

Appendix G.

Figure Descriptions

Environmental Assessment Figure Descriptions

This appendix includes written descriptions of all figures included in this Environmental Assessment.

Figure Number	Figure Title	Figure Description
1-1	Project Area	Figure 1 shows the Project Area. The Project Area includes a 1.7-mile segment of Interstate 5 (I-5), beginning north of Interstate 405 (I-405) at milepost 303.2, extending south to the Burnside Bridge just south of Interstate 84 (I-84) at milepost 301.5. The Project Area also includes the interchange of I-5 and N Broadway and NE Weidler Street (Broadway/Weidler interchange) and the surrounding transportation network, from approximately N/NE Hancock Street to the north, N Benton Avenue to the west, N/NE Multnomah Street to the south, and NE 2nd Avenue to the east. Figure 1 also shows the Willamette River to the west of the Project Area and the following four bridges (from north to south): Fremont Bridge, Broadway Bridge, Steel Bridge, and Burnside Bridge. The Project Area includes segments of both I-5 and I-84.
2-1	Local Street Network Improvements: (A) N/NE Broadway Westbound, East of NE 2nd; (B) N/NE Broadway Eastbound, West of N Benton	<p>Figure 2-1 is a series of four similar images displayed in two rows of two. The top left image is labeled "Broadway, Westbound—East of 2nd Avenue (Existing)," and shows a graphical representation of cross section of a street with sidewalks on either side. Left to right, the roadway configuration shown includes a sidewalk and curb, a parking lane, a through/left-turn streetcar/vehicular lane, two through lanes, a through/right-turn lane, a bicycle lane, and a curb and sidewalk.</p> <p>The top right image is labeled "Broadway, Westbound—East of 2nd Avenue (No-Build)," and shows a graphical representation of cross section of a street with sidewalks on either side. Left to right, the No-Build roadway configuration shown includes a sidewalk and curb, a parking lane, a through/left-turn streetcar/vehicular lane, a through lane, a through/right-turn lane, a buffered bicycle lane, and curb and sidewalk.</p> <p>The bottom left image is labeled "Broadway, Eastbound—West of Benton (Existing)," and shows a graphical representation of cross section of a street with sidewalks on either side. Left to right, the roadway configuration shown includes a curbed median, a left-turn lane, a streetcar/vehicular through lane, a through lane, a through/right-turn lane, a bicycle lane, and a curb and sidewalk.</p> <p>The bottom right image is labeled "Broadway, Eastbound—East of 2nd Avenue (No-Build)," and shows a graphical representation of cross section of a street with sidewalks on either side. Left to right, the No-Build roadway configuration includes a curbed median, a left-turn lane, a streetcar/vehicular through lane, a through/right-turn lane, a buffered bicycle lane, and a curb and sidewalk.</p>
2-2	Auxiliary Lane/Shoulder Improvement	Figure 2-2 shows the locations of the proposed auxiliary lanes and shoulder improvements on I-5. One new northbound (NB) auxiliary lane would be added to connect the I-84 westbound on-ramp to the N Greeley Avenue off-ramp. A new southbound (SB) auxiliary lane would extend the existing auxiliary lane that enters I-5 SB from the N Greeley on-ramp. The extent of proposed auxiliary lanes and shoulder improvements begin near where I-5 crosses over N Russell Street and extends south to I-84. Figure 2-2 also shows the Project Area.

Figure Number	Figure Title	Figure Description
2-3	I-5 Auxiliary (Ramp-to-Ramp) Lanes – Existing Conditions and Proposed Improvements	<p>Figure 2-3 shows the existing and proposed auxiliary lane configurations from the N Greeley on-ramp extending south to the SB Morrison Bridge off-ramp. Existing conditions are shown on the left and proposed improvements are shown on the right. Existing SB conditions include two SB lanes and three on-ramps (listed from north to south): N Greeley, I-405/N Fremont Street, and N Wheeler Avenue and three off-ramps (listed from north to south): N Broadway, I-84, and Morrison Bridge. There are existing auxiliary lanes between the N Greeley on-ramp extending to just south of the N Broadway off-ramp, the I-405/N Fremont on-ramp and N Broadway off-ramp, and N Wheeler on-ramp and I-84 off-ramp. Existing NB conditions include two NB lanes and two on-ramps (listed from south to north): I-84 and N Broadway and two off-ramps (listed from south to north): N Weidler, I-405/N Fremont, and N Greeley. There are existing auxiliary lanes between the I-84 on-ramp and N Weidler off-ramp and between the N Broadway on-ramp and I-405/N Fremont off-ramp.</p> <p>For proposed improvements, the on-ramps and off-ramps are the same as those shown for existing conditions, and all existing auxiliary lanes remain. There is one new SB proposed auxiliary lane that results in a continuous auxiliary lane from the N Greeley on-ramp extending south to the Morrison Bridge off-ramp. There is one NB proposed auxiliary lane that results in a continuous auxiliary lane from the I-84 on-ramp north to the N Greeley off-ramp. Two additional proposed NB auxiliary lane segments also extend the existing auxiliary lane between the I-84 on-ramp and N Weidler off-ramp.</p>
2-4	I-5 Cross Section (N/NE Weidler Overcrossing) – Existing Conditions and Proposed Improvements	<p>Figure 2-4 shows a cross section comparison of existing and proposed conditions of I-5 south of the N/NE Weidler overcrossing within the Broadway/Weidler interchange area. Existing conditions are shown on the top and are the same for NB and SB traffic and include an inside and outside shoulder of varying width and two 12-foot lanes. Proposed lane configuration is shown below the existing conditions and is the same for NB and SB traffic and include an inside and outside shoulder, two through lanes, and one auxiliary lane. All shoulders and lanes are 12 feet wide.</p>
2-5	Broadway/Weidler/Williams and Vancouver/Hancock Highway Covers (Existing and Build Alternative)	<p>Figure 2-5 shows a rendering of the existing and Build Alternative Broadway/Weidler/Williams and Vancouver/Hancock highway covers.</p> <p>The top image is labeled “Existing” and shows a rendering from the distance above N Williams Avenue, which runs north to south in the center of the image. I-5 is shown in the foreground of the right corner and runs diagonally to the left background. Streets cross over the highway running north to south and east to west.</p> <p>The bottom image is labeled “Build Alternative” and shows the modifications to N Williams described in Figure 2-7 but shown from a distance above N Williams. The Broadway/Weidler/Williams cover appears as a green space that spans east-west across I-5, extending from immediately south of N/NE Weidler to immediately north of N/NE Broadway. The entire block between N/NE Weidler, NE Victoria Avenue, N/NE Broadway, and N Williams is all shown as a green space covering I-5. The Vancouver/Hancock cover is located farther to the north and appears as a smaller green space extending northwest and southeast from N Vancouver Avenue at its intersection with N/NE Hancock. Proposed bike lanes are also shown along N/NE Weidler, N Williams, N Vancouver, N/NE Broadway, and N/NE Hancock.</p>

Figure Number	Figure Title	Figure Description
2-6	Broadway/Weidler Interchange Area Improvements	<p>Figure 2-6 shows locations of improvements to the Broadway/Weidler interchange between I-5, the interchange, and the local street network. Improvements are labeled with letters A through H. The Broadway/Weidler/Williams cover spans east-west across I-5, extending from immediately south of N/NE Weidler to immediately north of N/NE Broadway. The Vancouver/Hancock cover is located farther to the north and appears as a smaller green space extending northwest and southeast from N Vancouver at its intersection with N/NE Hancock. Both covers are indicated by the letter "A." Letter "B" is located near the bottom of the figure and shows how the I-5 SB on-ramp would be relocated by having it begin one block farther north at N/NE Weidler instead of N Ramsay Way, where the existing ramp begins. Letter "C" located near the middle of the figure shows the segment of N Williams between N Ramsay and N Weidler that would be closed to private motor vehicles. Letter "D" located near the middle of the figure shows the location of where traffic flow on N Williams between N/NE Weidler and N/NE Broadway would be converted to a reverse traffic flow two-way street with a 36-foot-wide median. Letter "E" shows the location of the proposed Hancock-Dixon crossing that extends from the intersection of N Dixon Street and N Wheeler east to N Williams and N/NE Hancock. Letter "G" indicates the location where N Flint Avenue would be removed beginning at N Tillamook Street and extending south to N Broadway. Letter "H" shows the location of the proposed Clackamas bicycle and pedestrian bridge, located south of N/NE Weidler to connect NE Clackamas Street with N Williams. The Project Area boundary and proposed auxiliary lanes and shoulders are also shown on the figure.</p>
2-7	Conceptual Illustration of Proposed N Williams Multi-Use Path and Revised Traffic Flow (Existing and Build Alternative)	<p>Figure 2-7 shows a rendering of the existing and proposed N Williams multi-use path and reverse traffic flow.</p> <p>The top image is labeled "Existing" and is a rendering of N Williams that shows the three NB lanes in the foreground in the bottom half, including a right-turn lane. There is a painted bike lane in the right portion of the middle lane. The top half of the rendering shows the continuation of the two NB lanes and the bike lane. There is also a lane to the right of the bike lane.</p> <p>The bottom image is labeled "Build Alternative." The foreground in the bottom half of this rendering shows the multi-use path as an extension of the sidewalk to the west (left) of N Williams. The top half of the rendering shows two SB traffic lanes to the east (right) of the multi-use path/median and two NB traffic lanes to the west (left) of the multi-use path/median. The Broadway/Weidler/Williams cover is shown as green space to the east (right) of N Williams SB traffic lanes.</p>
2-8	Proposed Modifications to N Williams Between Broadway and Weidler	<p>Figure 2-8 is a two-piece image that has a top portion that is a section of a map of the few blocks surrounding N Williams and a bottom portion that is a cross section of N Williams, including the sidewalks and median. The modifications to N Williams would be designed as follows: two NB travel lanes along the western side of N Williams to provide access to the I-5 NB on-ramp, through movements NB on N Williams, left-turn movements onto N Broadway; and a 36-foot-wide center median with a multi-use path permitted only for bicycles and pedestrians. The median multi-use path also would include landscaping on both the east and west sides of the path and two SB lanes along the eastern side of N Williams to provide access to the I-5 SB on-ramp or left-turn movements onto NE Weidler.</p> <p>The map extends north of NE Broadway and south of NE Weidler, which both run east to west. The north to south roads shown are N Vancouver, N Williams, and NE Victoria. I-5 cuts diagonally across the map from the lower right to the upper left. A few building outlines are shown, and a rectangle over I-5 is labeled "The Lid." A red line with arrows and the letter "A" beside it is located in the middle of the map, over the middle of N Williams, indicating the location of the cross section shown below the map.</p> <p>The cross section below the map shows the following items, from left to right: a curbed sidewalk with a pedestrian and a planter with a tree; two NB through lanes of N Williams with two cars; a 36-foot curbed median with a tree in a planter, a pedestrian in a walking lane, two bikers in a bike lane, and another tree in a planter; two SB through lanes of N Williams with two cars; and a curbed sidewalk with a tree in a planter and a pedestrian.</p>

Figure Number	Figure Title	Figure Description
2-9	Proposed Clackamas Bicycle and Pedestrian Crossing (Existing and Build Alternative)	<p>Figure 2-9 shows renderings of the existing and Build Alternative Clackamas bicycle and pedestrian crossing.</p> <p>The top image is labeled “Existing” and shows I-5 running diagonally in the foreground from the lower right corner to the center of the image in the middle-ground. N Williams is shown on the west side of I-5.</p> <p>The bottom image is labeled “Build Alternative.” The crossing is shown as a curved elevated path crossing I-5, connecting NE Clackamas on the east side of I-5 to N Williams on the west side of I-5. Green bicycle lanes are also shown on either side of N Williams, located just west of I-5.</p>
2-10	Step 3 Overall Findings Summary	<p>Figure 2-10 is a table that summarizes results of the Project design screening process. The table is sourced from the Central City 2035: N/NE Quadrant Plan (City of Portland et al. 2012) and is included in the Environmental Assessment to illustrate Step 3 of the Screening Process conducted by the Oregon Department of Transportation, the City of Portland, and the Stakeholder Advisory Committee to evaluate specific design concepts. The table depicts the degree of impact of the existing conditions, No-Build Alternative, and five Build design concepts on five specific criteria: Urban Design & Land Use, Freeway Operations & Safety, Local Transportation, Affected Environment, and Implementation/Cost. These criteria are listed in the left-most column of the table under the heading of “Summary.” From left to right, the header row of the table has columns for each design alternative: Existing; 2035 No-Build; 2. Braid/CD; 3. Rebuild; 4a. Split; 4b. Folded; and 4c. 3 Point. “Key Findings by Category” are summarized in the right-most column. Degree of impact is indicated by a circle with varying degrees of solid fill; the more a circle is filled, the more improvement is predicted to that specific criteria from the design concept.</p> <p>The first row under the Summary column is labeled “Urban Design & Land Use” and lists the following items listed below it in the same row: Connectivity, Development, Open Space, and Opportunity. The circle graphics are shown as mostly full for Concepts 3 and 4, mostly empty for Existing and 2035 No-Build, and intermediate for Concept 2. The key finding for Urban Designs & Land Use is that Concepts 3 and 4 best support urban design opportunities/improvements.</p> <p>The second row is labeled “Freeway Operations & Safety” and lists the following items below it in the same row: Mainline Performance, Weaving, and Safety. The circle graphics are shown as mostly full for Concept 2, mostly empty for Existing, and intermediate for all other concepts. The key findings for Freeway Operations & Safety are that Concept 2 provides the most freeway improvement, and concepts with auxiliary lanes (3, 4a, 4b & 4c) all include freeway improvement.</p> <p>The third row is labeled “Local Transportation” and lists the following items below it in the same row: Pedestrian, Bicycle, Auto, Freight, Transit, and Event Access/Egress. The circle graphics show 2035 No-Build as mostly empty, and all other concepts with similar performance. The key findings for Local Transportation are that Build concepts perform similarly overall, and Concept 4c provides the most consistent improvement in local transportation conditions.</p> <p>The fourth row is labeled “Affected Environment” and lists the following items below it in the same row: Residential, Business/Commercial, Environmental, and Historic/Cultural. The circle graphics show Existing and 2035 No-Build as mostly full, Concept 4b as mostly empty, and all other concepts with similar, intermediate performance. The key findings for Affected Environment are that, of the Build Alternatives, Concepts 3, 4a and 4c have the least community impacts, and Concept 4b has the most community impacts.</p>

The fifth row is labeled "Implementation/Cost" and lists the following items below it in the same row: Capital Cost Estimates, Project Phasing, and Construction Impacts. The circle graphics show 2035 No-Build as completely full, and all Build Concepts as mostly full, with Concepts 3 and 4b fuller than Concepts 2, 4a, and 4c. No circle is shown for Existing. The key findings for Implementation/Cost are that Concepts 3 and 4b are lowest cost, and Concepts 2 and 3 provide more opportunity for phasing in effective Project elements

The sixth row is labeled "Conclusion by Concept" and has the following statements under each of the columns:

- Existing: Blank.
- 2035 No-Build: Poor performance for urban design, freeway operations & safety and local transportation.
- 2. Braid/CD:
 - Very good for freeway operations & safety
 - Good for minimizing impacts and for implementation (project phasing)
 - OK for urban design and local transportation
- 3. Rebuild:
 - Very good for urban design & safety
 - Good for freeway operations & safety and minimizing impacts
 - OK for local transportation
- 4a. Split:
 - Very good for urban design, freeway operations & safety, minimizing impacts and implementation
 - OK for local transportation
- 4b. Folded:
 - Good for urban design, freeway operations & safety and implementation
 - OK for local transportation
 - Poor for minimizing impacts
- 4c. 3 Point:
 - Very good for urban design and minimizing impacts
 - Good for freeway operations & safety, local transportation, and implementation
- Key Findings by Category: Blank

Figure Number	Figure Title	Figure Description
3-1	Existing Land Use	<p>Figure 3-1 shows existing land use near I-5, bounded by I-405 to the north and I-84 to the south. The area west of I-5 from I-405 south to N Broadway is primarily industrial with a few blocks of commercial land use located just south of I-405 and just north of N Broadway. Between N Weidler and I-84, land uses are primarily public, associated with Veterans Memorial Coliseum and the Moda Center, with some industrial uses along the Willamette River. On the east side of I-5, land uses are more variable, with some public land uses associated with Legacy Emanuel Medical Center and Harriet Tubman Middle School and two parks located between approximately N/NE Morris Street and N/NE Thompson Street and the Oregon Convention Center located farther south near I-84. East I-5 between approximately I-405 and NE Hancock is a mix of commercial, multifamily, and single family residential, with a few parcels of undeveloped areas. East of I-5, but farther south, land use is primarily commercial, with some multifamily residential land uses scattered throughout. On the west side of the Willamette River, land uses are primarily commercial with some multifamily and park uses.</p>
3-2	Comprehensive Plan Designations	<p>Figure 3-2 shows City of Portland Comprehensive Plan designations, the Central City 2035 Plan Area, and City of Portland Transportation System Street Plan Classifications near I-5, bounded by I-405 to the north and I-84 to the south. The figure extent includes area south of N/NE Morris to the Burnside Bridge and the eastern bank of the Willamette River extending east to NE 9th Avenue.</p> <p>The Central City 2035 Plan Area includes area east of I-5 between I-405 and N/NE Schuyler Street and all areas within the figure extent that are south of N/NE Schuyler.</p> <p>The following City of Portland Transportation System Plan Street Classifications are shown: I-5, I-405, and I-84 are shown as "Urban Throughway"; N/NE Broadway, NE Martin Luther King Jr. Boulevard, and NE Grand Avenue are shown as "Main Civic"; N Interstate Avenue, N Thunderbird Way, and N Weidler on the east side of the Willamette and NW Naito Parkway on the west side of the Willamette are shown as "Corridors – Civic"; N/NE Holladay Street, NE Lloyd Boulevard, and NE 9th on the east side of the Willamette River and NW Everett Street on the west side of the Willamette River are shown as "Corridors – District/Neighborhood"; N Russell, N Williams (north of NE Russell), NE Multnomah, NE 7th Avenue, and NE Couch Street (west of NE 6th Avenue) are shown as "Main – District/Neighborhood"; and N Vancouver (north of N Broadway) and N Williams (north of N Russell) are shown as "Corridors – Community."</p> <p>The following City of Portland Comprehensive Plan designations are shown. West of I-5, from the northern extent of the figure south to approximately N Broadway, is primarily "Industrial Sanctuary" with some areas of "Central Employment" and "Central Commercial"; east of I-5 south of N Broadway is primarily "Central Commercial" with some areas of "Open Space" and "Industrial Sanctuary." East of I-5 from the northern figure extent south to NE Schuyler is variable with designations including "Industrial Campus"; "Open Space"; "Urban Commercial"; "Mixed Use – Urban Center"; "Multi-Dwelling 1,000, 2,000, and 5,000"; "High Density Residential"; "Central Residential"; and "Mixed Use Dispersed." South of NE Schuyler to I-84 is almost entirely "Central Commercial," and south of I-84 is "Industrial Sanctuary" and "Mixed Use – Urban Center."</p>
3-3	Land Converted to Transportation Use	<p>Figure 3-3 shows land to be converted to transportation use by the Project overlaid with existing land uses near I-5, bounded by I-405 to the north and I-84 to the south. A thin portion of land along the western edge of the Harriet Tubman Middle School property would be converted from public/semi-public land use to transportation land use. Northwest of the N Broadway off-ramp, parcels of commercial, multifamily, and industrial land uses would be converted to transportation use. Immediately west of I-5 between N Broadway and N Weidler, two areas of commercial land use and one undeveloped area would be converted to transportation land use. Just east of I-5 between N/NE Broadway and N/NE Weidler, two parcels would be converted from commercial land use to transportation land use. Just east of I-5 and south of N/NE Weidler, a thin portion of commercial land use and undeveloped area would be converted to transportation land use. A triangular parcel north of N Ramsay and east of N Center Court Street would be converted from public/semi-public land use to transportation land use. One rectangular area just east of I-5 and northwest of NE Clackamas as well as a thin sliver of land east of I-5 extending south past NE Wasco Street would be converted from commercial land use to transportation land use.</p>