

**FINAL**



# Hazardous Materials Technical Report

I-5 Rose Quarter Improvement Project

Oregon Department of Transportation

January 8, 2019



**I-5 ROSE QUARTER**  
IMPROVEMENT PROJECT





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## Acronyms and Abbreviations

AASHTO	American Association of State Highway Transportation Officials
ACBM	asbestos-containing building material
AMSL	above mean sea level
API	Area of Potential Impact
ASTM	American Society for Testing and Materials
bgs	below ground surface
CESQG	Conditionally Exempt Small Quantity Generator
CFR	Code of Federal Regulations
CMMP	Contaminated Media Management Plan
DEQ	(Oregon) Department of Environmental Quality
EB	eastbound
ECSI	Environmental Cleanup Site Information
EDR	Environmental Data Resources, Inc.
EPA	U.S. Environmental Protection Agency
ESA	Environmental Site Assessment
HASP	Health and Safety Plan
HBMA	Hazardous Building Materials Assessment
HWS	Hazardous Waste Site
I-405	Interstate 405
I-5	Interstate 5
I-84	Interstate 84
LBP	lead-based paint
LUST	leaking underground storage tank
mg/kg	milligram per kilogram
mvmt	million vehicle miles traveled
NB	northbound
NEPA	National Environmental Policy Act
NLR	No Longer Regulated
NonGen/NLR	Non-Generator/No Longer Regulated



NPL	National Priority List
OAR	Oregon Administrative Rule
ODOT	Oregon Department of Transportation
OR HAZMAT	Oregon Hazardous Materials Incidents
ORS	Oregon Revised Statute
OSFM	Oregon State Fire Marshall
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCP	Pollution Control Plan
PPS	Portland Public Schools
RCRA	Resource Conservation and Recovery Act
SAC	Stakeholder Advisory Committee
SB	southbound
SPIS	Safety Priority Index System
UST	underground storage tank
VCP	Voluntary Cleanup Program
WB	westbound





## Executive Summary

The I-5 Rose Quarter Improvement Project (Project) is located in Portland, Oregon, and extends along Interstate 5 (I-5) from approximately Interstate 405 (I-405) to the north and Interstate 84 (I-84) to the south. The Project also includes the interchange of I-5 and N Broadway and NE Weidler Streets (the Broadway/Weidler interchange) and the surrounding transportation network, from approximately NE Hancock Street to the north, N Benton Avenue to the west, N/NE Multnomah Street to the south, and NE 2nd Avenue to the east.

The purpose of the *Hazardous Materials Technical Report* is to identify how the Project may be affected by potential sources of contamination, to determine whether the Build Alternative could expose people or the environment to any existing contamination within the Area of Potential Impact (API), and to identify any measures for avoidance, minimization, or mitigation for these potential impacts.

The affected environment analyzed for this report includes known or potential Hazardous Materials Sites, identified in this report as Sites of Concern, within the API, which includes the Project Area and a 1.0-mile buffer extending from the Project Area boundary. The Sites of Concern were identified to show their relationship to the Build Alternative, based on state and federal environmental regulatory databases as reported in the Environmental Database Resources, Inc., (EDR) Report obtained for this assessment. The EDR Report compiled a list of Sites of Concern identified in state and federal environmental databases that generally consist of former and current industrial, commercial, and residential properties, including manufacturing sites, fueling stations, dry cleaners, car dealerships and repair facilities, electrical repairs facilities, warehouses, paint stores, hospitals, residential properties with leaking heating oil underground storage tanks (USTs), industrial/commercial properties with leaking USTs, and hazardous material spills.

A qualitative ranking system (i.e., impact ranking) for Sites of Concern was developed based on the potential for contamination at each Site of Concern in the API to be encountered or disturbed by the Build Alternative. Each Site of Concern was evaluated as a high, medium, moderate, or low priority. A high-priority ranking indicates that hazardous materials at the site are present in the soil or groundwater, and further action or investigation is recommended; the potential for hazardous materials to be disturbed by the Build Alternative is considered high. A medium-priority ranking indicates that hazardous materials at the site are potentially present in the soil or groundwater, and further action or investigation may be warranted; the potential for hazardous materials to be encountered or disturbed by the Build Alternative is considered medium. A moderate-priority ranking indicates that the site has not been fully investigated or that limited information was available for review and the presence of hazardous materials in the soil or groundwater is unknown; the potential for hazardous materials to be encountered or disturbed by the Build Alternative is considered moderate. A low-priority ranking indicates that the potential

for hazardous materials to be present in the soil and groundwater is unlikely, and no further action is needed; the potential for hazardous materials to be encountered or disturbed by the Build Alternative is considered low.

Based on the environmental database report review and a field survey conducted by AECOM, 182 Sites of Concern were identified within the hazardous materials API. Of this total, 43 Sites of Concern (24%) are located within the Project Area and 139 Sites of Concern (76%) are located outside of the Project Area (evaluated as either within 1,000 feet or greater than 1,000 feet from the Project Area boundary). The Sites of Concern were ranked based on their environmental regulatory database listing and their hydraulic gradient and topographic distance (i.e., upgradient and downgradient) relative to the Project design (or footprint). The hazardous materials API includes four high-priority, two medium-priority, six moderate-priority, and 170 low-priority Sites of Concern. All four of the high-priority, both of the medium-priority, four of the moderate-priority, and 33 of the low-priority Sites of Concern are located within the Project Area. Eleven Sites of Concern are located on parcels proposed for acquisition under the Build Alternative. Of these, six Sites of Concern are reported to have soil contamination, one Site of Concern is reported to have soil and groundwater contamination, and three Sites of Concern likely have lead-based paint (LBP) and asbestos-containing building materials (ACBM) present (based on the reported construction dates of the current on-site buildings).

Collectively, the Sites of Concern are identified from the environmental regulatory database review as generators of hazardous waste; spills of fuels, oils, pesticides, and other chemicals; and leaking underground storage tanks (LUSTs) that have resulted in petroleum-contaminated soil and groundwater.

During the field survey, additional area-wide (i.e., non-site-specific) sources of hazardous materials were also identified. These sources of potential hazardous materials included transient camps, overhead powerlines, pole-mounted transformers, street and property lights, and traffic signal lights. Additionally, surface soils adjacent to state highways (extending 25 feet laterally from the edge of the pavement to the edge of the right of way) are presumed to be contaminated with hazardous materials (lead and polycyclic aromatic hydrocarbons) to a depth of 18 inches (1.5 feet) below ground surface, based on limited sampling conducted by the Oregon Department of Transportation (ODOT). The contamination in sampled locations exceeds the Oregon Department of Environmental Quality's (DEQ) clean fill guidance values (DEQ 2014).

Environmental impacts from hazardous materials may result if existing contaminated soil and/or groundwater are encountered during construction or if existing contaminated properties are acquired for additional right of way. These impacts may result in cleaning up/remediating existing contamination with potential liability for cleanup costs. Environmental impacts from hazardous materials may result from spills or releases from equipment during construction and the mobilization or exposure of existing contamination that was previously not exposed, possibly exposing construction workers and public to potential health hazards. The risk of encountering contaminated soil and/or groundwater is higher in areas that have a

long and varied history of industrial and commercial land use and in areas near properties with USTs. Additional environmental investigation may be necessary to confirm the presence of contamination at Sites of Concern, such as LUSTs contributing to soil and groundwater contamination, to minimize potential adverse impacts from the Build Alternative. The potential liability to the Project from acquiring contaminated property can be minimized with appropriate due diligence procedures such as Phase I Environmental Site Assessments (ESAs) and subsequent Phase II ESAs, to establish the presence or absence of contamination in connection with the property, and by establishing landowner liability protections.

Table ES-1 summarizes potential environmental impacts from hazardous materials for both the No-Build and Build Alternatives.

Construction or demolition activities under the Build Alternative at three Sites of Concern could encounter hazardous building materials, specifically LBP and ACBM. Excavation work on seven parcels that are proposed to be acquired under the Build Alternative could encounter soils and groundwater affected by existing contamination. Additionally, existing roadway structures over I-5 planned for removal under the Build Alternative could encounter hazardous building materials, specifically LBP and ACBM.

A full Hazardous Materials Corridor Study, including review of historic aerial photos of the Project Area, DEQ's environmental program databases, and the Oregon State Fire Marshall's spills database, would be completed prior to conducting site specific Phase I and II ESAs and property acquisitions (ODOT 2010).

A Phase I ESA, including on-site inspections and interviews with property owners and operators, should be performed for any property that is planned for any level of acquisition. A subsequent Phase II ESA, involving sampling to confirm contamination, should be conducted for properties where the Phase I ESA report indicates that potential contamination may be present. During construction, the contractor would be required to follow applicable regulations regarding the transport, use, storage, removal, and disposal of hazardous materials, according to ODOT's 2015 *Boilerplate Special Provisions* Sections 00293 through 00299 (ODOT 2015a). A Health and Safety Plan would be developed for all construction activities consistent with applicable laws and best practices in effect at the time of construction. Additionally, Project-specific Pollution Control Plans would be developed to prevent and minimize spills. Adherence to these requirements would reduce the potential for hazardous materials to be released or spills to occur during construction.

**Table ES-1. Summary of Potential Environmental Impacts**

Type of Impact	No-Build Alternative	Build Alternative
Property Acquisition	<p>No increase in liability.</p> <p>Existing contaminated sites would remain.</p>	<p>A Phase I ESA would be required prior to the acquisition of any property. A Phase II ESA may follow. Acquiring Sites of Concern may involve removal of hazardous materials (i.e., USTs/LUSTS and drums), resulting in increased costs for off-site disposal and associated regulatory interactions.</p> <p>Potential for increased liability from acquiring soil- and/or groundwater-contaminated Sites of Concern, requiring short-term management responsibilities (i.e., removal of hazardous materials [USTs/LUSTs, LBP, and ACBM] and cleanup) and long-term management responsibilities (i.e., soil/groundwater sampling, remediation, and petroleum-impacted groundwater monitoring).</p> <p>Acquiring contaminated Sites of Concern and potentially contaminated existing roadway structures over I-5 may increase the possibility of exposure of construction and excavation workers or the public to potentially hazardous materials (i.e., LBP, ACBM, and petroleum-impacted soil and groundwater).</p>
Construction Spills	<p>No potential for construction spills.</p>	<p>Potential construction-related spills could introduce hazardous materials and associated contamination into the API (including previously unaffected areas not identified as Sites of Concern), resulting in cleanup and disposal; possible exposure of construction/excavation workers or the public to potentially hazardous materials; and unanticipated costs for cleanup, off-site disposal, and associated regulatory interactions.</p>
Hazardous Materials Cleanup	<p>No potential for remediation of contaminated Sites of Concern.</p>	<p>Greater possibility for remediation of contaminated Sites of Concern and increased rate of hazardous materials cleanup. Public and environmental safety could be improved because of subsurface investigations and site-remediation actions conducted prior to construction activities.</p> <p>Construction activities could cause an increase in human health and safety hazards due to potential disturbances and exposures to contaminated soil and groundwater (i.e., hazardous chemicals in the soil, soil vapor, and groundwater) and contaminated building materials (i.e., LBP and ACBM).</p>

Notes: ACBM = asbestos-containing building materials; API = Area of Potential Impact; ESA = Environmental Site Assessment; LBP = lead-based paint; LUST = leaking underground storage tank; UST = underground storage tank

# 1 Introduction

## 1.1 Project Location

The I-5 Rose Quarter Improvement Project (Project) is located in Portland, Oregon, along the 1.7-mile segment of Interstate 5 (I-5) between Interstate 405 (I-405) to the north (milepost 303.2) and Interstate 84 (I-84) to the south (milepost 301.5). The Project also includes the interchange of I-5 and N Broadway and NE Weidler Street (Broadway/Weidler interchange) and the surrounding transportation network, from approximately N/NE Hancock Street to the north, N Benton Avenue to the west, N/NE Multnomah Street to the south, and NE 2nd Avenue to the east.

Figure 1 illustrates the Project Area in which the proposed improvements are located. The Project Area represents the estimated 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.

## 1.2 Project Purpose

The purpose of the Project is to improve the safety and operations on I-5 between I-405 and I-84, of the Broadway/Weidler interchange, and on adjacent surface streets in the vicinity of the Broadway/Weidler interchange and to enhance multimodal facilities in the Project Area.

In achieving the purpose, the Project would also support improved local connectivity and multimodal access in the vicinity of the Broadway/Weidler interchange and improve multimodal connections between neighborhoods located east and west of I-5.

## 1.3 Project Need

The Project would address the following primary needs:

- **I-5 Safety:** I-5 between I-405 and I-84 has the highest crash rate on urban interstates in Oregon. Crash data from 2011 to 2015 indicate that I-5 between I-84 and the merge point from the N Broadway ramp on to I-5 had a crash rate (for all types of crashes<sup>2</sup>) that was approximately 3.5 times higher than the statewide average for comparable urban interstate facilities (ODOT 2015b).

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<sup>2</sup> Motor vehicle crashes are reported and classified by whether they involve property damage, injury, or death.



- Seventy-five percent of crashes occurred on southbound (SB) I-5, and 79 percent of all the crashes were rear-end collisions. Crashes during this 5-year period included one fatality, which was a pedestrian fatality. A total of seven crashes resulted in serious injury.
- The Safety Priority Index System (SPIS) is the systematic scoring method used by the Oregon Department of Transportation (ODOT) for identifying potential safety problems on state highways based on the frequency, rate, and severity of crashes (ODOT 2015c). The 2015 SPIS shows two SB sites in the top 5 percent and two northbound (NB) sites in the top 10 percent of the SPIS list.
- The 2015 crash rate on the I-5 segment between I-84 and the Broadway ramp on to I-5 is 2.70 crashes per million vehicle miles. The statewide average for comparable urban highway facilities is 0.77 crashes per million vehicle miles travelled (mvmt).
- The existing short weaving distances and lack of shoulders for accident/incident recovery in this segment of I-5 are physical factors that may contribute to the high number of crashes and safety problems.
- **I-5 Operations:** The Project Area is at the crossroads of three regionally significant freight and commuter routes: I-5, I-84, and I-405. As a result, I-5 in the vicinity of the Broadway/Weidler interchange experiences some of the highest traffic volumes in the State of Oregon, carrying approximately 121,400 vehicles each day (ODOT 2017), and experiences 12 hours of congestion each day (ODOT 2012a). The following factors affect I-5 operations:
  - Close spacing of multiple interchange ramps results in short weaving segments where traffic merging on and off I-5 has limited space to complete movements, thus becoming congested. There are five on-ramps (two NB and three SB) and six off-ramps (three NB and three SB) in this short stretch of highway. Weaving segments on I-5 NB between the I-84 westbound (WB) on-ramp and the NE Weidler off-ramp, and on I-5 SB between the N Wheeler Avenue on-ramp and I-84 eastbound (EB) off-ramp, currently perform at a failing level-of-service during the morning and afternoon peak periods.
  - The high crash rate within the Project Area can periodically contribute to congestion on this segment of the highway. As noted with respect to safety, the absence of shoulders on I-5 contributes to congestion because vehicles involved in crashes cannot get out of the travel lanes.
  - Future (2045) traffic estimates indicate that the I-5 SB section between the N Wheeler on-ramp and EB I-84 off-ramp is projected to have the most critical congestion in the Project Area, with capacity and geometric constraints that result in severe queuing.
- **Broadway/Weidler Interchange Operations:** The complexity and congestion at the I-5 Broadway/Weidler interchange configuration is difficult to navigate for vehicles (including transit vehicles), bicyclists, and pedestrians, which impacts

access to and from I-5 as well as to and from local streets. The high volumes of traffic on I-5 and Broadway/Weidler in this area contribute to congestion and safety issues (for all modes) at the interchange ramps, the Broadway and Weidler overcrossings of I-5, and on local streets in the vicinity of the interchange.

- The Broadway/Weidler couplet provides east-west connectivity for multiple modes throughout the Project Area, including automobiles, freight, people walking and biking, and Portland Streetcar and TriMet buses. The highest volumes of vehicle traffic on the local street network in the Project Area occur on NE Broadway and NE Weidler in the vicinity of I-5. The N Vancouver Avenue/N Williams couplet, which forms a critical north-south link and is a Major City Bikeway within the Project Area with over 5,000 bicycle users during the peak season, crosses Broadway/Weidler in the immediate vicinity of the I-5 interchange.
- The entire length of N/NE Broadway is included in the Portland High Crash Network—streets designated by the City of Portland for the high number of deadly crashes involving pedestrians, bicyclists, and vehicles.<sup>3</sup>
- The SB on-ramp from N Wheeler and SB off-ramp to N Broadway experienced a relatively high number of crashes per mile (50-70 crashes per mile) compared to other ramps in the Project Area during years 2011-2015. Most collisions on these ramps were rear-end collisions.
- Of all I-5 highway segments in the corridor, those that included weaving maneuvers to/from the Broadway/Weidler ramps tend to experience the highest crash rates:
  - SB I-5 between the on-ramp from N Wheeler and the off-ramp to I-84 (SB-S5) has the highest crash rate (15.71 crashes/mvmt).
  - NB I-5 between the I-84 on-ramp and off-ramp to NE Weidler (NB-S5) has the second highest crash rate (5.66 crashes/mvmt).
  - SB I-5 between the on-ramp from I-405 and the off-ramp to NE Broadway (SB-S3) has the third highest crash rate (4.94 crashes/mvmt).
- **Travel Reliability on the Transportation Network:** Travel reliability on the transportation network decreases as congestion increases and safety issues expand. The most unreliable travel times tend to occur at the end of congested areas and on the shoulders of the peak periods. Due to these problems, reliability has decreased on I-5 between I-84 and I-405 for most of the day. Periods of congested conditions on I-5 in the Project Area have grown over time from morning and afternoon peak periods to longer periods throughout the day.

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<sup>3</sup> Information on the City of Portland's High Crash Network is available at <https://www.portlandoregon.gov/transportation/54892>.



## 1.4 Project Goals and Objectives

In addition to the purpose and need, which focus on the state's transportation system, the Project includes related goals and objectives developed through the joint ODOT and City of Portland N/NE Quadrant and I-5 Broadway/Weidler Interchange Plan process, which included extensive coordination with other public agencies and citizen outreach. The following goals and objectives may be carried forward beyond the National Environmental Policy Act (NEPA) process to help guide final design and construction of the Project:

- Enhance pedestrian and bicycle safety and mobility in the vicinity of the Broadway/Weidler interchange.
- Address congestion and improve safety for all modes on the transportation network connected to the Broadway/Weidler interchange and I-5 crossings.
- Support and integrate the land use and urban design elements of the Adopted N/NE Quadrant Plan (City of Portland et al. 2012) related to I-5 and the Broadway/Weidler interchange, which include the following:
  - Diverse mix of commercial, cultural, entertainment, industrial, recreational, and residential uses, including affordable housing
  - Infrastructure that supports economic development
  - Infrastructure for healthy, safe, and vibrant communities that respects and complements adjacent neighborhoods
  - A multimodal transportation system that addresses present and future needs, both locally and on the highway system
  - An improved local circulation system for safe access for all modes
  - Equitable access to community amenities and economic opportunities
  - Protected and enhanced cultural heritage of the area
  - Improved urban design conditions
- Improve freight reliability.
- Provide multimodal transportation facilities to support planned development in the Rose Quarter, Lower Albina, and Lloyd.
- Improve connectivity across I-5 for all modes.

## 2 Project Alternatives

This technical report describes the potential effects of no action (No-Build Alternative) and the proposed action (Build Alternative).

### 2.1 No-Build Alternative

NEPA regulations require an evaluation of the No-Build Alternative to provide a baseline for comparison with the potential impacts of the proposed action. The No-Build Alternative consists of existing conditions and any planned actions with committed funding in the Project Area.

I-5 is the primary north-south highway serving the West Coast of the United States from Mexico to Canada. At the northern portion of the Project Area, I-5 connects with I-405 and the Fremont Bridge; I-405 provides the downtown highway loop on the western edge of downtown Portland. At the southern end of the Project Area, I-5 connects with the western terminus of I-84, which is the east-west highway for the State of Oregon. Because the Project Area includes the crossroads of three regionally significant freight and commuter routes, the highway interchanges within the Project Area experience some of the highest traffic volumes found in the state (approximately 121,400 average annual daily trips). The existing lane configurations consist primarily of two through lanes (NB and SB), with one auxiliary lane between interchanges. I-5 SB between I-405 and Broadway includes two auxiliary lanes.

I-5 is part of the National Truck Network, which designates highways (including most of the Interstate Highway System) for use by large trucks. In the Portland-Vancouver area, I-5 is the most critical component of this national network because it provides access to the transcontinental rail system, deep-water shipping and barge traffic on the Columbia River, and connections to the ports of Vancouver and Portland, as well as to most of the area's freight consolidation facilities and distribution terminals. Congestion on I-5 throughout the Project Area delays the movement of freight both within the Portland metropolitan area and on the I-5 corridor. I-5 through the Rose Quarter is ranked as one of the 50 worst freight bottlenecks in the United States (ATRI 2017).

Within the approximately 1.5 miles that I-5 runs through the Project Area, I-5 NB connects with five on- and off-ramps, and I-5 SB connects with six on- and off-ramps. Drivers entering and exiting I-5 at these closely spaced intervals, coupled with high traffic volumes, slow traffic and increase the potential for crashes. Table 1 presents the I-5 on- and off-ramps in the Project Area. Table 2 shows distances of the weaving areas between the on- and off-ramps on I-5 in the Project Area. Each of the distances noted for these weave transitions is less than adequate per current highway design standards (ODOT 2012b). In the shortest weave section, only 1,075 feet is available for drivers to merge onto I-5 from NE Broadway NB in the same area where drivers are exiting from I-5 onto I-405 and the Fremont Bridge.



**Table 1. I-5 Ramps in the Project Area**

I-5 Travel Direction	On-Ramps From	Off-Ramps To
Northbound	<ul style="list-style-type: none"> <li>I-84</li> <li>N Broadway/N Williams Avenue</li> </ul>	<ul style="list-style-type: none"> <li>NE Weidler Street/NE Victoria Avenue</li> <li>I-405</li> <li>N Greeley Avenue</li> </ul>
Southbound	<ul style="list-style-type: none"> <li>N Greeley Avenue</li> <li>I-405</li> <li>N Wheeler Avenue/N Ramsay Way</li> </ul>	<ul style="list-style-type: none"> <li>N Broadway/N Vancouver Avenue</li> <li>I-84</li> <li>Morrison Bridge/Highway 99E</li> </ul>

Notes: I = Interstate

**Table 2. Weave Distances within the Project Area**

I-5 Travel Direction	Weave Section	Weave Distance
Northbound	I-84 to NE Weidler Street/NE Victoria Avenue	1,360 feet
Northbound	N Broadway/N Williams Avenue to I-405	1,075 feet
Southbound	I-405 to N Broadway	2,060 feet
Southbound	N Wheeler Avenue/N Ramsay Way to I-84	1,300 feet

Notes: I = Interstate

As described in Section 1.3, the high volumes, closely spaced interchanges, and weaving movements result in operational and safety issues, which are compounded by the lack of standard highway shoulders on I-5 throughout much of the Project Area.

Under the No-Build Alternative, I-5 and the Broadway/Weidler interchange and most of the local transportation network in the Project Area would remain in its current configuration, with the exception of those actions included in the Metro 2014 *Regional Transportation Plan* financially constrained project list (Metro 2014).<sup>4</sup> One of these actions includes improvements to the local street network on the Broadway/Weidler corridor within the Project Area. The proposed improvements include changes to N/NE Broadway and N/NE Weidler from the Broadway Bridge to NE 7th Avenue. The current design concept would remove and reallocate one travel lane on both N/NE Broadway and N/NE Weidler to establish protected bike lanes

<sup>4</sup> Metro Regional Transportation Plan ID 11646. Available at: [https://www.oregonmetro.gov/sites/default/files/Appendix%201.1%20Final%202014%20RTP%20%20Project%20List%208.5x11%20for%20webpage\\_1.xls](https://www.oregonmetro.gov/sites/default/files/Appendix%201.1%20Final%202014%20RTP%20%20Project%20List%208.5x11%20for%20webpage_1.xls)

and reduce pedestrian crossing distances. Proposed improvements also include changes to turn lanes and transitions to minimize pedestrian exposure and improve safety. The improvements are expected to enhance safety for people walking, bicycling, and driving through the Project Area. Implementation is expected in 2018-2027.

## 2.2 Build Alternative

The Project alternatives development process was completed during the ODOT and City of Portland 2010-2012 N/NE Quadrant and I-5 Broadway/Weidler Interchange planning process. A series of concept alternatives were considered following the definition of Project purpose and need and consideration of a range of transportation-related problems and issues that the Project is intended to address.

In conjunction with the Stakeholder Advisory Committee (SAC) and the public during this multi-year process, ODOT and the City of Portland studied more than 70 design concepts, including the Build Alternative, via public design workshops and extensive agency and stakeholder input. Existing conditions, issues, opportunities, and constraints were reviewed for the highway and the local transportation network. A total of 19 full SAC meetings and 13 subcommittee meetings were held; each was open to the public and provided opportunity for public comment. Another 10 public events were held, with over 100 attendees at the Project open houses providing input on the design process. Of the 70 design concepts, 13 concepts advanced for further study based on SAC, agency, and public input, with six concepts passing into final consideration.

One recommended design concept, the Build Alternative, was selected for development as a result of the final screening and evaluation process. The final I-5 Broadway/Weidler Facility Plan (ODOT 2012a) and recommended design concept, herein referred to as the Build Alternative, were supported by the SAC and unanimously adopted in 2012 by the Oregon Transportation Commission and the Portland City Council.<sup>5</sup> The features of the Build Alternative are described below.

The Build Alternative includes I-5 mainline improvements and multimodal improvements to the surface street network in the vicinity of the Broadway/Weidler interchange. The proposed I-5 mainline improvements include the construction of auxiliary lanes (also referred to as ramp-to-ramp lanes) and full shoulders between I-84 to the south and I-405 to the north, in both the NB and SB directions. See Section 2.2.1 for more detail.

Construction of the I-5 mainline improvements would require the rebuilding of the N/NE Weidler, N/NE Broadway, N Williams, and N Vancouver structures over I-5.

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<sup>5</sup> Resolution No. 36972, adopted by City Council October 25, 2012. Available at: <https://www.portlandoregon.gov/citycode/article/422365>

With the Build Alternative, the existing N/NE Weidler, N/NE Broadway, and N Williams overcrossings would be removed and rebuilt as a single highway cover structure over I-5 (see Section 2.2.2). The existing N Vancouver structure would be removed and rebuilt as a second highway cover, including a new roadway crossing connecting N/NE Hancock and N Dixon Streets. The existing N Flint Avenue structure over I-5 would be removed. The I-5 SB on-ramp at N Wheeler would also be relocated to N/NE Weidler at N Williams, via the new Weidler/Broadway/Williams highway cover. A new bicycle and pedestrian bridge over I-5 would be constructed at NE Clackamas Street, connecting Lloyd with the Rose Quarter (see Section 2.2.4.3).

Surface street improvements are also proposed, including upgrades to existing bicycle and pedestrian facilities and a new center-median bicycle and pedestrian path on N Williams between N/NE Weidler and N/NE Broadway (see Section 2.2.4.4).

### 2.2.1 I-5 Mainline Improvements

The Build Alternative would modify I-5 between I-84 and I-405 by adding safety and operational improvements. The Build Alternative would extend the existing auxiliary lanes approximately 4,300 feet in both NB and SB directions and add 12-foot shoulders (both inside and outside) in both directions in the areas where the auxiliary lane would be extended. Figure 2 illustrates the location of the proposed auxiliary lanes. Figure 3 illustrates the auxiliary lane configuration, showing the proposed improvements in relation to the existing conditions. Figure 4 provides a cross section comparison of existing and proposed conditions, including the location of through lanes, auxiliary lanes, and highway shoulders.

A new NB auxiliary lane would be added to connect the I-84 WB on-ramp to the N Greeley off-ramp. The existing auxiliary lane on I-5 NB from the I-84 WB on-ramp to the NE Weidler off-ramp and from the N Broadway on-ramp to the I-405 off-ramp would remain.

The new SB auxiliary lane would extend the existing auxiliary lane that enters I-5 SB from the N Greeley on-ramp. The existing SB auxiliary lane currently ends just south of the N Broadway off-ramp, in the vicinity of the Broadway overcrossing structure.

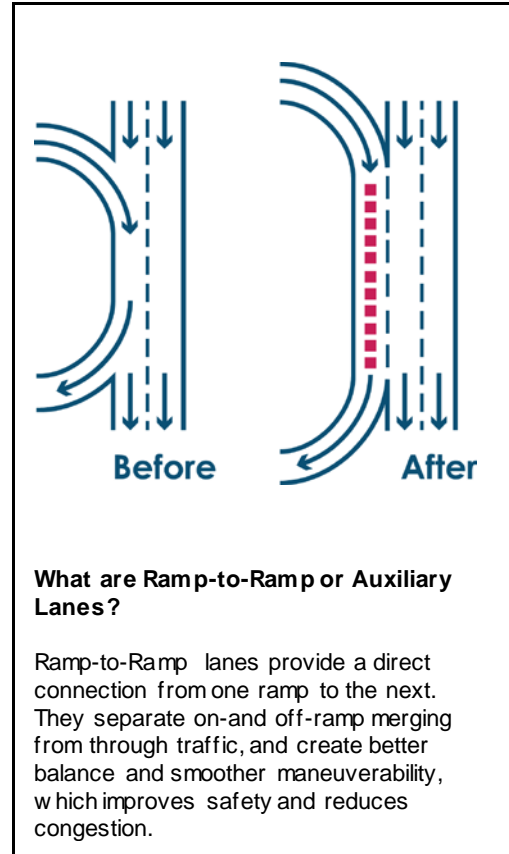


Figure 2. Auxiliary Lane/Shoulder Improvements

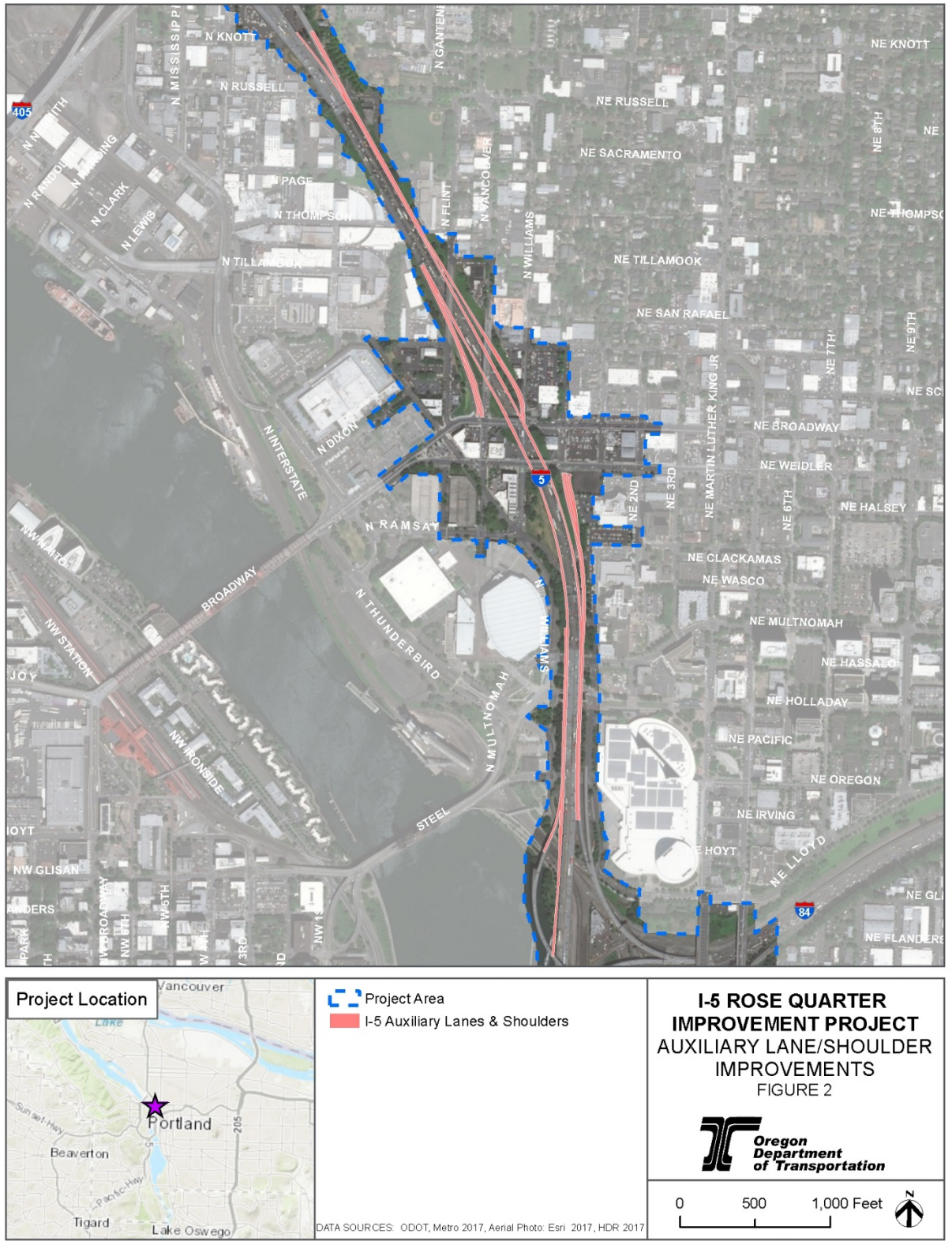
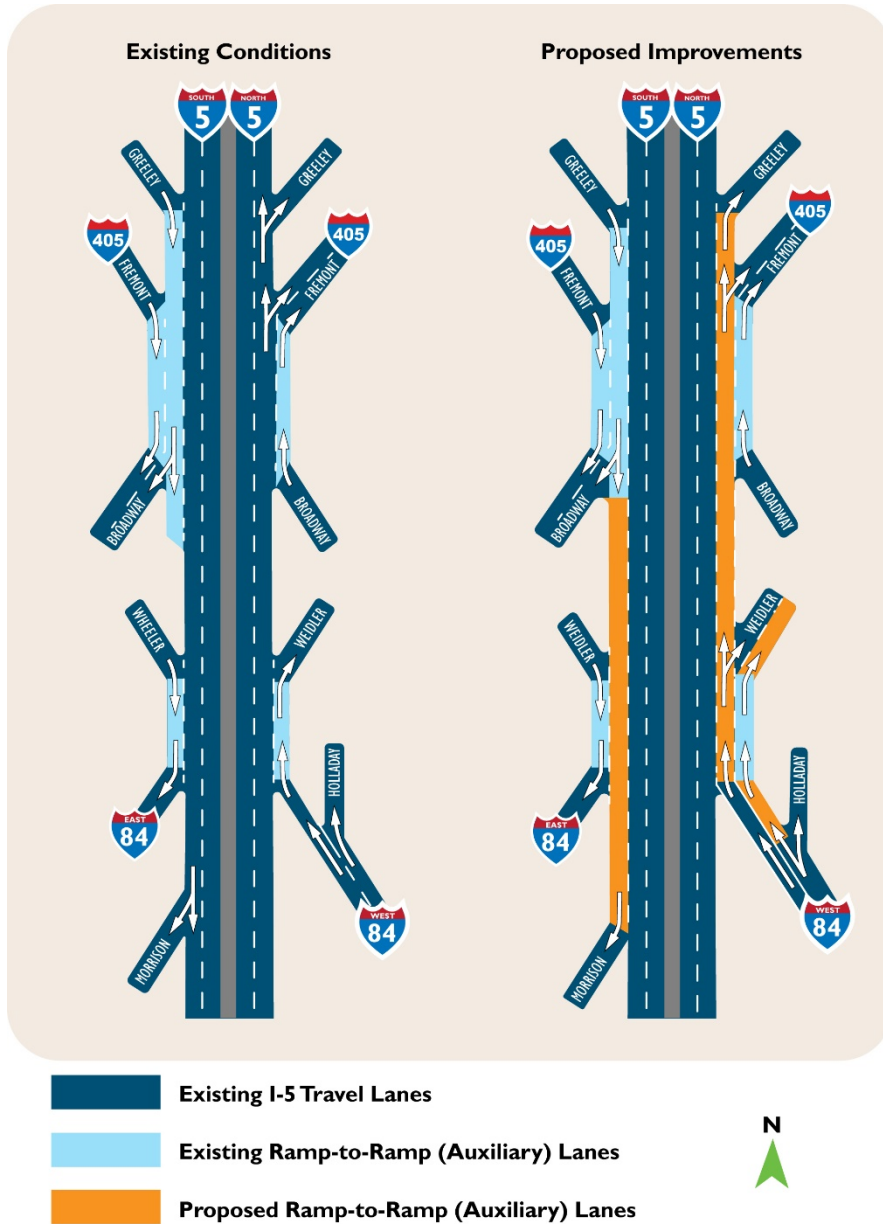
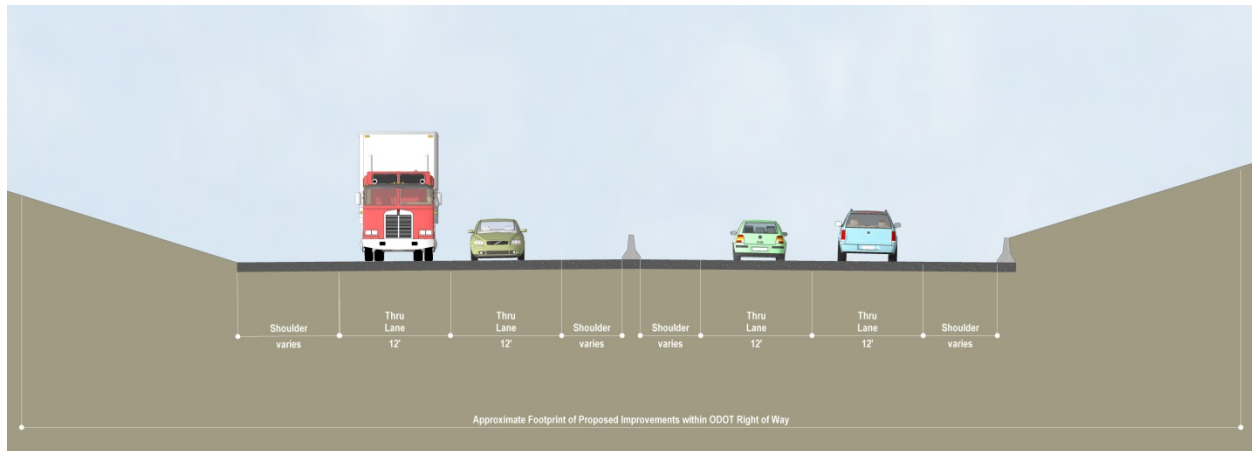


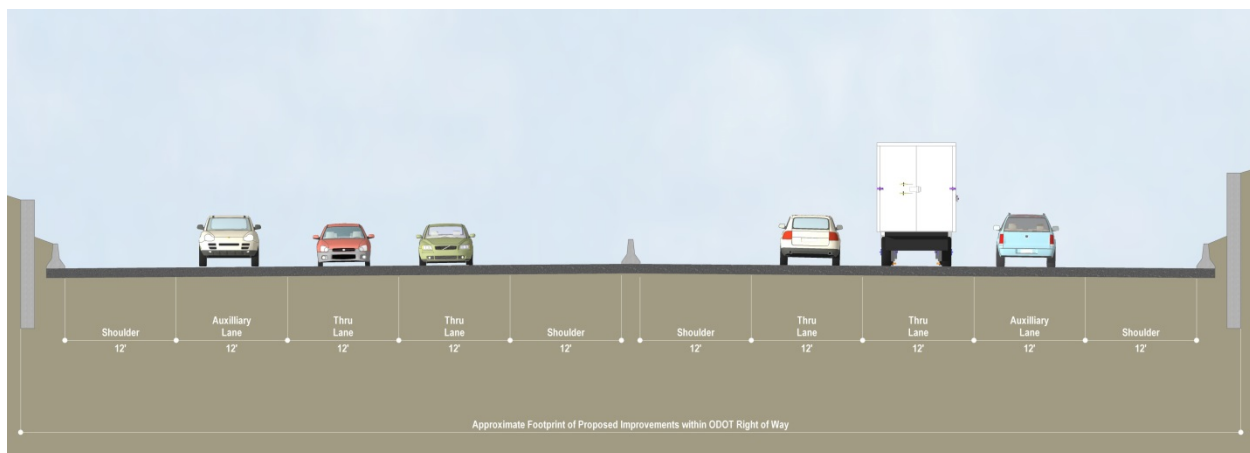
Figure 3. I-5 Auxiliary (Ramp-to-Ramp) Lanes – Existing Conditions and Proposed Improvements



**Figure 4. I-5 Cross Section (N/NE Weidler Overcrossing) – Existing Conditions and Proposed Improvements**



**Existing Lane Configuration**



**Proposed Lane Configuration**

Under the Build Alternative, the SB auxiliary lane would be extended as a continuous auxiliary lane from N Greeley to the Morrison Bridge and the SE Portland/Oregon Museum of Science and Industry off-ramp. Figure 4 presents a representative cross section of I-5 (south of the N/NE Weidler overcrossing within the Broadway/Weidler interchange area), with the proposed auxiliary lanes and shoulder, to provide a comparison with the existing cross section.

The addition of 12-foot shoulders (both inside and outside) in both directions in the areas where the auxiliary lanes would be extended would provide more space to allow vehicles that are stalled or involved in a crash to move out of the travel lanes. New shoulders would also provide space for emergency response vehicles to use to access an incident within or beyond the Project Area.

No new through lanes would be added to I-5 as part of the Build Alternative; I-5 would maintain the existing two through lanes in both the NB and SB directions.



## 2.2.2 Highway Covers

### 2.2.2.1 Broadway/Weidler/Williams Highway Cover

To complete the proposed I-5 mainline improvements, the existing structures crossing over I-5 must be removed, including the roads and the columns that support the structures. The Build Alternative would remove the existing N/NE Broadway, N/NE Weidler, and N Williams structures over I-5 to accommodate the auxiliary lane extension and new shoulders described in Section 2.2.1.

The structure replacement would be in the form of the Broadway/Weidler/Williams highway cover (Figure 5). The highway cover would be a wide bridge that spans east-west across I-5, extending from immediately south of N/NE Weidler to immediately north of N/NE Broadway to accommodate passage of the Broadway/Weidler couplet. The highway cover would include design upgrades to make the structure more resilient in the event of an earthquake.

**Figure 5. Broadway/Weidler/Williams and Vancouver/Hancock Highway Covers**



The highway cover would connect both sides of I-5, reducing the physical barrier of I-5 between neighborhoods to the east and west of the highway while providing additional surface area above I-5. The added surface space would provide an opportunity for new and modern bicycle and pedestrian facilities and public spaces when construction is complete, making the area more connected, walkable, and bike friendly.

### 2.2.2.2 N Vancouver/N Hancock Highway Cover

The Build Alternative would remove and rebuild the existing N Vancouver structure over I-5 as a highway cover (Figure 5). The Vancouver/Hancock highway cover would be a concrete or steel platform that spans east-west across I-5 and to the north and south of N/NE Hancock. Like the Broadway/Weidler/Williams highway cover, this highway cover would provide additional surface area above I-5. The highway cover would provide an opportunity for public space and a new connection across I-5 for all modes of travel. A new roadway connecting neighborhoods to the east with the Lower Albina area and connecting N/NE Hancock to N Dixon would be added to the Vancouver/Hancock highway cover (see element “A” in Figure 6).

### 2.2.3 Broadway/Weidler Interchange Improvements

Improvements to the Broadway/Weidler interchange to address connections between I-5, the interchange, and the local street network are described in the following subsections and illustrated in Figure 6.

#### 2.2.3.1 Relocate I-5 Southbound On-Ramp

The I-5 SB on-ramp is currently one block south of N Weidler near where N Wheeler, N Williams, and N Ramsay come together at the north end of the Moda Center. The Build Alternative would remove the N Wheeler on-ramp and relocate the I-5 SB on-ramp north to N Weidler. Figure 6 element “B” illustrates the on-ramp relocation.

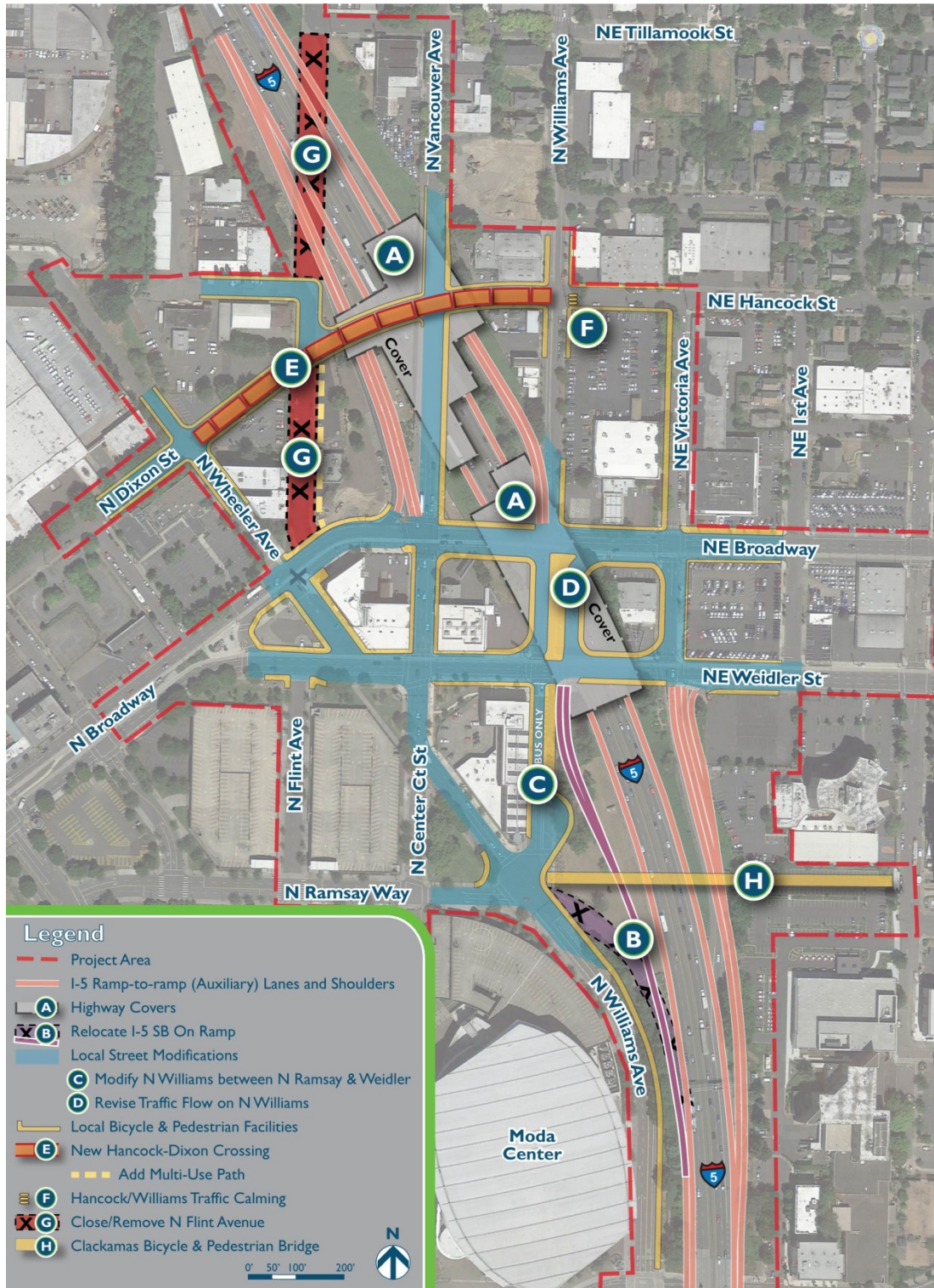
#### 2.2.3.2 Modify N Williams between Ramsay and Weidler

The Build Alternative would modify the travel circulation on N Williams between N Ramsay and N Weidler. This one-block segment of N Williams would be closed to through-travel for private motor vehicles and would only be permitted for pedestrians, bicycles, and public transit (buses) (Figures 6 and 7). Private motor vehicle and loading access to the facilities at Madrona Studios would be maintained.

#### 2.2.3.3 Revise Traffic Flow on N Williams between Weidler and Broadway

The Build Alternative would revise the traffic flow on N Williams between N/NE Weidler and N/NE Broadway. For this one-block segment, N Williams would be converted from its current configuration as a two-lane, one-way street in the NB direction with a center NB bike lane to a reverse traffic flow two-way street with a 36-foot-wide median multi-use path for bicycles and pedestrians. These improvements are illustrated in Figures 6 and 7.

Figure 6. Broadway/Weidler Interchange Area Improvements



**Figure 7. Conceptual Illustration of Proposed N Williams Multi-Use Path and Revised Traffic Flow**



The revised N Williams configuration would be designed as follows:

- Two NB travel lanes along the western side of N Williams to provide access to the I-5 NB on-ramp, through movements NB on N Williams, and left-turn movements onto N Broadway.
- A 36-foot-wide center median with a multi-use path permitted only for bicycles and pedestrians. The median multi-use path would also include landscaping on both the east and west sides of the path.
- Two SB lanes along the eastern side of N Williams to provide access to the I-5 SB on-ramp or left-turn movements onto NE Weidler.

## 2.2.4 Related Local System Multimodal Improvements

### 2.2.4.1 New Hancock-Dixon Crossing

A new roadway crossing would be constructed to extend N/NE Hancock west across and over I-5, connecting it to N Dixon (see Figure 6, element “E”). The new crossing would be constructed on the Vancouver/Hancock highway cover and would provide a new east-west crossing over I-5. Traffic calming measures would be incorporated east of the intersection of N/NE Hancock and N Williams to discourage use of NE Hancock by through motor vehicle traffic. Bicycle and pedestrian through travel would be permitted (see Figure 6, element “F”).

#### 2.2.4.2 Removal of N Flint South of N Tillamook and Addition of New Multi-Use Path

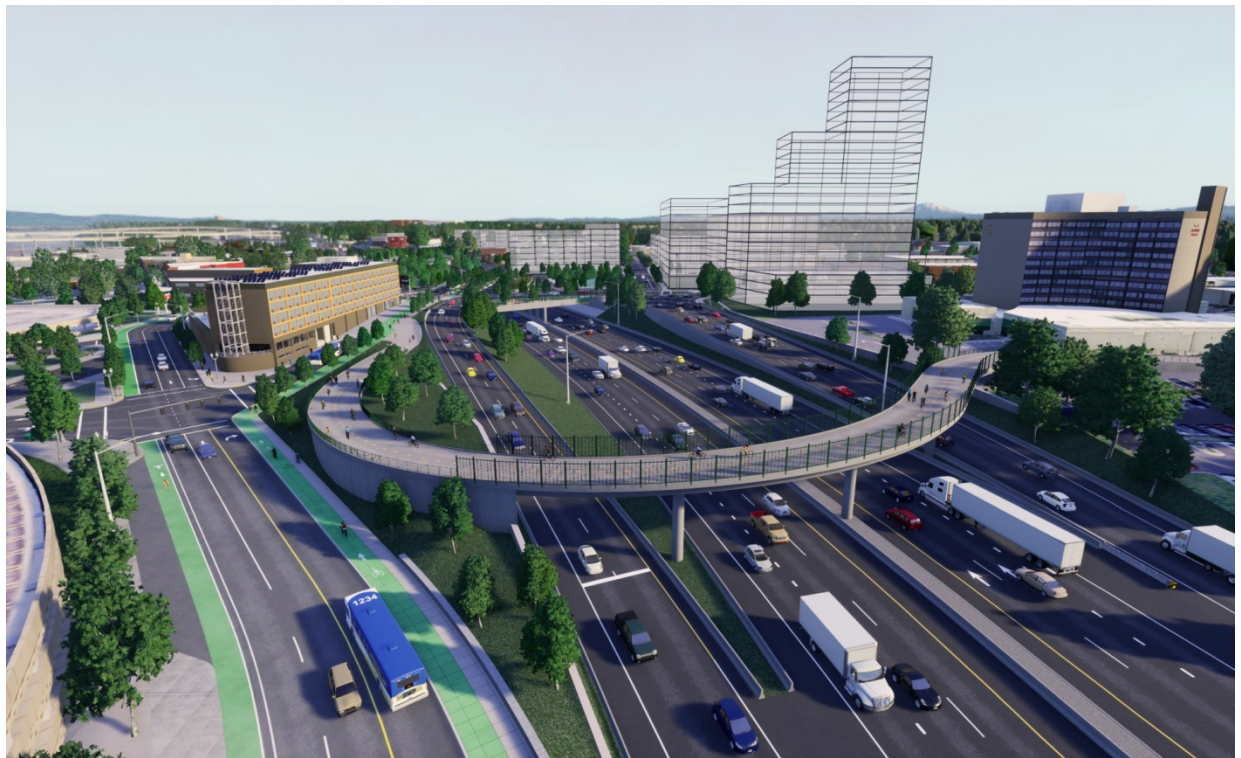
The existing N Flint structure over I-5 would be removed, and N Flint south of N Russell Street would terminate at and connect directly to N Tillamook (see Figure 6, element “G”). The portion of Flint between the existing I-5 overcrossing and Broadway would be closed as a through street for motor vehicles. Driveway access would be maintained on this portion of N Flint to maintain local access.

A new multi-use path would be added between the new Hancock-Dixon crossing and Broadway at a grade of 5 percent or less to provide an additional travel route option for people walking and biking. The new multi-use path would follow existing N Flint alignment between N Hancock and N Broadway (see Figure 6, element “G”).

#### 2.2.4.3 Clackamas Bicycle and Pedestrian Bridge

South of N/NE Weidler, a new pedestrian- and bicycle-only bridge over I-5 would be constructed to connect NE Clackamas Street near NE 2nd Avenue to the N Williams/ N Ramsay area (see Figure 6, element “H,” and Figure 8). The Clackamas bicycle and pedestrian bridge would offer a new connection over I-5 and would provide an alternative route for people walking or riding a bike through the Broadway/Weidler interchange.

**Figure 8. Clackamas Bicycle and Pedestrian Crossing**



#### 2.2.4.4 Other Local Street, Bicycle, and Pedestrian Improvements

The Build Alternative would include new widened and well-lit sidewalks, Americans with Disabilities Act-accessible ramps, high visibility and marked crosswalks, widened and improved bicycle facilities, and stormwater management on the streets connected to the Broadway/Weidler interchange.<sup>6</sup>

A new two-way cycle track would be implemented on N Williams between N/NE Hancock and N/NE Broadway. A two-way cycle track would allow bicycle movement in both directions and would be physically separated from motor vehicle travel lanes and sidewalks. This two-way cycle track would connect to the median multi-use path on N Williams between N/NE Broadway and N/NE Weidler.

The bicycle lane on N Vancouver would also be upgraded between N Hancock and N Broadway, including a new bicycle jug-handle at the N Vancouver and N Broadway intersection to facilitate right-turn movements for bicycles from N Vancouver to N Broadway.

Existing bicycle facilities on N/NE Broadway and N/NE Weidler within the Project Area would also be upgraded, including replacing the existing bike lanes with wider, separated bicycle lanes. New bicycle and pedestrian connections would also be made between the N Flint/N Tillamook intersection and the new Hancock-Dixon connection.

These improvements would be in addition to the new Clackamas bicycle and pedestrian bridge, upgrades to bicycle and pedestrian facilities on the new Broadway/Weidler/Williams and Vancouver/Hancock highway covers, and new median multi-use path on N Williams between N/NE Broadway and N/NE Weidler described above and illustrated in Figure 6.

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<sup>6</sup> Additional details on which streets are included are available at <http://i5rosequarter.org/local-street-bicycle-and-pedestrian-facilities/>

### 3 Regulatory Framework

The methods used to complete the *Hazardous Materials Technical Report* are generally consistent with portions of the American Society for Testing and Materials (ASTM) Standard E 1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM 2013) and ASTM Standard E2600-10, *Standard Guide for Vapor Encroachment Screening on Property Involving Real Estate Transactions* (ASTM 2010).

The purpose of ASTM E 1527-13 is to define good commercial and customary practice in the United States of America for conducting an environmental site assessment of a parcel of commercial real estate with respect to the range of contaminants within the scope of the Comprehensive Environmental Response, Compensation and Liability Act (42 United States Code 9601) and petroleum products. The ASTM practice is intended primarily as an approach to identifying potential sources of contamination that could impact the Area of Potential Impact (API) or that construction of the selected alternative could exacerbate and cause additional liability to ODOT.

Additional methods used to complete the *Hazardous Materials Technical Report* are generally consistent with portions of the 1990 American Association of State Highway Transportation Officials (AASHTO) *Hazardous Waste Guidance for Project Development* (AASHTO 1990) and the 2010 ODOT *Hazardous Materials Program Procedures Guidebook* (ODOT 2010). The 2010 ODOT *Hazardous Materials Program Procedures Guidebook* specifies two ODOT Policies regarding hazardous materials issues (revised December 12, 2008):

- ENV 16-01 “Hazardous Materials and Wastes” sets forth ODOT’s policy for the use and control of hazardous materials and wastes in compliance with federal and state laws, rules, and regulations in an efficient and cost-effective manner.
- ENV 16-02 “Contaminated Site Management,” sets forth ODOT’s policy for “investigation and cleanup of properties and structures that may be contaminated with hazardous materials...” This policy includes guidance for acquiring property, investigating hazardous materials and contamination, managing contaminated sites, considering liability and funding sources, and dealing with third parties who have impacted ODOT right of way.

Section 4 of the 2010 ODOT *Hazardous Materials Program Procedures Guidebook* provides guidance on determining ODOT’s responsibility (i.e., liability) for contaminated sites.

## 4 Methodology and Data Sources

This section describes the methodology used to complete the *Hazardous Materials Technical Report* for the Project. The purpose of this report is to identify potential sources of contamination that could be disturbed or released by the Project, determine whether the Build Alternative could expose people or the environment to any existing contamination within the API, and identify any measures for avoidance, minimization, or mitigation for these potential exposures (i.e., disturbances).

The analysis included assessment of hazardous wastes, hazardous substances, toxic substances, and hazardous materials (as those terms are used in applicable federal and Oregon statutes, regulations, and administrative rules governing environmental contamination, collectively referred to as the “Hazardous Materials”). The scope of work for this report did not include an evaluation of regulatory compliance, the testing of soil or groundwater, and surveys or sampling for asbestos, lead paint, drinking water, or radon.

The hazardous materials analysis was conducted in conformance with applicable ODOT-recommended procedures, including the 1990 AASHTO *Hazardous Waste Guidance for Project Development* (AASHTO 1990) and the 2010 ODOT *Hazardous Materials Program Procedures Guidebook* (ODOT 2010).

### 4.1 Project Area and Area of Potential Impact

The API for potential hazardous materials impacts includes the Project Area and up to a 1.0-mile-wide buffer extending from the Project Area boundary, shown on Figure 9.

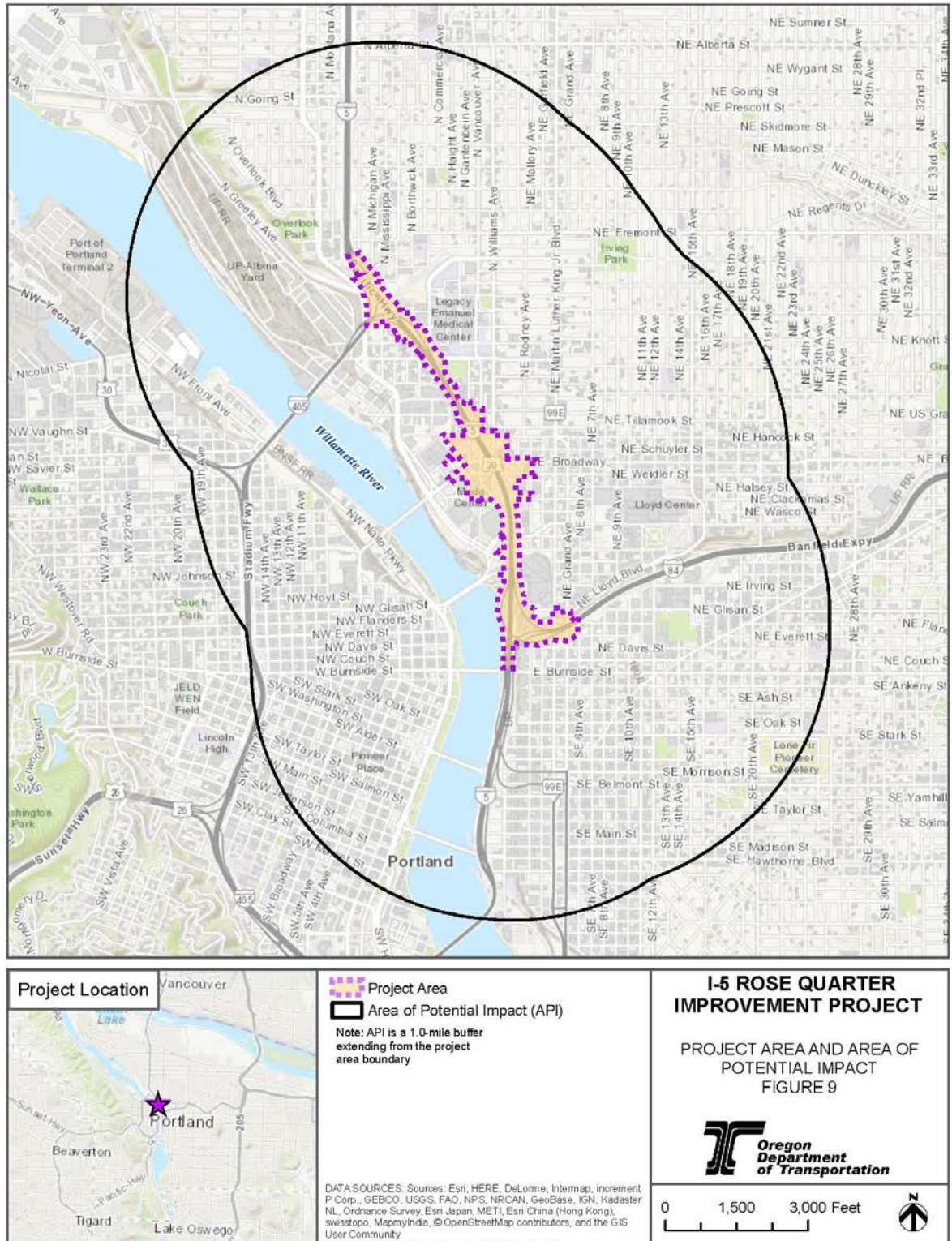
### 4.2 Resource Identification and Evaluation

The following tasks were conducted to identify Hazardous Materials Sites within the API. Hazardous Materials Sites within the API are hereafter referred to as Sites of Concern:

- **Develop Initial List of Sites:** A list of potential Sites of Concern in the API was developed and prioritized. In order to determine priority, criteria such as location relative to the Project Area (i.e., within the Project Area, within 1,000 feet of the Project Area, or greater than 1,000 feet from the Project Area), site regulatory status (i.e., file received closure, no violations found), hydrologic gradient relative to the Project Area (i.e., downgradient or crossgradient), and potential for ground disturbance by the Project in each location were considered.
- **Perform Field Survey:** A field survey of the API was conducted on July 25 and 28, 2017. During the survey, Project staff verified locations of the sites on the initial Sites of Concern list, and current conditions in the Project Area with regard to hazardous materials were observed.



Figure 9. Project Area and Area of Potential Impact



- **Review Regulatory Files:** Following the field survey, hard-copy Oregon Department of Environmental Quality (DEQ) files for 36 priority sites were reviewed.

#### 4.2.1 Development of Initial Site List

An initial Sites of Concern list was developed by reviewing a previous baseline report and obtaining current summaries of site listings from regulatory databases that track environmental concerns.

The *Environmental Baseline Report N/NE Quadrant and Broadway/Weidler Plans Project* (URS 2011) was reviewed for existing conditions analysis and findings within the hazardous materials API. Sites of Concern listings from the report were compared to sites identified for this *Hazardous Material Technical Report*.

Environmental Data Resources, Inc., (EDR) of Shelton, Connecticut, was contracted to conduct a search of state and federal databases for Sites of Concern located within the hazardous materials API. A map showing the hazardous materials API (and the Build Alternative) was submitted to EDR. EDR used the map to cross-reference against the U.S. Environmental Protection Agency (EPA), DEQ, and Oregon Hazardous Materials Incidents (OR HAZMAT) databases within specific radii around the Project Area. EDR generated a summary database report (the EDR Report), which is included as Appendix A. Below is a list of the environmental databases checked and the specific distances from the Project Area centerline that were used by EDR for each database search:

Database	Search Distance
EPA National Priority List (NPL)	1.0 mile
DEQ Environmental Cleanup Site Information (ECSI)	1.0 mile
EPA Superfund Enterprise Management System	0.5 mile
DEQ Solid Waste Facilities/Landfill Sites	0.5 mile
DEQ Leaking Underground Storage Tanks (LUST)	0.25 mile
EPA Resource Conservation and Recovery Act (RCRA) Generators	0.25 mile
DEQ Underground Storage Tanks (USTs)	0.25 mile
OR HAZMAT	0.25 mile
Oregon Spill Data	0.25 mile

The EDR Report also included “orphan” sites. Orphan sites are locations that EDR was unable to map due to insufficient or contradicting address information. Additional research and local knowledge were used by the author to determine whether these sites were located within the hazardous materials API.

The Oregon State Fire Marshal (OSFM) Hazardous Substance Incident online database was also reviewed for additional information concerning the OR HAZMAT listings.

Sites within the search radii but located on the west side of the Willamette River were excluded from consideration. Hydrologic features such as large rivers typically prevent the migration of hazardous materials across them, and any sites west of the river would have low potential to affect the Project, which is located east of the river.

Using the Initial Site List, a ranking system was developed for these Sites of Concern, based on the potential for Project activities to intersect locations of existing contamination in the API. Each Site of Concern was identified as a **low-**, **moderate-**, **medium-**, or **high-**priority site:

- **Low-**priority rankings indicate the potential presence of hazardous materials in soil and groundwater beneath the site is unlikely, and no further action is needed; therefore, these sites have a low potential for hazardous materials being encountered by the Project. All sites downgradient of the Project Area were ranked as low. Low-priority sites include non-commercial USTs without known releases, small spills with little or no potential for migration (i.e., resolved closed case LUST), or sites that have resolved notices of non-compliance for storage or RCRA generator activities.
- **Moderate-**priority rankings indicate that the site has not been fully investigated or limited information was available for review and the potential presence of hazardous materials in the soil or groundwater beneath the site is unknown; therefore, these sites have a moderate potential for hazardous materials being encountered by the Project.
- **Medium-**priority rankings indicate that hazardous materials are potentially present in soil and groundwater beneath the site and further action or investigation may be warranted; therefore, these sites have a medium potential for hazardous materials being encountered and disturbed by the Project. Medium-priority ranked sites include unresolved (i.e., open case) LUST, solid waste facility/landfill, HAZMAT, spill sites, or sites that have historically manufactured hazardous substances.
- **High-**priority rankings indicate that hazardous materials are present in the soil or groundwater and further action or investigation is recommended; therefore, these sites have a high potential of hazardous materials being encountered and potentially disturbed by the Project. High-priority ranked sites include open or conditionally closed cleanup sites or brownfields (i.e., NPL and ECSI), or commercial LUST sites with either high levels or a large lateral (i.e., horizontal) extent of contamination.

During development of this report, the Project Area was modified to extend the northern tip approximately 1,000 feet to the northwest. This modification resulted in a slight modification to the 1.0-mile API buffer, adjusting it approximately 1,000 feet out from the Project Area boundary (specifically, to the northwest, north, and northeast).

Based on review of the environmental database report generated prior to the Project Area modification, the development of Sites of Concern was not affected, according to the methodology described herein. Facilities identified in the environmental database report located within the adjusted 1.0-mile API buffer in the vicinity of the modified northern Project Area boundary are not expected to impact the Project, based on their topographical location (i.e., hydrologically crossgradient or downgradient) and/or regulatory status (i.e., case closed or no reported contamination).

#### 4.2.2 Field Survey

On July 25 and 28, 2017, sites from the initial Sites of Concern list were visually inspected to document representative conditions in the API. All locations were observed from the public right of way only. Photographs were taken of representative locations and high-priority Sites of Concern and are included in Appendix B of this report. The following observations were documented during the field survey:

- Whether conditions appeared changed from the most recent regulatory report
- Whether hazardous materials or conditions were apparent from the right of way
- Whether addresses or site names as recorded in the regulatory databases matched current addresses or business names

#### 4.2.3 File Review

On August 8, 2017, environmental case files for 36 priority listings in the hazardous materials API were reviewed at the DEQ Northwest Regional Office. Objectives of the file review included the following:

- Determining whether any known contamination remains present at these sites
- Noting the types and levels of contamination present
- Identifying the specific location of contamination within each site

### 4.3 Assessment of Impacts

Potential impacts to rights of way and properties containing hazardous materials were assessed using collected data and information about the Project, specifically:

- Assessing the potential for encountering contaminated soil and/or groundwater during construction activities (i.e., Sites of Concern ranked as medium, moderate, and/or high priority);
- Evaluating properties identified for acquisition that are known to be contaminated or have a high probability of being contaminated with hazardous materials (i.e., Sites of Concern ranked as medium, moderate, and/or high priority, in addition to on-site buildings likely to have lead-based paint [LBP] or asbestos-containing building materials [ACBM]); and

- Identifying activities that have the potential to result in spills (i.e., handling hazardous materials on acquired properties).

## 4.4 Cumulative Impacts

The cumulative impacts analysis considered the Project's impacts combined with other past, present, and reasonably foreseeable future actions that would result in environmental impacts in the Project Area. A list of reasonably foreseeable future actions was developed with the City of Portland and Metro staff. This list includes any permitted public and private construction projects within the Project Area and any projects that are in the permit application process. Appendix C includes the list of reasonably foreseeable future actions considered for this assessment. The cumulative impact assessment qualitatively assessed the magnitude of impacts expected from reasonably foreseeable future actions in combination with anticipated Project impacts. This assessment also identified the contribution of the Project to overall cumulative impacts.

## 5 Affected Environment

The Project Area is located to the east of the Willamette River; distance from the river ranges from approximately 2,400 feet (0.46 mile) at the north end of the Project Area to immediately adjacent, with limited in-water work at the southern end of the Project Area. The topography of the Project Area is variable, ranging in elevation from approximately 30 feet above mean sea level (AMSL) in the northern-most portion to approximately 120 feet AMSL in the central-most portion. The topographic gradient of the Project Area generally slopes to the west/southwest, toward the Willamette River. The API's 1.0-mile buffer extends from the Project Area boundary and crosses the Willamette River to the west; the *Hazardous Materials Technical Report* only evaluates Sites of Concern located on the east side of the Willamette River. The topography within the API, therefore, ranges in elevation from less than 30 feet AMSL to approximately 220 feet AMSL (Google Earth 2018).

Depth to groundwater beneath the Project Area is reported to be less than 100 feet below ground surface (bgs), and depth to groundwater beneath the API is reported to be as high as 300 feet bgs (USGS 2017). Based on area topography, groundwater flow is generally inferred to be westerly/southwesterly, following the topographic gradient towards the Willamette River. As such, the Project Area is located upgradient of the Willamette River.

The hazardous materials API includes a mix of industrial, commercial, and residential land uses in a highly developed area of Portland. The risk of encountering contaminated soil is higher in areas that have a long and varied history of industrial and commercial land use, such as the area within the API.

The database review identified 570 regulatory listings within the API, on both the west and east sides of the Willamette River. This total refers to the listings included in regulatory databases and not the actual Site of Concern, as a single Site of Concern may be listed in multiple environmental databases. During the field survey, the Project team observed and identified two additional Sites of Concern that were not listed in environmental regulatory databases: a vacant and unoccupied building/property and an active electrical substation.

The database review was limited to sites located on the east side of the Willamette River and hydraulically upgradient of the Project Area. In general, sites that are located downgradient of the Project Area are unlikely to affect environmental conditions within the Project Area, as soil and groundwater contamination generally spreads away from upgradient locations. For the Project Area, the downgradient flow would be toward the Willamette River, following the topographic gradient. However, downgradient-identified Sites of Concern were included in the evaluation when located within 1,000 feet of the Project Area and if they could potentially be disturbed during construction of the Build Alternative.

Following removal of redundant listings, the final number of Sites of Concern within the API was 182. Of this total, 43 Sites of Concern (24%) are located within the Project Area, and 139 Sites of Concern (76%) are located outside of the Project Area (evaluated as either being located within 1,000 feet or greater than 1,000 feet from the Project Area). Detailed summary information for the identified Sites of Concern, their associated database listings, and impact rankings (with respect to the Build Alternative) are included in Appendix D. Photos of the field survey (i.e., Sites of Concern and the API) are included in Appendix B.

In addition to specific Sites of Concern, the field survey identified several area-wide sources of potentially hazardous materials that included transient camps, overhead powerlines, pole-mounted transformers, street and property lights, and traffic signal lights. Additionally, it is presumed that within the Project Area, surface soil adjacent to state highways is contaminated with hazardous materials to a depth of 18 inches (1.5 feet) bgs (ODOT 2014). These sources are discussed further in Section 5.2.

Some Project work may also occur in, or near, the Willamette River. A portion of the Willamette River, downstream from proposed Project in-water work, is within the Portland Harbor Cleanup Superfund site, an area of past contamination. The portion of the river where in-water work would occur is within an additional study area, identified as the Lower Downtown Reach, in which ODOT and the City of Portland have conducted additional contaminated sediment investigations. Sediment sampling was conducted in the River Mile 12.1 subarea, in which the Project in-water work would occur, in April 2018. Preliminary results from this sampling indicate that contamination in this subarea is not significant, and these results “do not alter DEQ’s prior conclusion that this subarea is of low priority, and additional investigation appears unwarranted at this time” (GSI Water Solutions Inc. 2018).

High- and medium-priority ranked Sites of Concern are discussed individually in the following subsections, as are cases where further review or field observations resulted in lowering a Site of Concern’s priority ranking, despite its location near the Project Area. See Appendix D for information on other moderate- and low-priority Sites of Concern.

Table 3 summarizes the Sites of Concern and their associated impact rankings with respect to the Build Alternative, based on review and evaluation of the environmental database report.

**Table 3. Hazardous Materials Sites of Concern Impact Ranking Summary**

Priority Ranking <sup>1</sup>	Sites of Concern within API	Within Project Area	Within 1,000 Feet of Project Area	More Than 1,000 Feet from Project Area	Summary of Environmental Database Listings
High	4	4	0	0	Spill (fuel) and LUST (soil and groundwater contamination)
Medium	2	2	0	0	LUST (soil contamination) and hazardous waste generator
Moderate	6	4	2	0	LUST (soil contamination), UST decommissioned (contamination unknown), hazardous waste generator
Low	170	33	112	25	Spill (fuel, oils, and other chemicals) and LUST (soil and groundwater contamination); cleanup complete, no violations, and closed status/NFA
<b>TOTAL</b>	<b>182</b>	<b>43</b>	<b>114</b>	<b>25</b>	

Notes: API = Area of Potential Impact; ECSI = Environmental Cleanup Site Information; HAZMAT = [Oregon] Hazardous Materials Incidents; LUSTs = leaking underground storage tanks; NFA = No Further Action; NPL = National Priority List; RCRA = Resource Conservation and Recovery Act; UST = underground storage tank

<sup>1</sup> High priority – indicates that hazardous materials in the soil or groundwater have a high potential to impact the Project, and further action or investigation is recommended.

Medium priority – indicates that hazardous materials that could potentially impact the Project are present, and further action or investigation may be warranted

Moderate priority – indicates that the site has not been fully investigated or limited information was available for review; therefore, hazardous materials that could impact the Project may be present in soil and groundwater in these areas.

Low priority – indicates the potential for hazardous materials to be present in soil and groundwater beneath the API is unlikely, and no further action is needed. Low -priority sites are also all sites downgradient of the Project Area.

## 5.1 Sites of Concern

Sites of Concern were evaluated based on the following criteria:

- Environmental regulatory database report listing (i.e., suspect and reported contamination-related databases)
- Hydraulic gradient and topographic location (i.e., upgradient and/or downgradient) in relation to the Project Area



- Distance to the Project Area (either within the Project Area boundary, within 1,000 feet of the Project Area boundary, or greater than 1,000 feet from the Project Area boundary).

Figure 10 shows the locations of the Sites of Concern within the API, identified by their individual Map ID number and color coded according to their priority ranking (i.e., red refers to a high-priority ranking; orange refers to a medium-priority ranking; yellow refers to a moderate-priority ranking; and green refers to a low-priority ranking). Detailed summary information for the Sites of Concern within the API, their associated environmental database report listing(s), and relative priority rankings (with respect to the Build Alternative), are discussed in the following subsections and in Appendix D.

### 5.1.1 High-Priority Sites of Concern

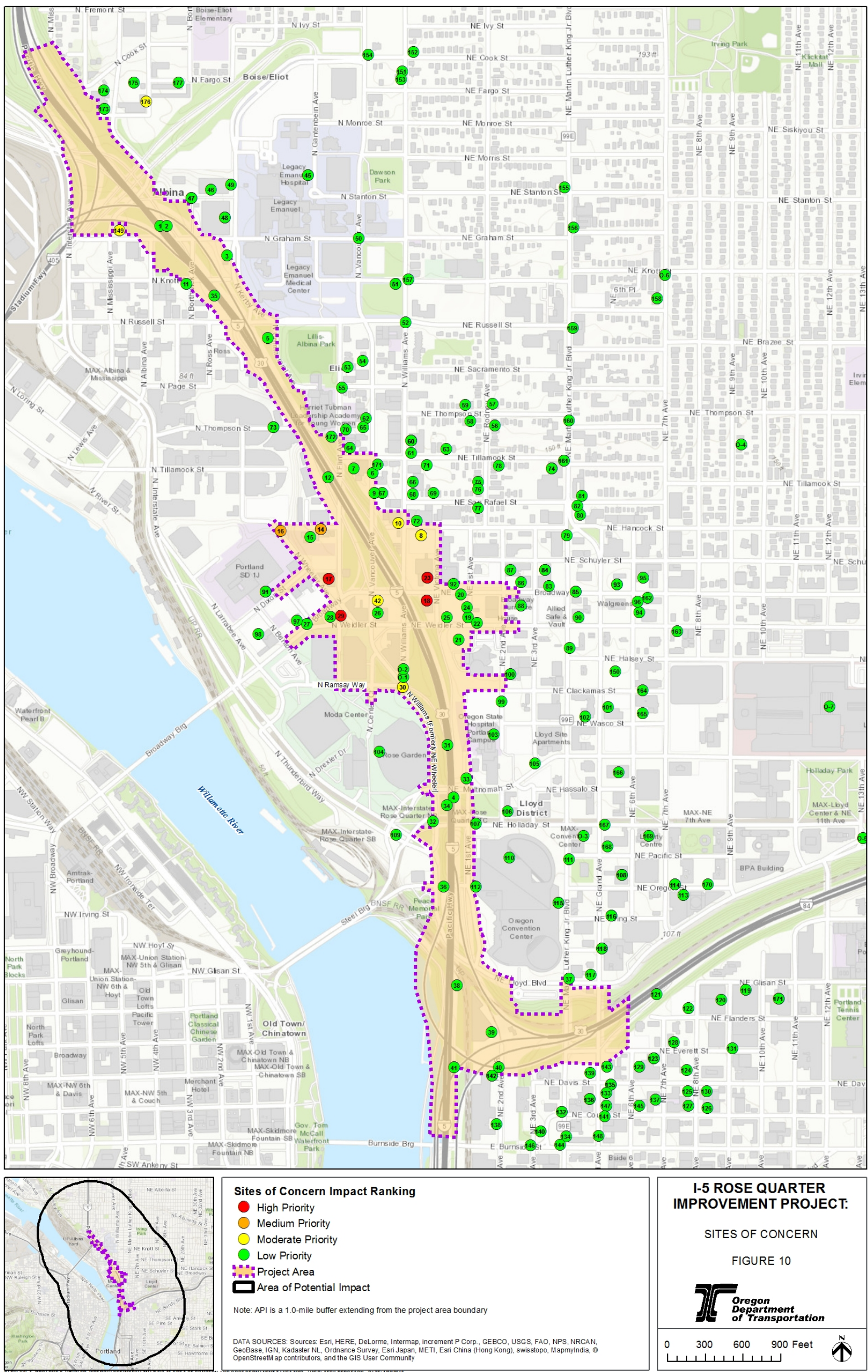
Four high-priority Sites of Concern are located within the API. These Sites of Concern are summarized below. Refer to Figure 10 and Appendix D.

**Site 17:** The Paramount Apartment building and associated parking lot is located within the Project Area at 253 N Broadway. A heating oil UST located under the sidewalk on N Wheeler was closed in place. An estimated 250 cubic yards of diesel-impacted soil remain in place around the UST. As Project activities are planned at the parking lot, this site is ranked as **high priority**. A portion of the parcel associated with the parking lot of this Site of Concern would be acquired (permanently) by ODOT to accommodate the new Hancock-Dixon crossing of I-5 while the remaining portion of the parcel would be used as temporary easement during construction.

**Site 18:** Sherwin-Williams is located within the Project Area at 30 NE Broadway. This property was observed currently operating as a retail paint sales facility. This Site of Concern would be directly impacted during construction activities of the Build Alternative. According to the DEQ file review, one UST was decommissioned at this Site of Concern; however, no petroleum contamination was reported. The Multnomah County Assessor's website lists the construction date of this building as 1965 (Multnomah County 2017). Based on the age of the building, painted surfaces may contain LBP and the building may contain ACBM. This Site of Concern is ranked **high priority** because LBP, ACBM, and residual petroleum from the UST may be encountered during Project activities. The parcel associated with this Site of Concern would be acquired (permanently) by ODOT.

**Site 23:** Shell Station #120678 is located within the Project Area at 15 NE Broadway. This Site of Concern is an active gasoline station with four USTs located on the west side of the property, adjacent to planned Project activities. This site is only listed on the UST database with no documented releases; however, based on the location of the USTs, this Site of Concern is ranked **high priority**. The parcel associated with this Site of Concern would be acquired (permanently) by ODOT.

Figure 10. Sites of Concern



**Site 29:** This Site of Concern is located within the Project Area at 240 N Broadway and is listed in the LUST database under “Heating Oil Tank.” The Site of Concern is located on a property currently occupied by a two-story commercial building. A 3,000-gallon UST was closed in place in 2007, and known soil contamination west of the building by N Wheeler remains in place. Because Project activities are planned in this location of the Project Area, this Site of Concern is ranked **high priority**.

### 5.1.2 Medium-Priority Sites of Concern

Two medium-priority Sites of Concern are located within the API. These Sites of Concern are summarized below. Refer to Figure 10 and Appendix D.

**Site 14:** Williamsen & Bleid is located within the Project Area at 1835 N Flint/270 N Hancock. This Site of Concern is a warehouse-style building operating as a commercial and industrial painting contractor. Two 55-gallon steel drums were observed at the exterior of the building during the field survey. This Site of Concern is listed in the Hazardous Waste Site (HWS), RCRA–Conditionally Exempt Small Quantity Generator (CESQG), UST, ECSI, and LUST databases. Two 1,000-gallon USTs were decommissioned and removed from the property in 1992. Petroleum-contaminated soil was reported at the property and allowed to remain in place under a NFA issued by the DEQ in 2002. Because Project activities would occur within the vicinity of this site and petroleum contamination is known to remain on-site in the soil, this Site of Concern is ranked **medium priority**. A portion of the parcel associated with this Site of Concern would be acquired (permanently) by ODOT.

**Site 16:** The Portland Public School (PPS) Fleet Garage/Multnomah County Blanchard Building is located within the Project Area at 301-401 N Dixon. This Site of Concern is listed in the LUST and RCRA-CESQG databases. Activities observed at this Site of Concern appear to include fleet vehicle maintenance and vehicle/equipment fueling. A retail-sized (1-gallon) plastic container of motor oil was observed on grass adjacent to a stormwater drain along N Wheeler. A large emergency generator and numerous vehicles and equipment were observed staged at the exterior of the building. Large emergency generators are typically powered by diesel fuel. Although the regulatory cases for this Site of Concern are closed regarding soil contamination, Project activities are planned immediately adjacent to this Site of Concern and past and ongoing fueling and vehicle maintenance present elevated risks of spills and releases; therefore, this Site of Concern is ranked as **medium priority**. The parcel associated with this Site of Concern is located adjacent to a parcel, a portion of which would be acquired (permanently) by ODOT.

### 5.1.3 Moderate- and Low-Priority Sites of Concern

Numerous low- and moderate-priority ranked Sites of Concern are located within the API. These Sites of Concern are summarized below. Refer to Figure 10 and Appendix D for more information on other moderate- and low-priority Sites of Concern.

**Site 30:** The Veterans Memorial Coliseum is located within the Project Area at 1401 N Wheeler and currently operates as a public sports complex. This site is listed in the RCRA-CESQG, UST, and LUST databases. According to reviewed records, two USTs were decommissioned, and soil contamination was reported. No violations are reported. No visual evidence of USTs (e.g., vent pipes, fill ports) was observed at this site during the field survey. This Site of Concern is, therefore, ranked as **moderate priority**. The parcel associated with this Site of Concern is located adjacent to a parcel that would be acquired (permanently) by ODOT.

**Site 149:** The ODOT Highway Division Fremont Bridge Maintenance Facility, located at 845 N Graham, is adjacent to the west and upgradient of the Project Area. This facility is listed in the RCRA-No Longer Regulated (NLR) database of the EDR Report, and no violations are reported. During the field survey, industrial washing of street-sweeping machines was observed occurring at the exterior, within a concrete containment bay. This site was not initially included as a Site of Concern, given its downgradient location from the Project Area. However, it is located directly beneath an elevated segment of I-5 and the Fremont Bridge. Street sweepings typically contain elevated levels of automotive fluids and metals such as lead and copper. As such, this Site of Concern is ranked as **moderate priority**.

**Site 176:** The Albina Yard, located at 3139 N Albina, is approximately 225 feet to the west and upgradient of the Project Area. This Site of Concern operates as the Albina Railroad Yard facility. This site is listed in the UST and Oregon Spill databases. According to reviewed records, a spill of unknown quantity of argon from the railway to soil was reported in 2008; no further information was reported. Additionally, a spill of 5 gallons of lube oil from the railway to surface gravel was reported in 2007 and cleaned up. Prior to the Project Area modification (see note in Section 4.2.1), this Site of Concern was originally located hydraulically crossgradient of the Project Area and was, therefore, not observed during the field survey. This Site of Concern is ranked as **moderate priority**.

**Roadway Spills:** Ten Sites of Concern within the API are reported as small-volume roadway spills that have been cleaned up. Spills typically impact only the surface pavement and are resolved immediately by highway spills response; therefore, all the roadway spill Sites of Concern are ranked **low priority**. Roadway spills Sites of Concern include the following Map ID numbers: **1, 2, 4, 12, 31, 34, 35, 36, 38, 39, 40, 41, 52, 89, 118, and 121**.

**Active Gasoline Fueling Stations:** Several gasoline fueling stations are located within and immediately outside the Project Area, within the API. The Sites of Concern include **Site 23**, Shell Station #120678 (15 NE Broadway); **Site 85**, My Goods Market-76 #2705460 (425 NE Broadway); **Site 93**, Shell Station #121357 (519 NE Broadway); **Site 16**, PPS Fleet Garage/Multnomah County Blanchard Building (301-401 N Dixon); and **Site 48**, City of Portland Vehicle Svcs Kerby (2835 N Kerby). The City of Portland Vehicle Svcs Kerby and the PPS Fleet Garage facilities are not public fueling stations. Because of the large volume of petroleum products typically stored in USTs and transferred at fueling facilities, these locations are at a high risk for petroleum contamination. The file review showed that none of

these Sites of Concern are known to have groundwater contaminant plumes spreading from the properties; therefore, only **Site 23** and **Site 16** within the Project Area were ranked as **high** and **medium priority** for the Build Alternative, respectively (discussed above in Sections 5.1.1 and 5.1.2, respectively). The parcel associated with Site of Concern 23 would be acquired (permanently) by ODOT. The parcel associated with Site of Concern 16 is located adjacent to a parcel, a portion of which would be acquired (permanently) by ODOT.

**Car Dealerships:** Several car dealerships are located within and immediately outside of the Project Area, within the API; some include repair service centers. The Sites of Concern include **Site 84**, Kia of Portland and Broadway Toyota (307 NE Broadway); **Site 8**, Former Standard Brands Paint Co Store (currently Toyota Scion at 20 NE Hancock); **Site 25**, Johnston Brothers Contracting Co (currently Toyota at 51 NE Weidler); **Site 92**, Dick Hannah Ford (55 NE Broadway); **Site 161**, Roth Motor Co (2111 NE Martin Luther King Blvd); **Site 116**, Convention Center Nissan Subaru (537 NE Irving Street); **Site 143**, Vince O. Powell (Powell Motors at 226 NE Grand); **Site 133**, Precision Motor Car (132 NE Grand); and **Site 139**, Gabriel Commercial Property (203 NE Grand). Car dealerships and repair shops are at elevated risk for contamination from petroleum products, metals such as lead and copper, solvents used in parts washers, and automotive fluid leaks and spills. The field survey and file review indicated that **Sites 8** and **25** are located within the Project Area and have had past releases from USTs or vehicle maintenance activities. Files indicate that none or low levels of contamination are known to remain. These Sites of Concern are ranked **moderate** and **low priority**, respectively. The remaining Sites of Concern are located outside of the Project Area or have no record of spills and are ranked **low priority**. The parcel associated with Site of Concern 25 would be acquired (temporarily) by ODOT for use as a construction staging area. The parcel associated with Site of Concern 25 is located adjacent to several other parcels that would also be acquired (temporarily) by ODOT for construction staging.

**Storage of Potentially Hazardous Materials:** The storage of potentially hazardous materials and operations potentially using hazardous materials were visually observed at numerous Sites of Concern during the field survey, including the following:

- **Site 148:** Kadel's Auto Body is located at 34 NE Grand, approximately 575 feet to the east and upgradient of the Project Area. This Site of Concern currently operates as ABRA Auto Body & Glass, performing auto painting within the building, as observed during the field survey. This site is listed in the RCRA-CESQG database and no violations are reported. This Site of Concern is therefore ranked **low priority**.
- **Site 10:** Erickson Supply Co is located within the Project Area at 1905 N Williams. This Site of Concern currently operates as Consolidated Supply Co. Unidentified materials storage was observed inside the warehouse during the field survey. This Site of Concern is listed in the UST and LUST databases with soil contamination only. The LUST case is reported as closed. No visual

evidence of USTs (e.g., vent pipes, fill ports) was observed at this site during the field survey. This Site of Concern is therefore ranked **moderate priority**.

- **Site 6:** Multnomah Co. SD 1 Student Trans Service is located within the Project Area at 2045 N Vancouver. This Site of Concern currently operates as Seargent's Towing Co. Automotive repairs were observed being conducted at the interior of the building during the field survey. This Site of Concern is listed in the RCRA Non-Generator/No Longer Regulated (NonGen/NLR) database, and no violations are reported. Therefore, this Site of Concern is ranked **low priority**.

**Large Construction Projects:** The following large construction projects, most apparently mixed-use multi-family residential and commercial developments, were observed ongoing during the site visit:

- **Site 144:** This Site of Concern is located at 15 NE Martin Luther King Boulevard, approximately 612 feet to the east and upgradient of the Project Area. During the field survey, active construction of a new apartment complex was observed. This Site of Concern is listed in the HWS, ECSI, Voluntary Cleanup Program (VCP), and Brownfield databases. As any residual contamination from its prior use is likely to be removed and/or covered during the current construction project, this Site of Concern is ranked **low priority**.
- **Site 132:** This Site of Concern is located at 111 NE Martin Luther King Boulevard, approximately 371 feet to the east and upgradient of the Project Area. During the field survey, active construction of a new apartment complex was observed. This Site of Concern is listed in the HWS, ECSI, and VCP databases, and no violations are reported. As any residual contamination from its prior use is likely to be removed and/or covered during the current construction project, this Site of Concern is ranked **low priority**.
- **Site 67:** This Site of Concern, formerly Evans Components, is located at 2004 N Vancouver, approximately 19 feet to the east and upgradient of the Project Area. This Site of Concern is located within the parcel addressed 2005 N Williams. This Site of Concern is listed in the RCRA NonGen/NLR database, and no violations are reported. During the field survey, construction of a new apartment building was observed. As any residual contamination from its prior use is likely to be removed and/or covered during the current construction project, this Site of Concern is ranked **low priority**.

#### 5.1.4 Sites of Concern Identified During Field Survey

The following sites were not included in the initial Site of Concern list compiled from EDR Report findings. However, these Sites of Concern were added to the final Sites of Concern list based on site conditions and operations observed during the field survey that potentially indicated the presence of hazardous materials (according to criteria evaluated for their location in relation to the Project Area). Refer to Figure 10 and Appendix D.

- **Site 42:** This Site of Concern is a vacant and boarded residential/commercial building located within the Project Area at the corner of N Broadway and N Vancouver (1626 N Vancouver), adjacent to and west of the ODOT-proposed Vancouver/Hancock highway cover (i.e., the proposed new roadway connecting NE Hancock to N Dixon). No visual evidence of hazardous materials storage was observed at the vacant/abandoned building. No visual evidence of USTs (e.g., vents, fill ports) was observed at the adjacent site. Vacant sites are at elevated risk for the dumping of hazardous materials. As this Site of Concern is adjacent to proposed construction impacts under the Build Alternative, this Site of Concern is ranked **moderate priority**. The parcel associated with this Site of Concern is located adjacent to a parcel, a portion of which would be acquired (permanently) by ODOT.
- **Site 150:** PacifiCorp, an active electrical substation, is located at 1414 NE Grand, approximately 770 feet to the east and upgradient of the Project Area (covering the entire city block at the intersections of NE Clackamas/NE Grand and NE Halsey Street/NE 6th Avenue). This property was not listed in the EDR Report. Substations are at elevated risk for polychlorinated biphenyl (PCB) contamination of soil due to the historical prevalence of PCB in large electrical equipment and equipment failure. The OSFM Hazardous Substance Incident online database (OSFM 2017) was reviewed for potential spills reports at this facility; no information was reported. As such, this Site of Concern is ranked **low priority**.

## 5.2 Area-Wide Hazardous Materials Concerns

No hazardous materials investigation can certify that an area or location is “clean” or free of hazards. This report was conducted consistent with best practices for hazardous materials due diligence. However, not all hazardous materials can be identified by field observation, file review, or regulatory records. ODOT should be aware of the possibility of encountering previously unknown hazardous materials during Project activities.

Numerous transient camps were observed throughout the API, in vacant lots, on sidewalks, and on highway and roadway rights-of-way. Transient camps have an elevated risk for the presence of biological and chemical hazards. As these sites move frequently, it is impractical to map them.

Overhead powerlines were observed located along roadways throughout the API and on properties adjacent to or in the immediate vicinity of the Project Area. Pole-mounted transformers, circuit breakers, and switches associated with these lines may contain PCBs. ODOT should work with electrical utilities to identify potentially PCB-containing electrical equipment that could be impacted by the Project.

Street and property lights are mounted on wooden and metal poles throughout the API and on properties adjacent to or in the immediate vicinity of the Project Area. Street lights may contain PCB-ballasts or mercury vapor light bulbs.

Wood poles are treated with preservatives such as pentachlorophenol and creosote. These contain high levels of polycyclic aromatic hydrocarbons (PAHs). Poles may also be treated with toxic metal salts. Soil immediately surrounding treated poles may also contain PAHs leached from the poles. Any wood utility poles impacted by the Project should be presumed to contain PAHs.

No pad-mounted electrical transformers were observed in the Project Area during the field survey. However, such structures may be located on properties where visual observations were not possible. Electrical transformers may contain PCBs and should not be handled or disposed unless the PCB content is tested and verified.

Roadway structures crossing I-5 that would be removed during Project construction activities (under the Build Alternative) may contain LBP and/or ACBM; refer to Section 2.2.2. These structures should be sampled and analyzed for LBP and ACBM content prior to demolition activities, according to ODOT's Special Provisions (refer to Section 7).

Finally, surface soils adjacent to state highways (extending 25 feet laterally from the edge of the pavement to the edge of the right of way) are known to be contaminated with hazardous materials (lead and benzo(a)pyrene, a PAH) to a depth of 18 inches (1.5 feet) bgs, based on limited sampling conducted by ODOT. The contamination in sampled locations exceeds the DEQ's Clean Fill Standards.<sup>7</sup> Management of excavated contaminated soil (from 0 to 1.5 feet bgs) of a nonpoint source origin (i.e., existing contamination) is to be handled according to ODOT's *Geo-Environmental Section Directive GE 14-01(D)* (ODOT 2014).

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<sup>7</sup> DEQ's Clean Fill Screening Level for lead is reported at 28 milligrams per kilogram (mg/kg) in the Portland Basin and 0.015 mg/kg for benzo(a)pyrene. ODOT reports analyzing soil only for benzo(a)pyrene (ODOT 2014, DEQ 2014).



## 6 Environmental Consequences

This section discusses the anticipated beneficial and adverse impacts of the Project with regard to hazardous materials for the No-Build and Build Alternatives.

### 6.1 No-Build Alternative

As described in Section 2.1, the No-Build Alternative consists of existing conditions and other planned and funded transportation improvement projects that would be completed in and around the Project Area by 2045 (Metro 2014).

#### 6.1.1 Direct Impacts

Under the No-Build Alternative, the proposed I-5 mainline and Broadway/Weidler interchange area improvements would not be constructed, and the current road system would remain in place. Any existing soil or groundwater contamination would not be disturbed or released by the Project. No Project workers would be potentially exposed to existing contamination during excavation or construction activities. No Project-related cleanup or remediation of any existing contamination would occur. If any complete exposure pathways between existing contamination and human or ecological receptors are present, these exposures would not be remediated by the Project.

#### 6.1.2 Indirect Impacts

Private redevelopment activity is currently ongoing in many locations within and near the Project Area. This activity is expected to continue as envisioned in several recently updated City of Portland land use plans. Under the No-Build Alternative, these activities are anticipated to continue. As private development occurs, cleanup of some sites containing hazardous materials may be expected to occur, depending on the location of future development.

### 6.2 Build Alternative

Under the Build Alternative, the Project's proposed roadway, bicycle, and pedestrian improvements would be constructed, as described in Section 2.2.

#### 6.2.1 Short-Term (Construction) Impacts

Impacts from hazardous materials could result if existing contaminated soil is encountered during construction or if contaminated property is acquired for additional right of way. Potential impacts of construction activities may vary with the different listed sites, depending on the following factors:

- Types of listing (i.e., RCRA-CESQGs, UST, LUST, ECSI)

- Open or closed status of the listed site (NFA determination from the regulatory agency)
- Extent and magnitude of contamination reported for the listed site
- Hydraulic and topographic location (i.e., upgradient or downgradient and the distance between the site and alternative, respectively)

For example, RCRA-generator sites are unlikely to impact construction activities. If the RCRA-generator site is a full or partial acquisition, then hazardous waste stored on the property may be required to be properly removed and disposed of at an approved hazardous waste disposal facility. In addition, UST sites are unlikely to impact construction activities unless the sites were to be acquired by the Project. As a result, any USTs on acquired properties could require decommissioning prior to construction activities.

The presence of ECSI and LUST sites may present the greatest impacts during construction activities. Acquired ECSI and LUST sites that have not received a NFA determination from the DEQ (or have received a NFA in some cases) may require further assessment to determine the extent and magnitude of soil and groundwater contamination. ECSI and LUST sites adjacent to or nearby the Project may also require further assessment, as contaminated groundwater may migrate past the site boundaries. Remedial activities may be required at LUST- and ECSI-listed sites that could be acquired for the Project.

Heating oil tank releases (i.e., LUSTs) may also present concerns to construction activities if the property is to be acquired. However, due to the physical nature of heating oil, it is unlikely that releases on distant properties would result from construction activities because heavy oil has a low potential to migrate in soils or groundwater.

Additionally, potential impacts of construction activities may vary with the age and construction of buildings developed on various properties. Construction or demolition may require the removal of structures that contain hazardous building materials such as creosote, lead (i.e., LBP), asbestos (i.e., ACBM), and PCBs. Sites of Concern identified with building construction dates prior to the 1980s (prior to LBP and ACBM regulations) likely have LBP and ACBM present. Construction or demolition activities associated with the Build Alternative could encounter hazardous building materials at **Sites of Concern 18, 23, and 42**. Refer to Figure 10, Section 7, and Appendix D.

Excavation work on acquired parcels may encounter soils or groundwater affected by existing contamination, which includes **Sites of Concern 3, 14, 17, 21, 23, 25, and 55**. Refer to Figure 10, Section 7, and Appendix D.

Negative short-term impacts would include potential spills or releases from equipment during construction and the mobilization or exposure of existing contamination that was previously not exposed. Construction activities could cause an increase in human health and safety hazards due to potential disturbance and exposures to contaminated soil and groundwater (i.e., hazardous chemicals in the soil, soil vapor, and groundwater). Construction-related detours, road or lane

closures, or unfamiliar traffic patterns could increase the rate of vehicle accidents during the short term, resulting in additional spills or releases of hazardous materials onto the roadway.

Permitted disposal options for contaminated building materials, soil, and/or groundwater are typically more costly than permitted disposal options for non-contaminated demolition or construction debris or soils that qualify as clean fill. Construction involves activities, equipment, and materials that can result in releases of hazardous materials into the environment. Releases during construction could include oils and fuels from construction equipment and oils, fuels, and other hazardous chemicals removed from acquired Sites of Concern (such as drums and tanks).

Other potential direct short-term impacts of the Build Alternative related to hazardous materials Sites of Concern may include the following:

- Remediation activities
- Possible exposure of construction and excavation workers or the public to hazardous materials
- Possible releases of hazardous materials into previously unaffected areas
- Improper handling of hazardous materials brought onto the construction sites during construction activities, which may lead to spills or releases to the environment
- Possible exposure of contractors to ACBM and LBP in buildings requiring demolition
- Unanticipated costs for disposal and replacement of contaminated soil, disposal of generated hazardous wastes (i.e., hazardous wastes onsite from the prior occupant/owner), and associated regulatory interaction

## 6.2.2 Long-Term and Direct Operational Impacts

Once construction is complete and the roadway, bicycle, and pedestrian improvements are operational, the Build Alternative is likely to have both positive and negative long-term impacts.

ODOT could be exposed to higher costs and levels of liability if properties with hazardous materials concerns are acquired under the Build Alternative. Properties that are planned to be acquired under the Build Alternative include **Sites of Concern 3, 14, 17, 18, 21, 23, 25, 42, 55, 92, and 103** (ranked low, moderate, and high priority). Six of these Sites of Concern are reported with existing soil contamination (**3, 14, 21, 23, 25, and 55**), and one Site of Concern is reported with existing soil and groundwater contamination (**17**). Additionally, three of these Sites of Concern likely have LBP and ACBM present (**18, 23, and 42**), based on the reported construction dates of the current on-site buildings. Refer to Section 7 for further information. Long-term liability to the Project can result from acquiring a property that is undergoing

investigation or remediation and/or that is subject to requirements such as monitoring associated with the long-term operation of a clean-up action.

If the Build Alternative were to result in new or increased exposure to hazardous materials in the Project Area that are not readily apparent and therefore not remediated, negative health and environmental impacts could result. New or increased exposure to hazardous materials during Project activities that are not readily apparent could include encountering USTs/LUSTs at acquired properties that were not identified in this *Hazardous Materials Technical Report*, based on the lack of information reported by permitting agencies during file reviews.<sup>8</sup>

The Build Alternative would provide environmental benefits. Improved traffic safety would reduce the likelihood of spills related to vehicular accidents. More than 25 percent of the existing Sites of Concern within the API are the result of vehicle spills on roadways within the API.

Other potential long-term direct impacts of the Project related to hazardous materials Sites of Concern may include the following:

- Post-construction negotiations with responsible parties and regulatory agencies
- Possible action(s) by regulatory agencies
- Complex and extensive remediation activities

### 6.2.3 Long-Term and Indirect Operational Impacts

Redevelopment is currently ongoing in many locations within and near the Project Area. Cleanup of existing contamination on surrounding properties by private parties has consequently taken place, and this trend is unlikely to be changed by the proposed Project. It is possible that implementation of the Build Alternative would facilitate an increased rate of redevelopment within the Project Area, potentially including properties currently containing hazardous materials. Prior to development (or redevelopment) of potentially contaminated properties, remediation of the properties would likely be required. A potential increase in the rate of hazardous materials cleanup would be a long-term benefit to the environment. Public and environmental safety within and adjacent to the Project Area could be improved as a result of subsurface investigations and site remediation actions necessary for construction activities and risk-based site closures in the area (associated with anticipated projects in the area). Therefore, compared to the No-Build Alternative, the Build Alternative would have greater potential for long-term, indirect beneficial environmental effects in the form of cleanup of acquired properties. Cleanup of existing contamination on surrounding properties by private parties would likely reduce the quantity of Sites of Concern identified in this *Hazardous Materials*

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<sup>8</sup> Information reported in the database listings for UST/LUST may not be 100 percent accurate; a Site of Concern may have been reported with one UST when in fact there may be two or more, according to the accuracy of the DEQ UST/LUST database records. A Phase I Environmental Site Assessment (ESA) would provide more information as to the exact quantity and location of USTs/LUSTs.

*Technical Report* and could reduce assigned priority rankings of identified Sites of Concern (from a high priority to a medium or low priority, or a medium to a low priority).

## 6.3 Cumulative Effects

Cumulative impacts are environmental effects that result from the incremental effect of the proposed action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes the other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (Title 40 Code of Federal Regulations [CFR] 1508.7).

The analysis of cumulative impacts involves a series of steps conducted in the following order:

- Identify the resource topics that could potentially experience direct or indirect impacts from construction and operation of the proposed action.
- Define the geographic area (spatial boundary) within which cumulative impacts will be assessed, as well as the time frame (temporal boundary) over which other past, present, and reasonably foreseeable future actions will be considered.
- Describe the current status or condition of the resource being analyzed, as well as its historical condition (prior to any notable change) and indicate whether the status or condition of the resource is improving, stable, or in decline.
- Identify other actions or projects that are reasonably likely to occur within the area of potential impact during the established time frame and assess whether they could positively or negatively affect the resource being analyzed.
- Describe the combined effect on the resource being analyzed when the direct and indirect impacts of the project are combined with the impacts of other actions or projects assumed to occur within the same geographic area during the established time frame.

### 6.3.1 Spatial and Temporal Boundaries

The geographic area used for the cumulative impact analysis is the same as the API described in Section 4.1 and shown on Figure 9. The time frame for the cumulative impact analysis extends from the beginning of large-scale urban development in and around the Project Area to 2045, the horizon year for the analysis of transportation system changes.

### 6.3.2 Past, Present, and Reasonably Foreseeable Future Actions

The past, present, and reasonably foreseeable future actions that were considered in assessing cumulative effects are provided in the following subsections.

### 6.3.2.1 Past Actions

Past actions include the following:

- Neighborhood and community development
  - Historical development of the Portland area and accompanying changes in land use
  - Development of the local transportation system (including roads, bicycle and pedestrian facilities, and bus transit)
  - Utilities (water, sewer, electric, and telecommunications)
  - Parks, trails, bikeways
- Commercial and residential development in and around the Project Area
  - Veterans Memorial Coliseum (1960)
  - Lloyd Center (1960)
  - Legacy Emanuel Medical Center (1970)
  - Oregon Convention Center (1990)
  - Rose Garden (1995)
- Regional transportation system development
  - Marine terminal facilities on the Willamette River
    - Port of Portland (1892)
    - Commission of Public Docks (1910)
    - Port of Portland (1970; consolidation of Port of Portland and Commission of Public Docks)
  - Freight rail lines (late 1800s and early 1900s)
  - Highways
    - I-84 (1963)
    - I-5 (1966)
    - I-405 (1973)
  - Rail transit system
    - MAX light rail (1986)
    - Portland Streetcar (2001)

### 6.3.2.2 Present Actions

Present actions include ongoing operation and maintenance of existing infrastructure and land uses, including the following:

- Ongoing safety improvements for bicycles and pedestrians
- Local and regional transportation system maintenance

- Utility maintenance

### 6.3.2.3 Reasonably Foreseeable Future Actions

Reasonably foreseeable future actions were identified collaboratively with the City of Portland and consist of the following:

- Redevelopment of existing urban areas in the Project Area and vicinity
- Ongoing maintenance and development of existing urban infrastructure in the Project Area and vicinity

These actions include private redevelopment, public development, and infrastructure projects, as well as combined public/private redevelopments. Specific projects and the plans identifying them are described in detail in the memorandum included in Appendix C. Given the highly developed nature of the Project Area and vicinity, the reasonably foreseeable future actions are not expected to substantially change the types or intensities of existing land uses.

### 6.3.3 Results of Cumulative Impact Analysis

Past actions (identified in Section 6.3.2.1) have changed conditions within the hazardous materials API through the following means:

- Development of residential neighborhoods installing heating oil tanks
- Development of commercial properties installing USTs and conducting industrial operations that resulted in impacts to surrounding environmental media (i.e., soil and groundwater contamination accruing overtime)
- Development of local transportation systems and utilities installing electrical equipment (i.e., transformers) and overhead/underground transmission power lines

Present actions (identified in Section 6.3.2.2) are changing the condition within the hazardous materials API through the following means:

- Ongoing commercial operations with USTs that developed into LUSTs and conducting industrial operations that resulted in impacts to surrounding environmental media (i.e., reported soil and groundwater contamination)
- Ongoing operation and maintenance of existing infrastructure where vehicle incidents result in leaks of fuels, oils, and other chemicals

Reasonably foreseeable future actions (identified in Section 6.3.2.3) that may change the future condition within the hazardous materials API include the following:

- Public/private redevelopment of existing urbanized areas within the API where USTs/LUSTs and contaminated soil and groundwater are present or may be encountered

- Public/private redevelopments of existing urbanized areas where new USTs may be installed and new industrial operations that may occur that could result in contaminated soil and groundwater in the future

The Sites of Concern identified in the hazardous materials API have resulted from many years of past actions. Present actions may also be introducing additional Sites of Concern within the API that are not yet able to be identified, and reasonably foreseeable future actions could do the same.

Based on the short-term construction impacts and long-term operational impacts described in Section 6.2, the Project would not contribute to negative cumulative construction or operation impacts under the Build Alternative.

If contaminated media are uncovered as a result of construction of the Build Alternative or other reasonably foreseeable future actions, there would be an incremental improvement in environmental quality when the contamination is addressed according to current applicable regulatory standards. Additional positive cumulative effects may include the following:

- Better understanding of existing hazardous materials located above and below the ground surface
- Enhanced regional understanding of existing geologic conditions due to subsurface investigations and excavations
- Improved regional traffic safety reducing the likelihood of spills related to vehicular accidents.

In developed locations such as the Project Area, the cumulative effects of the Build Alternative may be positive, as redevelopment typically triggers increased removal or remediation of existing hazardous materials.

## 6.4 Conclusion

The API for hazardous materials includes four high-priority, two medium-priority, six moderate-priority, and 170 low-priority Sites of Concern. All four of the high-priority, both of the medium-priority, four of the moderate-priority, and 33 of the low-priority Sites of Concern are located within the Project Area. Eleven Sites of Concern within the Project Area are located on parcels proposed for acquisition as part of the Project's Build Alternative. Six of these Sites of Concern are reported to have soil contamination, one is reported to have soil and groundwater contamination, and three likely have LBP and ACBM present (based on the reported construction dates of the current on-site buildings).

Additionally, surface soils adjacent to state highways (extending 25 feet laterally from the edge of the pavement to the edge of the right of way) are presumed to be contaminated with hazardous materials (lead and PAHs) to a depth of 18 inches (1.5 feet) bgs, based on limited sampling conducted by ODOT. The contamination in sampled locations exceeds the DEQ's clean fill guidance values.



Build Alternative construction activities could release hazardous materials into the environment or expose existing contaminated materials to human or ecological receptors as a negative short-term impact. Contractor use of health and safety plans, contaminated media management plans, and construction best management practices would reduce the potential for hazardous material releases and associated effects.

Long-term effects of the Build Alternative are likely to be positive with regard to hazardous materials. Existing hazardous materials Sites of Concern and non-site-specific hazards may be remediated during the redevelopment of roadways, bicycle, and pedestrian facilities. Traffic safety would be improved under the Build Alternative, which would lower the likelihood of future spills of hazardous materials from vehicle accidents in the Project Area. No long-term adverse hazardous materials-related impacts are anticipated.

Under a No-Build Alternative, other public and private construction projects (including property redevelopment) are likely to occur within the API. Thus, some beneficial impacts may result as acquisition and cleanup of contaminated sites occurs. However, impacts to Sites of Concern in the API from reasonably foreseeable future actions would not change the conclusions of the *Hazardous Materials Technical Report* in a noticeable way.

No negative cumulative construction or operation impacts are anticipated to occur with the Build Alternative. If contaminated media are uncovered as a result of Project construction, there would be an incremental improvement in environmental quality when the contamination is addressed according to current applicable regulatory standards.

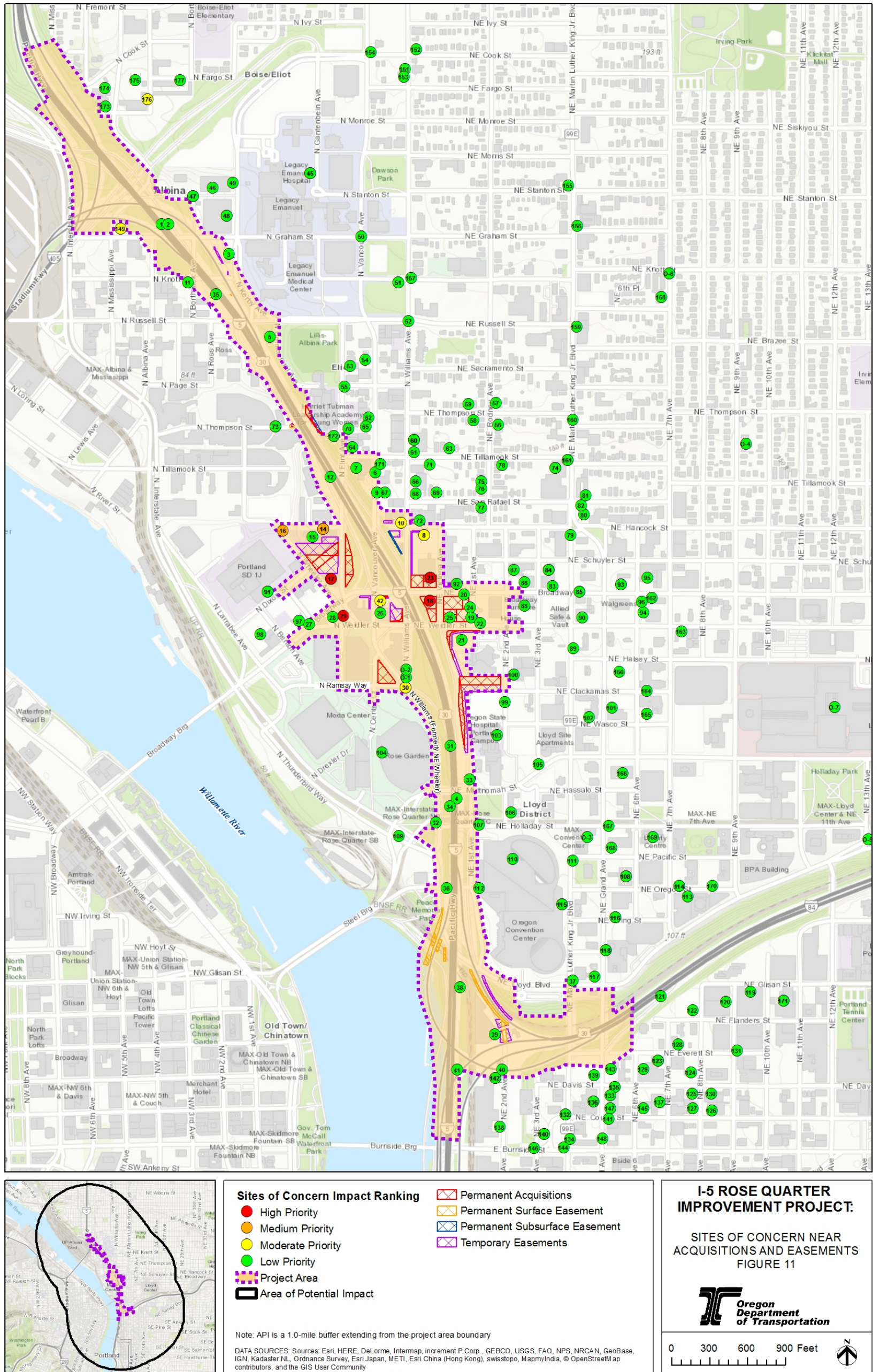
## 7 Avoidance, Minimization, and Mitigation Measures

A full Hazardous Materials Corridor Study would be completed prior to conducting property acquisitions (and prior to completing site-specific Phase I and II ESAs). The study would include review of historical aerial photos, Sanborn Fire Insurance Maps, and city directories to determine historic development of the Project Area indicating the presence of potential hazardous materials. The study would also include review of DEQ's environmental program databases (i.e., LUST, UST, and ECSI) and the OSFM's spills database to identify point sources of potential hazardous materials within the Project Area, as well as point sources of potential hazardous materials impacting the Project Area from surrounding properties (ODOT 2010).

A Phase I ESA conducted consistent with ASTM International Standard 1527-13 would be performed for any property that is planned for any level of acquisition. A Phase I ESA would include on-site inspections and interviews with property owners and operators, review of historical aerial photos, Sanborn Fire Insurance Maps, and city directories, and review of state and federal regulatory databases. Acquiring temporary or permanent easements may also require some level of environmental due diligence.

The permanent and temporary parcel acquisitions, in relation to the locations of the Sites of Concern, are shown on Figure 11. Parcels proposed for acquisition under the Build Alternative that also include a Site of Concern are listed in Table 4. Sites of Concern located in the immediate vicinity of the permanent and temporary parcel acquisitions (under the Build Alternative) are listed in Table 5.

Figure 11. Sites of Concern near ODOT Acquisitions and Easements



PATH: K:\\_3\_ BROADWAY, WEDLER, INTERCHANGE\04\02\01\FIG 11 SITE S OF CONCERN AND ODOT PERMANENT TAKES.MXD - USER: BETH BERGSON - DATE: 1/25/2019



Eleven Sites of Concern are located on parcels proposed for acquisition by ODOT under the Build Alternative (Table 4). These Sites of Concern would warrant a Phase I ESA prior to a property transaction taking place. Refer to Figure 11 and Appendix D.

**Table 4. Sites of Concern on Acquired Parcels**

Parcel ID to be Acquired <sup>1</sup> (type)	Parcel Address	Site of Concern <sup>2</sup>	Priority Ranking <sup>3</sup>	Building Construction Date	Potential for LBP/ACBM? <sup>4</sup>
1N1E34AA-01700 (permanent and temporary)	1225 NE 2nd Ave	103 – no name	n/a	n/a	n/a
1N1E27DB-03600 (permanent)	2231 N Flint Ave	55 – Portland Public School (Flint St Garage)	Low	n/a	n/a
1N1E27DC-03100 (permanent and temporary)	1835 N Flint / 270 N Hancock St	14 – Williamsen & Bleid, Inc.	Medium	n/a	n/a
1N1E27DC-03200 (permanent and temporary)	296 N Hancock St	14 – Williamsen & Bleid, Inc.	Medium	n/a – parking lot	n/a
1N1E27DC-03300 (permanent and temporary)	253 N Broadway	17 – Paramount Apartments	High	n/a – parking lot	n/a
1N1E27DD-07600 (permanent)	15 NE Broadway	23 – Shell Station #120678	High	n/a	n/a
1N1E27DD-07700 (permanent)	15 NE Broadway	23 – Shell Station #120678	High	1988	Yes
1N1E27DD-07800 (permanent)	15 NE Broadway	23 – Shell Station #120678	High	1988	Yes
1N1E27DD-11200 (permanent)	51 NE Weidler St	25 – Johnston Brothers Contracting	Low	n/a – parking lot	n/a



Parcel ID to be Acquired <sup>1</sup> (type)	Parcel Address	Site of Concern <sup>2</sup>	Priority Ranking <sup>3</sup>	Building Construction Date	Potential for LBP/ACBM? <sup>4</sup>
1N1E27DD-11300 (permanent)	51 NE Weidler St	25 – Johnston Brothers Contracting	Low	n/a – parking lot	n/a
1N1E27DD-11400 (permanent)	51 NE Weidler St	25 – Johnston Brothers Contracting	Low	n/a – parking lot	n/a
1N1E27DD-11600 (permanent)	30 NE Broadway	18 – Sherwin Williams	High	1965	Yes
1N1E27DD-12000 (permanent and temporary)	84 NE Weidler St	21 – Bee Rent-A-Car	Low	n/a – parking lot	n/a
1N1E27BD-150 (temporary)	2733 N Kerby	3 – Heating Oil Tank	Low	n/a - vegetated	n/a
1N1E27DC-01500 (permanent and temporary)	1626 N Vancouver Ave	42 – Vacant Abandoned Building	Moderate	1906	Yes
1N1E27DD-07100 (temporary)	55 NE Broadway	92- Dick Hannah Ford	Low	n/a	n/a
1N1E34AA-00300 (permanent and temporary)	84 NE Weidler	21 – Bee Rent-a-Car	Low	n/a	n/a

Source: Metro 2018, Multnomah County 2017, Portland Maps 2018.

Notes: Ave = Avenue; ACBM = asbestos-containing building materials; ECSI = Environmental Cleanup Site Information; HAZMAT = [Oregon] Hazardous Materials Incidents; ID = identification number; LBP = lead-based paint; LUST = Leaking Underground Storage Tank; n/a = not applicable; NPL = National Priority List; ODOT = Oregon Department of Transportation; RCRA = Resource Conservation and Recovery Act; St = Street; UST = underground storage tank

<sup>1</sup> Parcel ID for acquired parcels (under the Build Alternative) provided by ODOT (i.e., ODOT permanent/temporary acquisitions).

<sup>2</sup> Sites of Concern located within the Area of Potential Impact, which includes the Project Area and up to a 1.0-mile-wide buffer extending from the Project Area boundary.

<sup>3</sup> High priority – indicates that hazardous materials in the soil or groundwater have a high potential to impact the Project, and further action or investigation is recommended.



Medium priority – indicates that hazardous materials that could potentially impact the Project are present, and further action or investigation may be warranted

Moderate priority – indicates that the site has not been fully investigated or limited information was available for review; therefore, hazardous materials that could impact the Project may be present in soil and groundwater in these areas.

Low priority – indicates the potential for hazardous materials to be present in soil and groundwater beneath the API is unlikely, and no further action is needed. Low-priority sites are also all sites downgradient of the Project Area.

<sup>4</sup>LBP was banned from residential use in the 1970s. The use of ACBM in building construction was phased out in the late 1970s and early 1980s but was never actually banned in the United States.

Sites of Concern located in the immediate vicinity of parcels proposed for acquisition by ODOT (i.e., ODOT’s permanent and temporary acquisitions) under the Build Alternative are listed in Table 5. These properties would be evaluated in the Phase I ESAs recommended to be completed for the Sites of Concern identified in Table 4 above (a Phase I ESA evaluates properties within a 1-mile radius of the site being evaluated).

**Table 5. Sites of Concern Adjacent to Acquired Parcels**

Parcel ID to be Acquired <sup>1</sup> (type)	Site of Concern Address (adjacent to acquired parcel)	Site of Concern <sup>2</sup> (adjacent to acquired parcel)	Priority Ranking <sup>3</sup>
1N1E34AA-01700 (permanent and temporary)	I-5 MP 302	4 – no name	Low
	1021 NE 1st Ave	33 – TriMet Vintage Trolley	Low
	1306 NE 2nd Ave	99 – King, Ivan C	Low
	1400 NE 2nd Ave	100 – Calaroga Terrace	Low
	1225 NE 2nd Ave	103 – no name	Low
1N1E34AA-04300 (permanent)	1401 N Wheeler Ave	30 – Veterans Memorial Coliseum	Moderate
	1 N Center Court St	104 – Portland Arena Management	Low
1N1E27DB-03600 (permanent)	2125 N Flint Ave	172 – Tubman Annex	Low
	2226 N Flint Ave	55 – PPS (Flint St. Gar.)	Low
	2134-2136 N Flint Ave	70 – Heating Oil Tank	Low
1N1E27DC-01100 (permanent and temporary)	1618 N Vancouver Ave	26 – Flash Welding	Low
	1626 N Vancouver Ave	42 – Vacant/Abandoned Building	Moderate



Parcel ID to be Acquired <sup>1</sup> (type)	Site of Concern Address (adjacent to acquired parcel)	Site of Concern <sup>2</sup> (adjacent to acquired parcel)	Priority Ranking <sup>3</sup>
1N1E27DC-01200 (permanent)	1618 N Vancouver Ave	26 – Flash Welding	Low
	1626 N Vancouver Ave	42 – Vacant/Abandoned Building	Moderate
1N1E27DC-02200 (permanent)	1730 N Flint Ave	17 – Paramount Apartments	High
1N1E27DC-02300 (permanent)	1730 N Flint Ave	17 – Paramount Apartments	High
1N1E27DC-02400 (permanent)	1835 N Flint / 270 N Hancock St	14 – Williamsen & Bleid, Inc.	Medium
	296 N Hancock St	15 – PPS Storage Garage	Low
1N1E27DC-03100 (permanent and temporary)	296 N Hancock St	15 – PPS Storage Garage	Low
1N1E27DC-03200 (permanent)	301 N Dixon St	16 – PPS Fleet Garage Multnomah Co Fac & Prop Blanchard Bldg	Medium
1N1E27DC-03300 (permanent)	301 N Dixon St	16 – PPS Fleet Garage Multnomah Co Fac & Prop Blanchard Bldg	Medium
1N1E27DD-07600 (permanent)	20 NE Hancock St	8 – Former Standard Brands Paint	Moderate
	30 NE Broadway	18 – Sherwin Williams	High
1N1E27DD-07700 (permanent)	20 NE Hancock St	8 – Former Standard Brands Paint	Moderate
	55 NE Broadway	92 – Dick Hannah Ford	Low
1N1E27DD-07800 (permanent)	55 NE Broadway	92 – Dick Hannah Ford	Low
	30 NE Broadway	18 – Sherwin Williams	High
1N1E27DD-11100 (temporary)	1623 NE 1st Ave	19 – Heating Oil Tank	Low
	121 NE Weidler St	22 – ICI PAINTS&#8206	Low
	1635 NE 1st Ave	24 – UPS Ground Freight	Low



Parcel ID to be Acquired <sup>1</sup> (type)	Site of Concern Address (adjacent to acquired parcel)	Site of Concern <sup>2</sup> (adjacent to acquired parcel)	Priority Ranking <sup>3</sup>
1N1E27DD-11200 (temporary)	84 NE Weidler St	21 – Bee Rent-A-Car	Low
	121 NE Weidler St	22 – ICI PAINTS&#8206	Low
	51 NE Weidler St	25 – Johnston Brothers Contracting	Low
1N1E27DD-11300 (temporary)	84 NE Weidler St	21 – Bee Rent-A-Car	Low
	30 NE Broadway	18 – Sherwin Williams	High
	1635 NE 1st Ave	24 – UPS Ground Freight	Low
	1623 NE 1st Ave	19 – Heating Oil Tank	Low
1N1E27DD-11400 (temporary)	1635 NE 1st Ave	24 – UPS Ground Freight	Low
	30 NE Broadway	18 – Sherwin Williams	High
	51 NE Weidler St	25 – Johnston Brothers Contracting	Low
	1623 NE 1st Ave	19 – Heating Oil Tank	Low
1N1E27DD-11500 (temporary)	30 NE Broadway	18 – Sherwin Williams	High
	1623 NE 1st Ave	19 – Heating Oil Tank	Low
	51 NE Weidler St	25 – Johnston Brothers Contracting	Low
	55 NE Broadway	92 – Dick Hannah Ford	Low
1N1E27DD-11600 (permanent)	15 NE Broadway	23 – Shell Station #120678	High
	51 NE Weidler St	25 – Johnston Brothers Contracting	Low
1N1E27DD-11800 (permanent)	30 NE Broadway	18 – Sherwin Williams	High
	51 NE Weidler St	25 – Johnston Brothers Contracting	Low
1N1E27DD-11900 (permanent)	84 NE Weidler St	21 – Bee Rent-A-Car	Low
	51 NE Weidler St	25 – Johnston Brothers Contracting	Low





Parcel ID to be Acquired <sup>1</sup> (type)	Site of Concern Address (adjacent to acquired parcel)	Site of Concern <sup>2</sup> (adjacent to acquired parcel)	Priority Ranking <sup>3</sup>
1N1E27DD-12000 (permanent and temporary)	51 NE Weidler St	25 – Johnston Brothers Contracting	Low
	1623 NE 1st Avenue	19 – Heating Oil Tank	Low
	121 NE Weidler	22 – ICI PAINTS&#8206	Low
1N1E27BD-01200 (temporary)	South side of N Graham	3 – Heating Oil Tank	Low
1N1E27BD-01600 (temporary)	2723-2725 N Kerby	3 – Heating Oil Tank	Low
1N1E27DC-00400 (temporary)	1905 N Williams Ave	10 – Erickson Supply Company	Moderate
1N1E27DC-00800 (permanent and temporary)	1905 N Williams Ave	10 – Erickson Supply Company	Moderate
1N1E27DC-00900 (permanent)	1905 N Williams Ave	10 – Erickson Supply Company	Moderate
1N1E27DD-02300 (temporary)	1905 N Williams Ave	10 – Erickson Supply Company	Moderate
1N1E27DD-07500 (temporary)	20 NE Hancock St	8 – Former Standard Brands Paint	Moderate
1N1E27DC-01400 (permanent and temporary)	1626 N Vancouver Ave	42 – Vacant/Abandoned Building	Moderate
1N1E27DC-01600 (permanent and temporary)	1626 N Vancouver Ave	42 – Vacant/Abandoned Building	Moderate
1N1E27DC-01700 (temporary)	1626 N Vancouver Ave	42 – Vacant/Abandoned Building	Moderate
	1618 N Vancouver Ave	26 – Flash Welding	Low
1N1E27DC-01100 (permanent and temporary)	1626 N Vancouver Ave	42 – Vacant/Abandoned Building	Moderate
	1618 N Vancouver Ave	26 – Flash Welding	Low



Parcel ID to be Acquired <sup>1</sup> (type)	Site of Concern Address (adjacent to acquired parcel)	Site of Concern <sup>2</sup> (adjacent to acquired parcel)	Priority Ranking <sup>3</sup>
1N1E27DC-01200 (permanent and temporary)	1626 N Vancouver Ave	42 – Vacant/Abandoned Building	Moderate
	1618 N Vancouver Ave	26 – Flash Welding	Low
1N1E27DD-07100 (temporary)	15 NE Broadway	23 – Shell Station #120678	High
1N1E27DD-10900 (temporary)	121 NE Weidler	22 - ICI Paints	Low
	1623 NE 1st Ave	19 – Heating Oil Tank	Low
	1635 NE 1st Ave	24 – UPS Ground Freight	Low

Source: Metro 2018, Multnomah County 2017, Portland Maps 2018.

Notes: Ave = Avenue; ID = identification number; MP = milepost; PPS = Portland Public Schools; St = Street

<sup>1</sup> Parcel ID for acquired parcels (under the Build Alternative) provided by ODOT (i.e., ODOT permanent/temporary acquisitions).

<sup>2</sup> Sites of Concern located within the Area of Potential Impact, which includes the Project Area and up to a 1.0-mile-wide buffer extending from the Project Area boundary.

<sup>3</sup> High priority – indicates that hazardous materials in the soil or groundwater have a high potential to impact the Project, and further action or investigation is recommended.

Medium priority – indicates that hazardous materials that could potentially impact the Project are present, and further action or investigation may be warranted

Moderate priority – indicates that the site has not been fully investigated or limited information was available for review; therefore, hazardous materials that could impact the Project may be present in soil and groundwater in these areas.

Low priority – indicates the potential for hazardous materials to be present in soil and groundwater beneath the API is unlikely, and no further action is needed. Low-priority sites are also all sites downgradient of the Project Area.

A Phase II ESA (which involves sampling to evaluate the presence of on-site contamination) should be conducted for properties where the Phase I ESA report indicated that potential contamination may be present, based on evaluations made of the site history, regulatory status, site observations, and user-provided information (requirements of the ASTM 1527-13 standards for a Phase I ESA). This additional investigation would be necessary to establish the presence (or absence) of on-site contamination to 1) satisfy due diligence requirements under federal law, 2) qualify for landowner liability protections (under the ASTM standard), and 3) prevent exposure of workers or the environment to hazardous materials during construction, demolition, or waste disposal.

- Six of the **Sites of Concern (3, 14, 21, 23, 25, and 55)** located on parcels proposed for acquisition under the Build Alternative (Table 4, Figure 11, and

Appendix D) are reported with soil contamination, and one **Site of Concern (17)** is reported with soil and groundwater contamination. Additionally, three **Sites of Concern (3, 18, and 21)** are reported with at least one decommissioned UST; no further information was identified regarding contamination of environmental media. Therefore, soil and groundwater sampling and analysis are recommended at these Sites of Concern prior to construction activities.

- Twelve of the **Sites of Concern (3, 10, 14, 16, 19, 21, 23, 25, 26, 55, 70, and 99)** located adjacent to parcels proposed for acquisition under the Build Alternative (Table 5, Figure 11, and Appendix D) are reported with soil contamination, and one **Site of Concern (17)** is reported with soil and groundwater contamination. Therefore, soil and groundwater sampling and analysis are recommended at these Sites of Concern prior to construction activities to delineate contaminant plumes within the Project Area.

Prior to any demolition or removal activities, all structures on acquired parcels should be tested for lead (i.e., LBP) and ACBM with a Hazardous Building Materials Assessment (HBMA) by a qualified contractor in accordance with worker protection and material disposal regulations (refer to ODOT's 2010 *Hazardous Materials Program Procedures Guidebook*):

- Two of the **Sites of Concern (18 and 42)** are located on parcels proposed for acquisition under the Build Alternative (Table 4, Figure 11, and Appendix D) that are identified with buildings constructed prior to the 1980s; therefore, LBP and ACBM are likely to be present. Additionally, one **Site of Concern (23)** is identified with a building constructed in the mid-1980s; therefore, ACBM is likely to be present. A HBMA is recommended for these Sites of Concern prior to construction activities.
- Buildings on Sites of Concern located in the immediate vicinity of acquired parcels under the Build Alternative would not be evaluated for LBP or ACBM, as these buildings are not proposed to be demolished/removed for Project activities.

Potentially PCB-containing hydraulic or electrical equipment should be tested for PCBs by a qualified contractor prior to handling or disposal. ODOT would comply with all applicable federal, state, and local laws and regulations as they pertain to the storage, handling, management, transportation, disposal and documentation of hazardous substances (as defined in Oregon Revised Statute [ORS] 465.200); oil and hazardous materials (as defined in Oregon Administrative Rule [OAR] 340-100-0002); hazardous waste (as defined in 40 CFR 261 and OAR 340-101-0033); solid waste (as defined in 40 CFR 258, ORS 459, and OAR 340).

During construction, the contractor would be required to follow the applicable regulations regarding the transport, use, and storage of hazardous materials. A Health and Safety Plan (HASP) would be developed for all construction activities consistent with applicable laws and best practices in effect at the time of construction. The HASP should include emergency response procedures consistent with existing laws and regulations for use by ODOT personnel and the construction contractor in the event of a major hazardous materials release during construction of

the Build Alternative. Additionally, Project-specific Pollution Control Plans (PCPs) would be developed to prevent and minimize spills. Adherence to these requirements would reduce the potential for hazardous materials to be released or spills to occur during construction.

The contractor would be required to follow a Project-specific PCP to prevent spills and contain their potential spread. Adherence to federal, state, and local health and safety requirements would reduce the potential impacts associated with construction activities to less than significant levels. The contractor would develop a Contaminated Media Management Plan (CMMP) that specifies the correct handling and disposal of hazardous materials encountered during construction and includes procedures to be used in the event of encountering previously unexpected hazardous materials. The CMMP would follow ODOT's 2010 *Hazardous Materials Program Procedures Guidebook*, incorporating ODOT's 2015 *Boilerplate Special Provisions* 293 through 299 (ODOT 2010, 2015) into the CMMP. These provisions are as follows:

- **Section 00293 – Decommission Underground Storage Tanks.** USTs are to be decommissioned according to specifications in this provision.
- **Section 00294 – Contaminated Media.** Contaminated media is handled according to specifications in this provision.
- **Section 00295 – Asbestos Materials.** Asbestos-containing materials are handled and removed according to specifications in this provision.
- **Section 00296 – Paint and Painted Materials.** Removal of lead-, chromium-, and cadmium-based paint and materials coated with lead-, chromium-, and cadmium-based paints is conducted according to specifications in this provision. Sampling and analysis of painted materials is specified.
- **Section 00297 – PCB and Mercury Containing Equipment.** Removal and disposal of PCB- and mercury-containing equipment is conducted according to specifications in this provision. Materials/equipment include: lamp ballasts, electrical transformers, high-intensity discharge lamps, fluorescent lamp tubes, and other mercury or PCB-containing items.
- **Section 00298 – Well Preservation and Abandonment.** The protection, preservation, and abandoning of monitoring wells and water wells is according to specifications in this provision.
- **Section 00299 – Decommission Underground Injection Control Systems.** The decommissioning of underground injection control systems is according to specifications in this provision.
- **Section 00299A – Decommission Septic Systems.** The decommissioning of septic tank systems is according to specifications in this provision.

## 8 Contacts and Coordination

To complete this report, the preparer coordinated with EDR of Shelton, Connecticut, to conduct a search of state and federal databases for generating a list and identifying Sites of Concern. Other contacts included members of the ODOT Project team and consultant team.



## 9 Preparers

Name	Discipline	Education	Years of Experience
Melinda Borgens, AECOM	Environmental Due Diligence and Risk Assessment	B.S., Environmental Science, Land Atmosphere B.A., Liberal Arts, German	8
Susan Garland, AECOM	Environmental Due Diligence and Risk Assessment	M.S., Environmental Science and Resources B.A., English	15
Nicky Moody, AECOM	Environmental Due Diligence and Sediment Remediation	B.A., Biology/Environmental Science	18

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