

Chapter Five: Cumulative Effects

A cumulative effects analysis identifies other projects – past, present, and planned – that have or are expected to have impacts in the same area as the Proposed Project. Cumulative effects are important to consider during construction and operation of a project. While they may be minor when viewed in the individual context of direct effects, they can add to the effects of other actions and eventually lead to measurable or even significant and adverse environmental change.

The cumulative effects of the Proposed Project and planned transportation improvements in the project area would be improved mobility and decreased traffic congestion along SR 518 and nearby roadways, which would enhance access to local properties. The Proposed Project along with other planned transportation improvements would also support future long-term population, economic, and employment growth in the region.

The Proposed Project is expected to contribute to an incremental change in the project viewshed's character and quality. Positive cumulative effects on surface water resources have been identified. In relation to land use resources, the primary adverse cumulative impact of the Proposed Project and other ongoing and proposed projects would occur during construction.

1 What are cumulative effects and why do we study them?

In the regulations implementing the procedural provisions of the National Environmental Policy Act (NEPA), the Council on Environmental Quality (the federal agency charged with implementing NEPA) defines cumulative effects as the following:

“[T]he impact on the environment which results 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. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (*40 CFR 1508.7*).”

The Council on Environmental Quality recommends that an agency’s analysis accomplish the following:

- Focus on the effects and resources within the context of the proposed action;
- Present a concise list of issues that have relevance to the anticipated effects of the proposed action or eventual decision;
- Reach conclusions based on the best available data at the time of the analysis;
- Rely on information from other agencies and organizations regarding reasonably foreseeable projects or activities that are beyond the scope of the analyzing agency’s purview;
- Relate to the geographic scope of the Proposed Project; and
- Relate to the temporal (timeframe) period of the Proposed Project.

Cumulative effects can be positive or negative depending on the environmental resource being evaluated. It is possible for some environmental resources to be impacted negatively and others positively by the same Proposed Project.

2 If identified, how will adverse cumulative effects associated with the project be mitigated?

Reasonable measures to minimize adverse effects have been incorporated into the project design to ensure that the project is consistent with regulatory guidance. The measures are a combination of mitigation and enhancements that include construction of noise walls, treatment of stormwater, and use of a traffic management plan.

3 What are the geographic boundaries for this analysis?

When evaluating cumulative effects, a geographic area beyond that of the study area should be considered. The geographic scope of analysis was defined by the boundaries of the Proposed Project's effect on an environmental resource, as well as the boundaries of other activities that could also contribute to the effects on that resource.

The geographic area considered for the cumulative analysis is bordered by South 140th Street on the north, 4th Avenue Southwest on the west, South 200th Street on the south, and the I-405 corridor on the east. All projects in the *I-405 Master Plan* were considered in the analysis, thereby extending the northern corridor boundary up to Lynwood. Expanding the geographic area beyond that of the direct impact area of the Proposed Project allowed for a more comprehensive analysis of cumulative effects on environmental resources.

4 What projects were considered for this cumulative effects analysis?

For the effects of other major future projects to have been considered in this analysis, the projects must be located within or close to the project's study area. The projects must also be reasonably foreseeable. For a transportation project, this typically means that the project is planned, approved, and funded. Specific projects considered in this cumulative effects analysis are described below:



Photograph of Sound Transit's Link Light Rail Project under Construction adjacent to SR 518

- **Sound Transit North of SR 518**

A light rail route from South 154th Street in Tukwila to Sea-Tac International Airport is currently under construction. The proposed extension to the initial segment of Sound Transit's Link Light Rail route would provide direct light rail service to stations at International Boulevard/Southcenter Boulevard (Tukwila Station) and at Sea-Tac Airport near South 200th Street. The project includes plans for construction of a major stormwater detention facility located in-line with Gilliam Creek downstream (east) of 42nd Avenue South on the north side of Southcenter Boulevard. This detention facility would more than compensate for the light rail project's impacts on Gilliam Creek, and thus would provide a substantial benefit by reducing stream channel erosion and flooding problems.

- **Sea-Tac Airport Comprehensive Development Plan, 2004**

The Port of Seattle's comprehensive plan presents its vision for long-term development of airport facilities. It includes plans for the airport, roads and terminal and identifies proposed terminal, landside, cargo and support facilities.

- **Port of Seattle Remote Consolidated Rental Car Facility**

The Port is evaluating construction of this new facility on a 21-acre parcel near South 160th Street and

International Boulevard. The project would provide a single location for delivery of rental cars at the airport and a common facility that would be used by all rental car companies. Consolidation of rental car activities at the rental car facility would result in the relocation of the five companies currently operating in the Main Garage at the airport. It would also provide space for off-site rental car companies currently serving the airport. When complete, the facility could house between 10 and 12 rental car companies with associated office and support facilities. The project would also include a ramp from South 160th Street to the North Airport Expressway, a new southbound lane on SR 99, and access improvements to SR 518, including a new ramp from South 160th Street to eastbound SR 518.

- **Port of Seattle South 160th Street Loop Ramp Project**

This project would develop a multi-lane return-to-terminal ramp on the North Airport Expressway in the vicinity of the South 160th Street overpass. The South 160th Street Loop Ramp Project would include construction of a retaining wall, utility relocations, roadway signage and lighting modifications, storm drainage modifications, landscaping, and potential art components. The project would also widen the entrance ramp to the lower drive from one lane to two lanes.

- **Port of Seattle L-Shaped Property North Air Cargo Expansion**

The Port proposes to construct a secured access bridge across SR 518 to connect to Sea-Tac Airport on the south side of SR 518.

- **Rental Car Fleet Maintenance Facility East of SR 99**

This project would be constructed on a 1.7-acre site at the southeast corner of South 158th Street and SR 99, just south of SR 518. The site would be converted into a regional rental car fleet maintenance facility.

- **SR 518/SR 509 Interchange Project**

The city of Burien and WSDOT are working together to design and construct a new freeway-to-freeway connection from SR 509 southbound to SR 518 eastbound at the SR 518/SR 509 junction. The project would provide short- and long-term safety, mobility, and environmental benefits within this section of the freeway system.

- **Senior Housing Project at First Avenue South and South 140th Street**

This project would construct a 93,754-square-foot, three-story building on a 4.2-acre site at First Avenue South and South 140th Street. The project would provide 99 units of senior residential housing with street-level retail development.

- **Burien Transit Center/Transit Oriented Development**

The city of Burien, in conjunction with King County Metro, plans to construct a Transit Oriented Development at this 5-acre site between South 148th Street and South 150th Street, west of First Avenue South. It will incorporate a new off-street bus Transit Center, multi-use housing, and office and retail uses.

- **Town Square Mixed Development Project**

A proposed mixed-use retail project will consist of 250 housing units (condominiums and apartments) and 34,000 square feet of retail/live and work units. The project will be constructed between South 150th Street and South 152nd Street, west of Fourth Avenue Southwest.

- **I-405 Master Plan**

The *I-405 Master Plan* provides a twenty-year vision of multi-modal improvements to the freeway and transit system, and along the I-405 corridor between Tukwila and Lynnwood.

The general location of these projects is presented in **Exhibit 5-1**.

Exhibit 5-1
Projects Considered in the Cumulative Effects Analysis



5 What cumulative impacts would result from the Proposed Project?

Eight disciplines were identified as having potential cumulative impacts resulting from the Proposed Project. The following is a discussion of each of these areas.

Air Quality

Construction-related cumulative effects on air quality due to the Proposed Project and other projects in the area

should be localized, temporary, and of low magnitude with mitigation measures in place.

During operation, the Proposed Project will alleviate an identified traffic congestion problem, improving traffic flow. The Proposed Project will not cause or contribute to violation of carbon monoxide (CO) standards.

The Sound Transit Project and the Burien Transit Center/Transit Oriented Development may reduce automobile use. Other transportation projects, such as those proposed by the Port of Seattle, the *I-405 Master Plan* and the SR 518/SR 509 Interchange Project, may improve the transportation system's efficiency, thereby reducing CO levels in parts of the study area. The Senior Housing Project and the Town Square Mixed Development Project contain residential housing and retail, providing an opportunity to reduce travel demand. Therefore, the cumulative effects of these projects will not degrade air quality.

Surface Water

Positive cumulative effects on surface water resources have been identified for the Proposed Project.

Along the SR 518 eastbound lane, stormwater facilities would be designed to manage runoff from impervious surfaces. The Proposed Project is one of many reconstruction projects planned in the area, all of which should improve conditions in Gilliam Creek as a result of installation of stormwater treatment and detention facilities to meet regulatory requirements. **Exhibit 5-2** on the following page shows the general location of Gilliam Creek in the project study area.

The cumulative effects of these projects could result in decreased stormwater infiltration. Effective pollutant removal by required stormwater treatment facilities would improve the quality of stormwater runoff discharged to Gilliam Creek and its tributaries. In addition, stormwater detention facilities associated with the Proposed Project

Exhibit 5-2
General Location of Gilliam Creek



would increase flow control performance, resulting in reduced peak flows in Gilliam Creek during the rainy season, including reduced flows in the southwest and northwest tributaries of Gilliam Creek that flow into the Proposed Project area.

Groundwater

Changes in groundwater recharge in the project area could result from alterations to wetland configurations, increases in impermeable surface areas, and development of stormwater facilities. New stormwater facilities, for example, can influence groundwater inflow into streams because they may intercept or otherwise collect groundwater seepage more efficiently than occurs at present, and then transport that water quickly to the nearby stream. Additionally, during the dry summer months, increased impervious surface areas would reduce base flows in Gilliam Creek. On a basin-wide scale, however, effects on groundwater inflow to Gilliam Creek are not expected to be significant. This is because the added impervious surfaces will cover only a small fraction of the existing open space that provides base flow to the creek during the dry season. In addition, nearly all of the open

space area in the Gilliam Creek watershed that promotes infiltration and storage of precipitation in the rainy season will be unaffected by the project.

Fish and Aquatic Species

The project area comprises only a small portion of the Gilliam Creek basin. Numerous springs and seeps within the basin support perennial stream flow in Gilliam Creek (Tukwila, 2001). Fish and aquatic species that are dependent on streamflows in Gilliam Creek outside of the proposed project area are not expected to be affected. This is because, as noted above, dry season base flows in Gilliam Creek will not be significantly affected by the Proposed Project and the project will incorporate flow-control measures for stormwater runoff to prevent adverse high-flow effects in Gilliam Creek.

Land Use

The Proposed Project is not expected to result in substantial indirect or cumulative impacts on land uses.

Construction of the Remote Consolidated Rental Car Facility is expected before 2010, and planned construction of the Sound Transit Link Light Rail extension to Sea-Tac Airport is scheduled to be completed by late 2009. Combined with a proposed construction timeframe of 2007-2009 for the Proposed Project, there would be considerable overlap of construction activities for these three projects, which are in close proximity. The combined result of these construction activities would be an expected incremental increase in traffic congestion, noise, and dust emissions associated with construction activities.

Where new land uses could occur, it is expected that they would be consistent with local zoning. Thus, the Proposed Project is not expected to result in indirect impacts that substantially change land uses in the project area.

Social and Economic Resources

As discussed above, other construction activity is expected during the Proposed Project's construction period and in close proximity to the project area. Careful planning and coordination between construction management teams would be needed to avoid and minimize construction effects on surrounding Tukwila and SeaTac neighborhoods. Construction management teams would also work with public service, emergency services, and utility providers and provide residents of surrounding neighborhoods with updated information about project construction to minimize potential impacts.

Transportation

Once completed, construction of projects associated with the Sound Transit Link Light Rail, Remote Consolidated Rental Car Facility, SR 518/SR 509 Interchange, and I-405 corridor would improve transportation facilities for residents of the project study area and the region, as well as local retail and commercial businesses, regional freight and transport businesses, and business and leisure visitors to the Seattle metropolitan area. Travelers would experience improved safety, less congestion, and reduced travel times. They would also have alternative mode choices for travel to and from the airport, downtown Seattle, and surrounding communities. Together, these transportation improvements would support future long-term economic and employment growth in the region.

Visual Resources

The Proposed Project, in combination with past, present and reasonably foreseeable future projects such as Sound Transit's Link Light Rail adjacent to the north side of the SR 518 corridor, would contribute to greater change in the project viewshed's character and quality as compared to the visual change with just the Proposed Project. Although the Proposed Project would remain a very visible feature in the SR 518 corridor, the light rail tracks and columns, due to their scale and location, would result in a greater change in

the visual environment and would become the dominant feature.

6 What measures are proposed to minimize cumulative effects?

Construction management teams would coordinate with public service, emergency services, and utility providers and provide residents of surrounding neighborhoods with updated information about project construction to minimize potential impacts. No measures, beyond those incorporated into the project design, are necessary.