5 CUMULATIVE IMPACTS

This chapter describes how the effects of the Center City Connector may contribute to the effects of other past, present, and future projects in the vicinity. The objective is to understand how the project might interact with impacts that persist from past actions, with present-day activities, and with other projects that are planned but have not been built yet. A cumulative impact assessment can reveal unintended consequences that might not be apparent when the project is evaluated in isolation.

This cumulative impact assessment follows the approach recommended by the President’s Council on Environmental Quality in *Considering Cumulative Effects Under the National Environmental Policy Act* (CEQ, 1997), and the following additional guidance documents:

- Consideration of Cumulative Impacts in EPA Review of NEPA Documents (EPA, 1999)
- Guidance on the Consideration of Past Actions in Cumulative Effects Analysis (CEQ, 2005)
- Indirect and Cumulative Impact Analysis (National Cooperative Highway Research Program, 2006)

For the project to incur a cumulative impact in combination with other reasonably foreseeable future projects, the project itself would have to cause an incremental impact. The opposite also is true. If the project does not present an incremental impact after avoidance, minimization, and mitigation measures are applied, then it would not result in a cumulative impact. This chapter only addresses incremental impacts that would result in a cumulative impact. Throughout the development of alternatives and impacts analyses, the project team has reached out to other agencies and the public to identify impacts of past and present developments and reasonably foreseeable future actions that could interact with the Center City Connector project. This chapter incorporates the results of these discussions.

5.1 Geographic and Temporal Boundaries of Cumulative Analysis

The development actions that were considered include those that are past, present, and reasonably foreseeable as follows:
5.2 Past and Present Actions

Impacts from past actions have shaped the project vicinity since the mid-19th century, and they continue to shape how Seattle is changing in response to economic and population growth and to development trends. Starting with the first nonnative settlements along the Duwamish River in the 1850s, development of the Seattle area was driven by timber harvesting, commercial fishing, shipbuilding, merchant shipping, railroads, aircraft manufacturing, and other heavy industry, as well as by development and expansion of the state and federal highway systems and by residential communities with their supporting infrastructure.

Section 4.14.1 (Historic, Archaeological, Architectural, and Cultural Resources Cultural Setting) briefly describes the historic setting and how it developed. In brief, the evolution from Native American tribes to current day Seattle Center City has resulted in the transformation of the project vicinity from tidelands and forested wilderness to a densely populated, urban environment. As Seattle became increasingly urban, dispersed suburban-population growth spread to surrounding areas. Such growth was notable in the decades after World War II, and it rapidly accelerated from the 1980s to the present. The predominant trend today is the densification of multiple-use buildings and neighborhoods, including office, retail, and residential development uses. This pattern is being supported by upgrades in infrastructure, including recent utility upgrades and transportation and transit improvements.

Recognizing that the pressure of increasing population growth would continue and intensify, in 2010 PSRC adopted the VISION 2040 (2010a; update to its 1990 long-range plan). Like its predecessor, this plan puts forth an integrated, long-range growth management, economic, and transportation strategy based on a vision of high-density, urbanized centers linked by a high-quality multimodal transportation system. Its transportation element is called Transportation 2040 (2010b). VISION 2040 focuses growth on regional growth centers, which are areas of higher densities of population and employment served by multimodal transportation. These

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1 The “planning horizon” is a future forecast year that often corresponds with the long-range plan horizon for transportation projects.
centers also create opportunities for the arts, civic activity, commerce, and recreation. The Center City Connector advances policies identified in both *VISION 2040* and *Transportation 2040* by enhancing a transit system to serve a growing transportation need for planned density of residential and employment uses within designated urban areas in Seattle.

### 5.3 Reasonably Foreseeable Future Actions

Reasonably foreseeable future actions (RFFAs) are considered regardless of the agency, organization, or person serving as their proponent. They must be likely to occur in the reasonably foreseeable future by virtue of being funded, approved, or under consideration for regulatory permitting; the subject of an environmental review process under NEPA or SEPA; or part of an officially adopted planning document or publicly available development plan.

A number of substantial capital projects could overlap with the construction of the Center City Connector. One set of substantial projects includes waterfront-related projects (see inset above and to the right, and Figure 5-1), including demolition of the Alaskan Way Viaduct; completion of the downtown SR 99 tunnel; the Elliott Bay Seawall Project; Waterfront Seattle; the Seattle Multimodal Terminal at Colman Dock Project; and numerous pier-improvement projects. Other types of RFFAs are roadway, transit, and development projects in downtown Seattle. RFFAs are listed in Table 5-1. Project information in Table 5-1 was adapted from the Elliot Bay Seawall Final EIS and the Waterfront Seattle Draft EIS and was updated based on current project information. The location of RFFAs is shown in Figure 5-1.

**Waterfront-Related Projects** include many transportation, utility, and pier improvement projects from S Jackson Street (Pier 46) to approximately Battery Street (Pier 66). Several may have construction during the same period that the Center City Connector is under construction and involve closing portions of the waterfront area for project-related construction and detouring traffic.
Figure 5-1  RFFAs for the Seattle Area

<table>
<thead>
<tr>
<th>ID</th>
<th>Project Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pike Place Market Waterfront &amp; Union Street Pedestrian Project</td>
</tr>
<tr>
<td>2</td>
<td>Alaskan Way Viaduct (Phase 3)</td>
</tr>
<tr>
<td>3A</td>
<td>Alaskan Way Viaduct Demolition</td>
</tr>
<tr>
<td>3B</td>
<td>Alaskan Way Viaduct Replacement Program</td>
</tr>
<tr>
<td>4</td>
<td>Elliott Bay Sewwall Project (Phase 2)</td>
</tr>
<tr>
<td>5</td>
<td>Alaskan Way - Relocate Utilities</td>
</tr>
<tr>
<td>6</td>
<td>Central Waterfront Combined Sewer Overflow Project</td>
</tr>
<tr>
<td>7</td>
<td>SPPD Bored Tunnel Project (Extend)</td>
</tr>
<tr>
<td>8</td>
<td>Union Street Pier Replacement</td>
</tr>
<tr>
<td>9</td>
<td>Union Street Gondola</td>
</tr>
<tr>
<td>10</td>
<td>Seattle Multimodal Terminal at Colman Dock Project</td>
</tr>
<tr>
<td>11</td>
<td>Terminal 46 Dock Rehabilitation, Crane Rail Extension, and Parking</td>
</tr>
<tr>
<td>12</td>
<td>Seattle Aquarium Expansion</td>
</tr>
<tr>
<td>13</td>
<td>Waterfront Park and Pier 45/63 Replacement</td>
</tr>
<tr>
<td>14</td>
<td>Pier 46 Bailer Cranes Terminal Source Power Upgrade</td>
</tr>
</tbody>
</table>

**Waterfront-Related Projects**

- Pike Place Market Waterfront & Union Street Pedestrian Project
- Alaskan Way Viaduct (Phase 3)
- Alaskan Way Viaduct Demolition
- Alaskan Way Viaduct Replacement Program
- Elliott Bay Sewwall Project (Phase 2)
- Alaskan Way - Relocate Utilities
- Central Waterfront Combined Sewer Overflow Project
- SPPD Bored Tunnel Project (Extend)
- Union Street Pier Replacement
- Union Street Gondola
- Seattle Multimodal Terminal at Colman Dock Project
- Terminal 46 Dock Rehabilitation, Crane Rail Extension, and Parking
- Seattle Aquarium Expansion
- Waterfront Park and Pier 45/63 Replacement
- Pier 46 Bailer Cranes Terminal Source Power Upgrade

**Roadway Projects**

- Elliott/Wallabi Connector
- Pike/Pine Renaissance
- Market Front
- S. Main and S. Washington Street Improvements
- Next Gen Intelligent Transportation System
- Roosevelt to Downtown Project
- Westlake ATT Lanes and One-Way Couplet

**Transit Improvements**

- Third Avenue Transit Corridor Improvements
- Link Extension (Light Rail)
- Interim South Downtown Pathways
- Two-Way Columbia Street Pathways Project
- Madison Corridor Bus Rapid Transit Project
- Broadway Streetcar Extension

**Development**

- North Parking Lot development (Century Link Field)
- Battery Street Portal Park
- SCIDC Arena
- Belltown Private Development
- Capitol Hill Private Development
- Chinatown-International District Private Development
- Commercial Core Private Development
- Denny Triangle Private Development
- Pike/Pine Private Development
- Pioneer Square Private Development
- First Hill Private Development
- Greater Duwamish Private Development

(U) Undefined Geographically; (BMS) Beyond Map Extent
### Table 5-1 RFFAs in the Seattle Area

<table>
<thead>
<tr>
<th>Project ID</th>
<th>Project Name</th>
<th>Sponsor</th>
<th>Description/Proximity to Center City Connector</th>
<th>Completion Year</th>
<th>Transportation</th>
<th>Economics</th>
<th>Noise and Vibration</th>
<th>Cultural, Historic, and Archaeological Resources</th>
<th>Energy Resources</th>
<th>Land Use, Shorelines, and Parks and Recreation</th>
<th>Visual Resources</th>
<th>Fish, Wildlife, and Vegetation</th>
<th>Water Resources</th>
<th>Contaminated Materials</th>
<th>Geology and Soils</th>
<th>Air Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pike Place Market Waterfront and Union Street Pedestrian Project</td>
<td>SDOT</td>
<td>New pedestrian bridge and elevated walkways, stairway and elevator along Union Street from Post Alley to Alaskan Way one block west of Center City Connector Corridor.</td>
<td>2018</td>
<td>X</td>
<td></td>
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</tr>
<tr>
<td>2</td>
<td>Waterfront Seattle – Alaskan Way Promenade (Phase 2)</td>
<td>SDOT</td>
<td>Replaces Alaskan Way with a new permanent roadway and a promenade extending north from the Overlook Walk to Broad Street two blocks west of Center City Connector corridor.</td>
<td>2018 - 2022</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>3A</td>
<td>Alaskan Way Viaduct Replacement Program</td>
<td>WSDOT</td>
<td>The demolition of the SR 99 Viaduct would not occur until after the SR 99 Tunnel and associated project elements are complete.</td>
<td>2018 - 2019</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>3B</td>
<td>Alaskan Way Viaduct Replacement Program</td>
<td>WSDOT</td>
<td>The Alaska Way Via Duct Replacement Program includes several sub-projects, each having their own schedule and duration. They include: SR 99 Tunnel Project, South Access Project, North Access Project, North surface street Connection, Alaskan Way Viaduct Demolition (see 3A above), and the Battery Street tunnel decommissioning. Portions complete in 2016 and 2017. Tunnel expected to be open in 2018.</td>
<td>2017 or later (Phase 1)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
</tr>
<tr>
<td>4</td>
<td>Elliott Bay Seawall Project (Phase 1 and 2)</td>
<td>SDOT</td>
<td>Phase 1 South – rebuild the seawall from Yesler Way to Virginia Street. Phase 2 North – rebuilds the seawall from Virginia St to Broad St and could restore Alaska Way to four lanes until Alaskan Way Promenade can be built.</td>
<td>2017 or later (Phase 1) 2022 or later (Phase 2)</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>5</td>
<td>Alaskan Way – Relocate utilities</td>
<td>WSDOT</td>
<td>This project consists of numerous relocations of private utilities, two blocks west of Center City Connector corridor. Before demolition of the Alaskan Way Viaduct</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Project ID</td>
<td>Project Name</td>
<td>Sponsor</td>
<td>Description/Proximity to Center City Connector</td>
<td>Completion Year</td>
<td>Transportation</td>
<td>Economics</td>
<td>Noise and Vibration</td>
<td>Geophysical, Geotechnical, and Subsurface Resources</td>
<td>Energy Resources</td>
<td>Social Resources and Assessments</td>
<td>Visual Resources</td>
<td>Cultural Resources</td>
<td>Social and Environmental Justice</td>
<td>Water Resources</td>
<td>Contaminated Materials</td>
<td>Geology and Soils</td>
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<tr>
<td>6</td>
<td>Seattle Combined Sewer Overflow (CSO) System Upgrades</td>
<td>Seattle Public Utilities</td>
<td>Basins 70, 71 and 72 will be improved in close coordination with the Elliott Bay Seawall Project and Waterfront Seattle; this project will install a new 24- to 36-inch pipeline and remove or seal overflow structures in Alaskan Way between Pike Street and South King Street. Basin 69 will be upgraded later.</td>
<td>2017 – 2020 (Basins 70, 71 and 72) 2020-2025 (Basin 69)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>8</td>
<td>Union Street Pier Replacement</td>
<td>SDOT</td>
<td>Replace Waterfront Park with a new park on a rebuilt Union Street Pier. This project is approximately two blocks west of Center City Connector corridor.</td>
<td>2019 - 2021</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>9</td>
<td>Seattle Gondola</td>
<td>Private Developer</td>
<td>A gondola has been proposed on Union Street Pier linking Washington State Convention and Trade Center with Seattle waterfront via Union Street.</td>
<td>Unknown</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
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</tr>
<tr>
<td>10</td>
<td>Seattle Multimodal Terminal at Colman Dock</td>
<td>WSDOT - Ferries</td>
<td>Replace aging and seismically vulnerable components of Colman Dock, including vehicle and overhead loading structures on Slip 3, the main terminal building, and the timber portion of the dock, two blocks west of Center City Connector corridor near Pioneer Square.</td>
<td>2017 – 2024</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>11</td>
<td>Terminal 46 Dock Rehabilitation, Crane Rail Extension and paving</td>
<td>Port of Seattle</td>
<td>Repair deteriorated container berth pile caps and deck panels; repair terminal apron and container yard and extend dock crane rail to allow an additional 100-foot gauge crane. This is two blocks southwest of Center City Connector corridor.</td>
<td>2015 – 2020</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
</tr>
<tr>
<td>12</td>
<td>Seattle Aquarium expansion</td>
<td>Seattle Aquarium Society and Seattle Parks and Recreation</td>
<td>The Seattle Aquarium expansion includes the remodeling of the Seattle Aquarium at Pier 59</td>
<td>2022</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
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<td>X</td>
</tr>
<tr>
<td>13</td>
<td>Waterfront Park/ Pier 62/63</td>
<td>Seattle Parks and Recreation</td>
<td>Central Waterfront Master Plans calls for replacing the existing Pier 62/63 with a reconfigured pier to be used for recreation, including temporary boat moorage. This is three blocks west of Center City Connector corridor.</td>
<td>2022</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>14</td>
<td>Pier 66 Cruise Terminal Shore Power Upgrade</td>
<td>Port of Seattle</td>
<td>Upgrade the pier’s electrical system to allow cruise ships to plug into shore power during calls to reduce diesel emissions</td>
<td>2021</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
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</tr>
<tr>
<td>15</td>
<td>Elliott Western Connector</td>
<td>SDOT</td>
<td>The Elliott/Western Connector is a new roadway linking Alaskan Way to Elliott Ave and Western Ave over the BNSF mainline railroad tracks. It includes four traffic lanes with pedestrian and bicycle facilities, two blocks west of Center City Connector corridor.</td>
<td>2018 – 2020</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
</tr>
<tr>
<td>16A</td>
<td>Pike-Pine Renaissance</td>
<td>Downtown Seattle Association</td>
<td>Urban design concepts to improve the Pike-Pine corridors in downtown Seattle from 1st Ave to I-5 with higher-quality, more consistent pedestrian space by upgrading the standards for sidewalks and intersections, including along and crossing portions of the Center City Connector corridor.</td>
<td>Unknown</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Project ID</td>
<td>Project Name</td>
<td>Sponsor</td>
<td>Description/Proximity to Center City Connector</td>
<td>Completion Year</td>
<td>Transportation</td>
<td>Economics</td>
<td>Noise and Vibration</td>
<td>Cultural, Historic, and Archaeological Resources</td>
<td>Energy Resources</td>
<td>Environmental Resources</td>
<td>Social Resources</td>
<td>Visual Resources</td>
<td>Fish, Wildlife, and Vegetation</td>
<td>Water Resources</td>
<td>Contaminated Materials</td>
<td>Geology and Soils</td>
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<tr>
<td>16B</td>
<td>MarketFront</td>
<td>Pike Place Market Preservation and Development Authority</td>
<td>The MarketFront will be located on a 0.75-acre surface parking lot on Western Avenue. The location was formerly home to the Municipal Market Building, which was demolished after a fire damaged the building in 1974.</td>
<td>2016 – 2018</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
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</tr>
<tr>
<td>17 (BME)</td>
<td>S Main and S Washington Street Improvements</td>
<td>SDOT</td>
<td>Improve streetscape and sidewalks to provide improved connections and wayfinding between downtown Seattle and the waterfront, including along and crossing portions of the Center City Connector corridor.</td>
<td>2018</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>18 (UG)</td>
<td>Next Gen Intelligent Transportation System</td>
<td>SDOT</td>
<td>Technologies to help mitigate major planned project construction (SR 99 Tunnel Project, Elliott Bay Seawall, Waterfront, etc.). Major components include adaptive signals, dynamic message signs, transit priority, enhanced traveler information, FHWA model systems engineering, and parking evaluation and needs assessment. These measures overlap major portions of the Center City Connector study area.</td>
<td>2014 – Ongoing</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
</tr>
<tr>
<td>21 (BME)</td>
<td>Roosevelt to Downtown Project</td>
<td>SDOT</td>
<td>Provides a new high-capacity transit route for improved service between the University District and downtown Seattle via Eastlake Ave E, outside the Center City Connector study area.</td>
<td>2020</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
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<tr>
<td>22 (BME)</td>
<td>Westlake Transit Priority Improvement Project</td>
<td>SDOT</td>
<td>Reconfiguration of Westlake Avenue N from near Westlake Hub to Valley Street by replacing a general purpose traffic lane in each direction with either a Business Access Transit (BAT) or transit-only lane. The project is being completed to accommodate King County Metro bus Route 40, the RapidRide C Line, and the South Lake Union Streetcar.</td>
<td>2016</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>23</td>
<td>Third Avenue Transit Corridor Improvements</td>
<td>SDOT</td>
<td>Extending transit priority measures, improved lighting, new bus shelters, and new artistic elements, sidewalk widening, and safety improvements, which connects with the Center City Connector study area on Stewart Street.</td>
<td>2017 - 2018</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>24</td>
<td>Link Extensions (Light Rail)</td>
<td>Sound Transit</td>
<td>University Link Extension will provide light rail service linking Seattle with University of Washington, then Lynnwood Link Extension will continue this line north to Northgate and Redmond Link Extension would expand the light rail east to Bellevue and Redmond across Lake Washington, which connects with the Center City Connector study area at the Westlake and King Street Intermodal Hubs. It is estimated that once North Link and East Link are expanded, bus traffic in the Downtown Transit Tunnel would move up to surface streets.</td>
<td>2016 (University Link Extension) 2022 (Redmond Link Extension) 2023 (Lynnwood Link Extension)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Project ID</td>
<td>Project Name</td>
<td>Sponsor</td>
<td>Description/Proximity to Center City Connector</td>
<td>Completion Year</td>
<td>Transportation</td>
<td>Economics</td>
<td>Noise and Vibration</td>
<td>Cultural, Historic, and Archaeological Resources</td>
<td>Energy Resources</td>
<td>Vegetation</td>
<td>Natural and Cultural Resources</td>
<td>Social Resources and Utilities</td>
<td>Environmental Justice</td>
<td>Fish, Wildlife, and Vegetation</td>
<td>Water Resources</td>
<td>Contaminated Materials</td>
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<tr>
<td>25</td>
<td>Interim South Downtown Pathways</td>
<td>King County</td>
<td>The project consists of moving buses to new permanent travel pathways starting with the Alaskan Way Viaduct demolition. The project will connect transit from south of downtown along the new Alaskan Way surface street to the 3rd Ave transit spine. First Avenue, the location of the Center City Connector, is being considered for detoured buses.</td>
<td>2018 depending on Alaska Way demolition</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>26</td>
<td>Two-Way Columbia Street Pathway Project</td>
<td>SDOT</td>
<td>Reroute bus routes from Southwest Seattle onto Alaskan Way and Columbia St up to 3rd Ave after Alaskan Way Promenade Overlook Walk is complete, which connects with the Center City Connector study area on Stewart Street.</td>
<td>2019</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>27</td>
<td>Madison Corridor Bus Rapid Transit Project</td>
<td>SDOT</td>
<td>Implement bus rapid transit service on Madison Street between Colman Dock and 23rd Ave E in Madison Park, which would cross the Center City Connector study area.</td>
<td>2018 – 2020</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>28</td>
<td>Broadway Streetcar Extension</td>
<td>SDOT</td>
<td>The project will extend the streetcar system in Seattle by approximately 0.5 mile north, through Capitol Hill, and will include two or three new stops, which is the northeast extension of First Hill Streetcar linking to Center City Connector.</td>
<td>2016 – 2018</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>29</td>
<td>North Parking Lot Development (Qwest Field)</td>
<td>King County Metro (TOD)</td>
<td>Proposal to develop 956 housing units and 25,000 square feet of ground-level retail space, including a neighborhood grocer, shops, a restaurant, more than 1 acre of semipublic and private open space, and 1,035 automobile parking spaces, 500 of which would replace the site's existing public parking. This is four blocks south of the Center City Connector study area.</td>
<td>Unknown</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>30</td>
<td>Battery Street Portal Park</td>
<td>City of Seattle</td>
<td>Develop an open space created by closure of the north portal of the Battery Street Tunnel. This is four blocks north of the Center City Connector study area.</td>
<td>2018 – 2020</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
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<tr>
<td>31</td>
<td>SoDo Arena and Transportation improvements</td>
<td>Private Developer</td>
<td>Construct a new stadium in the SoDo area for professional basketball and hockey. This is four blocks south of the Center City Connector study area.</td>
<td>2017 - 2018</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>32</td>
<td>First Avenue Sewer Upgrade Project</td>
<td>City of Seattle</td>
<td>Upgrade the antiquated sewer line that follows First Avenue adding an internal seal inside the existing pipeline. This project will precede the Center City Connector to avoid conflicting construction activities.</td>
<td>2017</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Private development (downtown Seattle and Belltown)</td>
<td>Various Developers</td>
<td>Develop new residential and commercial spaces in downtown Seattle, comprising an estimated development of 4,500 residential units, 2,500 hotel rooms, 2 million square feet of office space, and 65,000 square feet of ground-floor retail. These are mostly one to four blocks north of the Center City Connector study area.</td>
<td>2016 – ongoing</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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* Project ID corresponds to ID on Figure 5-1.
BME = beyond mapped extent; UG = undefined geographically
BME = beyond mapped extent; UG = undefined geographically
WSDOT = Washington State Department of Transportation
5.4 Cumulative Impact Assessment

Direct and indirect impacts of the Center City Connector project that could contribute to future cumulative impacts and mitigation measures to address these impacts are discussed in Chapter 4 and briefly summarized in Appendix D4.15, Table D4.15-1, which summarizes the project’s operational impacts, and Table D4.15-2, which summarizes similar information for the construction phase. A complete list of all mitigation measures can be found in Chapter 6 of this EA.

The following sections discuss expected operational and construction cumulative impacts for each environmental discipline analyzed when Center City Connector impacts are combined with RFFAs.

5.4.1 Transportation

The study area for the transportation cumulative impacts analysis is bounded by Stewart Street to the north, Fifth Avenue to the east, S Jackson Street to the south, and Alaskan Way to the west. The existing transportation system within Seattle includes regional and interstate travel along I-5 and SR 99; transit systems, including a transit tunnel, monorail, ferries, and major roadway transit corridors throughout downtown; non-motorized facilities, including pedestrian and bicycle facilities; and parking facilities.

Operational Impacts

The overlapping streetcar operation north to Republican Street would result in the intersection at Westlake Avenue and Republican Street operating at LOS F or a delay of 2½ minutes. This intersection is also projected to degrade to LOS F under the No Build Alternative with a 2-minute delay at the intersection. The City is developing improvements along this Westlake Avenue that would change traffic patterns and improve intersection operations. One of these improvements is the re-channelization of Westlake Avenue to allow bus and streetcar priority within the corridor. These improvements along with the Center City Connector would have a positive effect on transit reliability and encourage people to use transit rather than drive. Operation of the Center City Connector in combination with other RFFAs such as Sound Transit’s multiple Link (light rail) Extension projects, Madison Corridor Rapid Ride transit projects, Third Avenue Corridor Improvements, and Next Gen Intelligent Transportation System would augment transit ridership and enhance transit interconnectivity, overall mobility within the City of Seattle and between other transit modes, such as light rail and bus transit.

The LPA and several RFFAs would enhance accessibility and safety for pedestrians and bicyclists as well as implement upgrades to be ADA compliant. The LPA along with Pike and Rennaissance, Union Street Gondola and Waterfront Promenade would improve intersections that have increased pedestrian volumes with wider sidewalks to ensure pedestrian safety at crosswalks and would provide or update pedestrian and wayfinding signage.

While the Center City Connector, Westlake Avenue transit improvements, and the Madison Street Rapid Ride bus improvements would reduce on-street parking, the analysis of the Center City Connector project and the RFFAs reveals that existing off-street parking facilities can accommodate the demand for parking in the study area. Operation of Center City Connector,
along with multiple other RFFA transit improvements would result in substantial beneficial cumulative impacts for persons desiring to move within the City Center without having to move their car.

Collectively, RFFAs and Center City Connector are removing parking and eliminating some general purpose travel lanes in downtown Seattle. To address the cumulative effects of multiple changes to the roadway network and transit systems and improve regional connections in downtown Seattle, SDOT is jointly developing a Center City Mobility plan with King County, Sound Transit, and the Downtown Seattle Association. The plan will establish a transportation vision for 2035 and create a near-term transit operations and transportation management plan by mid-2016, along with a public realm plan for enhancing the right-of-way to better serve residents, employees, shoppers, and visitors.

**Construction Impacts**

Construction of several projects along the waterfront could overlap with construction of the Center City Connector. If this were to happen, the combined impacts of these projects could increase transportation impacts related to the Central City Connector, including additional delays in travel time along First Avenue and Alaskan Way. Cumulative transit impacts would include temporary detours of bus routes and ETB deadheading on First Avenue, as well as relocations of stops from the Center City Connector construction and from the two planned detour projects to accommodate changes along the Waterfront. These detour projects are the Two-way Columbia Street Pathway Project and the Interim South Downtown Pathways Project. The latter foresees using First Avenue to detour transit from Alaskan Way, whereas the Center City Connector proposes the opposite. If both projects are under construction, additional detours around the construction area may be necessary, including Alaskan Way, Western Avenue, Fourth Avenue and the Alaskan Way Viaduct.

The Center City Connector project’s diversion of northbound traffic around Pioneer Square (Segment 1) for up to 8 months may worsen congestion on Alaskan Way due to other overlapping RFFA construction schedules. This could affect access to the Seattle Port for both labor and freight, passengers accessing Seattle Colman Dock Ferry Terminal, and normal commuting patterns using Alaskan Way. With the current construction schedules of the Seawall and Alaskan Way Viaduct demolition, access points to Alaskan Way as a detour around Pioneer Square may degrade below City standards. However, depending on the timing of RFFAs, Alaskan Way could temporarily be restored to its original four- to five-lane configuration, which would be able to absorb the detours with a minimal reduction in traffic operations along Alaskan Way.

If construction of RFFAs overlap in time, and if Alaskan Way is still in the current two- to three-lane configuration, the projected northbound volumes on Alaskan Way with the detoured northbound traffic around Pioneer Square together with congestion from other RFFAs projects would exceed 1,000 vehicles per hour in the PM peak hour. This would cause the Alaskan Way/Marion Street intersection to fail (operate at LOS F with average delay of approximately 170 seconds per vehicle) and cause queues to spill back to adjacent intersections on Alaskan Way. This would also affect freight traffic as well as general purpose traffic to and from the Ferry Terminal. Approximately 40 percent of the northbound traffic in the PM peak hour that would otherwise use First Avenue would have to find other detours to allow intersections on Alaskan Way to operate above the city’s standard (LOS E or better). During construction of the
Pioneer Square segment, the potential impacts of a northbound detour route would be mitigated through construction phasing and interagency coordination (see Section 5.5 Mitigation for details on proposed mitigation measures).

Temporary construction haul routes for the Center City Connector along Westlake Avenue and Stewart Street for the north segments and Yesler Street and First Avenue S for the southern segments may temporarily overlap with other local private development haul routes and transit plans but are unlikely to conflict with waterfront projects.

Parking and loading zones would be displaced along First Avenue and Stewart Street during construction. The impact would be the same as during operation of the Center City Connector. Overlapping construction for multiple projects may also create conflicting detour routes (i.e., automobile, transit, and bicycle routes), which would affect traffic flow and travel times in downtown Seattle. In Seattle, there are relatively few north-south routes (Alaska Way, First, Second, Third, Fourth, Fifth and Sixth Avenues) and some are one way, and Third Avenue is dedicated to Transit during peak commute hours. Therefore, there is a likelihood of several projects diverting traffic to the same roads, thus compounding traffic congestion.

Adverse cumulative impacts associated with transportation during construction would be temporary and limited to periods of overlapping construction. For instance, the impact on traffic along Alaskan Way while the Pioneer Square Segment is under construction would be of high intensity before mitigation. However, the construction detour would likely only be in place for a short duration of approximately 6 months and could be phased so as not to conflict with other projects. Close coordination with other major projects and development of a collaborative detour plan would mitigate much of the traffic impacts; therefore, the magnitude would be low. To address potential cumulative construction impacts SDOT will convene a project coordination committee consisting of representatives from SDOT, the Washington State Department of Transportation, King County Metro, Washington State Ferries, the Port of Seattle, and Community Transit (agencies that participated in the Regional Transit Coordination for Downtown Seattle Committee). This committee will be responsible for resolving potential schedule conflicts between major public projects. SDOT will coordinate construction activities through the SDOT Street Use Construction Hub Coordination Program. The HUB team consists of project and on-site coordinators who assess work throughout construction in areas where multiple, simultaneous construction projects (both public and private) are occurring (see Chapter 6 for additional information on construction mitigation measures).

Measures to mitigate parking during construction will be the same as those listed under operational impacts.

### 5.4.2 Air Quality and Greenhouse Gas

The study area for the air quality and greenhouse gas cumulative impacts analysis is measured at the regional level.

Many of the transit improvement and roadway RFFA projects are enhancing transit or non-motorized transportation which reduce GHG and other pollutants. The operation of the Center City Connector in combination with other RFFAs (Link Extension, Madison Corridor Rapid Ride bus improvements, Third Avenue improvements, and implementation of the Bicycle Master Plan) would result in long-term cumulative benefit in air quality and reduced GHG emissions.
Increased air pollutants would occur during the construction period of any of the waterfront-related (including the demolition of the Alaska Way Viaduct), transit, roadway and development RFFAs. Typical air quality impacts during construction include fugitive dust particles, engine exhaust from construction vehicles, and VOCs and odorous compounds during asphalt paving. Each project would implement BMP measures to reduce fugitive dust during construction. Still, overlapping construction schedules could have a short-term cumulative air quality impact of high intensity but low magnitude because of the short duration and because air quality would improve from these projects during operation. Similarly, overlapping construction schedules would result in a slight, temporary cumulative increase in GHG emissions in the immediate area, resulting in low magnitude and intensity of impact with long-term operations resulting in beneficial impact.

5.4.3 Noise and Vibration

The study area for the noise and vibration cumulative impacts analysis is the same as that for the Center City Connector: 125 feet for noise and 50 to 200 feet for vibration, depending on receptor category. In accordance with the FTA’s *Transit Noise and Vibration Guidance Manual* (FTA, 2006), hourly sound data were collected for not less than 24 continuous hours. Throughout the corridor, existing noise measurements reached exterior sound level limits as delineated in the Seattle Municipal Code for each land use type (residential, commercial and industrial), reflecting an urban environment of heavy traffic, ongoing construction projects, and other background noise. Vibration was measured at below FTA thresholds near similar land uses.

While the interior noise and vibration impacts of the Center City Connector can be mitigated to meet FTA and City code requirements, the Center City Connector streetcar combined with other transportation and transit RFFAs would still add background traffic noise to the urban environment. Since these combined noise effects are not expected to be perceptible in the noisy urban environment, these are considered to be low magnitude and intensity of impact. Vibration from passing streetcars would be similar to a passing bus and likely not perceptible to most persons. These conditions would not constitute a cumulatively significant change in the urban setting.

The construction of the Center City Connector together with that of any overlapping RFFAs has the potential to contribute to cumulative noise impacts resulting from construction-generated disturbance. However, a cumulative noise impact is dependent on two variables: proximity to similar sensitive receptors and construction occurring at the same time period. There are only a few projects that would overlap both physically and in the same time period with the Center City Connector. These projects consist of land use development projects along or nearby First Avenue, which may or may not be under construction at the same time. Other RFFAs are located farther way from the sensitive receptors common to the Center City Connector. Since all projects must meet the SMC noise ordinance, noise is expected to result in a moderate to low intensity, and since these are short-term impacts, a low magnitude of impact.

Vibration is evaluated as an event and thus, unless multiple construction projects create vibration at precisely the same time, no cumulative vibration impacts are likely during construction or operation of the Center City Connector.
5.4.4 Land Use

The land use study area for cumulative impacts includes the area within a quarter mile of the Center City Connector and within 1,000 feet of the OMF expansion sites. During operation, the Center City Connector in conjunction with RFFAs would not change land use patterns or convert existing land uses. Temporary impacts to adjacent land uses during the relatively short construction period would vary depending on the neighborhood location but would not result in permanent land use changes or changes to land use patterns. There would be no cumulative land use impact from either operation or construction phases.

5.4.5 Economics

The study area for the cumulative impacts analysis ranges across four Forecast Analysis Zones that cover the Center City of Seattle (see Figure 4.5-1). During operation, the Center City Connector and other RFFAs would generally enhance connectivity between employment centers within the study area and maintain mobility in the face of continued Seattle economic expansion. The cumulative loss of on-street parking would not affect businesses because there is ample off-street parking available downtown and multiple transit options to and within the City. The post-construction benefits to the economy would be driven by improved public safety, mobility, and accessibility, which would help to accommodate the growth in the number of residents and visitors, and associated revenues. Together, there would be cumulative economic benefit from the increased accessibility that the Center City Connector and the RFFAs would provide.

All federally funded RFFAs, including the Center City Connector, have the potential to infuse the local Seattle economy with new money for construction, which would result in construction jobs and other employment related to local purchases by persons employed for construction of the project. There would be substantial economic benefits from increased construction jobs and local spending in the study area from multiple simultaneous construction activities in downtown Seattle. However, construction activities tend to reduce visits to local restaurants and retail stores when persons choose alternative locations to avoid traffic delays, reduced parking, or interference with access.

The Seawall Project mitigation included compensating several local waterfront businesses for closing during construction; therefore, no additional impacts can burden those specific businesses. However, due to the numerous construction projects planned over the near future, there are potentially cumulative economic impacts on nearby businesses from a prolonged and expanded geographic area of construction; detours, reduced travel lanes and construction obstructions make accessing business that stay open difficult and thus businesses may suffer reduced patronage for a longer duration. The severity of reduced patronage may be worsened by increased difficulties in access and compounded construction nuisances. Several of these cumulative impacts may result from postponed SR 99 tunnel boring and the demolition of the Alaskan Way Viaduct and other waterfront-related RFFAs for waterfront businesses as well as businesses in the Pioneer Square and Commercial Core portions of the Center City Connector study area. A cumulative economic impact may occur where construction activities overlap near business areas, such as Pioneer Square and economic impacts from delays of freight movement from the Port of Seattle and associated freight traffic movements.
While RFFA economic impacts along the waterfront is currently of high intensity and magnitude due to project delays and continued difficulties in circulation, the increment of cumulative construction impact from Center City Connector on businesses may be attributable to 4 to 6 months of increased traffic along the waterfront (see transportation mitigation in Section 5.5). In Pioneer Square, access to businesses would be maintained throughout all RFFA construction periods; therefore, the intensity of cumulative construction would be considered moderate, whereas other RFFAs would not directly affect the same businesses but would potentially indirectly affect the degree of visitors to this area; therefore, the RFFA construction period may result in a medium magnitude of impact.

5.4.6 Social and Community Impacts

The study area for the social and community cumulative impacts analysis is the area within a quarter mile (5- to 10-minute walk) of the Center City Connector and within 1,000 feet of the proposed OMF expansion sites.

The cumulative loss of parking could affect social and community resources; however, there is ample off-street parking available (albeit at higher rates than on-street parking), and existing PM peak-restricted parking stalls do not support residential parking needs. No displacements would occur as a result of the Center City Connector. The project, together with the transit, bike, and transportation RFFAs, would provide cumulative beneficial impacts on the area by providing connections between neighborhoods and enhancing public accessibility to multiple destinations (jobs, parks, community resources) and intermodal connectivity.

The potentially overlapping construction periods could somewhat worsen economic impacts (reduced retail sales as a result of customers avoiding construction areas); increase noise, vibration, and dust; cause changes to traffic and transit patterns; and cause changes to visual settings. Residents in Belltown, South Lake Union, Pioneer Square, and the Chinatown-International Districts would be inconvenienced by construction activities, including the short-term rerouting of bicycle and bus routes and potential short-term utilities disconnections. However, while residents and businesses adjacent to the project area may experience these impacts, the neighborhood cohesion and community resources would not be degraded. Therefore, there may short periods of high intensity of disturbance, but maintaining conformance with SMCs and mitigation measures would result in a low magnitude of social and community impacts.

5.4.7 Visual and Aesthetics Resources

The study area for the cumulative impacts analysis is the viewshed from and of the Center City Connector corridor. Its visual character has largely been influenced by the City’s historic orientation toward Elliott Bay, strong periods of urbanization through the Yukon gold rush of the late 1890s, timber industry development through the mid-1970s, and more recent high-rise development in response to a concentration of corporate headquarters and high-tech centers of business.

The construction phase poses a potential for cumulative visual impacts. The adjacency of the waterfront-related projects (specifically with the demolition of the Alaskan Way Viaduct and staging areas for the SR 99 Tunnel Project), whose construction periods may overlap with that of the Center City Connector project, would result in broader areas of ongoing visual nuisance.
during construction in the Pioneer Square areas, where views of the waterfront projects are visible from First Avenue. Improvements at Pike Place Market (such as the Pike Place Renaissance) and other private development projects may require cuts in the roadway and staging areas nearby, resulting in cumulative visual impacts during construction. Similarly, there are multiple private development projects along Stewart Street that may be occurring while Center City Connector is under construction. However, visual impacts during construction would be approximately 4 to 8 months of overlap with Center City Connector segments and vary in severity depending on location and proximity to residences and tourist destinations, such as Pike Place Market and Pioneer Square. If construction projects overlap in the study area, elongating the periods of visual nuisance, the staging and construction areas adjacent to residences would cause short-term cumulatively adverse visual impacts during construction of high intensity but low magnitude because they are relatively short period of time and none of the visual impacts during construction would be permanent.

5.4.8 Stormwater/Water Quality

The study area for water quality consists of the area that may be drained into two primary CSO basins and one storm drain system serving the Belltown neighborhood, all of which drain into Elliott Bay. Elliott Bay has historically been and is currently the receiving water body for final water discharge within the downtown area. Seattle Public Utilities, through its Combined Sewer Overflow Projects, has been updating most of the stormwater system so that downtown discharge water flows through the West Point Wastewater Treatment Plant before discharging into Elliott Bay.

The Center City Connector and each of the RFFA are incrementally contributing to improving water quality by implementing Seattle’s Stormwater Manual (City of Seattle, 2014) for stormwater quality and flow control. Collectively, these RFFAs would result in long-term cumulative benefits to water quality, reversing the trend of water quality degradation in Elliott Bay that began in the early 1900s.

Simultaneous construction of the Center City Connector and multiple RFFAs (most importantly, the Seawall Project and Alaskan Way Utility Relocation Project) may result in temporary adverse cumulative effects on water resources. In particular, demolition of the Alaskan Way Viaduct would result in extensive dust and debris at street level that could be washed into Elliott Bay during storm events, causing occasional turbidity plumes and potentially a local increase in the pH of nearshore water from concrete dust. In addition, work is continuing to cap contaminated sediment (see Section 4.10, Hazardous Materials) at the Colman Dock. These actions will eliminate long-standing contaminant sources and contaminated sediments and benefit water quality. However, construction activities increase the risk of accidental spills, which could result in surface water contamination.

The Center City Connector and the RFFAs would be required to meet City stormwater standards, implement stormwater BMPs, and implement spill prevention plans during construction, and to meet state water quality standards. Thus, cumulative effects of RFFAs in combination with the Center City Connector would likely be limited to occasional exceedances of water quality standards and would be cumulatively negligible intensity and magnitude.
5.4.9 Utilities, Energy, and Electromagnetic Fields

The study area for the utilities cumulative impacts analysis includes the public right-of-way where the project tracks and stations are proposed, and the OMF expansion sites.

The Center City Connector in combination with improved transit and mobility RFFAs would assist in providing the avenue for a substantial shift from single-occupancy vehicle travel to public transit for future conditions, which would be cumulatively more energy-efficient.

The Center City Connector would include the relocation of utilities as needed to avoid long-term conflicts with maintenance or access, or to provide energy needed for construction activities. Utilities are expected to remain operational during RFFA construction phases, except for temporary short-term disruptions. These infrequent disruptions do not contribute to cumulative effects. BMPs would avoid construction-related EMF impacts.

During construction of the Center City Connector and RFFAs energy would be expended. However, increased energy efficiency in building codes, and increased opportunities for bicycle, pedestrian, and transit use would result in a net reduction in long-term energy use. Although temporary cumulative energy impacts would be of moderate intensity, the addition of the Center City Connector construction and RFFAs would not cumulatively stress the existing energy systems in the region or in the study area, and, therefore, the impact would be of low magnitude.

5.4.10 Hazardous Materials

The study area for the hazardous materials cumulative impacts analysis is the area adjacent to and within 1/8th of a mile from the proposed tracks and OMF sites.

The potential for accidental spills at OMF sites together with other RFFA risks for spills can be avoided and are not anticipated to have a cumulative impact on the potential release of hazardous materials.

The likelihood of impacts, both beneficial and adverse, on hazardous materials during temporary construction periods depends on the extent and characteristics of the hazardous materials at each site. Potential impacts related to construction include releasing, uncovering, or spreading of hazardous materials into the environment through disturbance of contaminated soils or groundwater, or by removal of existing contaminant sources for cleanup or prevention purposes.

Many of the RFFAs and regulation-driven cleanup and restoration projects are under way in the study area. As a consequence of the Center City Connector construction and the other RFFAs, contaminated materials would be removed and/or remediated within the work areas, in compliance with State and federal environmental regulations. Projects that have a potential for cumulative impacts include S Main and S Washington Street improvements, Central Waterfront CSO, Seattle Multimodal Terminal at Colman Dock, Union Street pier replacement and pedestrian projects, Pier 62 and 63 replacement, Elliott Bay Seawall Project (Phase 2), Battery Street Portal Park, and Alaskan Way Promenade (Phase 2). The cumulative effects of this work in conjunction with that of the other RFFAs and cleanup efforts in the vicinity should result in an overall improvement in conditions related to hazardous materials.
5.4.11 Public Services and Safety

The study area for the public services and safety cumulative impacts analysis is the area within 0.5 mile of the project components.

The operations of the Center City Connector, combined with other RFFAs, is reducing safety hazards by making it easier for more people to travel via transit, which can reduce the number of potential collisions and provide safe modes of transportation and less burden on the emergency service providers on a per capita basis. With the RFFAs and Center City Connector in operational phase, there may less than a half-minute increased delay at intersections within the study area compared to what they area today and slightly improved compared to the No Build Alternative in 2035. Following mitigation measures, no cumulative adverse effects are expected on public services.

Depending on the amount of overlap of RFFAs and Center City Connector construction periods, emergency service vehicles may experience delays in response times and the potential for heightened construction-related accidents. However, construction-related activities would not result in adverse cumulative impacts if projects are properly coordinated with emergency service providers per prescribed mitigation measures and if safety procedures are followed. Additionally, responding to the impacts of a natural event such as a tsunami or earthquake may be more difficult with the construction of multiple large projects occurring at the same time. However, the City has a streetcar system safety plan which will be expanded to include the Center City Connector as well as a City-wide Disaster Readiness and Response Plan that includes natural disaster planning. For this reason, and because construction impacts are temporary, cumulative emergency service impact would be of low intensity and magnitude during construction.

5.4.12 Park and Recreational Resources

The study area for the park and recreational resources cumulative impacts analysis is the area adjacent to and within one city block of the proposed Center City Connector project components.

Several RFFAs would augment the development of existing and new parks, such as Alaskan Way Promenade, Seattle Aquarium expansion, and Battery Street Portal Park. The Center City Connector and many of the RFFAs would cumulatively enhance accessibility to park resources. Therefore, the RFFAs in combination with the Center City Connector would result in beneficial impacts on park and recreational resources.

Construction periods would have short-term negative impacts on use of park resources, such as noise, dust and visually unpleasant activities or material related to the project. However, none of the parks within the study area would be closed during construction of the Center City Connector or RFFAs. For this reason, and because construction impacts are temporary, cumulative parks impact would be of low intensity and magnitude during construction.

5.4.13 Historic, Archaeological, and Cultural Resources

The area of potential effect for historic, archaeological, and cultural resources is within which lie the Pike Place Market Historic District, the Chinatown-International Historic District, and the Pioneer Square-Skid Road Historic District, as well as associated contributing historic properties
and those properties eligible for or listed on the NRHP. Also included is the soil beneath this study area, where excavations would occur during construction.

**Operational Impacts**

A number of the projects along the waterfront would affect cultural, historic, and archeological resources. The cumulative impacts of these projects on historic resources were evaluated in environmental documents for the Elliott Bay Seawall, SR 99 Tunnel Project, and Waterfront Seattle and concurred on by the State Historic Preservation Officer. These analyses are incorporated by reference.

Many of the RFFAs, including the Center City Connector, provide enhanced visual and physical access to Pioneer Square Historic District and Waterfront attractions, which is beneficial to maintaining the integrity and long-term use of the properties and historic districts. Clips on historic buildings to support the OCS support wires and other streetcar elements, such as stations, different pavement and streetcars would be added to those elements already in place for the ETBs. These are minor effects that would not affect the eligibility of historic buildings for the NRHP.

**Construction Impacts**

Although construction can lead to damage from any of the RFFAs, by implementing proper BMPs, the impacts are expected to be of low intensity and magnitude on historic resources. With each RFFA, there is high probability for discovery of archaeological resources during construction (although the soil has already been disturbed because of multiple deep excavation projects such as the Seawall Project, transit tunnel, and utilities). Archaeological resources are likely to be limited to items that reflect eras of construction, but such items are rarely of historical significance for preservation in place. Loss or degradation of these cultural resources would contribute to the cumulative reduction in the finite number of potential archaeological sites associated with waterfront-related RFFAs.

**5.4.14 Environmental Justice**

The study area for Environmental Justice is 0.25 mile around the centerline of the alignment, 1,000 feet around the existing South Lake Union and Chinatown-International District OMFs, and 1,000 feet around proposed turnback tracks along Republican Street. This area has approximately 10 percent higher concentration of minority persons compared to the City of Seattle as a whole and more than twice the number of low-income population (28.5 percent) compared with Seattle as a whole (13.2 percent). The context is that this population is located in the area of Seattle with highest density, which means these populations have higher access to community resources, employment, and transit opportunities.

The operations phase of the Center City Connector, together with RFFAs, would result in a cumulative improvement on transit circulation and access for all populations within the study area. This may be of higher benefit to low-income and transit-dependent populations, making it easier to access jobs, health care, and services.

Cumulative construction traffic, noise, dust, and visual impacts would not be predominantly borne by a minority or low-income population for any of the RFFAs; the identified impacts
would not be greater in magnitude than the impacts that would be experienced by the non-minority and non-low-income populations in the study area; and the project would not result in adverse impacts on cultural and social resources especially important to minority and low-income populations. Any impacts during construction and operation would affect all populations to the same degree. Construction impacts would be limited in duration and would be further reduced by implementing the proposed mitigation measures. For this reason, and because construction impacts are temporary, compared to individuals elsewhere in the city, the minority and low-income populations in the study area would not suffer high and adverse cumulative effects from the construction of the project.

5.5 Mitigation Measures for Cumulative Effects

During operation, the Center City Connector would result in predominantly beneficial effects and would not require mitigation measures. When combined with the RFFAs, the Center City Connector does have the potential to contribute to the cumulative impacts during construction. In this case, mitigation measures for the Center City Connector would substantially reduce potential impacts to less than significant. The following measures to minimize harm would be added when collaborating with other project construction planning efforts for impacts related to transportation, air quality, noise, and economics disciplines.

**Transportation.** SDOT will convene a project coordination committee consisting of representatives of SDOT, the Washington State Department of Transportation, King County Metro, Washington State Ferries, the Port of Seattle, and Community Transit (agencies that participated in the Regional Transit Coordination for Downtown Seattle Committee). This committee will be responsible for resolving potential schedule conflicts between major public projects. As necessary, private development contractors will be included in coordination and construction phasing strategies. Issues for this project coordination committee include traffic circulation, detour routes, or staggered construction sequencing in efforts to avoid concentrations of congestion, overlap in transit detours, and relocated stops, and managing loss of parking and changes to bike routes during construction, as warranted. Additionally, SDOT will coordinate construction activities through the SDOT Street Use Construction Hub Coordination Program. The HUB team consists of project and on-site coordinators who assess work throughout construction in areas where multiple, simultaneous construction projects (both public and private) are occurring. The HUB team also coordinates with other City departments.

Specific impacts due to construction of the Pioneer Square segment from the northbound detour route would be mitigated by SDOT (1) conducting an updated traffic evaluation of construction period-specific detours and implementing the potential traffic diversions identified below and (2) collaborating with other construction projects leaders to review how detour routes for Center City projects are collectively functioning for best traffic flow. Additional detours for northbound traffic flow around Pioneer Square and the Waterfront could include the following:

- Alaska Way viaduct (SR 99) via Dearborn Avenue (for traffic coming from south Seattle) and exit at First Avenue and Seneca. Wayfinding signage would be placed at S Holgate Street or S Atlantic Street in order to provide drivers enough time to use these detours.
- Alaskan Way to Marion Street for trips into downtown.
- Alaskan Way to Yesler Way or Western Avenue for shorter trips to the north end of Pioneer Square.
South on Jackson Street and northbound on Second Avenue or south on Washington Street and northbound on Occidental Avenue when the construction zone is from limited to the area between Jackson Street and Yesler Street

**Air Quality.** No mitigation is required as long as BMPs are applied.

**Noise.** Construction activities would comply with all applicable noise regulations. SDOT will coordinate with the Department of Planning and Development to identify and work with private development contractors who will be working in the project area.

**Economics.** To avoid overly straining retail, restaurant, and other business during construction periods, SDOT will coordinate through a project coordination committee made up of construction project managers and agencies with jurisdiction over the projects to provide a robust construction mitigation plan to address the needs of the businesses. The construction mitigation plan will include the following mitigation measures (these augment those mitigation measures listed in Section 5.4, Economics):

- Coordinate two-way communication between collective construction projects and businesses on construction schedules, changes, and potential detour routes, and provide regularly scheduled construction updates.
- Stagger projects and construction staging to maintain continued access, and provide directional signage that clearly directs visitors to businesses in the study area.
- Communicate and coordinate with public and private entities that own and operate various retail establishments and tourist activities in and around the study area to develop incentive programs or advertisements that encourage local residents and visitors to continue to visit and patronize the businesses.

**Social and Community Impacts.** Most mitigation measures for other elements of the environment would benefit residents and businesses. In addition to implementing the proposed mitigation measures for noise and air quality, SDOT will coordinate through a project coordination committee made up of construction project managers and agencies with jurisdiction over the projects to manage conflicting construction schedules, as well as to provide a collective communication program that includes routine updates on construction sequencing and short-term utility interruptions and/or detours that may affect their transportation routines, as well as a one-point hotline where local businesses and neighborhoods can inquire about multiple construction issues regardless of which project the issue concerns.

**Visual.** SDOT will coordinate with simultaneous construction projects to shield staging areas, stagger construction periods when possible, and provide distractions in the form of community art or learning opportunities.

**Public Services.** SDOT will coordinate through a project coordination committee made up of construction project managers and agencies with jurisdiction over the projects to discuss circulation as it relates to emergency service routes and confirm that adequate accessibility can be maintained throughout construction.