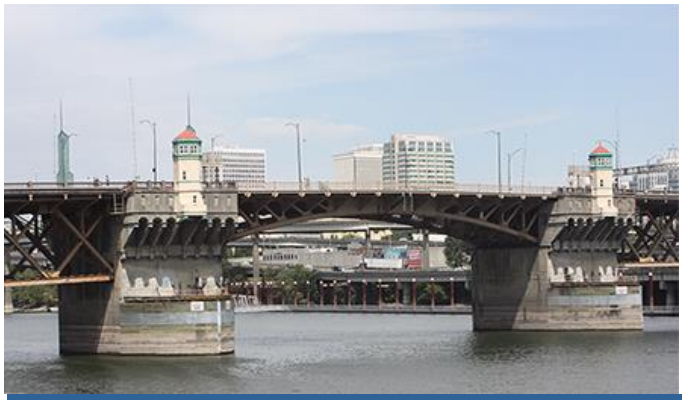

Public Services Technical Report

Multnomah County | Earthquake Ready Burnside Bridge Project

Portland, OR

January 29, 2021

Earthquake Ready Burnside Bridge Public Services Technical Report

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CERTIFICATION

The technical material and data contained in this document were prepared under the supervision and direction of the undersigned, as an environmental professional.


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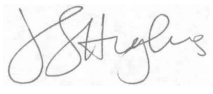
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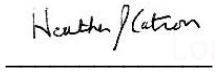
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Approved by Heather Catron (Consultant Project Manager)

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Acronyms, Initialisms, and Abbreviations

API	Area of Potential Impact
AMR	American Medical Response
CFR	Code of Federal Regulations
CSZ	Cascadia Subduction Zone
EIS	environmental impact statement
EQRB	Earthquake Ready Burnside Bridge
GIS	geographic information system
I-5	Interstate Highway 5
I-84	Interstate Highway 84
NEPA	National Environmental Policy Act of 1969
ORS	Oregon Revised Statute
OSMB	Oregon State Marine Board
PCC	Portland Community College
PF&R	Portland Fire & Rescue
PPB	Portland Police Bureau
PPS	Portland Public Schools
ROW	right-of-way
TCE	temporary construction easement
UO	University of Oregon
UPRR	Union Pacific Railroad

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Executive Summary

Public services such as schools, emergency response services, government offices, and hospitals are vital to the health of a community and can be affected by large construction projects and changes to the transportation network.

The Project proposes to build a seismically resilient Burnside Street lifeline crossing over the Willamette River that would remain fully operational and accessible for vehicles and other modes of transportation following a major Cascadia Subduction Zone earthquake. The Burnside Bridge would provide a reliable crossing for emergency response, evacuation, and economic recovery after an earthquake. Additionally, the bridge would provide a long-term safe crossing with low maintenance needs.

Public service facilities in the Area of Potential Impact (API) were identified, and the No-Build and Build Alternatives were reviewed for their potential effects on those services. The majority of public services considered in this report, including fire safety, law enforcement, and the U.S. Postal Service and waste disposal services, would have no direct long-term impacts.

All Build Alternatives would directly impact three public service facilities including two public school sites (a standalone University of Oregon retail space and the White Stag building [owned by the University of Oregon]) and one emergency response facility (American Medical Response [AMR]).

The Enhanced Retrofit Alternative would require a permanent easement at the public parcel, at the west bridgehead, that is currently developed as retail space and leased by the University of Oregon. The Replacement Alternatives would require full acquisition of the University of Oregon retail space. In addition, all Build Alternatives propose a partial permanent right-of-way) ROW acquisition at the property that houses AMR. While the impacts vary slightly across the Alternatives, all of the Alternatives would ultimately require the University of Oregon retail space and the AMR building to relocate. The addition of a temporary bridge to the respective Build Alternatives would not result in additional impacts to public service facilities; however, it would extend the length of time that construction-related river safety and security measures would need to be enforced by the Multnomah County Sheriff's River Patrol Office and the Oregon State Marine Board (OSMB). Mitigation measures implemented during construction would minimize direct impacts in the API.

All the Build Alternative options would require a temporary construction easement (TCE) for the University of Oregon White Stag building directly north of the west bridgehead. None of the other public services in the Project Area would require a TCE.

In post-earthquake scenarios, all Build Alternatives are expected to greatly improve public safety and services during and after earthquake seismic events as compared to the No-Build Alternative.

1 Introduction

As a part of the preparation of the Environmental Impact Statement (EIS) for the Earthquake Ready Burnside Bridge (EQRB) Project (Project), this technical report has been prepared to identify and evaluate public services within the Project's Area of Potential Impact (API).

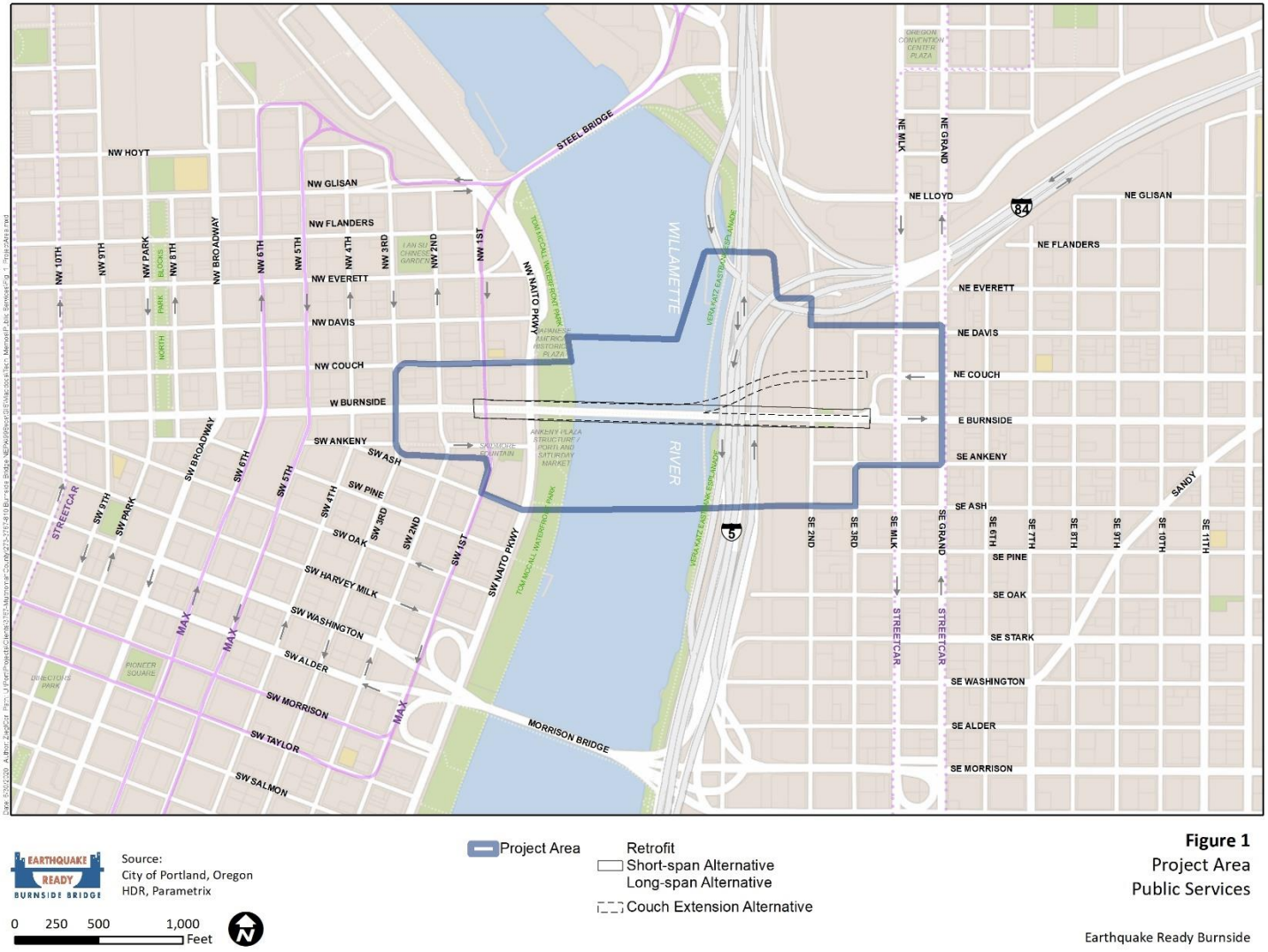
1.1 Project Location

The Project Area is located within the central city of Portland. The Burnside Bridge crosses the Willamette River connecting the west and east sides of the city. The Project Area encompasses a one-block radius around the existing Burnside Bridge and W/E Burnside Street, from NW/SW 3rd Avenue on the west side of the river and NE/SE Grand Avenue on the east side. Several neighborhoods surround the area including Old Town/Chinatown, Downtown, Kerns, and Buckman. Figure 1 shows the Project Area.

1.2 Project Purpose

The primary purpose of the Project is to build a seismically resilient Burnside Street lifeline crossing over the Willamette River that would remain fully operational and accessible for vehicles and other modes of transportation following a major Cascadia Subduction Zone earthquake. The Burnside Bridge would provide a reliable crossing for emergency response, evacuation, and economic recovery after an earthquake. Additionally, the bridge would provide a long-term safe crossing with low maintenance needs.

Figure 1. Project Area



Source: City of Portland, HDR, Parametrix

2 Project Alternatives

The Project Alternatives are described in detail with text and graphics in the EQRB Description of Alternatives Report (Multnomah County 2021b). That report describes the Alternatives' current design as well as operations and construction assumptions.

Briefly, the Draft EIS evaluates the No-Build Alternative and four Build Alternatives. Among the Build Alternatives there is an Enhanced Seismic Retrofit Alternative that would replace certain elements of the existing bridge and retrofit other elements. There are three Replacement Alternatives that would completely remove and replace the existing bridge. In addition, the Draft EIS considers options for managing traffic during construction. Nomenclature for the Alternatives/Options are:

- No-Build Alternative
- Build Alternatives:
  - Enhanced Seismic Retrofit (Retrofit Alternative)
  - Replacement Alternative with Short-span Approach (Short-span Alternative)
  - Replacement Alternative with Long-span Approach (Long-span Alternative)
  - Replacement Alternative with Couch Extension (Couch Extension Alternative)
- Construction Traffic Management Options
  - Temporary Detour Bridge Option (Temporary Bridge) includes three modal options:
    - Temporary Bridge: All modes
    - Temporary Bridge: Transit, Bicycles and Pedestrians only
    - Temporary Bridge: Bicycles and Pedestrians only
  - Without Temporary Detour Bridge Option (No Temporary Bridge)

Please see the EQRB Description of Alternatives Report (Multnomah County 2021b) for text and graphical descriptions of the Alternatives.

3 Definitions

The following terminology is used when discussing geographic areas:

- **Project Area –** The area within which improvements associated with the Project Alternatives would occur and the area needed to construct these improvements. The Project Area includes the area needed to construct all permanent infrastructure, including adjacent parcels where modifications are required for associated work such as utility realignments or upgrades. For the EQRB Project, the Project Area includes approximately a one-block radius around the existing Burnside Bridge and W/E Burnside Street, from NW/SW 6th Avenue on the west side of the river and NE/SE Grand Avenue on the east side.

- **Area of Potential Impact (API) –** This is the geographic boundary within which physical impacts on the environment could occur with the Project Alternatives. The API is resource-specific and differs depending on the environmental topic being addressed. For all topics, the API encompasses the Project Area, and for some topics, the geographic extent of the API is the same as that for the Project Area; for other topics (such as for transportation effects) the API is substantially larger to account for impacts that could occur outside of the Project Area. The API for public services is defined in Section 5.1.
- **Project vicinity –** The environs surrounding the Project Area. The Project vicinity does not have a distinct geographic boundary but is used in general discussion to denote the larger area, inclusive of the Old Town/Chinatown, Downtown, Kerns, and Buckman neighborhoods.
- **Point Resources –** Public Service resources with a definable property boundary. These resources would be a point on a map that is used by a public service. Examples include schools, fire stations, police stations, and medical centers.
- **Mobile Resources –** Public service resources that rely on access routes to provide public services. Examples include ambulance routes, emergency response routes for fire departments, police, and ambulances and school transportation routes.

4 Legal Regulations and Standards

4.1 Laws, Plans, Policies, and Regulations

The analysis considers the National Environmental Policy Act (NEPA), Council on Environmental Quality, and Federal Highway Administration guidance on preparing NEPA documents.

The following is a list of federal, state, and local laws, regulations, plans, and policies that may guide or inform the assessment of public services and utilities:

4.1.1 Federal

- 49 Code of Federal Regulations (CFR) Part 24, the Uniform Relocation Assistance and Real Property Acquisition Regulations for Federal and Federally Assisted Programs, Final Rule and Notice, issued by the U.S. Department of Transportation.
    - Applicable when public services properties are directly impacted by the Project.

4.1.2 State of Oregon

- Oregon Administrative Rule 660-015-0000(11), Oregon Statewide Planning Goal 11 (2010), Public Facilities and Services.
    - Requires local jurisdictions to develop community and public facilities plans.
- Oregon Revised Statutes (ORS) Chapter 459 (2015), Municipal Solid Waste Management.

  - Establishes the relationship and authorities of state and local governments with respect to solid waste management in Oregon, and defines landfill permitting rules.
- ORS 327.043 (2015), When district required to provide transportation.
  - Defines the requirement for public school districts to provide student transportation from their homes to public schools in Oregon.
- ORS 373.130 (2019), County use of city streets as bridge approach
  - Iterates that whenever any county constructs a bridge across a stream that is wholly or in part within the limits of any city within the county, the county may use the portions of any street of the city as approaches for the bridge, and that the power, dominion and right of control over and to improve and maintain the portions of any street so used belong exclusively to the county.

4.1.3 City of Portland

- City of Portland, Bureau of Planning. 2035 Comprehensive Plan.
  - Chapter 8 Public Facilities and Services establishes long-range goals and policies specific to public services.
  - Comprehensive Plan Goals and Policies are described in further detail below in Section 4.1.4.
- Central City 2035, Central City Plan District, Policy 6.1.c.: Retrofitting.
  - Encourages the retrofitting of buildings and infrastructure to withstand natural hazards and recognizes the Burnside Bridge as the regionally designated priority.
- City of Portland, Portland Fire and Rescue. Strategic Plan/Coggle 2017–2020.
  - This plan establishes long-range operating goals and service standards used to evaluate impacts on facilities and response times.
- City of Portland, Portland Police Bureau. 2007–2012 Community Policing Strategic Plan. Portland, Oregon.
  - This plan establishes long-range goals, strategies, and service standards used to evaluate programs and approaches to minimize public safety concerns.

4.1.4 City of Portland 2035 Comprehensive Plan Goals and Policies

The goals and policies of the City of Portland Comprehensive Plan guide Portland's population and employment growth through 2035. Goals listed in the plan that are applicable to public services are listed below:

Goals

Goal 8.A – Quality public facilities and services

High-quality public facilities and services provide Portlanders with optimal levels of service throughout the city, based on system needs and community goals, and in compliance with regulatory mandates.

Goal 8.I – Public safety and emergency response

Portland is a safe, resilient, and peaceful community where public safety, emergency response, and emergency management facilities and services are coordinated and able to effectively and efficiently meet community needs.

Policies

Policy 8.104 – Emergency preparedness, response, and recovery coordination

Coordinate land use plans and public facility investments between City bureaus, other public and jurisdictional agencies, businesses, community partners, and other emergency response providers, to ensure coordinated and comprehensive emergency and disaster risk reduction, preparedness, response, and recovery.

Policy 8.105 – Emergency management facilities

Provide adequate public facilities—such as emergency coordination centers, communications infrastructure, and dispatch systems—to support emergency management, response, and recovery.

Policy 8.106 – Police facilities

Improve and maintain police facilities to allow police personnel to efficiently and effectively respond to public safety needs and serve designated land uses.

Policy 8.107 – Community safety centers

Establish, coordinate, and co-locate public safety and other community services in centers.

Policy 8.108 – Fire facilities

Improve and maintain fire facilities to serve designated land uses, ensure equitable and reliable response, and provide fire and life safety protection that meets or exceeds minimum established service levels.

Policy 8.109 – Mutual aid

Maintain mutual aid coordination with regional emergency response providers as appropriate to protect life and ensure safety.

Policy 8.110 – Community preparedness

Enhance community preparedness and capacity to prevent, withstand, and recover from emergencies and natural disasters through land use decisions and public facility investments.

Policy 8.111 – Continuity of operations

Maintain and enhance the City's ability to withstand and recover from natural disasters and human-made disruptions in order to minimize disruptions to public services.

Policy 8.112 – Waste management

Ensure land use programs, ROW regulations, and public facility investments allow the City to manage waste effectively and prioritize waste management in the following order: waste reduction, recycling, anaerobic digestion, composting, energy recovery, and then landfill.

Policy 8.118 – Schools as emergency aid centers

Encourage the use of seismically safe school facilities as gathering and aid-distribution locations during natural disasters and other emergencies.

4.2 Design Standards

There are no applicable design standards required by federal, state, and local law or by agency policy besides any listed in the above plans and policies that relate to public services.

5 Affected Environment

5.1 Area of Potential Impact

The API for public services extends approximately 0.5 mile out from the Project Area (see Figure 2). This is wider than the API of some other environmental topics, and much broader than the area around the bridge where direct physical effects could occur. The larger area captures potential effects of congestion or transportation network changes, especially during construction, on access in the area, including the ability for emergency services to conduct operations across and through the Project Area. An analysis of existing public services within the API includes fire stations, police stations, medical centers, schools, solid waste collection and disposal facilities, and other public service buildings.

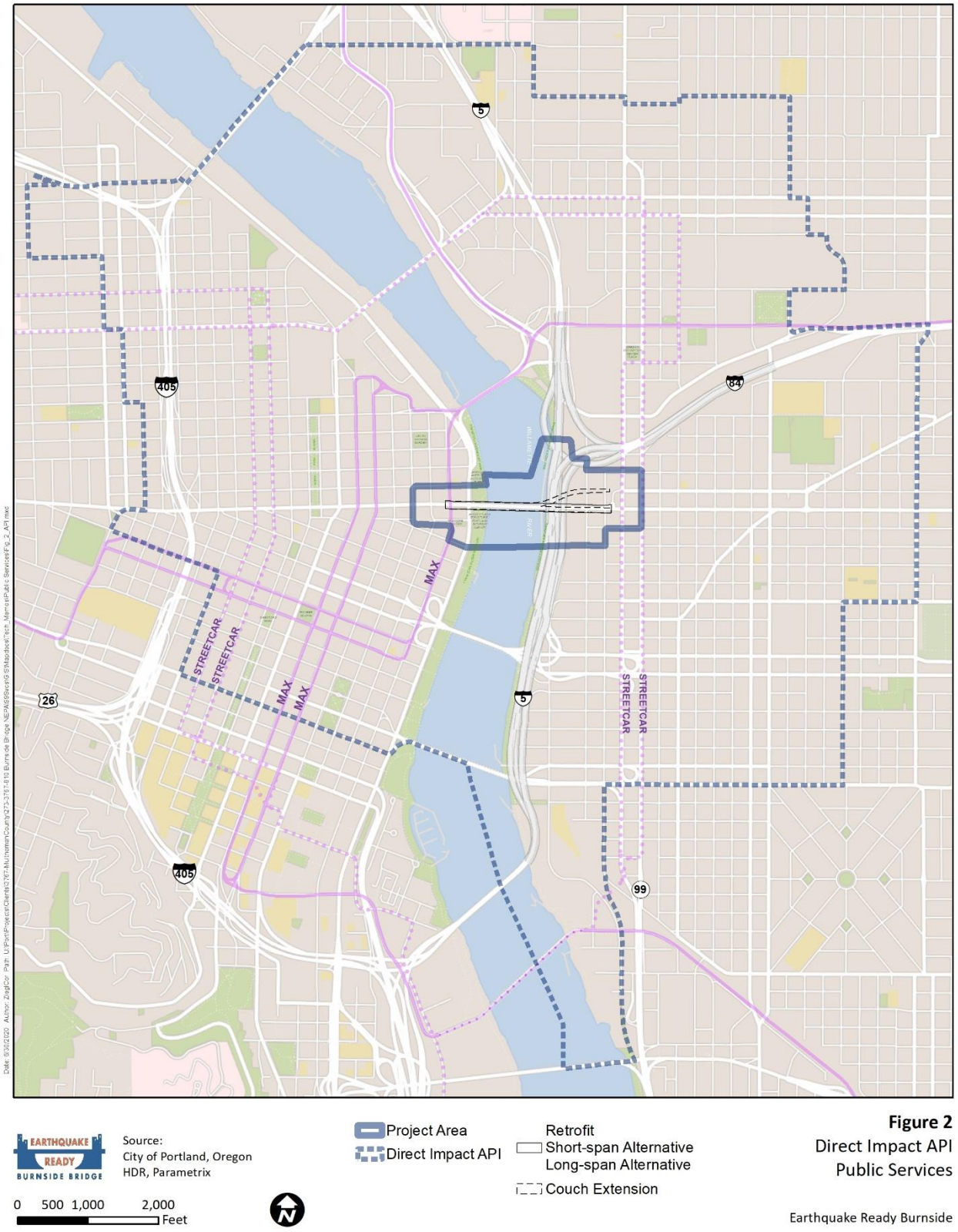
5.2 Resource Identification

5.2.1 Published Sources and Databases

The following data were used to determine and describe existing conditions:

- Portland Bureau of Emergency Management GIS database which includes waterline, power, and sewer pipe location data; emergency transportation routes; and locations of fire stations and management areas
- Available or internally generated maps for school transportation routes

Figure 2. Direct Impact API



Source: City of Portland, HDR, Parametrix

Public services identified include but are not limited to the following:

- Emergency transportation routes (fire, law enforcement, emergency medical transportation)
- School transportation routes
- Portland Fire and Rescue Station 1 (55 SW Ash Street)
- Portland Police Bureau – Central Precinct (1111 SW 2nd Avenue)
- Transit Police Department (210 NW 1st Avenue)
- University of Oregon, Portland (70 NW Couch Street)
- AMR (ambulance service, 1 SE 2nd Avenue)
- Multnomah County Sheriff's Office River Patrol Unit (2200 NW Front Avenue)

Public assistance programs such as food delivery programs and routes, overnight shelters, and other nonprofit and public/government assistance programs and facilities are addressed in other reports, including the EQRB Environmental Justice (Multnomah County 2021c), Social/Neighborhood (Multnomah County 2021e), and Acquisitions and Displacements (Multnomah County 2021a) Technical Reports.

5.3 Existing Conditions

The primary City of Portland public service providers in the API are Portland Fire & Rescue (PF&R), Portland Police Bureau (PPB), Portland Bureau of Emergency Management, and Portland Public Schools (PPS). The emergency service providers depend on the local and highway transportation network to respond to emergencies, and although they are given signal priority, they can be negatively affected by traffic congestion. Emergency service providers have designated critical access routes that they rely on to provide rapid emergency response. The Burnside Bridge is an important west-east access route through the City of Portland.

5.3.1 Public Safety and Emergency Response

Portland Fire & Rescue

PF&R provides fire, emergency medical, and special response services to approximately 583,830 people covering an area of approximately 152 square miles. The department employs approximately 750 people across 30 stations throughout the City of Portland. It is the largest fire and emergency response provider in the state of Oregon and has an operating budget of $90.7 million. PF&R's equipment includes 30 engines; 9 trucks; 1 heavy rescue company; 2 fireboats; 1 hazmat company; 1 paramedic rescue vehicle; 2 squads for chemical, biological, radiological, nuclear, and explosive response; and various support and auxiliary equipment. Station #1, located in the Project Area, is home to the only technical rescue team in the service area. This team has special training and special apparatuses in their vehicles, including those that assist in high-angle rope rescue. The next closest technical rescue team is Station #12, which is outside the API at Sandy Boulevard and NE 87th Street. According to the PF&R 2017–2020 Strategic Plan/Coggle, the goal for response time to an emergency (the time from dispatch to

arrival on the scene) is 5 minutes and 20 seconds or less, 90 percent of the time. Response times when the Burnside Bridge is open or closed are generally the same. In the event of a bridge closure or bridge lift, PF&R would dispatch from an alternate location with better access (Breuer 2020).

Portland Police

The PPB is composed of 23 units and provides law enforcement and response to 911 emergency calls throughout the City of Portland. Crimes are tracked on a monthly basis and reported using the National Incident-Based Reporting System maintained by the FBI. The Central Precinct is located on the border of the API at 1111 SW 2nd Avenue. In addition, portions of four different police districts are located within the API: District 830 (southwest portion of the API), District 711 (eastern and southeastern portion of the API), District 690 (northeastern portion of the API), and District 822 (northwest portion of the API). Average response time for high priority incidents is approximately 8 minutes, approximately 17 minutes for medium priority incidents, and approximately 45 minutes for low priority incidents. No designated standard operating procedures for emergency response are in place, and the route taken to address a call is at the officer's discretion (Jones 2020).

American Medical Response

AMR is a privately owned medical transportation service with locations nationwide. The AMR building in Portland is located at 1 SE 2nd Avenue. A portion of this facility is directly under the eastern approach of the existing Burnside Bridge. The building is used as a communication and dispatch center for crews and ambulances for Multnomah, Clackamas, and Clark Counties, as well as for vehicle maintenance and administrative offices for Multnomah County. Approximately 100 vehicles are dispatched out of this facility, and the branch employs approximately 290 people, 40 of whom hold administrative positions. It is estimated that AMR crosses the Burnside Bridge approximately 20 to 50 times per day; however, that number fluctuates based on several variables. Conversations with AMR representatives indicate that vehicles are dispatched from this location in a system status format, where units regularly cross the Burnside Bridge and are constantly moving through the area depending on 911 call volume and ambulance availability. While there are no pre-determined designated routes, AMR attempts alternate access whenever necessary. Similar to PF&R, in the event of a bridge closure or bridge lift, AMR attempts to dispatch from other locations with better access (McDonald 2020).

Multnomah County Sheriff's Office River Patrol Unit

The Multnomah County Sheriff's Office River Patrol Unit is located at 2200 NW Front Avenue. While the office itself is not located in the Direct Impact API, portions of the Willamette River that are patrolled by this unit are.

The Sheriff's River Patrol Unit partners with OSMB, the Port of Portland, and the U.S. Coast Guard to provide safe commercial and recreational access and passage to the county's 110 miles of waterways along the Columbia River, Willamette River, Sandy River, and Multnomah Channel (Multnomah County Sheriff's Office n.d.). Marine deputies respond to all life-threatening marine calls for service such as boat collisions,

drowning, missing persons, and environmental hazards. Deputies also provide boater safety education and intervention through classroom instruction, boat inspections, and enforcement activities. This unit provides critical infrastructure security protection along Multnomah County waterways.

The Multnomah County River Patrol participates in regional multi-agency marine security drills to promote efficient coordination of first responder resources. OSMB contributes approximately one third of the funding needs for the Sheriff's Office River Patrol. The River Patrol Unit is key to emergency preparedness on/near the regional waterways; it participates in numerous agency collaborations and is a significant function to a visible public safety system.

Tier 1 Critical Facilities

Designated Tier 1 critical facilities are buildings identified by the Portland Bureau of Emergency Management as having Tier I importance (checked first) in a post-disaster situation. Several Tier 1 critical facilities are located within the API:

- Fire Station 1 (55 SW Ash Street)
- Multnomah County Lincoln Building (421 SW Oaks Street)
- PPB – Central Precinct (1111 SW 2nd Avenue)
- PPB Transit Police at the Naito/Davis Garage (210 NW 1st Avenue)
- Prosper Portland (222 NW 5th Avenue)
- Multnomah County McCoy Building (426 SW Stark Street)
- Portland Housing Bureau at the Commonwealth Building (421 SW 6th Avenue)
- Multnomah County Motor Pool (530 SW 2nd Avenue)
- Portland Parks and Recreation Portland Tennis Center (324 NE 12th Avenue)

Hospitals and Clinics

Public hospitals that provide emergency services are located on both sides of the Willamette River, but none is located within the API. Because these facilities are located outside the API and there are multiple routes from which to access them, further discussion of hospitals and clinics is not included in this report.

5.3.2 Educational Resources

Founded in 1851, PPS currently enrolls over 49,000 students at 81 schools and employs approximately 8,400 people in the City of Portland. Benson Polytechnic High School (grades 9 to 12) is located within the API on the east side of the Willamette River. Benson is scheduled to be renovated from summer of 2021 to 2024 and would operate from another location (outside the API of this Project) during that time period which is expected to overlap with EQRB construction. No PPS buses utilize the Burnside Bridge (Nevius 2020). No additional PPS schools are within the API on the west side of the Willamette River.

Two public higher education facilities are located within the API on the west side of the Willamette River: Portland Community College – Downtown Center (PCC), and the University of Oregon at Portland campus. PCC is located at 722 SW 2nd Avenue, southwest and outside of the Project Area.

The University of Oregon at Portland campus is located in the White Stag building, just northwest of the Burnside Bridge and within the Project Area, and the 109 NW Naito Building, just outside of the Project Area. An additional public parcel at the west bridgehead leased by the University of Oregon is currently developed as retail space. The University of Oregon at Portland uses approximately half of the White Stag building for classrooms, laboratories, meeting rooms, offices, and event spaces. As an extension of the main campus in Eugene, the Portland campus houses five disciplines: College of Design, Lundquist College of Business, School of Journalism and Communication, School of Law, and Continuing and Professional Education (UO n.d.). Approximately 400 students and 100 staff members use the building on a daily basis.

Portland Art Institute and Oregon College of Oriental Medicine are also located within the API; however, these are private education facilities and are therefore not discussed further in this report.

5.3.3 U.S. Postal Service

The U.S. Postal Service is an independent federal agency with retail locations throughout the Portland metro region as standalone facilities. Many other businesses throughout the city are designated Approved Postal Providers and offer postal products and services. Three post offices are located within the API at 204 SW 5th Avenue, 1020 SE 7th Avenue, and 715 NW Hoyt Street.

5.3.4 Waste Disposal

Businesses and residents can subscribe to solid waste disposal services (garbage, recycling, and compost) from a permitted collection company. For businesses, rates are not set by the City of Portland, and businesses are able to negotiate service level, frequency, and cost. For residential collection services, the City sets rates and services options and oversees the permitted collection companies.

5.3.5 Field Visits and Surveys

A windshield survey was conducted on June 25, 2019, to view applicable existing public service locations and resources. Point and mobile resources described in Section 5.3.6 and Section 5.3.7 were identified, and locations were verified. No additional resources were observed during the windshield survey.

5.3.6 Point Resources

Emergency management point resources in the Project Area (shown in Figure 3) include PF&R Station 1 (55 SW Ash Street) and AMR (ambulance service, 1 SE 2nd Avenue). Both organizations use the Burnside Bridge to respond to emergencies; however, based on the severity of the emergency and the required response time, alternate routes are available. More information about this is provided in the sections below.

Figure 3. Existing Point Resources

Source: City of Portland, HDR, Parametrix

The Transit Police Department (210 NW 1st Avenue) is the only emergency management point resource in the API; however, it is outside the Project Area. There are no public hospitals or clinics in the Project Area.

There are two educational point resources in the Project Area. One is the University of Oregon–owned White Stag building directly north of the west bridgehead (70 NW Couch Street) and the second is the University of Oregon retail space located under the Burnside Bridge (TLID 1N1E34DB-01400). In the API (outside the Project Area), educational and school point resources include PCC (722 SW 2nd Avenue), the Central Library (801 SW 10th Avenue), Janus Youth Programs (707 NE Couch Street), and Benson Polytechnic High School (546 NE 12th Avenue).

There are no U.S. Post Offices in the Project Area. Three post offices are located in the API (outside the Project Area) at 204 SW 5th Avenue, 1020 SE 7th Avenue, and 715 NW Hoyt Street.

The University of Oregon–owned White Stag building, the University of Oregon at Portland retail space, and AMR are the point resources that would potentially be affected by the construction of any Build Alternatives considered.

5.3.7 Mobile Resources

As described in Section 3, Point Resources are public service resources with a definable property boundary. These resources would be a point on a map that is used by a public service. Examples include schools, fire stations, police stations, and medical centers. Mobile Resources are public service resources that rely on access routes to provide public services. Examples include ambulance routes, emergency response routes for fire departments, police, and ambulances and school transportation routes.

Burnside Street as it crosses the Burnside Bridge is an important mobile resource within the Project Area for emergency service providers. Naito Parkway and Martin Luther King Jr. Boulevard, both within the Project Area, are also important north-south access routes for emergency service providers. In addition, Interstate Highway 5 (I-5), the southbound ramp from Interstate Highway 84 (I-84) onto I-5, and the eastbound entrance ramp onto I-84 (from both southbound I-5 and northbound I-5) intersect the Project Area and are important access routes for emergency service providers. See Figure 1.

Burnside Street as it crosses the Burnside Bridge is not currently used by Portland Public School transportation systems for bus routes. Naito Parkway and Martin Luther King, Jr. Boulevard are important routes that are used by the school transportation system. Two large buses use northbound Naito Parkway to transport up to 80 students to Chapman Elementary School (1445 NW 26th Avenue) and West Sylvan Middle School (8111 SW West Slope Drive), one bus to each school. One small bus transports up to 12 students to Buckman Elementary School (320 SE 16th Avenue), and one van is used to transport up to four students to Portland Village School (7654 North Delaware Avenue). Martin Luther King Jr. Boulevard is used by one large bus that serves Llewellyn Elementary School (6301 SE 14th Avenue). Three small buses also use this route to transport students to and from Cleveland High School (3400 SE 26th Avenue), the Community Transitions Program – Southeast Site (6801 SE 60th Avenue), and the Pioneer Program at Holladay School (2600 SE 71st Avenue) (Nevius 2020). All of these schools are

located outside the Direct Impact API and are therefore not included on the figures provided in this report.

The U.S. Postal Service makes regular mail deliveries throughout the API. All residents and businesses within the City of Portland have the option to subscribe to solid waste disposal services. No solid waste disposal facilities are located within the API; however, the API intersects routes used for companies providing solid waste disposal services.

6 Impact Assessment Methodology and Data Sources

6.1 Long-Term Impact Assessment Methods

The analysis of direct long-term impacts assesses the degree to which the Alternatives affect public services at an operational level as described below:

- Displacement and permanent relocation of fire or police stations (none), schools and school administration buildings, government offices (none), emergency medical response services, and hospitals (none).
- Notable traffic movement restrictions or changes in transportation service levels, such as road closures, turning restrictions, one-way designations, new median barriers, or traffic congestion levels that would permanently alter the routes used to provide public services. No such changes are proposed.
- Alterations to critical emergency access routes (not expected based on the designation of the Burnside Bridge as the emergency corridor from west to east).
- Beneficial effects associated with completion of the Project are also discussed based on the results of the transportation impact analysis.

6.2 Short-Term Impact Assessment Methods

The analysis of direct short-term impacts considers potential construction impacts on fire and emergency medical services and law enforcement locations or routes resulting in increased response times and delays and altered access routes. Alternate east-west evacuation routes include SW Clay Street, SW Salmon Street, and NW Glisan Street (Portland Bureau of Emergency Management 2017). School transportation routes could also be affected. Close coordination with fire, emergency, law enforcement, and school transportation providers would be necessary during construction design and in the development of construction management plans.

6.3 Indirect Impact Assessment Methods

Most impacts on public services are addressed through the direct long-term and short-term impacts analyses, but the indirect impact assessment considers other activities that may occur. The analysis of indirect impacts for public services focuses on potential indirect effects to the Project vicinity over time, such as those related to the indirect effects of transportation and roadway upgrades in the Project Area that could

incentivize further development in the Project vicinity; however, because the replacement bridge would have the same capacity and be in the same location, indirect impacts are not anticipated.

6.4 Cumulative Impact Assessment Methods

The cumulative impacts analysis considers the Project's impacts combined with other past, present, and reasonably foreseeable future actions that would have environmental impacts in the Project vicinity. Based on the list of foreseeable transportation and other development projects that are anticipated to occur in the Project vicinity within the same time frame, as well as relevant past actions that have defined the Project vicinity, a qualitative analysis examines potential cumulative effects for public service impacts. The analysis of potential cumulative public service impacts examines both near-term construction effects as well as long-term operational impacts.

7 Environmental Consequences

7.1 Introduction

The description of long-term impacts is divided into (1) pre-earthquake impacts, based on each Alternative's footprint and its day-to-day operations, as well as (2) impacts that would occur after the next CSZ earthquake, including how the Alternatives affect resiliency, emergency response and longer-term recovery.

7.2 Pre-Earthquake Impacts

This section describes the potential long-term effects of the Alternatives on public services prior to a CSZ earthquake.

All Alternatives, except the No-Build Alternative, would need to acquire several properties adjacent to the existing ROW either for construction or permanent use by the Project. Full acquisition of a property results in the displacement and relocation of any businesses or residences, whereas a partial acquisition may or may not result in the need to displace existing uses. Additional information regarding the nature of displacements and acquisitions is available in the EQRB Acquisitions and Displacements Technical Report (Multnomah County 2021a).

Because the bridge would be replaced in the same location and with the same capacity as the current bridge, the majority of public services considered in this report would not experience any direct long-term impacts. Services with no direct impacts include:

- Fire safety
- Law enforcement
- U.S. Postal Service
- Waste disposal

All the Build Alternatives would permanently impact two public service facilities including one emergency response facility and one public school auxiliary site. The addition of a

temporary bridge to the respective Build Alternatives would not result in additional impacts to public service facilities. Table 1 below summarizes all potentially impacted properties and displacements of public services by each Build Alternative.

Table 1. Impacted Public Service Properties – Permanent

Map ID	Tax Lot ID	Property Name	Retrofit Alternative	Short-Span Alternative	Long-Span Alternative	Couch Extension
4	1N1E34DB-01400	University of Oregon Retail Space (City of Portland)	Permanent Easement	Full	Full	Full
18	1N1E34DD-01000	American Medical Response	Partial (1)	Partial (1)	Partial (1)	Partial (1)

Notes: Full = full acquisition; Partial = partial acquisition; (1) = number of partial acquisitions

7.2.1 No-Build Alternative

The No-Build Alternative assumes that all other programmed and planned projects move forward, but that the Burnside Bridge—lacking a major retrofit or replacement—would remain seismically vulnerable. It includes future projects and land use changes that are anticipated in adopted transportation and land use plans. It also anticipates population and employment growth consistent with regional forecasts, and other documented major trends, such as a changing climate. The No-Build transportation network is based on the existing network plus changes included in the Regional Transportation Plan and the Central City in Motion Plan.

Under the No-Build Alternative, the Burnside Bridge would not be retrofitted or replaced. Pre-earthquake, public and emergency services would continue to respond to calls within their service areas; existing response routes would continue to be used and no change in response times would occur, other than that resulting from changes in traffic congestion over time.

It is assumed that regular maintenance would continue to occur on the bridge, and in some cases this maintenance work would occur adjacent to areas of the University of Oregon retail space and the AMR building. In general, agencies may attempt to schedule maintenance work that would temporarily restrict access to the least busy times of the year for these facilities, but as the bridge ages and maintenance needs become more frequent and widespread, that may not be possible.

7.2.2 Enhanced Seismic Retrofit Alternative

The Retrofit Alternative would retrofit some elements and replace other elements of the existing Burnside Bridge. Under this Alternative, the bridge width and capacity would not change, and it would provide the same modal connections at each end of the bridge that presently exist. The existing stairs from the south side of the east approach to the Eastbank Esplanade would be replaced with an ADA-accessible ramp connection as well as stairs, and near the west end, the existing stairs that connect the south side of the bridge to 1st Avenue would be replaced with an ADA-accessible ramp connection.

Direct

Direct impacts associated with this Alternative would be limited to the public service properties situated directly below the bridge and to those used for new bridge access at the west bridgehead. This Alternative would require a permanent easement at the retail space leased by University of Oregon and owned by the City, which would require this facility to relocate. While it is unknown at this time where the new facility would be located, relocation would follow guidelines and procedures outlined in 49 CFR Part 24, the Uniform Relocation Assistance and Real Property Acquisition Regulations for Federal and Federally Assisted Programs.

This Alternative would also require a partial, permanent ROW acquisition at the property that houses AMR, which would require AMR to relocate. The current facility functions as a communication, administration, and operations hub for Multnomah, Clackamas, and Clark Counties. This facility receives approximately 105,000 calls from Multnomah County per year; 55,000 calls from Clackamas County; and 68,000 to 72,000 from Clark County. Relocation of this facility would directly impact approximately 40 employees that work inside the building. Because all Multnomah County deployment comes out of this building, AMR representatives expressed concern that there is not another location in the City that would meet the needs met by this current location. If relocation were to occur, a new communications center would have to be built before closing the existing one (McDonald 2019). While it is unknown at this time where the new facility would be located, relocation of this facility would follow guidelines and procedures outlined in 49 CFR Part 24, the Uniform Relocation Assistance and Real Property Acquisition Regulations for Federal and Federally Assisted Programs. See Figure 4 for property impacts.

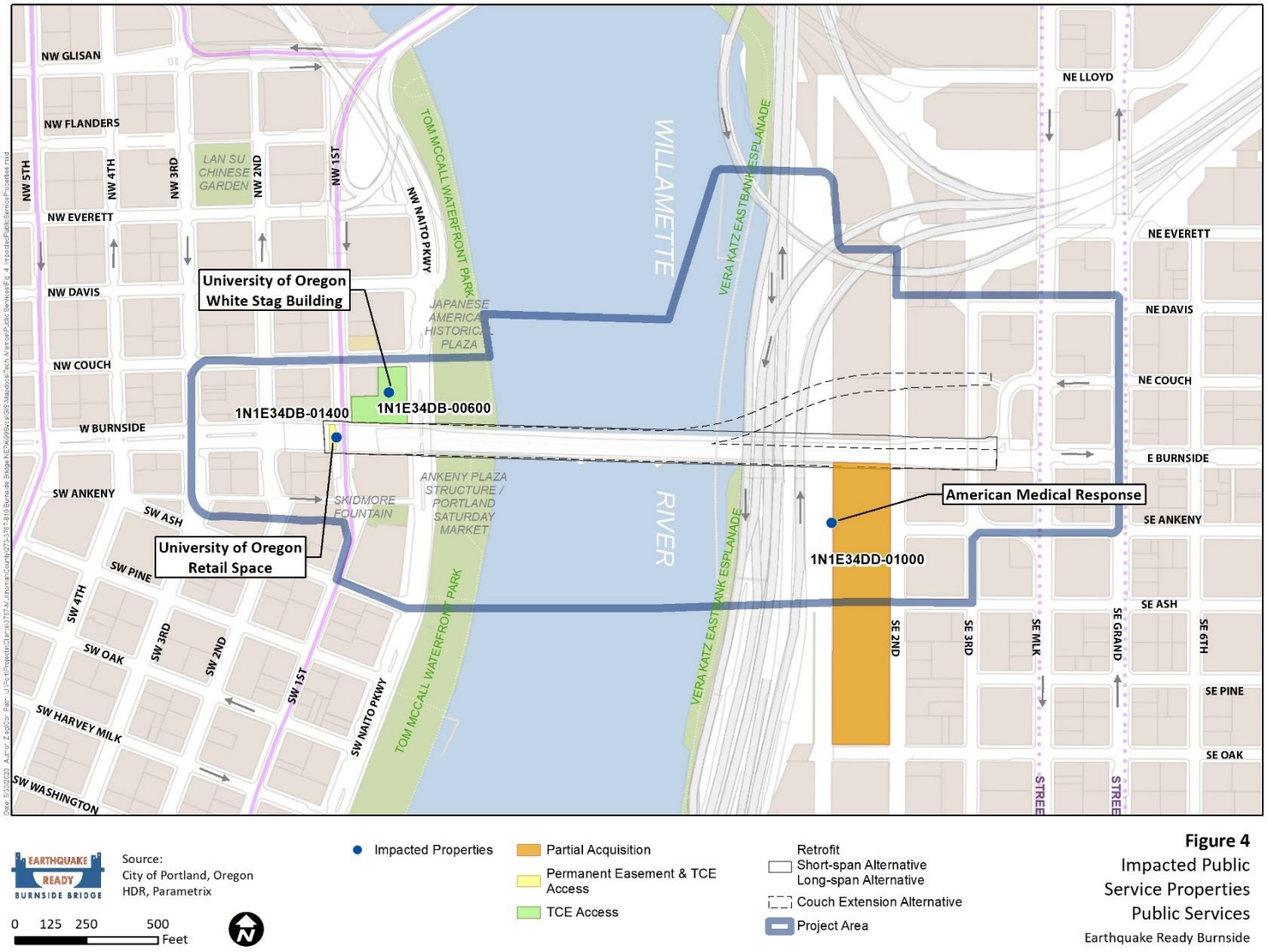
Indirect

Public service providers evaluate future population growth and calculate needed future service increase such as increased numbers of police officers, new equipment, or new station locations. Because the Project would not change the location or capacity of the crossing, no induced changes are anticipated to density in downtown Portland, and, therefore, the Project would not impact individual long-range service plans in a pre-earthquake scenario.

7.2.3 Replacement Alternative with Short-span Approach

The Short-span Alternative proposes to construct a new bridge to replace the existing structure on the existing alignment. It includes a movable bridge span over the primary navigation channel and fixed bridge spans for the east and west approaches.

Figure 4. Impacted Public Service Properties



Source: City of Portland, HDR, Parametrix

Direct

Permanent impacts to the AMR building would be the same for all Build Alternatives. Compared to the permanent easement required by the Retrofit Alternative, the Short-span Alternative would require a permanent full acquisition of the retail space that is currently leased by the University of Oregon. The west abutment of the bridge would be relocated eastward in order to maintain access to the Portland Rescue Mission, resulting in a permanent acquisition and permanent displacement of the University of Oregon retail space.

Permanent impacts to public service facilities would be the same for the Short-span and Long-span Alternatives.

Indirect

As with the indirect effects described in Section 7.2.2, the anticipated population and employment increases in the Project vicinity are not expected to be changed by this Alternative, so it would not impact individual long-range service or service plans.

7.2.4 Replacement Alternative with Long-Span Approach

Under the Long-span Alternative, large segments of the east and west approaches would be supported by above-deck superstructure rather than below-deck columns. For the east approach, the height of the superstructure above the bridge deck could range from approximately 140 feet for a tied-arch bridge up to 250 feet or more for a cable-stayed bridge. On the west side, this Alternative would include a clear span extending from the movable span in the river, approximately 450 feet to the east side of Naito Parkway. On the east side of the bridge, the Long-span Alternative would clear-span from the movable span in the river to just west of 2nd Avenue.

Direct

Impacts to public service facilities would be the same for the Short-span and Long-span Alternatives.

Indirect

Indirect effects would be the same as described for the other Build Alternatives.

7.2.5 Replacement Alternative with Couch Extension

As with the Short-span Alternative, the Couch Extension Alternative would require completely removing and replacing the existing bridge structure. Under this Alternative, the new bridge would follow the existing alignment at the west bridgehead, and would split before the east bridgehead with separate approaches for NE Couch Street (westbound) and E Burnside Street (eastbound).

Direct

The Couch Extension would require identical permanent impacts to the University of Oregon retail space and the AMR building as with the Short-span Alternative.

Traffic volumes and intersection operations are expected to be the same under this Alternative as they are under the other Build Alternatives and the No-Build Alternative due to the functionally equivalent nature of traffic operations in all Alternatives.

Indirect

Indirect effects would be the same as described for the other Build Alternatives.

7.3 Post-Earthquake Impacts

This section describes the effects on public services during and after an earthquake, including immediate and long-term recovery effects.

All the Build Alternatives are being designed such that the bridge can be used immediately for emergency response after a CSZ earthquake of up to a 9.0 magnitude. Similarly, the bridge would be designed for a minimum 100-year design life and would meet all current and applicable city, county, state, and national design and safety standards. The bridge would also be designed to accommodate heavier loads, including streetcar vehicles, emergency vehicles, and heavier freight or emergency hauling needs. The existing bridge does not load-restrict current emergency vehicles but may not be able to accommodate the very heavy vehicles likely to be employed after a major disaster.

Presently, buildings and elevated highway infrastructure are located very near to the bridge spans, bridge approaches, and piers and there is the likelihood that they would collide into each other during a major seismic event. In some cases, these structure and bridge elements are loosely connected with a very small gap between structures. All the Build Alternatives would be designed and constructed to provide clearance (minimum of 2 feet) between the bridge and adjacent buildings to allow independent movement during a seismic event. The process of separating the buildings from the bridge is not expected to cause physical damage to the buildings.

7.3.1 No-Build Alternative

Like the pre-earthquake No-Build Alternative, the post-earthquake No-Build Alternative assumes that all other programmed and planned projects move forward, but that the Burnside Bridge—lacking a major retrofit or replacement—would remain seismically vulnerable. All other assumptions described in Section 7.2.1 are the same for the post-earthquake No-Build Alternative.

As a result of a CSZ earthquake, major portions of the existing bridge structure and decking would fail, falling as debris and blocking north-south travel along Naito Parkway and SW 1st Avenue on the west end of the bridge. On the east bank of the river, the collapsed bridge would sever and block I-5, I-84, and 1st, 2nd, and 3rd Avenues. Post-earthquake impacts under the No-Build Alternative would create a substantial added demand for emergency services in the immediate and early recovery timeframe. Bridge debris would obstruct all modes of transportation, blocking over one billion dollars in transportation infrastructure that relies on the bridge. With other bridges also out of service, Portland would be divided by the Willamette River.

The destruction of the Burnside Bridge and the surrounding infrastructure would result in greatly diminished emergency access and response times, thereby posing an increased hazard to public safety.

The collapsed bridge would block the main river channel creating an obstacle for river traffic that needs to deliver goods or people after the earthquake. Land-based public and emergency services that rely upon the Burnside Bridge as their primary emergency route, including but not limited to PF&R, the PPB, and AMR, would be required to use alternative emergency response routes, although none of the downtown bridges are expected to be usable. Emergency responders would be unable to cross the river to aid victims, fight fires, address other emergencies, or facilitate evacuation.

The immediate effects of a CSZ earthquake on public services would likely include the destruction of the University of Oregon retail space below the west bridgehead, as well as the AMR building, due to bridge collapse. In addition, the White Stag building would be impacted from the bridge swaying and likely collapsing during an earthquake event. In the weeks, months, and potentially years following a CSZ earthquake, access to these public services near the east and west bridgeheads would likely be closed. It is possible that the area could experience a mid- to long-term reduction in population as the region tries to rebuild, which could result in increased vacancies in the API areas that experience severe damage. Thus, the mid- to long-term recovery phase may have a lower demand for these general public services.

Lastly, because the No-Build Alternative would not have required relocation of AMR, the north end of its facility is at risk of damage from bridge collapse and is anticipated to be non-operational.

7.3.2 Enhanced Seismic Retrofit Alternative

Direct

The Burnside Corridor is designated as a “Primary East-West Emergency Transportation Route” since it provides a key link in the Burnside Street lifeline route connecting two sides of the region across the Willamette River. In their current condition, all of the Willamette River bridges in the downtown area are expected to be heavily damaged, collapsed, or inaccessible in a post-earthquake scenario. A seismically resilient Burnside Bridge would serve as a crucial link for emergency vehicles and public services.

All Build Alternatives, including the Enhanced Seismic Retrofit Alternative, would result in a Burnside Bridge that withstands a major CSZ event, and the only bridge in downtown Portland to remain usable after such an event. In the immediate aftermath of a CSZ earthquake, many roadways would be unpassable, blocked by debris and abandoned vehicles. A seismically resilient Burnside Bridge would also likely be the only lifeline between the two banks of the river in downtown Portland, thus becoming a crucial link for emergency services in the immediate aftermath.

Compared with the No-Build Alternative, the Retrofit Alternative would reduce impacts to adjacent buildings, as the seismically retrofitted bridge would not collide with or collapse into those buildings. A seismically resilient bridge would also substantially increase the likelihood that access along West and East Burnside Streets at the bridgeheads would be maintained.

The potential for the bridge itself to adversely affect the AMR facility and operations during an earthquake would be reduced or eliminated with all the Build Alternatives, not only because the bridge would be seismically resilient, but also because AMR would have already been relocated during Project construction; however, it is unknown whether the new location would meet the same needs met by its current location. Information regarding the relocation of AMR is ongoing and will become available as design and planning progress.

Indirect

Transportation infrastructure damaged by an earthquake impairs the long-term ability of a region to recover economically and socially after a disaster. The transportation network is a critical factor in providing public services, particularly in providing emergency and police services. Lack of a resilient river crossing in the short term would inhibit the ability for emergency response to act in a timely manner, leading to delays in the long-term recovery rate. Delayed recovery would result in delayed return of jobs and population, which in turn would potentially result in lowered school enrollment, increased demand for police, fire, and other emergency services, and lower revenues to fund these services.

All the Build Alternatives, including the Enhanced Retrofit Alternative, provide an east-west bridge connection over the Willamette River to speed the movement of emergency services, goods, and recovery throughout the wider Portland region. In general, the Build Alternatives would significantly improve post-earthquake traffic mobility and access because the bridge would remain functional; thus, response times for mobile public services relying on the Burnside Bridge would be positively affected compared with No-Build Alternative post-earthquake conditions. Compared to the No-Build, the Build Alternatives would allow normal day-to-day life, including public services to return at a faster rate and reduce the potential for lowered school enrollment and long-term loss of jobs, commerce, and revenue.

7.3.3 Replacement Alternative with Short-Span Approach

Direct

As with the Retrofit Alternative, both Replacement Alternatives are expected to greatly improve public safety and structure stability during and after major seismic events. Post-earthquake impacts for the Short-span and Long-span Alternatives would be similar to those described above in Section 7.3.2.

Indirect

Indirect effects for the Short-span Alternative would be the same as those described in Section 7.3.2 for the Retrofit Alternative.

7.3.4 Replacement Alternative with Long-Span Approach

Direct

As with the Retrofit Alternative, the Replacement Alternatives are anticipated to greatly improve public safety and structure stability during and after major seismic events.

Post-earthquake impacts for the Short-span and Long-span Alternatives would be similar to those described above in Section 7.3.2.

Indirect

Indirect effects for the Long-span Alternative would be the same as those described in Section 7.3.2 for the Retrofit Alternative.

7.3.5 Replacement Alternative with Couch Extension

Direct

As with the Retrofit Alternative, the Replacement Alternatives are expected to greatly improve public safety and structure stability during and after major seismic events when compared with the No-Build Alternative.

Impacts to public services for this Alternative would be the same as described above in Section 7.3.2 and Section 7.3.3.

Indirect

Indirect effects for the Couch Extension following an earthquake would be the same as those described under Section 7.3.2 and Section 7.3.3.

7.4 Construction Impacts

All the Build Alternatives would require temporary highway lane closures in order to demolish and replace the Burnside Bridge over I-5 and I-84. Lane closures are anticipated to occur during limited evening hours or on weekends, with dozens of closure sessions anticipated. Up to 10 weekend closures could be required, depending on the specific Alternative.

With respect to Portland Fire Station #1, there would likely be short-term restrictions on Naito Parkway, but direct access to Naito from the fire station would be maintained throughout construction. Short-term restrictions during construction could block direct access from the fire station to northbound Naito Parkway, but southbound access to other routes would always be maintained. While there are no designated routes per se, Portland Fire Station #1 does not typically use northbound Naito Parkway to reach destinations north of the bridge; rather, they exit their facility by heading south on Naito Parkway first before heading north (Breuer 2020). Therefore, closure of the bridge during construction is not anticipated to affect response times.

Emergency services visit the Portland Rescue Mission multiple times per week via one of their access doors on Burnside Street. A minor TCE at this location would be required under all Build Alternatives for staging and/or bridge construction, which would impact ambulance services that need to access this location. It may be possible for ambulances to access the building from the corner of Burnside Street and NW 2nd Avenue while the bridge is closed to traffic. More information is needed to determine if this is feasible. For more information regarding the Portland Rescue Mission, please refer to the EQRB Social/Neighborhood Technical Report (Multnomah County 2021e).

Trucks hauling construction materials and debris to and from the site would be coming from and going to multiple locations in the region. Trucking to and from the Project site would occur continually throughout the work, and it is anticipated that construction vehicles would contribute to the traffic delays described in the following sections. Additional information on hauling routes during construction is provided in the Description of Alternatives chapter.

During construction of any of the Build Alternatives, the Willamette River navigation channel would remain open except for short-term closures. For boater safety, the Project would create an exclusion area to restrict recreational boaters from entering dangerous active construction zones during portions of the Project. This would generally include a 200-foot area around all active construction components including the work bridges, barges, piers, etc. It is too early in Project planning to specify exactly when and how long each instance of exclusion would be; however, it is estimated that each closure could be up to 3 weeks in duration, and the number of closures could range from 2 to 10 over the full length of construction, depending on the type of bridge lift chosen. A vertical lift would require a lower number of river closures while a bascule lift would require a higher number of closures. Boater restrictions would be communicated with OSMB staff and the Multnomah County Sheriff's Office River Patrol Unit more than 30 days prior to the added restrictions that are needed to allow for the agencies to develop necessary regulations and notices.

7.4.1 Without Temporary Bridge

Without a temporary bridge, public services that use the Burnside Bridge would need to redirect their cross-river response and service trips onto adjacent bridges during construction or use alternative facilities on either side of the bridge. Furthermore, increased delays and traffic on streets during construction may potentially cause response-time delays for mobile public services for all Build Alternatives without a temporary bridge. However, because motorists are required to yield ROW to emergency response vehicles that are using audible and/or visual signals, emergency vehicles would be substantially less affected by congestion compared to other motorists.

PF&R response times when the Burnside Bridge is open or closed are generally the same, and, in the event of a bridge closure, PF&R would dispatch from an alternate location with better access to the destination (Breuer 2020). Furthermore, access to destinations north of the Burnside Bridge is achieved using alternate routes via southbound Naito Parkway, as described above.

As with PF&R, vehicles that are dispatched from AMR's location regularly cross the Burnside Bridge and are constantly moving through the area depending on 911 call volume and ambulance availability. The number of cross-river trips taken by AMR is roughly estimated to be 20 to 50 times per day (McDonald 2020). This information is not available for PF&R (Breuer 2020). While there are no pre-determined designated routes, AMR and PF&R attempt alternate access whenever necessary.

Based on this information, response times under a scenario without a temporary bridge would be expected to be the same as with; however, the potential for increased congestion is greater under the option without a temporary bridge. Additional information on how emergency service organizations would serve the affected area is needed to

better define construction-phase impacts and potential mitigation. Coordination with these entities is ongoing and would continue throughout the duration of the Project.

All Build Alternatives would require a TCE for access to the White Stag building (Map ID 10) directly north of the west bridgehead. None of the other public services in the Project Area would require a TCE. See Table 2.

Table 2. Impacted Public Service Properties – Temporary

Map ID	Tax Lot ID	Property Name	Retrofit	Short-Span Alternative	Long-Span Alternative	Couch Extension
10	1N1E34DB-00600	University of Oregon (White Stag Building)	TCE Access	TCE Access	TCE Access	TCE Access

Notes: TCE Access = Temporary Construction Easement for access only

7.4.2 With Temporary Bridge

The temporary bridge would need to span over mainline I-5, the Morrison off-ramp, the I-84 westbound to I-5 southbound on-ramp, and the I-5 northbound to I-84 eastbound ramp in a single span. This span (approximately 170 feet) would need to be set during a full closure of I-5, the I-84 ramps, and the Morrison exit. The temporary bridge would also span over the UPRR railroad tracks.

Most of the effects on public services during construction would be similar to those described above in Section 7.4.1. Response times would be similar with and without a temporary bridge. Cross-river emergency response trips would be able to occur on the Burnside Bridge with the temporary bridge option; however, given that the temporary bridge would have, at most, one lane in each direction, emergency vehicles may still choose to use one of the other bridges that has more lanes and therefore greater ability for motorists to move to the side and allow responders to pass by.

7.4.3 Potential Off-Site Staging Areas

The construction contractor may use one or more off-site staging areas, outside the bridge study area to store and and/or assemble materials that would then be transported by barge to the construction site. Off-site staging could occur with any of the Alternatives. Whether, where, and how to use such sites would be the choice of the contractor, and, therefore, the actual site or sites cannot be known at this time. Given this uncertainty, detailed analysis of impacts is not possible at this time. To address this uncertainty, the Project has identified four possible sites that represent a much broader range of potential sites where off-site staging could occur. While the contractor might choose to use one of these or any other site, it is assumed that because of regulatory and time constraints on the contractor, any site they choose would need to be already developed with road and river access. It is also assumed that the contractor would be responsible for any relevant permitting and/or mitigation that could be required for their chosen use of a site. The Draft EIS is identifies the types of impacts that could occur from off-site staging, based on the above assumptions. This analysis is not intended to “clear” any specific site, but rather to ensure disclosure of the general types of impacts based on the sample sites.

Additional information about off-site staging areas is included in the EQRB Description of Alternatives Report (Multnomah County 2021b).

The four representative sites include the Willamette Staging Option off Front Avenue, USACE Portland Terminal 2, the Willamette Staging Option off Interstate Avenue, and the Ross Island Sand and Gravel Site.

Based on the four sample sites identified, the types of public service impacts that could occur from off-site staging include Willamette River recreational boating restrictions in additional areas. These could be limited to restricted areas near the shore of staging areas and around construction barges moving to and from the staging areas. For more information on how these restrictions would affect parks and recreation, please see the EQRB Parks and Recreation Technical Report (Multnomah County 2021d).

If a contractor chooses to use an off-site staging area, coordination with OSMB and the Multnomah County Sheriff's Office River Patrol Unit would be required to implement and enforce regulations regarding boater safety. No additional local, state, or federal regulations regarding public services were identified.

7.5 Cumulative Effects

Cumulative impacts 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 (40 CFR 1508.7).

7.5.1 No-Build Alternative

In a major seismic event, the No-Build Alternative, when combined with the effects on all other downtown Portland crossings of the Willamette River, would result in a significant cumulative effect on public safety and emergency services, as discussed previously.

7.5.2 Build Alternatives

There is the potential for a cumulative impact during construction, when combining the impacts of this Project with those of other potentially simultaneous construction projects, such as the I-5 Rose Quarter project. Approximately 35,000 daily vehicle trips over the Burnside Bridge would be displaced in a scenario involving full closure of the Burnside Bridge that coincides with construction of the I-5 Rose Quarter project. Additional vehicle trips that are avoiding I-5 closures associated with the I-5 Rose Quarter construction would also be displaced.

Vehicles that need to cross the Willamette River during construction of these projects would be detoured to the Morrison Bridge, Steel Bridge, or Broadway Bridge. During the AM peak hour, assuming worst case construction-phase impacts (during I-5 Rose Quarter project full directional closure of I-5) westbound routes across the Morrison Bridge are expected to experience the largest impact on travel times with an increase of 12.5 to 13 minutes, while westbound routes traveling across the Broadway Bridge and Steel Bridge would experience an increase of 7.5 to 11 minutes. During the PM peak hour, eastbound routes across the Morrison Bridge would likely experience the largest

increase in travel times with an increase of 14.5 to 15.5 minutes, while eastbound routes traveling across the Broadway Bridge and Steel Bridge would experience an increase of 4.5 to 7 minutes.

In this scenario, vehicular movement, including that of emergency response vehicles, would be impacted with increased congestion, detour routes, and extended travel times in and out of the downtown Portland area. In the event of a Burnside Bridge closure, buses traveling along Naito Parkway, Martin Luther King Jr. Boulevard, and the other surrounding bridges would experience increased congestion. PF&R, PPB, and other emergency response organizations already use alternative routes and dispatch from stations that yield the shortest possible response time (Breuer 2020). Because of this, and because they would maintain priority over other traffic, travel times for emergency response are not anticipated to be affected. No other public services discussed in this report would be impacted by the combined construction projects.

7.6 Compliance with Laws, Regulations, and Standards

7.6.1 No-Build Alternative

Federal/State

No public service properties would be directly impacted by this Alternative; therefore, this Alternative is consistent with 49 CFR Part 24. Similarly, the No-Build Alternative is consistent with Statewide Planning Goal 11 as it does not change the current community and public facilities plans. While this Alternative does not directly conflict with the ORS 327.043 requirement for public school districts to provide student transportation from their homes to public schools in Oregon, collapse of the Burnside Bridge would prevent students from attending school while post-disaster cleanup and reconstruction efforts are underway.

Local/Regional

The No-Build Alternative is not consistent with the City of Portland 2035 Plan recommendations outlined in Goal 8.1, nor in Policies 8.104, 8.105, 8.108, 8.109, 8.110, and 8.111. Under the No-Build Alternative following a CSZ earthquake, response times for emergency responders would not be reliable. Public and emergency services would be disrupted in the immediate aftermath of such an event, hindering the city's ability to withstand and recover from natural disasters. Furthermore, bridge failure due to the CSZ earthquake would not be consistent with the 2017–2020 Portland Fire and Rescue Strategic Plan/Coggle as response times for emergency responders would be delayed.

7.6.2 Build Alternatives

The Retrofit Alternative would require a permanent easement at the University of Oregon retail space. The remaining Alternatives at this location would result in a full acquisition of the retail space. All the Build Alternatives would result in the same impacts to the remaining public service facilities, including a partial, permanent ROW acquisition at the property that houses AMR and a TCE at the White Stag building. The acquisitions at the University of Oregon retail space and AMR would require both facilities to relocate.

Federal/State

The relocation of AMR would follow guidelines and procedures outlined in 49 CFR Part 24, the Uniform Relocation Assistance and Real Property Acquisition Regulations for Federal and Federally Assisted Programs.

Local/Regional

While the Build Alternatives would temporarily reduce accessibility to two educational public service facilities during construction, they would contribute to the overall resiliency goals outlined in the Central City 2035 Plan. All Build Alternatives are consistent with the Central City 2035 Plan since they would upgrade the bridge to be a “major emergency response route.” Should a major earthquake occur, the Burnside Bridge would provide crucial access across the river to aid emergency response services in supporting areawide recovery, thereby decreasing the amount of time non-emergency public services (educational, postal, and waste disposal services) are out of commission.

In addition, the City-owned tax lot under the west end of the bridge off SW 1st Avenue is currently leased to the University of Oregon as retail space. The City lease agreement includes a bridge maintenance clause, requiring existing tenants to vacate the area when the bridge needs to be maintained or reconstructed. As such, the Project complies with the laws regarding bridge maintenance and reconstruction in this area.

7.7 Conclusion

Under the No-Build Alternative, the Burnside Bridge is not expected to survive a major earthquake. The bridge would be seriously damaged or collapse, and the bridge debris would fall into the Willamette River and onto the roads below. This would likely result in severe disruptions to the transportation of people, goods, and public and emergency services. The majority of public services considered in this report, including fire safety, law enforcement, U.S. Postal Service, and waste disposal services, would have no direct long-term impacts.

All Build Alternatives would directly impact three public service facilities including two public school sites (a standalone University of Oregon retail space and the White Stag building [owned by the University of Oregon]) and one emergency response facility (AMR).

The Retrofit Alternative would require a permanent easement at the public parcel at the west bridgehead that is currently developed as retail space and leased by the University of Oregon. The Replacement Alternatives would require full acquisition of the University of Oregon retail space. In addition, all Build Alternatives propose a partial, permanent ROW acquisition at the property that houses AMR. While the impacts vary slightly across the Alternatives, all of the Alternatives would ultimately require the University of Oregon retail space and the AMR building to relocate. The addition of a temporary bridge to the respective Build Alternatives would not result in additional impacts to public service facilities. Mitigation measures implemented during construction would minimize direct impacts in the API.

All the Build Alternative options would require a TCE for the White Stag building directly north of the west bridgehead. None of the other public services in the Project Area would require a TCE.

Compared to the No-Build Alternative, all Build Alternatives are expected to greatly improve public safety and structure stability during and after seismic events. The Earthquake Ready Burnside Bridge would reduce the effects of the next CSZ earthquake through preparation via the creation of a seismically resilient transportation lifeline route. Such a lifeline route would facilitate post-earthquake emergency response, rescue, and evacuation, as well as enable post-disaster regional recovery and help prevent permanent population loss and long-term economic decline.

8 Mitigation Measures

8.1.1 Enhanced Seismic Retrofit Alternative

The displacement of the AMR building and the University of Oregon retail space would be mitigated by relocating the use or, functionally, by replacing the property acquired with another facility that would provide equivalent use. Compensation and relocation assistance described in the EQRB Acquisitions and Displacements Technical Report (Multnomah County 2021a) would mitigate the effects to AMR and the University of Oregon. Coordination with AMR and the University of Oregon would continue as Project design progresses.

8.1.2 Replacement Alternative with Short-Span Approach

Mitigation would be the same as under the Retrofit Alternative.

8.1.3 Replacement Alternative with Long-Span Approach

Mitigation would be the same as under the Retrofit Alternative.

8.1.4 Replacement Alternative with Couch Extension

Mitigation would be the same as under the Retrofit Alternative.

8.1.5 Construction Impacts Mitigation

To mitigate for temporary construction activities affecting public services, detailed coordination regarding construction locations and phasing would be required with the appropriate parties including fire departments, emergency responder services, school transportation services, and law enforcement.

For all the Build Alternatives, a pre-construction communication plan would be developed with all affected emergency response groups and other public service agencies detailing how detour and road closure information would be provided to the services. The County would continue to address the fire, life, safety, and security concerns associated with post-earthquake conditions. This would include a safety and security management plan that was developed in accordance with federal requirements and in close coordination with the transit agencies, the City of Portland, and all associated police and fire

departments. This coordination would take place during final design, construction, and operation of the Project improvements. The plan would provide emergency access, develop alternate plans or routes to avoid delays in response times, and institute other features as necessary so that safety and emergency services are not compromised.

Where construction activity requires detours on routes typically used by the public to access public service locations (police and fire stations, public schools, and post offices), detour signs would be provided. Specifically, short-term restrictions during construction could block direct access to northbound Naito Parkway, but southbound access would always be maintained. The County is also planning to invest in capital improvement projects, such as replacing the failing movable span deck on the Broadway Bridge and the cracking trunnions on the Hawthorne Bridge, to minimize peak hour lane closures and congestion on the Steel and Morrison bridges, which would serve as alternative transportation routes during construction.

Additional information and coordination with the PF&R Department, PPS, PPB, OSMB, AMR, and the University of Oregon would be needed as design progresses to further define impacts and potential mitigation.

If regulatory changes are needed for the safety of recreational boaters during construction, efforts to engage the Marine Board staff, Multnomah County Sheriff's Office River Patrol Unit, and other related agencies would begin at a minimum of 30 days in advance in order to allow enough time to implement the changes. Restrictions would be communicated to river users via signage and all media channels including the OSMB and River Patrol Unit websites, which list regulations and closures in a geographic format. Funding for signage and the location of any restricted areas would be worked out as the design progresses.

9 Contacts and Coordination

The Project includes extensive public involvement and agency coordination, including local jurisdictions and neighborhoods within the Project Area. Potential public services that have been or would be contacted are listed below:

Table 3. Public Service Contacts and Coordination

Agency/Organization	Contacted	Date(s) of Correspondence
Portland Bureau of Emergency Management	TBD	TBD
Portland Fire & Rescue	Yes	February 28, 2020
Portland Police Bureau	Yes	March 4, 2020
911 Bureau of Emergency Communications	TBD	TBD
Multnomah County Office of Emergency Management	TBD	TBD
Oregon State Marine Board	Yes	June 4, 2020
University of Oregon	Yes	July 16, 2019 February 6, 2020

Table 3. Public Service Contacts and Coordination

Agency/Organization	Contacted	Date(s) of Correspondence
American Medical Response	Yes	April 25, 2019 June 18, 2019 July 11, 2019
Portland Public Schools	Yes	March 3, 2020

Notes: TBD = To be determined

In addition, targeted interviews with representatives from public service providers would be conducted as Project design progresses.

10 Preparers

Name	Professional Affiliation	Education	Years of Experience
Kelly Carini	Parametrix	Environmental Science	5
Justina Everhart	Parametrix	Environmental Planner; Master of Urban and Regional Planning	6
Jennifer Hughes	Parametrix	Senior Environmental Planner	20

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