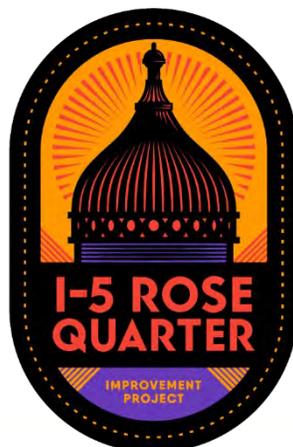


# ACTIVE TRANSPORTATION SUPPLEMENTAL TECHNICAL REPORT

Oregon Department of Transportation  
September 16, 2022



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## Appendix

A: NEPA Reevaluation Area of Potential Impact (API) Roll Plot



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# Executive Summary

This technical report supplements the 2019 Active Transportation Technical Report (ODOT 2019) with an evaluation of the active transportation impacts of the Revised Build Alternative. This Active Transportation Supplemental Technical Report concentrates on how highway cover changes and multimodal improvements of the Revised Build Alternative impact active transportation in the area compared to the Build and No-Build Alternatives. This report does not include analysis of updates to mainline I-5 because active transportation users do not use mainline I-5 facilities.

There are small and inconsequential changes in the regulatory framework from what was analyzed in the 2019 Active Transportation Technical Report. Impacts of the No-Build Alternative are the same as reported in the 2019 Active Transportation Technical Report. Generally, construction impacts of the Revised Build Alternative are similar to the Build Alternative as reported in the 2019 Active Transportation Technical Report. The construction of the Revised Build Alternative would still require the demolition of all existing I-5 overcrossings in the API.

Long Term and Operational impacts include:

- Upgraded, physically separated and raised bike facilities and shorter intersection crossings along NE Broadway and NE Weidler Street that benefit east-west traveling pedestrians and cyclists.
- Upgraded, physically separated and raised bike facilities and shorter intersection crossings on portions of N Vancouver Avenue and N Williams Avenue that benefit north-south traveling pedestrians and cyclists.
- Removed crosswalk on west side of N Williams Avenue crossing NE Broadway due to increased traffic from the relocated I-5 southbound offramp would require pedestrians cross NE Broadway on the east side of the intersection or walk one block west and cross on the west side of N Vancouver Avenue.
- A N Hancock Street connection over I-5 which would increase connectivity in the northwest portion of the API.
- Design changes that would alter Level of Traffic Stress (LTS) conditions for both cyclists and pedestrians in the API. These impacts are both positive and negative, but not substantial. However, they are different from impacts in both the Build and No-Build Alternatives as evaluated in the 2019 Active Transportation Technical Report.

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Indirect Impacts include:

- Reduction of intersection complexity, upgraded intersections along new or reconstructed streets on the expanded cover, and accessible wayfinding signage for all users could improve pedestrian convenience, comfort, and safety. Collectively, these enhancements could make walking more practical and attractive. People with disabilities would also encounter fewer barriers in these areas. Additional building capacity provided by the cover will generate more active transportation use in the cover area compared to the Build and No-Build Alternatives.
- Expanded cover space in the Revised Build Alternative would give pedestrians and cyclists greater connectivity compared to the Build and No-Build Alternatives.
- Additional building capacity provided by the cover may generate more active transportation use in the cover area compared to the Build and No-Build Alternatives.

Cumulative Impacts

- The Cumulative impacts of the Revised Build Alternative would be the similar to what was reported in the 2019 Active Transportation Technical Report, except the Clackamas Bicycle and Pedestrian Bridge, which was designed to connect the Portland Green Loop from NE 6<sup>th</sup>/NE 7<sup>th</sup> to the Broadway Bridge, is no longer a design feature. This connection would now be provided on updated bicycle and pedestrian facilities on NE Weidler Avenue and NE Broadway. Compared to planned I-5 crossing at NE Clackamas Street, the Revised Build Alternative would require pedestrians and bicyclists to travel two to three blocks further to or from the Broadway/Weidler corridor to the planned loop route on NE Clackamas Street on the east end and approximately three to four blocks further to the planned loop route at N Broadway and N Benton on the west end. The Revised Build Alternative would include upgraded physically separated and raised bike facilities with shorter intersection crossings along NE Broadway and NE Weidler Street which would be enhanced compared to the separated bike lanes as designed in the Build Alternative.

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# 1.0 INTRODUCTION

The I-5 Rose Quarter Improvement Project (Project) Environmental Assessment (EA) was released in February 2019. The Federal Highway Administration (FHWA) published a Finding of No Significant Impact (FONSI) and Revised EA (REA) for the Build Alternative on November 6, 2020. Since the issuance of the FONSI, the Oregon Department of Transportation (ODOT) has made changes to the design of the proposed Build Alternative to create a Revised Build Alternative and re-evaluated the changes in the context of the FONSI/REA. At the conclusion of the re-evaluation, FHWA and ODOT agreed that the design changes require additional analyses beyond what was presented in the REA, and FHWA rescinded the FONSI on January 18, 2022. This technical report supplements the 2019 Active Transportation Technical Report (ODOT 2019) with an evaluation of the active transportation impacts of the Revised Build Alternative compared to the No-Build Alternative and Build Alternative.

## 2.0 BUILD ALTERNATIVE DESIGN CHANGES

Changes to the Build Alternative include modification to the highway cover design and changes associated with advancements in other elements of the project design, some of which require expansion of the Project Area. This section describes the highway cover design changes and design changes that resulted from advancements in project engineering. The evaluation of these changes is presented in Section 6.2 of this supplemental technical report.

### 2.1 DESIGN PROCESS

Through 2021, ODOT facilitated an Independent Highway Cover Assessment, as directed by the Oregon Transportation Commission, that engaged the Project’s advisory committees and community members in a series of collaborative workshops to explore the design opportunities for the highway cover. The purpose of the Independent Highway Cover Assessment was to understand stakeholder goals and objectives within the Project Area, generate potential highway cover scenarios, and assess the impacts and benefits of these scenarios. The Independent Highway Cover Assessment team worked directly with local community members from the historic Albina neighborhood to understand how the highway cover design concepts might best serve the historic Albina community. The Project’s Historic Albina Advisory Board (HAAB), Executive Steering Committee (ESC) and the Community Oversight Advisory Board (COAC) also provided input as part of the Independent Highway Cover Assessment process. These sessions explored potential opportunities for economic development in the Albina community and the highway cover design concepts.

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In July 2021, Oregon Governor Brown convened a series of meetings with Project stakeholders and community organizations to discuss the design concepts developed in the Independent Highway Cover Assessment. In August 2021, the HAAB—as supported by the ESC and the COAC, and through the Governor-led process—recommended “Hybrid 3” as the preferred highway cover design concept (Figure 1). The Hybrid 3 highway cover design concept represents a proposed community solution to maximize developable space on a single highway cover. The Hybrid 3 highway cover design concept maintains the commitment for the Project to create opportunities for the local community to grow wealth through business ownership and long-term career prospects through the Project’s Disadvantaged Business Enterprise and workforce program. Following the community and stakeholder recommendations, in September 2021, the Oregon Transportation Commission directed ODOT to advance further evaluation of the Hybrid 3 highway cover design concept, with conditions related to the Project’s funding process and other technical analyses.

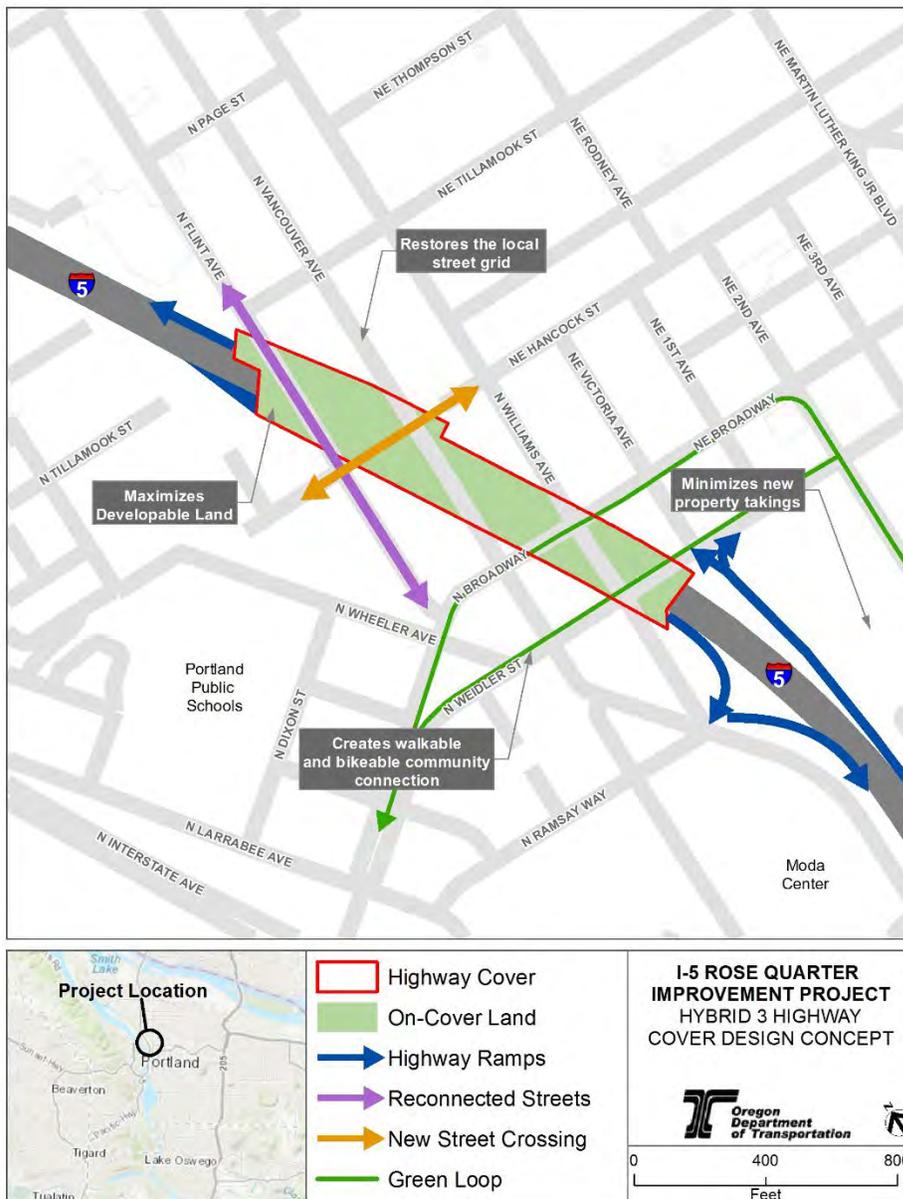
In January 2022, Governor Brown entered into a Letter of Agreement with the City of Portland, Metro, and Multnomah County that demonstrated their shared understanding and collective support for the Hybrid 3 concept as part of the Project. The Letter of Agreement specifically highlights the desire to connect the Lower Albina neighborhood, create buildable space, and enhance wealth-generating opportunities for the community, while simultaneously addressing the area’s transportation needs. Additionally, the Letter of Agreement supports the development of a process to define the future development vision for what could ultimately be built on top of the highway cover upon Project completion – this process is referred to as a Community Framework Agreement. The Letter of Agreement states that the City of Portland will lead a Community Framework Agreement process and that it should be between the City of Portland, ODOT, other state agencies and local jurisdictions as necessary, with the participation of organizations that represent the Albina community and Black residents. Any future real estate or open space development on top of the cover would require executing long-term air rights and lease agreements, and that any such actions or decisions are subject at all times to applicable local, state, and federal laws including but not limited to land use and NEPA processes.

In June 2022, ODOT and the City of Portland executed an Intergovernmental Agreement (IGA), building upon the January 2022 Letter of Agreement. The IGA further states that the City will lead the future highway cover land use, programming and development processes and development of a Community Framework Agreement, in consultation with the ODOT to ensure the highway, local streets and resulting land parcels within the Project are coordinated. As such, ODOT would construct the highway cover as part of the Project and the City of Portland would lead the process to define what is ultimately built on the new land created by the Project’s highway cover. In the IGA, both ODOT and the City agreed that ODOT will retain ownership of

the highway cover structure and the new developable area created on the highway cover structure upon Project completion.

The sections below describe the highway cover design changes and the design changes that resulted from advancements in project engineering and are incorporated into the Revised Build Alternative.

Figure 1 Hybrid 3 Highway Cover Design Concept



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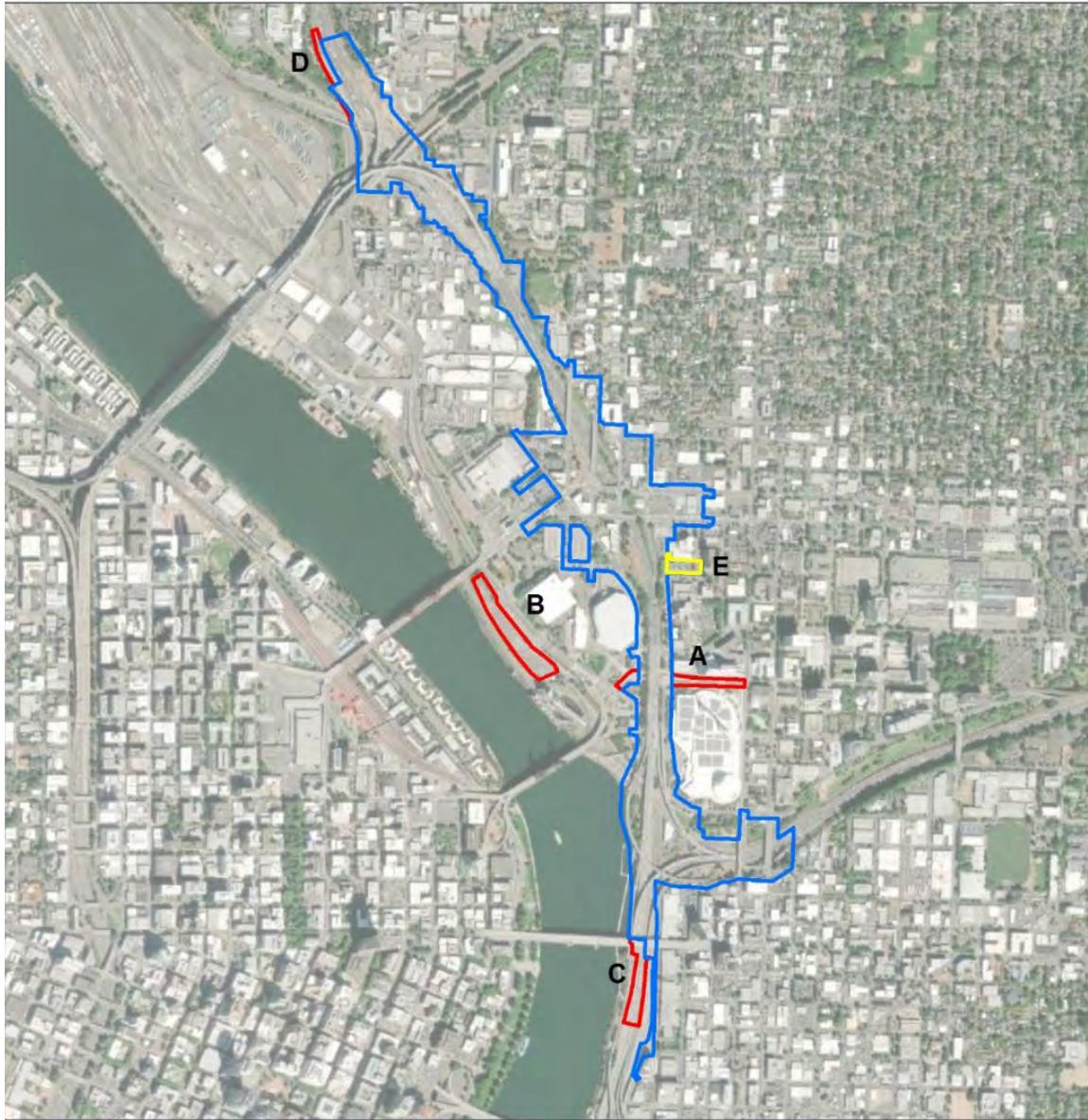
This section describes the highway cover design changes and design changes that resulted from advancements in project engineering and are incorporated into the Revised Build Alternative.

## 2.2 PROJECT AREA

The Project Area is defined as the area within which improvements are proposed, including where permanent modifications to adjacent parcels may occur and where potential temporary impacts from construction activities could result. As Project design information advanced, some changes required expansion of the Project Area presented in the REA and FONSI, and in one location the Project Area was reduced (Figure 2). In total, approximately 8.7 acres would be added to the Project Area. The changes are as follows, with letter references to the areas shown in Figure 2:

- A: Utility conflicts with Light Rail Transit (LRT) along NE Holladay Street between N Interstate Avenue and NE Martin Luther King Jr. Boulevard required expanding the Project Area by 1.9 acres to include additional overhead utility relocations (label A in Figure 2).
- B: An existing parking lot (known as Aegean Lot) south of N Interstate Avenue and the Broadway Bridge may be used for contractor staging during construction and is added to the Project Area (label B, Figure 2). ODOT identified this 4.3-acre construction staging area for contractor use based on its location, size, and suitability recognizing that, because of the urban setting and high-density land development in the construction area, it would be difficult for a construction contractor to find the space needed near or next to the project work areas for equipment staging, material storage, and the required co-location space for the contractor/construction personnel. This location meets all of the Project requirements: large level open space, proximity to the project work areas, and access for staging/storage of materials and equipment. Any materials stored in the area and site runoff would be subject to the same regulations as required throughout the project site.
- C: The southern end of the Project Area is expanded by 2.4 acres to include the portion of I-5 south of the Burnside Bridge proposed for a retrofit of the existing bridge rail, restriping the existing freeway, and installation of new guide signs (label C, Figure 2).
- D: At the northernmost end of the Project Area, a 1.1-acre area of ODOT right of way along the I-5 shoulders is now included in the Project Area for fiber optic conduit (label D, Figure 2).
- E: In one location, the Project Area was reduced by 1.0 acre. A parking lot west of the intersection of NE Clackamas Street and NE 2<sup>nd</sup> Avenue is no longer needed for the Project due to the removal of the Clackamas Bicycle and Pedestrian Crossing (label E, Figure 2).

Figure 2 Previous and Current Project Area.



- FONSI Build Alternative
- Revised Build Alternative Additional Area
- Reduced Project Area

**I-5 ROSE QUARTER  
IMPROVEMENT PROJECT  
PROJECT AREA**



0 0.25 0.5 Miles

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## 2.3 I-5 MAINLINE IMPROVEMENTS CHANGES

The Build Alternative included relocation of the I-5 southbound on-ramp at N Wheeler Avenue to N/NE Weidler Street at N Williams Avenue via the new Weidler/Broadway/Ramsay highway cover, construction of auxiliary lanes and full shoulders (12 feet in width) on I-5 between I-405 and I-84 in both directions, and associated improvements to I-5 through the Project Area. The Revised Build Alternative includes the following changes to those elements of the Build Alternative:

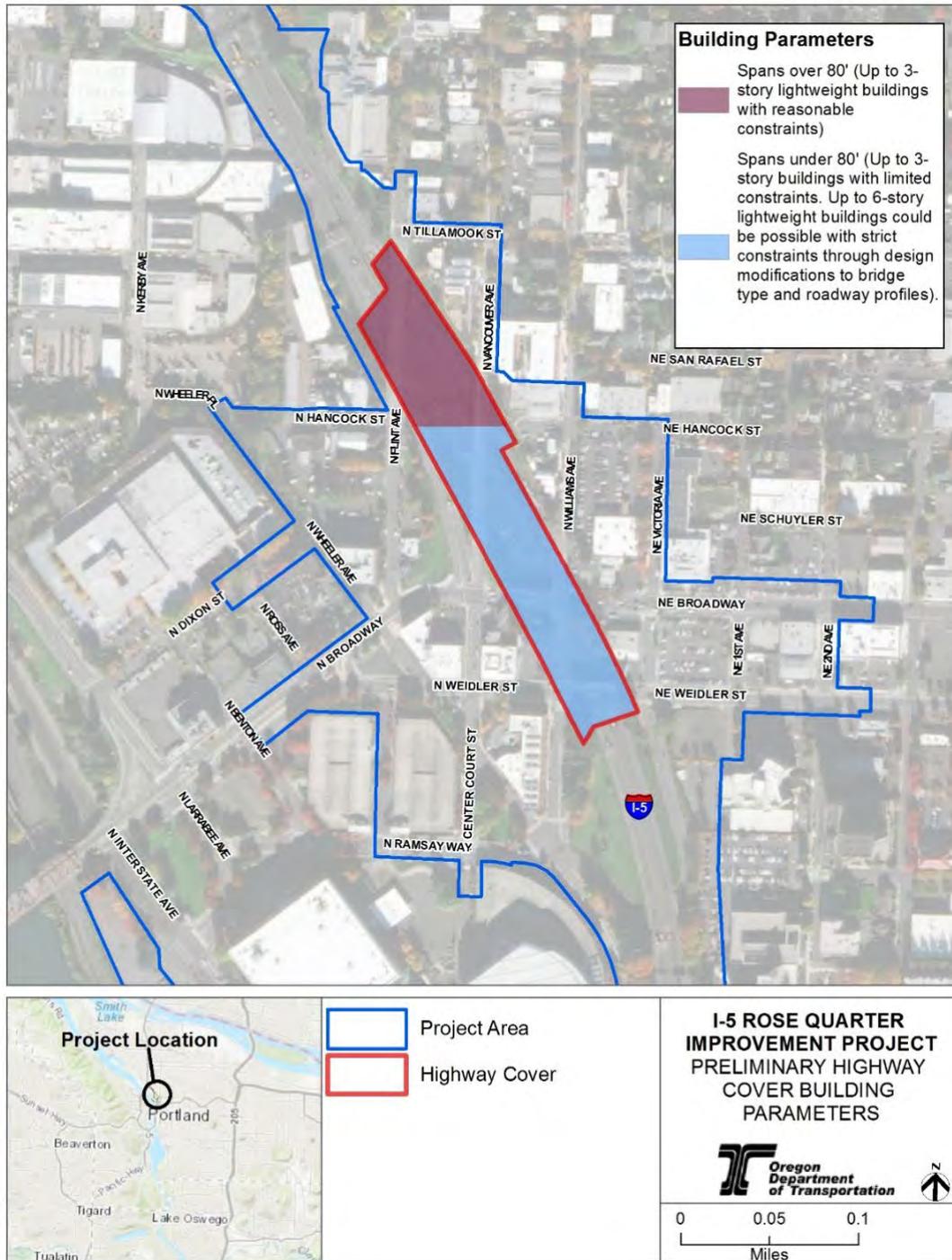
- Move the I-5 southbound exit ramp termini from N Broadway to N Williams Avenue at NE Wheeler Avenue.
- Reduce the freeway median shoulder through the entire Project Area, from 12 feet to 8 feet (4 to 5 feet within highway cover). The outside shoulder width of 12 feet remains unchanged.
- Relocate Noise Wall 24 from N Commercial Avenue near Harriet Tubman Middle School to attach to Walls 1 and 2 along the east edge of I-5.
- Keep the I-5 southbound entrance ramp from NE Wheeler Avenue/N Williams Avenue/N Ramsay Way on the existing alignment rather than relocate it to parallel N Williams Avenue.
- On I-5 south of the Burnside Bridge: retrofit existing bridge rail, restripe freeway in both the northbound and southbound directions, and install new guide signs on an existing sign structure in the southbound direction.

## 2.4 HIGHWAY COVER CHANGES

The Build Alternative included the construction of two highway cover structures over I-5 for roadway crossings and other purposes. The Revised Build Alternative, based on Hybrid 3 (see Figure 1), includes the following changes to the highway covers:

- Provide one continuous highway cover over I-5 rather than separate covers at the existing N Flint Avenue, NE Weidler Street, NE Broadway, N Williams Avenue, and the N Vancouver Avenue overcrossings.
- Expand the limits of the highway cover by approximately 35 feet to the west, and approximately 400 feet to the north.
- Design and construct the highway cover to accommodate multi-story buildings. Due to span length and site constraints, design would constrain building size, location, type, and use on portions of the cover (Figure 3). Generally, buildings up to three stories could be accommodated throughout the highway cover. Buildings of up to six stories could be accommodated where span lengths are shorter than 80 feet with strict design constraints.

Figure 3 Building Parameters on the Cover



Future development on the highway cover would follow a community process according to the City-led Community Framework Agreement, as described in Section 2.1. ODOT anticipates this process could continue past completion of cover construction.

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As part of the Project, ODOT anticipates programming interim uses on the highway cover for the time period between Project completion and when the City-led development process would be implemented. Upon Project completion, the added surface space created by the highway cover over I-5 could provide an opportunity for new and modern bicycle facilities, making the area more connected, walkable and bike friendly. It could also provide opportunity for various potential types of public spaces, to be precisely determined during the Project’s final design phase and through robust community engagement, consisting of one or more of the following types of uses:

- Landscaped areas for active and passive recreation and/or to provide a buffer, backdrop and visual comfort, such as gardens, lawns or planter beds.
- Plazas and hardscaped open space for active and passive recreation, such as courts, plazas, splash pads, picnic areas, and community gathering spaces.
- Interpretive signage, historical markers, landmarks and other areas of historical recognition and narrative such as art pieces and other historical signage/kiosks and pavement focused on the historic Albina community.
- Temporary and lightweight vertical features to support episodic, mobile commercial activities such as a food market shed, eating pavilion, food carts, or picnic venues.

These features may be removed upon implementation of the development determined by the community process or may be incorporated into that development.

## 2.5 RELATED LOCAL SYSTEM MULTIMODAL IMPROVEMENTS CHANGES

The Build Alternative included construction of a new bicycle and pedestrian bridge over I-5 at NE Clackamas Street and other local street improvements. The Revised Build Alternative includes the following changes to these improvements to accommodate the Hybrid 3 design concept and related changes in traffic patterns (see Figure 4 below):

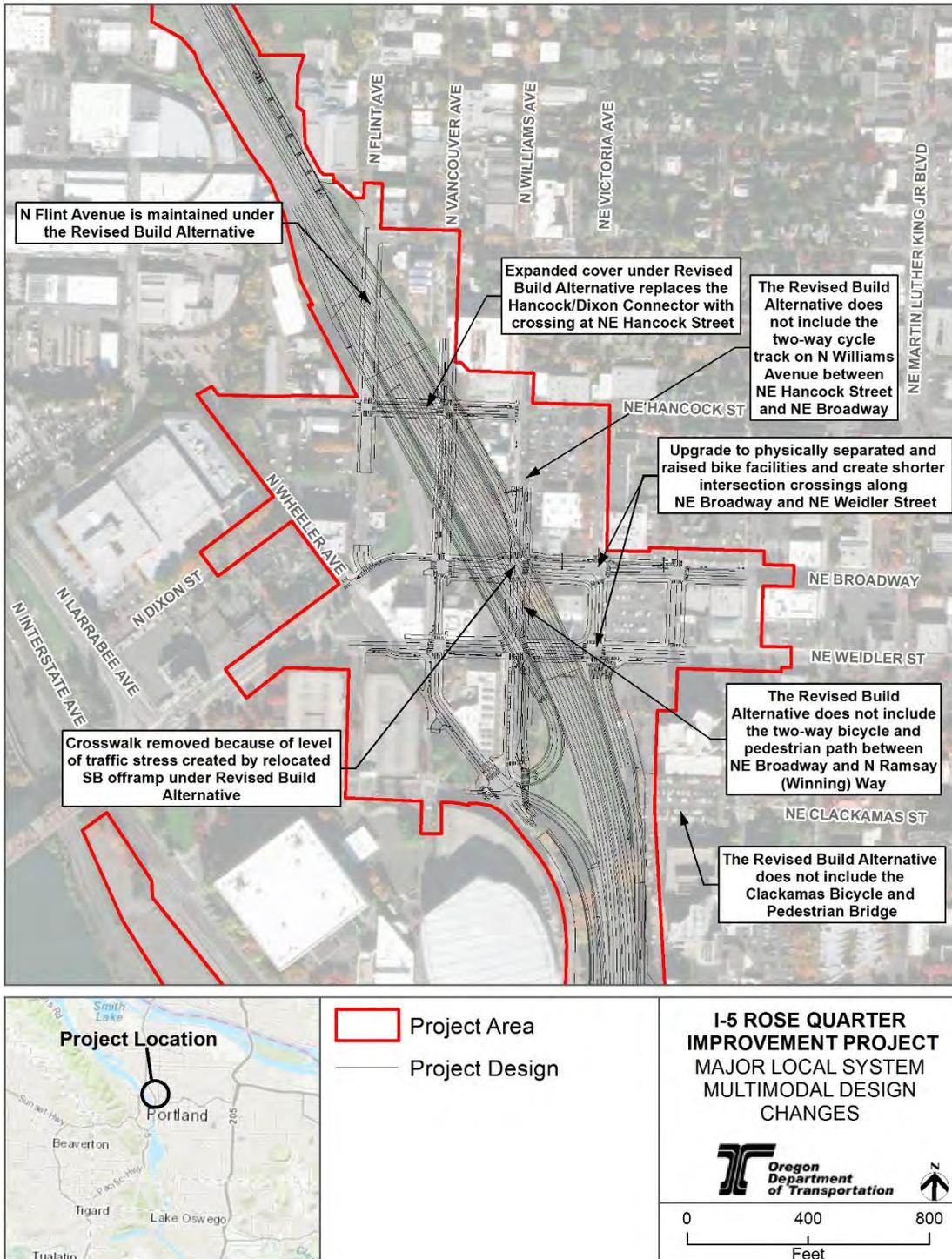
- Remove the Clackamas Bicycle and Pedestrian Crossing from the Build Alternative.
- Construct wider sidewalks and bike lanes at sidewalk level and physically separated from the roadway with a curb and provide protected bike signal phases at multiple intersections along NE Broadway and NE Weidler Street.
- Connect N Flint Avenue across I-5 from NE Tillamook Street to N Hancock Street and terminate it at N Broadway.
- Remove the NE Hancock Street overcrossing of I-5 from N Williams Avenue to N Dixon Street as proposed in the Build Alternative. NE Hancock Street would be extended across I-5

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and reconnect to NE Hancock Street west of N Flint Avenue as part of the expanded highway cover.

- Remove the two-way cycle track on N Williams Avenue between NE Hancock Street and NE Broadway and a two-way bicycle and pedestrian path between NE Broadway and N Ramsay Way from the design and instead convert the on-road bike lane to a protected bike lane, with a transition to the existing on-road bike lane south at or near NE Hancock Street.
- Close the crosswalk across NE Broadway on the west side of N Williams Avenue and the crosswalk across N Williams north of N Weidler Street.

Figure 4 Major Local System Multimodal Design Changes



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## 3.0 REGULATORY FRAMEWORK

There are differences in the regulatory framework from what was evaluated in the 2019 Active Transportation Technical Report. Some policies and regulations have not changed since the writing of the 2019 Active Transportation Technical Report including:

- ADA Guidance
- Oregon Transportation Plan
- Oregon Bicycle and Pedestrian Plan
- Oregon Highway Plan
- ODOT Highway Design Manual
- Division 51: Access Management Rules

Plans and guidance that have not changed since the writing of the 2019 Active Transportation Technical Report include:

- TriMet Service Enhancement Plan
- City of Portland Comprehensive Plan
- City of Portland Protected Bicycle Lane Planning and Design Guidance
- Go Lloyd
- National Association of City Transportation Officials (NACTO) Urban Street Design Guide

Since the writing of the 2019 Active Transportation Technical Report there have been updates to the Policy on Geometric Design of Highways and Streets 6<sup>th</sup> edition which was updated to the 7<sup>th</sup> edition in 2018 (AASHTO 2011), City of Portland TSP (City of Portland 2020) and the Metro RTP (Metro 2018). There are no major changes in the Policy on Geometric Design of Highways and Streets 7<sup>th</sup> edition that would influence the Project. The 2014 Metro Regional Transportation Plan (RTP) evaluated in the 2019 Active Transportation Technical Report was updated in 2018. No additional projects were added with the RTP update within the API (Metro 2018).

The 2018 Transportation System Plan (TSP) evaluated in the 2019 Active Transportation Technical Report was updated in March of 2020 (City of Portland 2020). TSP project 20113 which would enhance existing bike lanes and improve pedestrian/bicycle crossings along the NE Broadway and NE Weidler Street was carried over from the 2018 TSP to the 2020 TSP. There were no major project additions to the TSP within the Project API since the 2019 Active Transportation Technical Report; however, two pedestrian roadway classifications changed between the 2018 TSP and the updated 2020 TSP, including NE Clackamas Street, originally

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classified as a Neighborhood Walkway, was updated to a Major City Walkway classification, and N Ramsay Way (N Winning Way) and N Larrabee Avenue which were both updated from City Walkway to Major City Walkway (see Figure 5 for updated pedestrian roadway classifications). The extension (bridge crossing) and upgrade of NE Clackamas Street was identified in the updated 2020 TSP (project 20204) under the assumption that the Clackamas Bicycle and Pedestrian Bridge would be incorporated as a part of the Build Alternative. The Bridge is not included in the Revised Build Alternative.

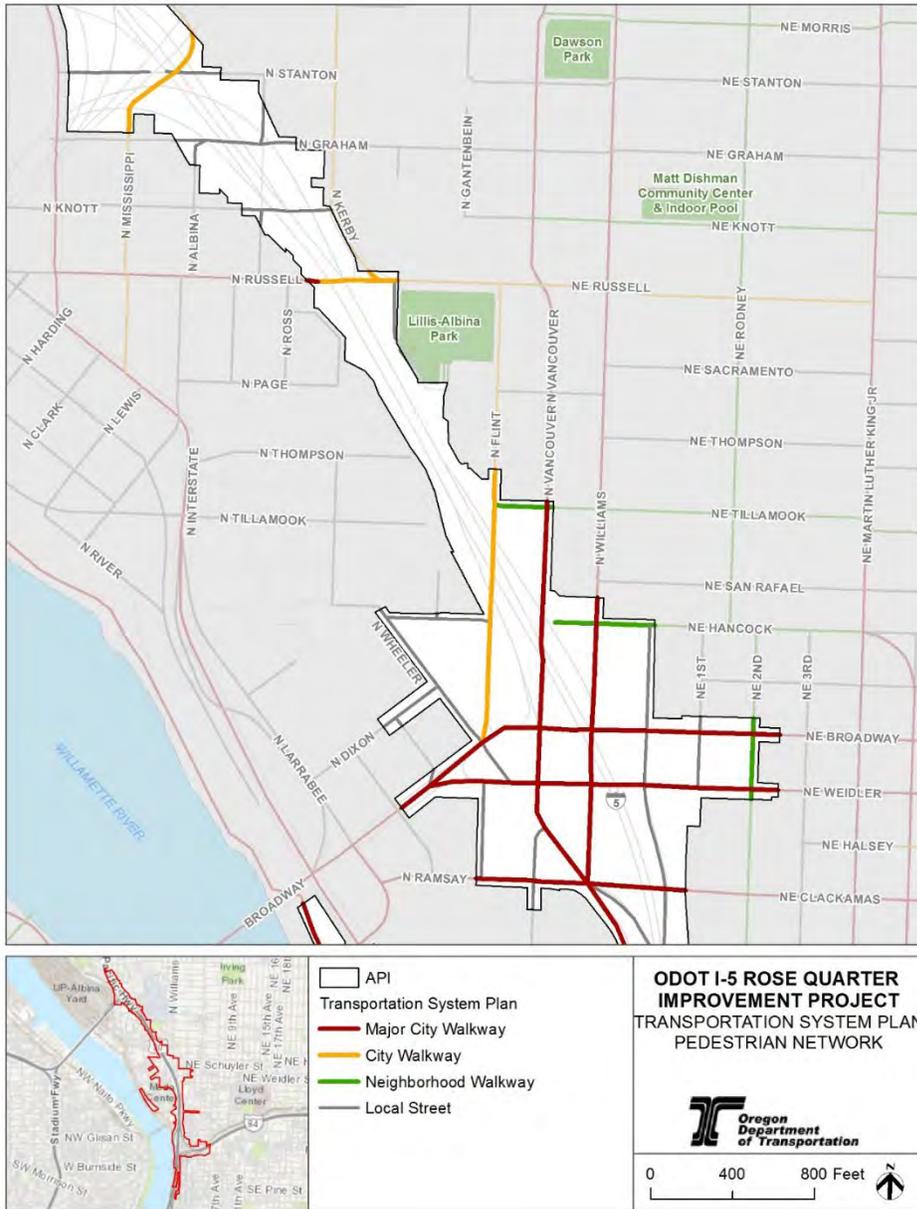
Portland's Citywide Pedestrian Plan (PedPDX) was published in 2019, after the 2019 Active Transportation Technical Report was written. The 2020 TSP update explicitly defers to PedPDX to address pedestrian network needs, priorities, classifications, and policies. Portland Bureau of Transportation (PBOT) is in the process of re-evaluating the prioritizations, with new changes expected to be complete by the end of August 2022. PedPDX defines the City's pedestrian network, including areas designated as pedestrian districts (PBOT 2019). The majority of the project area is within the Central City pedestrian district. See Figure 5 below for updated pedestrian street classifications.

The mission of PedPDX is to ensure that walking is a safe, accessible, and attractive experience for everyone in Portland by putting pedestrians at the forefront of City policy, investments, and design. The goals of PedPDX are to make Portland active transportation more equitable and inclusive, safer, more comfortable and inviting, and to improve the health of people and the environment.

In May 2022, PBOT adopted a new Pedestrian Design Guide that updates the City of Portland's original 1998 Pedestrian Design Guide. The purpose of the Pedestrian Design Guide is to create a coherent set of standards and guidelines to promote a walkable city. It provides sidewalk design criteria, including minimum widths, street tree requirements, corners, and crossings (PBOT 2022). The Pedestrian Design Guide uses Street Design Classification for sidewalk corridor requirements that will apply to the Project.

Portland City Council adopted PBOT's ADA Title II Public Right of Way Transition Plan in July 2021. The plan provides a framework to bring public right of way and PBOT programs into compliance with the Americans with Disabilities Act (ADA) (PBOT 2021).

Figure 5 Pedestrian Street Network Classification



Source: PedPDX: Portland's Citywide Pedestrian Plan (City of Portland 2019)

## 4.0 METHODOLOGY AND DATA SOURCES

The methodology and data sources are the same as those described in the 2019 Active Transportation Technical Report.

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## 5.0 AFFECTED ENVIRONMENT

There are slight differences in the affected environment from what was evaluated in the 2019 Active Transportation Technical Report. There are additional bikeshare bike corral locations in the expanded project area included at the Oregon Convention Center and Leftbank Annex. The pedestrian classification status of N Ramsay Way (N Winning Way) and N Larrabee Avenue were both updated from City Walkway to Major City Walkway as a part of the adoption of PedPDX. The southern and northern crosswalks that cross N Benton Avenue at the N Benton Avenue/ N Broadway intersection are now striped as a continental crossing as opposed to a marked crosswalk as displayed in the 2019 Active Transportation Technical Report.

In June 2019, the City of Portland adopted PedPDX, Portland’s citywide pedestrian plan. PedPDX aims to ensure walking is safe, accessible, and comfortable for all by putting pedestrians at the forefront of City policy, investments, and design. PedPDX establishes prioritization of pedestrian needs based on equity, safety, and pedestrian demand. PBOT is in the process of re-evaluating the prioritizations, with new changes expected to be complete by the end of August 2022. The plan scores demand priority by street segment on a scale from 1 to 10 (1-2 being the lowest demand priority, 9-10 being the highest demand/priority). Any roadways in the API that scored above the lowest scoring category (1-2) are identified below. For equity needs, the majority of the streets in the project area scored between 5-6, which means most API streets have average equity needs. For safety needs, NE Broadway and NE Weidler Street scored 3-4 (lower priority) west of N Williams Avenue but scored 7-8 (high priority) east of N Williams Avenue. Pedestrian demand was scored highest (9-10) on NE Broadway, NE Weidler Street, N Ramsay Way (N Winning Way), and on N Williams Avenue and N Vancouver Avenue south of NE Broadway. NE Flint Avenue scored 6-7 for pedestrian demand (higher demand), and N Williams Avenue and N Vancouver Avenue were scored 5-6 (average demand) north of NE Broadway.

PedPDX creates a tiered system for project implementation/prioritization based on the scoring for equity, safety, and pedestrian demand. Tier 1 projects are highest priority and Tier 5 projects are lowest priority. NE Broadway and NE Weidler Street are Tier 2 priority, N Ramsay Way (N Winning Way) is Tier 3 priority, N Williams Avenue and N Vancouver Avenue are Tier 3/4 priority, and NE Flint Avenue is Tier 4 priority. Crossing deficiencies at priority intersections are scored from Tier 1 (highest priority) to Tier 3 (lowest priority). The crossing at NE Wheeler Avenue/N Ramsay Way/N Williams Avenue (formerly NE Wheeler Avenue) & N Vancouver Avenue at the new southbound ramp terminal is identified as a Tier 3 priority intersection.

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## 6.0 ENVIRONMENTAL CONSEQUENCES

### 6.1 NO-BUILD ALTERNATIVE

#### 6.1.1 Direct Impacts

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The No-Build Alternative would have the same direct impacts as described in the 2019 Active Transportation Technical Report. Updates in plans described in the Affected Environment section above would not influence the No-Build Alternative impacts.

#### 6.1.2 Indirect Impacts

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The No-Build Alternative would have the same indirect impacts as described in the 2019 Active Transportation Technical Report.

### 6.2 REVISED BUILD ALTERNATIVE

Project impacts related to active transportation are different from those disclosed in the 2019 Active Transportation Technical Report. This section describes the direct, indirect, and cumulative impacts of the Revised Build Alternative compared to the Build and No-Build Alternatives.

#### 6.2.1 Direct Impacts

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This section evaluates short-term construction and long-term operational impacts of the Revised Build Alternative and compares them to the Build and No-Build Alternatives. The No-Build Alternative would not require active transportation detours or construction delays because construction of Project improvements would not occur. Reference Appendix A for further information on location and detail of project developments under the Revised Build Alternative.

##### Short Term (Construction Impacts)

The construction of the Revised Build Alternative would require the demolition of all existing I-5 overcrossings in the API, as was required for the Build Alternative. Construction activity impacts to active transportation users are described below.

#### **Broadway/Weidler/Williams**

The demolition of the NE Broadway and NE Williams Avenue structures over I-5 are required for the Revised Build Alternative. The demolition of the bridge would require cyclists and pedestrians to be detoured from normal routes of travel and may cause delays in this area during construction. Because the existing NE Broadway structure is tied to the NE Williams Avenue structure, both would need to be demolished at the same time. Under the Revised

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Build Alternative, the highway cover would be built north of N Broadway, prior to demolition. This would allow pedestrians and westbound cyclists to use the highway cover as a shoofly detour<sup>1</sup> around the demolished bridge on a temporary structure, whereas the Build Alternative required diversion to parallel streets and the NE Weidler Street temporary detour bridge. There may be times when the sidewalk on one side of NE Broadway is closed during construction, requiring pedestrians to use the other side of the bridge. During this time N Williams Avenue would be closed to all traffic and active transportation users would be detoured to Victoria Avenue.

The demolition of the NE Weidler Street structure is still required in the construction of the Project. The highway cover would be built north of NE Weidler Street, prior to demolition. This would require pedestrians and eastbound cyclists to use the highway cover as a shoofly detour to go around the demolished bridge which would delay travel for cyclists and pedestrians during construction. It is likely that the sidewalk on one side of NE Weidler Street would be closed during construction. Pedestrians would be routed to the sidewalk on the opposite side of the road through the shoofly detour.

### **Vancouver/Flint/Hancock**

Similar to the Build Alternative, the Revised Build Alternative would require demolition of the N Vancouver Avenue and N Flint Avenue structure over I-5, which would require rerouting and potential delay for cyclists and pedestrians during construction. The Revised Build Alternative highway cover would include an I-5 crossing at NE Hancock from N Flint Avenue to N Vancouver Avenue.

### **Moda Center**

The east side of N Williams Avenue (formerly known as N Wheeler Avenue) between NE Multnomah Avenue and N Ramsay Way (N Winning Way) along the Moda Center would be reconstructed. There is no existing sidewalk on the east side of N Williams Avenue, so pedestrian movement along the west side of N Williams Avenue would be maintained on the existing west sidewalk as opposed to the Build Alternative construction diversion to NE 2<sup>nd</sup> Avenue or Interstate Avenue. Southbound bike movements would be maintained in the existing configuration (southbound bike lane), without having to detour as proposed in Build Alternative construction design. Northbound bikes would be able to utilize the existing bike lane on N Williams Avenue, though there may be short disruptions to the northbound bike lane during construction which has the potential to cause temporary detours and delays to cyclists throughout construction. Cyclists would be required to share the northbound bus-only lane if the northbound bike lane is disrupted which would temporarily require additional cyclist interaction with buses compared to the Build Alternative.

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<sup>1</sup> A "shoofly" is a short temporary detour constructed to carry traffic around a construction work zone.

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N Williams Avenue between NE Ramsay Way and NE Weidler Street would be closed for an extended duration (multi-year period) due to construction of the I-5 southbound offramp. Pedestrians would be rerouted to N Vancouver Avenue. Northbound cyclists would also be rerouted in this section of N Williams Avenue. The exact detour route has not yet been determined, but it would likely require northbound cyclists to take the NE 2nd Avenue/Rodney Avenue Greenway north, turn west on Tillamook Street, and then turn north onto N Williams Avenue. This detour would temporarily increase northbound cyclist and southbound pedestrian delay using N Williams.

### **Other Areas**

Unlike the Build Alternative, the Revised Build Alternative would not require closure of the Eastbank Esplanade.

## Long Term and Operational Impacts

Direct active transportation impacts under the Revised Build Alternative as compared to the No-Build and Build Alternatives would include the following (see Figure 4 above for major design changes under the Revised Build Alternative):

### **Broadway/Weidler/Williams/Vancouver**

The Revised Build Alternative would include upgraded, physically separated and raised bike facilities and shorter intersection crossings along NE Broadway and NE Weidler Street. The upgraded bike facilities would enhance cyclist separation from traffic compared to the bike lanes under the Build Alternative, which were designed to be separated but not raised. See Figure 6 and Figure 7 below for concept designs of cross sections showing active transportation facilities along NE Broadway and NE Weidler Street between N Vancouver Avenue and N Williams Ave, and between N Williams Avenue and N Victoria Avenue for the Revised Build and Build Alternatives.

The Revised Build Alternative would accommodate bicyclists traveling northbound on N Williams Avenue on a northbound raised and protected bike facility on the east side of N Williams Avenue from N Ramsay Way to the onramp at the intersection of N Williams Avenue and N Broadway. Bicyclists would transition to the existing bike facilities on the west side of Williams at a signalized intersection at NE Hancock Street. The Revised Build Alternative does not include the two-way cycle track on N Williams Avenue between NE Hancock Street and NE Broadway, nor does it include the two-way bicycle and pedestrian path between NE Broadway and N Ramsay Way (N Winning Way) as designed in the Build Alternative. However, even without the two-way cycle track pedestrian and cyclist movements under the Revised Build Alternative would be improved compared to the No-Build Alternative and would be similar to those design under the Build Alternative.

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The Revised Build Alternative would close the gap in sidewalks along the east side of N Williams Avenue between Multnomah Street and N Ramsay Way and provide protected bike lanes in the northbound and southbound directions. Options for bike facilities will be further evaluated during design with PBOT. As a result, pedestrian and cyclist movements under the Revised Build Alternative would be improved compared to the No-Build Alternative and similar to the design under the Build Alternative.

In the Revised Build Alternative, southbound cyclists would travel on a protected bike facility on the west side of N Vancouver Avenue from NE Hancock Street to N Broadway. These bike facilities on N Vancouver Avenue would enhance cyclist safety and separation from traffic compared to the No-Build and similar to the design under the Build Alternative. Southbound cyclists on N Vancouver Avenue would be subject to less traffic stress and intersection complexity due to the relocation of the I-5 northbound offramp at the intersection of N Vancouver Avenue and N Broadway under the Revised Build Alternative compared to the Build and No-Build Alternatives.

Under the Revised Build Alternative, the I-5 southbound offramp would be relocated to N Williams Avenue south of NE Weidler Street. The increased traffic generated by the ramp would cause the closure of the crosswalk on the west side of N Williams, crossing NE Broadway and the crosswalk on the north side of NE Weidler Street crossing N Williams Avenue. Any crosswalk closures would be evaluated in coordination with the City of Portland during final design, and approved prior to implementation. These crosswalk closures would require north/south bound pedestrians to cross NE Broadway on the east side of the intersection or walk one block west and cross on the west side of N Vancouver Avenue, and east/west bound pedestrians on NE Weidler Street to cross to the south side of the street at NE Williams, compared to the Build and No-Build Alternatives.

Under the Revised Build Alternative there would be bike crossings with exclusive turning lanes at the following intersections:

- EB at N Weidler Street and N Vancouver Avenue
- NB at NE Weidler Street and N Williams Avenue

The current design assumption is that a traffic signal is needed at N Williams Avenue and NE Hancock Street to accommodate a diagonal bike crossing. Options for transitions to tie into existing bike facility north of N Broadway will be further evaluated during design.

The additional bike signals at the intersection of NE Weidler Street and N Vancouver Avenue (eastbound), NE Weidler Street and N Williams Avenue (northbound), and N Williams Avenue and NE Hancock Street (northbound) would create a safer and more comfortable experience for eastbound and northbound cyclists traversing the cover area.

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## **Vancouver/Flint/Hancock**

The Revised Build Alternative would provide a direct multimodal NE Hancock Street extension traversing I-5 to existing N Flint Avenue as a part of the expanded highway cover. This design feature would improve east-west bicycle and pedestrian connections in the northern portion of the cover area compared to the No-Build Alternative and similar to the Hancock/Dixon connector designed under the Build Alternative.

## **Moda Center**

The Portland Green Loop as outlined in the Central City 2035 Plan is a six-mile linear park connecting cyclists and pedestrians to destinations around the city center. The Clackamas Bicycle and Pedestrian Bridge was the planned east-west connection in the loop that would cross I-5 and connect NE 6<sup>th</sup> Avenue and NE 7<sup>th</sup> Avenue to the Broadway Bridge. The Clackamas Bicycle and Pedestrian Bridge was an element of the Build Alternative but is not included in the Revised Build Alternative and would be precluded from future development due to the relocation of the southbound offramp to N Williams Avenue. In the Revised Build Alternative, the Green Loop east-west connection would be provided on NE Broadway and NE Weidler Street (Figure 4). Compared to planned I-5 crossing at NE Clackamas Street, the Revised Build Alternative would require pedestrians and bicyclists to travel two to three blocks further to or from the Broadway/Weidler corridor to the planned loop route on NE Clackamas Street on the east end and approximately three to four blocks further to the planned loop route at N Broadway and N Benton on the west end. The Revised Build Alternative would include upgraded physically separated and raised bike facilities with shorter intersection crossings along NE Broadway and NE Weidler Street which would be enhanced compared to the separated bike lanes as designed in the Build Alternative. The No-Build Alternative would also include enhanced bike lanes and improved pedestrian/bicycle crossings along NE Weidler Street and NE Broadway per TSP project 20113 (City of Portland 2020).

Sidewalk gap closures on N Wheeler Avenue/N Williams Avenue (formerly NE Wheeler) would substantially improve walking connections in the Moda Center's vicinity (see Affected Environment Section of the 2019 Active Transportation Technical Report for more information on existing sidewalk gaps in the cover area). The continued presence of gaps elsewhere, similar to the No-Build Alternative, would diminish pedestrian convenience, comfort, and safety by forcing foot traffic to either cross to the other side of a street to reach a sidewalk or walk within the roadway.

The relocation of the I-5 southbound offramp at the intersection of NE Wheeler Avenue/ N Ramsay Way/ N Williams Avenue (formerly NE Wheeler) & N Vancouver Avenue under the Revised Build Alternative would increase the length and complexity of crossings and reduce safety for northbound cyclists and pedestrians on N Williams Avenue south of N/NE Weidler Street compared to the Build and No-Build Alternatives.

Figure 6 Cross Section Comparison of NE Broadway Under the Build Alternative and Revised Build Alternative

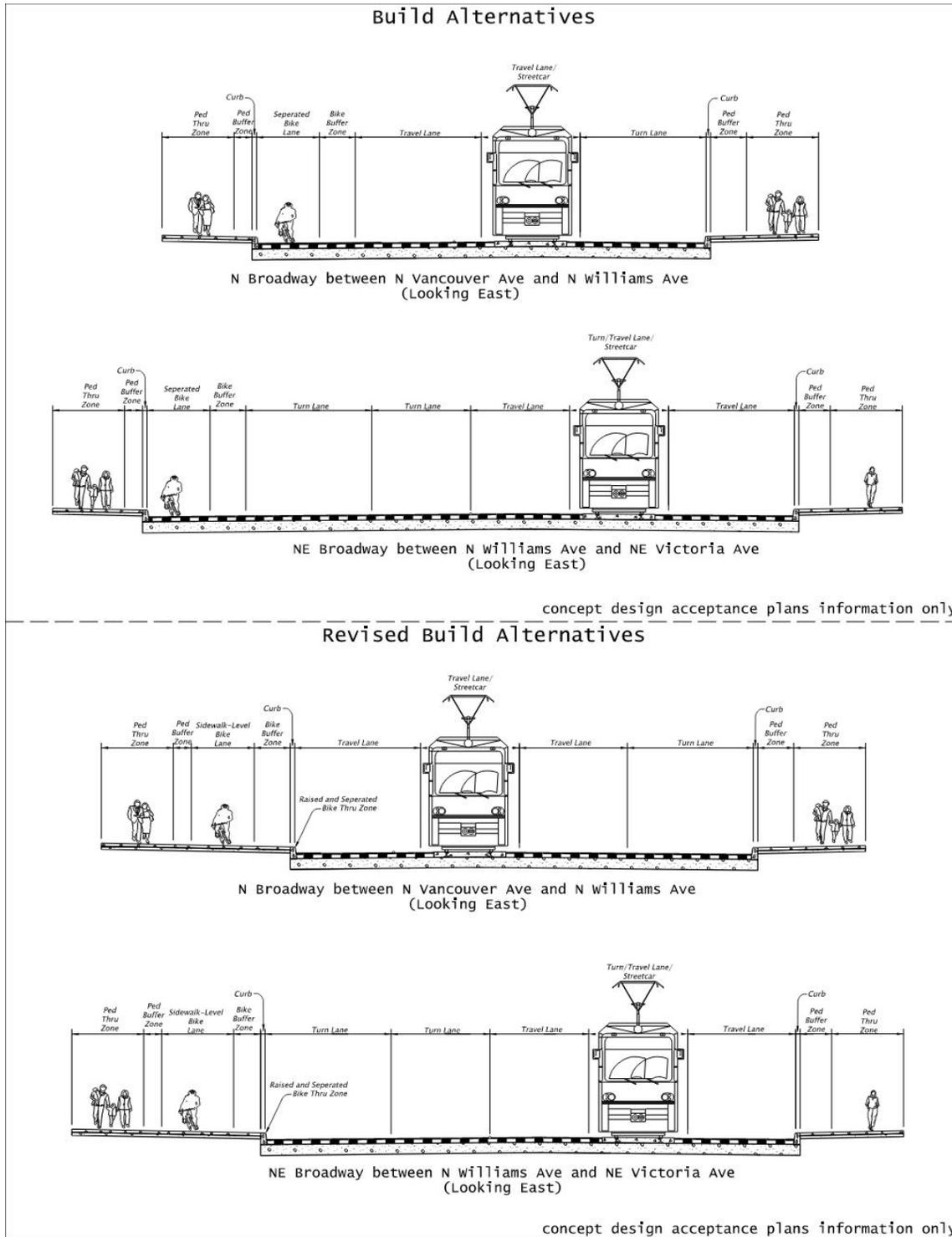
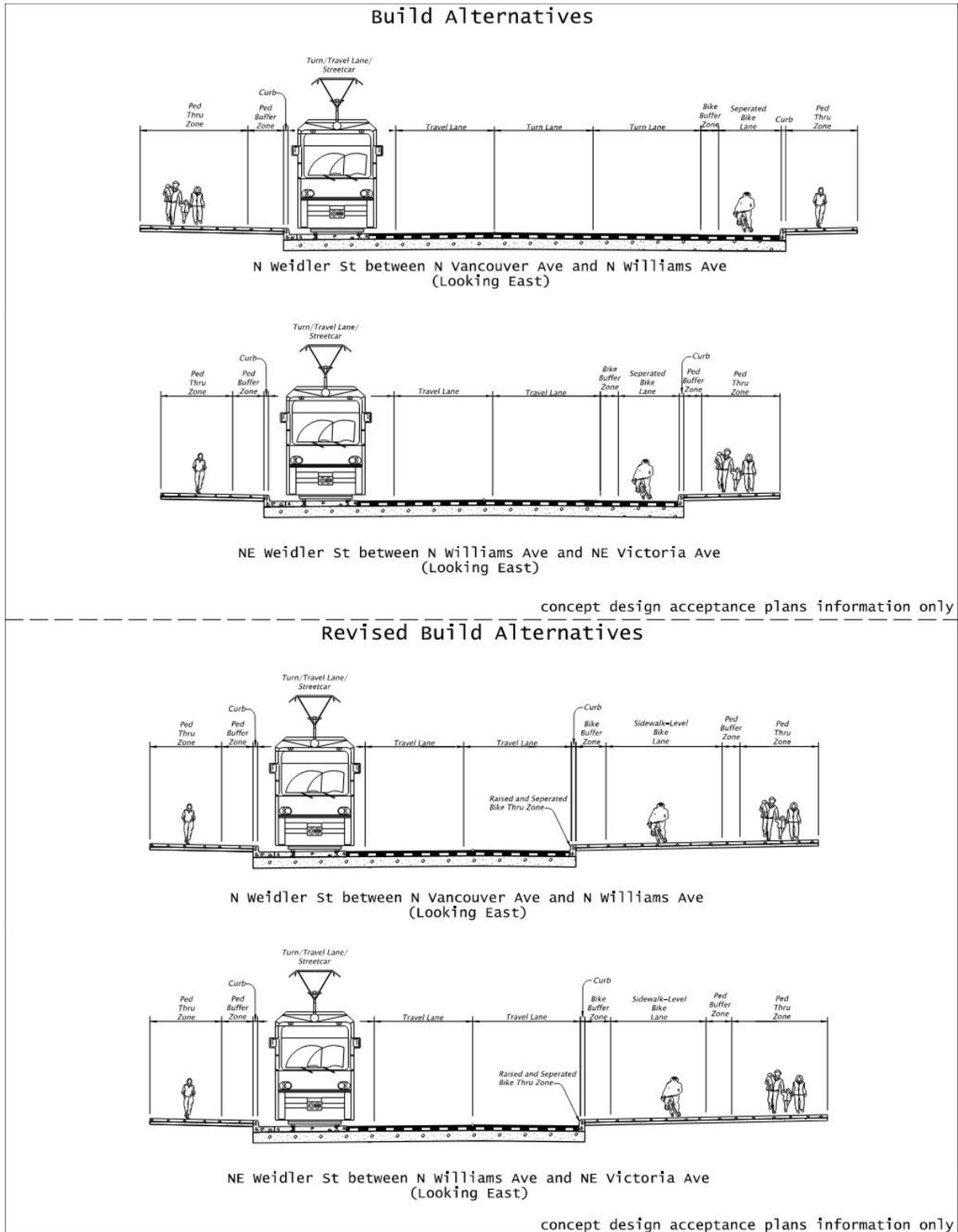


Figure 7 Cross Section Comparison of NE Weidler Street Under the Build Alternative and Revised Build Alternative



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## Consistency with PedPDX

Overall, the highway cover included in the Revised Build Alternative would enhance pedestrian connectivity in the API by adding new connections to the street grid over Interstate 5 and expanding the sidewalk network on these new streets. New connections would include the east-west sidewalks on NE Hancock Street. The Revised Build Alternative would maintain the north-south sidewalks on N Flint Avenue. The Revised Build Alternative would also make pedestrian and bicycle improvements along NE Broadway and NE Weidler Streets, which are both identified as high priority corridors (Tier 2) in the PedPDX plan. All transportation design elements under the Revised Build Alternative are in accordance with the goals and objectives identified in PedPDX including:

- Making the Project Area more equitable and inclusive by improving connections in the Albina Neighborhood
- Creating safer pedestrian facilities that separate users from traffic
- Creating a more comfortable and connected pedestrian network on the expanded highway cover
- New and improved facilities on the expanded cover space increase opportunities for walking and biking to promote healthier people and a healthier environment

The Revised Build Alternative would be consistent with most strategies identified in PedPDX. The expanded cover, upgrade of bike and pedestrian facilities along NE Broadway and NE Weidler Street, and the changes to the N Flint Avenue overcrossing, would be consistent with the following strategies outlined in PedPDX:

- Address gaps in the pedestrian priority network
- Improve visibility of pedestrians at crossings
- Improve pedestrian safety at crossings

More detailed street-design level strategies outlined in PedPDX would be addressed in a later design stage, including:

- Provide opportunities for an interesting and enjoyable pedestrian experience
- Provide adequate street lighting for pedestrians
- Manage vehicle speeds and improve driver awareness
- Work with developers, residents, and property owners to provide pedestrian improvements, address public safety and security concerns for people walking on city sidewalks
- Use education and outreach to help Portlanders keep themselves safe while walking

- 
- Include wayfinding signage for any crosswalk closures, and ensure wayfinding signage is accessible to all users, including those who are blind or low vision, people who use lower profile mobility devices, people who are deaf and hard of hearing, and others

The new NE Wheeler Avenue/ N Ramsay Way/ N Williams Avenue/I-5 Southbound offramp intersection would not reduce turning movement conflict which cause safety issues for cyclists and pedestrians at crossings. The I-5 southbound offramp placement is a requirement for the functionality of the Hybrid 3 design. To mitigate the increased safety risk to pedestrians crossing the I-5 ramp terminals, additional traffic calming measures and modification to signal operations will be coordinated with the City during the design phase of the Project. Section 6.2.2.2 of the Traffic Analysis Supp Tech Report provides a list of the Revised Build alternative protected bike and pedestrian crossings and pedestrian crossings with Lead Pedestrian Interval signal timing.

PedPDX presents a series of strategies and actions for the implementation of improvements to the identified system deficiencies. The proposed Revised Build Alternative is consistent with the strategies and actions as presented in PedPDX. The Revised Build Alternative is designed to improve all identified deficiencies in the cover area as defined in PedPDX and would enhance the overall pedestrian network in the cover area.

PBOT's 2022 Pedestrian Design Guide serves as a key implementation tool for the policies in PedPDX. The Revised Build Alternative would be consistent with the design requirements for pedestrian facilities as outlined in the Guide or would be coordinated with the PBOT to request exceptions, as needed.

## 6.2.2 Level of Traffic Stress (LTS) Condition Comparison

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According to the ODOT Analysis Procedure Manual, LTS is a data driven, multi-variate calculation that “quantifies the perceived safety issue of being in close proximity to vehicles whether on a spacing distance or speed basis” (ODOT 2020). Table 1 and Table 2 below, respectively, show the pedestrian and bicycle LTS scores for the Revised Build, Build, and No-Build Alternatives at selected intersection. Figure 8 below shows the project intersections covered in Table 1 and Table 2. Pedestrian and bicycle LTS scores for the No-Build and Revised Build alternatives in selected roadway segments are shown in Table 3 and Table 4, respectively. Figure 9 shows the roadway segments included in the LTS analysis.

LTS scores for both walking and bicycling range from “1” to “4,” with LTS 1 representing the best possible score (representing relatively lower-stress conditions). The tolerable stress level for biking and walking is LTS 2, and anything exceeding LTS 2 should be identified as unfavorable for biking and walking conditions. For more information on LTS scoring, see the 2019 Active Transportation Technical Report and ODOT Analysis Procedure Manual (ODOT 2020).

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Overall, differences in pedestrian LTS conditions in the Revised Build Alternative are both improved and diminished, but not substantial. However, they are different from impacts in both the Build and No-Build Alternatives as evaluated in the 2019 Active Transportation Technical Report. The relocation of the southbound offramp from N Vancouver Avenue to N Williams Avenue would improve LTS conditions at the intersection of N Broadway and N Vancouver Avenue compared to the Build and No-Build Alternatives. Conversely, the relocation of the southbound ramp would worsen LTS conditions at the intersection of NE Wheeler Avenue/ N Ramsay Way/ N Williams Avenue compared to the Build Alternative and would have similar poor crossing conditions to the No-Build Alternative. To mitigate the safety risk to pedestrians crossing the I-5 ramp terminals, additional traffic calming measures and modification to signal operations will be coordinated with the City during the design phase of the Project.

Figure 8 Project Intersections

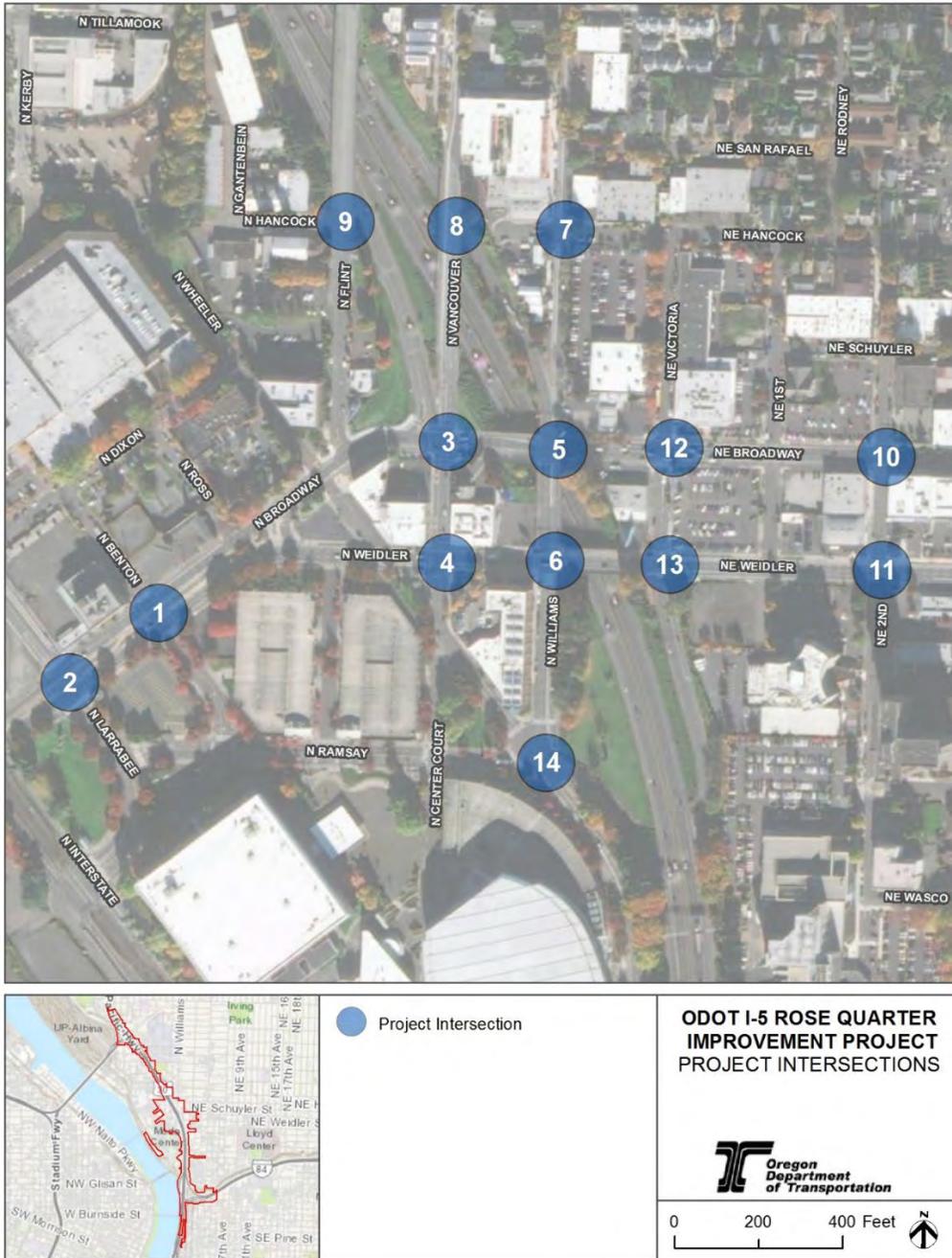


Table 1 Intersection-Level Pedestrian LTS comparison

INTERSECTION	NO-BUILD ALTERNATIVE PEDESTRIAN LTS SCORE	BUILD ALTERNATIVE PEDESTRIAN LTS SCORE	REVISED BUILD ALTERNATIVE PEDESTRIAN LTS SCORE
<b>1 N Broadway &amp; N Benton Avenue</b>	3	3	3
<b>2 N Broadway &amp; N Larrabee Avenue</b>	3	3	3
<b>3 N Broadway &amp; N Vancouver Avenue</b>	3	3	1
<b>4 N Weidler Street &amp; N Vancouver Avenue</b>	1	1	1
<b>5 N/NE Broadway &amp; N Williams Avenue</b>	3	3	3
<b>6 N/NE Weidler Street &amp; N Williams Avenue</b>	1	3	3
<b>7 N Williams Avenue &amp; N/NE Hancock Street</b>	3	1	1
<b>8 N Vancouver Avenue &amp; N Hancock Street</b>	NA	1	1
<b>9 N Hancock Street &amp; N Flint Avenue</b>	3	1	1
<b>10 NE Broadway &amp; NE 2nd Avenue<sup>2</sup></b>	2	2	2
<b>11 NE Weidler Street &amp; NE 2<sup>nd</sup> Avenue</b>	1	1	1
<b>12 NE Broadway &amp; NE Victoria Avenue</b>	1	1	1
<b>13 NE Weidler Street &amp; NE Victoria Avenue</b>	2	1	1
<b>14 NE Wheeler Avenue/ N Ramsay Way/ N Williams Avenue</b>	3	1	3

Source: ODOT, Spring 2018.

Notes: LTS = Level of Traffic Stress

NB= Northbound

SB= Southbound

<sup>2</sup> Pedestrian LTS levels for the Build and No-Build Alternatives at intersections 10 (NE Broadway & NE 2nd Avenue) and 11 (NE Weidler Street & NE 2nd Avenue) were updated from what was reported in the 2019 Active Transportation Technical Report to accommodate the consideration of the permissive left turn which was not taken into account under the previous LTS analysis. The scores for these intersections were reported as LTS 1 in the 2019 Active Transportation Technical Report but are instead LTS 2. The conditions for all Alternatives would be similar at both intersections.

All analyzed intersections operate at Bicycle LTS 1 for the Revised Build, Build, and No-Build Alternatives due to the presence of dedicated bike facilities, signalized traffic control, and low intersection complexity. See Table 2 below for Bicycle LTS conditions under the Revised Build Alternative compared to the LTS scores of the Build and No-Build Alternatives. Refer to Figure 8 above for a map of API intersections.

Table 2 Intersection-Level Bicycle LTS comparison

INTERSECTION	NO-BUILD ALTERNATIVE BICYCLE LTS SCORE	BUILD ALTERNATIVE BICYCLE LTS SCORE	REVISED BUILD ALTERNATIVE BICYCLE LTS SCORE
<b>1 N Broadway &amp; Benton Avenue</b>	1	1	1
<b>2 N Broadway &amp; N Larrabee Avenue</b>	1	1	1
<b>3 N Broadway &amp; N Vancouver Avenue</b>	1	1	1
<b>4 N Weidler Street &amp; N Vancouver Avenue</b>	1	1	1
<b>5 N/NE Broadway &amp; N Williams Avenue</b>	1	1	1
<b>6 N/NE Weidler Street &amp; N Williams Avenue</b>	1	1	1
<b>7 N Williams Avenue &amp; N/NE Hancock Street</b>	1	1	1
<b>8 N Vancouver Avenue &amp; N Hancock Street</b>	NA	1	1
<b>9 N Hancock Street &amp; N Flint Avenue</b>	1	1	1
<b>10 NE Broadway &amp; NE 2nd Avenue</b>	1	1	1
<b>11 NE Weidler Street &amp; NE 2nd Avenue</b>	1	1	1
<b>12 NE Broadway &amp; NE Victoria Avenue</b>	1	1	1
<b>13 NE Weidler Street &amp; NE Victoria Avenue</b>	1	1	1*
<b>14 NE Wheeler Avenue/ N Ramsay Way/ N Williams Avenue</b>	1	1	1

Source: ODOT, Spring 2018.

Notes: LTS = Level of Traffic Stress

NB= Northbound

SB= Southbound

\* Note that the Revised Build scenario would provide signalization of the northbound dual right turns, improving protection for bicyclist crossing right turn lanes compared to the No-Build scenario.



Table 3 Segment-Level Pedestrian LTS comparison

	SEGMENT	NO-BUILD ALTERNATIVE PEDESTRIAN LTS SCORE	REVISED BUILD ALTERNATIVE PEDESTRIAN LTS SCORE
1	Flint: Hancock to Broadway	2	2
2	Broadway: Flint to Wheeler	2	2
3	Broadway: Wheeler to Ross	2	2
4	Broadway: Ross to Benton	2	2
5	Broadway: Benton to Larrabee	2	2
6	Vancouver: Hancock to Broadway	4	2
7	Vancouver: Broadway to Weidler	2	2
8	Vancouver: Weidler to Center Ct	2	2
9	Vancouver: Center Ct to Ramsay Way	2	2
10	Williams: Ramsay Way to bike lane end (SB)	2	2
11	Williams: Ramsay Way to Weidler	2	4
12	Williams: Weidler to Broadway	4	1
13	Williams: Broadway to Hancock	2	2
14	Williams: Hancock to San Rafael	2	2
15	Hancock: Victoria to Williams	2	2
16	2nd: Broadway to Weidler	2	2
17	Weidler: 2nd to 1st	2	2
18	Weidler: 1st to Victoria	2	2
19	Weidler: Victoria to Williams	4	4
20	Broadway: Williams to Victoria	2	2
21	Broadway: Victoria to 1st	2	2
22	Broadway: 1st to 2nd	2	2
23	Weidler: Vancouver to Wheeler	2	2
24	Weidler: Wheeler to Ross	2	2

SEGMENT	NO-BUILD ALTERNATIVE PEDESTRIAN LTS SCORE	REVISED BUILD ALTERNATIVE PEDESTRIAN LTS SCORE
<b>25 Weidler: Ross to Benton</b>	2	2
<b>26 Weidler: Benton to Larrabee</b>	2	2
<b>27 Williams: bike lane end to Multnomah (SB)</b>	2	2
<b>28 Williams: Multnomah to Ramsay Way (NB)</b>	4	2
<b>29 Broadway: Williams to Vancouver</b>	4	2
<b>30 Weidler: Williams to Vancouver</b>	2	2
<b>31 Broadway: Vancouver to Flint</b>	2	2
<b>32 Weidler: Ross to Flint</b>	-	2
<b>33 Hancock: Williams to Vancouver</b>	-	2

Source: ODOT, Spring 2018.

Notes: LTS = Level of Traffic Stress

NB= Northbound

SB= Southbound

Table 4 Segment-Level Bicycle LTS comparison

SEGMENT	NO-BUILD ALTERNATIVE BICYCLE LTS SCORE	REVISED BUILD ALTERNATIVE BICYCLE LTS SCORE
<b>1 Flint: HANCOCK to Broadway</b>	1	1
<b>2 Broadway: Flint to Wheeler</b>	1	1
<b>3 Broadway: Wheeler to Ross</b>	1	1
<b>4 Broadway: Ross to Benton</b>	1	1
<b>5 Broadway: Benton to Larrabee</b>	1	1
<b>6 Vancouver: Hancock to Broadway</b>	1	1
<b>7 Vancouver: Broadway to Weidler</b>	1	1
<b>8 Vancouver: Weidler to Center Ct</b>	3	1

SEGMENT	NO-BUILD ALTERNATIVE BICYCLE LTS SCORE	REVISED BUILD ALTERNATIVE BICYCLE LTS SCORE	
9	Vancouver: Center Ct to Ramsay Way	3	1
10	Williams: Ramsay Way to bike lane end (SB)	1	2
11	Williams: Ramsay Way to Weidler	3	1
12	Williams: Weidler to Broadway	3	1
13	Williams: Broadway to Hancock	3	1
14	Williams: Hancock to San Rafael	1	1
15	Hancock: Victoria to Williams	1	1
16	2nd: Broadway to Weidler	1	1
17	Weidler: 2nd to 1st	1	1
18	Weidler: 1st to Victoria	1	1
19	Weidler: Victoria to Williams	1	1
20	Broadway: Williams to Victoria	4	1
21	Broadway: Victoria to 1st	1	1
22	Broadway: 1st to 2nd	1	1
23	Weidler: Vancouver to Wheeler	3	2
24	Weidler: Wheeler to Ross	1	1
25	Weidler: Ross to Benton	1	1
26	Weidler: Benton to Larrabee	1	1
27	Williams: bike lane end to Multnomah (SB)	4	4
28	Williams: Multnomah to Ramsay Way (NB)	1	1
29	Broadway: Williams to Vancouver	1	1
30	Weidler: Williams to Vancouver	1	1
31	Broadway: Vancouver to Flint	1	1
32	Weidler: Ross to Flint	-	3

SEGMENT	NO-BUILD ALTERNATIVE BICYCLE LTS SCORE	REVISED BUILD ALTERNATIVE BICYCLE LTS SCORE
<b>33 Hancock: Williams to Vancouver</b>	-	1

Source: ODOT, Spring 2018.  
Notes: LTS = Level of Traffic Stress  
NB= Northbound  
SB= Southbound

Overall, the majority of pedestrian and bicycle segment LTS conditions remain the same between the No-Build and Revised Build Alternatives, and where a difference would occur, more segments would provide improved LTS conditions. Pedestrian segment LTS conditions would improve under the Revised Build in the following segments:

- 6 Vancouver: Hancock to Broadway
- 12 Williams: Weidler to Broadway
- 28 Williams: Multnomah to Ramsay Way (NB)
- 29 Broadway: Williams to Vancouver

Pedestrian segment LTS conditions would decline under the Revised Build in the following segments:

- 11 Williams: Ramsay Way to Weidler

Bicycle segment LTS conditions would improve under the Revised Build in the following segments:

- 8 Vancouver: Weidler to Center Ct
- 9 Vancouver: Center Ct to Ramsay Way
- 12 Williams: Weidler to Broadway
- 13 Williams: Broadway to Hancock
- 23 Weidler: Vancouver to Wheeler

Bicycle segment LTS conditions would decline under the Revised Build in the following segments:

- 10 Williams: Ramsay Way to bike lane end (SB)
- 11 Williams: Ramsay Way to Weidler

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### 6.2.3 Route-Based Conditions Assessment

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The Project team qualitatively assessed conditions along the same five primary travel routes that were identified in the 2019 Active Transportation Technical Report based upon route directness, intersection quality, ramp terminal avoidance, separation from motor vehicle traffic, grades, and bicycle delay<sup>3</sup>. Differences in design would slightly alter some travel routes, but overall, pedestrians and cyclists under the Revised Build Alternative would utilize the same corridors as the No-Build Alternative as evaluated in the 2019 Active Transportation Technical Report. Under the Revised Build Alternative, pedestrians and cyclists would utilize the updated biking facilities along NE Weidler Street and NE Broadway instead of the planned Clackamas Bicycle and Pedestrian Bridge (used in the Build Alternative) along the following east-west routes:

- Broadway Bridge to/from Lloyd District
- Broadway Bridge to/from Broadway/Weidler corridor immediately east of I-5 interchange

The Revised Build Alternative would have similar route-based conditions to the No-Build Alternative and decreased intersection quality and ramp terminal avoidance of some east-west oriented API routes compared to the Build Alternative (without the implementation of the Clackamas Bicycle and Pedestrian Bridge).

Table 5 presents a detailed summary of the Revised Build Alternative's performance for each primary travel route, including color-coded cells denoting its performance relative to the primary route in the No-Build Alternative. Green cells denote improvement compared to the No-Build Alternative, while red cells show degradation compared to the No-Build Alternative. Darker colors represent more substantial differences, while lighter colors represent more minimal differences. Grey cells highlight cases where the Build and No-Build Alternatives have similar impacts. Key findings are summarized below.

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<sup>3</sup> For definitions of the scoring criteria see section 4.3.2 of the 2019 Active Transportation Technical Report

Table 5 Route-Based Conditions Assessment, Revised Build Alternative

	Mode	Direction of Travel	Criteria*					Bicycle Delay
			Route Directness	Intersection Quality	Ramp Terminal Avoidance	Separation from Motor Vehicle Traffic	Grades	
<b>Broadway Bridge to/from Williams/Vancouver corridor and Tillamook Neighborhood Greenway</b>	Bicycling	Eastbound	Relatively direct route with minimal out-of-direction travel. Length of route = 5,500 feet.  No change from the primary No-Build Route. (=)	All six study intersections (through which the route passes) yield BLTS scores representing favorable conditions for the target design user (=)	Route passes through one ramp terminal intersections (=)	Physical separation on Broadway and Weidler (protected bike lanes); delineated separation on Williams (buffered bike lane) (=)	Moderate uphill grade with a maximum grade of 5% on Weidler (Matching Existing). N Williams Avenue would have gradual uphill grades not exceeding 2%. (=)	The route passes through the following additional signalized intersection, compared to the No-Build route: • Hancock and Williams (-)
		Westbound	Direct route with no out-of-direction travel. Length of route = 5,000 feet. (+)	All four study intersections (through which the route passes) yield BLTS scores representing favorable conditions for the target design user (=)	Route passes through no ramp terminal intersections (=)	Delineated separation on Vancouver between N Hancock and N Broadway (separated/protected bike lane); Delineated separation on portion of Flint to be reconstructed (buffered/protected bike lane); physical separation on Broadway (separated/protected bike lane) (+)	Users would utilize new bicycle facilities along N Vancouver Avenue. Moderate downhill grades on N Vancouver Avenue with a maximum grade of 4% south of the cover and up to 5% (increase of 2%-3%) on the cover. On this route, Broadway would have moderate downhill grade of approximately 4% (matching existing conditions). (-)	No change (=)
	Walking	Eastbound	Direct route with no out-of-direction travel. Length of route = 5,540 feet.  No change from the primary No-Build Route. (=)	Three of five study intersections (through which the route passes) yield PLTS scores representing less favorable conditions for the target design user (=)	Route passes through no ramp terminal intersections (=)	Physical separation (sidewalks) along street corridors (=)	Users would not encounter excessive climbing/descending beyond the total elevation difference between the Broadway Bridge and Williams/Vancouver/Tillamook (=)	N/A (criterion does not apply) (=)
		Westbound	Direct route with no out-of-direction travel. Length of route = 5,000 feet.  No change from the primary No-Build Route. (=)	All study intersections (through which the route passes) yield PLTS scores representing favorable conditions for the target design user (+)	Route passes through no ramp terminal intersections (=)	Physical separation (sidewalks) along street corridors. Wider sidewalks, and improved pedestrian crossings (new markings, updated pedestrian signals) on N Vancouver Avenue (+)	Users would not encounter excessive climbing/descending beyond the total elevation difference between the Broadway Bridge and Williams/Vancouver/Tillamook (=)	N/A (criterion does not apply) (=)
<b>Broadway Bridge to/from Lloyd</b>	Bicycling	Eastbound	Relatively indirect route, with some out-of-direction travel necessary (to traverse I-5). Length of route = 3,570 feet.  No change from the primary No-Build Route. (=)	All four study intersections (through which the route passes) yield BLTS scores representing favorable conditions for the target design user (=)	Route passes through one ramp terminal intersection (=)	Physical separation on Broadway and Weidler (protected bike lanes); no separation on 2nd (neighborhood greenway); no separation on Clackamas. (=)	Moderate uphill and downhill grades with no excessively steep slopes; users would encounter minimal additional climbing/descending beyond the total elevation difference between the Broadway Bridge and Lloyd. (=)	No change (=)
		Westbound	Relatively indirect route, with some out-of-direction travel necessary (to traverse I-5). Length of route = 3,960 feet.  No change from the primary No-Build Route. (=)	Both study intersections (through which the route passes) yield BLTS scores representing favorable conditions for the target design user (=)	Route passes one ramp terminal intersections (+)	No separation on Clackamas; physical separation between 2nd and Wheeler; no separation on Ramsay; delineated separation on Larrabee (conventional bike lane); physical separation on Broadway (protected bike lane) (=)	Moderate uphill and downhill grades with no excessively steep slopes; users would encounter minimal additional climbing/descending beyond the total elevation difference between Lloyd and the Broadway Bridge. (=)	No change (=)

	Mode	Direction of Travel	Criteria*					Bicycle Delay
			Route Directness	Intersection Quality	Ramp Terminal Avoidance	Separation from Motor Vehicle Traffic	Grades	
<b>Broadway Bridge to/from Broadway/Weidler corridor immediately east of I-5 interchange</b>	Walking	Eastbound	Relatively indirect route, with some out-of-direction travel necessary (to traverse I-5). Length of route = 3,850 feet.  No change from the primary No-Build Route. (=)	Two of six study intersections (through which the route passes) yield PLTS scores representing less favorable conditions for the target design user (=)	Route passes through one ramp terminal intersection (=)	Physical separation (sidewalks) along street corridors; sidewalks along Broadway and Weidler would be upgraded protected bikeway and crossing enhancements. (=)	Moderate uphill and downhill grades with no excessively steep slopes; users would encounter minimal additional climbing/descending beyond the total elevation difference between the Broadway Bridge and Lloyd. (=)	N/A (criterion does not apply) (=)
		Westbound	Relatively indirect route, with some out-of-direction travel necessary (to traverse I-5). Length of route = 3,850 feet.  No change from the primary No-Build Route. (=)	Two of six study intersections (through which the route passes) yield PLTS scores representing less favorable conditions for the target design user (=)	Route passes through one ramp terminal intersection (=)	Physical separation (sidewalks) along street corridors; sidewalks along Broadway and Weidler would be upgraded in tandem with implementation of planned protected bikeway and crossing enhancements. (=)	Moderate uphill and downhill grades with no excessively steep slopes; users would encounter minimal additional climbing/descending beyond the total elevation difference between Lloyd and the Broadway Bridge. (=)	N/A (criterion does not apply) (=)
	Bicycling	Eastbound	Direct route with no out-of-direction travel. Length of route = 2,800 feet.  No change from the primary No-Build Route. (=)	All six study intersections (through which the route passes) yield BLTS scores representing favorable conditions for the target design user (=)	Route passes through one ramp terminal intersection (=)	Physical separation on Broadway and Weidler (protected bike lanes). (=)	Moderate downhill and/or relatively flat grades, with no excessively steep slopes; users would not encounter excessive climbing/descending beyond the total elevation difference between the Broadway/Weidler corridor (east of I-5) and the Broadway Bridge (=)	No change (=)
		Westbound	Direct route with no out-of-direction travel. Length of route = 2,920 feet.  No change from the primary No-Build Route. (=)	All six study intersections (through which the route passes) yield BLTS scores representing favorable conditions for the target design user (=)	Route passes one ramp terminal intersections (+)	Physical separation on Broadway and Weidler (protected bike lanes) (=)	Moderate downhill and/or relatively flat grades, with no excessively steep slopes; users would not encounter excessive climbing/descending beyond the total elevation difference between the Broadway/Weidler corridor (east of I-5) and the Broadway Bridge (=)	No change (=)
	Walking	Eastbound	Direct route with no out-of-direction travel. Length of route = 3,060 feet.	Two of six study intersections (through which the route passes) yield PLTS scores representing less favorable conditions for the target design user (=)	Route passes through one ramp terminal intersection (=)	Physical separation (sidewalks) along street corridors; sidewalks along Broadway and Weidler may be upgraded in tandem with implementation of planned protected bikeway and crossing enhancements; (+)	Moderate uphill and/or relatively flat grades with no excessively steep slopes; users would not encounter excessive climbing/descending beyond the total elevation difference between the Broadway Bridge and the Broadway/Weidler corridor east of I-5 (=).	N/A (criterion does not apply) (=)
		Westbound	Direct route with no out-of-direction travel. Length of route = 3,060 feet.	Two of six study intersections (through which the route passes) yield PLTS scores representing less favorable conditions for the target design user (=)	Route passes through one ramp terminal intersection (=)	Physical separation (sidewalks) along street corridors; sidewalks along Broadway and Weidler may be upgraded in tandem with implementation of planned protected bikeway and crossing enhancements; (+)	Moderate uphill and/or relatively flat grades with no excessively steep slopes; users would not encounter excessive climbing/descending beyond the total elevation difference between the Broadway Bridge and the Broadway/Weidler corridor east of I-5 (=)	N/A (criterion does not apply) (=)

	Mode	Direction of Travel	Criteria*					Bicycle Delay
			Route Directness	Intersection Quality	Ramp Terminal Avoidance	Separation from Motor Vehicle Traffic	Grades	
<b>Steel Bridge/Eastbank Esplanade to/from Williams/Vancouver corridor and Tillamook Neighborhood Greenway</b>	Bicycling	Northbound	Direct route with no out-of-direction travel. Length of route = 7,360 feet.	All four study intersections (through which the route passes) yield BLTS scores representing favorable conditions for the target design user (=)	Route passes through three ramp terminal intersections (-)	Physical separation between Esplanade and Williams (formerly Interstate)/Oregon intersection (shared-use path); delineated separation on Interstate and Williams (conventional bike lane on Interstate, bi-directional bike lane through Rose Quarter Transit Center, physical separation on Williams between I-5 SB offramp and Weidler (separated/protected bike lane) (+)	Moderate uphill and/or relatively flat grades with no excessively steep slopes; users would not encounter excessive climbing/descending beyond the total elevation difference between the Eastbank Esplanade and Williams/Vancouver/Tillamook (=)	The route passes through the following additional signalized intersection, compared to the No-Build route: • Hancock and Williams (-)
		Southbound	Direct route with no out-of-direction travel. Length of route = 7,740 feet.	All five study intersections (through which the route passes) yield BLTS scores representing favorable conditions for the target design user (=)	Route passes one ramp terminal intersections (+)	Physical separation on Vancouver and Wheeler (physically separated bike lane north of Broadway) Combined bike/bus lane on Vancouver between Broadway and Weidler, buffered bike lane on Vancouver/Wheeler south of Broadway; delineated separation Williams (formerly Wheeler [shared lane markings north of Multnomah]; delineated separation on Williams (formerly Wheeler and Interstate [bi-directional bike lane through Rose Quarter Transit Center, conventional bike lane on Williams]); physical separation between Williams (formerly Interstate)/Oregon intersection and Esplanade (shared-use path) (+)	Moderate downhill and/or relatively flat grades with no excessively steep slopes; users would encounter moderate downhill grades on N Vancouver Avenue with a maximum grade of 4% south of the cover and up to 5% (increase of 2%-3%) on the cover. No excessive climbing/descending beyond the total elevation difference between Williams/Vancouver and the Eastbank Esplanade (-)	No Change (=)
	Walking	Northbound	Direct route with no out-of-direction travel. Length of route = 7,000 feet.	Three of four study intersections (through which the route passes) yield PLTS scores representing less favorable conditions for the target design user (=)	Route passes through three ramp terminal intersections (-)	Physical separation between Esplanade and Williams (formerly Interstate)/Oregon intersection (shared use path); physical separation (sidewalks) along street corridors; sidewalk gaps on Williams (formerly Wheeler) between Interstate and Holladay and between Multnomah and Ramsay would be connected.(+)	Moderate uphill and/or relatively flat grades with no excessively steep slopes; users would not encounter excessive climbing/descending beyond the total elevation difference between the Eastbank Esplanade and Williams/Vancouver/Tillamook (=)	N/A (criterion does not apply) (=)
		Southbound	Direct route with no out-of-direction travel. Length of route = 7,000 feet.	Three of four study intersections (through which the route passes) yield PLTS scores representing less favorable conditions for the target design user (=)	Route passes through three ramp terminal intersections (-)	Physical separation (sidewalks) along street corridors; physical separation between Esplanade and Williams (formerly Interstate)/Oregon intersection (shared-use path); sidewalk gaps on Williams (formerly Wheeler) between Interstate and Holladay and between Multnomah and Ramsay would be connected. (+)	Moderate downhill and/or relatively flat grades with no excessively steep slopes; users would not encounter excessive climbing/descending beyond the total elevation difference between Williams/Vancouver/Tillamook and the Eastbank Esplanade (=)	N/A (criterion does not apply) (=)
<b>Steel Bridge/Eastbank Esplanade to/from Broadway/Weidler corridor immediately east of I-5 interchange</b>	Bicycling	Northbound	Relatively direct route with minimal out-of-direction travel. Length of route = 4,580 feet.	Both study intersections (through which the route passes) yield BLTS scores representing favorable conditions for the target design user (=)	Route passes through no ramp terminal intersections (=)	Physical separation between Esplanade and Williams (formerly Interstate)/Oregon intersection (shared-use path); no separation on Oregon (shared lane markings); physical separation on 1st (protected bike lane); delineated separation on Multnomah (buffered bike lane); no separation on 3rd (neighborhood greenway); physical separation on Weidler (protected bike lane) (=)	Moderate uphill and/or relatively flat grades with no excessively steep slopes; users would not encounter excessive climbing/descending beyond the total elevation difference between the Eastbank Esplanade and the Broadway/Weidler corridor east of I-5. (=)	No Change (=)

	Mode	Direction of Travel	Criteria*					Bicycle Delay
			Route Directness	Intersection Quality	Ramp Terminal Avoidance	Separation from Motor Vehicle Traffic	Grades	
		Southbound	Relatively indirect route, with some out-of-direction travel necessary (in order to utilize signalized crossings to traverse Broadway and Weidler). Length of route = 5,370 feet.	All three study intersections (through which the route passes) yield BLTS scores representing favorable conditions for the target design user (=)	Route passes through no ramp terminal intersections (=)	Physical separation on Broadway (protected bike lane); no separation on 2nd, Wasco, and 3rd (neighborhood greenway), delineated separation on Multnomah and Williams (formerly Wheeler and Interstate segments) (buffered bike lanes on Multnomah, bi-directional bike lane through Rose Quarter Transit Center, conventional bike lane on Williams [formerly Interstate]; physical separation between Williams (formerly Interstate)/Oregon intersection and Esplanade (shared-use path) (=)	Moderate downhill, uphill and/or relatively flat grades with no excessively steep slopes; users would encounter minimal additional climbing/descending beyond the total elevation difference between the Broadway/Weidler corridor (east of I-5) and the Eastbank Esplanade. (=)	No Change (=)
	Walking	Northbound	Length of route = 4,530 feet. No change from the primary No-Build Route. (=)	N/A (route does not pass through any study intersections) (=)	Route passes through no ramp terminal intersections (=)	Physical separation between Esplanade and Williams (formerly Interstate)/Oregon intersection (shared-use path); physical separation between Esplanade and Interstate/Oregon intersection (shared use path) (=)	Moderate uphill and/or relatively flat grades with no excessively steep slopes; users would not encounter excessive climbing/descending beyond the total elevation difference between the Eastbank Esplanade and the Broadway/Weidler corridor east of I-5 (=)	N/A (criterion does not apply) (=)
		Southbound	Length of route = 4,530 feet. No change from the primary No-Build Route. (=)	N/A (route does not pass through any study intersections) (=)	Route passes through no ramp terminal intersections (=)	Physical separation (sidewalks) along street corridors; physical separation between Esplanade and Interstate/Oregon intersection (shared use path) (=)	Moderate downhill and/or relatively flat grades with no excessively steep slopes; users would not encounter excessive climbing/descending beyond the total elevation difference between the Broadway/Weidler corridor (east of I-5) and the Eastbank Esplanade (=)	N/A (criterion does not apply) (=)
	Darker green cells: Substantial improvement compared with No-Build Alternative (+++)	Lighter green cells: Moderate improvement compared with No-Build Alternative (++)	Very light green cells: Slight improvement compared with No-Build Alternative (+)	Gray cells: Relatively similar compared with No-Build Alternative, and or criterion is not applicable (=)	Very light red cells: Slight degradation compared with No-Build Alternative (-)	Lighter red cells: Moderate degradation compared with No-Build Alternative (--)	Darker red cells: Substantial degradation compared with No-Build Alternative (---)	

Notes: BLTS = Bicycle Level of Traffic Stress; N/A = Not applicable; PLTS = Pedestrian Level of Traffic Stress

\* Conditions are indicated by color scheme and use of the symbols +, =, and -. See descriptions of color and symbol meanings below. Assessment based on conditions experienced by people walking and bicycling via the "Primary Travel Routes," as illustrated in Figures 21 and 22 of the 2019 Active Transportation Technical Report.

Bicycle delay is a qualitative assessment comparing the number of signalized intersections between the primary build route and the primary no-build route.

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Route 1: Broadway Bridge to/from Williams/Vancouver Corridor and Tillamook Neighborhood Greenway

**Pedestrians**

The Revised Build Alternative would have better route directness for westbound pedestrians than the Build Alternative and No-Build Alternative in the *Broadway Bridge to/from Williams/Vancouver Corridor and Tillamook Neighborhood Greenway* route because of the improved pedestrian facilities on N Vancouver Avenue between N Hancock Street and N Broadway. Eastbound pedestrians in this corridor would traverse the same number of ramp terminals as the No-Build (0) and two less than the Build Alternative (2). The Revised Build Alternative intersection quality of this route would be lower for northbound pedestrian users compared to the Build Alternative due to the double right-hand turn, higher traffic volume, and elimination of the northern crossing at the intersection of N Williams Avenue and NE Weidler Street. The Revised Build Alternative would have all signal-controlled turns and would not allow right turns on red, thus reducing impacts to pedestrian crossings. The signal at NE Weidler Street and I-5 NB exit ramp would include Lead Pedestrian Interval signal timing. Intersection quality would increase for westbound pedestrians under the Revised Build Alternative compared to the No-Build Alternative due to the relocation of the southbound offramp to N Williams Avenue.

**Cyclists**

The Revised Build Alternative would have increased route directness for westbound bikers when compared to the No-Build Alternative and Build Alternatives in the *Broadway Bridge to/from Williams/Vancouver Corridor and Tillamook Neighborhood Greenway* route with because of the improved bicycle facilities on N Vancouver Avenue between N Hancock Street and N Broadway. Under the Revised Build Alternative, southbound cyclists would take the protected facilities on N Vancouver Avenue directly down to N Broadway instead of taking N Flint Avenue (under the No-Build Alternative) or the Hancock-Dixon connector (under the Build Alternative). Eastbound cyclists would have increased separation from motorists with the improved bike facilities on NE Weidler Street compared to the Build Alternative and similar separation as the No-Build Alternative. Cyclists would be required to traverse the same number of ramp terminals as the Build and No-Build Alternatives. Bicycle delay would be higher under the Revised Build Alternative compared to the No-Build Alternative due to the additional signal at the intersection of N Hancock Street and N Williams Avenue.

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## Route 2: Broadway Bridge to/from Lloyd

### **Pedestrians**

The overall route conditions for pedestrians along the *Broadway Bridge to/from Lloyd* route under the Revised Build Alternative would be similar to conditions under the No-Build Alternative. Intersection quality and ramp terminal avoidance under the Revised Build Alternative would decrease compared to the Build Alternative without the improvement of conditions associated with the Clackamas Bicycle and Pedestrian Bridge.

### **Cyclists**

Most route conditions for cyclists along the *Broadway Bridge to/from Lloyd* route in the Revised Build Alternative would be similar to conditions under the No-Build Alternative. The Revised Build Alternative westbound route would pass one less ramp terminal than the No-Build Alternative. The Revised Build Alternative separation from motorists would be similar to the No-Build with the updated biking facilities along NE Weidler Street and NE Broadway but would not include complete separation as with the Clackamas Bicycle and Pedestrian Bridge included in the Build Alternative.

## Route 3: Broadway Bridge to/from Broadway/Weidler Corridor Immediately East of I-5 Interchange

### **Pedestrians**

The overall route conditions for pedestrians under the Revised Build Alternative, which does not include the Clackamas Bicycle and Pedestrian Bridge, would be similar to the No-Build Alternative on the *Broadway Bridge to/from Broadway/Weidler Corridor Immediately East of I-5 Interchange* route. Under the Revised Build Alternative, pedestrians would have similar route directness compared to the No-Build Alternative but more direct connections than the Build Alternative, which in this route, travels out of direction to the Clackamas Bicycle and Pedestrian Bridge. Like the No-Build Alternative, the Revised Build Alternative would require the eastbound pedestrian route to cross the high volume I-5 northbound offramp at NE Weidler Street and NE Victoria Avenue and would have less separation from vehicle traffic than the Build Alternative. Under the Revised Build Alternative pedestrians walking on Weidler between the Broadway Bridge and the area east of the I-5 interchange would be required to cross the same number of ramp terminals as the No-Build Alternative (1, at the I-5 northbound offramp) and one less than the Build Alternative (2, at the I-5 southbound onramp and northbound offramp).

### **Cyclists**

Under the Revised Build Alternative, cyclists would take similar routing to both the Build and No-Build Alternatives, along NE Weidler Street (EB) and NE Broadway (WB). Cyclists' route

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directness under the Revised Build Alternative would be similar to route directness under the Build and No-Build Alternatives. Eastbound cyclists on NE Weidler Street would be required to cross the same number of ramp terminals as the No-Build Alternative and one less than the Build Alternative. Westbound cyclists on NE Broadway would be required to cross one less ramp terminal compared to both the Build Alternative and No-Build Alternative.

Route 4: Steel Bridge/Eastbank Esplanade to/from Williams/Vancouver Corridor and Tillamook Neighborhood Greenway

**Pedestrians**

Pedestrians under the Revised Build Alternative would have similar route directness in the *Steel Bridge/Eastbank Esplanade to/from Williams/Vancouver Corridor and Tillamook Neighborhood Greenway* route to the Build and No-Build Alternatives. The Revised Build Alternative would have less motorist separation than the Build Alternative, which included a two-way bicycle and pedestrian path on N Williams Avenue between NE Ramsay Way (N Winning Way) but more motorist separation than the No-Build Alternative. The double right-hand turn, higher traffic volume, and elimination of the northern crossing at the intersection of N Williams Avenue and NE Weidler Street would create difficult crossing for pedestrians under the Revised Build Alternative compared to the Build Alternative. The Revised Build Alternative would have all signal-controlled turns and would not allow right turns on red, thus reducing impacts to pedestrian crossings. Under the Revised Build Alternative, the route would cross an additional ramp compared to the Build and No-Build Alternatives due to the relocated southbound offramp on N Williams Avenue. Intersection quality of this route under the Revised Build Alternative would be similar to the No-Build Alternative and decreased compared to the Build Alternative.

**Cyclists**

The Revised Build Alternative would have less motorist separation than the Build Alternative, which included a two-way bicycle and pedestrian path on N Williams Avenue between N Ramsay Way (N Winning Way) and NE Broadway, and the two-way cycle track designed between NE Broadway and NE Hancock Street, but more bike separation than the No-Build Alternative due to the protected bike facilities designed on N Williams Avenue between the I-5 southbound offramp and N Weidler Street. Under the Revised Build Alternative, the relocation of the I-5 southbound ramp terminal on N Williams Avenue would decrease both ramp terminal avoidance and intersection quality for northbound cyclists but increase ramp terminal avoidance for southbound cyclists. Bicycle delay will increase along this route compared to the Build and No-Build Alternatives with the addition of the signal at the intersection of N Hancock Street and N Williams Avenue.

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Route 5: Steel Bridge/Eastbank Esplanade to/from  
Broadway/Weidler Corridor Immediately East of I-5  
Interchange

**Pedestrians**

Under the Revised Build Alternative, pedestrians would have similar overall route conditions along the *Steel Bridge/Eastbank Esplanade to/from Broadway/Weidler Corridor Immediately East of I-5 Interchange* route as reported for the Build and No-Build Alternatives in the 2019 Active Transportation Technical Report.

**Cyclists**

Under the Revised Build Alternative, cyclists would have similar route directness, ramp terminal avoidance, separation from motorists, and grade along the *Steel Bridge/Eastbank Esplanade to/from Broadway/Weidler Corridor Immediately East of I-5 Interchange* route to the No-Build Alternative. Without the Clackamas Bicycle and Pedestrian Bridge, the Revised Build Alternative would have better route directness but less motor vehicle separation than the Build Alternative.

### 6.3 INDIRECT IMPACTS

This section describes indirect impacts under the Revised Build Alternative that are different from those disclosed in the 2019 Active Transportation Technical Report including:

- By reducing intersection complexity, upgraded intersections along new or reconstructed streets on the expanded cover could improve pedestrian convenience, comfort, and safety. Collectively, these enhancements could make walking more practical and attractive. People with disabilities would also encounter fewer barriers in these areas. The expanded cover space in the Revised Build Alternative would give pedestrians and cyclists greater connectivity compared to the Build and No-Build Alternatives.
- Additional building capacity provided by the cover will generate more active transportation use in the cover area compared to the Build and No-Build Alternatives.

### 6.4 CUMULATIVE IMPACTS

The Cumulative impacts of the Revised Build Alternative would be similar to those reported in the 2019 Active Transportation Technical Report, except for the Portland Green Loop from NE 6<sup>th</sup> Avenue/NE 7<sup>th</sup> Avenue to the Broadway Bridge would be made with bicycle and pedestrian facilities on NE Weidler Avenue and NE Broadway. The 2014 Metro Regional Transportation Plan (RTP) evaluated in the 2019 Active Transportation Technical Report was updated in 2018. No additional projects were added to the API in the RTP update.

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Like the Build Alternative, the Revised Build Alternative would include the following:

- As identified in the List of Reasonably Foreseeable Future Actions (Appendix C of the Supplemental EA), establishment of new active transportation corridors outside of the API would spread out regional active transportation more evenly. However, existing bikeways and walkways within the API, particularly those designated as Major City Bikeways and City Walkways, would continue to fulfill prominent roles in the local and regional network due to future population and employment growth in Lloyd and Eliot Neighborhood and given the API's proximity to Portland's Central Core.
- The conditions for walking in the area would benefit from improved sidewalk connections and pedestrian crossings, coupled with a reduction in intersection complexity. Increased walking activity would support local and regional pedestrian mode share goals. These improvements would occur along with slightly increased grades and the loss of two crosswalk street crossings and outweigh the adverse effects of those changes.
- Because people walking and bicycling are sensitive to conditions on a more granular scale, the active transportation network's functionality and attractiveness would largely depend on design details, which are less defined at this level of analysis. Route directness, level of stress and risk, grades, delay, and other factors would collectively inform the user's perception.

## 6.5 CONCLUSION

The analysis from this report has shown that the Revised Build Alternative would have the following impacts:

### **Direct Impacts**

- Change construction impacts and detour strategies during construction which would temporarily alter active transportation routes.
- Include upgraded, physically separated and raised bike facilities and shorter intersection crossings along NE Broadway and NE Weidler Street that benefit east-west traveling pedestrians and cyclists.
- Include upgraded, physically separated and raised bike facilities and shorter intersection crossings on portions of N Vancouver Avenue and N Williams Avenue that benefit north-south traveling pedestrians and cyclists.
- Remove crosswalks on N Williams Avenue and NE Broadway due to increased traffic from the relocated I-5 southbound offramp, which would complicate some crossings in the cover area.

- 
- Not include the Clackamas Bicycle and Pedestrian bridge which requires the Green Loop east-west connection to be facilitated on NE Broadway and NE Weidler Street which disrupts east-west active transportation routes compared to the Build Alternative. The Revised Build Alternative would include upgraded physically separated and raised bike facilities with shorter intersection crossings along NE Broadway and NE Weidler Street.
  - Include a N Hancock Street connection over I-5 which would increase connectivity in the northwest portion of the study area.
  - Include design changes that would alter LTS conditions for both cyclists and pedestrians in the API. These impacts are both positive and negative, but not substantial. However, they are different from impacts in both the Build and No-Build Alternatives as evaluated in the 2019 Active Transportation Technical Report.

### **Indirect Impacts**

- By reducing intersection complexity, upgraded intersections along new or reconstructed streets on the expanded cover could improve pedestrian convenience, comfort, and safety. Collectively, these enhancements could make walking more practical and attractive. Though people with disabilities are more sensitive to grade changes and complex intersections, the Project would have fewer barriers in these areas for these users. Additional building capacity provided by the cover will generate more active transportation use in the cover area compared to the Build and No-Build Alternatives.
- The expanded cover space under the Revised Build Alternative would give pedestrians and cyclists greater connectivity compared to the Build and No-Build Alternatives.
- Additional building capacity provided by the cover would generate more active transportation use in the cover area compared to the Build and No-Build Alternatives.

### **Cumulative Impacts**

- Major design changes in the Revised Build Alternative such as the omission of the Clackamas Bicycle and Pedestrian Bridge and the implementation of the I-5 southbound offramp at N Williams Avenue have changed route-based conditions compared to the Build and No-Build Alternatives. As a whole, route directness in the API is would be similar to the No-Build Alternative but worse than the Build Alternative without the Clackamas Bridge.

## **7.0 AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES**

Mitigation measures would be the same as reported in the 2019 Active Transportation Technical report.

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## 8.0 PREPARERS

NAME	DISCIPLINE	EDUCATION	YEARS OF EXPERIENCE
<b>Garrett Augustyn</b>	Planner	• MS	2
<b>Jennifer Hughes</b>	Planner	• MURP	20
<b>John McPherson</b>	Planner	• MUP	30

## 9.0 REFERENCES

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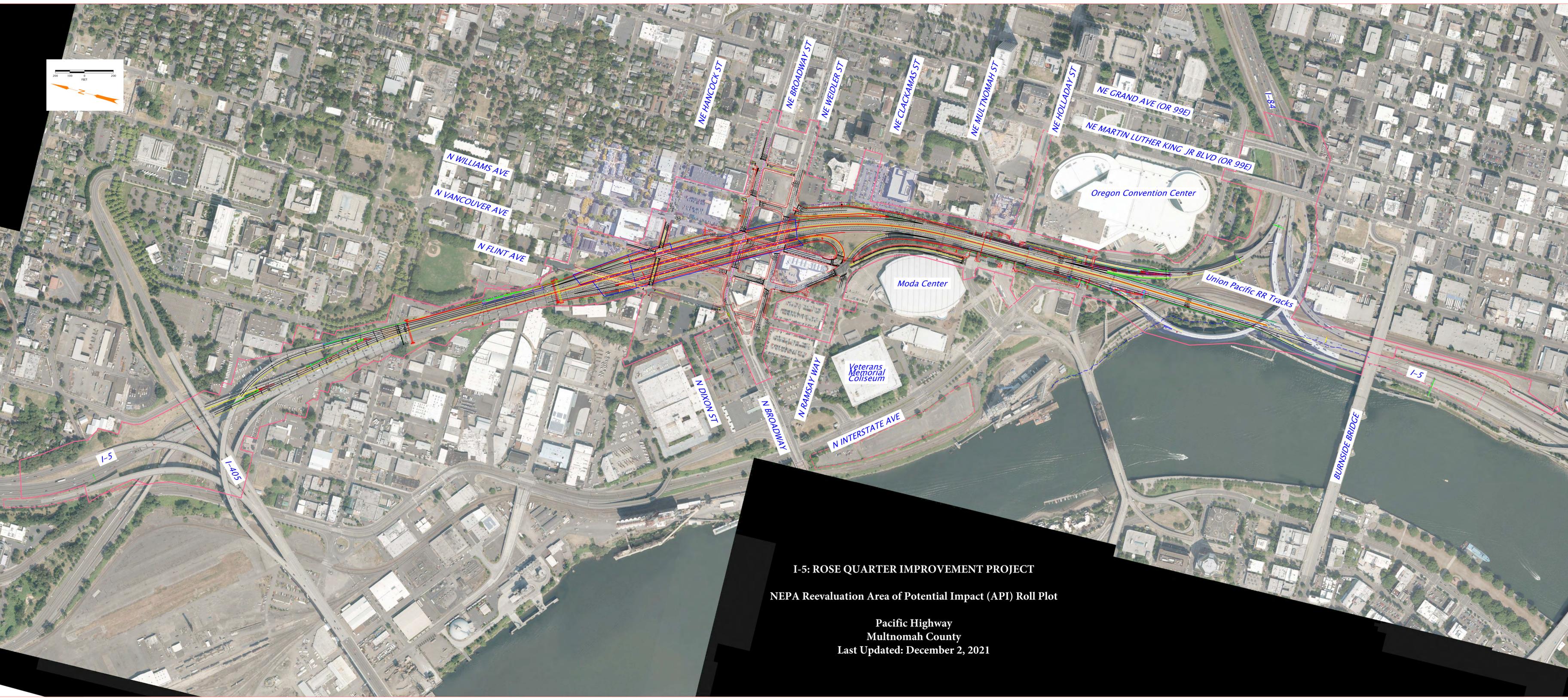
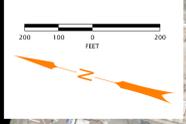
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## **APPENDIX A:**

# **NEPA REEVALUATION AREA OF POTENTIAL IMPACT (API) ROLL PLOT**



I-5: ROSE QUARTER IMPROVEMENT PROJECT  
NEPA Reevaluation Area of Potential Impact (API) Roll Plot

Pacific Highway  
Multnomah County  
Last Updated: December 2, 2021