4. Cumulative Effects

The Mercer Corridor Improvements Project would take place in an area that has changed dramatically in the last century and will continue to grow and change with or without the project. This project is part of a complex network of land use and transportation systems, and it is important to consider the project's effects in the context of this network rather than in isolation. Considering the project on a larger scale in terms of both time and distance contributes to an understanding of how it influences and is influenced by the broader patterns of development in the area.

4.1 What are cumulative effects?

Cumulative effects are those that result when the project's effects combine with those of other past and future actions in the area, such as development of a roadway, a light rail route, a housing subdivision, or an office park. The Mercer Corridor project may contribute to cumulative effects from past, present, or reasonably foreseeable future projects. In addition to the Mercer Corridor project, there are a number of other transportation and commercial development projects in the area, including:

- Alaskan Way Viaduct and Seawall Replacement Project
- Conversion of Ninth Avenue from a one-way to two-way street
- South Lake Union Park improvements
- 2201 Westlake mixed-use development, including 93 condominiums
- University of Washington Medical Research Campus, approximately 650,000 square feet of biomedical research facilities and office space
- Interurban Exchange, approximately 516,000 square feet of commercial space
- Amazon headquarters, office and retail building

It is important to note that many of the analyses done for this EA already consider cumulative effects. For example, the transportation, air quality, and noise analyses all consider past and planned growth in the region as part of the model used to evaluate future conditions.

4.2 What are the cumulative effects of this project?

Air Quality

The traffic improvement projects combined with this project would have the cumulative effect of improving traffic flow, reducing delay, and reducing emissions from motor vehicles using these roadways.

Noise

Because the majority of land within the affected study area is already developed and noise levels already exceed noise abatement criteria for sensitive uses in some locations, no cumulative effects are anticipated. Mercer Street and other roadways are the primary source of noise in the study area. The noise effects of this project constitute a slightly perceivable increase in noise levels in selected areas over the No Build Alternative, while in some areas noise levels would be lower than the No Build Alternative. Within the context of existing noise emissions from Mercer Street and other transportation sources, the incremental contribution of this project to noise levels is negligible.

Historic and Cultural Resources

The construction of this project along with other construction projects in the area, both transportation-related and development-related, may create adverse effects on historic structures. Historic properties may suffer prolonged periods of limited access, greater dust accumulation, and prolonged periods of vibration from multiple construction activities.

The increased transit options, improved transportation routes, and large-scale development projects may bring more redevelopment pressure to bear on the few smaller historic properties in the area, such as the row of turn-of-the-century houses on Republican Street near Fairview. Due to the valuable new amenities in the neighborhood (such as the South Lake Union streetcar and South Lake Union Park improvements) and the associated increased land value, these small buildings may be in danger of being demolished to allow larger-scale, mixed-use development in their place.

The construction of this project along with other construction projects may affect historic structures in the area through intensification of the effects discussed above.

Hazardous Materials

The construction of this project along with other projects in the South Lake Union area, both transportation-related and development-related, may result in improved environmental quality in the South Lake Union area by uncovering and cleaning up contaminated properties. The development of the projects listed above will require that contaminated sites within the immediate area be remediated so that construction activities can occur in compliance with state and federal environmental

regulations. Therefore, there would be an overall beneficial cumulative effect to the area surrounding the Mercer Corridor Improvements project.

However, construction and operation of new businesses and industries would have the potential to contribute to contamination or recontamination within the project vicinity, albeit with more modern safeguards than previous development.

Surface Water Quality

As a result of past development activities, Lake Union is the most urbanized lake in the Seattle area and drains residential, commercial, and industrial neighborhoods. Within the study area, there are no natural water drainages and there is little native shoreline vegetation. Past development activities have degraded water quality in the lake, which is on the WDOE 2004 list of Section 303d impaired waters.

Development in the South Lake Union neighborhood is anticipated to continue. As this occurs, impervious surface areas (roofs, parking lots, roads) on some projects could increase and flow rates and water quality may be affected. However, other projects could also reduce impervious surface areas by introducing pervious areas and other sustainable drainage design elements. Measures to mitigate any new development may help to minimize the long-term hydrologic effects (such as stormwater flow control facilities or limitations on impervious surfaces) and water quality effects.

Land Use

The proposed project, as well as the other planned transportation and development projects listed, would be consistent with the City's policies to coordinate transportation and development in order to concentrate and intensify urban development. In accordance with regional and local plans and policies, these projects would provide mobility and access options that could accommodate higher densities and reduce land consumption. Localized intensification of land use would occur consistent with adopted plans, policies, and regulations. A change in land use would occur independent of this project; however, the proposed project would facilitate shifting land use in this area as intended by the City's Comprehensive Plan. Overall, major changes to land use in the South Lake Union Neighborhood would result from this project and the multiple transportation, mixed-use, and bio-tech development projects planned in this area.

The proposed project would have no negative cumulative effects on land use. The proposed project would assist in realizing adopted land use goals and policies for the area. With other projects, such as development of South Lake Union Park, it would result in a cumulative beneficial effect on the neighborhood.

Social

Construction of this project along with other transportation-related and development-related construction projects may temporarily affect the

residential neighborhoods, making it more difficult to move through the area during construction, especially if construction of several projects occurs concurrently. However the transportation-related projects are improvements to enhance circulation and improve safety in the area and would improve overall mobility for those who live in the neighborhood and the region. Bicycle and pedestrian improvements to Valley Street, together with the new South Lake Union Streetcar and planned improvements to South Lake Union Park, would also add to neighborhood livability.

Relocations

The Mercer Corridor Improvements project would remove some retail and office properties in the South Lake Union area. However, substantial new commercial development is planned for construction in South Lake Union. The businesses displaced as a result of the proposed project would likely be replaced with other commercial or residential development, and a net increase in commercial development in South Lake Union would result from other planned development. The cumulative effect of these projects would not affect the ability of displaced businesses to relocate, either within South Lake Union or other neighborhoods within the city.

Economics

The construction of this project along with other projects, both transportation-related and development-related, would facilitate and possibly increase the pace at which planned development for a new, revitalized neighborhood is created. However, a similar level of projected growth is expected to ultimately occur in the South Lake Union neighborhood, with or without the project. All of these projects combined will provide a number of new economic opportunities and increase the contribution of this area to the local and regional economy.

Visual Quality

The construction of this project along with other projects, both transportation-related and development-related, would generally contribute positively to the visual quality of the study area. Positive effects would result from new development adhering to the South Lake Union Design Guidelines by creating memorable destinations and contributing unifying features to frame the roadways. The narrowing of Valley Street to two lanes, together with the future improvements to South Lake Union Park, would improve views of the lake. Development projects would help fill in the vacant lots and, together with the park improvements, will contribute enhanced points of interest. These projects may contribute additional light and glare through use of reflective materials and new lighting features in the study area. The South Lake Union Park plan includes beneficial shade features for park user enjoyment, but none of the other projects would cause shadows in the open space areas. The other projects may, however, reduce sunlight along sidewalks, which is difficult to avoid in urban locations.

Geology and Soils

The project limits lie partially within what were once the waters of Lake Union. Substantial filling between 1884 and 1908 reduced the shoreline considerably. Much of the area is covered by historic fill to a depth of approximately 25 feet. In addition, the topography in the study area has been modified for street and building construction.

The Mercer Corridor Improvements project and other projects in the area will involve excavation and filling. However, these activities are not expected to substantially alter the existing topography or require fill quantities that could not readily be provided by existing commercial fill sources.

Fish, Wildlife, and Vegetation

Past development in the study area has created an urban environment with little or no native vegetation. Existing vegetation is primarily ornamental trees and shrubs. Wildlife species are those that are adapted to urban environments. Current and planned development in the area may include landscape plantings typical of urban environments that may provide limited wildlife habitat.

Past development around Lake Union has degraded water quality and the aquatic habitat and development in the South Lake Union neighborhood is anticipated to continue. However, similar to the Mercer Street improvements, other planned projects would include measures to reduce stormwater flow and improve water quality, as required by City and State regulations, and would not be expected to adversely affect the aquatic habitat and fish.

Transportation

Potential cumulative transportation effects could occur as a result of two planned construction project within the study area, the Alaskan Way Viaduct and Seawall Replacement Project and the conversion of Ninth Avenue from a one-way to two-way street. The Mercer Street improvements are projected to be completed prior to the Alaskan Way Viaduct construction. If concurrent construction is expected, physical impacts would only occur on the west side of the study area. Continuity of traffic access across Aurora Avenue during construction would require a major coordination effort.

Potential cumulative effects on the transportation system upon completion of the project involve changes in travel patterns. Vehicular and transit pattern changes may occur due to the strengthened grid network created by the aforementioned projects, including the two-way operations on Ninth Avenue North, Westlake Avenue North, and Mercer Street. The AWVRP also creates crossings of Aurora Avenue North at Thomas Street and Harrison Street, which are expected to relieve demand along the Mercer Street corridor. Mercer Street intersections at Ninth and Westlake Avenues North would experience higher delays with the proposed connection to Broad Street and the two-way operation along Ninth Avenue North, however.