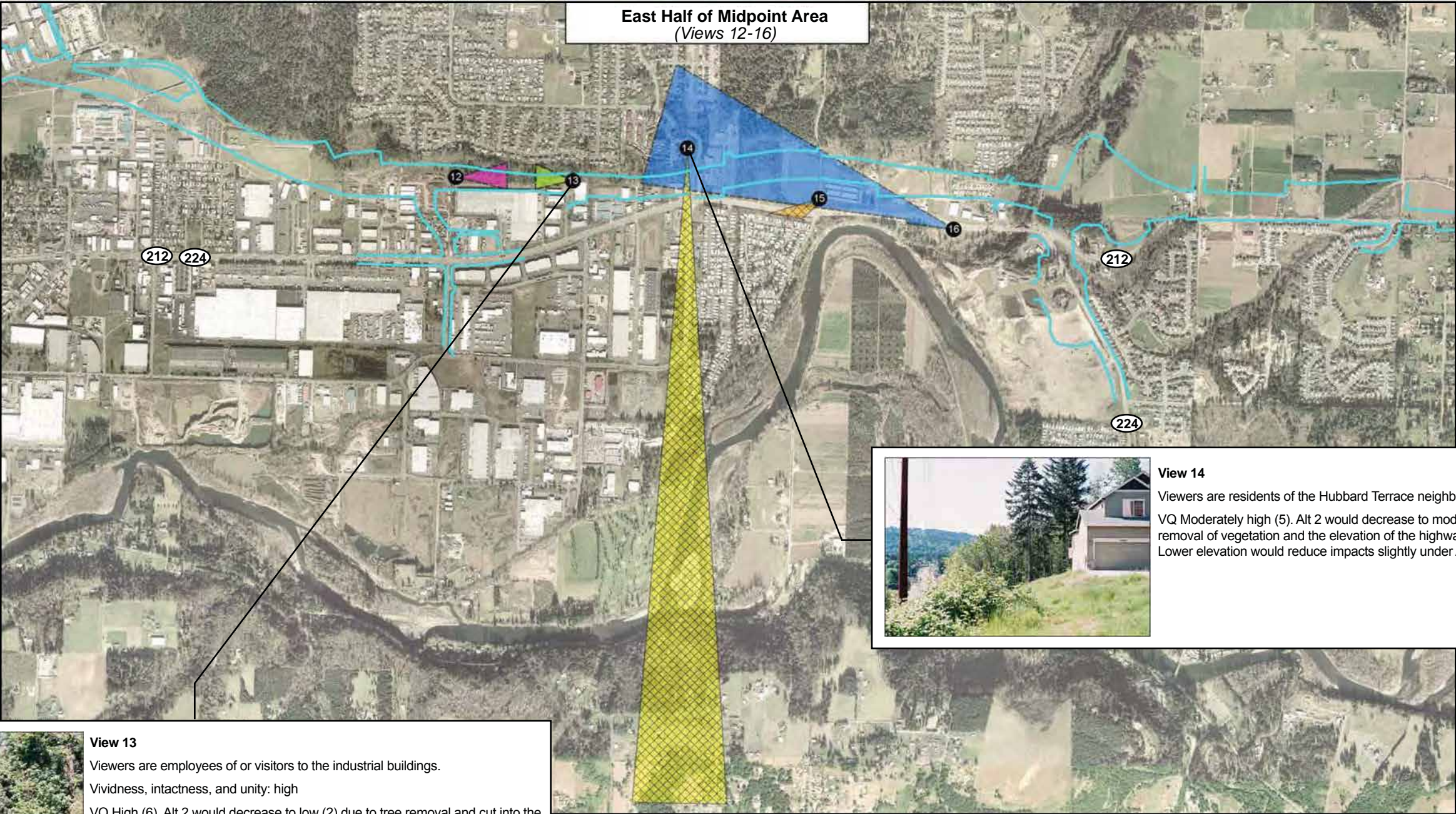
*Viewshed extends beyond map extent. **This generally shows the areas within which all alternatives and design options would be contained.

NOTE: Photos for views scoring moderately high are included. Views 7, 8, 9, and 11 scored moderately high (5).

Figure 33

West Half of Midpoint Area Viewsheds

 **Sunrise Project, I-205 to Rock Creek Junction**



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.



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.

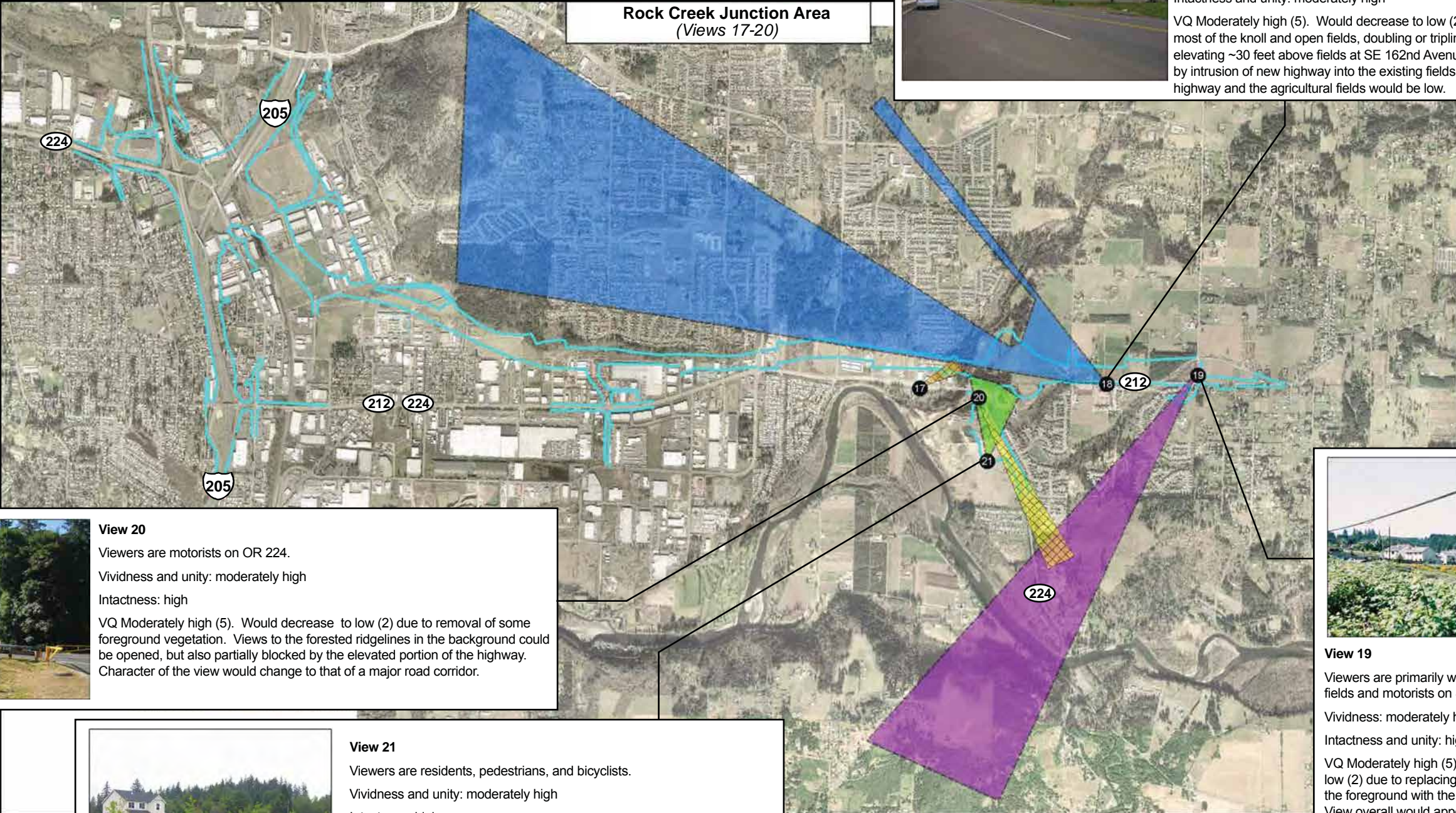


- Legend:**
- View
 - Viewshed 12
 - Viewshed 13
 - Viewshed 14
 - Viewshed 15
 - Viewshed 16
 - Project Corridor *

*This generally shows the areas within which all alternatives and design options would be contained.

NOTE: Photos for views scoring moderately high are included. Views 13 and 14 scored moderately high (5).

Figure 34
East Half of Midpoint Area Viewsheds



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.




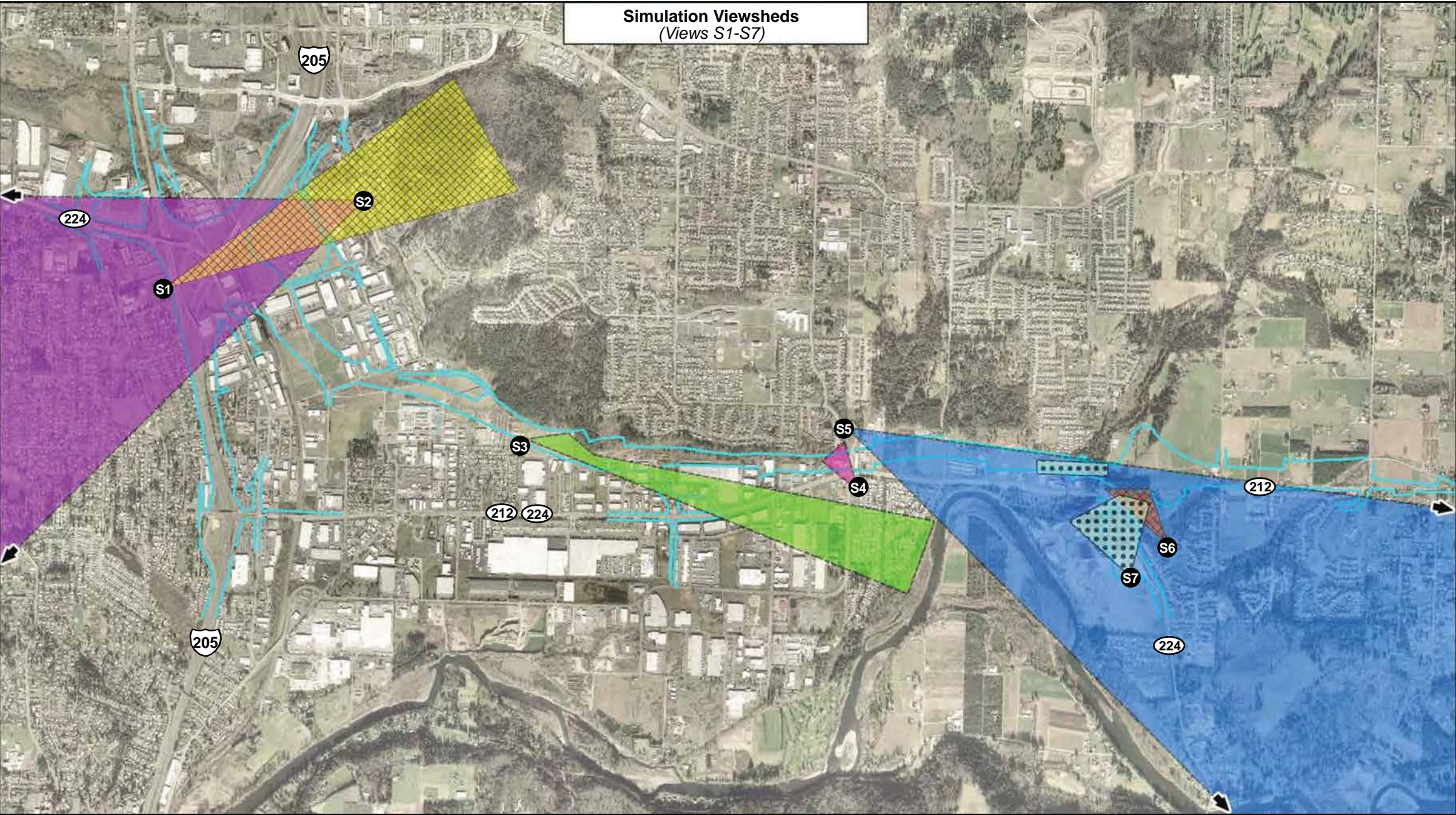
View 21
Viewers are residents, pedestrians, and bicyclists.
Vividness and unity: moderately high
Intactness: high
VQ Moderately high (5). Would decrease to moderately low (3) due to removal of the knoll and new elevated structure on OR 224. Visibility of parts of the OR 224 structure would impose a more 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.

NOTE: Photos for views scoring moderately high are included. Views 18, 19, 20, and 21 scored moderately high (5).

Figure 35
Rock Creek Junction Area Viewsheds
 Sunrise Project, I-205 to Rock Creek Junction



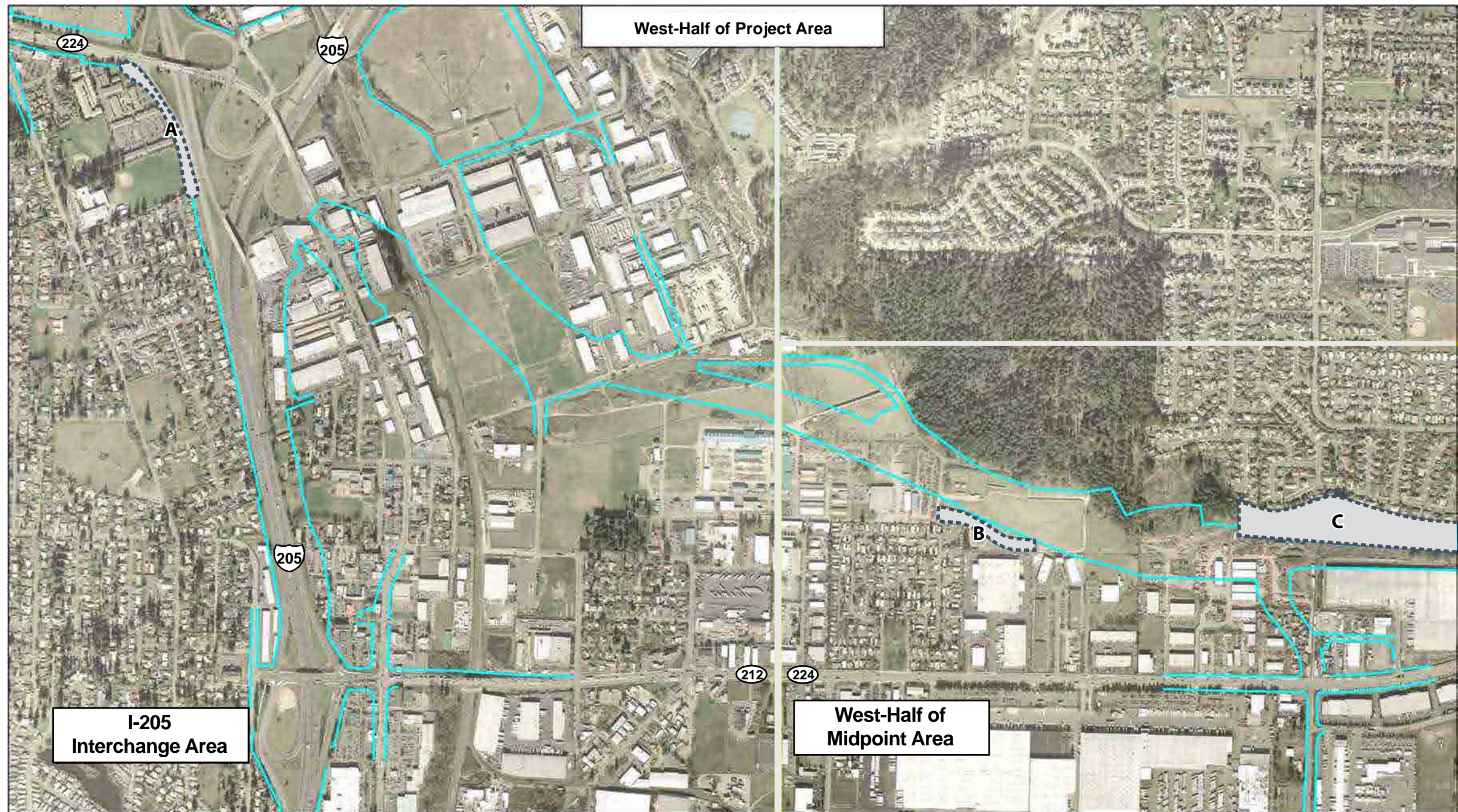
Sources:
 ODOT, Metro, Portland OR and Parsons Brinckerhoff

- 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 36

Simulation Viewsheds



- Legend:**
- Areas of Analysis
 - Project Corridor *
 - Mitigation Area Label
 - Mitigation Area
 - Mitigation Areas Studied but not Proposed for Mitigation

*This generally shows the areas within which all alternatives and design options would be contained.

Figure PA-17
 I-205 Interchange and Midpoint Area (West End)
 Mitigation Locations

Sunrise Project, I-205 to Rock Creek Junction

Sources:
 ODOT, Metro, Portland OR and Parsons Brickerhoff

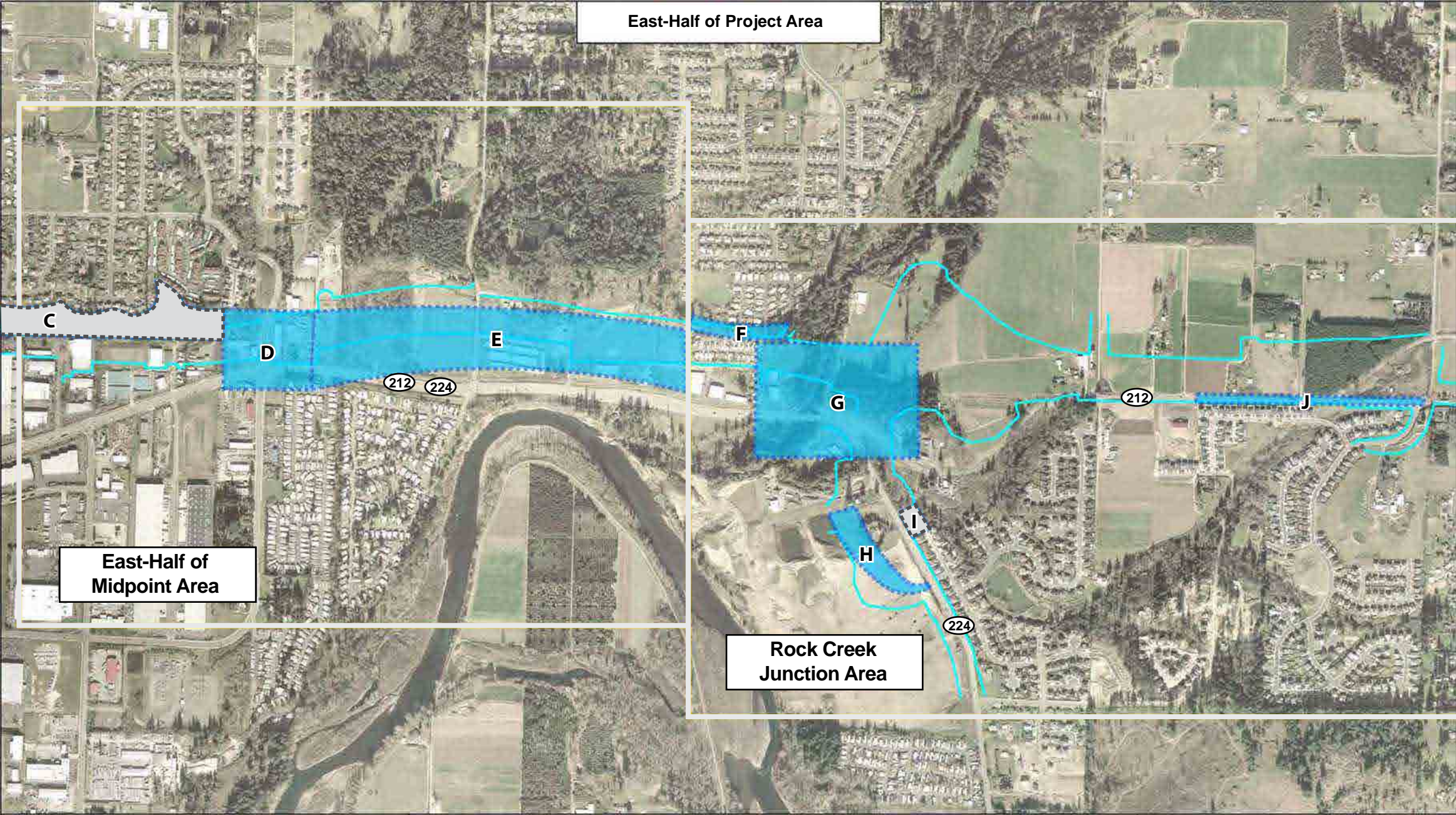


Figure PA-18

Midpoint Area (East End) and Rock Creek Junction Area Mitigation Locations

 **Sunrise Project, I-205 to Rock Creek Junction**

0 625 1,250 2,500 Feet



Legend:

- | | |
|---|--|
|  Areas of Analysis |  Mitigation Area |
|  Project Corridor * |  Mitigation Areas Studied but not Proposed for Mitigation |
|  Mitigation Area Label | |

**This generally shows the areas within which all alternatives and design options would be contained.*

Sources:
ODOT, Metro, Portland OR and Parsons Brickerhoff

This page left intentionally blank

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 criterion 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 in traffic noise is the minimum that is normally perceptible to people. ODOT’s absolute impact criteria are different for different land uses, which are grouped according their sensitivity to noise into one of two general categories. The first includes residences, recreational areas, places of worship, schools, libraries, and hotels, and the second category includes commercial and industrial uses. 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.
- 70 L_{eq} -dBA outside commercial and industrial sites.
- 10 decibel increase over existing noise level for all land use types.

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.

L_{eq} , or the energy equivalent sound level, is the level of a constant sound for a specified period of time that has the same sound energy as an actual fluctuating noise over the same period of time.

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 provides details on the following:

- Federal and state regulations and standards.
- Methodology.
- Affected environment.
- Environmental consequences.
- Proposed abatement.

Noise Technical Report Appendices:

- A General Noise Information
- B Traffic Data
- C Modeling Data
- D SDEIS Monitoring Locations
- E Clackamas County Comprehensive Plan
- F Noise Mitigation Considered
- G Bluff Neighborhood Cost Table and Quiet Pavement Fact Sheet
- H Traffic Noise Modeling Input and Output Files

Traffic noise impacts typically do not occur farther than 500 feet from a major highway; for that reason, the noise analysis focuses on areas within 500 feet of project roadways.

Project Area Noise Modeling

Noise monitoring of existing conditions showed that noise levels adjacent to I-205 and OR 212/224 currently exceed the ODOT noise abatement criteria (NAC) 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.

In 2007, the Traffic Noise 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 properties, and industrial properties. Sound levels were predicted at 5 feet aboveground level in most locations. At a few properties, sound

levels were predicted at second, third, or fourth floor heights. Figure 37, Noise Impact Sites **Alternatives 2 and 3** shows approximate locations where sound levels were predicted in the noise model and identifies whether the impact was due to noise exceeding either the absolute or relative increase criteria, or both. At some locations, the road would move away from some properties, and sound levels are expected to diminish if the project is built.

Preferred Alternative

FHWA's Traffic Noise Model was used to predict future sound levels from the traffic volumes projected for the **Preferred Alternative** in 2030. Noise levels were predicted for the 175 noise prediction sites from 2007 as well as an additional 116 modeling locations in response to new roadway modifications associated with the **Preferred Alternative** along SE Johnson Road and OR 212/224 near SE Webster Road and SE Rusk Road. In order to simplify the modeling locations and provide for an easier method of discussing existing and future noise levels, the sites were renumbered into 15 groups that represent a specific geographical area.

Out of the 690 units examined, 220 are currently at or above the noise abatement criteria: 204 residences, one school, one hotel, and 14 commercial properties. This includes new receptor sites along OR 212/224 west of SE Rusk Road and along SE Johnson Road.

Project Area Impacts

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 3 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. There are some residences along SE Johnson Road where traffic noise level increases of up to 7 dBA are predicted, which are due to an increase in cut-through traffic on local streets as the main arterials become more congested. All other locations are predicted to have increases of 1 to 4 dBA.

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 on Figure 37. The locations of sound levels are also shown where they are predicted to decrease, because those properties would be farther from the proposed alignment than from existing OR 212/224.

Table 15 summarizes the total number of residential, commercial, and institutional properties impacted by **Alternatives 2 and 3** and the design options. Noise impacts remaining after inclusion of abatement measures determined to be reasonable and feasible are also listed.

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.

Table 15. Number of Sites Meeting or Exceeding the NAC for Existing Conditions and Alternatives 1, 2, and 3 and Design Options (without/with Abatement)

	Residential Units Meeting or Exceeding the NAC		Commercial / Industrial Units Meeting or Exceeding the NAC		School Units Meeting or Exceeding the NAC		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	n/a	9	n/a	1	n/a	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 and 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 and 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

¹Units above the NAC 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.

n/a=not applicable

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 a.m. and 10 p.m. Use of standard ODOT specifications for control of noise sources during construction can minimize construction impacts.

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 multi-family 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 abatement 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 residences exceeding the NAC 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 SE 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 abatement 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 levels 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.

Preferred Alternative

As with **Alternatives 2 and 3**, under the **Preferred Alternative** traffic noise levels in the project area will change substantially depending on the location. Table 16 and Figures PA-19 through PA-21 present the results of the noise modeling for the **Preferred Alternative**. The NAC and criterion levels used to evaluate the **Preferred Alternative's** traffic noise levels were taken from the ODOT Noise Manual. Noise mitigation must be considered when traffic noise levels exceed the NAC at a unit (each unit being a single structure or multi-family apartment or condominium). The number of units predicted to meet or exceed the NAC are as follows:

- Total existing units = 204
- Total units under **No Build** = 262
- Total units under **Preferred Alternative** = 416

Noise levels would increase by up to 21 dBA over existing conditions, although a majority of increases are predicted to rise between 1 to 4 dBA. The areas with the highest traffic noise level increases are in areas where there are no existing major aerial roadways, like the Bluff Drive Residential area, Oak Acres manufactured home park, and around the KEX and Lawnfield Road area. There will be reduced noise levels of up to 8 dBA south of OR 212/224 near Rock Creek Junction compared to existing conditions because traffic will be redirected to the new highway.

By 2030, a substantial portion of heavy trucks (those currently using the existing OR 212/224

alignment along Carver Road) will relocate to the Sunrise Project. That shift in the traffic route will move a significant source of noise closer to many homes that currently have relatively low ambient noise levels. In contrast, many receivers that are adjacent to the existing OR 212/224 alignment along Carver Road will have a reduction in noise levels compared to

Alternative 1, because fewer vehicles will be using that alignment. There will also be a noticeable reduction in traffic volumes along I-205 between the Milwaukie Expressway interchange and the interchange with OR 212/224, with peak hour volumes dropping to below 2004 conditions by 2030.

Table 16. Comparison of Number of Noise Units Meeting or Exceeding the NAC, by Type of Receptor

Location	Single-/ Multi-family Residential			School			Places of Worship		Hotel			Commercial		
	Alt 1-			Alt 1-			Alt 1 and		Alt 1-			Alt 1-		
	Extg Cond	No Build	Pref Alt	Extg Cond	No Build	Pref Alt	Extg Cond	Pref Alt	Extg Cond	No Build	Pref Alt	Extg Cond	No Build	Pref Alt
Sunnybrook	20	28	28	-	-	-	-	-	-	-	-	-	-	1
Webster	10	12	13	-	-	-	-	-	-	-	-	-	1	2
Johnson	54	66	77	-	-	-	-	-	-	-	-	12	14	12
West of I-205N	15	19	14	-	-	-	-	-	-	-	-	-	-	-
West of I-205S	22	22	25	-	-	-	-	-	-	-	-	2	-	-
East of I-205S	8	8	8	-	-	-	-	-	-	-	-	-	2	2
East of I-205N	39	39	39	1	1	1	-	-	1	1	1	-	1	3
KEX	-	-	-	-	-	-	-	-	-	-	-	-	-	10
Oak Acres	-	-	23	-	-	-	-	-	-	-	-	-	-	-
Midpoint Commercial	-	-	-	-	-	-	-	-	-	-	-	-	7	4
Bluff	-	-	113	-	-	-	-	-	-	-	-	-	-	-
Riverbend	1	14	14	-	-	-	-	-	-	-	-	-	-	-
NE of Midpoint	-	-	9	-	-	-	-	-	-	-	-	-	-	-
Goosehollow	1	3	3	-	-	-	-	-	-	-	-	-	-	-
Rock Creek	18	24	14	-	-	-	-	-	-	-	-	-	-	-
Receptors above NAC	188	235	380	1	1	1	-	-	1	1	1	1	25	34

I-205 Interchange area

One major difference in this area between **Alternatives 2 and 3** and the **Preferred Alternative** is the realignment of SE Lawnfield Road along the KEX site, but it is not predicted to change noise levels in this area by a noticeable amount. Noise levels of the same 28 multi-family units are predicted to exceed the noise abatement criteria under the **No Build Alternative** and the **Preferred Alternative**. The third westbound lane between SE Webster Road and SE Rusk Road will result in increased noise levels by 1 to 3 dBA over the existing levels.

In the area of SE Johnson Road, the number of residences meeting or exceeding the NAC will increase from 54 residences to 77 residences, 11 more than under the **No Build Alternative**. Many of the exceedances would occur at multi-family residential buildings.

Similar to **Alternatives 2 and 3**, the **Preferred Alternative** alignment will shift noise levels to the east relative to residences west of I-205, reducing the number of exceedances in some areas. Little difference in the number of units meeting or exceeding the NAC will occur on the east side of I-205 between the **No Build** conditions and any of the build alternatives.

Midpoint area

Future traffic noise levels at the Oak Acres manufactured home park are predicted to increase by 12 to 18 dBA compared to no increase under the **No Build Alternative**, similar to the units meeting or exceeding the NAC predicted for **Alternatives 2 and 3** at that location, because of the addition of the new highway. The **Preferred Alternative** will affect 23 single-family residences, 16 of which will also meet the NAC. Four commercial structures near the midpoint interchange will meet the ODOT substantial increase criterion.

Currently, and under the **No Build Alternative**, no units would meet or exceed the NAC at any of the single-family and multi-family residences near SE Bluff Drive. The **Preferred Alternative** will cause a noticeable increase in traffic noise at an estimated 113 residential units. Of these, an estimated 77 residences are predicted to meet the 10 dBA substantial increase criterion, while 91 of the 113 would exceed the ODOT 65 dBA threshold criterion. Also, 58 residences will meet both criteria. Those impacts are substantially similar to predicted impacts under **Alternatives 2 and 3**. Future traffic noise levels at the Riverbend manufactured home park under the **Preferred Alternative** are predicted to be similar to the **No Build Alternative** traffic noise levels.

Rock Creek Junction area

Traffic noise impact noise levels from the **Preferred Alternative** in this segment will range from 60 to 66 dBA L_{eq} during peak noise hour, with nine residences that are predicted to either meet the 10 dBA substantial increase criterion or meet the ODOT 65 dBA criterion.

Three single-family residences east of OR 224 along SE Goosehollow Drive will be affected because they are located near the end points of an existing sound wall. Fewer residences will be affected by traffic noise levels meeting or exceeding the NAC than under both existing and future **No Build** conditions, because the new highway will be farther north, away from

the dense residential area south of existing OR 212.

Indirect Effects

Noise levels at or above the NAC are generally considered direct effects. The effects of growth in the 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.

Unavoidable noise impacts

Because of substantial potential noise increases in the Bluff neighborhood, 14 additional mitigation options were evaluated for the Bluff area based on variations of noise wall mitigation, adjustments to the location or operating characteristics of the highway, surface treatments, and compensation. A description and the reasons for rejection as mitigation measures are presented below (for a comparison table, see Table D-2, "Evaluation of Noise Impact Mitigation Measures along Bluff" in Appendix D).

Noise Walls

Option 1: Wall at north edge of proposed Sunrise Project (35 to 60 feet high)

- Would have poor effect for noise reduction on first row of Bluff residences because of distance and topography relative to the residences on the bluff. The proposed wall would need to be at least 35 feet high to reduce noise levels by 5 dBA for Bluff residences and would likely need to be 40 to 60 feet to result in meaningful noise level reductions of at least 5 dBA in accordance with ODOT design guidelines.
- The distance between the wall and the Bluff residences would be too far to effectively reduce noise levels.
- The cost of the wall (\$400,000 to \$1 million per residence) would exceed ODOT

reasonable criteria for providing noise mitigation.

- Would result in potential sunlight impacts that would have a negative effect on the adjacent wildlife passage area by partially shading the corridor, potentially affecting types of vegetation communities there and affecting species who rely on sunlight for thermal regulation.

Option 2: Wall in center median (30 to 60 feet high) combined with a north-edge wall (Option 1) which would allow lower height of north-edge wall)

- Would have poor effect on noise reduction at first row of Bluff residences due to distance and topography relative to residences. This wall would have to be at least 30 feet high to have any effect on noise levels (reductions of 2 to 4 dBA are predicted), and would need to be much higher to result in meaningful noise level reductions (5 dBA or higher) in accordance with ODOT design guidelines.
- This would not effectively mitigate noise impacts without the construction of the wall described for Option 1 because westbound traffic noise would not be blocked by the median wall.
- Proposed roadway footprint would need to be widened to accommodate the median wall, requiring purchase of additional right-of-way, and resulting in additional environmental impacts associated with a larger project footprint, such as additional property acquisition.
- The cost of the wall (\$400,000 to \$1 million per residence) would exceed ODOT reasonable criteria for providing noise mitigation.

Option 3: Partially cover the proposed Sunrise Project highway (open structure on south side)

- Would require widening right-of-way to accommodate wider footprint (5 to 20 feet) in order to provide protection for fixed objects in the clear zone.

- Wider footprint would create more impacts on resources, particularly visual resources.
- The cost (\$1 million to \$2 million per residence) would exceed ODOT cost effectiveness policies for providing noise mitigation.

Option 4: Construct Concrete Wall at top edge of bluff (12 to 16 feet high)

- Would have the most effective noise reduction effect, though not in all locations.
- Would be difficult to construct.
- Would require permanent easements onto private property, and may require construction of a new access road. To avoid construction of an access road, the wall would have to be constructed with masonry blocks, with no large/heavy equipment, which could increase cost substantially. If some property owners resisted easements resulting in discontinuous wall segments, then effectiveness would be substantially diminished.
- Would limit or eliminate views from back yards of homes.
- Cost (\$100,000-300,000 per residence) would exceed ODOT policy for cost effectiveness on noise mitigation measures.
- Could result in removal of trees and vegetation in wildlife corridor.

Option 5: Construct Transparent Acrylic Wall at top edge of bluff (minimum 16 feet high)

- Would have essentially the same abatement effects as Option 4, except views would be retained (through the wall).
- Would be difficult to construct.
- Would require permanent easements onto private property, and may require construction of a new access road.
- Would increase cost by 30 to 50 percent compared to standard post and panel construction. Cost (\$100,000 to \$300,000 per residence) would exceed ODOT reasonable criterion for cost effectiveness on noise mitigation measures.

Option 6: Move new Sunrise Project alignment close to existing OR 212/224

- Would have a moderate impact on the decibel level on the bluff but does not meet purpose and need because it would preclude a midpoint interchange, a major feature that provides the mobility and congestion relief needed to meet the project need.
- Would preclude any midpoint interchange due to the shorter distance at 122nd Avenue between the Sunrise Project and OR 212.
- Would result in loss of (estimated) 31 businesses, 792 jobs, \$29 million in annual payroll (2004), 30 industrial buildings, 36 mobile homes, 4 houses and approximately \$41.6 million in assessed value.
- Would still negatively affect some residences (approximately 20 percent), so a sound barrier would likely be needed in addition to moving the alignment on the west end.
- Would have a substandard design.
- Costs (\$1 million to \$2 million per residence) would exceed ODOT reasonable criteria for noise mitigation measures.

Option 7: Build Sunrise Project on top of existing OR 212/224

- Would have a moderate impact on the decibel level on the bluff.
- Would still negatively affect about 20 percent of residences, so a sound barrier would likely be needed in addition to moving the alignment on the west end.
- “Double decker” design would be substandard and preclude a midpoint interchange.
- Would result in removal of (estimated) 32 businesses, over 400 jobs, \$17 million in annual payroll (2004), 30 lots, 6 mobile homes, one house and approximately \$11.8 million in assessed value.
- Cost (\$1 million to \$2 million per residence) would exceed ODOT policy for cost-effectiveness on noise mitigation measures.

- Would not meet purpose and need because it would preclude a midpoint interchange, a major feature that provides the mobility and congestion relief needed to meet the project need.

Option 8: Reduce speed limit on Sunrise Project

- No direct costs to project.
- To achieve full mitigation, speed limit would need to be reduced to 20 mph, which would not meet project purpose and need because the facility would not function as a regional expressway.
- The minimum noise reduction for noise mitigation is 5 dBA to qualify as “feasible” mitigation. However, most affected residences are predicted to experience over 10 dBA increases. A reduction to approximately 42 mph would be needed to meet the 5 dBA criterion. At that speed limit, about 80 percent of impacted houses would still be negatively impacted.

Option 9: Reduce traffic volumes/number of travel lanes

- Reduction of traffic volumes by one-half only gains noise reduction of 3 dBA
- Assumption of reduced traffic volumes by one-half is inconsistent with project traffic forecasts, and therefore would not meet the project purpose and need to accommodate future traffic volumes and relieve safety and mobility problems.

Option 10: Lower grade of Sunrise Project through bluff area

- Unknown costs to balance cut and fill quantities.
- Geotechnical issues much greater than under other alternatives due to large cuts that would be required to lower the grade.
- Would result in many new structures for local roads.
- Would preclude midpoint interchange.
- Additional grade loss near bluff would increase grade approaching Rock Creek Junction, making it unattractive to trucks.

Option 11: Apply Quiet Pavement

- Increases paving cost.
- Would have minimal noise mitigation qualities compared to predicted impacts, reductions of approximately 1 to 7 dBA.
- Would add to paving costs due to higher cost of pavement type, greater maintenance requirements for cleaning, and a more frequent paving schedule.
- Rubberized pavement mix is not used in Oregon because studded tires degrade the open-grade pavement mix, eroding noise abatement effects after only six months.

Option 12: Purchase Homes along the bluff

- ODOT policies currently do not allow purchase for noise impact reasons (noise issues are not compensable, no exceptions). Would only be available with county funds.
- Cost (\$300,000 to \$600,000 per residence) would exceed ODOT policy for cost-effectiveness on noise mitigation measures.

Option 13: Offer financial compensation to affected property owners

- Unknown cost.
- Would only be available with county funding.
- Could consist of obtaining appraisals, selling the houses, and paying homeowners the difference between the sales price and what the price would have been had the Sunrise Project not been built.
- Could also entail “buying” the right to pollute the area with noise, which would be in the deed.

Option 14: Quiet pavement, reduced speed, and reduced traffic volumes

- Poor noise mitigation effectiveness.
- Approximately 40 percent higher cost compared to standard paving and shorter pavement lifespan/higher life cycle costs.
- Requires higher maintenance attention (application and sweeping).

- Reduced noise levels not sustainable over time due to limited durability of quiet pavement.
- Reduction of traffic volumes by one-half not supported by traffic forecasts.
- A reduction to approximately 42 mph would be needed to meet the minimum noise reduction of 5 dBA to qualify as feasible.
- An additional, initial noise reduction of 3 to 5 dBA would be possible with application of quiet pavement; however, that noise reduction is not sustainable beyond four to eight years without need to re-pave.
- Additional reduction of 3 dBA possible if traffic volumes reduced by one-half; however, traffic volumes forecast, based on planned land uses and employment in project area, is inconsistent with such assumptions.

This evaluation was based on procedures used to determine whether noise abatement would be considered reasonable and feasible as provided in the ODOT Noise Manual. In particular, the criteria noted that:

- Mitigation must provide a 5 dBA reduction in noise levels at the first row of receivers.
- Cost of abatement should not exceed \$25,000 per benefited residence, or \$35,000 for areas with one or more of the following: build noise levels exceeding 70 dBA for residences; areas with a 10 dBA increase over existing levels; homes constructed prior to 1996; and provision of for logical wall terminations.
- Environmental impacts—effects such as visual issues, and effects on cultural and wildlife resources—must be considered.

As indicated above, none of the additional options evaluated meet these criteria. All potential mitigation measures studied for the Bluff neighborhood, including the wall at the top of the bluff, were expected to have very high costs, with preliminary estimates in the range of \$100,000 to \$1,000,000 per residence for the 113 predicted homes that could exceed the NAC. None would provide effective mitigation without excessive heights. The need

for additional height and/or right-of-way area would have other potential environmental impacts and add to the costs of these measures.

No other options were identified that would effectively reduce potential noise impacts while also preventing additional project-related impacts, and meeting cost requirements for mitigation under ODOT policy for reasonable mitigation costs. Therefore, it was concluded that no feasible and reasonable methods of noise reduction are available for potential impacts to the Bluff neighborhood north of the proposed project alignment. The results are summarized in the 2010 Noise Technical Report and discussed in the most detail in the 2007 Noise Technical Report, in the section “Bluff Neighborhood Mitigation Analysis.”

Noise Abatement Measures for the Preferred Alternative

During construction, the project will comply with Clackamas County noise regulations and ODOT Standard Specifications (Section 00290.32) to minimize construction impacts.

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’s Noise Manual (ODOT 2009) has procedures and guidelines for whether abatement meets the criteria for feasibility and reasonableness, including the following criteria that should be considered in recommending mitigation:

- Noise mitigation must provide a 5 dBA reduction in noise levels with a typical goal of 7 to 8 dBA, or higher, at first row receivers.
- Cost of abatement is typically capped at \$25,000 per benefited residence. Costs up to \$35,000 can be considered under specific circumstances.
- Opinions of impacted residents (property owners).

- Absolute noise levels of 60 dBA L_{eq} or higher.
- Residences constructed after 1996 generally not offered mitigation unless there is an increase of 5 dBA or more.
- Other environmental impacts from mitigation need to be considered, such as impacts on visual, cultural or wildlife resources.
- Other sources of noise.

Several methods of noise abatement were considered to mitigate permanent impacts, such as truck restrictions, speed restrictions, and alignment changes. Of all abatement measures considered, noise walls appear to be the most feasible form of mitigation for the Sunrise Project. Restricting trucks and speed on the Sunrise Project would not support 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 residences on the bluff north of OR 212/224.

Seven sound walls are recommended for inclusion in the project (Table 17 and Figures PA-19 through PA-21): W-2, J-1, J-2, E205N-3, W205S-4, E205S-5, and ZM-6. Two walls that were recommended in the 2007 noise analysis were re-evaluated by the modeling for the **Preferred Alternative**. Since no noise impacts were identified in these areas, these walls are not needed. After mitigation, the number of units meeting or exceeding the NAC as a result of constructing the **Preferred Alternative** would be reduced to 241 compared to 262 under the **No Build Alternative**. The final decision and recommendation to include the approved mitigation noise abatement walls will be made during the final design process. Should the project design significantly change, or should affected residents be in opposition to the recommended noise mitigation, the recommended abatement may not be incorporated into the project. Table 17 provides a summary of the recommended noise walls for the corridor.

Table 17. Summary of Proposed Walls for Noise Abatement

Wall Name	Range of dBA Reduction	Location of Receivers Benefiting	Wall Height and Length Summary
W-2	3 to 10	South side of Highway 212 between SE Webster Road and SE Rusk Road	10 ft high, 960 ft long
J-1	2 to 8	Provides mitigation for SE Johnson Road area, for all but 5 receivers on SE Johnson Road and some 2 nd floor apartment units	14 ft high, 890 ft long
J-2	4 to 9	Provides mitigation for SE Johnson Road area, for all but 5 receivers on SE Johnson Road and some 2 nd floor apartment units	16 ft high, 2040 ft long
E205N-3	2 to 12	East side of I-205 (existing OR 212/224 to SE Jannsen Road); remaining impacts are hotel and a commercial property	16 ft high, 2170 ft long
W205S-4	5 to 10	Provides mitigation for all but two of the noise impacts on west side of I-205 (OR 212/224 to end of project work area)	12 ft high, 1692 ft long
E205S-5*	12 to 13	East side of I-205 (existing OR 212/224 to end of project work area); though future noise levels may exceed criteria, reduction of 10 to 12 dBA provides justification	16 ft high, 619 ft long
ZM-6	7 to 10	All noise impacts at Oak Acres mitigated	10 ft high, 1511 ft long

*Wall E205S-5, shown as Wall 5 on Figure 38, which was recommended for special consideration in the SDEIS, is now part of the project plans, as shown in Figure PA-19.

This page intentionally left blank.