Air Quality Supplemental Memorandum

Multnomah County | Earthquake Ready Burnside Bridge Project

Portland, OR

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Earthquake Ready Burnside Bridge
Air Quality Supplemental Memorandum

Prepared for

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Acronyms, Initialisms, and Abbreviations

AADT	Annual average daily traffic
ADA	Americans with Disabilities Act
API	Area of Potential Impact
CSZ	Cascadia Subduction Zone
EIS	environmental impact statement
EPA	U.S. Environmental Protection Agency
EQRB	Earthquake Ready Burnside Bridge
I-5	Interstate 5
I-84	Interstate 84
LOS	Level of Service
MSAT	mobile source air toxic
mph	miles per hour
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969
OAR	Oregon Administrative Rules
SDEIS	Supplemental Draft Environmental Impact Statement
VMT	vehicle miles traveled

Executive Summary

This Air Quality Technical Memorandum was prepared to support the National Environmental Policy Act (NEPA) Supplemental Environmental Impact Statement (EIS) for the Multnomah County, Oregon Earthquake Ready Burnside Bridge Project (EQRB or Project). The entire Project is located in an area designated by the U.S. Environmental Protection Agency (EPA) as being in attainment with the National Ambient Air Quality Standards (NAAQS). The results of this analysis indicate that the Project would not significantly impact air quality and mobile source air toxics (MSATs) are expected to be lower in the future relative to existing conditions.

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1 Introduction

In support of the Supplemental Draft Environmental Impact Statement (SDEIS) for the Earthquake Ready Burnside Bridge (EQRB) Project, this supplemental technical memorandum has been prepared to evaluate the impacts of potential design refinements to the Preferred Alternative on Air Quality within the project's Area of Potential Impact (API). The intent of the design modifications is to reduce the overall cost and improve the affordability of the EQRB Project. This technical memorandum is a supplement to the Draft EIS technical reports and as such does not repeat all of the information in those reports, but instead focuses on the impacts of the design modification options, how they compare to each other, and how they compare to the version of the Preferred Alternative that was evaluated in the *EQRB Draft Environmental Impact Statement* (Multnomah County 2021c).

Much of the information included in the Draft EIS and Draft EIS technical reports, including project purpose, relevant regulations, analysis methodology and affected environment, is incorporated by reference because it has not changed, except where noted in this technical memorandum.

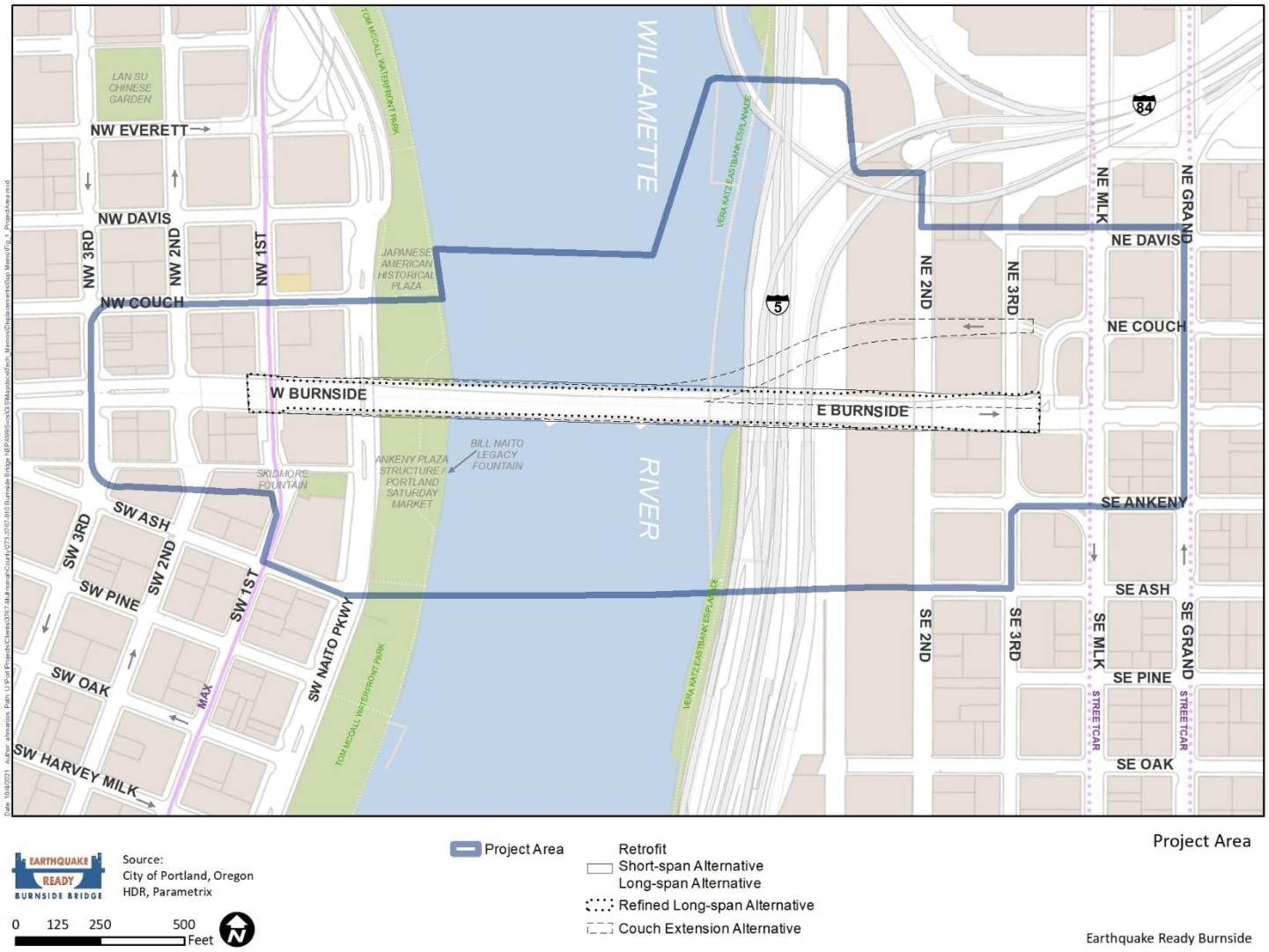
1.1 Project Location

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

1.2 Project Purpose

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

Figure 1. Project Area



2 Project Alternatives

This technical memorandum evaluates potential design refinements to the Draft EIS Preferred Alternative. All of the Project Alternatives evaluated in the Draft EIS are summarized in Chapter 2 of the Draft EIS and described in detail in the *EQRB Description of Alternatives Report* (Multnomah County 2021b). Briefly, the Draft EIS evaluated a No-Build Alternative and four Build Alternatives. One of the Build Alternatives, the Long-span Alternative, was identified as the Preferred Alternative. The potential refinements evaluated in this technical memorandum are collectively referred to as the Refined Long-span Alternative (Four-lane Version) or the Refined Long-span. The Refined Long-span includes Project elements that were studied in the Draft EIS but have been modified as well as new options that were not studied in the Draft EIS. These refinements and new options are intended to provide lower cost and, in some cases, lower impact designs and ideas that could be adopted to reduce the cost of the Draft EIS Preferred Alternative while still achieving seismic resiliency. The potential design refinements, and how they differ from the Draft EIS Long-span Alternative, are described below.

- Bridge width – The total width of the bridge over the river would be approximately 82 to 93 feet (the range varies depending on the bridge type and segment). For comparison, the Draft EIS Replacement Alternatives were approximately 110 to 120 feet wide over the river. The refined bridge width would accommodate approximately 78 feet for vehicle lanes, bike lanes, and pedestrians, which is comparable to the existing bridge.
    - The refined bridge design would accommodate four vehicle lanes (rather than five as evaluated in the Draft EIS). The following lane configuration options are being evaluated:
        - Lane Option 1 (Balanced) – Two westbound lanes (general-purpose) plus two eastbound lanes (one general-purpose and one bus-only lane)
        - Lane Option 2 (Eastbound Focus) – One westbound lane (general-purpose) plus three eastbound lanes (two general purpose and one bus only)
        - Lane Option 3 (Reversible Lane) – One westbound lane (general-purpose) plus two eastbound lanes (one general-purpose and one bus-only) plus one reversible lane (westbound AM peak and eastbound PM peak)
        - Lane Option 4 (General Purpose with Bus Priority) – Two westbound general-purpose lanes plus two eastbound general-purpose lanes, plus bus priority access (e.g., queue bypass) at each end of the bridge.
    - The width of the vehicle lanes would be, at minimum, 10 feet and could vary depending on how the total bridge width is allocated between the different modes.
    - The total width of the bicycle lanes and pedestrian sidewalks would be approximately 28 to 34 feet. This is wider than the existing bridge but narrower than what was proposed in the Draft EIS for the replacement alternatives.

Physical barriers between vehicle lanes and the bicycle lanes are proposed and are in addition to the above dimensions.

  - The refined bridge would allow narrower in-water piers, due to less weight needing to be transferred to the in-water supports.

- Other design refinements being evaluated:
  - West approach – This memorandum evaluates a refined girder bridge type for the approach over the west channel of the river, Tom McCall Waterfront Park, and Naito Parkway. Compared to the cable-stayed and tied-arch options evaluated in the Draft EIS, this option would not only reduce costs but also avoid an adverse effect to the Skidmore/Old Town National Historic Landmark District. It would have two sets of columns in Tom McCall Waterfront Park compared to just one with the Draft EIS tied-arch option and five with the existing bridge.

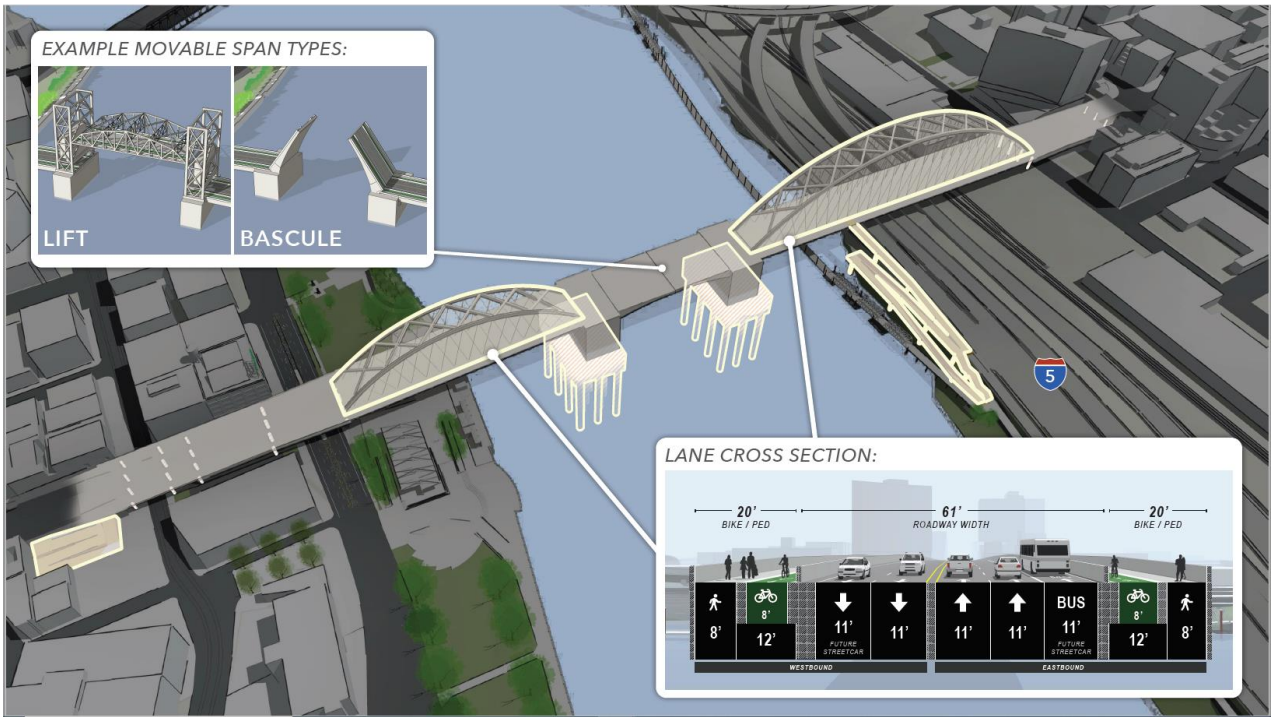
  - East approach – This memorandum evaluates a potential span length change for the east approach tied-arch option that would minimize the risks and reduce costs associated with placing a pier and foundation in the geologic hazard zone that extends from the river to about E 2nd Avenue. The refined tied-arch option would be about 720 to 820 feet long and approximately 150 feet tall (the Draft EIS Long-span Alternative was the same height and 740 feet long). The refined alternative would place the eastern pier of the tied-arch span either on the east side of 2nd Avenue (Option 1) or just west of 2nd Avenue (Option 2). Increasing the length of the tied-arch span would also reduce the length and depth of the subsequent girder span to the east.

  - Americans with Disabilities Act (ADA) access – This memorandum evaluates a refined approach for providing direct ADA access between the bridge and the Eastbank Esplanade, as well as between the bridge and W 1st Avenue and the Skidmore Fountain MAX station. The Draft EIS evaluated multiple ramp, stair, and elevator options for these locations. This SDEIS memo evaluates a refined option that would provide enhanced ADA access at both locations using both elevators and stairs. These facilities would also provide pedestrian and potentially bicycle access. For the west end, there is also the potential for replacing the existing stairs with improved sidewalk access from the west end of the bridge to 1st Avenue.

Figure 3 highlights the elements of the Draft EIS Long-span Alternative that have been modified to create the Refined Long-span Alternative, as described above. Figure 2 shows the Draft EIS Long-span Alternative and Figure 3 shows the Refined Long-span Alternative. Both figures include the tied-arch option for the east approach and the bascule option for the center movable span, but the east span could also be a cable-stayed bridge and the movable span could be a vertical lift bridge. For the west approach, the Draft EIS Long-span Alternative shows the tied-arch option while the Refined Long-span Alternative shows the refined girder bridge. The Refined Long-span Alternative image shows just one of the four possible lane configuration options being studied. All four configuration options, as well as many more graphics of the Refined Long-span Alternative, and how it compares to the Draft EIS Long-span Alternative, can be found in Chapter 2 of the *EQRB Supplemental Draft Environmental Impact Statement*

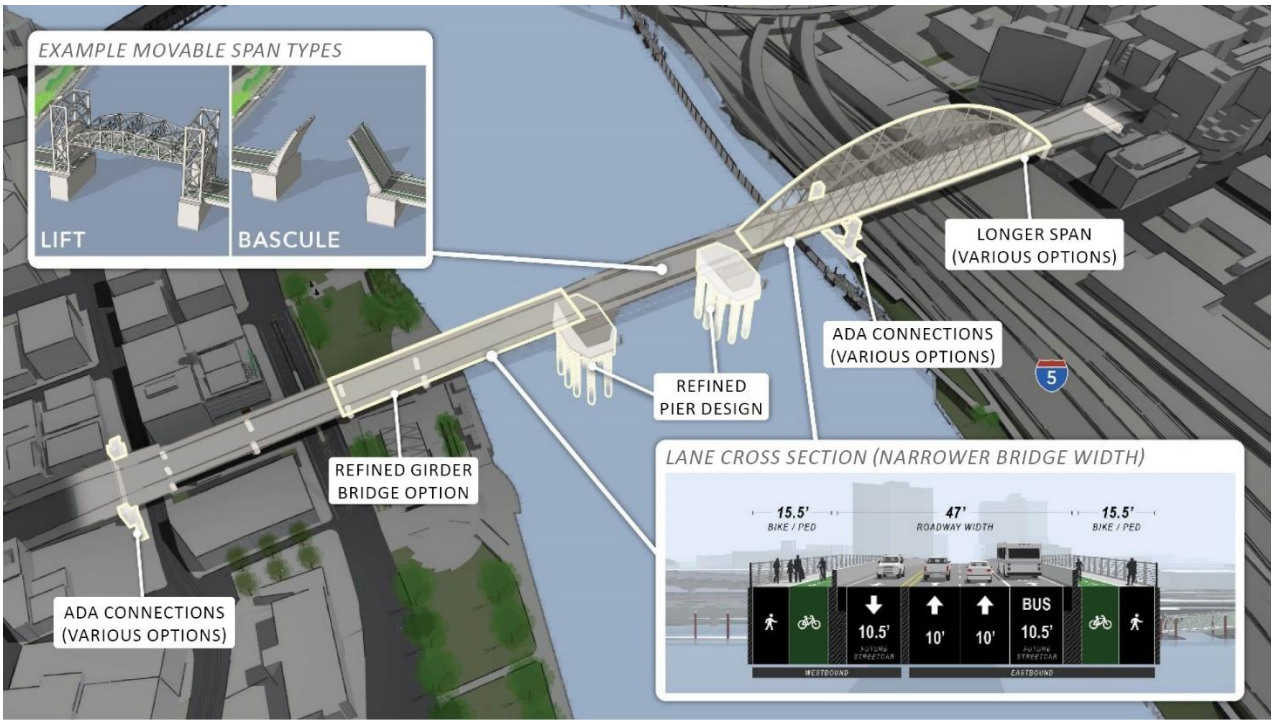
(Multnomah County 2022a). Figure 3 also shows just one of the possible ways to allocate the bridge width between vehicle lanes, bicycle lanes and sidewalks; the total width of the bicycle and pedestrian facilities could range from approximately 28 to 34 feet.

Figure 2. Draft EIS Long-Span Alternative



Note: The Draft EIS Long-span Alternative included multiple bridge types for both the east and west approach. This figure shows only the tied arch option.

Figure 3. Refined Long-Span Alternative



Notes: The Refined Long-span Alternative evaluated in this SDEIS includes both cable-stayed and tied arch options for the east span. This figure shows only the tied arch option. The Draft EIS studied, and SDEIS further studies, a bascule option and vertical lift option for the center movable span. The inset shows both options but the main figure shows the bascule option. This figure also shows just one of the lane configuration options considered in the SDEIS.

- Construction assumptions:
  - Construction duration – The expected duration of project construction is 4.5 to 5.5 years, dependent upon the design option. See Table 1 for more information regarding construction impact extent and closure timeframes.
  - Construction area – Compared to the Draft EIS Long-span Alternative, the main refinement is that the construction area would be smaller for the west approach south of the bridge, including a smaller area within Tom McCall Waterfront Park south of the bridge.
  - Construction access and staging – The construction access and staging is expected to be the same as that described in the Draft EIS.
  - Vegetation – The Refined Long-span Alternative would remove slightly fewer trees and vegetation impacts than the Draft EIS Long-span Alternative, primarily within Tom McCall Waterfront Park south of the bridge.
  - In-water work activity – The in-water work would be similar to that described in the Draft EIS, except that the replacement bridge in-water foundations would consist of a perched footing cap and a group of drilled shafts. Whereas the Draft EIS discussed the use of cofferdams to isolate in-water work, the Refined Long-span Alternative proposes to use a temporary caisson lowered to an elevation about mid-height of the water column to construct footing caps, avoiding additional disturbance of the riverbed that would be needed for a cofferdam.

Additionally, the existing Pier 4 would be fully removed, Pier 1 would be partially removed below the mudline and Piers 2 and 3 removed to below the mudline. Existing in-water piles would be removed, subject to the design option advanced

- Temporary freeway, rail, street, and trail closures – Temporary closures are expected to be the same as those described in the Draft EIS.
- Access for pedestrians and vehicles to businesses, residences, and public services – Access is expected to be the same as that described in the Draft EIS.
- On-street parking impacts – On-street parking impacts are expected to be the same as those described in the Draft EIS.
- Property acquisitions and relocations – Property acquisitions and relocations are similar to those listed in the Draft EIS, except that they have been modified to reflect a narrower set of bridge design options.
- Temporary use of Governor Tom McCall Waterfront Park – The park area that would be temporarily closed for construction has changed since the Draft EIS. On the north side of the bridge, the closure area has been reduced to avoid removing ten cherry trees and a berm that are part of the Japanese American Historical Plaza; this change would apply to all of the build alternatives. On the south side of the bridge, the park closure area has also been reduced to include only the area north of the Tom McCall Waterfront Park trellis; this revision applies only to the Refined Long-span Alternative.

Table 1. Construction Impacts, Closure Extents, and Timeframes by Build Alternative

Facility Impacted	Draft EIS Long-Span Alternative	Refined Long-Span Alternative
Tom McCall Waterfront Park	4.5-year closure within boundary of potential construction impacts	Same; Smaller closure area south of the bridge
Willamette River Greenway Trail	Portion of trail within Tom McCall Waterfront Park closed for same duration as park; detours in place for construction duration	Same
Japanese American Historical Plaza	Southern portion of plaza would be closed for same duration as Tom McCall Waterfront Park	Same
Ankeny Plaza Structure	Closure for duration of construction but no impacts to Ankeny Plaza structure	Plaza Structure would not be closed during construction or impacted
Bill Naito Legacy Fountain	No closure of fountain and associated hardscape	Same
Vera Katz Eastbank Esplanade	18 months (this could extend to 3.5 to 4.5 years if project builds ramps rather than elevators and stairs for the ADA/bicycle/pedestrian connection); detours in place for construction duration	Same
Burnside Skatepark	4-month full closure	Same
River Crossing on Burnside Street	4- to 5-year closure	Same
Saturday Market Location	4.5-year closure or use of alternative location	Same
Skidmore Fountain MAX Station	Approximately 5 weeks	Same
Navigation Channel/Willamette River Water Trail	Intermittent closures; 2 to 10 closures; each closure up to 3 weeks	Same
Overall Construction Duration	**4.5 to 5.5 years**	**Same**

3 Definitions

The following terminology is used when discussing geographic areas in the EIS:

- **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 and NE/SE Grand Avenue on the east side.
- **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 will encompass the Project Area, and for some topics, the geographic extent of the API will be the same as that for the Project Area; for other topics (such as for transportation effects) the API will be substantially larger to account for impacts that could occur outside of the Project Area. The API for Air Quality is defined in Section 5.1 of the *EQRB Air Quality Technical Report* (Multnomah County 2021a).

- **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.

4 Relevant Regulations

Relevant regulations are the same as were used in the *EQRB Air Quality Technical Report* (Multnomah County 2021a).

5 Analysis Methodology

The analysis methodology is the same as was used in the *EQRB Air Quality Technical Report* (Multnomah County 2021a).

6 Affected Environment

The affected environment is the same as was used in the *EQRB Air Quality Technical Report* (Multnomah County 2021a). The only change is with regards to how existing monitoring data was reported. See Table 2 for updated values.

Table 2. Summary of DEQ Air Quality Monitoring Data (2016-2018) Nearest the Project Area

Pollutant[a]	NAAQS	2016	2017	2018	3-Year Average 2016-2018
CO (8-Hour) (ppm)	9	1.5	1.6	1.6	n/a
$PM_{2.5}$ (24-Hour 98th Percentile) ($\mu g/m^3$)	35	14	34[b]	20[b]	n/a
$PM_{2.5}$ (Annual Average) ($\mu g/m^3$)	12	5.6	7.9[b]	7.4[b]	n/a
PM_{10} (24-Hour) ($\mu g/m^3$) [b]	150	32	59[a]	27[a]	n/a
O_3 (3-Year Average of 4th Highest) (ppm)	0.070	0.055	0.060[b]	0.063[b]	n/a
NO_2 (Annual) (ppb)	53	9	9	9	n/a
NO_2 (1-Hour) (ppb)	100	34	40	35	36
SO_2 (1-Hour) (ppb)	75	3	3	3	3
SO_2 (3-Hour) (ppm)	0.5	0.003	0.004	0.003	n/a

Source: ODEQ 2018 Oregon Air Quality Data Summaries Report from S.E. Portland Station EPA #41-051-0080
Notes: EPA Station #41-051-0080 is located 3.6 miles from the Project, ppm = parts per million, $\mu g/m^3$ = micrograms of pollutant per cubic meter of air, ppb = parts per billion
[a] Pollutant concentrations in Table 2 represent maximum concentration for annual averages, highest second highest concentrations for short-term averages, except PM2.5 and Ozone which represent 98th percentile consistent with the NAAQS.
[b] Forest fire data included.

As with criteria pollutants, air toxics from highway traffic have also been declining since monitoring commenced in the area in 1999. DEQ's monitoring data (DEQ 2018) indicates that most pollutants are trending downward, however some such as benzene are trending downward but still remain above the state's health benchmarks (i.e., a one in a million chance of developing cancer over an individual's lifetime).

7 Impacts from the Design Modifications and Comparison to Draft EIS Alternatives

7.1 Traffic Analysis

Traffic forecast for the Project was documented in the *EQRB Transportation Supplemental Memorandum* (Multnomah County 2022b) and the *EQRB Air Quality Technical Report* (Multnomah County 2021a). Table 3 presents the annual average daily traffic (AADT), vehicle miles traveled (VMT), and diesel truck percentage for the Refined Long-span Alternative (2045), Draft EIS Long-span Alternative and No-Build Alternative. The EQRB Draft EIS found that No Build traffic conditions are the same as the future Build Alternatives because bridge capacity and hence traffic and vehicle mix will be the

same for each alternative. Relative to these conditions the Refined Long-span Alternative, either Option 2 or 3, would carry slightly less traffic across the bridge. Options 2 or 3 would carry the same traffic volumes and are the highest traffic volumes of the lane configuration options under consideration. Specifically, the Refined Long-span Alternative would reduce AADT on Burnside Street by 3.4 percent and would reduce peak hour traffic volumes by less than 1 percent, relative to the Draft EIS Long-span Alternative (and No-Build Alternative). Inclusive of all roadways in Table 3, roadway traffic would change by less than 1 percent relative to the Draft EIS Long-span and No Build Alternatives; however, PM peak hour traffic would be reduced by approximately 10 percent along NW/SW 2nd Avenue under either lane configuration option. The reason for the reduction on 2nd Avenue is that traffic is diverting to other roadways to find more efficient routes relative to the No Build Alternative. Additionally, 12 percent and 16 percent increases in VMT on Martin Luther King Jr. Boulevard and Grand Avenue, respectively, are due to traffic rerouting and choosing other routes.

Traffic counts, which were collected by HDR and Parametrix, were used to determine the peak AM (8:00 AM) and PM (5:00 PM) hours. The peak AM PM hour traffic conditions represent the highest 1-hour concentration of traffic on the roadways indicated in Table 3. Percentage of diesel vehicle (i.e., trucks) traffic for the AM peak hour and PM peak hour are also provided in Table 3. Note that level of service (LOS) does not change with the Refined Long-span Alternative relative to the other Build and No Build Alternatives on Burnside Street, side streets, or Interstates because of any of the Project Alternatives. Similarly, delays along Burnside Street, side streets, and Interstates would also not change because of the Project. As with the EQRB Draft EIS it is for these reasons that a summary of LOS was not calculated for the Project. Traffic forecast details are presented in the *EQRB Transportation Supplemental* (Multnomah County 2022b), and Table 3 summarizes selected data. Delays associated with construction are anticipated to be less than 5-minutes. Section 7.2.1 provides emissions estimates due to construction delays.

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Table 3. Refined Long-span Alternative 2045 Traffic/Vehicle Forecasts (with comparison to Draft EIS Long-span Alternative)

Roadway	Segment Description	Refined Long-span Alternative							Draft EIS Long-span Alternative and No Build Alternative							Percent Change Refined Long-span Alternative vs. Draft EIS Long-span Alternative			
		Peak Hour Speed (mph)	AADT	VMT	AM Peak Hour Traffic	PM Peak Hour Traffic	AM Peak Hour Diesel Vehicles (%)	PM Peak Hour Diesel Vehicles (%)	Peak Hour Speed (mph)	AADT	VMT	AM Peak Hour Traffic	PM Peak Hour Traffic	AM Peak Hour Diesel Vehicles (%)	PM Peak Hour Diesel Vehicles (%)	AADT (%)	VMT (%)	AM Peak Hour Traffic (%)	PM Peak Hour Traffic (%)
Burnside St	EB b/w NW/SW 2nd Ave and MLK Jr. Blvd	25	17,900	9,748	965	1,485	1	0.1	25	18,500	9,491	970	1,495	1	0.1	-3.4	2.6	-0.5	-0.7
	WB b/w NW/SW 2nd Ave and MLK Jr. Blvd	35	15,100	8,209	1,345	1,055	0.4	0	35	15,500	7,952	1,400	1,110	0.4	0	-2.6	3.1	-4.1	-5.2
Couch St	b/w Grand Ave and MLK Jr. Blvd	10	13,300	604	1,330	1,165	1	0.1	10	13,600	647	1,360	1,195	1	0.1	-2.3	-7.1	-2.3	-2.6
Grand Ave	b/w Couch St and Burnside St	10	18,200	995	1,325	1,695	6.1	6.1	10	18,000	874	1,305	1,685	6.1	6.1	1.1	12.2	1.5	0.6
MLK Jr Blvd	b/w Couch St and Burnside St	10	21,000	1,206	1,055	1,730	6.1	6.1	10	20,800	1,007	1,050	1,715	6.1	6.1	1.0	16.5	0.5	0.9
Naito Pkwy	NB b/w Couch St and Ankeny St	15	7,000	654	615	680	5.65	5.65	15	7,000	669	610	680	5.65	5.65	0.0	-2.3	0.8	0.0
	SB b/w Couch St and Ankeny St	25	8,200	775	500	710	5.65	5.65	20	8,200	784	495	730	5.65	5.65	0.0	-1.2	1.0	-2.8
NW/SW 2nd Ave	b/w Couch St and Burnside St	10	5,400	271	570	425	9.6	0.965	10	5,600	271	570	470	9.6	0.965	-3.7	0.0	0.0	-10.6
I-5	NB Mainline near Burnside Crossing	13	46,162	33,223	3,278	2,538	7.14	7.14	13	46,162	33,223	3,278	2,538	7.14	7.14	0.0	0.0	0.0	0.0
	SB Mainline near Burnside Crossing	17	21,709	15,624	1,409	1,301			17	21,709	15,624	1,409	1,301			0.0	0.0	0.0	0.0
	NB C-D to I-84 Interchange	13	47,145	25,849	3,347	2,591			13	47,145	25,849	3,347	2,591			0.0	0.0	0.0	0.0
	SB I-5 Off-ramp to Morrison	17	15,354	7,212	998	920			17	15,354	7,212	998	920			0.0	0.0	0.0	0.0
	SB C-D from I-84 Interchange	17	56,890	18,047	3,697	3,414			17	56,890	18,047	3,697	3,414			0.0	0.0	0.0	0.0

AADT (Annual average daily traffic), EB (eastbound), mph (miles per hour), VMT (vehicle miles traveled), WB (westbound), % (percent)

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7.2 Direct Impacts

7.2.1 Short-Term Direct Impacts

Short-term Direct Impacts for the Refined Long-span Alternative are the same as those disclosed in the EQRB Draft EIS for the Long-span Alternative.

7.2.2 Long-Term Direct Impacts

Based on the traffic comparison long-term direct impacts from the Refined Long-span Alternative are expected to remain approximately the same (i.e., less than a 1 percent difference in roadway traffic for roads analyzed, see Table 3) as the No-Build and Draft EIS Long-span Alternatives as future traffic volumes are expected to be negligibly different for the Refined Long-span Alternative. As an example, AADT is expected to be 3.4 percent less for the Refined Long-span Alternative relative to the Draft EIS Build Alternatives and No Build Alternative conditions. For this reason, the analysis of long-term impacts is the same as those disclosed in the EQRB Draft EIS.

7.2.3 Mobile Source Air Toxics Analysis

The results of the Mobile Source Air Toxics Analysis for the Refined Long-span Alternative are the same as those for other alternatives discussed in the EQRB Draft EIS.

7.3 Indirect Effects and Cumulative Impacts

Indirect effects and cumulative impacts are the same for the Refined Long-span Alternative as those disclosed in the EQRB Draft EIS.

7.1 Conclusion

This analysis determined that the Refined Long-span Alternative would not add any additional capacity and hence no additional vehicular traffic or change in the vehicle fleet mix compared to the No-Build Alternative or the build alternatives evaluated in the EQRB Draft EIS. Daily traffic volumes, including diesel vehicles are within 1 percent of area roadway volumes relative to the Draft EIS Build Alternatives and No-Build Alternative. Furthermore, it can reasonably be concluded the Refined Long-span Alternative is not expected to increase CO emissions compared to the No-Build Alternative because traffic volumes would remain approximately the same and LOS would be the same. With these conclusions, coupled with monitored CO background values in the area being well below the NAAQS and CO modeling results for other projects in the Portland metropolitan area unlikely to result in CO impacts above the NAAQS, the Refined Long-span Alternative is not expected to affect air quality or cause/contribute to a violation of the CO NAAQS.

Temporarily, emissions will be produced in the construction of this Project from heavy equipment and vehicle travel to and from the site, traffic delays due to rerouting, as well as from fugitive sources. Construction of this Project would cause only temporary

increases in emissions. Mitigation measures as discussed in Section 8 will be implemented to mitigate construction emissions.

8 Potential Mitigation

No long-term direct impacts are anticipated from the Refined Long-span Alternative. There would be temporary short-term impacts from construction activity.

8.1 Construction Mitigation

Mitigation measures for potential temporary construction impacts normally include best management practices for dust suppression. Construction contractors are required to comply with Division 208 of Oregon Administrative Rules (OAR) 340, which addresses visible emissions and nuisance requirements. Subsection of OAR 340-208 places limits on fugitive dust that causes a nuisance or violates other regulations. Violations of the regulations can result in enforcement action and fines. The regulation provides that the following reasonable precautions be taken to avoid dust emissions (OAR 340-208, Subsection 210):

- Use of water or chemicals, where possible, for the control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads, or the clearing of land
- Application of asphalt, oil, water, or other suitable chemicals on unpaved roads, materials stockpiles, and other surfaces that can create airborne dusts
- Full or partial enclosure of materials stockpiled in cases where application of oil, water, or chemicals are not sufficient to prevent particulate matter from becoming airborne
- Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials
- Application of water or other suitable chemicals on unpaved roads, materials stockpiles, and other surfaces that can create airborne dusts
- Adequate containment during sandblasting or other similar operations
- When in motion, always cover open-bodied trucks transporting materials likely to become airborne
- The prompt removal from paved streets of earth or other material that does or may become airborne

Based on Oregon Department of Transportation Standard Specification, Section 290, construction contractors must follow certain control measures, which include vehicle and equipment idling limitations, designed to minimize vehicle track-out and fugitive dust. These measures would be documented in the erosion and sediment control plan the contractor is required to submit prior to the preconstruction conference. To reduce the impact of construction delays on traffic flow and resultant emissions, road or lane closures should be restricted to non-peak traffic periods, when possible. Additional

mitigation measures for reducing emissions from construction equipment and activities would be achieved by following the Multnomah County Clean Air Construction guidance.

Particular consideration will be given to reducing potential impacts from construction dust and emissions on the residents and occupants of older buildings (such as the Portland Rescue Mission and Central City Concern) located immediately adjacent to the construction zone on the west end. Compared to newer buildings, residents of older buildings that do not currently have air conditioning and rely on opening windows to cool interior temperatures, could be exposed to more construction-related dust and emissions, and could benefit from measures to reduce those impacts, especially when bridge demolition activities are occurring in that location. The potential for impacts as well as mitigation options will be evaluated and coordinated with those facilities as the Project progresses.

9 Agency Coordination

Agency coordination remains unchanged from the EQRB Draft EIS.

10 Preparers

Name	Professional Affiliation [firm or organization]	Education [degree or certification]	Years of Experience
Scott Noel	HMMH	Bachelors Geography and Environmental Planning	21
Phillip DeVita	HMMH	B.S. Meteorology M.S. Environmental Studies	32
Dillon Tannler	HMMH	B.S. Economic, Environmental Policy, & Management	10

11 References

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