



Appendix E. Figure Descriptions

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This appendix includes written descriptions of all figures included in this Technical Report. If needed, additional figure interpretation is available from the ODOT Senior Environmental Project Manager at (503) 731-4804.

Figure Number	Figure Title	Figure Description
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	Auxiliary Lane/Shoulder Improvements	Figure 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 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 and extends south to I-84. Figure 2 also shows the Project Area.
3	I-5 Auxiliary (Ramp-to-Ramp) Lanes – Existing Conditions and Proposed Improvements	<p>Figure 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, and N Wheeler 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>

Figure Number	Figure Title	Figure Description
4	I-5 Cross Section (N/NE Weidler Overcrossing) – Existing Conditions and Proposed Improvements	Figure 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.
5	Broadway/Weidler/Williams and Vancouver/Hancock Highway Covers	Figure 5 shows a rendering of the Broadway/Weidler/Williams and Vancouver/Hancock highway covers. 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, 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 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.
6	Broadway/Weidler Interchange Area Improvements	Figure 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 and N Wheeler east to N Williams and N/NE Hancock. Letter “G” indicates the location where N Flint would be removed beginning at N Tillamook 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 with N Williams. The Project Area boundary and proposed auxiliary lanes and shoulders are also shown on the figure.
7	Conceptual Illustration of Proposed N Williams Multi-Use Path and Revised Traffic Flow	Figure 7 shows a rendering of the proposed N Williams multi-use path and reverse traffic flow. The foreground in the bottom half of the 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.
8	Clackamas Bicycle and Pedestrian Crossing	Figure 8 shows a rendering of the Clackamas bicycle and pedestrian crossing. 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.

Figure Number	Figure Title	Figure Description
9	Area of Potential Impact	<p>Figure 9 shows the Air Quality Area of Potential Impact (API) marked on a map of the Portland, Oregon, vicinity. This API was determined by taking the Project Area and including all the roadways that could experience changes in traffic congestion, and therefore changes in emissions, due to their links to the Project. Both traffic and air links are indicated on the figure. Air quality links and traffic links each have three categories: non-core links, core surface street links, and highway links. The figure also marks two Oregon Department of Environmental Quality (DEQ) monitoring stations, with one at 24 N Emerson and the other in southeast Portland.</p> <p>The marked highway links include I-405, I-5, I-84, and US-26, along with a portion of Route 30 where it intersects with I-405. The core surface street links are mostly located north of I-84 and south of NE Knott Street, with a small expanse of streets in the northern portion of the API. The core surface street links are concentrated between the NE 24th Avenue to the east and the Willamette River to the west, though the Broadway Bridge and the Steel Bridge are also included as core surface street links. The non-core links are located around the outer edges of the API, generally outside of the portion of the map marked by core surface street links.</p>
10	Particulate Matter Trends	<p>Figure 10 shows a graph of the particulate matter trends between 1986 and 2016 for 5824 SE Lafayette, Portland, Oregon, using the second highest 24-hour average of coarse particulate matter (PM₁₀). The y-axis measures PM₁₀ and runs from 0 to 180 micrograms per cubic meter (µg/m³), at intervals of 20 µg/m³. The x-axis lists the years 1986 through 2016 individually. A solid line measuring the National Ambient Air Quality Standard (NAAQS) for PM₁₀ spans the entirety of the graph at 150 µg/m³. The PM₁₀ concentrations line shows various levels throughout the years since 1986, but demonstrates a generally decreasing trend over time, starting at 136 µg/m³ in 1986 and ending at 32 µg/m³ in 2016. There is one spike that rises above the NAAQS standard in 1991 with 159 µg/m³.</p>
11	Ozone Trends	<p>Figure 11 shows a graph of the ozone trends between 1991 and 2016 for Carus, Canby, Oregon, using a measurement of the 8-hour concentration of ozone (3-year average of 4th highest). The y-axis measures ozone and runs from 0.01 to 0.1 parts per million (ppm), at intervals of 0.01 ppm. The x-axis lists the years 1991 through 2016 individually. A solid line measuring the NAAQS for ozone spans the years 1991 through 2007 at 0.085 ppm. From 2008 through 2016, the NAAQS line is at 0.075 ppm. The ozone concentration line shows various levels throughout the years since 1991 but demonstrates a generally decreasing trend from 1991 at 0.084 ppm to 0.065 ppm in 2002. The years 2003 through 2016 show ozone levels that vary between 0.062 ppm and 0.069 ppm. There is one spike that rises above the NAAQS in 1992 at 0.092 ppm.</p>
12	Formaldehyde Trends	<p>Figure 12 shows a graph of the formaldehyde trends between 2003 and 2015 for 24 N Emerson, Portland, Oregon, using a measurement of the annual average. The y-axis measures formaldehyde and runs from 0 to 4.5 µg/m³, at intervals of 0.5 µg/m³. The x-axis lists the years 2003 through 2015 individually. A solid line measuring the DEQ benchmark for formaldehyde spans the entire graph at 3 µg/m³. The formaldehyde concentration line shows various levels throughout the years since 2003 but demonstrates a generally decreasing trend from 2003 at 4.2 µg/m³ to 1.6 µg/m³ in 2011. The years 2012 through 2016 show ozone levels of 2.1, 2.0, 1.8, and 2.7 µg/m³, accordingly. There is one spike that rises above the DEQ benchmark in 2003 at 4.2 µg/m³.</p>

Figure Number	Figure Title	Figure Description
13	Benzene Trends	<p>Figure 13 shows a graph of the benzene trends between 2003 and 2015 for 24 N Emerson, Portland, Oregon, using a measurement of the annual average. The y-axis measures benzene concentrations and runs from 0 to 1.8 $\mu\text{g}/\text{m}^3$, at intervals of 0.2 $\mu\text{g}/\text{m}^3$. The x-axis lists the years 2003 through 2015 individually. A solid line measuring the DEQ benchmark for benzene spans the entire graph at 0.13 $\mu\text{g}/\text{m}^3$. The benzene concentration line shows various levels throughout the years since 2003 but demonstrates a generally decreasing trend from 2003 at 1.5 $\mu\text{g}/\text{m}^3$ to 0.5 $\mu\text{g}/\text{m}^3$ in 2014. In 2015, the benzene concentration rose to 0.7 $\mu\text{g}/\text{m}^3$. There is no measurement for benzene concentrations in 2005. The entirety of the graph shows benzene levels above the DEQ benchmark.</p>