CHAPTER 4. ADDITIONAL IMPACTS (CONSTRUCTION, CUMULATIVE, AND UNAVOIDABLE) AND APPLICABLE LAWS

Construction Impacts

Alternative 1–No Build would not create construction impacts. Therefore, this section applies only to **Alternatives 2 and 3** and the design options.

Alternatives 2 and 3 would cause substantial construction impacts. Construction activities common to both alternatives and the design options would be trucking fill material to raise the roadbed, constructing bridges, moving earth and rock on the site, and reconstructing the interchanges.

Constructing the proposed Sunrise Project would affect the immediate vicinity of businesses and residences and also be more widespread in the project area. Typical construction impacts are as follows:

- Increased use of local and arterial roads by construction equipment and truck traffic resulting in traffic delays;
- Temporary traffic rerouting and road and access closures;
- Construction noise from heavy equipment operation and the construction of bridges and wall forms;
- Blasting noise and dust;
- Dust from excavating and placing fill; and
- Lighting in construction areas in the evening.

Additional impacts on businesses include:

- Traffic rerouting, temporary road and driveway closures and delays;
- Temporary loss of visibility from key roadways; and
- Difficulty maneuvering trucks.

Over 2 million cubic yards of fill could be moved from borrow pits outside the immediate area of the proposed Sunrise Project. This would require crossing arterial and collector streets, especially SE 135th Avenue, SE 142nd Avenue, and SE 152nd Avenue. The truck volumes are expected to interfere with other traffic movement. Constructing bridges would require trucking of other building materials, resulting in a greater impact under **Alternative 2** than **Alternative 3** because the former has more bridges. Moving construction materials would temporarily increase the congestion on the major roadways in the area.

The reconstruction of the existing I-205/OR 212/224 Interchange would produce short-term negative impacts to the truck traffic originating or ending in the Clackamas Industrial Area. Likewise, this project would impact through truck traffic using the OR 212 freight route that connects US 26 and I-205. The need to continue to provide access from I-205 to OR 212/224 during this reconstruction may require the construction of a temporary interchange facility while the existing interchange is rebuilt.

A large cut to the east of Rock Creek may reach down 80 feet and require blasting of the basalt. If the excavated material is suitable for fill, it would be trucked to other portions of the facility for reuse. If the material is not suitable, then it would be necessary to truck it to an external site for disposal. Constructing the Rock Creek Interchange could interrupt traffic on OR 212, OR 224, SE 152nd Avenue, and SE 162nd Avenue for varying periods of time.

The construction impact is larger than the proposed right-of-way in the Rock Creek Junction area, near the Windswept Waters development. Temporary construction easements are assumed to be necessary due to the topographic constraints and the unknown location of the approved development.

Businesses and communities. Impacts to both business districts and neighborhoods have the potential to affect business traffic and residential livability. A construction management plan should be developed that supports the continued operation of business districts and the livability of affected neighborhoods.

Air quality. The primary impacts of construction would be the generation of dust from site clearing, excavation, and grading activities, and impacts to traffic flow in the project area. Traffic congestion increases idling times and reduces travel speeds, resulting in increased vehicle emission levels. Construction of concrete structures may have associated dust-emitting sources, such as concrete mixing operations. Stationary sources such as concrete mix plants are generally required to obtain air contaminant discharge permits from the Oregon Department of Environmental Quality and to comply with regulations to control dust and other pollutant emissions.

Construction impacts would vary in extent and location, depending on the alternative or design options selected and on weather conditions (e.g., rain suppresses dust but increases erosion). Construction impacts would logically be lowest with **Alternative 1–No Build** and higher for **Alternatives 2 and 3**.

Energy. ODOT may be able to reduce construction energy use by the following measures:

- Minimize the number of hauling trips by using full trucks to and from the site;
- Use recycled materials when possible, so that energy is not used to create new products;
- Use regional products whenever possible to reduce the distance materials travel;
- Use biodiesel or other nonpetroleum fuels and limiting vehicle idling;
- Locate staging areas near work sites; and
- Reuse construction signage, barriers, lighting, and other common materials to reduce energy in the production of materials.

Views. To minimize temporary disturbances during construction, construction areas could be placed out of sight from the majority of viewers and restored to their pre-project condition. Lighting on work areas could be shielded to minimize spillover onto adjacent areas. Some of the temporary effects result from safety measures (e.g., brightly colored signs, safety lights) and cannot be mitigated.

Biology. Construction activities and fill slopes would create at least a temporary impact to the wildlife corridor between the unnamed tributary to Rock Creek and Rock Creek. The banks of the fill slope would be planted with vegetation appropriate for the wildlife that use the area, but it would take several years for the plants to grow tall enough to provide cover for traveling wildlife. Consequently, wildlife may avoid the area for some time.

Geology and soils. In the Midpoint area, construction traffic could create unstable roadway subgrades where there are wetlands and areas with shallow groundwater because the soils are likely to be weak and compressible. Shallow groundwater and seeps, found in places along the slopes in the Midpoint area, could also have adverse effects on slope stability during construction of temporary cut slopes.

Placing fill while benching slopes could also potentially affect the temporary stability of slopes that have weaker soils underneath. For example, slopes underlain by Quaternary alluvium (or similar materials) may result in smaller failures or slumps if the cuts are too steep.

Erosion during construction could greatly increase the sediment load being carried by surface runoff water into adjacent streams or lakes, thus causing subsequent environmental degradation. Development of deep gullies caused by continued long-term erosion could result in excessive maintenance costs associated with shallow cut or fill slope instability.

Noise. Construction of the build alternatives may cause localized, short-duration noise impacts. Clackamas County exempts construction noise from regulations between the hours of 6 AM and 10 PM. Use of standard ODOT specifications for control of noise sources during construction can minimize construction impacts. The ODOT specifications are described in the Noise Technical Report (Construction Noise Mitigation).

Cumulative Impacts

Cumulative impacts on the environment are those that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.

General Historic Overview

The Sunrise Corridor project area was homeland to the Clackamas Indians who occupied the area when the first Euroamericans visited the area in the early 1800s. The Native Americans fished at Willamette Falls and had villages and fishing stations along the Clackamas and Willamette rivers. Hunting and gathering camps were located in the uplands surrounding the project area.

The Sunrise Corridor has been the focus of historical activity since the early to mid-1800s. The early settlers were attracted to the rich farmland and rivers, and made use of the power source provided by the falls at Oregon City. Early settlements were centered around the falls and along the Willamette and Clackamas rivers. The overland branch of the Oregon Trail passed through the project area and many of the early travelers settled in the newly created communities of Gladstone and Oregon City.

Between 1847 and 1865, the county rural population began to grow, creating the need for rural centers. As the rural population increased, so did the need for better transportation routes. Several spurs and wagon roads developed as offshoots from the well-established Barlow Trail.

The town of Clackamas was platted in 1869-70 and developed around the railroad. The Oregon Central Railroad ran its line through Clackamas (previously called Marshfield) in 1869. In 1870, Clackamas donated land to the railroad under the stipulation that a depot be built in the town. The depot was constructed shortly after the land transaction. The community benefited greatly from the railroad, and many businesses developed there because of it.

The continued growth of rural areas and small towns in Clackamas County followed a pattern that was similar to the rest of Oregon for most of the first half of the twentieth century. Most of the growth occurred in or near small towns.

After the Second World War, suburban residential and commercial development followed the existing road system in to northwestern Clackamas County, creating a large urban area by the 1960s. While suburban growth has continued until the present day, a series of major decisions made during the 1970s have played a major role in shaping the urban form of northwestern Clackamas County

Major decisions of the 1970s

Two major transportation projects, I-205 and the Milwaukie Expressway (OR 224), and two major land use policy decisions set the stage for the development that occurred in the last 30 years in the study area. During this time, a major regional employment, manufacturing, and wholesale distribution complex has developed, along with residential areas in urban unincorporated Clackamas County and in the City of Happy Valley. The transportation and land use patterns

that evolved as a result of these transportation projects and policy decisions provide the impetus for the expected future growth in the recent UGB expansion areas of Damascus and East Happy Valley urban areas. This urbanization pattern has set the stage for future expansion of the UGB over the next twenty years.

Major Highway Projects

I-205 and the Milwaukie Expressway (OR 224), both built in the 1970s, are the transportation and freight backbone of the regional transportation system in Clackamas County's portion of the Portland metropolitan area east of the Willamette River. The other main transportation corridor in this area is OR 99E, also known as McLoughlin Boulevard.

I-205, formally known as Oregon Highway No. 64, the East Portland Freeway, was the largest of these major highway construction projects. This 26.6-mile-long route starts at I-5 at Tualatin, travels through Clackamas and Multnomah Counties to the Columbia River and then continues through Clark County, Washington, to rejoin I-5 just north of Vancouver, Washington.

I-205 is now one of the most heavily traveled portions of interstate highway in Oregon and is a major truck route for the region. Average daily traffic on I-205 near its connection with I-84 in Portland is 148,300 vehicles per day. It took fourteen years to complete construction of I-205, which was built and opened in segments:

- The first contract for construction of Willamette River Bridge at West Linn and Oregon City was awarded on January 11, 1968.
- The connection from I-5 to Oregon City was opened to traffic on May 28, 1970.
- The segment between Oregon City and Sunnyside Road was completed in 1974. At that time, I-205 was connected to OR 213N (82nd Avenue) and to the Milwaukie Expressway (OR 224).
- By 1978-1979, construction on the remaining 9.2-mile section of I-205 in Oregon was underway. The final section of the I-205 project was one of the first Oregon highways to successfully follow the requirements of the National Environmental Policy Act.
- The Glenn L. Jackson Bridge, which spans the Columbia River and connects Oregon and Washington, was opened in December 1982.

Completion of I-205 was the final step in establishing the major truck freight distribution center now located along OR 212/224 and the Milwaukie Expressway (OR 224).

The Milwaukie Expressway (OR 224), also built in the 1970s, is a 4-mile roadway traveling through Milwaukie to I-205. An early plan map for this project is dated 1949. OR 224 starts at OR 99E on the western edge of Milwaukie and travels east about four miles until it intersects with I-205 south of the Clackamas Regional Center (this section is the Milwaukie Expressway; east of I-205 the road is named OR 212/224). This four-lane expressway provides a major east-west traffic connection for employment areas and provides a north-south connection as well, connecting to US 99E and thus to Portland.

OR 224 continues east, as OR 212/224, through the Clackamas Industrial Area until it reaches the Rock Creek Junction where is turns south to Carver and then travels through rural Clackamas County to Estacada.

OR 212 continues east through the city of Damascus to US 26, which continues through the city of Sandy, over Mount Hood, and then to Bend and other parts of central Oregon, supporting the freight distribution function of the study area.

Major Land Use Policy Decisions

Beginning in 1973, Oregon established a statewide planning system that was intended to direct growth towards the urban areas as defined

by urban growth boundaries. The establishment of the Portland regional UGB beginning in 1977 committed most of the land in the land use study area to future urban development. The subsequent adoption of the Clackamas County Comprehensive Plan in 1981 committed the area around I-205, the OR 224, and OR 212/224 to future development as a regional retail and office center, an employment/manufacturing center, and one of the largest truck distribution centers in the region. These decisions created the policy framework that guided the expansions of urban uses in the vicinity of the Sunrise Project, which has, in turn, produced the demand for more transportation facilities in the area.

The second major policy decision that affects the Sunrise Project was a major expansion of the UGB in 2002. The location of the regional UGB did not significantly change for nearly twenty years after it was first established. Two small expansions located northeast of the Sunrise Project were approved in the late 1990s, followed in 2002 with a major expansion of the UGB that added 12,000 acres of land to the north and east of the Sunrise Project. The 2002 UGB expansion area, which contains the new city of Damascus and the easternmost part of the city of Happy Valley, is expected to eventually contain an estimated 45,000 new jobs and 25,000 new households.

Past, Present, and Foreseeable Future Actions

The following list includes past, present, and foreseeable future actions in the Sunrise Corridor area from the I-205 interchange area to just east of the Rock Creek Junction and areas beyond the project in all directions that could be included in a cumulative effects analysis.

Transportation Projects

Past highway projects

- I-205 is a 26.6 mile-long route that meets I-5 south of Portland at Tualatin and joins I-5 just north of Vancouver, Washington.
- OR 224 is a 22-mile roadway from Milwaukie to Estacada that intersects with I-205 about four miles east of Milwaukie and then traverses the project area to the Rock Creek Junction where it turns south.

No Build and Build assumptions for future road projects (arterial)

- Widen SE 82nd Drive between Lawnfield Road and OR 212/224 (5 lanes).
- Improve OR 212 connection to Mather Road via SE 102nd Avenue and Industrial Way (3 lanes).
- At Rock Creek Boulevard, a new arterial road, create a new northerly extension from OR 224 at Rock Creek Junction that curves east to connect to SE 162nd and SE 172nd Avenues (5 lanes).
- Widen SE 172nd Avenue between Foster Road and OR 212 (5 lanes).
- Widen OR 224 between Rock Creek Junction and Carver Bridge (5 lanes).
- Widen Carver Bridge to 5 lanes.
- SE 82nd Drive, improvements, Gladstone to OR 212/224 (5 lanes).
- Sunnybrook Boulevard Extension from SE 82nd Avenue (OR 213N) to Harmony Road (3 lanes).
- Create a climbing lane on OR 212 between Rock Creek Junction and SE 172nd Avenue.

Proposed transportation projects outside of the Sunrise Project

Arterial road projects, Damascus

- SE 242nd Avenue from OR 212 to Palmquist (5 lanes, 35 mph).
- OR 212 from Rock Creek to SE 257th Avenue (5 lanes, 35 mph).
- Sunnyside Road extension from SE 172nd to SE 242nd Avenues (5 lanes, 35 mph).
- SE 232nd Avenue extension from OR 212 to Borges Road (3 lanes, 25 mph).
- SE 190th Avenue extension from Tillstrom Road to SE 172nd (5 lanes, 35 mph).

Arterial road projects, outside the UGB, south of the Clackamas River

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

Transit-related projects

- I-205 Light Rail with Station at Clackamas Town Center.
- New bus routes connecting the Oregon City Transit Center with Carver (and Clackamas Town Center Transit Center) via Holcomb Boulevard and Forsythe Road. Buses will run every 30 minutes during service hours.

Rail projects

- Oregon Iron Works Railroad spur.
- Closure of Lawnfield Road at-grade crossing of UPRR to vehicles.

Bicycle network and related projects

- I- 205 multi-use path improvements (existing gap completed between SE 82nd Drive and SE Roots Road).
- Sunrise Project multi-use path construction, from I-205 multi-use path to SE 122nd Avenue/OR 212/224.
- Bike paths and sidewalks on all proposed arterial streets listed above.

Other agency plans

- **Parks**. Both Metro and the North Clackamas Parks District identify several planned parks, greenspaces, natural resources areas, and trails or linear parks as part of the planned regional trails and greenways system.
- **Sewer.** Clackamas County's Water Environmental Services is constructing a sewer trunk line located beside Rock Creek (planned to be completed in late 2006) and plans to install sewer line in SE 172nd Avenue as part of a road construction project in 2007 and 2008. This is the first step in the delivery of sewer services to the east Happy Valley area within the Rock Creek basin.
- **Water**. The Clackamas River Water District proposes a 6-million-gallon water reservoir about 800 feet west of SE 152nd Drive above the bluff and near its eastern edge. Sunrise Water Authority has proposed to put a new water reservoir northwest of the intersection of SE 172nd Avenue and Armstrong Circle.
- **Camp Withycombe**. The site's armory and readiness training center functions have been identified for upgrade or replacement to house the corporate headquarters of the 41st Brigade as well as joint forces in a new Armed Forces Readiness Center for realigned units from closing installations in the region. A new master plan for the site is

being developed to identify how this and other future development on the site will be accommodated within the effective period of the Master Plan. Part of this master plan includes the possible construction of an overcrossing of UPRR tracks from Industrial Way to SE 82nd Drive via SE Tolbert Street.

Land Use Decisions

Land use decisions – past

- Original Regional UGB location decision – 1977.
- UGB expansions late 1990s and 2002—Pleasant Valley UGB expansion area, Rock Creek UGB Expansion Area, and Damascus Boring Concept Plan Area.

Land use decisions – future

- East Happy Valley Comprehensive Plan—Happy Valley implementation of their portion of the Damascus Boring Concept Plan.
- Damascus Comprehensive Plan—Damascus implementation of their portion of the Damascus Boring Concept Plan.

Land use decisions – development on private land

- **Providence Hospital.** The hospital plans to develop a campus on property north of Rock Creek Junction, east of Rock Creek. A minimum of 30 net acres is needed to accommodate a full-service regional medical center to be developed over a 40-year period. At full build-out, the proposed medical center will:
    - Have up to 5,000 employees, about 45 percent of employees in the Rock Creek Employment Area as a whole. This is an employee density of 72 employees per gross acre and 170 employees per net acre.
    - Have a building inventory of 1.6 million gross square feet (gsf), including a 400- to 500-bed hospital and related inpatient facilities (1.1 million gsf) and outpatient facilities (0.5 million gsf), and up to 4,430 structured parking spaces.
- **Windswept Waters.** This 192-lot subdivision is between OR 224 and the Clackamas River, south of the Rock Creek intersection and north of Carver. In 2003 the comprehensive plan designation was changed from Medium Density Residential to Low Density Residential. In 2005 the zone was changed from FU-10 to a combination of R-7 (Low Density Residential), MR-1 (Medium Density Residential), and OSM (Open Space Management). At the time of this report, the site is under construction.
- **River Rim.** Design Review was approved for 144 single-family townhome lots on the western edge of OR 224, approximately 1,000 feet south of the OR 212/224 intersection (Rock Creek Interchange). At the time of this report, the site is under construction.
- **Clackamas Town Center** expansion and Light Rail Station. At the time of this report, the site is under construction.
- **Clackamas Community College** expansion at Harmony Road/82nd Avenue—Nurse Training Program. At the time of this report, the site is under construction.
- **Wentzel Park Estates**, an approved 76-lot planned unit development and associated zone change at 14830 SE 142nd Avenue. In 2004, a zone change converted FU-10 (Future Urbanizable, 10-acre minimum lot size) to R-8.5 (Urban Low Density Residential, 8,500-square foot average lot size), resulting in 76 lots east of SE 142nd Avenue and north of OR 212/224. This development north of the corridor will contribute to the significant residential development occurring in the Sunnyside neighborhood above the bluff. It appears

that Option C-3 may take up to 22 lots and new homes in this subdivision.

Zoning changes

Approved zone change from Industrial to Commercial at 15251 SE 142nd Avenue. The subject land contains both local and jurisdictional wetlands. The approval for the zone change permitted the applicant to impact the wetlands in exchange for off-site mitigation. The proposal will likely have mitigation and permitting challenges. Development of expected commercial uses may also include rerouting and enhancement of Sieben Creek. The land use action has not been finalized as of this report.

Changes to Natural Resources

Local and jurisdictional wetlands exist on the site at 15251 SE 142nd Avenue (see previous bullets).

Cow Creek flows southwest to the Clackamas River through commercial and industrial areas. The drainage has become almost entirely contained in underground structures.

Sieben Creek flows south from the hills north of the project area. South of OR 212/224 the creek has been ditched to the Clackamas River.

Dean Creek flows from the Mount Talbert area to Mt. Scott Creek. It has been ditched at the I-205 crossing.

Cumulative Impacts by Topic Area

Transportation

The future road projects common to all alternatives are expected to occur in support of the developing urban areas. In addition the road system will expand as local streets are built as part of the development process. Those projects would support the expanding urban area in the new additions to the UGB. While the projects would not be enough by themselves to provide adequate transportation infrastructure to support the new urban development, they would provide enough accessibility to allow development to occur for the foreseeable future. **Alternative 1–No Build**, in combination with the future highway and road projects common to all alternatives, would negatively impact this future transportation system by allowing increased congestion to affect the future arterial road system and freight movement on the main roads. The future arterial road facilities would support the future development in the Sunrise Project vicinity.

Alternatives 2 and 3 would support the future transportation system by carrying much of the through traffic and freight movement in the corridor. **Alternatives 2 and 3**, in combination with the future highway and road projects common to all alternatives, would positively impact the future transportation system by providing the capacity needed to manage congestion on the future arterial road system and accommodate freight movement as needed.

The development of future area road improvements common to all alternatives would result in an increase in the number of bike lanes and pedestrian facilities in the vicinity of the Sunrise Project. **Alternative 1–No Build** in combination with a planned bicycle network and related projects would allow the growth of more congestion and create additional safety concerns for bicycle lanes on roadways. **Alternatives 2 and 3** would provide additional multi-use path improvements from the I-205 Interchange to SE 122nd Avenue. The cumulative effects of **Alternatives 2 and 3** in combination with bicycle network and related projects would increase opportunities for alternative forms of travel in the vicinity of the Sunrise Project compared to **Alternative 1**.

Land Use

Major highway projects and land use policy decisions, previously discussed in this report, supported the urban development that occurred in the last 30 years in the vicinity of the Sunrise Project. However, because of Oregon's unique land use laws and the presence of the UGB, there is one key assumption that underlies the analysis

of the Sunrise Project that is different from assumptions made for the analysis of projects in most other states. That assumption is that the population and employment growth forecast for the study area and the resulting future land uses will occur regardless of the outcome of the decision concerning whether or not to build the Sunrise Project.

Land development in Oregon is not primarily driven by the development of the highway system to the same extent that it is in other states. The availability of sewer service, water service, and land zoned for urban development within the UGB will drive development over the next 20 to 30 year time period. Similarly, the Oregon land use planning system directs urban growth and densities towards those areas that are within UGBs and away from lands that are outside the UGB and it defines the priority areas to be brought into UGBs in the future. Lands outside the future expansion area for the UGB are not expected to be available for large scale urban development.

Alternative 1 would negatively impact the future transportation system by allowing increased congestion. Congestion and limited freight access opportunities are expected to have the effect of limiting employment and other types of development envisioned in local plans. It is understood that future urban growth may slow down as traffic and congestion problems increase and as other portions of the region that have developable lands within the UGB compete for the region's growth. However it is unlikely that development of the area around the Sunrise Project and the area to the east of the project, within the UGB, will actually be stopped by traffic and congestion problems.

The cumulative effects of **Alternatives 2 and 3**, in combination with past highway and land use policy actions, would be to continue to support future urban development in the Sunrise Project vicinity and in the newer urban areas to the south and east by providing the capacity needed to manage congestion on the future arterial road system and accommodate freight movement as needed. **Alternatives 2 and 3** in combination with other bicycle network and related projects is expected to increase the opportunity for alternative forms of travel in the vicinity of the Sunrise Project and in the new urban areas to the south and east.

The cumulative effects of **Alternatives 2 and 3** may also be present in the form of more rapid development. The increased access to I-205, providing a streamlining of movement to and from Portland and other distribution centers, would likely result in the area around I-205 becoming increasingly commercial, with loss of remaining residential areas. As the residential centers in the vicinity of OR 212 are displaced, they would increasingly relocate to the east, taking advantage of the streamlined access of the now-outlying areas to I-205.

Communities and Businesses

The cumulative effects of **Alternative 1** would be to allow increased congestion and reduced access to the regional transportation system so that there would be a significant negative impact on future employment growth and the viability of the business districts in the Sunrise Project area.

The Old Clackamas and Hollywood neighborhoods have already been impacted by expansion of transportation facilities and incursion of industrial and commercial development. Both **Alternatives 2 and 3** would add to the previous encroachment. The future of the manufactured home parks located within or adjacent to the Clackamas Industrial Area is also a concern; nationwide market forces at this time are supporting the conversion of manufactured home parks to other uses.

The improved regional accessibility of **Alternatives 2 and 3** and the design options may make neighborhoods more attractive for intensification and redevelopment. The risk would be the potential loss of affordable housing, particularly in manufactured home parks. It is also reasonable to expect requests to convert some of these existing residential areas to commercial or industrial land uses, similar to

previous requests for changes in Hollywood and Old Clackamas.

Under **Alternatives 2 and 3**, development of the limited supply of vacant employment land within the land use study area is likely to be more employment-intensive with the more supportive transportation system. Also, existing employment areas are expected to intensify over time due to the cumulative effects of a more efficient and convenient transportation system.

Environmental Justice

Because **Alternatives 2 and 3** and the design options, in combination with other past, present, and reasonably future actions, may support gentrification or redevelopment/replacement of moderate and low-income areas (such as the manufactured home parks that are already at risk from market forces), there may be a cumulative effect of further displacing low-income residents beyond the direct effects already noted. Thus, they might have cumulative effects on environmental justice populations.

Visual Resources

The cumulative effects and benefits would be expected to be approximately the same for both **Alternatives 2 and 3** and all the design options. The main cumulative effect of the proposed project and other proposed or current projects is increased man-made development, particularly roads, intersections, structures, and on- and off-ramps, which would potentially cause the character of the project area, especially in Zones C and D, to become urbanized more rapidly than if the highway were not built. However, transportation improvement projects such as widened roads would potentially reduce traffic congestion, which can encroach upon views, particularly in areas that are currently less developed.

New roads and associated improvements can also further encroach on visual resources and contribute to the segmentation of existing visual resources, such as those of fields and intact stands of trees. The projects would also contribute to the collective removal of vegetation and grading of terrain in the project area. This would negatively affect existing views by decreasing the color, form, texture, and line variation that trees, shrubs, and hills provide.

Noise

The impacts described throughout this report represent cumulative noise impacts. The forecast traffic volumes used in this analysis were based on land use and employment forecasts and included traffic from all sources, including projected development in the area.

Air Quality

The forecast traffic volumes used to analyze the air quality impacts of the proposed Sunrise Project alternatives and design options include traffic from all sources. Background concentrations representing the cumulative emissions of other sources in the area are added into the predicted local concentrations for carbon monoxide at intersections. Because of these inclusive analysis methodologies, the impacts evaluated already represent cumulative air quality impacts.

Energy

The proposed Sunrise Project would be constructed in a region projected to gain one million residents by 2030. Many other road and infrastructure projects are planned in addition to the Sunrise Project in the Portland metropolitan region. When considered in the context of the entire Portland metropolitan region, the proposed Sunrise Project would have a marginal impact on total fuel consumption, and cumulative energy effects resulting from the Sunrise project would be minimal.

Biology

Past and planned road projects add to the biological impacts of the proposed Sunrise Project, primarily as a result of increased impervious surface. It is assumed that these road projects would comply with state water quality standards for detention/retention and water

quality treatment existing at the time of construction.

Residential development is expected to continue on the vacant lands in the vicinity of the proposed Sunrise Project, which adds roofs to the sum of impervious surfaces.

New bus lines would presumably use existing facilities and would not result in additional impacts to fish, wildlife, and botanical resources. These new bus lines may benefit those resources by slowing the demand for additional new facilities. Nevertheless, it is safe to assume that increased growth would occur and would negatively impact fish habitat.

Sewer and water projects built as part of a road construction project or built in existing road prisms do not constitute significant impacts to biological resources because the areas are already disrupted by construction. Sewer projects that follow stream corridors can be very disruptive to the natural environment.

Camp Withycombe plans to add new facilities to the camp in order to locate the new 41st Brigade headquarters and logistics center. Wildlife habitats at the camp are already compromised due to the existing amount of activity there.

It is unknown whether the wetland on the future medical care complex site would be adversely affected. Permits would be required from USACE and DSL. The agricultural field provides limited wildlife habitat.

New urban areas to the south and the east of the proposed Sunrise Project are expected to begin development within three to five years. If all privately held land were to fully develop, the Mount Talbert to Rock Creek wildlife corridor could be severed.

Wetlands

Past development has likely resulted in a significant loss of wetland acreage and wetland function in this portion of Clackamas County. Consequently, the hydrology and plant communities of the remaining wetlands have been altered significantly, and linkages between wetlands and other native habitats are largely lost. The proposed project would significantly add to this cumulative loss by further impacts to wetland acreage and function. If pressure to develop in wetlands increases, many impacts to small- and medium-sized wetlands could occur.

Water Quality

No cumulative water quality effects are anticipated from **Alternative 1** or the proposed project. The project area is currently fully urbanized. If the project does prompt redevelopment, such redevelopment would require stormwater mitigation in addition to the project-related stormwater mitigation.

Geology and Soils

Cumulative effects to geology and soils would be minimal because no other large construction projects are planned to occur simultaneously with the proposed Sunrise Project. Potential cumulative effects to landslide-prone areas also need to be considered in association with any of the project alternatives.

Cultural Resources

Urbanization would occur regardless of the proposed Sunrise Project; however, constructing the highway may accelerate development of currently undeveloped and open lands, especially in east Happy Valley and Damascus. That development is likely to result in the loss of archaeological resources that may be present on developable lands in these areas.

If development triggers federal involvement, the developer would be required to determine whether archaeological resources would be affected by the proposed development and to mitigate for adverse effects to significant resources. Oregon state law protects archaeological resources, but no surveys prior to development are required if there is no federal agency involvement. Unrecorded and unreported archaeological resources are therefore likely to be unknowingly disturbed or destroyed.

Similarly, development and urbanization of areas recently added to the urban growth boundary may also affect the historical resources located within the UGB.

Hazardous Materials

Major cumulative effects related to remediation of contaminated soil/groundwater due to the construction of the proposed Sunrise Project would not be expected. Concerns may arise that a project the size of the proposed Sunrise Project could create a shortage of experts available to handle the workload across the region. The opinion of the contributors to this SDEIS is that qualified contractors could absorb the work.

Utilities

No cumulative impacts would be expected because no other projects of a similar magnitude are planned for the area.

Irretrievable and Irreversible Commitment of the Resources

Implementation of the proposed action involves a commitment of a range of natural, physical, human, and fiscal resources. NEPA requires the SDEIS to identify how building the Sunrise Project would commit resources that could not in future be retrieved (once the resource is used, it is gone, such as fuel or labor) and commit resources to a use in a way that could not be reversed (such as natural wetlands that could not be recreated).

The commitment of these resources is based on the concept that residents in the immediate area, state, and region will benefit by the improved quality of the transportation system. These benefits will consist of improved accessibility and safety, savings in time, and greater availability of quality services which are anticipated to outweigh the commitment of these resources.

Land Consumption

Land used in the construction of the proposed Sunrise Project is considered an irreversible commitment during the time period that the land is used for a highway facility. **Alternatives 2 and 3** with any design option would commit land from existing uses to transportation and related uses. While this land might be retrievable in the long term, if a greater need arises for use of the land or if the highway facility is no longer needed, it represents an irreversible commitment within the foreseeable future. While the land can be converted to another use, there is no reason to believe such a conversion will ever be necessary or desirable. **Alternative 2** with **Design Option B-2** would have the largest impact by converting about 520 acres of land to transportation. **Alternative 3 with Design Option A-2** would have the least impact among the build alternatives by converting about 477 acres.

Natural Resources

Large amounts of natural resources are used in the fabrication and preparation of construction materials. Additionally **Alternatives 2 and 3** would cause irretrievable loss or conversion of wetlands and upland and riparian habitats to pavement or roadway slopes. **Alternative 2** would impact 101 acres of habitat and 32 acres of wetlands. **Alternative 3** would impact 99 acres of habitat. **Design Option B-2** would have the greatest impacts on habitat while **Design Option C-3** would have the least.

Energy Resources

Alternatives 2 and 3 would require the irreversible and irretrievable expenditure of energy resources, approximately 35,800 to 43,300 gallons of fuel per day for the operation of vehicles on the corridor in 2030 or 13.07 to 15.80 million gallons of fuel annually.

To construct the project, the commitment of energy sources would include petroleum products expended by construction equipment on the site and in transport to and from the site, and the energy invested in the preparations or fabrication of the construction materials. Construction is estimated to require between 55.6 and 61.6 million gallons of fuel.

Materials

Considerable amounts of highway construction materials such as cement, aggregate, and bituminous material would be used to build the proposed Sunrise Project. These materials are generally not retrievable except for those items that have some salvage value and can be recycled. However, they are not in short supply and their use will not have an adverse effect upon continued availability of these resources. Any construction will also require a substantial one-time expenditure of both state and federal funds that are not retrievable. **Alternative 2** with **Design Option B-2** would require the most materials.

Financial Resources

Funds expected in the design, construction, operation, and maintenance of the proposed Sunrise Project would be totally committed and unavailable for other uses.

Unavoidable Impacts

Transportation

Congestion on the road network would continue to grow even if the proposed Sunrise Project is built.

Land Use, Communities, and Businesses

Changes to access and circulation would require longer traveling distances for residents and businesses at specific points in the Sunrise Project area. The conversion of developable land to transportation uses is unavoidable.

Environmental Justice

Displacement of some low-income housing is likely. Whether residents could be relocated within the land use study area is unknown.

Visual Resources

Permanent impacts to some visual resources would be unavoidable.

Noise

Areas adjacent to the project would experience an increase in traffic noise levels with and without the project. Noise increases that do not meet the criterion for funding of abatement measures would not be mitigated for noise impacts. Noise mitigation analyzed in the Midpoint area was generally found to be either ineffective at reducing sound levels or had costs too high to meet the ODOT reasonableness criterion. Residential units in neighborhoods north of the proposed Sunrise Project alignment at the top of the bluff have the potential for unmitigated and substantial noise increases as a result of the proposed build alternatives. Even with mitigation measures at some locations, there would be unavoidable noise impacts.

Biology and Wetlands

Replacement of upland, riparian, and wetland habitats with pavement would be unavoidable.

Water Quality

Mitigation would not prevent all pollutants in stormwater from entering surface and groundwater.

Soils and Geology

Excavation into rock or dewatering (if required) for construction of the interchange in the Rock Creek Junction area would be unavoidable.

Cultural Resources

Alteration of some historic resources would be unavoidable.

Utilities

Relocation of public and private utilities would be unavoidable.

Applicable Laws and Approval Requirements

Noise

No permits would be required for permanent impacts. A noise variance could be required by Clackamas County during construction.

Air Quality

No Air Quality permits are required.

Clean Air Act

This law forms the basis for regulations that control allowable air emissions and concentrations of air pollutants in the environment.

National Ambient Air Quality Standards

The federal government has established National Ambient Air Quality Standards to protect the public from air pollution. Geographic areas where concentrations of a pollutant exceed the ambient air quality standards are classified as nonattainment areas (as in, they do not attain standards). Nonattainment areas that become compliant are classified as maintenance areas. Areas that meet the standards are attainment areas. The Portland metropolitan area is a maintenance area for carbon monoxide and an attainment area for all other pollutants. The EPA recently revised the standards for particulate matter. Based on information collected to date, the Portland area is expected to comply with the new standards.

Air Quality Conformity Finding

The project is located in the Portland carbon monoxide maintenance area. The project must be included in a conforming RTP and Metropolitan Transportation Improvement Program with no substantive changes in design concept or scope, and a hot spot analysis must be completed to determine that local carbon monoxide impacts would not occur.

The 2035 RTP includes the following task descriptions for the proposed Sunrise Project: acquire right-of-way from I-205 to SE 172nd Avenue, perform preliminary engineering, and construct new highway facility from I-205 to SE 122nd Avenue interim connection. The conformity analysis for the 2035 RTP included the full build alternative from I-205 to SE 172nd Avenue with six lanes, no tolls, to be completed by 2017. and the U.S. Department of Transportation has issued a determination that regional emissions resulting from the 2035 RTP (and, therefore, including the six-lane project) would conform to the carbon monoxide emissions budgets. A local hot spots analysis was performed for the alternatives and design options for the expected year of opening and the design year and no violations of the NAAQS were predicted. The analyses show that the full build alternative with six lanes, no toll from I-205 to SE 172nd Avenue, and constructed by 2017 would conform to the State Implementation Plan.

Mobile Source Air Toxics

The Clean Air Act Amendments of 1990 identify 188 air toxins (defined as pollutants that cause cancer or may cause other serious health effects). Based on the EPA rulemaking, FHWA identified six toxins as the priority Mobile Source Air Toxics: benzene, formaldehyde, acetaldehyde, diesel exhaust (particulate matter/diesel exhaust organic gases), acrolein, and 1,3-butadiene. There are no national standards for Mobile Source Air Toxics, and there are no established criteria for determining when emissions should be considered a significant issue. There is guidance for qualitative analysis. A qualitative analysis for the SDEIS is recommended.

State Regulations

ODEQ has established state ambient air quality standards that are more stringent than the national standards. State law on “Transportation Conformity” establishes criteria and procedures for determining conformity of transportation plans and programs with State Implementation Plans to meet the national ambient air quality standards. The conformity regulations are applicable to projects within nonattainment or maintenance areas.

Biology

OAR Division 415 635-415-000 through 635-415-0025 Fish and Wildlife Habitat Mitigation Policy

The Oregon Department of Fish and Wildlife can require or recommend mitigation for loss of fish and wildlife habitat resulting from development actions.

Fish and Wildlife Coordination Act of 1958 (Public Law 85-624)

The Act requires that any plans to impound, divert, control, or modify any stream or other body of water must be coordinated with the U.S. Fish and Wildlife Service and the state fish and wildlife agency through consultation directed toward the prevention of fish and wildlife losses.

Endangered Species Act of 1973 (Public Law 93-205)

The ESA provides for the protection of animal and plant species currently in danger of extinction (endangered) and those species that may become so in the near future (threatened).

Endangered Species Act, Section 7 Consultation and Biological Assessment

Section 7 of the ESA directs all federal agencies to ensure that any actions they fund, permit, or authorize are not likely to jeopardize a listed species or destroy or adversely modify critical habitat. Consultation with the federal agencies (NMFS and USFWS) regarding potential project impacts to listed species would be necessary.

Migratory Bird Treaty Act

Under the Act, taking, killing, or possessing migratory birds is unlawful unless permitted by regulations. During construction, migratory birds would be protected.

Federal Clean Water Act Section 404

Any alternative involving work below the Ordinary High Water Mark of a stream or within a wetland would require a Federal Clean Water Act Section 404 permit. The Federal 404 Wetland Removal Fill permit also requires that stormwater management be addressed. Issuance of the 404 permit would require "Water Quality Certification" by the ODEQ, indicating that their stormwater management standards are met (per the federal Clean Water Act, Section 401). Because ESA-listed fish are present in the API, USACE requires concurrence from NMFS regarding the appropriate management of stormwater.

Removal/Fill Law

State of Oregon Removal/Fill law requires a permit for impacting waters of the State of Oregon. The Removal/Fill permit is administered by the Oregon Department of State Lands.

Stormwater

Stormwater runoff from new impervious areas would require permits from Clackamas County. The proposed project would require a Clackamas County Service District No. 1 permit for the stormwater system. The permit would require water quality treatment and potential detention of runoff from the new roadway. For construction activities, the ODEQ has designated Clackamas County as its agent for the review, issuance, and enforcement of National Pollutant Discharge Elimination System (1200-C) permits. This permit identifies the activities required if construction disturbs more than one acre of land, in order to ensure an acceptable standard of water quality.

Wetlands

Federal Clean Water Act Section 404 Permit

USACE administers the 404 permit, which is processed by one of two paths: Individual Permit or Regional General Permit, depending on project design and the area and volume of waterway impact. Because of the estimated project impacts, the proposed project would most likely require an individual permit. If federally listed threatened or endangered species may be affected by the proposed project, consultation with the USFWS and/or the NMFS would likely be required before a permit can be issued by the USACE.

State of Oregon Removal/Fill Permit

The Removal/Fill permit is administered by the Oregon Department of State Lands and is processed by one of two paths: Individual Permit or General Authorization, depending on project design and the area and volume of waterway impact.

The Joint Permit Application is the application form for both the Section 404 permit and the Removal/Fill Permit. Copies of the application form, project plans, and resource plans are sent to the USACE and DSL.

Geology and Soils

Site preparation permits for grading, erosion, blasting, and air and noise emissions from ODEQ, ODOT, local cities, and Clackamas County would be required. A Pre-Construction Assessment for in-water work from the DSL and the USACE would also be needed.

Cultural Resources

Archaeological Resources

State of Oregon Archaeological Permits, issued by the State Historic Preservation Office, would be required for any excavations in known archaeological sites or for exploratory excavations to determine if archaeological deposits are present on lands owned by local or state agencies.

Historic Resources

While no permits would be required for this project with regard to historic resources, the project is subject to review under Section 106 of the NHPA and Section 4(f) of the Department of Transportation Act (see 4(f) section of the SDEIS).

As stated earlier, Section 106 Determination of Eligibility forms were prepared for each of six resources affected by the project, with three recommended for eligibility and three recommended as not eligible.

If SHPO agrees with a Section 106 recommendation that a resource is not eligible, then the Section 106 requirements for that resource are satisfied. If SHPO agrees with a recommendation for eligibility, then a Section 106 Finding of Effect form must be prepared for that resource. This form is used to determine the effect a project would have on an NRHP-eligible resource. These effects are categorized into three possible findings. A “No Historic Properties Affected” finding means that there are no historic properties present in the project area. A “No Historic Properties Adversely Affected” finding means that the project effects are not adverse. A “Historic Properties Adversely Affected” finding means that there are historic properties present and they would be affected.

Hazardous Materials

For the federal- or state-listed sites, coordination with the Environmental Protection Agency and/or the Oregon Department of Environmental Quality would be required to assure that ongoing investigations and/or long-term operations and maintenance and monitoring continue. Consultations with both agencies would determine site-specific restrictions and considerations for construction within or near those sites.

The proposed handling and disposing of contaminated soils should be coordinated with ODEQ prior to construction.

If ODOT acquires land for right-of-way where there is a known hazardous materials issue, ODOT would coordinate with the EPA and/or the ODEQ. Agreements between ODOT and property owners could be used to avoid or limit liability for ODOT. However, the ODEQ generally requires that the purchaser do some cleanup to provide a public benefit that balances the state’s elimination of long-term liability.

Utilities

Coordination with public and private utilities and agencies are required throughout the project process. Some relocation efforts may require a land use application submittal.