Environmental Justice Technical Report

Multnomah County | Earthquake Ready Burnside Bridge Project

Portland, OR

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Earthquake Ready Burnside Bridge Environmental Justice Technical Report

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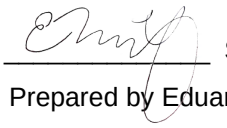
CERTIFICATION

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



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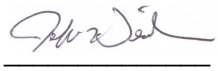

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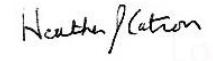

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Approved by Heather Catron (Consultant Project Manager)

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Acronyms, Initialisms, and Abbreviations

ACS	American Community Survey
ADA	Americans with Disabilities Act
AMR	American Medical Response
API	Area of Potential Impact
BES	Bureau of Environmental Sciences
CFR	Code of Federal Regulations
CSZ	Cascadia Subduction Zone
DHS	Department of Human Services
EIS	Environmental impact statement
EPA	U.S. Environmental Protection Agency
EQRB	Earthquake Ready Burnside Bridge
FHWA	Federal Highway Administration
FR	Federal Register
GHG	Greenhouse gas
GIS	Geographic information system
LEP	Limited-English proficiency
LGBT+	An inclusive term used in this analysis to indicate lesbian, gay, bisexual, transgender, and other communities that encompass a wide spectrum of sexuality and gender identity.
NEPA	National Environmental Policy Act of 1969
ODOT	Oregon Department of Transportation
ORS	Oregon Revised Statute
RTP	Regional transportation plan
UPRR	Union Pacific Railroad
USC	United States Code
USDOT	U.S. Department of Transportation

Executive Summary

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 (CSZ) 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.

Large construction projects and changes to the transportation network can result in disproportionately high and adverse effects on minority or low-income populations or communities, and the facilities they use. This analysis focuses on minority and low-income populations within the City of Portland and Portland metropolitan region. Such populations are identified using information and input generated through public outreach and involvement programs, field visits, open houses, community workshops, and the EQRB Diversity, Equity, and Inclusion program.

The No-Build and Build Alternatives were reviewed for their potential effects on those services. Based on this review, it has been determined that once project upgrades have been implemented and potential adverse impacts are mitigated, there would be no disproportionately high and adverse effects on any minority and/or low-income populations in accordance with the provisions of EO 12898 and FHWA Order 6640.23A.

Environmental justice populations would experience adverse environmental impacts to a degree no greater than the general population. Any disproportionately high and adverse effects on environmental justice populations would be adequately offset by the Project benefits, especially when compared to the No-Build Alternative in a post-earthquake scenario. All Build Alternatives would avoid disproportionately high and adverse effects on environmental justice populations as a result of the collapse of the Burnside Bridge caused by the next CSZ earthquake. A major seismic event would severely impact the use of the Burnside Bridge as a vital east-west crossing of the Willamette River and would also severely impact public and social services in the area including the cluster of organizations near the west approach that provide direct service to low-income, minority, and disabled populations.

Because people of low-income, minority populations, older adults, and people with disabilities are likely to depend more on active modes and public transportation, improved access to the Vera Katz Eastbank Esplanade and Skidmore Fountain MAX Station resulting from the Build Alternatives are considered benefits to environmental justice populations living, working, or accessing environmental resources within the Area of Potential Impact. These benefits, coupled with the proposed mitigation strategies, are considered to adequately offset disproportionately high and adverse effects on environmental justice populations resulting from the Project.

Generally, environmental justice populations will not experience short-term impacts to a greater degree than the general population. Short-term impacts are limited to construction-related impacts such as increased truck traffic and related congestion, detours, construction-related noise and visual impacts, and temporary access impacts. Short-term access impacts to social service providers have the potential to impact

environmental justice populations to a higher degree than the general population but have been mostly avoided through the design process. The Retrofit Alternative would result in the greatest short-term impact on environmental justice populations due to a 3-month construction easement that would disrupt client access to Portland Rescue Mission. However, the short duration of these impacts coupled with the Project benefits and mitigation measures are considered to offset disproportionately high and adverse effects on environmental justice populations.

Project benefits, coupled with the proposed mitigation strategies, are considered to adequately offset disproportionately high and adverse effects on environmental justice populations resulting from the Project. Further mitigation measures would be coordinated with the appropriate organizations prior to construction and would minimize direct impacts in the Area of Potential Impact.

1 Introduction

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

The environmental justice analysis examines whether the Project Alternatives (including the No-Build Alternative) have the potential to result in disproportionately high and adverse effects on minority or low-income populations or communities. The analysis focuses on minority and low-income populations within the City of Portland and Portland metropolitan region. Such populations are identified using information and input generated through public outreach and involvement programs, field visits, open houses, community workshops, and the EQRB Diversity, Equity, and Inclusion program.

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 to NE/SE Grand Avenue on the east side. Several neighborhoods surround the area including Old Town/Chinatown, Downtown, Kerns, and Buckman.

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 (CSZ) 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.

2 Project Alternatives

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

Briefly, the Draft EIS evaluates the No-Build Alternative and three 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:

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. Because the EQRB Project is intended to serve two very different future conditions (i.e., before as well as after the next CSZ earthquake), the No-Build Alternative is similarly defined in two scenarios:

- No-Build prior to the next major earthquake
- No-Build after the next major earthquake

The future projects assumed within the No-Build Alternative are the same in both scenarios. The difference is that in the first scenario, the focus of the analysis is on daily operations, whereas the second scenario analyzes how a seismically vulnerable Burnside Bridge would affect emergency response and recovery after the next CSZ earthquake.

2.2 Build Alternatives

- **Enhanced Seismic Retrofit (Retrofit) –** Under this Alternative, bridge bents and abutments would be retrofitted to meet current seismic standards. On the east side of the river, three replacement spans would be constructed over the freeway ramps and lanes, as well as over Union Pacific Railroad (UPRR) right-of-way. The Retrofit would also restore the bascule span leaf opening angle to the original design angle of 73 degrees (currently 55 degrees).

Replacement Alternatives with Short- and Long-span Approaches – These Alternatives replace the existing bridge with a bridge with the same connection to W Burnside from the west approach and only slightly modified connections to NE Couch St and E Burnside from the east approach.

- **Replacement Alternative with Short-span Approach (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. The bridge generally

consists of structural members below the riding surface and has span lengths comparable to the existing Burnside Bridge.

- **Replacement Alternative Long-span Approach (Long-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 long-span fixed bridge spans for the east and west approaches. Under the Long-span Alternative, the bridge would consist of structural members above the riding surface and have span lengths longer than the existing Burnside Bridge.
- **Replacement Alternative with Couch Extension (Couch Extension)** is composed of the same west approach and movable center span as the Short- and Long-span Alternatives but on the east, the westbound approach would extend NE Couch Street. approximately 1,100 feet westward on structure over all roads and buildings west of Martin Luther King, Jr. Boulevard before curving south to reconnect with the main Burnside Bridge over the water. Movable-span systems consisting of vertical lift and bascule span types are under consideration as of the writing of this report. Final selection of a movable-span system type will be determined in late 2021 with the approval of the Preferred Alternative by Multnomah County, project committees, and FHWA.

2.3 Construction Traffic Management Options

Traffic would not be able to cross the existing Burnside Bridge during construction of a replacement or retrofit bridge. The EIS will evaluate two basic options for managing cross-river traffic during construction:

- Temporary Detour Bridge Option (Temporary Bridge)
- Without Temporary Detour Bridge Option (No Temporary Bridge)

In order to allow some level of vehicular, pedestrian, and bicycle traffic to cross the river within the Burnside Corridor during construction, the Project could install a temporary bridge that would carry up to two traffic lanes as well as pedestrians and bicycles across the river. This bridge would be installed to the south of the permanent bridge and tie into the permanent east and west approach spans (see Appendix A of the EQRB Construction Approach Technical Report (Multnomah County 2021c) for approximate locations). See for a plan view and cross section of the temporary detour bridge with traffic options. Due to the tie-in locations, the last several spans of the east and west approaches would need to be constructed in halves to accommodate traffic.

The temporary detour bridge is evaluated with three different modal options:

1. Two general traffic lanes (one in each direction) allowing all motor vehicle lane, bike lanes, and sidewalks.
2. Two bus-only lanes (no other motor vehicles), bike lanes, and sidewalks.
3. Bicycles and pedestrians only (no motor vehicles).

Any of the three temporary bridge options, as well as the No Temporary Bridge Option, could be paired with any of the Alternatives.

3 Definitions

3.1 Geographic Terminology

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 3rd Avenue on the west side of the river to NE/SE Grand Avenue on the east side. The Project Area is shown in Figure 1.
- **Area of Potential Impact (API) –** This is the geographic boundary within which physical impacts to 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 environmental justice effects) the API is larger to account for impacts that could occur outside of the Project Area. The API for environmental justice effects is defined in Section 5.1.
- **Direct API –** The Direct API refers to the broader geographic boundary outside of resource-specific APIs where construction-phase impacts such as traffic detours and diversion are likely to occur. Any effects outside of the Direct API are considered indirect environmental effects.
- **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.

Figure 1 shows the Project Area, API, Direct API, and Project vicinity.

Figure 1. Project Area

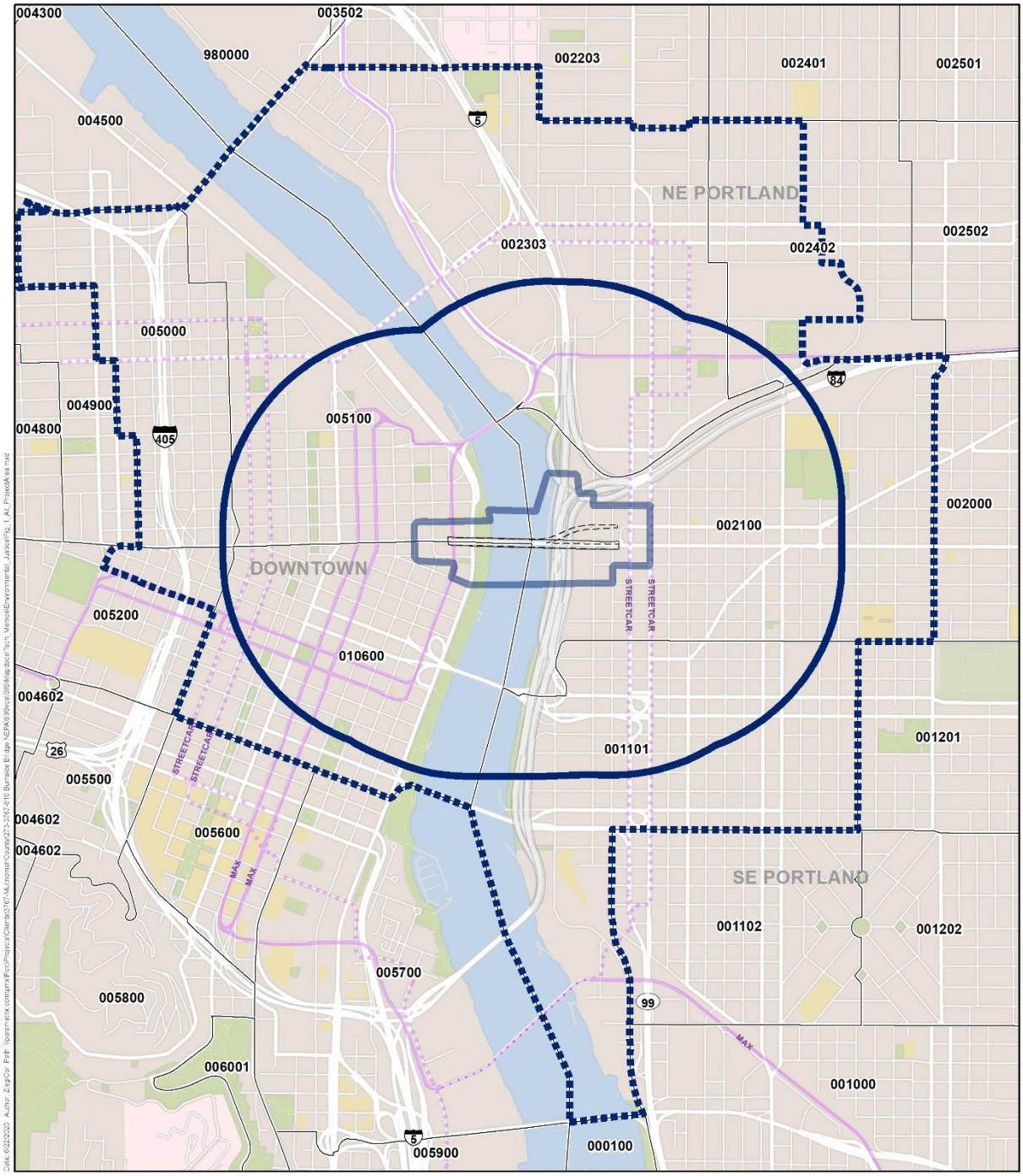


Figure 1
Direct Impact API
Environmental Justice

Earthquake Ready Burnside

3.2 Demographic Terminology

The following terminology is used when discussing minority and low-income populations within the context of environmental justice.

- Environmental Justice Populations–Are minority and/or low-income populations as defined in the DOT Order 5610.2(a) and FHWA Order 6640.23A on Environmental Justice. The FHWA Order provides the following definitions, which have been used in this analysis:
  - Minority Individual – A person who identifies as:
    - Black: a person having origins in any of the black racial groups of Africa;
    - Hispanic or Latino: a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race;
    - Asian American: a person having origins in any of the original peoples of the Far East, Southeast Asia or the Indian subcontinent;
    - American Indian and Alaskan Native: a person having origins in any of the original people of North America, South America (including Central America), and who maintains cultural identification through tribal affiliation or community recognition; or
    - Native Hawaiian and Other Pacific Islander: a person having origins in any of the original peoples of Hawaii, Guam, Samoa or other Pacific Islands.
  - Low-Income Individual – Is defined in the DOT Order 5610.2(a) and FHWA Order 6640.23A as a person whose household income is at or below the US Department of Health and Human Services (HHS) poverty guidelines. The U.S. Census defines low income as a person whose household income is at or below the U.S. Department of Health and Human Services poverty guidelines of $25,750 (2019 guidelines) for a family of four. For the purposes of this analysis, to account for a higher regional cost of living, the level for low-income is considered to be double this guideline, $51,500.[1] Doubling the guideline also helps account for future inflation and further increases in the regional cost of living.[2]

[1] This methodology is consistent with demographic variables used by U.S. EPA EJScreen reporting, which utilizes 200 percent of the FPL. Detailed information about this methodology can be found in EPA EJ Screen Technical Documentation: https://www.epa.gov/sites/production/files/2017-09/documents/2017_ejscreen_technical_document.pdf

[2] This methodology is also consistent with the *Poverty in Multnomah County* (2019) report developed by the Multnomah County Department of County Human Services and County Commission for Economic Dignity. The official poverty rate, which is defined as households with incomes below 100% of the Federal Poverty Level (FPL), is the only measure of poverty for which detailed and comprehensive data are available, but it significantly undercounts the number of people experiencing poverty. Many people with incomes above the official poverty rate are still unable to meet their basic needs, and many more do not have sufficient resources to achieve their full potential or participate as full and equal members of society.

4 Laws and Regulations

All federal agencies must comply with Title VI of the 1964 Civil Rights Act (Title VI) and Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. Under Title VI and related statutes, each federal agency is required to ensure that no person is excluded from participation in, denied the benefit of, or subjected to discrimination under any program or activity receiving federal financial assistance on the basis of race, color, national origin, age, sex, disability, or religion. Executive Order 12898 states that "…each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations…" [3]

Pursuant to the Executive Order, FHWA issued Order 6640.23A, FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. The Secretary of Transportation, along with heads of other federal agencies, signed a Memorandum of Understanding on Environmental Justice (EJ MOU) and Executive Order 12898 confirming the continued importance of identifying and addressing these considerations in agency programs, policies and activities as required by Executive Order 12898.

As part of the EJ MOU, each agency agreed to review and update their Environmental Justice (EJ) strategy as appropriate. The updated strategy relies upon existing authorities for achieving EJ as described by the Executive Order 12898, such as the National Environmental Policy Act of 1969 (NEPA), Title VI and related statutes, as well as the commitments and focus areas in the EJ MOU.

FHWA issued Order 6640.23A, FHWA Actions to Address EJ in Minority Populations and Low-Income Populations, on June 14, 2012. On December 16, 2011, FHWA issued a memorandum titled "Guidance on Environmental Justice and NEPA."[4] The memorandum (EJ Memo) describes the process involved in addressing Environmental Justice during NEPA review, including documentation requirements. This guidance helps FHWA staff and NEPA practitioners ensure compliance with EJ requirements. FHWA administers its governing statutes to identify and avoid discrimination and disproportionately high and adverse effects on minority populations and/or low-income populations by:

[3] While a person, or persons, cannot bring a legal claim under any of the EJ orders, such person, or persons, can bring a claim under Title VI. Title VI of the Civil Rights Act of 1964, requires that no person, because of race, color, or national origin, be excluded from participation in, denied the benefits of, or in any other way be subjected to discrimination under any program or activity receiving Federal assistance. Any member of a protected class under Title VI may file a complaint with the FHWA Office of Civil Rights, Attention HCR-20, alleging that he or she was subjected to discrimination in violation of Title VI.

[4] Federal Highway Administration (2011). Guidance on Environmental Justice and NEPA. https://www.environment.fhwa.dot.gov/env_topics/ej/guidance_ejustice-nepa.aspx

1. Identifying and evaluating environmental, public health, and interrelated social and economic effects of FHWA programs, policies, and activities;
2. Proposing measures to avoid, minimize, and/or mitigate disproportionately high and adverse environmental and public health effects and interrelated social and economic effects and provide offsetting benefits and opportunities to enhance communities, neighborhoods, and individuals affected by FHWA programs, policies, and activities, where permitted by law and consistent with Executive Order 12898;
3. Consider alternatives to proposed programs, policies, and activities where such alternatives would result in avoiding and/or minimizing disproportionately high and adverse human health or environmental impacts, where permitted by law and consistent with Executive Order 12898; and
4. Providing public involvement opportunities and considering the results thereof, including providing meaningful access to public information concerning the human health or environmental impacts and soliciting input from affected minority populations and/or low-income populations in considering alternatives during the planning and development of alternatives and decisions.

5 Impact Analysis Methodology and Data Sources

Per Executive Order 12898, FHWA Order 6640.23A, and FHWA EJ Memo guidance, explicit consideration of potential effects on minority and low-income populations is required in NEPA documents. Analysis of potential effects on minority and low-income populations must:

- *Identify existing minority and low-income populations* - The primary sources of data for demographic information are 2018 American Community Survey 5-Year Estimates and the 2010 Census published by the US Census Bureau. Per FHWA EJ Memo guidance, deliberate efforts were taken to ensure relatively small clusters or dispersed populations were not be overlooked – namely unhoused populations living in the Project Vicinity. This analysis utilizes other localized and relevant information sources such as the 2017–2019 Point-in-Time Count of Homelessness study conducted by Portland State University and Multnomah County to identify groups or clusters of minority or low-income persons in the EJ study area that may be underrepresented in U.S. Census counts. Other information used in this analysis includes Multnomah County demographic information published in the U.S. Environmental Protection Agency's (EPA) EJScreen tool.
- *Explain coordination, access to information, and participation* – This EJ analysis includes a discussion of major proactive public participation efforts and activities done to increase meaningful participation by low-income and minority populations. Key issues relevant to population(s) that would be affected by the project are discussed throughout the description of impacts, benefits, and proposed mitigation actions. Outreach to low-income and minority populations was also conducted as part of the Project Diversity, Equity, and Inclusion (DEI) program, which included

deliberate actions to involve minority and low-income populations in the decision-making process related to selection of the Preferred Alternative, impact analysis, and mitigation process.

- *Identify disproportionately high and adverse effects* – The EJ analysis determines whether disproportionately high and adverse effects are predominantly borne by low-income and/or minority populations, or are appreciably more severe or greater in magnitude on the minority or low-income population than the adverse effect suffered by the non-minority or non-low-income population. In determining whether there would be disproportionately high and adverse impacts, the analysis takes into consideration potential mitigation, enhancement measures, and offsetting benefits to low-income and minority populations. If a disproportionately high and adverse effect on an EJ population remains after Project benefits and mitigations are taken into consideration, the EJ analysis evaluates whether there is a further practicable mitigation measure or practicable alternative that would avoid or reduce the disproportionately high and adverse effect(s). FHWA will approve the proposed action only if it determines no such practicable measures exist.

5.1 Long-Term Impact Assessment Methods

The analysis of direct long-term environmental justice impacts considers disproportionately high and adverse effects of Project operation (after construction) that would affect the identified minority and low-income populations. This evaluation includes information on the location, intensity, and duration of potential environmental effects and based on the impact analyses of the following Draft EIS technical report topics:[5]

- Land use and economics
- Displacements and relocations
- Social and neighborhood effects
- Visual resources
- Parks and recreation
- Archaeology and historic preservation
- Public services and utilities
- Air quality
- Noise and vibration
- Transportation

The analysis also considers potential impacts to facilities used extensively by environmental justice populations, including community facilities and social service providers that directly serve low-income and minority populations. Such community facilities and social service providers are assessed to determine if Project impacts would result in disproportionately high and adverse effects on environmental justice populations.

[5] Note: list to be refined once EIS sections are complete and the descriptions of relevant impacts have been finalized.

Mitigation and enhancement measures for long-term Project impacts described in Section 8 of this report. Potential benefits to environmental justice populations resulting from Project improvements are also considered, such as improved seismic resiliency and improved multimodal connectivity across the Willamette River. Project benefits are considered for their potential to offset disproportionately high and adverse effects on low-income and minority populations that could not be avoided or mitigated otherwise.

5.2 Short-Term Impact Assessment Methods

The analysis of direct short-term impacts considers the potential for construction impacts to result in disproportionally high and adverse effects on low-income and minority populations. Short-term impacts include temporary, one-time, or short-term effects that are limited to the duration of construction. As with the analysis of long-term impacts, Draft EIS environmental resource impact analysis technical reports are used as the basis of technical information for evaluating potential short-term impacts to environmental justice populations in the API. Construction-phase impacts identified in Draft EIS technical reports are evaluated for their potential to result in disproportionately high and adverse effects on environmental justice populations.

5.3 Indirect Impact Assessment Methods

The assessment of indirect impacts considers *reasonably foreseeable* Project actions that would result in disproportionately high and adverse effects on low-income and minority populations that would occur later in time or further in distance from the Direct API. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems. An example of such an indirect impact would be the displacement of minority or low-income communities, or service providers for these communities, due to new development that was enabled by a new Burnside Bridge. Another example would be if there is a substantial increase in traffic noise in low-income or minority areas outside of the Project Area related to detours from construction of the EQRB Project. This analysis is primarily qualitative and based on historical and current development and population trends in the region.

5.4 Cumulative Impact Assessment Methods

The cumulative impacts analysis considers the incremental impact of EQRB Project effects combined with the effects of other past, present, and reasonably foreseeable future actions that could result in disproportionately high and adverse impacts on low-income and minority populations. This analysis is primarily qualitative based the list of foreseeable transportation improvement projects and other development projects that are anticipated to occur in the Portland metropolitan region within the same time frame. The cumulative impacts analysis also considers relevant past and present actions that, when combined with the incremental impact of the EQRB Project, could result in disproportionately high and adverse effect on environmental justice populations. Cumulative environmental justice impacts are examined in the context of both short-term construction effects as well as long-term operational impacts.

5.5 Mitigation Approach

If required, mitigation measures will be identified for significant adverse environmental justice impacts. The majority of these mitigation measures will be taken from other environmental topics, such as mitigation for displacements, community disruption, traffic impacts, visual impacts, and noise and vibration. For any identified environmental justice impacts, the analysis will consider whether the Project's mitigation measures and environmental enhancement actions will avoid, offset, or minimize these impacts, or whether additional mitigation is necessary. For any remaining effects, the analysis will conclude with a discussion of why further mitigation is not feasible or not proposed.

5.6 Public Outreach Methods

The environmental justice analysis was also informed by Multnomah County's broader equity, inclusion, and public engagement program for the Project. Between 2016 and 2020, Multnomah County and local partners solicited comments from the general public and key stakeholders, including low-income and/or minority people and organizations that directly serve or represent low-income and/or minority people.

Multnomah County implemented an inclusive public and stakeholder outreach process by offering a variety of ways for people to participate in project conversations. The following public engagement methods were utilized with an emphasis on directly reaching low-income and minority populations within the API:

- Interviews
- Community briefings
- Focus groups and working groups (some targeted specifically on low-income individuals)
- Committee representation
- Open houses
- Email updates
- Tabling at community events (i.e., markets)
- Field surveys
- Website/online engagement tools (i.e., videos)
- Social media engagement
- Newsletters and mailers
- Translated materials in languages other than English to reach minority populations

In addition, Multnomah County partnered with the Community Engagement Liaisons (CELs) Program to facilitate direct engagement with low-income and minority populations within a one-mile radius of the Project area using several of the methods above, including in-person business canvassing, field surveys, and community briefings. Liaisons obtained feedback from Black and African American, Native American, Vietnamese, Chinese, Latinx, Japanese, Arabic, and Russian and Ukrainian

communities within the API, of which some were also low-income individuals. In-person and online surveys used to collect feedback from the general public during this time also captured demographic information to track low-income and minority representation in responses. In the most recent round of survey outreach conducted in 2020, minorities (all but White, non-Hispanic individuals) accounted for approximately 21 percent of all survey responses. Respondents with household incomes of $30,000 per year or less also accounted for approximately 21 percent of all survey responses.[6]

In addition, two working groups with members of the environmental justice community were formed to provide detailed input on the planning process and bridge alternatives. The Social Services working group is represented by individuals from the Portland Rescue Mission, Central City Concern, Bridgetown Night Strike, and Ride Connection, which directly serve the low-income and unhoused population in the API. Unhoused low-income individuals are generally more difficult to engage through traditional outreach means than the general public, so the Social Services working group played a critical role in helping the County understand the potential for disproportionately high and adverse effects on low-income populations living or accessing social services in the vicinity of the Burnside Bridge. The Social Services working group raised several important issues pertaining to the analysis of disproportionately high and adverse effects on low-income populations, including temporary access impacts at homeless meal and recovery centers, safety considerations related to the number of columns at Waterfront Park, and fare subsidies to support transit-dependent low-income individuals accessing social services in the West Bridgehead area. Input from the Social Services working group contributed to the selection of the Preferred Alternative and generation of mitigation ideas to minimize impacts to EJ and other historically disadvantaged groups.

The Public Involvement program is also supported by the EQRB Diversity, Equity, and Inclusion plan, which was developed based on feedback from early environmental justice interviews, a Diversity, Equity, and Inclusion (DEI) working group, and project area demographics analysis on other DEI plans to implement engagement strategies and recommendations that would bring the voices of low-income and minority populations to be heard in the project and allow for influence in decision making. The Diversity, Equity, and Inclusion working group consisted of individuals representing the City of Portland, ODOT, Metro, and TriMet.

In addition to the working groups, Multnomah County, ODOT, and FHWA conducted direct outreach with other organizations that directly serve or advocate for low-income and minority populations. For example, Multnomah County met with organizations including the National Association for the Advancement of Colored People (NAACP), Coalition of Communities of Color, Native American Youth and Family Center, Native American Rehabilitation Center, Voz, Vancouver Avenue Baptist Church Immigrant and Refugee Community Organization, Asian Pacific American Network of Oregon (APANO), and Verde. Meetings with these organizations were held to share information and gather feedback on alternative concepts, potential impacts to low-income and minority populations, and mitigation strategies to inform selection of the Preferred Alternative. ODOT and FHWA also met with the Confederated Tribes of the Grand Ronde

[6] For comparison, the median household income of Multnomah County residents (2013-2017 ACS) was $60,369. Therefore, an annual household income of $30,000 represents approximately 50 percent of the median household income in Multnomah County.

Community of Oregon, Confederated Tribes of Siletz Indians, Confederated Tribes of the Warm Springs Reservation of Oregon, Confederated Tribes of the Umatilla Indian Reservation, and Nez Perce Tribe in 2019. These meetings provided an opportunity for the tribes and agencies to discuss alternatives proposed for the Project, cultural resource surveys, and potential effects of the Project, and mitigation strategies. These tribes are recognized as a Participating Agency for the NEPA process.

The environmental justice analysis builds on these past and ongoing outreach efforts to assess the potential for disproportionately high and adverse environmental effects resulting from the Project. More detailed discussion about the public engagement process is documented in the EQRB Public Involvement Plan; EQRB Diversity, Equity, and Inclusion Plan, and EQRB Public Involvement Summary Reports (Rounds 1 and 2) (Multnomah County 2019b and 2020, respectively).

6 Affected Environment

6.1 Environmental Justice Area of Potential Impact

Environmental justice impacts and benefits are inclusive of long- and short-term direct, indirect, and cumulative impacts. The API used for the environmental justice analysis of long- and short-term environmental impacts includes a 0.5-mile buffer from the Project Area. Using this buffer, the entirety of all census tracts and block groups intersecting the 0.5-mile buffer were selected to constitute the *Direct API*, denoting the area where direct environmental impacts are likely to occur as a result of the Project. Therefore, *API* and *Direct API* are used interchangeably throughout the report, as environmental effects are considered for all intersecting census geographies even if partially located outside the strict 0.5-mile buffer. Figure 1 shows the 0.5-mile buffer and Direct API boundary resulting from the selected census geographies.

The Direct API for the environmental justice analysis is broader than the API for some of the other environmental topics and is substantially broader than the immediate Project Area. The Direct API captures broad potential effects including direct physical impacts and infrastructural changes, transportation network changes, short-term construction impacts, changes to access in the area, and other network effects as a result of the Project. An analysis of existing environmental justice populations within the API considers information obtainable via census data.

Impacts outside of the Direct API are considered indirect Project impacts. Analysis of indirect impacts is primarily qualitative and based on historical and current development and population trends in the region. Therefore, the assessment of indirect impacts considers reasonably foreseeable Project actions that would result in disproportionately high and adverse effects on low-income and minority populations within the Portland metropolitan region as a whole, such as those that would occur later in time or further in distance from the Direct API.

Analysis of cumulative impacts considers the incremental impact of EQRB Project effects outside of the Direct API combined with the effects of other past, present, and reasonably foreseeable future actions within the Portland metropolitan region that could

result in disproportionately high and adverse impacts on environmental justice populations.

The sections below provide addition information about the west and east bridgehead areas within the API.

6.1.1 West Bridgehead

The west bridgehead area is almost entirely within either the New Chinatown/Japantown or Skidmore Old Town historic districts and is comprised of several land uses, businesses, and institutions with relevance to low-income and minority populations. The west bridgehead area is a hub for social, health, and emergency service providers that directly serve low-income and minority populations, including homeless individuals.[7] For example, Portland Fire Department Station No. 1 and Mercy Corps Northwest are located on Naito Parkway to the south of the bridge (one block from the bridge), both of which provide direct service to environmental justice populations. Skidmore Market and Portland Saturday Market are also located within this portion of the API; both operate seasonally on weekends between SW 2nd Avenue and the waterfront along SW Ankeny Street and are frequented by many people, including minority and low-income individuals. Governor Tom McCall Waterfront Park and the Japanese American Historical Plaza comprise 4.4 acres or 37 percent of the west bridgehead area and are both frequented by environmental justice populations.

No major new developments have been identified for API West.

For more information on existing social services in the west bridgehead area, see Section 6.3.1 below.

6.1.2 East Bridgehead

The east bridgehead area includes portions of Interstate 84 (I-84), Interstate 5 (I-5), and the UPRR, industrial uses along NE/SE 2nd Avenue, and a mixed-use and retail development zone from NE/SE 3rd Avenue to NE/SE Grand Avenue. The area also includes social, health, and emergency service providers that directly serve low-income and minority populations.

The predominantly industrial uses along NE/SE 2nd Avenue include the Pacific Coast Fruit Company and Rose City Transportation, which may employ low-income and minority individuals. American Medical Response (AMR) provides ambulance services (dispatch and fleet maintenance) to Multnomah County, Clackamas County, and Clark County in Washington. AMR also frequently serves low-income and minority social service organizations within the west and east bridgehead areas. In addition to the industrial uses along NE/SE 2nd Avenue, the Burnside Skatepark sits directly underneath the bridge which may be frequented by environmental justice populations.

[7] This report acknowledges the U.S. Department of Housing and Urban Development definition of homelessness, which accounts for both “homeless” individuals as well as the “housed homeless.” For the purpose of consistency, “homeless” is used consistently throughout this report to describe individuals lacking a “fixed, regular, and adequate nighttime residence” including those who sleep outside and those with temporary nighttime residences. Homeless individuals are considered low-income persons for the purposes of this EJ analysis. https://files.hudexchange.info/resources/documents/HomelessDefinition_RecordkeepingRequirementsandCriteria.pdf

Other providers and centers that serve low-income and minority populations include Harry's Mother Run-Away Youth, Independent Living Resources (help resources for persons with disabilities), Multnomah County Department of Human Services Child Welfare Office, and two locations of the Salvation Army.

Since approximately 2010, there have been changes in transportation patterns and land uses as a result of transportation improvement projects and redevelopment activity in the east bridgehead area. For example, the transportation pattern and right-of-way through the east bridgehead area were substantially changed in 2010 with the introduction of the Couch-Burnside couplet. This traffic change was followed by a series of major mix-used and office-retail developments adjacent to the bridgehead. The increase in new development in the area has been accompanied by renovations and conversions of other properties including the office conversion of the Old Town Storage building on SE Ankeny Street and the conversion from apartments to a hostel for The Vivian Building on the corner of NE Couch Street and NE Martin Luther King Jr. Boulevard. With several low-rise buildings and surface parking lots remaining in API East, it is likely that redevelopment will continue. Refer to Section 7.5 for more discussion on future anticipated projects.

For more information on existing social services in the east bridgehead area, see Section 6.2.2 below.

6.1.3 Environmental Justice Populations

Minority Population

Table 1 compares the proportion of minority residents within the API to those living in Multnomah County as a whole. Figure 2 displays minority population concentrations living within API census tracts. Table 2 reports the same information by the census tracts within the API to show where concentrations of different minority groups exist.

Figure 2. Minority Population within API Census Tracts

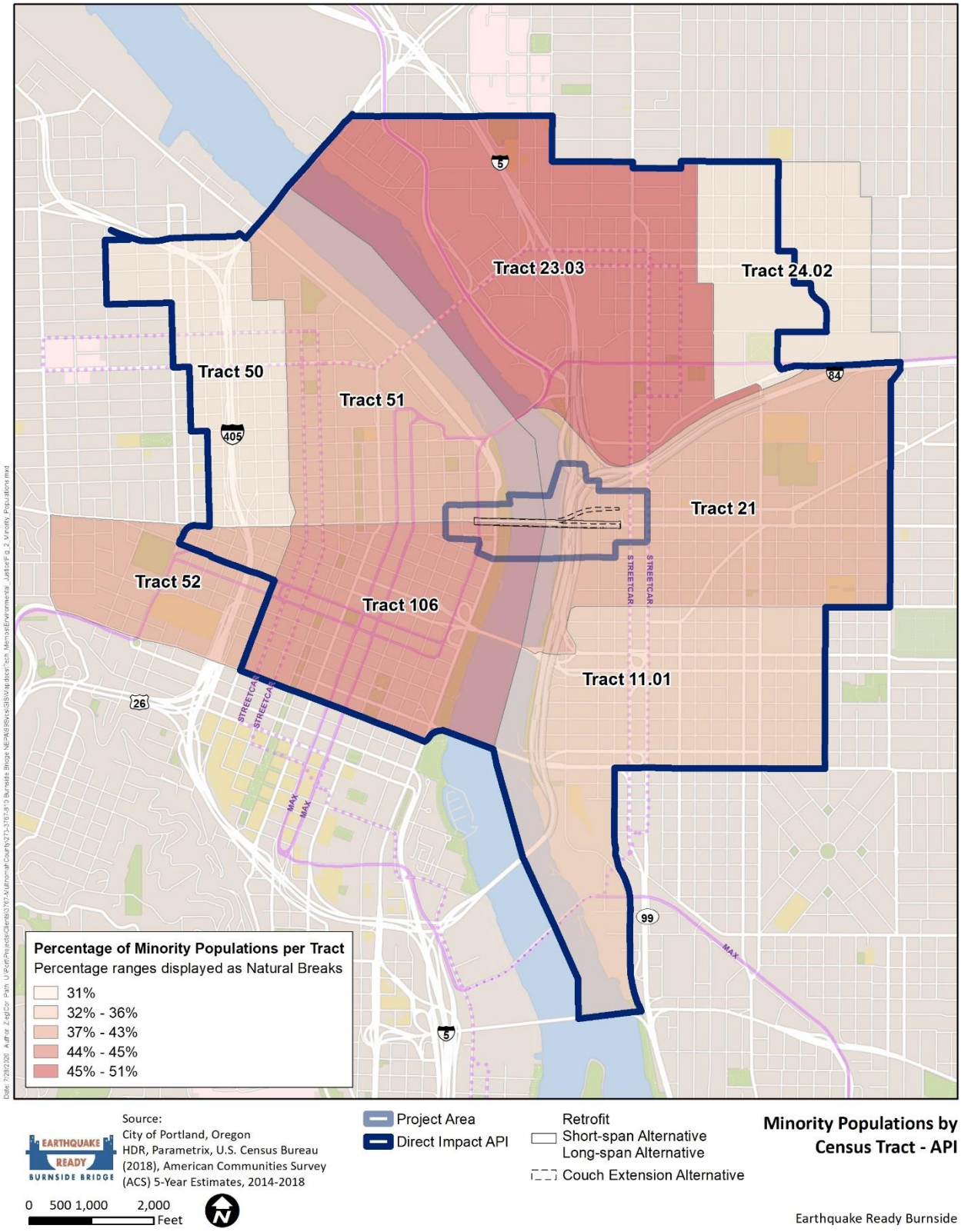


Table 1. Minority Populations within the API and County

Minority persons as percent of total population within API census tracts

Demographics	API	Multnomah County
Total Population	1,643	811,880
Hispanic (all races)*	6.1%	11.7%
White Non-Hispanic	76.1%	68.9%
Black Non-Hispanic	6.4%	5.4%
American Indian – Non-Hispanic	0.6%	0.8%
Asian Non-Hispanic	4.9%	7.8%
Pacific Islander – Non-Hispanic	1.1%	0.7%
Two or More Races – Non-Hispanic	4.6%	4.3%
Total Minority	**23.7%**	**30.8%**

Source: U.S. Census Bureau, American Community Survey - 2014-2018 5-Year Estimates

*Note: Hispanic origin is generally not considered to be a racial group but is considered a minority. For the purposes of this evaluation, all individuals identifying as non-white races combined with those of Hispanic origin (of any race) together make up the minority population.

Table 2. Minority Populations within Census Tracts

Percent of total population within API census tracts

Census Tract	Total Population	Hispanic (all races)	White Non-Hispanic	Black Non-Hispanic	American Indian – Non-Hispanic	Asian Non-Hispanic	Pacific Islander – Non-Hispanic	Two or More Races – Non-Hispanic	Total Minority
11.01	2,473	2.8%	80.7%	8.0%	0.4%	2.7%	0.0%	5.3%	19.3%
21	2,694	2.9%	76.0%	4.8%	1.9%	3.9%	4.1%	5.3%	23.0%
23.03	2,555	5.8%	71.5%	12.5%	0.4%	3.4%	0.0%	6.4%	28.5%
24.02	1,188	8.2%	80.2%	4.4%	0.0%	5.7%	0.0%	1.5%	19.8%
50	3,326	3.0%	82.5%	2.1%	0.0%	7.8%	0.0%	4.6%	17.5%
51	8,148	7.5%	74.7%	6.2%	0.4%	5.3%	1.6%	4.2%	25.3%
52	1,003	15.2%	70.6%	1.8%	0.7%	3.6%	2.8%	5.4%	29.4%
106	3,144	7.7%	73.6%	8.8%	1.6%	4.3%	0.0%	4.0%	26.4%
API Total	**24,531**	**6.1%**	**76.1%**	**6.4%**	**0.6%**	**4.9%**	**1.1%**	**4.6%**	**23.7%**
Multnomah County Total	**811,880**	**11.7%**	**68.9%**	**5.4%**	**0.8%**	**7.8%**	**0.7%**	**4.0%**	**30.5%[a]**

Source: U.S. Census Bureau, American Community Survey – 2014–2018 5-Year Estimates

[a] Table 2 reports a Multnomah County total percentage of minority populations that is 0.3% lower than Table 1 due to minor discrepancies in the margin of error between census block groups and census tracts.

As shown in Table 1, the API has lower minority representation than Multnomah County as a whole. However, the API has slightly higher concentrations of three minority groups: Black and African American, Native Hawaiian or Pacific Islander, and two-or-more-race residents. As shown in Table 2, concentrations of minority residents within the API are relatively even across census tracts and range from a low of 17.5 percent in census tract 50 to a high of 29.4 percent in census tract 51.

As shown in Figure 2, the greatest concentration of the minority population resides in census tract 23.03, located east of the Willamette River along the I-5 corridor, north of I-84. The two largest minority groups in the API are Hispanic or Latino and Black or African American residents, which comprise 6.1 percent and 6.4 percent of the total population, respectively. Tracts 52 and 23.03 contain the highest concentrations of Hispanic or Latino and Black or African American individuals. Hispanic or Latino residents account for 15.2 percent of the total population in census tract 52, while Black or African American residents account for 12.3 percent of the total population in census tract 23.03.

Table 3 shows the population distribution of racial minorities in the Project Area census tracts, as well as in Portland, Multnomah County, and Oregon between 2012 and 2017. Over time, the proportions and trends in minority populations were generally consistent with state, county, and city trends. The key observations from this table include the following:

- In 2017, census tract 51 had the smallest proportion of minority populations at 17 percent compared to 21.4 percent in census tract 21 and 26.4 percent in census tract 106. In the benchmark areas of Portland, Multnomah County, and Oregon, the proportion of minority populations was well above 20 percent (at 23.5 percent, 29.5 percent, and 29.0 percent for the areas specified, respectively).
- Over the 2012-2017 period, total proportion of minority populations increased in census tract 21, Multnomah County, and Oregon, and decreased in census tract 51 and census tract 106.
- In 2017, across all geographic areas analyzed, the proportions of individual categories of minority populations did not exceed a level of about 8 percent, except for Black and African American populations in census tract 106 which accounted for 10.2 percent of the total population in that census tract.
- In census tract 21, the proportion of the population that was Black or African American increased three times between 2012 and 2017. The population share of individuals with a background of two or more races more than doubled. The share of American India and Alaska Native populations increased from 0 to 2.5 percent and the Asian alone population increased by 0.8 percentage points. However, the share of the Hispanic or Latino population decreased by almost 50 percent. The total percent of minorities increased by more than 8 percentage points.
- In census tract 51, the proportion of most minority populations fell, except for Hispanic or Latino populations and populations of two or more races. The total percent of minorities decreased by 4.7 percentage points.
- In census tract 106, notable reductions of minority population shares included decreases in the shares of American Indian and Alaska Native populations, Asian

Only population, and population identified as "Some other race." On the other hand, the proportions of Hispanic and Latino populations, as well as Black or African American populations increased. Overall, the total minority share of the population fell by about 3.3 percentage points.

- In 2017, the census tracts of the Project Area (i.e., census tracts 21, 51, and 106) tended to have lower proportions of Asian populations, Hispanic or Latino populations, and "Some other race" populations as compared to Multnomah County as a whole. At the same time, the census tracts had a similar level of Black or African American populations to the county, except for census tract 106 which had nearly twice as many Black or African American residents. These census tracts also had higher levels of American Indian or Alaska Native populations as compared to the county as a whole.

Table 3. Minority Population Change Over Time (2012–2017)

Race/Minority	Census Tract 21	Census Tract 51	Census Tract 106	Portland	Multnomah County	Oregon
2017						
Black or African American	5.5%	5.6%	10.2%	5.7%	5.5%	1.9%
American Indian or Alaska Native	2.5%	0.1%	1.4%	0.8%	0.9%	1.1%
Asian alone	3.5%	3.3%	3.1%	7.8%	7.0%	4.1%
Native Hawaiian or Other Pacific Islander	0.0%	0.0%	0.0%	0.6%	0.6%	0.4%
Some other race	1.9%	1.8%	1.6%	2.3%	2.8%	3.0%
Two or more races	5.7%	4.2%	5.2%	5.5%	5.4%	4.6%
Hispanic or Latino; White	2.3%	2.0%	4.9%	6.4%	7.3%	8.4%
Total minority	**21.4%**	**17.0%**	**26.4%**	**29.0%**	**29.5%**	**23.5%**
2012						
Black or African American	1.8%	7.0%	8.6%	6.5%	5.8%	1.8%
American Indian or Alaska Native	0.0%	1.9%	2.2%	0.8%	1.0%	1.4%
Asian alone	2.7%	5.8%	4.3%	7.2%	6.7%	3.7%
Native Hawaiian or Other Pacific Islander	0.0%	0.0%	0.0%	0.6%	0.6%	0.4%

Race/Minority	Census Tract 21	Census Tract 51	Census Tract 106	Portland	Multnomah County	Oregon
Some other race	1.7%	2.1%	5.4%	3.1%	3.4%	3.8%
Two or more races	2.7%	3.4%	6.3%	4.3%	4.1%	3.7%
Hispanic or Latino; White	4.5%	1.6%	2.9%	5.2%	6.3%	6.9%
Total minority	**13.3%**	**21.8%**	**29.7%**	**27.7%**	**27.8%**	**21.6%**

Source: U.S. Census Bureau (accessed April 2019), calculated based on American Community Survey 5-year estimates. Note that the racial minorities groups combine Hispanic and non-Hispanic origins. "Hispanic or Latino; White" is added as an additional category as populations of this origin are often identified as minorities.

Low-Income Populations

Table 4 shows the percent of the population considered to be low-income within the API and Multnomah County. Figure 3 summarizes the low-income population concentrations living within API census tracts. As indicated in Table 4, the percent of low-income individuals in the API (38 percent) is higher than that found in the county (28 percent). The majority of the tracts have a substantially higher percentage of low-income individuals than Multnomah County as a whole, particularly census tract 106 (65 percent). Census tract 106 represents the area west of the Willamette River and south of W Burnside and includes the hub of social service providers in the west bridgehead area.

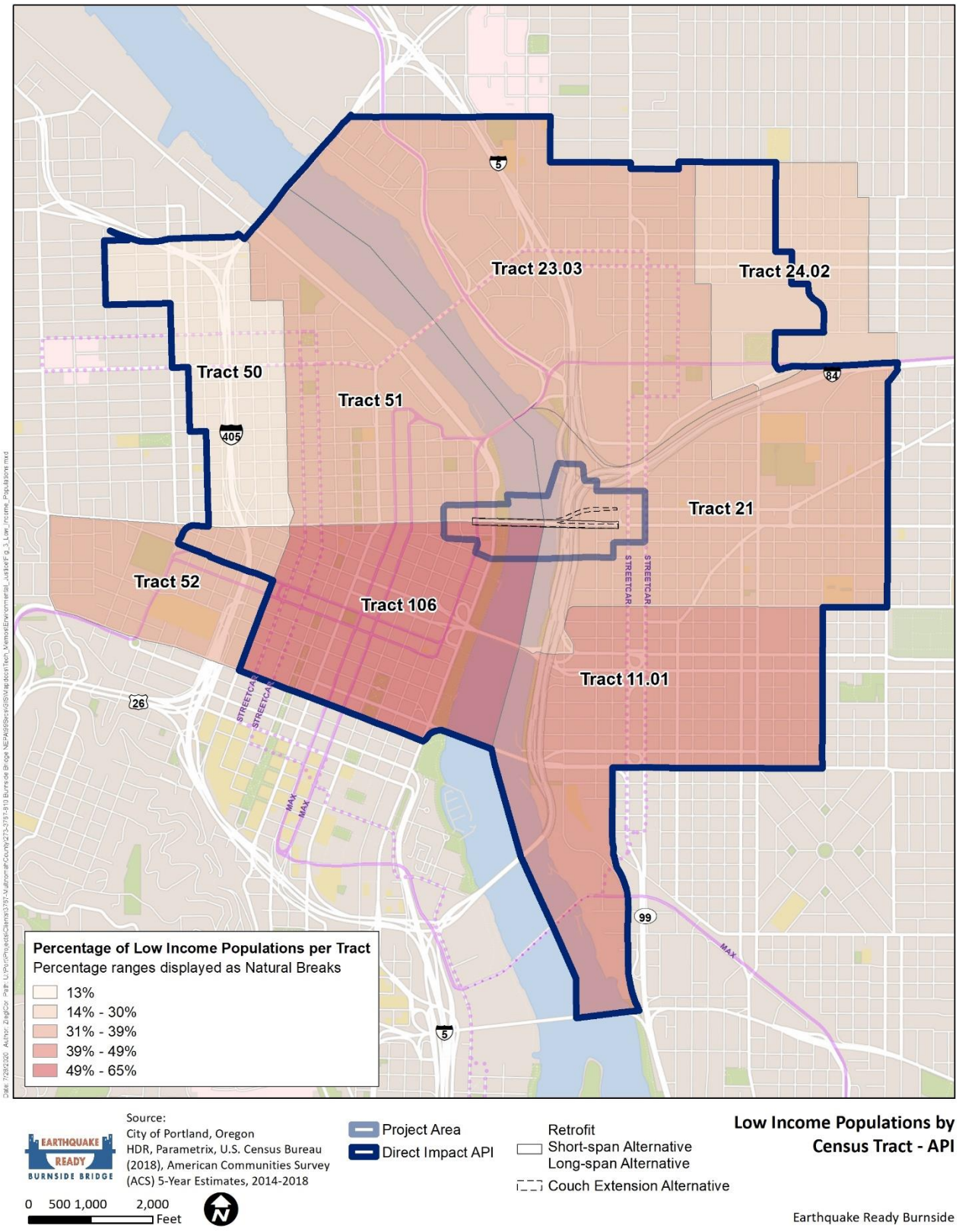
Table 4. Low-Income Populations within the API and County

Percent of total population considered low-income in census tracts

Tract	Total Population	Low-Income Population	Low-Income Population
11.01	2,473	1,202	48.6%
21	2,660	1,040	39.1%
23.03	2,480	906	36.5%
24.02	1,753	539	30.8%
50	3,326	456	13.7%
51	8,040	2,997	37.3%
52	664	258	38.9%
106	2,640	1,726	65.4%
API Total	**24,036**	**9,124**	**38.0%**
Multnomah County Total	**811,880**	**226,522**	**27.9%**

Source: U.S. Census Bureau, American Community Survey – 2014–2018 5-Year Estimates

Figure 3. Low-Income Populations within API Census Tracts



Homeless Populations

The EJ analysis utilizes other localized and relevant information sources to identify groups or clusters of minority or low-income persons that may be underrepresented in U.S. Census counts. Specifically, additional analysis was done to assess disproportionately high and adverse effects on low-income persons that may also be homeless. For the purposes of this EJ analysis, homeless individuals are considered a subset of the low-income population.

This analysis was based primarily on the 2019 Point-in-Time Count of Homelessness study (the Count) conducted by Multnomah County and Portland State University.[8] Additional information published by the Multnomah County Office of Homeless Services and the U.S. Environmental Protection Agency's (EPA) EJScreen tool was utilized to inform the analysis of homeless individuals living or accessing services within the API. Public outreach to social service organizations that directly serve the homeless such as Portland Rescue Mission and Night Strike was completed to inform the analysis of disproportionately high and adverse effects on homeless and low-income individuals that would occur as a result of the Project.

The 2019 Count identified 2,037 people who were unsheltered, 1,459 people sleeping in emergency shelters, and 519 people in transitional housing.[9] In all, the Count found 4,015 people who met HUD's definition of homelessness.[10]

Of this amount, 435 were counted in the SE Portland area (Willamette River to 2nd Avenue) and 413 were being counted in the Downtown/Old Town/Pearl neighborhoods. These two locations, both of which intersect with the API, had the highest share of the unsheltered population compared to the other listed locations.

While shelter resources exist in the vicinity of the bridge—particularly in the west bridgehead area—there are still a considerable number of homeless people who are unable or choose not to use these resources. Of the unsheltered, 29.9 percent used streets or sidewalks; 10.4 percent slept in doorways or other private property; 9.8 percent used bridges, overpasses, and rail right-of-way for shelter; and 2.6 percent slept in parks. These findings were corroborated by a field survey conducted by the Project team, which observed people sheltering within Waterfront Park, below and on the existing Burnside Bridge between SW/NW 1st Avenue and Naito Parkway, on sidewalks, and in private doorways.

The study team recreated the boundaries used in the point-in-time study using imprecise boundaries developed in Google Earth. City-recognized neighborhood boundaries (available on the City's GIS Open Data Portal) were then selected based on overlapping

[8] The Point-in-Time Count of Homelessness Study provides a bi-annual snapshot of the individuals and families experiencing homelessness on a given night in the City of Portland and Multnomah County. The 2019 study provides a count of homelessness for January 23, 2019.

[9] In 2019, 707 individuals did not wish to participate in the street count portion of the Count, so it these findings underestimate the true number of homeless individuals in Multnomah County.

[10] The U.S. Department of Housing and Urban Development (HUD) defines homeless individuals and families as those…"who lack a fixed, regular, and adequate nighttime residence and includes a subset for an individual who is exiting an institution where he or she resided for 90 days or less and who resided in an emergency shelter or a place not meant for human habitation immediately before entering that institution…" The full definition can be found at https://www.hud.gov/sites/documents/PIH2013-15HOMELESSQAS.PDF

Google Earth boundaries, resulting in more reliable cluster boundaries for the creation of additional maps. Tabulated information from the point-in-time report was then joined to the cluster boundaries to display homeless counts for 2017 and 2019, shown in

Figure 4 and Figure 5 below display neighborhood-level counts of homelessness for 2017 and 2019, respectively. For each of these years, concentrations of homeless individuals were highest in Downtown/Pearl District/Old Town and SE Portland which intersect the Direct API. Figure 6 below displays the percent change in reported homeless individuals between 2017 and 2019. While there is a high concentration of homeless individuals within Downtown/Pearl District/Old Town and SE Portland, there has been a greater percent change of homelessness in neighborhoods outside of the Direct API —namely in North Portland and Central NE Portland. These findings suggest that disproportionately high and adverse effects on homeless populations within the API are more likely to occur as a result of shorter-term construction impacts. Neighborhoods outside the Direct API are expected to capture a larger share of the city's homeless population in the future, reducing the potential for long-term disproportionately high and adverse effects on low-income populations living in the vicinity of the Burnside Bridge.

The 2019 Count was also used to address the undercounting of minority populations in U.S. Census data. The Count determined that minorities (all except White-Alone respondents) accounted for 38.1 percent of the homeless population in Multnomah County. When compared to the concentration of minorities within Multnomah County as a whole (30.8 percent), these findings indicate a relatively high concentration of minorities among the Multnomah County homeless population.

Environmental Justice Populations Summary

Based on the population and income characteristics discussed earlier in this section, the API is considered to contain a relatively high percentage of low-income populations when compared to the reference geography, Multnomah County. Low-income populations in the API are approximately 10 percentage points higher than in Multnomah County as a whole, and likely even higher considering the presence of homeless individuals that live and access services within the API.

Although overall levels of minority populations are lower in the API than in Multnomah County as a whole, high concentrations of minority populations reside in areas just south of the Burnside Bridge and nearest the east bridgehead area. These areas have slightly higher concentrations of Black, Native Hawaiian or Pacific Islander, and two-or-more-race populations than Multnomah County as a whole.

Section 7 below assesses whether Project impacts will result in disproportionately high and adverse effects on identified low-income and minority populations.

Figure 4. Point-in-Time Count of Homelessness – Estimates by Neighborhood (2017)

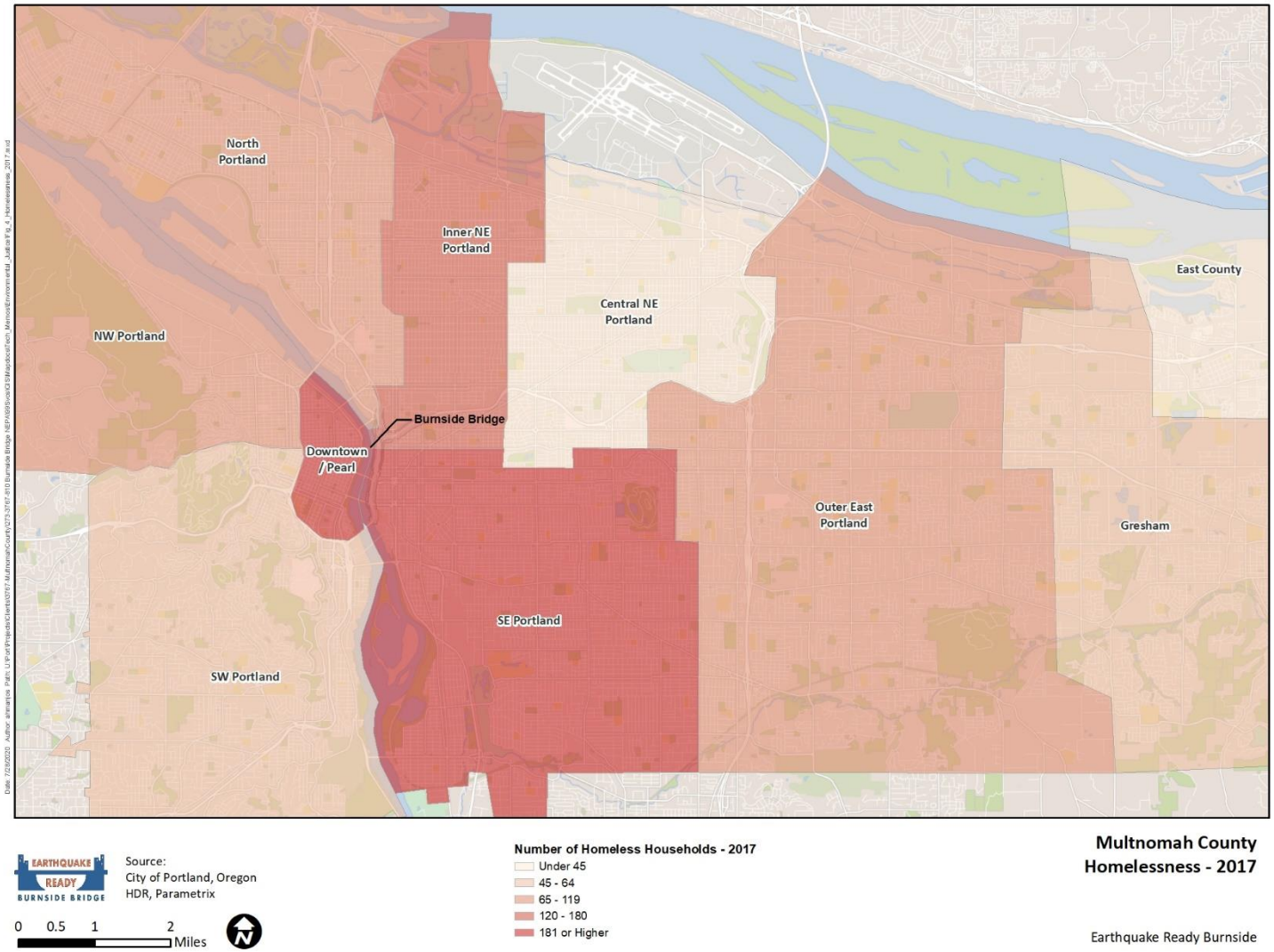


Figure 5. Point-In-Time Count of Homelessness – Estimates by Neighborhood (2019)

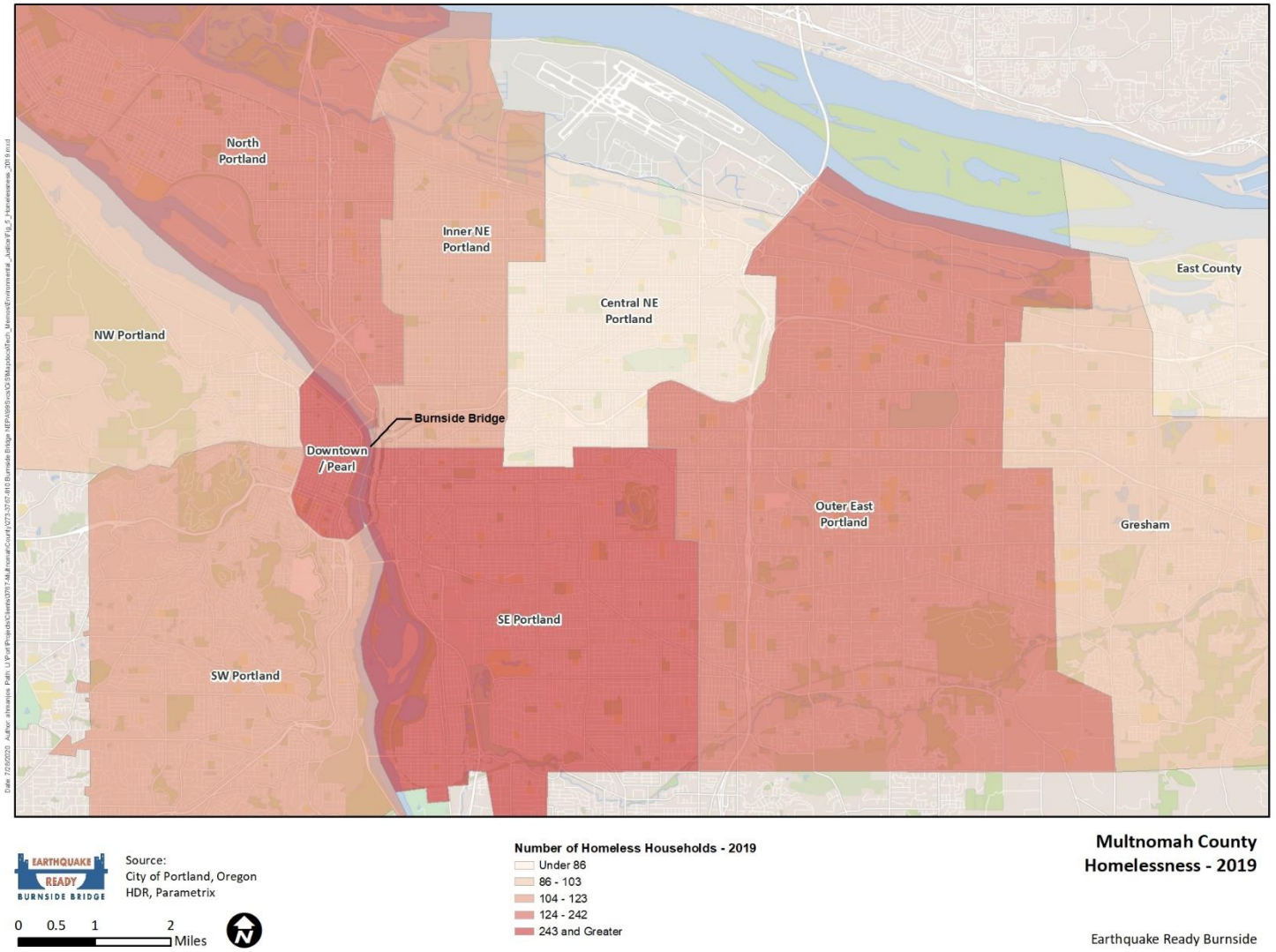
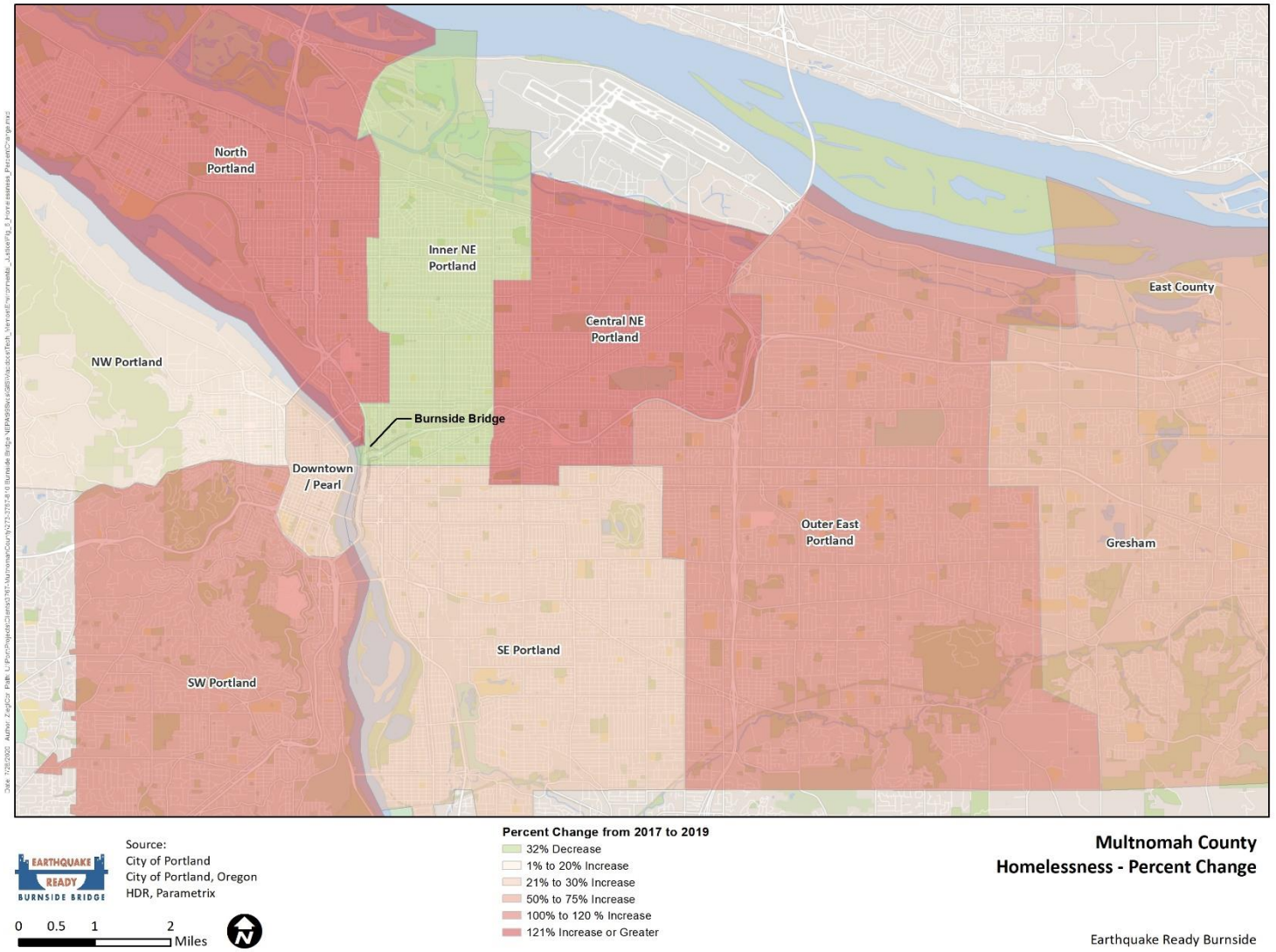


Figure 6. Point-In-Time Count of Homelessness – Percent Change by Neighborhood (2017–2019)



6.2 Social and Emergency Service Providers

6.2.1 West Bridgehead

Social and emergency service providers are discussed in this EJ analysis for directly serving low-income and minority populations within the API. The area surrounding W Burnside from NW/SW 1st Avenue to NW/SW 3rd Avenue is a hub for social services with Central City Concern, Portland Rescue Mission, Union Gospel Mission, and the Liberation Street Church located on W Burnside, and the Salvation Army located on W Burnside and SW 2nd Avenue. Central City Concern, Union Gospel Mission, Portland Rescue Mission, and the Salvation Army provide overnight shelter for homeless individuals. Homeless individuals accessing services at Portland Rescue Mission queue nightly on W Burnside along the north side of the street from NW 2nd Avenue east toward the river. Because People Matter operate their Night Strike event every Thursday under the Burnside Bridge, which provides food and resources to the homeless community. In addition to offering shelter space, the Central City Concern – Shoreline Building on the corner of NW 2nd Avenue and W Burnside provides longer-term transitional housing and the Erickson-Fritz Apartments on NW 2nd Avenue offer affordable housing. The west bridgehead area also includes Blanchet House, a homeless shelter located on NW Glisan and NW 3rd Avenue.

6.2.2 East Bridgehead

On the east side, providers and service centers include Harry's Mother Run-Away Youth, Independent Living Resources (help resources for persons with disabilities), Multnomah County Department of Human Services Child Welfare Office, and two locations of the Salvation Army. In addition, AMR provides ambulance services (dispatch and fleet maintenances) to Multnomah County, Clackamas County, and Clark County.

There are two social services located within the Jeanne Rivers Building on the corner of NE Martin Luther King Jr. Boulevard and NE Couch Street. The Multnomah County Crisis Assessment and Treatment Center provides a 16-bed facility for people struggling with mental health issues, and the Central City Concern Sobering Station provides temporary assistance for inebriated individuals.

7 Environmental Consequences

7.1 Introduction

Table 5 below provides a high-level summary of impacts identified for all environmental elements analyzed as part of the Draft EIS. The table summarizes the direct effects from construction, as well as indirect and/or cumulative effects. The table also summarizes potential mitigation that would reduce or eliminate potential adverse impacts for each environmental resource area. Mitigation measures are discussed more comprehensively in corresponding technical reports for each environmental resource, and in the EQRB Cumulative Effects Technical Report (Multnomah County 2021e). The No-Build Alternative would not have any of the impacts described in this table.

Table 5. Summary of Potential Environmental Impacts and Mitigation – Build Alternatives

Type of Impact	Impact Summary for Build Alternatives	Mitigation Summary
Land Use and Economics	• All Build Alternatives would require property acquisitions/displacements and easements. • All of the Build Alternatives would expect to experience temporary construction-related impacts including temporary easements and access impacts, changes in noise levels, visual changes, and traffic detours and congestion.	• Compensation and relocation assistance would mitigate the effects on affected property owners and tenants. • Changes to the vacant property inventory and traffic patterns would be minimal. • Compliance with local land use plans and design guidelines and standards would provide additional mitigation. • Local comprehensive plans identify the need for a safe transportation route that supports a growing region. A seismically resilient Burnside Bridge would support long-term regional growth in a post-earthquake scenario, such that the benefits of a seismically resilient Burnside Bridge outweigh the anticipated short-term impacts.
Transportation Impacts	• Long-term traffic volumes and intersection operations are expected to be the same under the Build Alternative as they are under the No-Build Alternative due to the functionally equivalent nature of traffic operations in both Alternatives. • Under the Build Alternative, TriMet transit service is expected to stay the same within the Project API. Bus lines 12, 19, and 20 run across the Burnside Bridge with an eastbound business and transit lane. • All Build Alternatives would result in long-term impacts to pedestrian access at both the east and west bridgehead approaches. Long-term impacts to pedestrian access would occur under the bridge. • All Build Alternatives would result in temporary construction-related multimodal impacts, including traffic detours, congestion, and pedestrian access impacts for cross-river trips along the alignment of the existing Burnside Bridge. • Under the Retrofit Alternative, the Portland Rescue Mission would require temporary relocation for 2 to 3 months during construction due to its primary access being blocked.	• All Build Alternatives bicycle, pedestrian, and American with Disabilities Act–compliant facilities, including an 18-foot multiuse pathway on both sides of the Burnside Bridge. All Build Alternatives also include construction or replacement of any missing, nonstandard, or noncompliant curb ramps at intersections that would be directly impacted by the Project. • Preparation of a schedule and plan for communicating temporary access closures and detours. • Coordination with the Portland Rescue Mission to maintain public access during construction.

Type of Impact	Impact Summary for Build Alternatives	Mitigation Summary
Displacements and Relocations	• All Alternatives, except No-Build, would need to acquire property adjacent to the existing right-of-way either for construction or permanent use by the Project. • No residential displacements are anticipated. • Some businesses would be displaced, including American Medical Response (AMR). Although AMR provide frequent ambulatory services to Portland Rescue Mission, Central City Concern, and other social service providers in the area, displacement of AMR would not result in a disproportionately high and adverse effect on environmental justice populations after taking Project mitigations and benefits into account. AMR provides services to all people within Multnomah County, Clackamas County, and Clark County in Washington irrespective of low-income or minority status. • Under the Couch Extension, the Pacific Coast Fruit Company would be permanently displaced, which may potentially employ low-income and minority workers. • The Retrofit Alternative would require demolition and permanent closure of the Burnside Skatepark. • None of the Build Alternatives would result in long-term property impacts to any of the key social service providers in the area, including Portland Rescue Mission, Central City Concern, Mercy Corps, or Salvation Army. • Under the Retrofit Alternative, the Portland Rescue Mission would require temporary relocation for 2 to 3 months during construction due to their its access being blocked.	• The acquisitions and relocations program would be conducted in accordance with the Uniform Relocation and Real Property Acquisition Policy Act of 1970 (49 CFR Part 24). • Relocation assistance will be provided fairly, uniformly, and equitably for all affected uses and persons. • Coordination with design to identify opportunities to remove or reduce property impacts through design refinements. • Direct engagement with displaced individuals and households to gather input and seek collaborative ways of minimizing displacement impacts. • Coordination with Multnomah County and the City of Portland to identify potential relocation sites for displaced businesses. • Coordination with the Portland Rescue Mission to maintain public access during construction. • Preparation of a schedule and plan for communicating temporary access closures to affected individuals, businesses, and organizations.

Type of Impact	Impact Summary for Build Alternatives	Mitigation Summary
Social and Neighborhood Effects	• All Build Alternatives would result in temporary construction-related transportation impacts, including traffic detours, congestion, and access impacts. These impacts could potentially result in disproportionately high and adverse effects on social and neighborhood resources relevant to environmental justice populations within the API. • All Build Alternatives would permanently impact two components of the Portland Saturday Market (a full acquisition at the Saturday Market Administration Offices and a permanent easement at the Portland Saturday Market storage location). • All Build Alternatives would require temporary construction easements for the Portland Rescue Mission, the Mercy Corps property, the Japanese American Historical Plaza, the Ankeny Plaza Structure, the University of Oregon White Stag Building, and the classroom space that is currently being leased by the University of Oregon. Temporary construction easements are anticipated to last approximately 3 months. • Under the Retrofit Alternative the Portland Rescue Mission would require temporary relocation for 2 to 3 months during construction due to their primary access being blocked. • All Replacement Alternatives (including Short-span, Long-span, and Couch Extension Alternatives) would require a temporary construction easement for access at the Central City Concern Shoreline Building and the Salvation Army which provide direct service to low-income and minority populations within the API. Temporary construction easements will result in short-term impacts to pedestrian access of these facilities. Despite these temporary impacts, Central City Concern and the Salvation Army will be able to continue to serve low-income and minority populations in the API.	• General mitigation measures applicable to all Build Alternatives are described below. • Noise would be monitored throughout the duration of the Project. It may be possible that the loudest work could be completed during slow times (summer) to accommodate the needs of the University of Oregon. • Coordinate with the Portland Rescue Mission to maintain public access during construction. • Mitigation for impacts to community facilities, including parks and recreation resources, would primarily include returning them to their pre-construction or better condition. This includes a need for close coordination with all the organizations listed in this report. The Project would need to follow Portland Parks and Recreation landscape design guidelines and Bureau of Development Services mitigation requirements for work within the Greenway Overlay Zones. • Additional coordination with Portland Parks and Recreation is required to determine suitable relocation options for Saturday Market administrative offices and storage. • The Burnside Skatepark would be rebuilt under all Alternatives that would only partially demolish it (e.g., all Replacement Alternatives with Temporary Bridge Options). Mitigation would include close coordination with skatepark managers and City of Portland representatives to understand the impact of the skatepark on environmental justice populations and possible relocations under partial demolition scenarios.

Type of Impact	Impact Summary for Build Alternatives	Mitigation Summary
Parks and Recreation	• No permanent conversion of park property to a transportation or other use would occur under any of the Build Alternatives. • Portions of Waterfront Park, Ankeny Plaza, and other recreational resources would be temporarily unavailable depending on the Alternative and options selected. • There are no direct impacts to the Ankeny Plaza with any of the Build Alternatives. • Under the Retrofit Alternative, the Burnside Skatepark would be permanently demolished. Under all Replacement with Temporary Bridge Options, the Burnside Skatepark would be partially demolished during construction and rebuilt after the completion of the Project. With the Replacement Alternatives an no Temporary Bridge, the Skatepark would be closed for 4-8 months over the construction period, and there would be no demolition. • The majority of impacts to park and recreation resources from all Build Alternatives are temporary impacts because they occur during construction activities and would not be permanent after construction is complete. • The Long-span Alternative would permanently remove numerous bridge columns under the bridge deck and provide additional open space where it crosses over Waterfront Park. A reduction in the number of bridge columns is considered a safety benefit to low-income and minority users of Waterfront Park due to improved visibility conditions. Expanded open space is also considered a benefit to low-income and minority users of Waterfront Park for recreational activities.	• Mitigation for impacts to parks and recreation resources that would be temporarily closed and would require vegetation and hardscape removal (such as a portion of Waterfront Park) would primarily include returning park facilities to their pre-construction or better condition. • As part of all Build Alternatives, the connection from the south side of the Burnside Bridge to the Vera Katz Eastbank Esplanade would be rebuilt to maintain and provide improved bike and pedestrian connection to the Esplanade. • The Project would follow Portland Parks and Recreation landscape design guidelines and Bureau of Development Services mitigation requirements for work within the Greenway Overlay Zones. • Mitigation for temporarily restricted bike/ped trail use is being provided in the form of detour routes for the Waterfront Trail and Eastbank Esplanade and full restoration of the impacted facility after bridge construction. • Mitigation for the temporary closure and removal of vegetation and hardscape from a portion of the Japanese American Historical Plaza included minimizing the area that would be affected during construction, full restoration after construction, and on-going coordination with the Japanese American Historical Museum to determine addition measures such as temporary interpretative signage and other measures. • Coordination and discussion with Portland Parks and Recreation is on-going to further refine mitigation to address adverse temporary impacts related to trail closures. Supplementary mitigation measures to transportation route detours may be needed to account for trail closures. • Mitigation for lost Park revenue due to potential cancellation of private events in the parks will be addressed through the City Non-Park Use Permit process.

Type of Impact	Impact Summary for Build Alternatives	Mitigation Summary
Public Services and Utilities	• All Build Alternatives would directly impact three public service facilities including two public school sites (a standalone University of Oregon classroom and the White Stag building [owned by the University of Oregon]) and one emergency response facility (AMR). • The addition of a temporary bridge to the respective Build Alternatives would not result in additional impacts to public service facilities. • Compared to the No-Build Alternative, all Build Alternatives are expected to greatly improve public safety and structure stability during and after seismic events. • Short-term restrictions during construction will block direct access to northbound Naito Parkway from the fire station, but southbound access would always be maintained.	• The acquisition of property and displacement of public service uses such as AMR would be mitigated through reimbursement and relocation assistance, as described above for displacements and relocation impacts. • For all the Build Alternatives, 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. • To mitigate for temporary construction activities affecting public services, detailed coordination regarding construction locations and phasing would be required with the appropriate parties. • 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. • 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.
Hazardous Materials	• All Build Alternatives would require acquisition of one property identified as a priority hazardous materials site. Subsequent cleanup and remediation would be considered a benefit compared to No-Build conditions. • In the absence of mitigation, sediment contamination is possible due to in-water work activities such as pier reconstruction.	• Avoidance of contaminated sites, if possible; utilization of construction methodologies and best management practices to prevent the spread of contamination; and cleanup, if needed. • Hazardous building materials surveys would be conducted on structures proposed for demolition prior to demolition to identify any asbestos-containing materials, lead-based paint, and other hazardous materials. • Multnomah County will develop a Project-wide construction health and safety plan detailing actions to minimize the potential for exposure of construction workers to hazardous materials and the risk to human health and the environment.
Soils and Geology	• With respect to soils and geology, pre-earthquake long-term impacts are thought to occur in two general categories: (1) disturbance of earth-material during construction; and (2) effects to earth-material from construction and operation. These potential impacts are assessed qualitatively for each Alternative based on the current understanding of the natural and built environments. • Construction of a seismically resilient Burnside Bridge would require existing bridge foundations to be enhanced or replaced such that they are situated on seismically competent earth-material. These actions would result in various degrees of impact on existing soils and geology in the Project Area.	• Bridge foundations and other bridge elements would be improved (Enhanced Seismic Retrofit Alternative) or constructed (Replacement Alternatives), and soil improvements would be implemented to address identified poor soil strength and potential for liquefaction in response to a seismic event. • Excavation activities would address how to manage and control poor strength soil and generally saturated earth-material while proposed enhanced foundation elements are constructed.

Type of Impact	Impact Summary for Build Alternatives	Mitigation Summary
Hydrology	• Stormwater quality could be diminished by runoff over roadways and bridges carrying automobiles. Typical stormwater pollutants include petroleum products, metals (copper, cadmium, and lead), salts, and suspended solids. Contaminants in stormwater could migrate to surface water, groundwater, and sediments.	• Long-term operation and maintenance of a stormwater conveyance system and treatment facilities is necessary to meet discharge and water quality regulatory standards.

Vegetation and Wildlife	• The vegetation that currently exists within the immediate area of construction activity is subject to removal for construction access and staging areas, including trees, shrubs, and herbaceous vegetation. Vegetation adjacent to structures planned for removal, such as street trees and landscaping, would also be removed.
	• Wildlife habitat within the construction area would be heavily disturbed during construction, from activities such as clearing, grading, and excavation. Vegetation removal would reduce the amount of habitat and foraging resources for birds and wildlife.
	• Fish and other aquatic species may be affected through disturbance of habitat from the installation of temporary and permanent drilled shafts, sheet piles, and cofferdams.
		• Roadway landscaping plans and erosion and sediment control measures would be prepared and implemented prior to construction activities per state and local standards.
		• Removing invasive plant species and replanting native species would improve quality and quantity of available habitat.
		• Revegetation would restore riparian habitat and provide additional food sources. Exact type, quantity, and location of mitigation to be determined in coordination with the appropriate agencies, including Oregon Department of Fish and Wildlife.
		• Mitigation measures and best management practices that would be implemented during construction to avoid, minimize, and/or compensate for adverse effects to aquatic species include the following:
		  ○ Use of cofferdams
		  ○ Bubble curtains
		  ○ Fish salvage within cofferdams
		  ○ Working within the in-water work window
		  ○ Erosion and sediment control measures
		• Construction work in phases

Climate Change	• The total 2045 greenhouse gas (GHG) emissions for the Build Alternatives are projected to be approximately 41% lower than the existing (2019) annual emission total, the same as for the No-Build Alternative. This reduction is due to advancements in vehicle technologies and more stringent fuel economy standards and emission-reduction efforts on a federal, state, and local level. • GHG emissions associated with the construction phase of the Project are expected to be consistent with other projects of this scale. Major sources of GHG emissions during construction include mobile and stationary fossil-fuel construction equipment and heavy trucks, embedded GHG emissions in construction materials for the bridge and for a temporary bridge, and emissions from diverted traffic and added congestion.	• Conduct Greenroads assessment to provide further information on how final design, and construction materials and methods options could affect GHG emissions.

Type of Impact	Impact Summary for Build Alternatives	Mitigation Summary
Cultural Resources	• The Retrofit would modify piers, bents, footings, and spans of the Burnside Bridge, as well as replace the bridge deck and mechanical equipment. The Replacement Alternatives would completely remove the bridge. • The Retrofit Alternative would permanently demolish the Skatepark. The Replacement with Temporary Bridge Options would partially demolish the skatepark, and then rebuild it after construction. The Replacement Alternatives with No Temporary Bridge Option would keep the skatepark intact. All of the Build Alternatives would temporarily close access to the skatepark. • The Retrofit Alternative would demolish and rebuild part of the Harbor wall.	• Potential mitigation measures for historic resources are listed in the EQRB Cultural Resources Technical Report (Multnomah County 2021d). • Mitigation would include ongoing coordination with skatepark managers to understand the relevance of the skatepark to environmental justice populations. • Under the Retrofit Alternative, mitigation would include additional coordination with skatepark managers to discuss potential plans for relocating the demolished skatepark to another location. • There would be mitigation for the loss of the Burnside Bridge with the Replacement Alternatives, and for impacts to the bridge with the Retrofit Alternative.

Type of Impact	Impact Summary for Build Alternatives	Mitigation Summary
Cumulative Effects	**Past Actions** • Although Native Americans occupied or traveled through the Burnside Bridge Project Area for thousands of years, those activities had relatively little effect on current environmental conditions in the Project Area. In the 1800s European-American settlement began in the Portland area population. Cumulative effects resulting from past actions consider the development and maturation of Portland's land use and transportation system. **Present Actions** • Current development projects within the Project vicinity include the ongoing construction of Block 76 West, a 5-story mixed-use building at 218 NE Couch Street, and 5 MLK, a mixed-use building at 5 SE Martin Luther King, Jr. Boulevard. • As part of the Portland Bureau of Transportation's Central City in Motion effort, the eastbound bus-only lane over the Burnside Bridge would be extended to 12th on the east side. **Reasonably Foreseeable Future Actions** • Development consistent with the Metro Regional Transportation Plan (RTP) (2018), Central City 2035 Plan, and City of Portland 2035 Comprehensive Plan/Transportation System Plan. The RTP recognizes Burnside as a major arterial within the regional motor vehicle network, an enhanced transit corridor, and a bicycle and pedestrian parkway. • Regional growth consistent with Metro 2040 Growth Concept. The Metro 2040 Growth Concept designates the Project Area as Central City, serving as the region's business and cultural hub, having the most intensive development for housing and employment, and having high-rise development as common in the central business district. It recognizes Burnside as a main street, which is a traditional commercial identity with a strong sense of the immediate neighborhood. • I-5 Rose Quarter Improvements • TriMet and Portland Streetcar service expansions and growth in operations • Portland Harbor Superfund Site Remediation • Land redevelopment projects within the Project vicinity which include potential developments • Future City of Portland transportation projects • Climate Change Projections including potential impacts of climate change on the Burnside Bridge and adjacent areas such as change in average and peak river levels (impacts to bridge clearance) and floodplain areas and depth (for bridge approaches)	• Potential mitigation measures may be identified for cumulative impacts to which the EQRB Project is found to make a substantial contribution. This analysis will be interdisciplinary in that it will incorporate reference measures already being applied for other environmental topics and in that new measures developed (if required for identified cumulative impacts) may address multiple resource areas.

DOT Order 5610.2(a) requires agencies to explicitly consider human health and environmental effects related to transportation projects that may have a disproportionately high and adverse effect on low-income and minority individuals, referred to throughout this report as environmental justice populations.

As shown in Table 5, many of the environmental resource area impacts relate to general effects within the API and are not localized enough to result in a disproportionately high and adverse effect on environmental justice populations. Other elements of the environment would have impacts, but those impacts would be mitigated and would not be differentially distributed among minority and low-income populations as compared to non-environmental justice populations. Therefore, the following environmental resources are not further analyzed in the environmental justice analysis:

- Parks and recreation
- Air quality
- Climate change
- Soils and geology
- Hazardous materials
- Vegetation and wildlife

Although the environmental resources listed above were not analyzed in-depth as part of the environmental justice analysis, considerations for how these environmental impacts could affect environmental justice populations are included throughout this report as appropriate.

Other resource areas, such as displacements and relocations (including business, and community or social facilities), transportation impacts, public services and utilities impacts, and social and neighborhood impacts have the potential to result in disproportionately high and adverse effects on minority and low-income populations. Short-term construction impacts also have the potential to result in disproportionately high and adverse impacts to minority and low-income populations living within the Project vicinity. These elements are described further below, including additional discussion of potential mitigation measures.

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 Alternatives affect resiliency, emergency response and longer-term recovery.

7.2 Pre-Earthquake Impacts (Long-Term)

Due to their localized impact, property displacements and acquisitions have the potential to disproportionately impact minority and low-income populations within the API. All Alternatives, except the No-Build, would need to acquire property adjacent to the existing right-of-way either for construction or permanent use by the Project. Three types of acquisitions are expected for all Build Alternatives: property in fee, permanent easements for subsurface and aerial bridge improvements, and temporary construction easements for work areas. Of these acquisition types, the property in fee could result in

full or partial acquisition of a property. Full acquisition of a property results in the permanent displacement and relocation of any businesses or residences, whereas a partial acquisition may or may not result in the need to displace existing uses. Figure 7 through Figure 10 below display property impacts within the east and west bridgehead areas for all the Build Alternatives with and without a temporary bridge. Figure 7 displays property impacts within the west bridgehead area for all the Build Alternatives. Figure 8 displays property impacts within the east bridgehead area for the Retrofit Alternative only. Figure 9 displays property impacts resulting from the Replacement Alternatives with both Short- and Long-Span Approaches only. Figure 10 displays property impacts resulting from the Couch Extension.

Table 6 below summarizes the number of affected properties and displacements by Alternative except for the No-Build Alternative which would result in no property impacts.

Table 6. Acquisitions and Displacements by Alternative

Alternative	Fee Full Acquisition	Fee Partial Acquisition	Easement*	Temporary Construction Easement**	Businesses Displaced Permanent (Temporary)
Retrofit	6	2	6	14	6(1)***
Short-Span Alternative	6	2	6	17	6(0)
Long-Span Alternative	6	2	1	17	6(0)
Couch Extension	8	4	7	20	6(0)
Temporary Bridge Option	+0	+0	+0	+2	+0(1)

* Includes Permanent Easements for bridge facilities.
** Includes temporary construction easements for staging and work as well as building access closures.
*** Closure to the Portland Rescue Mission expected to be 2 to 3 months during construction.

Table 7 below lists impacted properties and displacements associated with the Build Alternatives and the Temporary Bridge Option. The table only includes properties that directly serve environmental justice populations such as Central City Concern, Portland Rescue Mission, and Salvation Army, as well as other properties that may hold cultural value for minority populations, properties such as the Japanese American Historical Plaza. Table 7 also includes impacted properties that provide amenities and services to the general population that also directly benefit environmental justice populations, such as the AMR parcel and the Vera Katz Eastbank Esplanade. Union Arms apartments is included for providing affordable market-rate housing (also known as “naturally occurring” affordable housing). The Project was not able to obtain tenant demographics for Union Arms apartments by the time of this writing. However, Union Arms is noted in this analysis given the potential that affordable housing tenants are also low-income individuals.

The remainder of this section details more discrete long-term environmental impacts organized by Alternative, including the No-Build Alternative. Short-term and temporary construction impacts are subsequently described in Section 7.4.

Table 7. Impacted Properties – Potential Environmental Justice Impacts

ID	TLID	Property Name	**Retrofit** (business displacements)	**Replacement Short-Span Alternative** (business displacements)	**Replacement Long-Span Alternative** (business displacements)	**Replacement Couch Extension** (business displacements)	**Temporary Bridge Option** (business displacements)
1	1N1E34CA - 09200	Central City Concern (Shoreline Building)	-	TCE Access	TCE Access	TCE Access	-
2	1N1E34DB - 00900	Portland Rescue Mission	TCE Access (1*)	TCE Access	TCE Access	TCE Access	-
6	1N1E34CD - 00300	Salvation Army	-	TCE Access	TCE Access	TCE Access	-
11	1N1E34DC - 90000	Mercy Corps	TCE & TCE Access	TCE & TCE Access	TCE & TCE Access	TCE & TCE Access	-
12	1N1E34DB - 01300	Japanese American Plaza (City of Portland)	Easement & TCE	Easement & TCE	TCE	Easement & TCE	-
13	1N1E34DC - 03600	Ankeny Plaza Structure (City of Portland)	Easement & TCE	Easement & TCE	TCE	Easement & TCE	-
16	1N1E34DA - 01500	Pacific Coast Fruit Company	TCE***** (1)	TCE***** (1)	TCE***** (1)	Full (1)	-
18	1N1E34DD - 01000	AMR (Produce Row LLC)	Partial (1)	Partial (1)	Partial (1)	Partial (1)	-
B	NA	Vera Katz Eastbank Esplanade (City of Portland)	TCE	TCE	TCE	TCE	-

TLID = Tax lot ID | Full = Full Acquisition | Partial = Partial Acquisition | Easement = Permanent Easement = | TCE = Temporary Construction Easement | TCE Access = Temporary Construction Easement for accesses only

*Under the Retrofit Alternative the Portland Rescue Mission will require Temporary Relocation for 2 to 3 months during construction due to their primary access being blocked.

** The University of Oregon uses this space and they are identified as a business displacement of personal property.

*** Saturday Market would be permanently displaced from their administration offices but would only be temporarily displaced from their market location on the waterfront. A single permanent displacement has been tallied for this business.

**** Diamond Parking Services would be displaced from Map IDs 8 and 9 but are only counted as one business displacement.
***** The Retrofit, and Short-span and Long-span Alternatives could potentially displace the Pacific Coast Fruit Company business due to impacts to the Rose City Transportation building next door which shares a wall. Because of the uncertainty surrounding the building impacts and the duration of the closure (greater than 12 months), Pacific Coast Fruit Company is being included as a business displacement.

Figure 7. Property Impacts – West Bridgehead – Build Alternatives

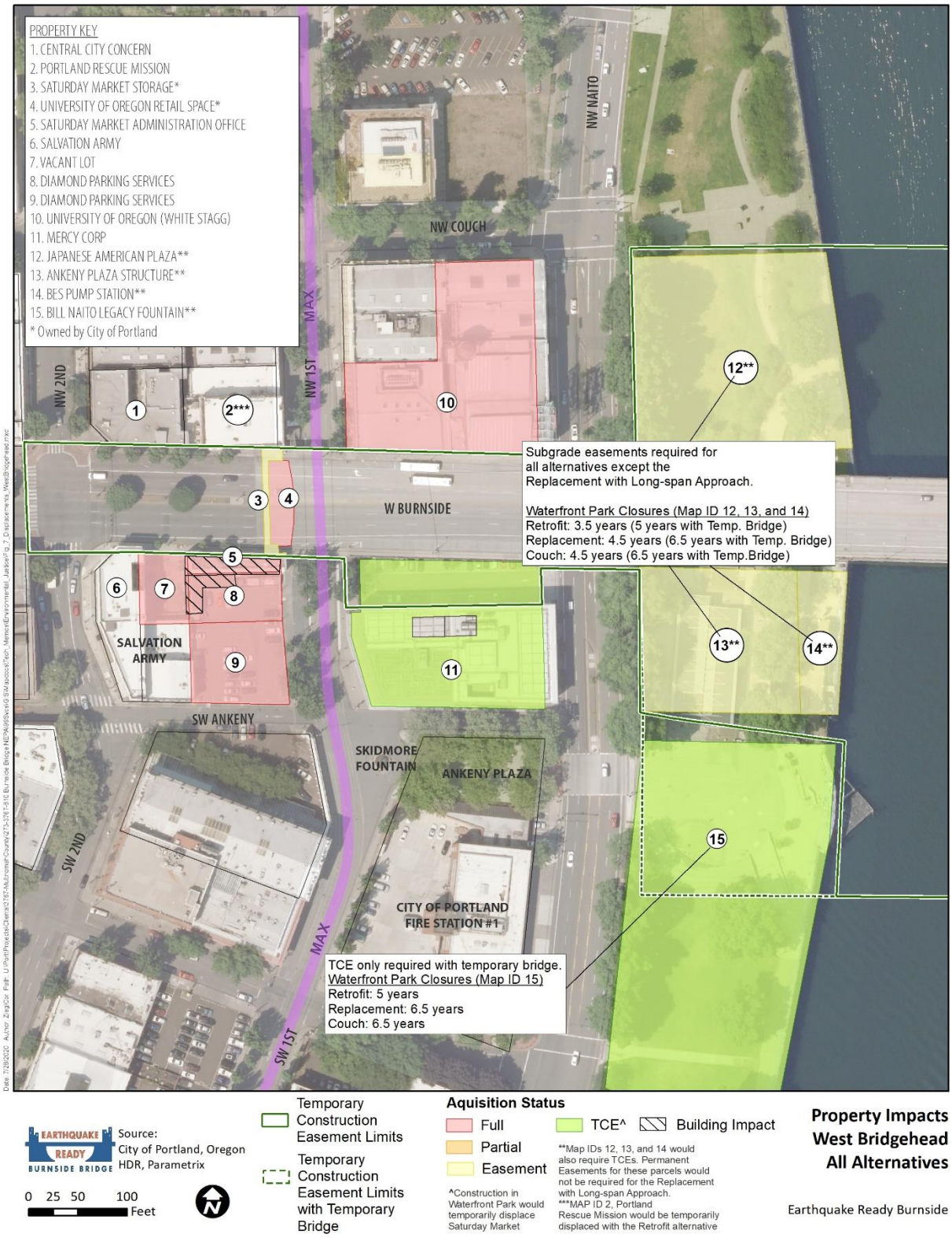


Figure 8. Property Impacts – East Bridgehead – Retrofit Alternative

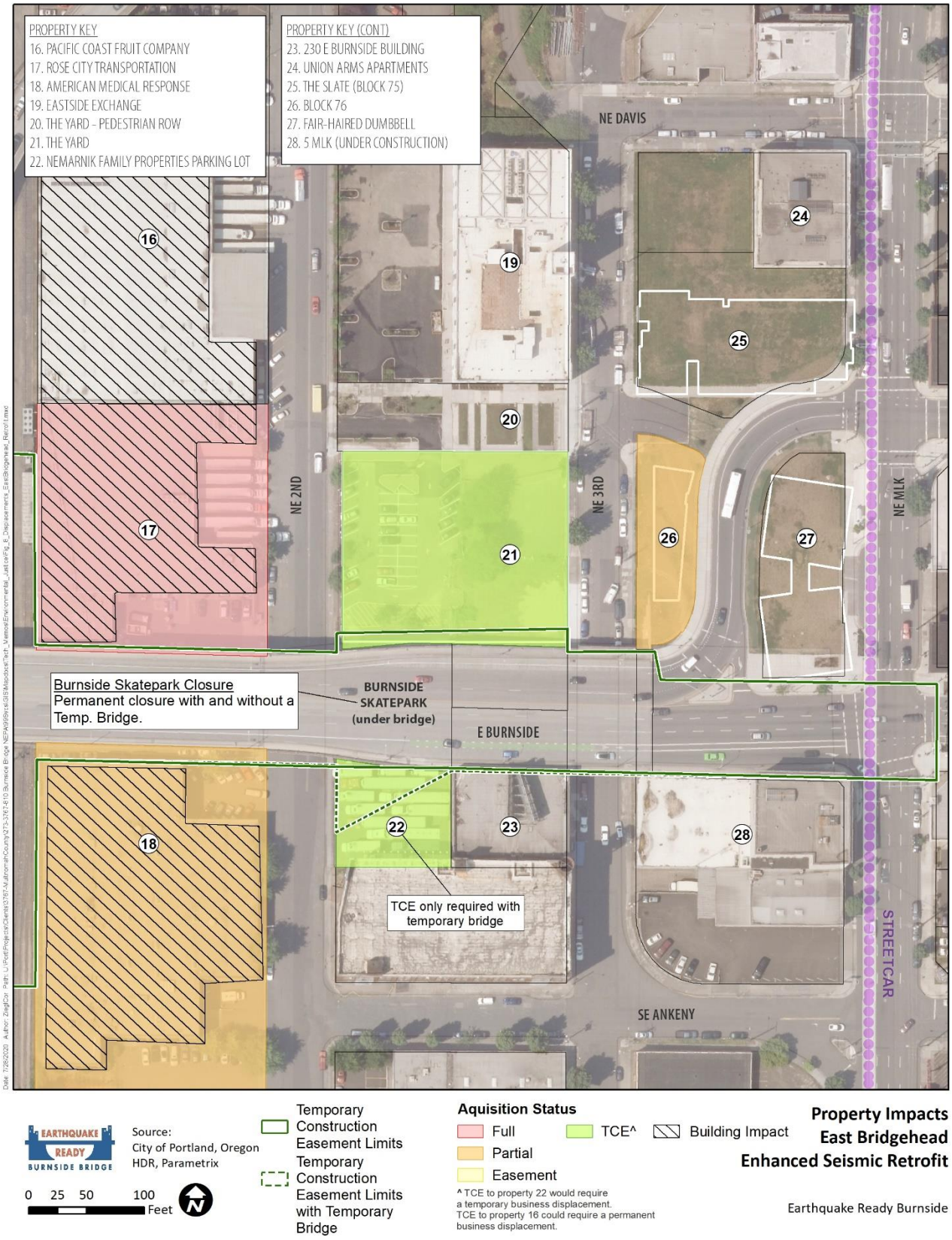


Figure 9. Property Impacts – East Bridgehead – Short-Span and Long-Span Alternatives

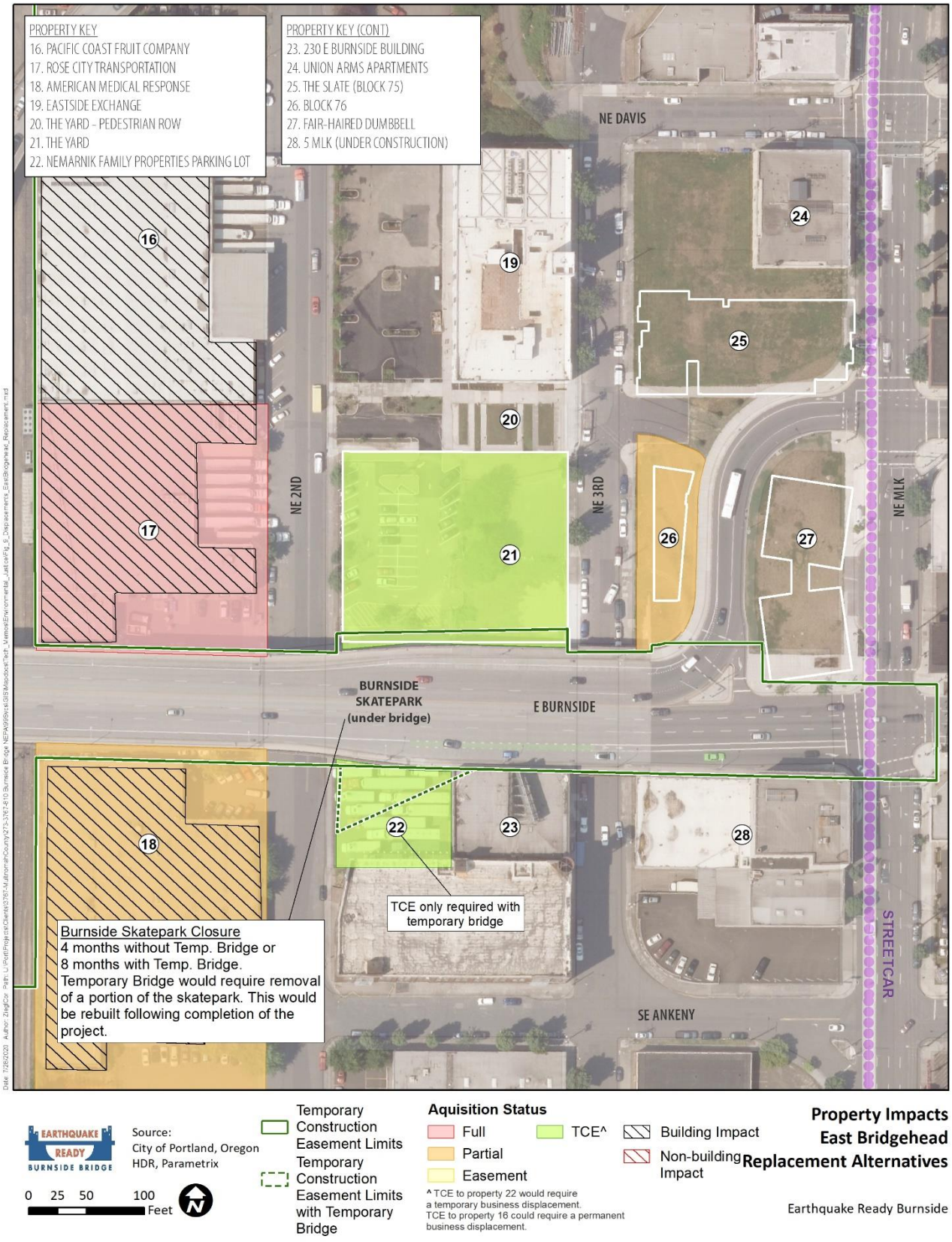
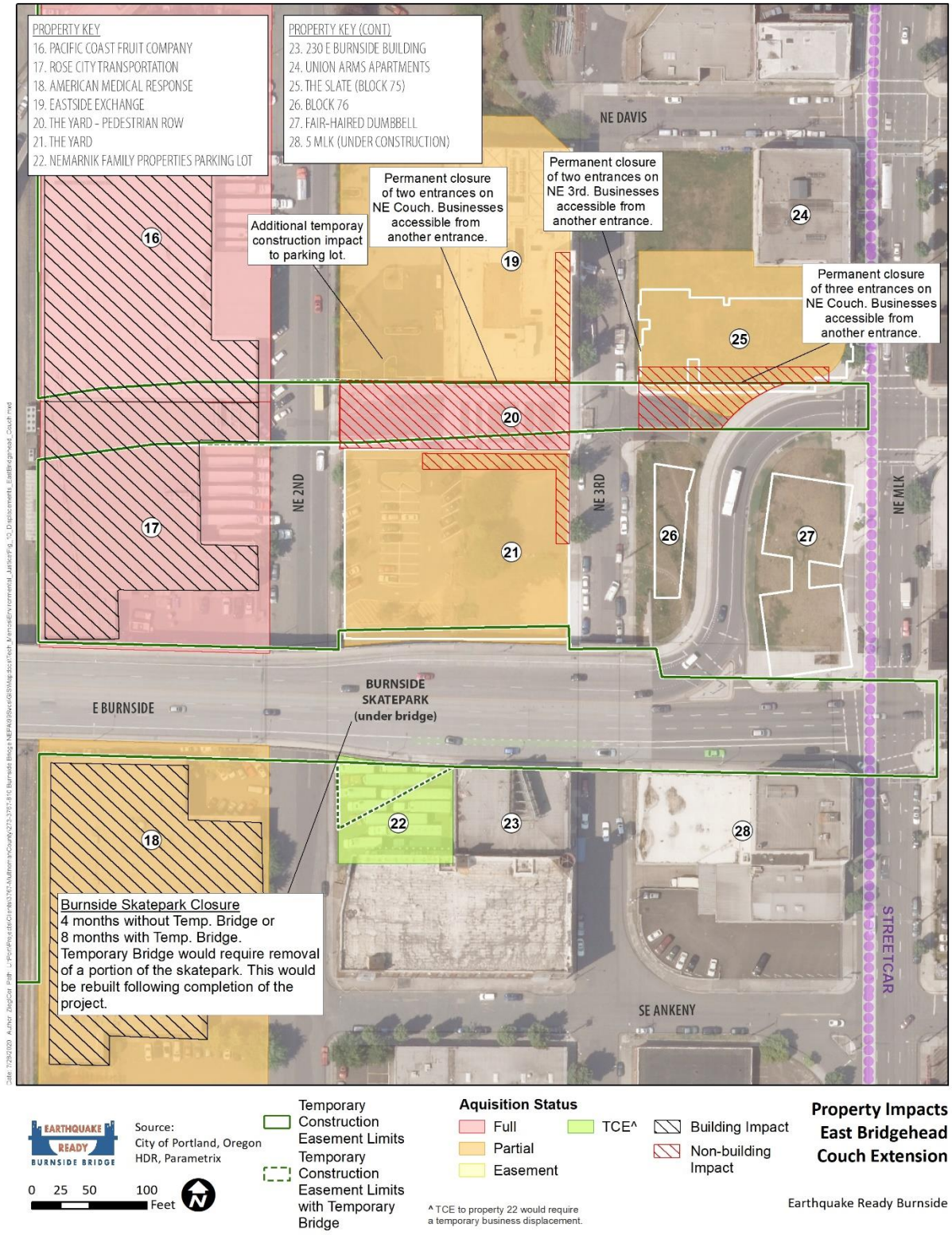


Figure 10. Property Impacts – East Bridgehead – Couch Extension



7.2.1 No-Build Alternative

Under the No-Build Alternative, the Burnside Bridge would not be retrofitted or replaced. 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 into the future. The No-Build Alternative also assumes future projects and land use changes occur 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 Metro Regional Transportation Plan (RTP) and the Central City in Motion Plan.

Maintenance, improvements, and repairs for the No-Build Alternative would be extensive, and the Burnside Bridge, as it stands, would likely require a full replacement due to its aged condition within the next 50 years. Specific maintenance improvements scheduled for the No-Build Alternative are currently being discussed and are not available at the time of this report. However, it can be assumed that repairs, improvements, and maintenance of the existing bridge would be more frequent and more extensive than any of the Build Alternatives and would still result in a need for a replacement within 50 years.

It is assumed that in some cases maintenance work on the bridge would occur adjacent to areas of the University of Oregon classroom and the AMR building.[11] 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.

Under the No-Build Alternative, TriMet transit service would not be temporarily affected by Project construction. Bus lines 12, 19, and 20 operate across the Burnside Bridge with an eastbound business and transit lane. The Skidmore Fountain MAX light rail station is located directly under the bridge on W. 1st Avenue. No impacts to MAX service are anticipated under the No-Build Alternative.

Although not affected by Project construction, impediments to transit service could still occur under the No-Build Alternative. As this report has noted above, the No-Build Alternative assumes extensive and more frequent maintenance and repairs on the bridge. Completed in early 2020, the Burnside Bridge Rehabilitation Project caused frequent delays to Lines 12, 19, and 20, particularly during evening peak hours. Buses were often full and very slow to cross the bridge. Both minority and low-income individuals are typically more dependent on public transit than other population groups. These environmental justice groups would bear the negative impacts associated with longer transit travel times along with other members of the public. However, it is possible that depending on ridership demographics, a greater proportion of environmental justice populations could be affected as compared to the general public. Additionally, seniors and disabled persons may find it more difficult to navigate during repair activities or utilize potential travel detours than the general population. Depending on the type of repair or maintenance actions, their number and frequency, this could have an effect on the use of the bridge by these populations.

[11] See the EQRB Public Services Technical Report (Multnomah County 2021j) for more information.

In terms of pedestrian accessibility, redevelopment and planned capital improvement projects would address some pedestrian deficiencies in the No-Build condition, including sidewalks, ramps, and crossings on redevelopment frontages. Planned City projects to signalize intersections would improve the comfort and safety of crossings such as the Better Naito Forever Project to address sidewalk gaps on the east side of Naito Parkway. However, the other existing pedestrian deficiencies identified in the bike and pedestrian Direct API on the east side remain under this scenario.

7.2.2 Build Alternatives

The Project is expected to have relatively minimal long-term impacts on traffic circulation, volume, noise, and the bridge footprint. The analysis of right-of-way also suggests that there would be a few long-term changes in access points to buildings and services in the Project Area that may require longer walk times and cause inconvenience to pedestrians. Overall, the long-term impacts to environmental justice and as a result of the Build Alternatives are relatively minimal, especially when considering the disproportionately high and adverse effects on environmental justice populations that would occur under the No-Build Alternative in a post-earthquake scenario (see Section 7.3.1 for more information).

Several of the long-term benefits to environmental justice populations as a result of the Project are the same for all Build Alternatives. Once constructed, all Build Alternatives would provide access across the bridge for the same transportation modes that presently use the bridge, including motor vehicles, bus transit, pedestrians, and other active transportation types such as bicycles, skateboards, and scooters. Additionally, all Build Alternatives would be designed to accommodate potential future streetcar expansion on the Burnside Bridge, as planned in the adopted 2009 Portland Streetcar System Concept Plan.

The following elements would be included in all Build Alternatives:

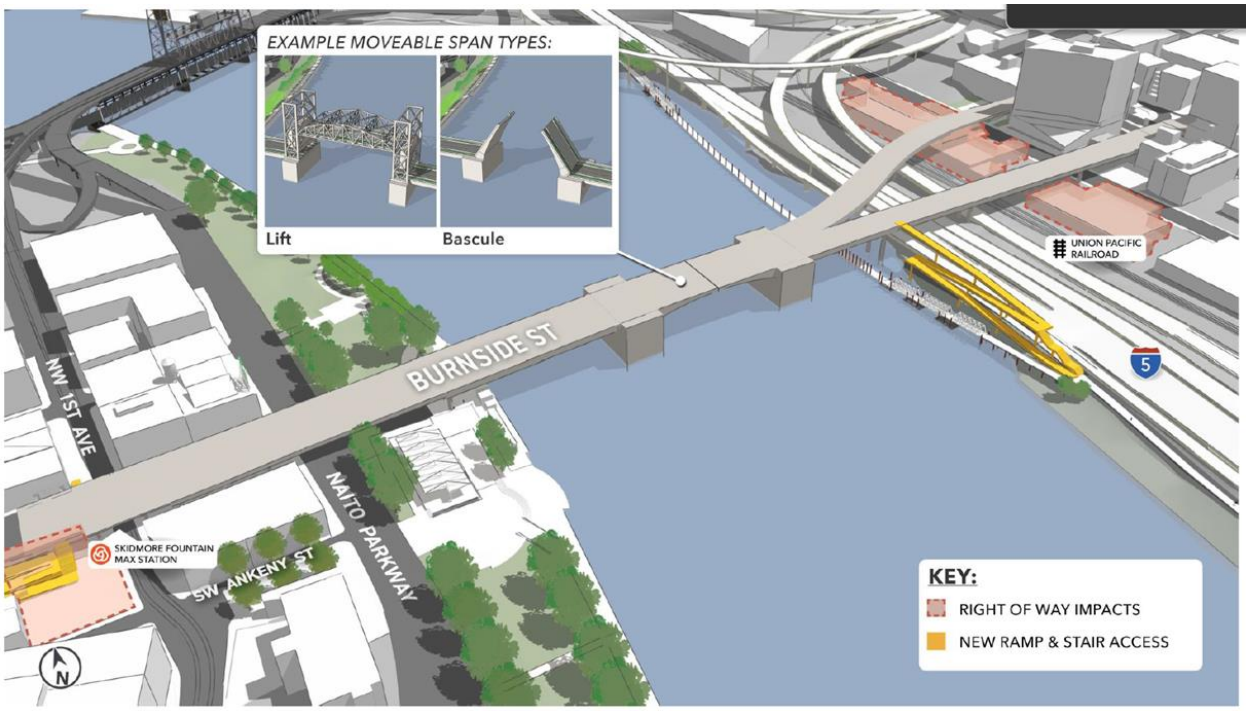
- Lighting – Lighting styles have not been determined at this level of design; however, lighting would be provided under any Build Alternative, and it would meet local standards for illumination of eastbound and westbound roadways, and pedestrian and bicycle lanes. Lighting under publicly accessible portions of the bridge approaches would also be installed consistent with local standards for public spaces, roads, and parks, as applicable. Based on community feedback, it is anticipated that project lighting elements will yield safety benefits for environmental justice populations using active transportation facilities, parks, and recreational resources.
- Stormwater capture – Presently, not all stormwater runoff from road surfaces is captured, with some runoff from the center of the bridge flowing directly into the river. Under all Build Alternatives, stormwater would be captured from roadways and sidewalks and would be routed to the city's stormwater treatment facilities. This improvement is not anticipated to benefit environmental justice populations any differently than the rest of the population.
- Improved access to the Vera Katz Eastbank Esplanade – Under all Build Alternatives, the current stairwell from the south side of the eastern bridge approach to the Eastbank Esplanade would be replaced with an Americans with

Disabilities Act (ADA)-compliant facility, likely a ramp and stairwell combination. Access from the north side of the approach to the Esplanade is not proposed under any Build Alternative. Figure 11 below displays the pedestrian ramp and stairs concept proposed under all Build Alternatives, including a conceptual rendering of a potential switchback-style pedestrian ramp and stair access connection to the Eastbank Esplanade, and examples of lift and bascule-style movable-span types.

- Improved access to the Skidmore Fountain MAX Station – Under all Build Alternatives, the current stairwell from the south side of the western bridge approach to the Skidmore Fountain MAX Station would be replaced with an ADA-compliant facility, likely a ramp and stairwell combination. The existing stairway on the north side of the bridge would be reconstructed as is.

Because people from low-income, minority, older adult, and disability populations are more likely to depend on active modes and public transportation, improved access to the Vera Katz Eastbank Esplanade and Skidmore Fountain MAX Station resulting from the Build Alternatives are considered benefits to environmental justice populations living, working, or accessing environmental resources within the API.

Figure 11. Vera Katz Eastbank Esplanade East Side Pedestrian Ramp and Stairs



Temporary Use and Potential Removal of Burnside Skatepark

The Burnside Skatepark is situated directly beneath the bridge on the east side and is considered an important recreational resource in the API. The Burnside Skatepark is also recognized in several other environmental discipline reports, including the EQRB Acquisitions and Displacements (Multnomah County 2021a), Cultural Resources (Multnomah County 2021d), Parks and Recreation (Multnomah County 2021i), and Social/Neighborhood (Multnomah County 2021k) Technical Reports as well as the EQRB

Draft Section 4(f) Analysis (Multnomah County 2021g). The relevance of the Burnside Skatepark to environmental justice populations is not well understood because the facility is not publicly owned or managed, and there is no demographic data available on Skatepark users. I Impacts to the Skatepark are included in the environmental justice analysis as a potential impact on low-income persons, people of color, and youths. The project has also coordinated closely with the Skatepark Board to reduce impacts and identify mitigation. Impacts vary from full displacement with the Retrofit Alternative to no demolition but a temporary (4 to 8 months) closure with the Replacement Alternatives. This variability in impacts are included in the criteria used to help identify the preferred alternative.

Impacts to the skatepark specific to each of the Build Alternatives are discussed in the sections below. The following sections also describe other known long-term environmental consequences specific to each of the Build Alternatives.

7.2.3 Enhanced Seismic Retrofit Alternative

This Alternative would retrofit the existing Burnside Bridge rather than replace it. Under this Alternative, the bridge width 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 Vera Katz Eastbank Esplanade would be replaced with an ADA-compliant ramp connection as well as stairs (Figure 8), 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-compliant ramp connection.

Direct

As summarized in Table 7, the Retrofit Alternative would impact a total of 28 properties, including 6 Fee Full or Partial Acquisitions and 6 Permanent Business Displacements. The Retrofit Alternative would impact the fewest properties compared to the other Build Alternatives but would require one additional temporary business displacement. This Alternative would not result in any long-term physical impacts to Central City Concern, Portland Rescue Mission, Salvation Army, or Mercy Corps which are considered environmental justice resources in the area.

Direct impacts associated with this Alternative include impacts to public service properties situated directly below the bridge and to those used for new bridge access at the west bridgehead. The Retrofit Alternative would result in permanent easements of the Japanese American Historical Plaza, which is culturally relevant to the history of Japanese Americans in Oregon and the arch structure in Ankeny Plaza – an important landmark in Portland's Old Town Chinatown neighborhood containing the Skidmore Fountain, a registered National Historic Landmark. This Alternative would also require a permanent easement for a public parcel at the west bridgehead that is currently owned by the City of Portland, which is developed as classroom space and leased by the University of Oregon. It is assumed at this level of design that the classroom could not be rebuilt following construction. The classroom is mentioned here for broad consideration but is not considered an environmental justice impact, and is therefore not included in Table 7 above.

Under the Enhanced Seismic Retrofit Alternative, the Burnside Skatepark would need to be evacuated and demolished due to the strut and pier strengthening work that would need to be conducted under the east bridgehead. The added bridge structure would not allow the skatepark to be rebuilt in this location. None of the other Alternatives would result in permanent physical impacts to the skatepark. The relevance of the Burnside Skatepark to environmental justice populations is not well understood because it is not a publicly owned or managed facility and there are no comprehensive records of user demographics. Given this uncertainty, the Skatepark is included for consideration, including proposed efforts to reduce impacts and to coordinate closely with the Skatepark Board. The Burnside Skatepark is covered in more detail in the EQRB Cultural Resources (Multnomah County 2021d) and EQRB Social/Neighborhood (Multnomah County 2021k) Technical Reports.

The Retrofit Alternative would result in a partial, permanent right-of-way acquisition at the property that houses AMR, which would require AMR to relocate. Relocation would be consistent with guidelines and procedures outlined in 49 CFR Part 24, the Uniform Relocation Assistance and Real Property Acquisition Regulations for Federal and Federally Assisted Programs; however, it is uncertain at this time where the new facility would be located. The Portland Rescue Mission receives multiple AMR responses per week; therefore, impact to the AMR property is noted in this EJ analysis as a potential disproportionately high and adverse effect on environmental justice populations within the API. However, potential impacts to response times are likely to be balanced by the fact that AMR functions as a remote dispatch center to other emergency response providers in the area, such as Portland Police and Portland Fire and Rescue, and that AMR vehicles tend to be geographically distributed, rather than originating all response trips from the eastside AMR property. Furthermore, AMR provides ambulatory services to individuals throughout Multnomah County, Clackamas County, and Clark County in Washington irrespective of low-income or minority status.

Business displacements will affect a relatively low number of total employees and are not expected to result in a disproportionately high and adverse effect on low-income and minority populations within the API.

Indirect

Future No-Build and Build Alternatives would provide the same capacity in the permanent condition; therefore, transportation indirect impacts related to the permanent condition are not anticipated. Property acquisitions and business displacements associated with this Alternative would not have indirect impacts on other uses within the API. Similar uses exist within the API to provide comparable services.

7.2.4 Replacement Alternatives with Short-Span or Long-Span Approaches

The Replacement Alternatives would measure approximately 2,330 feet in total length and include three separate segments of bridge: the west approach spans, the east approach spans, and a movable center span system that would be constructed over the primary navigation channel. The Short-span Alternative proposes to construct a new bridge of comparable span length to the existing alignment generally comprised of below-deck support structures. The Long-span Alternative proposes to construct a new

bridge of longer span length than the existing structure. The Long-span Alternative would be supported by an above-deck superstructure thus reducing the need for below-deck piers, bents, deep foundation, and soil improvement work in those sections. All Replacement Alternatives include a movable bridge span over the primary navigation channel and fixed bridge spans for the east and west approaches.

Direct

Under pre-earthquake conditions, both the Short- and Long-span Alternatives would require identical full and partial property acquisitions as would the Retrofit Alternative. However, the Short-span Alternative would result in a greater number of permanent easements for bridge facilities. Permanent easements to the Japanese American Historical Plaza and Ankeny Plaza Structure are not anticipated to result in a significant impact to environmental justice populations as they are underground easements and would not permanently affect the surface. The Replacement Alternatives would result in six permanent business displacements, although only the Couch Extension would result in a potential impact to environmental justice through the permanent displacement of the Pacific Coast Fruit Company. The Pacific Coast Fruit Company would be permanently displaced under this Alternative and is considered as a potential environmental justice resource for potential employment of low-income and minority workers.[12] However, workforce demographics of the Pacific Coast Fruit Company are not known at the time of this writing; therefore, impacts to the Pacific Coast Fruit Company are included in this analysis for broad consideration alone. There would be no residential displacements associated with any of the Replacement Alternatives.

The Short-span Alternative would require permanent easements identical to those required for the Long-span Alternative. The Long-span Alternative would require five fewer permanent easements as it would not require footings within Governor Tom McCall Waterfront Park at the west bridgehead or within the ODOT or Oregon Department of State Lands right-of-way near the east bridgehead. Reducing the number of columns in the Waterfront Park would improve visibility under the bridge, which is anticipated to result in a safer environment for all users of the park. A safer environment also benefits surrounding residents, workers, and the general park users, some of which are likely to be environmental justice populations. Social service providers have shared anecdotal information suggesting that a reduction in the number of columns could impact homeless individuals who seek shelter by camping against the columns. It is not known precisely how the removal of columns would impact use of Waterfront Park by homeless individuals, although social service providers have indicated they would feel more comfortable administering homeless services in a more visible environment and generally consider improved visibility to be a significant safety benefit for all users under the bridge.

At the west bridgehead, the Replacement Alternatives would avoid permanent access impacts to the Portland Rescue Mission by relocating the bridge abutment in order to maintain sidewalk access from Burnside Street into the Portland Rescue Mission during construction. The Replacement Alternatives would also not result in any permanent

[12] For more information on employee displacement impacts, refer to the EQRB Acquisitions and Displacements Technical Report (Multnomah County 2021a).

impacts to Central City Concern, Mercy Corps, or Salvation Army. The Short-span and Long-span Alternatives would not require the permanent closure of the Burnside Skatepark. For the Replacement Alternatives without a temporary bridge, the skatepark could remain relatively unaffected during construction since the work occurring would be over the skatepark; however, intermittent skatepark closures would still be required for overhead work. For any of the Replacement Alternatives with a temporary bridge, partial demolition of the skatepark would occur to construct and stage the work. Demolished portions of the skatepark would be reconstructed after the Project is complete.

Indirect

Indirect impacts resulting from the Short-span and the Long-span Alternatives are anticipated to be identical those for to the Retrofit Alternative.

7.2.5 Replacement Alternative with Couch Extension

The Couch Extension Alternative is composed of the same west approach and movable center span as the Short-span and Long-span Alternatives, but on the east, the westbound approach would extend NE Couch Street approximately 1,100 feet westward on structure over all roads and buildings west of Martin Luther King, Jr. Boulevard before curving south to reconnect with the main Burnside Bridge over the water. Movable-span systems consisting of vertical lift and bascule span types are under consideration; however, the type of movable-span system would not be determined until after selection of the Preferred Alternative.

Direct

The Couch Extension, as with the Short-span 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 but would split before the east bridgehead with separate approaches for NE Couch Street (westbound) and E Broadway Street (eastbound). The approach to NE Couch Street at the east bridgehead would eliminate the existing pedestrian and bike right-of-way between the Yard and the Eastside Exchange Building.

Under the Couch Extension Alternative, the existing pedestrian and bike facility on the Couch Street alignment between NE 3rd Avenue and Couch Street would be removed to accommodate the extension of the Couch Street couplet. Bike and pedestrian traffic would be re-routed along NE 3rd Avenue to NE Davis Street and/or SE Ankeny Street and onto Martin Luther King, Jr. Boulevard to access the Burnside Bridge. This would result in an additional 0.15 mile of out-of-distance travel for pedestrians and bicyclists, making travel times longer and more difficult for these individuals than for other members of the public. These changes would require the following:

- Improvements would be made to the ramps at the 3rd Avenue and Martin Luther King, Jr. Boulevard intersections with SE Ankeny Street and NE Davis Street to ensure ADA-compliant routes to the Burnside Bridge.
- Bike traffic going to the bridge would be re-routed along NE 3rd Avenue to NE Davis Street and then to a southbound protected bike lane in place of on-street parking on

the west side of NE Martin Luther King, Jr. Boulevard between NE Davis Street and NE Couch Street.

The Couch Extension would result in the highest number of property impacts as compared to the other Build Alternatives. Under pre-earthquake conditions, the Couch Extension would require identical property acquisitions as the other Alternatives at the west bridgehead. At the east bridgehead, this Alternative would require the full acquisition of the pedestrian and bike right-of-way associated with the Pacific Coast Fruit Company parcel. Building impacts would not be expected to any of these partial acquisitions; however, there are some short- to long-term building access closures that could require building modifications to accommodate businesses during construction. No additional business displacements would be anticipated. Full acquisition of the Pacific Coast Fruit Company could have an adverse impact on environmental justice populations, who may be employed at the fruit company, although relocation, rather than closure, of the business is likely.

Permanent easement requirements would be identical to both the Retrofit and Short-span Alternatives with the exception of an additional permanent easement for bridge facilities that would be needed from UPRR for the Couch Extension.

No permanent impacts to Portland Rescue Mission or Central City Concern are anticipated.

The Couch Extension without a temporary bridge would only result in short-term construction impacts to the Burnside Skatepark and would not require the permanent closure of the skatepark. The Couch Extension with a temporary bridge would require partial demolition of the skatepark, which would be rebuilt after the completion of the Project.

For the Couch Extension, the existing pedestrian and bike facility on the Couch Street alignment between NE 3rd Avenue and Couch Street would be removed to accommodate the extension of the Couch Street couplet. Bike and pedestrian traffic that would have used this connection would be re-routed along NE 3rd Avenue to NE Davis Street and onto Martin Luther King, Jr. Boulevard to access the Burnside Bridge.

This would result in an additional 0.15 mile of out-of-distance travel for pedestrians and bicyclists, potentially impacting individuals who are low-income, minority, or living with disabilities. Travel times to and from local services could be increased, and travel conditions could be more difficult for some individuals. The out-of-distance travel could have a disproportionate impact on individuals with limited access to a vehicle or a range of transportation options, those that are substantially burdened by cost of transit fares, and those trying to access social services on either side of the bridge crossing. This is considered a potential negative impact on environmental justice populations.

Indirect

Indirect impacts resulting from the Couch Extension and the Long-span Alternative are expected to be identical to those for the Retrofit and Short-span Alternatives.

7.3 Post-Earthquake Impacts (Long-Term)

7.3.1 No-Build Alternative

Any day, without warning, a CSZ earthquake of up to 9.0 magnitude could strike and forcefully shake the region for several minutes. Buildings, bridges, and other infrastructure not built to CSZ seismic standards would be devastated or substantially damaged. 33 of the 67 buildings within the API are unreinforced masonry, which are particularly susceptible to collapse during a CSZ earthquake (City of Portland). The existing Burnside Bridge is not rated for a CSZ earthquake and would collapse, resulting in further damage to the surrounding transportation infrastructure and buildings.

The immediate effects of a CSZ earthquake would likely include the collapse of several unreinforced masonry buildings at the west bridgehead including the Portland Saturday Market administration offices, the Salvation Army building at the corner of SW 2nd Avenue and West Burnside Street, as well as the Central City Concern Shoreline Building at NW 2nd Street and West Burnside Street. There are no unreinforced masonry buildings directly adjacent to the east bridgehead. In addition to building collapse from shaking, a CSZ earthquake would result in the collapse of the Burnside Bridge on to the buildings below. At the west bridgehead, this collapse would likely result in destruction of the properties below the west bridgehead, as well as the Ankeny Plaza Structure, the Skidmore Fountain MAX Station, and the Bureau of Environmental Services (BES) Pump Station in Governor Tom McCall Waterfront Park. The collapse of the Skidmore Fountain MAX Station would result in significant service disruptions to MAX Red and Blue line service. At the east bridgehead, the bridge would fall onto I-84, I-5, and the UPRR right-of-way, as well as the buildings currently housing Rose City Transportation and AMR.

The collapse of these buildings would result in the direct displacement of six businesses. Table 8 below lists properties potentially directly affected under the No-Build Alternative. This list does not include properties outside of the bridgeheads which would have shared impacts across all Alternatives, including the No-Build Alternative.

Table 8. Properties Affected by a CSZ Earthquake under the No-Build Alternative

ID	TLID	Property Name	Reason for Collapse	Businesses Displaced
1	1N1E34CA - 09200	Central City Concern (Shoreline Building)	Shaking	1
3	1N1E34DB - 01400	University of Oregon Classroom (City of Portland)	Bridge Collapse	-
4	1N1E34DB - 01500	Portland Saturday Market Storage (City of Portland)	Bridge Collapse	-
BES	1N1E34DC - 00800	Saturday Market Administration Offices (Skidmore Fountain Plaza, LLC)	Shaking	1
6	1N1E34CD - 00300	Salvation Army	Shaking	1

ID	TLID	Property Name	Reason for Collapse	Businesses Displaced
13	1N1E34DC - 03600	Ankeny Plaza Structure (City of Portland)	Bridge Collapse	-
14	1N1E34DC - 00100	BES Pump Station (City of Portland)	Bridge Collapse	-
16	1N1E34DA - 01500	Pacific Coast Fruit Company	I-5/I-84 Ramp Collapse	1
17	1N1E34DA - 01900	Rose City Transportation	Bridge Collapse	1
18	1N1E34DD - 01000	AMR	Bridge Collapse	1

Buildings and uses adjacent to the bridge may be impacted from the bridge swaying as well. These properties are listed in Table 9 below.

Table 9. Properties Potentially Affected by Bridge Sway During a CSZ Earthquake under the No-Build Alternative

ID	TLID	Property Name	Number of Businesses	Number of Residences
2	1N1E34DB -00900	Portland Rescue Mission	1	-
10	1N1E34DB -00600	University of Oregon (White Stag Building)	9	-
11	1N1E34DC -90000	Mercy Corps	1	-
21	1N1E34DA -02001	The Yard	2	284
22	1N1E34DD -00900	Nemarnik Family Properties Parking Lot	1	-
23	1N1E34DD -00700	230 East Burnside Building	3	-

In the weeks, months, and potentially even years following a CSZ earthquake, access to businesses near the bridgehead from both E and W Burnside Street would be closed, as would access to some business on SE/NE 2nd Avenue and SE/NE 3rd Avenue below the east bridgehead, and SW/NW Naito Parkway and SW/NW 1st Avenue below the west bridgehead due to the bridges collapse.

In a post-earthquake scenario, the collapse of Central City Concern and Salvation Army would result in a significant adverse impact to homeless populations within the API and surrounding region. Central City Concern serves over 13,000 individuals annually, providing direct social services including healthcare, recovery, and employment assistance.

Considering the demographics of the area and the concentration of social and health service providers near the bridgeheads, Post-Earthquake environmental effects in the aftermath of a CSZ earthquake are expected to result in a disproportionate and devastating impact on environmental justice populations within the API.

For details of the conditions and impacts of the No-Build Alternative post-earthquake, including access consideration and other transportation related impacts, see the EQRB Transportation Technical Report (Multnomah County 2021l). For additional details on the effects to sensitive populations and uses post-earthquake, see the EQRB Land Use (Multnomah County 2021h), Social/Neighborhood (Multnomah County 2021k), Public Services (Multnomah County 2021j), and Acquisitions and Displacements (Multnomah County 2021a) Technical Reports.

7.3.2 Enhanced Seismic Retrofit Alternative

Direct

During and immediately following a CSZ earthquake, impacts to properties not directly adjacent to or below the bridgehead would remain the same between No-Build and the Retrofit Alternative. Under this Alternative, several properties including the Saturday Market Administration Office at the west bridgehead and the Rose City Transportation and AMR properties at the east bridgehead would have already been displaced during construction and therefore would not be affected at the time of the earthquake. Having already been relocated, employees of these businesses could be saved from major injuries or casualty from the collapsing buildings, depending on where those businesses relocate.

Compared with the No-Build Alternative, the Retrofit Alternative would also reduce impacts to adjacent properties, as the seismically retrofitted bridge would likely not sway and collapse into the adjacent buildings. The lack of bridge movement with this Alternative in place would also provide a better likelihood that accesses along W and E Burnside Streets at the bridgeheads would be maintained.

Long term, the Retrofit Alternative would reduce cleanup associated with bridge and building collapse and allow access to businesses and residents more quickly, thereby reducing displacements compared with the No-Build scenario.

It is anticipated that the other Willamette River bridges in downtown would be heavily damaged and inaccessible such that a seismically resilient Burnside Bridge would be the only usable crossing for months and would serve as a crucial link for social service providers, emergency vehicles, and community members. Therefore, all Build Alternatives are expected to significantly benefit environmental justice populations over the No-Build Alternative in a post-earthquake scenario.

Indirect

Following the CSZ earthquake, the Retrofit Alternative, like any of the Build Alternatives, would remain standing, and not only provide access across the river, but also reduce cleanup and collateral damage associated with a bridge collapse. This reduction would be notable in Governor Tom McCall Waterfront Park which would be undamaged by bridge collapse in this area and could be used for staging emergency resources or for emergency vehicle access.

No significant indirect environmental justice impacts are expected as a result of the Enhanced Retrofit Alternative in a post-earthquake scenario.

7.3.3 Replacement Alternatives with Short-Span or Long-Span Approach

Direct

Like the Enhanced Retrofit Alternative, the Short-span or Long-span Alternative is expected to greatly improve public safety and structure stability during and after major seismic events. Post-earthquake impacts for the Short- and Long-span Alternatives would be identical to those described above in Section 7.3.2: Enhanced Retrofit.

Both the direct and indirect post CSZ earthquake impacts for the Short-span and Long-span Alternatives would be identical to those for the other Build Alternatives.

Indirect

Indirect effects for the Short-span Alternative would be the same as those described under Section 7.3.2. Both the direct and indirect post CSZ earthquake impacts for the Couch Extension would be identical to those for the other Build Alternatives.

7.3.4 Replacement Alternative with Couch Extension

Direct

Like the other Build Alternatives, the Couch Extension is expected to greatly improve public safety and structure stability during and after major seismic events. Post-earthquake impacts would be identical to those described above in Section 7.3.2.

Indirect

Indirect effects with the Couch Extension would be the same as those described under Section 7.3.2.

7.4 Construction Impacts (Short-Term)

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. Up to 10 weekend closures could be required, depending on the specific Alternative. Short-term impacts to these highway facilities would negatively affect some environmental justice populations, although not disproportionately as compared to the Burnside Bridge users as a whole.

Emergency services reportedly visit the Portland Rescue Mission more than once a week via the access door at Burnside Street. A minor temporary construction easement at this location would be required under all Replacement Alternatives for staging and/or bridge construction, which would impact ambulance services that need to access this location. The Retrofit Alternative would require full closure of the Portland Rescue Mission access doors on Burnside for approximately 3 months. For more information regarding Portland Rescue Mission please refer to the EQRB Social/Neighborhoods Technical Report (Multnomah County 2021k).

Except for short-term closures and restrictions, the navigation channel would remain open during construction of the Replacement and Retrofit Alternatives, so water-based emergency services would not be impacted.

The construction contractor may use one or more off-site staging areas, outside the Project 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 with certainty at this time. Given this uncertainty, detailed analysis of impacts to environmental justice populations resulting from off-site staging areas is not possible at this time. However, four possible sites have been identified that represent a much broader range of potential sites where off-site staging might occur: (1) Willamette Staging Option off Front Avenue; (2) USACE Portland Terminal 2; (3) Willamette Staging Option off Interstate Avenue; and (4) Ross Island Sand and Gravel Site. Based on these representative sites, the eventual impacts resulting from off-site staging areas is anticipated to have little to no disproportionate adverse effect on environmental justice populations.

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.

7.4.1 Without Temporary Bridge

Without a temporary bridge, individuals without a vehicle would need to take alternative walking, biking, or transit routes to access services on the opposite side of the river. This is anticipated to have a disproportionate impact on low-income individuals who walk or bike across the river to access dining halls, temporary shelter, and social services such as the Portland Rescue Mission and St. Francis of Assisi Catholic Church.

Public service providers that utilize the Burnside Bridge would also need to redirect their cross-river response and service trips onto adjacent bridges during construction. Increased delays and traffic on streets during construction may cause transit and response time delays for mobile public services without a temporary bridge for all Build Alternatives. Depending on the route and the direction of travel, a full closure of the Burnside Bridge during construction could increase travel times for some trips by approximately 3 to 9 minutes, resulting in an adverse effect on transit, and potentially on the provision of public services. Additional information about travel times is provided in the EQRB Transportation Technical Report (Multnomah County 2021l), and additional information about public services and emergency response is provided in the EQRB Public Services Technical Report (Multnomah County 2021j).

All Build Alternatives would require a temporary construction easement 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 temporary construction easement.

Enhanced Seismic Retrofit Alternative

The Enhanced Retrofit Alternative would require more maintenance, improvements, and repairs than the Replacement Alternatives.

At the west bridgehead, this Alternative would also temporarily block accesses on the east side of the Portland Rescue Mission building.[13] The analysis of right-of-way suggests that access to Portland Rescue Mission and Mercy Corps buildings would be more difficult to impossible during some parts of the construction period. Due to a temporary access easement, the Portland Rescue Mission operations are expected to be interrupted for 3 months. These organizations provide essential services to the homeless in a geographic area of Portland that has many unsheltered homeless people.

At the east bridgehead, the Retrofit Alternative would result in a temporary construction easement of the Pacific Coast Fruit Company, which may potentially affect environmental justice populations.

The Retrofit Alternative would not result in any short-term impacts to Central City Concern.

Construction of the Retrofit Alternative with the temporary bridge would require the same temporary construction easements as described above this section. No additional public services property access closure would be required for this Alternative with a temporary bridge.

Replacement Alternatives

Temporary construction impacts for the Replacement Alternatives would be the same as for the Retrofit Alternative, except that none of the Replacement Alternatives would close the Portland Rescue Mission's access doors on Burnside Street.

7.4.2 With Temporary Bridge

Most of the impacts associated with constructing the permanent bridge would be the same as described above in Section 7.4.1. All the temporary bridge options would allow emergency vehicle access.

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, I-84 ramps, and the Morrison exit. The temporary bridge must also span over the UPRR tracks.

Depending on the route and the direction of travel, a temporary bridge for all Build Alternatives could increase travel times over those for the No-Build Alternative by approximately 1 to 6.5 minutes during construction, which is less than the option without a temporary bridge. Additional information about travel times is provided in the EQRB Transportation Technical Report (Multnomah County 2021l).

Under the Temporary Bridge Option limited to bus, bike, and pedestrians only, TriMet bus lines 12, 19, and 20 would continue to be routed over the temporary Burnside Bridge. However, short-term construction impacts would result in the temporary closing of the Skidmore Fountain MAX Station underneath the Burnside Bridge at W 1st Avenue, served by the MAX Red and Blue lines. The Short-span, Retrofit, and Couch Extension

[13] Access impacts to Portland Rescue Mission under the Enhanced Retrofit Alternative are anticipated to last 3 months.

Alternatives would all temporarily impact MAX Red and Blue line operations. The Retrofit Alternative would require four separate 2-week closures for a total of 8 weeks, while the Replacement Alternatives would require seven separate 2-week closures for a total of 14 weeks. As of the writing of this report, the full extent of route impacts is still being analyzed. Additional information regarding short-term travel times is provided in the EQRB Transportation Technical Report (Multnomah County 2021l).

The Temporary Bridge Option would provide individuals without a vehicle with a more direct walking, biking, and transit route for accessing services on both sides of the river, whereas the No Temporary Bridge Option would potentially require more out-of-direction travel. Similarly, a temporary bridge would allow service providers that use the Burnside Bridge with an adjacent cross-river connection for river response and service trips.

Enhanced Seismic Retrofit Alternative

Construction of the Retrofit Alternative with the temporary bridge would require the same temporary construction easements as described in Section 7.4.1. Therefore, Portland Rescue Mission operations would be interrupted for 3 months due to a temporary construction easement.

Replacement Alternatives with Short-Span or Long-Span Approach

Temporary construction impacts for the Replacement Alternatives would be the same with or without a temporary bridge. Therefore, no short-term impacts to the Portland Rescue Mission are anticipated. No additional property access closure would be required for this Alternative with the Temporary Bridge Option.

Replacement Alternative with Couch Extension

The Couch Extension would require the same temporary construction impacts with or without the temporary bridge. Therefore, no short-term impacts to the Portland Rescue Mission are anticipated. No additional property access closure would be required for this Alternative with the Temporary Bridge Option.

7.5 Cumulative Effects

Cumulative impacts are the result of incremental effects of the Project Alternatives combined with the effects of past, present, and reasonably foreseeable future actions that could culminate in significant impacts on the environment. Cumulative impacts can result from individually minor actions that combine over the short-term (such as simultaneous construction projects), or over a long period of time (Title 40 CFR 1508.7).

The description of present and reasonably foreseeable future actions is informed by transportation and land use plans as well as forecasts. In addition, relatively recently published NEPA documents prepared for other projects in the region have been reviewed for cumulative impact information, including the following:

- I-5 Columbia River Crossing Final EIS
- Sellwood Bridge Final EIS
- I-5 Rose Quarter Improvements Project Draft EA

- Southwest Corridor Light Rail Project Draft EIS

Past and present projects and actions in the vicinity of the Burnside Bridge to which the EQRB Project could contribute cumulative effects include the following:

- Recent construction of new buildings at the Burnside Bridgehead at the eastside intersection of Burnside and the Willamette River (2014-2018). These include the Yard (formerly Block 67), a 21-story mixed-use tower constructed at 123 NE 3rd Avenue; The Fair-Haired Dumbbell, two 6-story office buildings at 11 NE Martin Luther King, Jr. Boulevard; Aura Burnside, an apartment building at 77 NE Grand Avenue; and Slate (formerly Block 75), a 10-story mixed-use building at 111 NE Martin Luther King, Jr. Boulevard.
- The Burnside Bridge maintenance project performed over the years 2015 to 2019, which included improvements and repairs to the main bridge span, approaches and other elements.
- Ongoing construction in Block 76 West, a 5-story mixed-use building at 218 NE Couch Street and 5 MLK, a 200-foot, mixed-use building at 5 SE Martin Luther King, Jr. Boulevard.
- Construction of Vera Katz Esplanade and bicycle deck on Steel Bridge expanding area-wide pedestrian and bicycle network (2001).

Reasonably foreseeable future projects and actions in the vicinity of the Burnside Bridge to which the EQRB Project could contribute cumulative effects include:

- Development consistent with the RTP (2018), Central City 2035 Plan, and City of Portland 2035 Comprehensive Plan/Transportation System Plan. The RTP recognizes Burnside Street as a major arterial within the regional motor vehicle network, an enhanced transit corridor, and a bicycle and pedestrian parkway. The Central City 2035 Plan includes standards for building setbacks from Burnside Street and parking and loading access standards on the west side of the bridge. The City of Portland Transportation System Plan, as part of the West Burnside/Couch Refinement Plan, calls for plans to enhance West Burnside to improve streetscape quality, multimodal access and bicycle and pedestrian safety.
- Future City of Portland transportation projects are listed in Section 7.5.
- Regional growth consistent with Metro 2040 Growth Concept. The Metro 2040 Growth Concept designates the Project Area as central city, serving as the region's business and cultural hub, having the most intensive development for housing and employment, and having high-rise development as common in the central business district. It recognizes Burnside as a main street, which is a traditional commercial identity with a strong sense of the immediate neighborhood.
- I-5 Rose Quarter Improvements, which include improvements along I-5 and on city surface streets in and around the Broadway/Weidler interchange including improvements for transit, bicyclists, and pedestrians. As discussed below, construction closures of I-5 and pedestrian/bicycle facilities on the Willamette Greenway could coincide with those of the EQRB Project.

- TriMet and Portland Streetcar service expansions and growth in operations. TriMet commissioned the Steel Bridge Transit Improvements study in 2017 that looked at options for improving and replacing the Steel Bridge due to age and track-related issues. The 2009 Portland Streetcar System Concept Plan includes concept plans for a future line across the Burnside Bridge, extending along Burnside/Couch from NW 19th Avenue to E 14th Avenue.
- Portland Harbor Superfund Site Remediation – EPA cleanup areas are downstream of RM 12, but some of the restoration actions will occur upstream and downstream of the Burnside Bridge location and have potential for impacts related to fish passage, water quality and river traffic.
- Land redevelopment projects within the Project vicinity which include potential developments such as: a 3- to 4-story office building at 201 NE 2nd Avenue, an 8-story hotel at 131 NE Martin Luther King Jr Boulevard, and a 4-story mixed-use office building at 50 SW 2nd Avenue.
- Climate Change Projections including potential impacts of climate change on the Burnside Bridge and adjacent areas such as change in average and peak river levels (impacts to bridge clearance) and floodplain areas and depth (for bridge approaches). (See the EQRB Climate Change Technical Report [Multnomah County 2021b] for further information.)

7.5.1 No-Build Alternative

In the absence of a major seismic event, actions implemented under the No-Build Alternative would primarily involve construction maintenance and repairs to ensure that the bridge is fully operational. They would not create any significant disruptions or have significant impacts to environmental justice populations. Long-term maintenance and repair work under the No-Build Alternative is unlikely to contribute to cumulative impacts with other projects that would result in a disproportionate impact to environmental justice populations.

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 significant cumulative and adverse effects to environmental justice populations. Cumulative effects in the long-term aftermath of a CSZ earthquake would include the widespread collapse of the majority of the city's bridges and unreinforced masonry buildings, with the greatest projected effects at the west bridgehead, including the collapse of the Portland Saturday Market administration offices, the Salvation Army building at the corner of SW 2nd Avenue and West Burnside Street, and the Central City Concern Shoreline Building at NW 2nd Avenue and West Burnside Street. Although there are no unreinforced masonry buildings directly adjacent to the east bridgehead, the cumulative effects of building collapse on east of the Willamette is expected to have a significant adverse effect on environmental justice populations in terms of health, physical access to goods and services, and emergency response services.

In terms of public safety and emergency services, the only bridges expected to remain standing in the aftermath of a CSZ event under the No-Build Alternative would be the Tilikum and Sellwood Bridges. This means all cross-river emergency trips would be limited to use of those crossings and would likely result in increased travel delays and

response times. The cumulative effect of these limited crossings and emergency response delays are anticipated to result in disproportionate negative impacts to the city's most vulnerable populations, including homeless individuals, low-income individuals, people with disabilities, and minorities.

7.5.2 Build Alternatives

There is 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, 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, could be impacted with increased congestion, detour routes, and extended travel times in and out of the downtown Portland area. While AMR and other emergency response organizations utilizing these detour routes would maintain priority over other traffic and would be therefore less affected than other vehicles, emergency response vehicle travel times could 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 Policies 8.88: Fire Facilities and 8.91: Continuity of Operations. 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

Federal/State

Relocation of AMR would be consistent with 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 area-wide 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 classroom 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

Based on this review, it has been determined that once project upgrades have been implemented and potential adverse impacts are mitigated, there will be no disproportionately high and adverse effects on any minority and/or low-income populations in accordance with the provisions of EO 12898 and FHWA Order 6640.23A. Environmental justice populations will experience adverse environmental impacts to a degree no greater than the general population. Furthermore, this analysis concludes that any disproportionately high and adverse effects on environmental justice populations are adequately offset by the Project benefits, especially when compared to the No-Build Alternative in a post-earthquake scenario. All Build Alternatives would avoid disproportionately high and adverse effects on environmental justice populations as a result of the collapse of the Burnside Bridge caused by the next CSZ earthquake. A major seismic event would severely impact the use of the Burnside Bridge as a vital east-

west crossing across the Willamette River, and would also severely impact public and social services in the area, including the cluster of organizations in the West API that provide direct service to low-income, minority, and disabled populations.

Because people of low-incomes, minority populations, older adults, and people with disabilities are likely to depend more on active modes and public transportation, improved access to the Vera Katz Eastbank Esplanade and Skidmore Fountain MAX Station resulting from the Build Alternatives are considered benefits to environmental justice populations living, working, or accessing environmental resources within the API. These benefits, coupled with the proposed mitigation strategies in Sections 7.1 above and Section 8 below, are considered to adequately offset disproportionately high and adverse effects on environmental justice populations resulting from the Project.

Generally, environmental justice populations will not experience short-term impacts to a greater degree than the general population. Short-term impacts are limited to construction-related impacts such as increased truck traffic and related congestion, detours, construction-related noise and visual impacts, and temporary access impacts. Short-term access impacts to social service providers have the potential to impact environmental justice populations to a higher degree than the general population but have been mostly avoided through the design process. The Retrofit Alternative would result in the greatest short-term impact on environmental justice populations due to a 3-month construction easement that would disrupt client access to Portland Rescue Mission. However, the short duration of these impacts coupled with the Project benefits and mitigation measures are considered to offset disproportionately high and adverse effects on environmental justice populations.

The concluding observations arising from the analysis of the socioeconomic impacts are outlined below.

7.7.1 Long-Term Impacts

- Under No-Build, the Burnside Bridge is not expected to survive a major earthquake. The Burnside Bridge would be seriously damaged or collapse altogether, and the bridge debris would fall into the Willamette River and on the roads below. This would likely result in severe disruptions to transportation of people and goods with commensurate impacts to environmental justice populations. This would also include disproportionately high and adverse effects to social service organizations that provide direct assistance to low-income and minority populations at the west bridgehead.
- Under the Build Alternatives, the above impacts would largely be avoided. The Burnside Bridge could serve as a vital connection in the transportation of emergency personnel and supplies, facilitate and speed up the recovery and reconstruction efforts in the entire region.
- The No-Build Alternative is not expected to have any new significant impact on environmental justice populations in a pre-earthquake scenario. Impacts related to the No-Build Alternative would be limited to maintenance and repair activities to ensure that the bridge is fully operational, and because the Project is not expected to significantly affect the traffic volumes compared to No-Build.

- The long-term impacts of the Build Alternatives on environmental justice populations are relatively low. The Build Alternatives would not result in any residential displacements for housed environmental justice populations. Displacements to unhoused and homeless individuals are not well understood but are not considered to result disproportionately high and adverse effects on environmental justice populations. The benefits of constructing the Project to environmental justice populations are anticipated to far outweigh the negative, primarily temporary impacts as a result of bridge construction.
- Six businesses would be displaced as a result of the Project. Of these, two are considered potential resources to environmental justice populations, including impacts to AMR, an ambulance service for the Multnomah, Clackamas, and Clark counties. Impacts to AMR are notable given they provide regular ambulance services to Portland Rescue Mission, Central City Concern, and other social service providers in the area.
- Under the Couch Extension, the Pacific Coast Fruit Company would be permanently displaced, which may potentially employ low-income and minority workers.
- The Retrofit Alternative would require permanent closure of the Burnside Skatepark, and all Replacement Alternatives with a temporary bridge option would require partial demolition of the skatepark. There is no readily available data on the use of the Burnside Skatepark, but it is included in this report to acknowledge the potential relevance of the skatepark as cultural and recreational minority populations who could be disproportionately impacted with its closure. Additional discussion with skatepark managers and stakeholders is needed to determine the impact that potential closure of the skatepark would have on environmental justice populations.
- The Replacement Alternatives would improve safety to automobiles, bike and pedestrian traffic on the bridge and bridge approaches leading to a reduction in accidents (including accidents with fatalities and serious injuries). Multimodal improvements to the transportation system are considered potential benefits to environmental justice populations, who may have limited access to a personal vehicle, may be disproportionately burdened by transit fares, and may depend on walking and biking to access goods and services. It should be noted that multimodal transportation improvements being considered as part of the Build Alternatives include ADA enhancements, which would benefit individuals living with disabilities.
- None of the Build Alternatives would result in long-term impacts to any of the key social service providers in the area, including Portland Rescue Mission, Central City Concern, Mercy Corps, or the Salvation Army which provide direct service to low-income and minority populations in the API.

7.7.2 Short-Term Impacts

The short-term negative impacts of the Build Alternatives include various construction-related disruptions:

- Detours, travel delays and travel costs to traffic that normally uses the Burnside Bridge (automobiles, trucks, bikes, and pedestrians), as well as increased congestion on alternate roads where auto traffic would be diverted if the Burnside crossing is not

available. These delays have the potential to affect environmental justice populations differently, who may face out-of-direction travel or delays to accessing critical services such as food, temporary shelter, and other health/social services.

- Temporary disruptions on transportation infrastructure in the API including I-5, I-84, the UPRR track, and the MAX light rail track under the bridge could result in disproportionately high and adverse effects on environmental justice populations.
- Displacements to business operations in the API, which may employ low-income and minority workers.
- The Retrofit Alternative would disrupt Portland Rescue Mission operations for 3 months due to a temporary construction easement. The Retrofit Alternative would not result in any short-term impacts to the Central City Concern or Salvation Army buildings.
- All Replacement Alternatives would result in short-term, partial access impacts to the Central City Concern and the Salvation Army buildings. The Replacement Alternatives would not result in any short-term access impacts to Portland Rescue Mission.
- All Build Alternatives would result in short-term access impacts to Mercy Corps.
- Temporary disruptions to other transportation infrastructure in the API (i.e., interstate highways, transit, rail, river navigation) would be short in duration (1 to 3 weeks) a few times over the construction period which is estimated at 3.5 years for the Retrofit and 4.5 years for the Replacement Alternatives. Other disruptions listed above could be expected to last for most of the construction period.

8 Mitigation Measures

In determining whether there would be disproportionately high and adverse effects, the analysis takes into consideration planned mitigation and enhancement measures that would be implemented with the Project, as well as offsetting benefits to affected populations.

Mitigation measures specific to other resources may benefit environmental justice populations as well. Reduction in the overall extent and duration of construction noise is one such example. The following sections focus on potential mitigation measures that directly address adverse effects to environmental justice populations. Mitigation measures are similar across all Build Alternatives, except where noted below.

8.1 Community Engagement and Communications Measures

In a parallel process, Multnomah County has engaged community stakeholders, social service providers, non-profit organizations, and agency partners to identify additional environmental justice considerations and potential mitigation measures that can be achieved as part of the Draft EIS process. Recommendations from these groups will inform the Final EIS reporting of impacts and desired mitigation measures.

Public outreach during construction activities will help mitigate negative potential impacts as well. For example, signage and advanced information about detours and closures will allow travelers to plan their trips in advance, avoid confusion, and additional delays. This kind of information will be critical for social service providers who will be able to relay short-term construction impacts to the community members they serve.

As appropriate, coordination and assistance to establish alternative access points to buildings where access would be made more difficult will be considered, and those access changes will be communicated clearly and in advance to affected environmental justice communities.

8.2 Economic Measures

The Project will provide a significant boost to the local, regional, and state economies, specifically to the construction industry and various other industries that provide supplies and services to this industry, as well as consumer goods to their workers. The location and number of jobs and business revenues would depend on the selected Build Alternative and the location of builders and suppliers awarded the contracts. As an approximation, over the construction period the impacts in Multnomah County could be expected to exceed as much as 400 jobs and $170 million in business output annually.

To offset negative temporary impacts and ensure Project benefits are being distributed fairly, Multnomah County and agency partners would advance Community Benefits Agreements to ensure the economic benefits of Project construction reach low-income and minority workers, disadvantaged, small, woman, or minority-owned business enterprises. The development of Community Benefits Agreements would involve union representatives, minority contractors, pre-apprenticeship training programs, Multnomah County officials, and non-profit workforce development organizations to ensure environmental justice populations have expanded and equal opportunities to participate in the work program.

Other measures to mitigate negative economic impacts to environmental justice populations would include financial assistance to displaced businesses, not only in terms of potential relocation and displacement, but also to establish alternative access points to buildings where access would be made more difficult by the Project (if feasible).

8.3 Transportation Measures

Short-term construction impacts would limit access and transportation options in the vicinity of the bridge and are anticipated to impact environmental justice populations. This is particularly true for the No Temporary Bridge Option, which is anticipated to cause travel delays and costs to multimodal traffic crossing the Willamette River. The effects of these delays are of particular importance with regard to homeless and low-income individuals, who may need to access social service providers on foot or by bicycle. Individuals with a disability may also be disproportionately burdened. Even though transit operations are anticipated to remain the same under all Build Alternatives, many vulnerable community members may be disproportionately burdened by transit fares.

Multnomah County and agency partners are considering the provision of free or reduced-price transit tickets to offset the negative impacts of out-of-direction travel during construction. If implemented, this kind of a transit subsidy could be wholly or partially distributed by direct service providers with insight into the specific transportation needs of the individuals they serve. Given the tentative nature of this mitigation measure, it was not accounted for in determining the Project's potential to result in disproportionate impact on environmental justice populations as of this writing. If Multnomah County and agency partners agree to provide this transit subsidy, it will be recorded in the Final EIS and will be counted as a beneficial mitigation measure to offset negative Project impacts on environmental justice populations.

If chosen as part of the Preferred Alternative, the Temporary Bridge Option would partially mitigate travel delays and travel costs to traffic that normally uses the Burnside Bridge, although it would not completely eliminate the delays. Depending on which modes are allowed on the temporary bridge, it would retain a link for some or all individuals already using the Burnside Bridge and would support enhanced cross-river connections to social, health, and emergency response services on the west and east sides.

While impacts to bus transit access are considered minimal under the Temporary Bridge Option, temporary closure of the Skidmore Fountain MAX Station would disrupt operations of MAX Red and Blue lines, which could have a disproportionate impact on environmental justice populations. As of the writing of this report, TriMet and partners are assessing the need for a bus bridge to offset the negative effects of temporarily closing the Skidmore Fountain MAX Station. The possible extent of the bus bridge could include from the Rose Quarter Transit Center on the east bank to the Yamhill Street/10th Street stop in downtown. Additional work is needed to understand the full extent of station closures, the exact route and stop locations, and timeframe for operating the bus bridge. Given the tentative nature of this mitigation measure, it was not accounted for in determining whether environmental justice populations would be disproportionately impacted. A final determination and agency commitment to providing a temporary bus bridge, if reached, will be described in the Final EIS.

8.4 Acquisition and Displacement Measures

Acquisition and displacement information was gathered for this report in the fall of 2019 and winter of 2020 based on level of bridge design up until that point. At this early time, the following mitigation measures for displacements and relocations will be implemented as part of the Project:

- The acquisitions and relocations program would be conducted in accordance with the Uniform Relocation and Real Property Acquisition Policy Act of 1970 (49 CFR Part 24).
- Relocation assistance will be provided fairly, uniformly, and equitably for all affected persons.
- Coordination with design to identify opportunities to avoid or reduce property impacts through design refinements.

- Coordination with the Portland Rescue Mission to maintain public access during construction.
- Preparation of a schedule and plan for communicating temporary access closures.

Additional information regarding the displacement and relocation process is included in the EQRB Acquisitions and Displacements Technical Report (Multnomah County 2021a).

9 Contacts and Coordination

The analysis was conducted in conjunction with the analysis being prepared for the EQRB Social/Neighborhood Technical Report (Multnomah County 2021k). The analysis for each report shared common analysis methodology, including a review of census-based demographic information, but differentiated environmental impacts by focusing on impacts with a direct link to low-income and minority populations. The environmental justice analysis also relied extensively on the analytical results from the displacements and acquisitions analysis.

In addition, interviews and outreach with Project stakeholders conducted in the summer 2019 by the study team were used in impact assessment to provide additional context and detail as relevant. Additional outreach to social service providers, non-profit organizations, and agency stakeholders has been conducted between fall 2019 and spring 2020, including coordination with Portland Rescue Mission and Night Strike (a homeless food-support organization with a weekly event under the Burnside Bridge).

10 Preparers

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