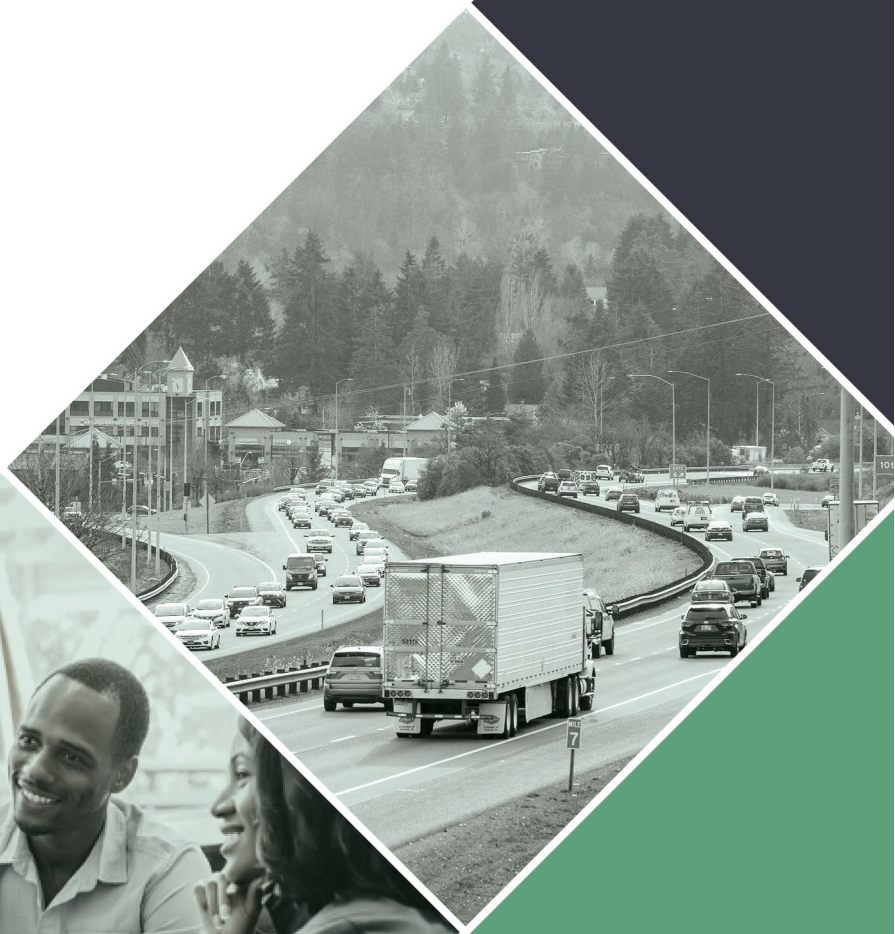
Appendix G I-205 Toll Project Noise Technical Report

I-205 Toll Project

Noise Technical Report

February 2023



Urban Mobility STRATEGY

Oregon Department of Transportation

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Noise Technical Report

February 2023

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Oregon Department of Transportation

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
API	Area of Potential Impact
CFR	Code of Federal Regulations
dBA	A-weighted decibels
EB	Eastbound
EA	Environmental Assessment
EPA	Environmental Protection Agency
FHWA	U.S. Federal Highway Administration
I-	Interstate
Leq	Equivalent sound level
Leq(h)	Hourly equivalent sound level
Lmax	Maximum sound level
Lmin	Minimum sound level
mph	Miles per hour
NAAC	Noise abatement approach criteria
NAC	Noise abatement criteria
NB	northbound
NEPA	National Environmental Policy Act
ODOT	Oregon Department of Transportation
OR	Oregon Route
Project	I-205 Toll Project
Receiver	Modeling or measurement location that represents noise sensitive land uses; can represent multiple receptors or equivalent units
Receptor	An activity or unit represented by a measured or modeled receiver, also called an equivalent unit (subset of receiver)
SB	Southbound
SR	State Route
TNM	Traffic Noise Model
U.S.	United States
WB	Westbound

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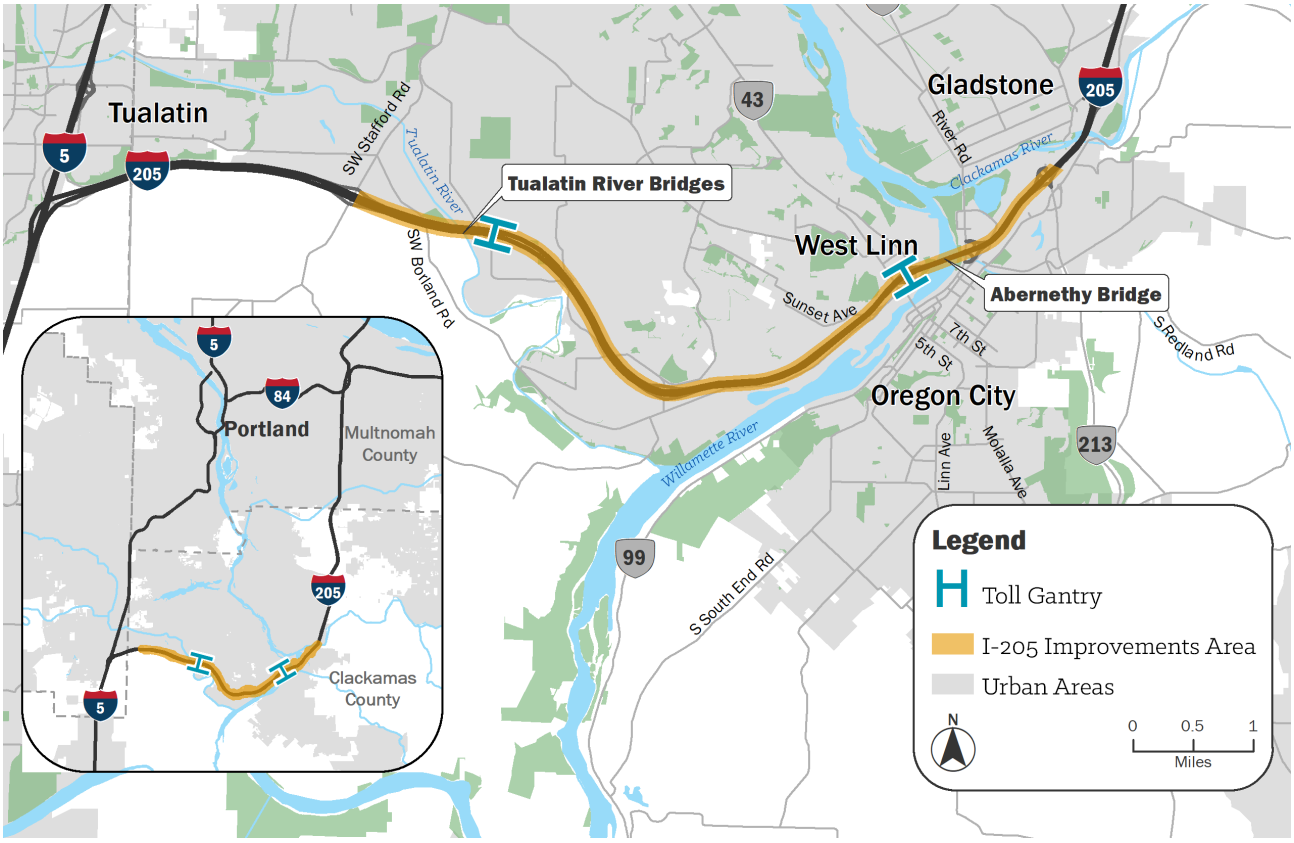
1 Introduction

This technical report supports the I-205 Toll Project Environmental Assessment developed by the Oregon Department of Transportation (ODOT) in partnership with the Federal Highway Administration (FHWA). ODOT proposes to use variable-rate tolls[1] on the Interstate 205 (I-205) Abernethy Bridge and Tualatin River Bridges to raise revenue for construction of planned improvements to I-205 from Stafford Road to Oregon Route (OR) 213, including seismic upgrades and widening, and to manage congestion. The Environmental Assessment evaluates the effects of variable rate tolls and the toll-funded I-205 improvements (together, the "Project") on the human and natural environment in accordance with the National Environmental Policy Act (NEPA). Figure 1-1 illustrates Project Area.

Figure 1-1. Project Area



This technical report describes the existing noise conditions, discusses impacts and benefits the Project would have on those conditions, and identifies measures to avoid, minimize, and/or mitigate these impacts. The information contained in this technical analysis supports the Project's Environmental Assessment (EA).

[1] Variable-rate tolls are fees charged to use a road or bridge that vary based on time of day and that can be used as a strategy to shift demand to less congested times of day.

2 Project Alternatives

ODOT evaluated two alternatives in the I-205 Toll Project Environmental Assessment and this technical report:

- No Build Alternative
- Build Alternative

Section 2.1 describes the previous environmental review that led up to the Environmental Assessment and associated technical analyses, and Sections 2.2 and 2.3 describe the alternatives in more detail.

2.1 Project Background and Environmental Review

Oregon House Bill 2017 identified improvements on I-205 as a priority project, known as the I-205: Stafford Road to OR 213 Improvements Project (I-205 Improvements Project). The purpose of the improvements was reducing congestion; improving mobility, travel time reliability, and safety; and providing seismic resiliency for I-205 to function effectively as a statewide north-south lifeline route after a major earthquake by widening I-205 and seismically upgrading or replacing 13 bridges. In 2018, ODOT and FHWA determined that, with respect to FHWA regulations implementing NEPA, the I-205 Improvements Project qualified as a categorical exclusion (CE) (Code of Federal Regulations [CFR] 23 771.117[d][13]). In December 2018, FHWA signed a CE Closeout Document (2018 CE) for the I-205 Improvements Project, which demonstrated that it would not involve significant environmental impacts. At that time, the potential locations for tolling on I-205 had not been determined, and tolling of I-205 was not included in any adopted long-term transportation plan;[2] therefore, tolling was not considered part of the I-205 Improvements Project nor analyzed in the 2018 CE.

After FHWA approved the 2018 CE, ODOT advanced elements of the I-205 Improvements Project as multiple phased construction packages; however, efforts to secure construction funding for the entirety of the project were unsuccessful. In 2021, Oregon House Bill 3055 provided financing options that allowed the first phase of the I-205 Improvements Project to be constructed without toll revenue[3]. This first phase, referred to as the I-205: Phase 1A Project (Phase 1A), includes reconstruction of the Abernethy Bridge with added auxiliary lanes and improvements to the adjacent interchanges at OR 43 and OR 99E. ODOT determined that toll revenue would be needed to complete the remaining construction phases of the I-205 Improvements Project as described in the 2018 CE (i.e. those not included in Phase 1A).

In May 2022, FHWA and ODOT reduced the scope of the project to include only Phase 1A and completed a NEPA re-evaluation that reduced the scope of the 2018 CE decision for the scaled back project (ODOT 2022a). Construction of Phase 1A began in summer 2022 and is estimated to be complete in 2025. The toll-funded improvements were removed from the I-205 Improvements Project and accompanying 2018 CE decision and are now included in the I-205 Toll Project. The environmental

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[2] Federal regulations require that transportation projects be formally included in state and/or regional long-term transportation plans before they receive NEPA approvals.

[3] If tolling is approved upon completion of environmental review of the I-205 Toll Project, tolls could be used to pay back loans for Phase 1A.

effects of the toll-funded improvements are analyzed in the Environmental Assessment and associated technical analyses.

2.2 No Build Alternative

NEPA regulations require an evaluation of a No Build Alternative to provide a baseline to compare with the potential effects of a Build Alternative. The No Build Alternative consists of existing transportation infrastructure and any planned improvements that would occur regardless of the Project. The No Build Alternative includes the I-205: Phase 1A Project (reconstruction of the Abernethy Bridge with added auxiliary lanes and improvements to the adjacent interchanges at OR 43 and OR 99E) as a previously approved project that would be constructed by 2025. Under the No Build Alternative, tolling would not be implemented and the toll-funded widening and seismic improvements on I-205 between Stafford Road and OR 213 would not be constructed.

2.3 Build Alternative

Under the Build Alternative, drivers of vehicles on I-205 would be assessed a toll for crossing the Abernethy Bridge (between OR 43 and OR 99E) and for crossing the Tualatin River Bridges (between Stafford Road and 10th Street). The Build Alternative includes construction of a third through lane in each direction of I-205 between the Stafford Road interchange and the OR 43 interchange, a northbound auxiliary lane between OR 99E and OR 213, toll gantries and supporting infrastructure, as well as replacement of or seismic upgrades to multiple bridges along I-205 (shown schematically in Figure 2-1).

The following sections provide a more detailed description of the Build Alternative.

2.3.1 Bridge Tolls – Abernethy and Tualatin River Bridges

Two toll gantry areas have been identified for placement of the toll gantries and supporting infrastructure, as shown in Figure 2-2. The gantries and supporting infrastructure would be located entirely within the existing I-205 right-of-way.

Figure 2-1. Schematic Diagrams of No Build and Build Alternatives

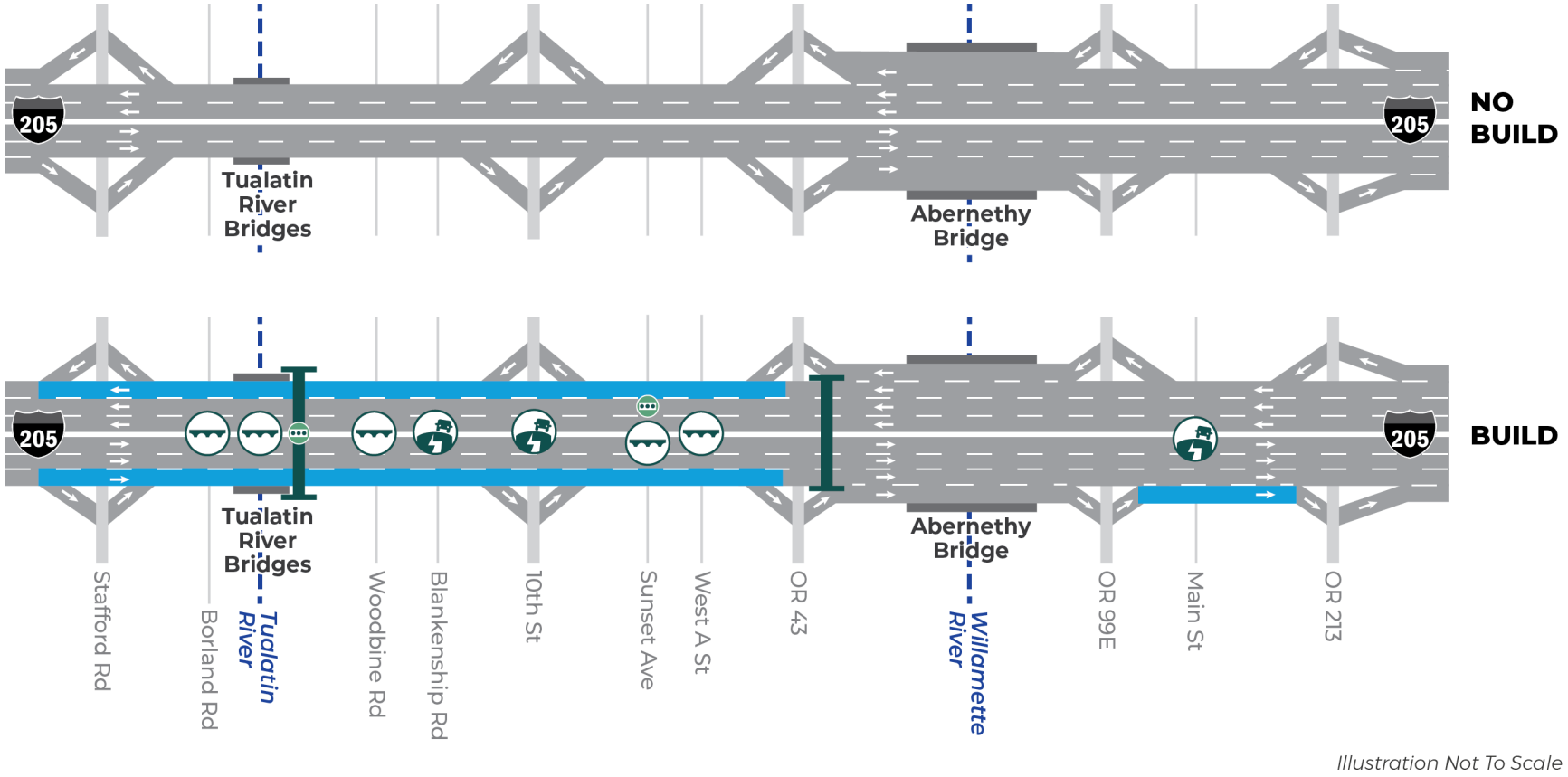
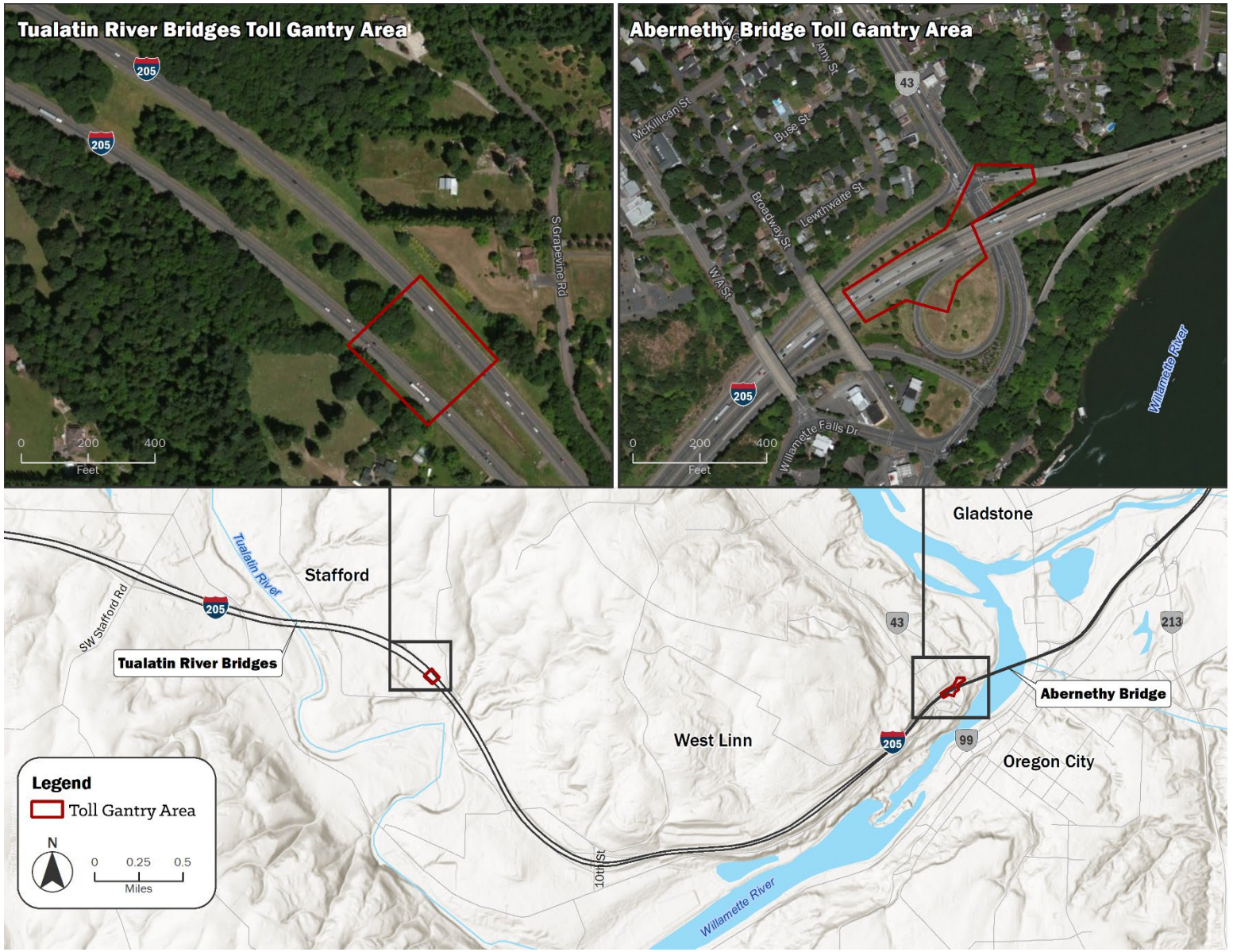


Figure 2-2. Build Alternative: Bridge Tolls – Abernethy Bridge and Tualatin River Bridges



Tolling Technology

Under the Build Alternative, tolling would consist of an all-electronic system that would automatically collect tolls from vehicles traveling on the highway, as shown in Figure 2-3. There would be no toll booths requiring drivers to stop. Rather, antennae, cameras, lights, and other sensors would be mounted on the toll gantries spanning the roadway and would either (1) read a driver's toll account transponder (a small sticker placed on the windshield), or (2) capture a picture of a vehicle's license plate and send an invoice to the registered owner of the vehicle.

Figure 2-3. Electronic Toll System

How electronic tolling works. An all-electronic system would automatically collect tolls from vehicles traveling on the highway. A transponder (a small sticker placed on the windshield) is read and connected to a prepaid account. If a vehicle doesn't have a transponder, a camera captures the car's license plate, and the registered owner is billed. This keeps traffic flowing without stopping to pay tolls.

Tolling Infrastructure

Toll gantries would consist of vertical columns on the outside of the travel lanes and a horizontal structure that would span the travel lanes to which the electronic tolling equipment would be attached. Toll gantries would be constructed of a metal framework with metal or concrete support structures. Gantries and supporting infrastructure would be designed to ensure consistency with other improvements to I-205 included in the Project. The final structure type and design would be determined during the preliminary design of the gantries and would be based on cost, aesthetics, and ease of construction. The toll gantry areas would include paved parking for service vehicles, which would typically be protected by a safety barrier or guard rail.

In addition to the toll technology mounted overhead on the gantries themselves, the gantries would require some additional toll system equipment for data processing, storage, and network operations. This equipment is generally enclosed within a small, access-controlled concrete structure, from which connections to existing ODOT data fiber and commercial power would be routed. ODOT currently operates a fiber data network with a 48-strand fiber-optic cable along the north side of I-205, to which the toll system equipment would be connected. A backup generator (typically fueled by diesel or natural gas) would be provided so the toll equipment would function during power outages. No relocation of existing utilities to accommodate construction of the gantries or any supporting infrastructure is expected.

The Abernethy Bridge toll gantry area would include three toll gantries: a mainline gantry structure that spans all highway lanes, and gantries over the northbound on-ramp and the southbound off-ramp. Each toll gantry would include a single gantry structure. The on-ramp and off-ramp gantries would likely be cantilevered structures. The Tualatin River Bridges toll gantry area would include two toll gantries: one over the mainline northbound travel lanes and one over the mainline southbound travel lanes. Each toll gantry would include a single gantry structure.

Toll Implementation

As Oregon's toll authority, the Oregon Transportation Commission will set toll rates, policies (including discounts and exemptions), and price escalation. If tolling is approved, the Oregon Transportation Commission would ultimately set toll rates at levels sufficient to meet all financial commitments, fund

Project construction and maintenance, and manage congestion. The Oregon Transportation Commission is expected to finalize toll rates in 2024. ODOT could begin tolling as early as December 2024, before the completion of construction of Project improvements to I-205 under the Build Alternative.

Toll Rate Assumptions

Toll rates have not been determined and will be set by the Oregon Transportation Commission if tolling is approved. For environmental analysis and financial planning purposes, a baseline weekday variable-rate toll schedule was identified that balances the objectives of revenue generation sufficient to meet the funding target for capital construction of the I-205 improvements, and alleviating congestion on I-205 during peak travel times. The identified toll rates would provide a sustainable source of revenue for ongoing corridor operations and maintenance and for periodic repair and replacement costs. For environmental analysis and financial planning purposes, the identified baseline toll rate schedule for the year of opening varies as follows:

- During off-peak hours, toll rates are assumed to be lowest, ranging from $0.55 overnight (from 11 p.m. to 5 a.m.) to $0.65 in the midday and evening (from 10 a.m. to 1 p.m. and 8 p.m. to 11 p.m.) to cross a single bridge.
- During peak hours (6 a.m. to 9 a.m. and 3 p.m. to 7 p.m.), toll rates are assumed to be highest during peak hours, varying from $1.65 to $2.20 to cross a single bridge depending on which weekday peak hour.
- During the shoulder period hours just before and after the peak periods (5 a.m. to 6 a.m., 9 a.m. to 10 a.m., 1 p.m. to 3 p.m., 7 p.m. to 8 p.m.), toll rates are assumed to be $1.00 to cross a single bridge.

These assumed rates would apply to each bridge crossing. The rates for a through trip (i.e., crossing both the Abernethy and Tualatin River bridges) would be double the assumed toll rate for only crossing one bridge. The assumed toll rates are provided in state fiscal year (FY) 2025 dollars, indicative of the year of opening, and are assumed to escalate annually with general price inflation, conservatively assumed to be 2.15% per year.

A recent financial analysis confirmed that under the assumed baseline toll rates, there would be sufficient net toll revenues to leverage bonds that would meet the toll funding contribution target for construction of the planned I-205 improvements (ODOT 2022b).

2.3.2 Improvements to I-205

Under the Build Alternative, a 7-mile portion of I-205 would be widened between Stafford Road and OR 213, with added through lanes between Stafford Road and OR 43, and a northbound auxiliary lane from OR 99E to OR 213. Eight bridges between Stafford Road and OR 213 would be replaced or reconstructed to withstand a major seismic event. New drainage facilities would be installed in both directions of I-205.

Bridge Reconstructions and Replacements

The following bridges would be reconstructed with foundation improvements and substructure upgrades for seismic resiliency but would not be replaced:

- Northbound I-205 bridge over Blankenship Road – Mile Post (MP) 5.84
- Southbound I-205 bridge over Blankenship Road – MP 5.90
- Northbound I-205 bridge over 10th Street (West Linn) – MP 6.40
- Southbound I-205 bridge over 10th Street (West Linn) – MP 6.42
- I-205 bridge over Main Street (Oregon City) – MP 9.51

The following bridges would be replaced to meet seismic design standards and to facilitate the widening of I-205:

- Northbound I-205 bridge over SW Borland Road – MP 3.82
- Southbound I-205 bridge over SW Borland Road – MP 3.81
- Northbound I-205 bridge over the Tualatin River – MP 4.1
- Southbound I-205 bridge over the Tualatin River – MP 4.08
- Northbound I-205 bridge over Woodbine Road – MP 5.14
- Southbound I-205 bridge over Woodbine Road – MP 5.19
- Sunset Avenue (West Linn) bridge over I-205 – MP 8.28
- West A Street (West Linn) bridge over I-205 – MP 8.64

The I-205 bridges over 10th Street and Blankenship Road would be widened and raised to meet the proposed new highway grade. The I-205 bridges over the Tualatin River and SW Borland Road would be replaced on a new alignment between the existing northbound and southbound directions to accommodate construction. The I-205 bridges over Woodbine Road would be replaced on the existing alignment and raised to meet the proposed new highway grade. The Broadway Street Bridge over I-205 would be removed to enhance the function of the OR 43 interchange.

2.3.3 Construction

Construction of the Build Alternative is expected to last approximately 4 years, beginning in late 2023 with construction of toll gantries and toll-related infrastructure and continuing from 2024 through 2027 with construction of I-205 widening and seismic improvements. Most toll-related construction would be conducted alongside I-205 within the existing right-of-way. For highway widening, it is anticipated that construction would be sequenced to widen one direction of I-205 at a time, enabling traffic to be moved to a temporary alignment while the remaining widening work is completed. Construction activities would include adding temporary crossover lanes to enable access to the temporary traffic configurations during roadway widening. Staging areas for construction equipment and supplies for the Build Alternative would be located primarily in the median of I-205 in ODOT right-of-way.

3 Regulatory Framework

3.1 Noise Regulations and Impact Criteria

Applicable noise regulations and guidelines provide a basis for evaluating potential noise impacts. For highway transportation projects with Federal Highway Administration (FHWA) involvement, the *Federal-Aid Highway Act of 1970* and the associated implementing regulations (23 Code of Federal Regulations 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The noise regulations govern noise prediction requirements, noise analyses, noise abatement criteria (NAC), and requirements for informing local officials. The NAC are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 A-weighted decibels [dBA]) is lower than the NAC for land uses such as hotels, offices, and restaurants areas (72 dBA).

The Project meets the definition of a Type I project as established in 23 CFR 772 and defined in the ODOT Noise Manual (ODOT 2011). Therefore, the Project is required to analyze highway traffic noise and any impacts resulting from the Project. The Project is defined as a Type I project because project improvements involve added capacity with the construction of new through lanes.

As such, the noise analysis is an evaluation of noise levels from the construction, operations, and maintenance of the Build Alternative relative to the No Build Alternative and identifies locations where noise levels exceed the ODOT Noise Abatement Approach Criteria (NAAC) and any substantial increases in noise levels at noise-sensitive land uses. Because FHWA defines the Project as a Type I Project, noise abatement at noise impact locations are evaluated for mitigation. The noise analysis for the I-205 Toll Project presented in this report is an evaluation of the expected noise impacts that would occur from adding tolls to I-205 at the Abernethy Bridge and Tualatin River Bridges, as well as adding a third travel lane in each direction of I-205 between the Stafford Road interchange and the OR 213 interchange, and seismic upgrades to bridges along I-205.

3.1.1 ODOT Noise Policy

ODOT implements FHWA noise regulations in Oregon in accordance with the ODOT Noise Manual (ODOT 2011). According to this manual, a noise impact occurs when the future noise level for a build alternative results in a substantial increase in the noise level, defined as a 10 dBA or more increase over the existing noise levels, or when the future noise level for a build alternative approaches or exceeds the FHWA NAC. ODOT noise policy defines the NAAC as 2 dBA less than the FHWA NAC. This report complies with the current ODOT manual. Table 3-1 shows the FHWA NAC and the ODOT NAAC.

Table 3-1. FHWA Noise Abatement Criteria—ODOT Noise Abatement Approach Criteria Hourly A-Weighted Sound Level Decibels (dBA)

Activity Category	Activity Criteria[1] $L_{eq(h)}$		Evaluation Location	Activity Description
	FHWA NAC[2]	ODOT NAAC[3]		
A	57	55	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[3]	67	65	Exterior	Residential
C[3]	67	65	Exterior	Active sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or non-profit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails and trails crossings.
D	52	50	Interior	Auditoriums, campgrounds, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or non-profit institutional structures, radio studios, recording studios, schools, and television studios.
E[3]	72	70	Exterior	Hotels, motels, offices, restaurants/bars, and other develop lands, properties, or activities not included in A through D or F.
F	—	—	—	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	—	—	—	Undeveloped lands that are not permitted.[4]

[1] The Leq(h) Activity Criteria values are for impact determination only and are not design standards for noise abatement measures.
[2] Federal Highway Administration noise abatement criteria
[3] Oregon Department of Transportation noise abatement approach criteria
[4] Includes undeveloped lands permitted for this activity category

When predicted design-year Build Alternative noise levels approach or exceed the NAC during the loudest hour of the day or if a substantial increase in noise over existing noise levels occurs, consideration of noise abatement measured is required. The Project is defined as a Type I Project and noise abatement at all noise impact locations was considered. For this study, noise levels throughout the study area were estimated for existing (2017) conditions and for the 2045 No Build Alternative and Build Alternative.

3.1.2 Oregon Department of Environmental Quality

The Oregon Department of Environmental Quality Chapter 340 Division 35 sets allowable noise levels for individual vehicles and for industrial and commercial uses. Maximum allowable noise levels for in-use vehicles in Oregon are determined by vehicle type, operating conditions, and model year (DEQ 2021).

3.1.3 Local Noise Regulations

Portions of the Project are within the jurisdictions of Clackamas County, West Linn, Oregon City, and Gladstone.

Clackamas County

Clackamas County provides noise regulations within Title 6-10, Chapter 6.05 of the County Code (Clackamas County 2000). Portions of the code applicable to the Project include those relating to construction noise, which is restricted to daytime hours from 7:00 a.m. to 10:00 p.m. Construction noise related to blasting is restricted to the hours from 9:00 a.m. to 4:00 p.m., excluding weekends. Nighttime construction requires a noise variance from the County.

West Linn

The City of West Linn provides noise regulations within Title 5, Section 5.487 of the Municipal Code (City of West Linn 2004). As with the Clackamas County, the portions of the code applicable to the Project include those relating to construction noise, which is exempted from the City's noise level limits from 7:00 a.m. to 7:00 p.m. during weekdays, from 9:00 a.m. to 5:00 p.m. on Saturdays, and all day on Sundays. ODOT is exempt from requiring a noise variance from the City of West Linn when construction is performed within ODOT right-of-way (City of West Linn 2019). All construction within West Linn would be located within ODOT right-of-way.

Oregon City

Oregon City provides noise regulations within Title 9, Chapter 9.12.020 of City of Oregon Code. (City of Oregon City 2018). Construction noise is restricted to daytime hours from 7:00 a.m. to 6:00 p.m. weekdays and from 9:00 a.m. to 6:00 p.m. on Saturdays. Construction outside these daytime hours requires a variance from the City.

Gladstone

The City of Gladstone provides noise regulations in Title 8, Chapter 8.12 of the Municipal Code (City of Gladstone 2021). Construction activities from 6:00 p.m. to 7:00 a.m. are exempted on rights-of-way owned by ODOT, provided typical measures for work in urban areas are used to mitigate noise, including notification of affected property owners and the City.

4 Methodology

This section describes the methods used to evaluate noise impacts of the No Build Alternative and Build Alternative.

This noise analysis updates the traffic noise analysis prepared for the Documented Categorical Exclusion for the I-205 Improvements Project (ODOT 2018) (discussed in Section 2.1); referred to in this report as the "prior noise analysis". Project analysts used noise models developed from the prior noise analysis and traffic data from the *I-205 Toll Project Transportation Technical Report* to reflect future traffic projections under the No Build Alternative and Build Alternative. Future traffic data used in this noise analysis is for future year 2045 and assumes the toll-funded improvements to I-205 are constructed. As shown in Figure 4-1, the study area required for Type I Project improvements is located along I-205; labeled as the "Type I Project Study Area".

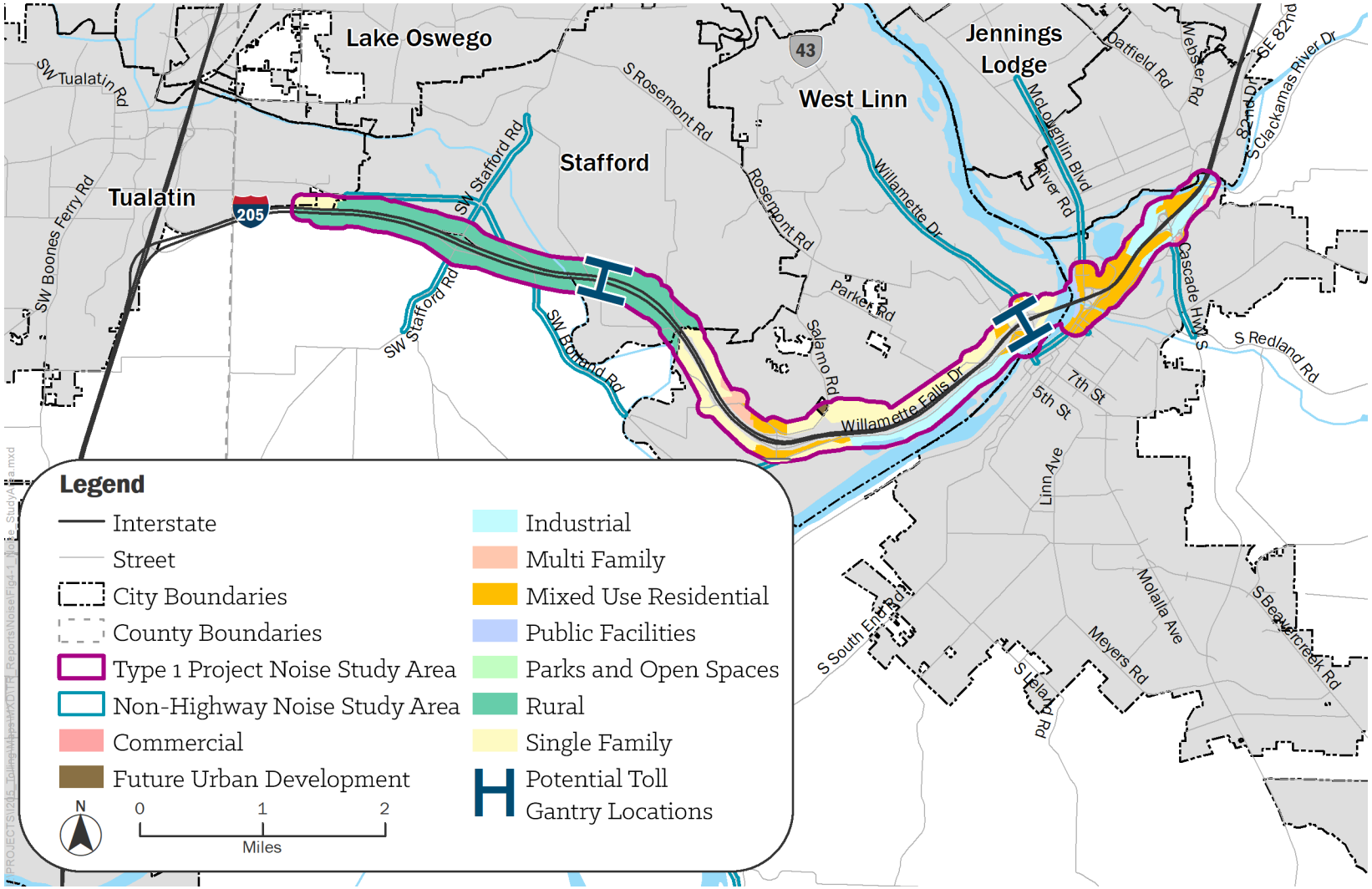
A high-level quantitative analysis was also performed to identify the potential change in traffic noise levels along roadways that are expected to experience traffic diversion; labeled as the "Non-Highway Noise Study Area" on Figure 4-1.

Construction noise was qualitatively assessed using FHWA reference levels. Suggested construction noise minimization measures are generally included in contractor documents. (Attachment B presents the characteristics of noise.)

4.1 Noise Study Area

Figure 4-1 shows the noise study area used to evaluate existing and future noise levels. The noise study area is defined as the I-205 right-of-way between the SW Stafford Road and (OR 213 interchanges, plus a 500-foot buffer from the right-of-way. As shown on Figure 4-1, the noise study area also includes areas beyond I-205, which may experience rerouting as a result of the Build Alternative. Within the noise study area, future noise modeling reflects updates to future traffic noise levels under the No Build Alternative and Build Alternative. Figure 4-1 also shows the zoning within the noise study area, which is generally reflective of existing land uses. Section 5.1 further describes the land uses within the noise study area.

Figure 4-1. Noise Study Area



4.2 Traffic Noise Modeling

4.2.1 Traffic Noise Model Version 2.5 to Predict Highway Noise Levels

Traffic Noise Model (TNM) Version 2.5 computer model (FHWA 2004) was used to predict hourly equivalent sound level ($L_{eq(h)}$) traffic noise levels as shown in Section 5.2. TNM models developed for the prior noise analysis (ODOT 2018) were used to model the No Build and Build alternatives of the Project. The 2018 analysis included the development of preliminary heights, lengths, and locations of potential noise barriers along the Project corridor. For this study, the No Build Alternative included the I-205: Phase 1A Project, which includes Wall E (also referred to as Wall 12 in this report) as part of the physical improvements. Future conditions modeling for the Project used traffic volumes, speeds, and vehicle mix from the *I-205 Toll Project Transportation Technical Report*.

The prior noise analysis included an evaluation of structure-borne noise resulting from the Abernethy Bridge. This evaluation can be found in Section 4.2.3 of the prior noise analysis (ODOT 2018). The evaluation includes structure-borne noise calculated near the Abernethy Bridge to determine how well proposed mitigation will perform on the bridge. The modeling results that include the contribution from structure-borne noise calculated in the 2018 noise analysis are included in Figure F-1.

The TNM was used to predict noise levels at discrete points by considering interactions between different noise sources and the effects of topographical features on the propagation of noise. The model estimates the traffic noise level at a receptor location resulting from a series of straight-line roadway segments. Noise emissions from free-flowing traffic depend on the number of automobiles, medium trucks, and heavy trucks per hour; vehicular speed; and reference noise emission levels of specified vehicles. TNM also considers effects of intervening barriers, topography, trees, and atmospheric absorption. By intent and design, noise from sources other than traffic is not included. Therefore, when non-traffic noise, such as aircraft, is considerable in an area, the TNM results can be slightly less than the measured noise levels.

Analysis of sound levels at noise-sensitive land uses were conducted following standard ODOT and FHWA noise policy guidance.

4.2.2 Modeled Traffic Data

Per ODOT policy, a comparison of the peak truck hour $L_{eq(h)}$ and peak vehicle hour $L_{eq(h)}$ is typically performed to determine the loudest-hour traffic conditions. A comparison is made because noise from truck traffic has been found to be much louder than automobile traffic. Therefore, the peak truck hour is often found to be noisier than the peak vehicular hour, although it may have lower overall traffic volumes.

The Project analysts used existing conditions modeling prepared for the prior noise analysis to describe the noise affected environment of the I-205 Toll Project. Existing conditions traffic modeling data was derived using ODOT-provided traffic counts from May 3, 2017 combined with traffic predictions made in the 2018 model (ODOT 2018). Modeled noise levels from the peak truck hour for the prior noise analysis were determined to result in the worst-case traffic noise hour; therefore, peak truck hour was used for existing conditions modeling for the Project.

Future conditions modeling for the Project used noise models developed for the prior noise analysis and updated traffic volumes, speeds, and vehicle mix presented in the *I-205 Toll Project Transportation Technical Report*. As with existing conditions (2017), PM peak truck hour volumes were used in the No Build Alternative (2045) and Build Alternative (2045) after a comparison of AM and PM peak-hour and AM and PM peak truck hour noise levels showed that sound levels from PM peak truck hour traffic volumes

were higher than noise levels resulting from all other peak hour traffic volumes. Traffic counts were also recorded during field measurements for the prior noise analysis for model validation. Attachment C documents the traffic volumes used in future conditions modeling prepared for this noise study. Attachment E presents modeled noise levels from the Build Alternative peak-hour volumes modeled for comparison.

4.3 Calculated Change in Noise Levels for Non-Highways

A high-level quantitative analysis was performed to identify changes in traffic noise levels beyond the area included in the modeling effort. This analysis compared existing and future traffic volumes to estimate a change in noise levels due to changes in traffic volumes resulting from the No Build and Build alternatives using a method documented in the California Department of Transportation *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (Caltrans 2013). This method used peak-hour and peak-truck-hour traffic volumes from the *I-205 Toll Project Transportation Technical Report* for existing year (2020) and the future design year (2045) for the No Build Alternative and Build Alternative. For both the existing conditions and the No Build and Build Alternative, the effect of heavy trucks on the noise level was taken into account, by multiplying the number of heavy trucks by 15 and adding this to the overall traffic volumes. The factor of 15 is based on Table 3-2, from Caltrans "Technical Noise Supplement to the Caltrans Traffic Noise Analysis Protocol" from September 2013, which has one heavy truck being equivalent to 15.1 automobiles at a speed of 40 miles an hour. The non-highway roadways in this study have speeds from 40 to 45 mph.

The following formula was used for this calculation:

N = 10log (A/B)

Where:

- N = Change in noise level (dBA)
- A = Future traffic volumes minus the Truck Counts + (Truck Counts *15)
- B = Existing traffic volumes minus the Truck Counts + (Truck Counts *15)

Estimated changes in noise levels were identified by major roadway segments and focus on areas near I-205 and other roadways located closest to Project improvements. The estimate changes were calculated for; existing to No Build Alternative, existing to Build Alternative, and No Build Alternative to Build Alternative. This approach was used because these areas farther from I-205 were not included in noise modeling for the Project, and existing noise levels had not been established for these areas.

4.4 Impact Assessment Methods

The impact analysis includes an evaluation of construction, direct, and indirect impacts upon noise-sensitive land uses in the built environment for the No Build Alternative and Build Alternative.

The noise analysis of direct impacts for the Project, presented in this report, is an evaluation of the projected noise impacts from adding tolling on the Abernethy Bridge and Tualatin River Bridges and the toll-funded improvements to I-205. Any exceedances of the ODOT NAAC or substantial increases are evaluated for mitigation.

4.4.1 Construction Impact Assessment Methods

The analysis of construction noise impacts considers a qualitative assessment of construction noise not previously considered in the prior noise analysis.

4.4.2 Direct Impact Assessment Methods

The implementation of tolling is expected to alter traffic patterns, which could result in direct noise impacts. The analysis of direct noise impacts resulting from the Project considers the traffic noise levels predicted using FHWA's TNM to identify areas with ODOT NAAC and substantial increases that required abatement consideration. A high-level quantitative analysis was performed to identify changes in traffic noise levels at non-highway roadways located beyond I-205 not included in the prior noise analysis.

4.4.3 Indirect Impacts Assessment Methods

The noise analysis is based on the I-205 Toll Project transportation-demand forecasting model that generates projected traffic volumes and includes the impacts of increased demand on the transportation system from future population, housing and land use changes, and growth. Therefore, the traffic analysis used to assess the direct noise impacts also takes into account indirect noise impacts.

4.5 Mitigation Approach

Noise mitigation must be considered and evaluated for feasibility and reasonableness where there would be noise impacts from a Type I project. At a minimum, ODOT is required to consider noise abatement in the form of a noise wall (23 CFR 772). Construction noise would generally be reduced through the use of ODOT's standard specifications for construction.

5 Affected Environment

This section describes existing noise conditions presented in the prior noise analysis (ODOT 2018). The noise study area was extended for the Project beyond the noise study area analyzed for the prior noise analysis to include non-highway roadways expected to experience traffic diversion caused by the Project. Section 5 presents existing conditions data consistent with the prior noise analysis. The study area required for Type I project improvements located along I-205 and the study area focused on non-highway roadways are both shown on Figure 4-1

This section does not include detailed land use information for the non-highway roadways, as land uses in these areas were not quantified for the impact assessment.

5.1 Land Use

The noise study area contains a variety of existing land uses consisting primarily of single- and multifamily residences along with community and recreational land uses and one hotel. Table 5-1 provides totals by land use activity category within the noise study area. Land use surveys and noise monitoring performed for the prior noise analysis were used, unchanged, to support the update of future noise levels with and without the Build Alternative. However, additional receptors were added to the noise model for the I-205 Toll Project from the design of a noise wall that was completed after the noise modeling for the prior noise analysis was completed.

Table 5-1. Existing (2017) Land Uses within the Noise Study Area

Noise Abatement Activity Category and Land Use	Total Number of Uses
B (65) (Total)	**798**
Multifamily Residential	378[1]
Single-Family Residential	420
C (65) (Total)	**10**
Church, Daycare, School	1
Jon Storm Park	5
Play Structure at Apartments	1
Pool at Apartments	2
School (Atlas Immersion Academy)	1
D (50) (Total)[2]	**71**
Retirement Home (no outdoor use)	71
E (70) (Total)	**120**
Best Western	118[3]
Best Western (Outdoor Seating)	1
Best Western (Pool)	1

Source: ODOT, K19786 I-205: Stafford Rd to OR 213 Corridor Widening & Abernathy Bridge Seismic Retrofit / Widening, Final Noise Technical Report
[1] Includes Grand Cove Project future sensitive receptors
[2] Interior noise level limit
[3] The hotel has 118 rooms

Historic resources on Willamette Drive were included in the analysis as NAAC B uses and are located near the West Linn landing of the Abernethy Bridge.

5.2 Noise Measurements

No noise measurements were conducted for this analysis; rather, the analysis relies on noise measurement data collected as part of the prior noise analysis that included the same noise study area. The noise study prepared for the prior noise analysis included a noise measurement program, consisting of long-term and short-term measurements, to document existing ambient noise levels and to validate modeling results (ODOT 2018). Measurement details and validation results can be found in the prior noise analysis (ODOT 2018). A summary of the data collected during the noise measurement program is provided in this section with the locations of all measurements provided in Attachment A, Figures A-5 through A-11 and A-13 through A-16.

5.2.1 Long-Term Measurements

Two long-term (24-hour) noise measurements were conducted during weekdays to document existing conditions and day/night variation. Long-term measurement location 1 (LT-1) was located at a place of worship (SouthLake Church) and preschool approximately 140 feet south of the I-205 southbound lanes and approximately 650 feet east of the crossover of I-205 and SW Borland Road. Sound levels at LT-1 were measured from 12:19 p.m. on August 29, 2017, to 1:16 p.m. on August 30, 2017 (ODOT 2018).

LT-2 was located at a duplex at 4329 Imperial Drive. This residential structure is located approximately 215 feet north of the I-205 northbound lanes and is on top of a bluff with the highway approximately 25 to 35 feet below. Sound levels were measured at LT-2 from 2:14 p.m. on August 30, 2017, to 2:45 p.m. on August 31, 2017. Table 5-2 provides a summary of the long-term measurement results.

Table 5-2. Long-Term 24-Hour Noise Measurement Results

Monitoring Location	L_{eq}[1] dB(A) (day)	L_{eq}[1] dB(A) (night)	L_{dn}[1] dB(A)	L_{min} dB(A)	L_{max} dB(A)	L_{10} dB(A)	L_{50} dB(A)	L_{90} dB(A)
LT-1	71.6	68.9	75.6	42.8	88.2	73.0	68.6	63.0
LT-2	59.7	58.8	65.2	48.8	81.2	60.4	58.4	56.4

Source: ODOT 2018

[1] Leq (day) represents the energy averaged sound level for the hours of 7:00 a.m. to 10:00 p.m., Leq (night) is the energy averaged sound level for the hours of 10:00 p.m. to 7:00 a.m. and the Ldn is the Day-Night Average Sound Level which is the energy averaged sound level for the 24-hour monitoring period with 10 dB added to nighttime sound levels.

5.2.2 Short-Term Validation Measurements

Short-term validation measurements were used to validate the TNM results for existing conditions. Section 6.3 of the ODOT Noise Manual states that a traffic noise model is considered a valid predictor of traffic noise if measured and modeled levels agree within +/-3 dBA. The short-term measurements were at least 15 minutes in duration at each of the 14 locations throughout the study area. Also, vehicle traffic classification counts were conducted for 10 minutes during each measurement and speeds documented concurrent with each of the short-term noise measurements. Table 5-3 presents measured and modeled noise levels at each of the 14 short-term measurements sites along with the approximate location of each site and respective distance to the edge of the roadway (ODOT 2018).

Table 5-3. Short-Term Noise Measurement Validation Results

ST	Street Address	Date/ Time of Measurement	Distance to Edge of Roadway (feet)	Measured L_{eq} dB(A)	Modeled L_{eq} dB(A)	Difference (Modeled minus Measured)
ST-01	1555 SW Borland Rd	8/29/17 12:35-12:50	140	72.6	70.1	-2.5
ST-02	22400 Johnson Rd	8/29/17 13:24-13:52	240	64.5	63.5	-1.0
ST-03	22601 Grapevine Rd	8/30/17 9:38-9:53	233	63.1	65.9	2.8
ST-04	23400 Johnson Rd	8/30/17 10:16-10:31	180	63.9	66.6	2.7
ST-05a	2384 Margery St	8/30/17 10:49-11:04	140	69.4	72.2	2.8
ST-05b	2383 Margery St	8/30/17 11:06-11:21	275	64.9	65.4	0.5
ST-06	1709 Blankenship Rd	8/30/17 12:36-13:01	240	58.0	60.2	2.2
ST-07	1788 Jamie Cir	8/30/17 15:06-15:21	260	58.1	60.9	2.8
ST-08	2318 8th St	8/31/17 9:38-9:57	455	63.2	62.6	-0.6
ST-09	4701 Imperial Dr	8/31/17 10:25-10:40	315	56.0	58.0	2.0
ST-10	4329 Imperial Dr	8/30/17 14:35-14:50	215	57.4	58.3	0.9
ST-11	4835 Willamette Falls Dr	8/31/17 13:07-13:22	380	57.6	57.2	-0.4
ST-12	5345 Grove St	8/31/17 13:39-14:00	90	59.9	57.0	-2.9
ST-13	1801 Clackamette Dr	8/31/17 14:14-14:32	118	63.4	62.8	-0.6

Source: ODOT 2018

As shown in Table 5-3, the measured and modeled noise levels agree within 3 dB(A); therefore, the TNM (and its data inputs) were validated for the prior noise analysis and are valid predictors of traffic noise for the I-205 Toll Project. Additional details for the monitoring program and model validation process can be found in the prior noise analysis (ODOT, 2018). The measurement locations are provided in Attachment A, Figures A-5 through A-11 and A-13 through A-16.

5.3 Existing Conditions (2017)

Existing 2017 peak-hour truck traffic data were used to predict loudest-hour noise levels at all noise-sensitive land uses in the noise study area. Under the existing 2017 conditions, predicted traffic noise levels ranged from 44 A-weighted decibels equivalent sound level (dBA L_{eq}) to 74 dBA L_{eq} and exceeded the NAAC at 239 residences (NAAC B), the SouthLake church/preschool/daycare (NAAC C), Jon Storm Park (NAAC C), and the Atlas Immersion Academy School (NAAC C). Exterior sound levels at the retirement home (NAAC D) are predicted to be 70 dBA L_{eq} at the facade closest to I-205. Interior sound levels at the retirement home area are predicted to be 45 dBA L_{eq}, resulting from storm windows observed during the previous noise study. The predicted interior noise levels at the retirement home are below the impact criteria, therefore noise levels do not exceed the NAAC at this site.

Existing conditions modeling prepared for the prior noise analysis was used to describe the existing noise conditions of the I-205 Toll Project. Additional receptors were added to the noise model for the I-205 Toll Project from the design of a noise wall that was completed after the noise modeling for the prior noise analysis was completed. Therefore, the number of NAAC exceedances summarized in Section 5.3 differ from those reported in the prior noise analysis.

As anticipated, traffic noise levels would be highest at outdoor land uses located closest to I-205. Attachment F, Table F-1, provides a summary of NAAC exceedances for the existing conditions. and includes predicted noise results for all modeled receptors located within the API. Attachment A provides the location of all modeled receptors.

6 Environmental Consequences

This section describes the anticipated impacts of the Project with regard to noise under the No Build Alternative and Build Alternative.

6.1 No Build Alternative

6.1.1 Direct Impacts

Under the No Build Alternative in 2045, predicted traffic noise levels range from 44 dBA L_{eq} to 74 dBA L_{eq} and exceed the NAAC at 268 residences (NAAC B), an outdoor pool at an apartment building, the SouthLake church/preschool/daycare (NAAC C), Jon Storm Park (NAAC C), and the Atlas Immersion Academy School (NAAC C). Predicted exterior sound levels at the retirement home (NAAC D) are 70 dBA L_{eq} at the facade closest to I-205. Predicted interior sound levels at the retirement home area are 45 dBA L_{eq}. The predicted interior noise levels at the retirement home are below the impact criteria; therefore, noise levels do not exceed the NAAC at this site.

Traffic noise levels would be highest at outdoor land uses located closest to I-205. Noise levels would range between a decrease of 6 dBA L_{eq} to an increase of 4 dBA L_{eq} relative to existing conditions at all noise receptors in the study area. (Attachment F, Table F-1, provides a summary of NAAC exceedances for the No Build Alternative and includes predicted noise results for all modeled receptors located within the API. Attachment A, Figures A-5 through A-11 and A-13 through A-16 indicate the location of the modeled receptors.)

6.1.2 Indirect Impacts

As noted in Section 4.4.3, the noise analysis is based on the transportation demand forecasting model for the I-205 Toll Project and includes the potential noise impacts related to capacity constraints on the transportation system (vehicles not moving efficiently through the system) and increased demand on the transportation system from future population, housing and land use changes, and growth. Therefore, the results of the noise analysis reflect the direct impacts as well as the indirect impacts from potential delayed and distant impacts without tolling. Data presented in Attachment F, Table F-1, reflect noise levels for the No Build Alternative through 2045.

6.2 Build Alternative

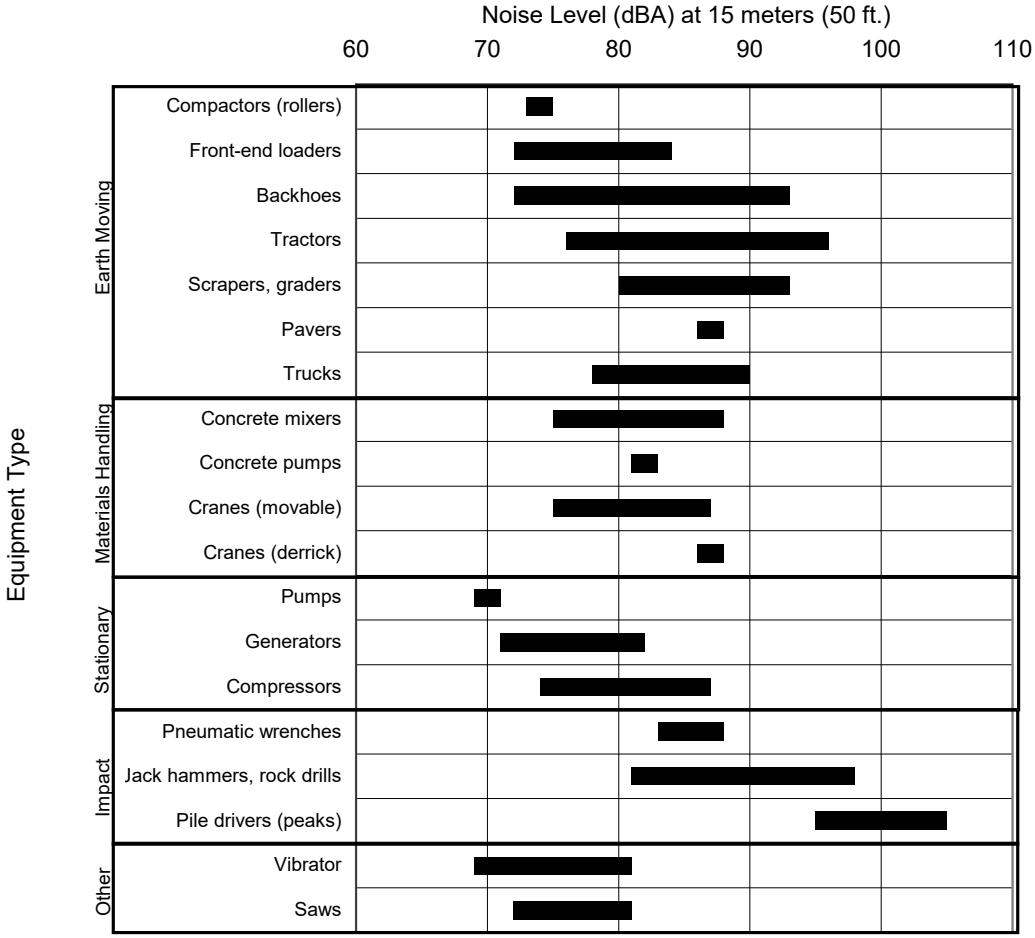
6.2.1 Construction Impacts

Construction activities would generate noise during the construction period. Construction would usually be carried out in several reasonably discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. Project construction would involve construction equipment located within public right-of-way where new through lanes would be constructed; at bridges that are being improved or replaced; and at the locations where the toll gantries and supporting infrastructure would be installed. Construction in these areas would include clearing, cut-and-fill activities, paving, bridge improvements and replacement, including pile driving for bridge work in the Tualatin River, and toll gantry construction.

Construction noise levels would depend on the type, amount, and location of construction activities. The type of construction methods would establish the maximum noise levels of construction equipment used. The amount of construction activity would quantify how often construction noise would occur throughout

the day. The location of construction equipment relative to adjacent properties would determine any impacts of distance in reducing construction noise levels. Maximum noise levels of construction equipment under the Build Alternative would be similar to typical maximum construction equipment noise levels presented in Figure 6-1.

Figure 6-1. Construction Noise Levels



Source: EPA, 1971 and WSDOT, 1991.

During the construction of the Build Alternative, areas adjacent to the limited construction areas would be exposed to construction noise. Impacts during construction would be of short duration, and standard specifications for noise control would minimize or eliminate impacts during construction. As shown in Figure 6-1, maximum noise levels from construction equipment expected for Project construction would range from 69 dBA to 105 dBA at 50 feet. Construction noise at locations farther away would decrease at a rate of 6 dBA per doubling of distance from the source. Because various pieces of equipment would be turned off, idling (or operating at less than full power at any time), and because construction machinery is typically used to complete short-term tasks at any given location, average L_{eq} noise levels during the day would be less than maximum noise levels presented in Figure 6-1.

Areas of construction for the Build Alternative are located near noise-sensitive land uses that would experience noise during Project construction. Noise-sensitive land uses in these areas are primarily residences. These areas also experience traffic noise from I-205.

Construction noise is exempt from local regulations during daytime hours. Construction noise levels could be reduced by the noise control measures identified in Section 7.

6.2.2 Direct Impacts

Under the Build Alternative in 2045, predicted traffic noise levels range from 44 dBA L_{eq} to 75 dBA L_{eq} and exceeded the NAAC at 317 residences (NAAC B), an outdoor pool at an apartment building, the SouthLake church/preschool/daycare (NAAC C), Jon Storm Park (NAAC C), and the Atlas Immersion Academy School (NAAC C). Predicted exterior sound levels at the retirement home (NAAC D) are 69 dBA L_{eq} at the facade closest to I-205. Predicted interior sound levels at the retirement home area are 44 dBA L_{eq}. The predicted interior noise levels at the retirement home are below the impact criteria; therefore, noise levels do not exceed the NAAC at this site. No substantial noise increases would occur under the Build Alternative.

Traffic noise levels would be highest at outdoor land uses located closest to I-205. Build Alternative noise levels range from a decrease of 6 dBA L_{eq} to an increase of 6 dBA L_{eq} relative to existing conditions noise levels. Build Alternative noise levels ranged from a decrease of 3 dBA L_{eq} to an increase of 5 dBA L_{eq} relative to No Build Alternative noise levels. The number of exceedances under the Build Alternative is predicted to be 17% greater than the No Build Alternative largely due to an increase in traffic on I-205 and, to a lesser degree, I-205 moving slightly closer to some noise sensitive sites under the Build Alternative. Attachment F, Table F-1, provides a summary of NAAC exceedances for the Build Alternative and includes predicted noise results for all modeled receptors located within the API. The location of all modeled receptors is provided in Attachment A, Figures A-1 through A-15. Attachment A, Figures A-16 through A-30 also identify each receptor location in comparison with the NAAC exceedance level for the Build Alternative noise levels.

6.2.3 Indirect Impacts

The noise analysis for the Build Alternative is based on the transportation demand forecasting model for the I-205 Toll Project and includes the potential noise impacts related to capacity constraints on the transportation system (vehicles not moving efficiently through the system) and increased demand on the transportation system from future population, housing and land use changes, and growth. Therefore, the results of the noise analysis reflect the potential delayed and distant impacts with tolling. Data presented in Attachment F, Table F-1, reflect modeled noise levels for the Build Alternative through 2045. No indirect impacts are expected to be associated with noise for this alternative.

6.3 Estimated Change in Future Noise Levels for Non-Highways

As described in the methodology section of this report, a high-level quantitative analysis was performed to identify the potential change in traffic noise levels for off-highway roadways in the study area. Peak-hour traffic levels from the arterial peak-hour volumes for existing year and future design year under the No Build Alternative and Build Alternative developed for the *I-205 Toll Project Transportation Technical Report* were used to estimate changes in noise levels for these roadways. Table 6-1 presents estimates for the change in noise levels using existing and future traffic volumes as discussed in the methods section of this report.

As shown in Table 6-1, the changes in No Build Alternative traffic noise levels along non-highway roadways in the noise study area was estimated to range from -2 dB to 5 dB relative to existing noise levels. The largest reduction in No Build Alternative noise levels is projected to occur along SW Borland Road north of the Tualatin River Bridges during the AM Peak Hour and the biggest increase is estimated at SW Borland Road north of Ek Road during the Truck Peak Hour. While these changes are estimated at individual roadway sections, the change in noise levels at most locations included in this calculation based solely on traffic volumes ranged from no change to an increase of 2.0 dB relative to existing noise levels. Attachment A, Figure A-31, provides a map showing locations where increases in No Build Alternative noise levels are estimated relative to existing noise levels.

Build Alternative AM, PM, and Peak Hour traffic noise levels along the same arterials were estimated to range from -6 dB to 6 dB relative to existing noise levels. The largest reduction in Build Alternative noise levels is projected to occur along Willamette Falls Drive east of 19th Street during the PM Peak Hour and the largest increase is projected to occur along Borland Road east of Stafford Road during the Truck Peak Hour. While these changes are estimated at individual roadway sections, the change in noise levels at most locations included in this calculation based solely on traffic volumes ranged from no change to an increase of 3 dB relative to existing noise levels. Attachment A, Figure A-32, provides a map showing locations where increases in Build Alternative noise levels are estimated relative to existing noise levels.

The highest increase in noise levels for the Build Alternative would be 0 to 3 dBA higher than the increase in the noise levels under the No Build Alternative. The change in noise levels at most locations included in this calculation based solely on traffic volumes ranged from no change to an increase of 2.0 dB relative to No Build Alternative noise levels

Existing and future noise levels have not been established for these areas located outside the noise study area; therefore, an assessment of the potential impact in these areas is not possible and not included as part of this noise study.

Table 6-1. Estimated Change in Future Traffic No Build and Build Noise Levels (2045) from Existing Conditions (2017) on Non-Highway roads for the Project based on Change in Traffic Volumes

Roadway Name	Estimated Change in Future No Build AM Peak-Hour Noise Levels (dB) (2045) from Existing Noise Levels (2017)	Estimated Change in Future No Build PM Peak-Hour Noise Levels (dB) (2045) from Existing Noise Levels (2017)	Estimated Change in Future No Build Truck Peak-Hour Noise Levels (dB) (2045) from Existing Noise Levels (2017)	Estimated Change in Future Build AM Peak-Hour Noise Levels (dB) (2045) from Existing Noise Levels (2017)	Estimated Change in Future Build PM Peak-Hour Noise Levels (dB) (2045) from Existing Noise Levels (2017)	Estimated Change in Future Build Truck Peak-Hour Noise Levels (dB) (2045) from Existing Noise Levels (2017)	Estimated Change in Future Build AM Peak-Hour Noise Levels (dB) (2045) from No Build Noise Levels (2045)	Estimated Change in Future Build PM Peak-Hour Noise Levels (dB) (2045) from No Build Noise Levels (2045)	Estimated Change in Future Build Truck Peak-Hour Noise Levels (dB) (2045) from No Build Noise Levels (2045)
SW Stafford Road (Rosemont)									
N/of Borland Rd	1	1	1	2	3	2	1	2	1
S/of Borland Rd	2	0	1	2	4	3	1	3	2
Between I-205 ramps	2	0	2	3	4	3	1	3	1
S/of I-205 ramp	3	0	1	3	2	2	0	3	0
N/of Mountain Rd	3	0	1	3	NA	2	0	NA	-3
SW Borland Road									
W/of Stafford Rd	1	1	2	2	1	1	1	0	0
E/of Stafford Rd	1	2	5	4	4	6	3	3	1
N/of Ek Rd	1	1	5	5	3	5	3	2	1
N/of Tualatin River Bridge	-2	-1	0	2	1	1	3	2	1
Willamette Falls Drive									
E/of 19th St	0	0	1	1	-6	1	1	-6	0
W/of 10th St	1	0	1	3	2	2	1	1	1
W/of OR 43	1	1	3	0	0	2	-2	-1	0
OR 43 (Willamette Drive) Pacific Hwy									
S/of Hidden Springs Rd	1	1	1	3	1	0	2	1	0
N/of McKillican St	1	0	0	3	0	-1	2	0	-1
N/of I-205 SB ramps	1	0	1	3	1	0	2	0	-1
N/of I-205 NB ramps	1	1	0	3	1	1	2	0	1
S/of Willamette Falls Drive	1	1	1	2	1	1	2	0	0
Arch Bridge									
Bridge	1	1	1	2	1	1	1	0	0
OR 99E Marion									
S/of Jennings Ave	1	1	2	1	1	2	0	0	0
N/of Gloucester St	1	1	2	1	1	1	0	0	0
N/of Arlington St	1	1	2	1	1	1	0	0	0
N/of Dunes Dr	NA	NA	2	2	NA	2	NA	NA	0
N/of I-205 SB ramps	1	1	1	1	1	1	0	0	0
Between I-205 ramps	1	1	1	2	1	1	1	0	0
S/of I-205 NB ramps	1	1	1	2	1	1	1	0	0
S/of 14th St	1	1	2	2	NA	2	1	NA	
S/of 10th St	0	1	1	2	1	3	1	1	1
S/of Main St	2	1	2	2	NA	2	1	NA	0
S/of South End Rd	2	1	2	3	NA	2	1	NA	0

Roadway Name	Estimated Change in Future No Build AM Peak-Hour Noise Levels (dB) (2045) from Existing Noise Levels (2017)	Estimated Change in Future No Build PM Peak-Hour Noise Levels (dB) (2045) from Existing Noise Levels (2017)	Estimated Change in Future No Build Truck Peak-Hour Noise Levels (dB) (2045) from Existing Noise Levels (2017)	Estimated Change in Future Build AM Peak-Hour Noise Levels (dB) (2045) from Existing Noise Levels (2017)	Estimated Change in Future Build PM Peak-Hour Noise Levels (dB) (2045) from Existing Noise Levels (2017)	Estimated Change in Future Build Truck Peak-Hour Noise Levels (dB) (2045) from Existing Noise Levels (2017)	Estimated Change in Future Build AM Peak-Hour Noise Levels (dB) (2045) from No Build Noise Levels (2045)	Estimated Change in Future Build PM Peak-Hour Noise Levels (dB) (2045) from No Build Noise Levels (2045)	Estimated Change in Future Build Truck Peak-Hour Noise Levels (dB) (2045) from No Build Noise Levels (2045)
N/of N Redmond St	2	1	2	3	NA	2	1	NA	1
OR 99E Haines									
N/of S Ivy St	2	1	1	4	NA	1	2	NA	0
N/of Lone Elder Rd	3	2	2	6	NA	2	3	NA	0
OR 213									
Between I-205 ramps	0	0	1	0	0	1	0	NA	0
S/of I-205 NB ramps	1	0	1	0	0	1	-1	NA	0
S/of Washington St/Clackamas River Dr	1	0	1	0	0	1	-1	NA	0

Source: Caltrans Technical Noise Supplement 2013 – Equation 2-11.
Note: Traffic data used for to calculate the estimated change in future noise levels is provide in Attachment C, Table C-3.
Figures showing locations of estimated noise level changes are provided in Figures 31, 32, and 33.
NA = not available – Traffic data was not provided for these roadway segments.

6.4 Summary of Impacts by Alternative

Under the Build Alternative, only temporary construction noise impacts were identified. Table 6-2 provides a comparison of anticipated NAAC exceedances by alternative.

Table 6-2. Summary of Noise Exceedances by Alternative

No Build Alternative	Build Alternative
• Predicted traffic noise levels ranged from 44 A-weighted decibels equivalent sound level (dBA L_{eq}) to 75 dBA L_{eq}.	• Predicted traffic noise levels ranged from 44 A-weighted decibels equivalent sound level (dBA L_{eq}) to 75 dBA L_{eq}.
• Exceeded the NAAC at 268 residences (NAAC B), an outdoor pool at an apartment building, the SouthLake church/preschool/ daycare (NAAC C), Jon Storm Park (NAAC C), and the Atlas Immersion Academy School (NAAC C).	• Exceeded the NAAC at 317 residences (NAAC B), an outdoor pool at an apartment building, the SouthLake church/preschool/ daycare (NAAC C), Jon Storm Park (NAAC C), and the Atlas Immersion Academy School (NAAC C).
• Noise levels for non-highway roads could range from a decrease by 2 dBA to an increase up to 5 dBA from existing noise levels. An increase of 0 to 2 dBA from existing noise levels was estimated at most locations.	• Noise levels for non-highway roads could range from a decrease of 6 dBA to an increase up to 6 dBA from existing noise levels. An increase of 0 to 3 dBA from existing noise levels was estimated at most locations.
	• Noise levels for non-highway roads could range from a decrease up to 6 dBA from No Build noise levels. An increase of 0 to 2 dBA from the No Build noise levels was estimated at most locations.

7 Avoidance, Minimization, and/or Mitigation Commitments

7.1 Construction Noise

The following measures would be implemented to avoid, minimize, or mitigate construction noise:

ODOT includes standard project specifications (290.32) for all projects to mitigate for construction noise impacts. The following construction measures reflect current ODOT standard specifications to avoid, minimize, and mitigate temporary adverse noise impacts:

00290.32 Noise Control – Comply with ORS 467, OAR 340-035, all other applicable Laws, and the following construction noise abatement measures:

- Do not perform construction within 1,000 feet of an occupied dwelling on Sundays or legal holidays, or between the hours of 10:00 p.m. and 6:00 a.m. on other days, without the approval of the Engineer.
- Use Equipment with sound control devices no less than effective than those provided on the original Equipment. Equipment with un-muffled exhausts is prohibited.
- Use Equipment complying with pertinent equipment noise standards of the EPA.
- Do not drive piling or perform blasting operations within 3,000 feet of an occupied dwelling on Sundays or legal holidays, or between the hours of 8:00 p.m. and 8:00 a.m. on other days, without the approval of the Engineer.
- Mitigate the noise from Rock crushing or screening operations performed within 3,000 feet of all occupied dwellings by placing material stockpiles between the operation and the affected dwellings, or by other means approved by the Engineer.

If a specific noise impact complaint occurs during the construction of the Project, one or more of the following noise mitigation measures may be required, at no additional cost to the Agency, as directed by the Engineer:

- Locate stationary construction equipment as far from nearby noise-sensitive properties as feasible.
- Shut off idling equipment.
- Reschedule construction operations to avoid periods of noise annoyance identified in the complaint.
- Notify nearby residents whenever extremely noisy work will be occurring.
- Install temporary or portable acoustic barriers around stationary construction noise sources.
- Operate electric-powered equipment using line voltage power or solar power.

7.2 Traffic Noise

Mitigation measures recommended as part of the Project must be feasible and reasonable. For abatement to be feasible, ODOT requires that a simple majority of receptors where there would be an impact achieve at least a 5-dBA reduction in noise levels. ODOT also considers engineering factors such as noise wall height, safety, topography, drainage, utilities, and access issues when determining feasibility. For abatement to be reasonable, ODOT must consider the viewpoints of the residents and property owners who would benefit from the proposed abatement; the cost-effectiveness of the

abatement measure; and the ODOT noise-reduction design goal of the abatement measure, providing at least a 7-dBA noise reduction at one benefited property.

To determine cost effectiveness for residential areas, all benefited residences must be considered in calculating a noise wall's cost per residence. A benefited residence is any residence, whether it would be the location of an impact or not, that receives a noise reduction of 5 dBA or more. Consistent with ODOT's 2021 Noise Manual Interim Update, the reasonable cost for each of the noise walls included in this analysis was considered to be a maximum of $37,500 per benefited residence. This cost is based on $30 per square foot for a post and panel wall up to 16 feet tall. For wall heights greater than 16 feet up to 25 feet, the unit cost increases to $37.50 per square foot to account for additional structural considerations. ODOT provides an exception for receptors with future build levels of 70 dBA or above. Receptors with future build levels of 70 dBA or more would have a reasonable cost allowance up to $52,500 per benefited residence.

Noise walls were modeled at ODOT's right-of-way unless constructability concerns (e.g., drainage, steep topography) identified during Project design changed the modeled location. Modeled locations were consistent with those modeled for the prior noise analysis with the exception of where impacts would result in extensions to modeled noise walls.

7.2.1 Mitigation Requirements

Noise mitigation must be considered and evaluated for feasibility and reasonableness where there would be noise impacts from a Type I project. At a minimum, ODOT is required to consider noise abatement in the form of a noise wall (23 CFR 772). To be effective, the noise wall must block the line of sight between the highest point of a noise source and the receptor. The noise wall must be long enough to prevent sounds from passing around its ends, have no openings, and be dense enough so that noise will not be transmitted through the wall. Access limitations, location in relation to the surrounding roadways, and the low number of noise-sensitive land uses at some impact locations prevent feasible and reasonable noise wall placement to effectively reduce traffic noise levels predicted for the Project, as discussed below.

Build Alternative traffic noise levels would exceed the NAAC at 317 residences and 8 recreational receptors. Traffic noise mitigation measures were evaluated for each of these receptors.

7.2.2 Individual Affected Receptors

There would be impacts at receptors that are isolated from other noise-sensitive land uses throughout the noise study area. These receptors were considered for noise abatement, but abatement was deemed infeasible due to their proximity to I-205 and the lack of other nearby noise-sensitive land uses. Generally, noise walls cannot be constructed cost-effectively when there is not sufficient receptor density to justify the costs of constructing the noise wall. FHWA has found that in order for a noise wall to feasibly reduce noise levels, the noise wall must block the line of sight from the receptor to the roadway noise source.

Individual receptors (LT-1/ST-1, ST-2, ST-3, ST-4, R1, R2, R3, R5 to R7, and R12 to R16) where there would be impacts are not located near other noise-sensitive land uses in the noise study area. There would be impacts at receptors R466, R693, and R694, which are located near driveway accesses that would require gaps in the noise walls; because of the driveway gaps, the noise walls would not feasibly reduce noise levels at these receptors. For these 18 receptors, it is not possible to feasibly provide noise abatement; therefore, these receptors were not included the noise wall evaluations described below.

Noise Wall Evaluation

Eleven noise walls were evaluated along I-205 to reduce traffic noise levels at the clusters of receptors where there would be impacts. Unless otherwise stated, noise walls were evaluated along ODOT right-of-way in the same locations where each noise wall was previously evaluated in the prior noise analysis. Noise walls were analyzed at heights ranging from 8 feet to 24 feet. Attachment A includes noise abatement worksheets showing noise levels with and without noise wall placement and figures are included showing the location of each evaluated noise wall. Noise walls that were analyzed but did not meet ODOT's feasibility and reasonableness criteria are indicated by red lines in the figures included in Attachment A. Noise walls evaluated for placement that did meet ODOT feasibility and reasonableness criteria are indicated by yellow lines in the figures in Attachment A. Table 7-1 summarizes the noise wall analysis. (Noise Walls 6A and 7 are not included in this analysis because the affected communities in those areas voted against wall placement; therefore, both walls are not reasonable because of the results of the vote).

Table 7-1. Noise Wall Analysis Summary

Wall	No. of Impacts	Length (feet)	Height (feet)	No. of Impacts Benefited	Acoustic-ally Feasible ?	Achieves Acoustic Design Goal?	Total Benefits	Estimated Cost per Benefit	Cost Reason-able?	Wall Recom-mended?
1	21	1,860	16	16	Yes	Yes	17	$52,518	No[1]	No
2	41	2,072	12	25	Yes	Yes	30	$24,864	Yes[1]	Yes
3	42	2,161	16	28	Yes	Yes	32	$32,415	Yes	Yes
4	34	1,518	14	32	Yes	Yes	82	$7,775	Yes	Yes
5	12	1,550	24	0	No	N/A	0	N/A	No	No
6B	11	1,164	14	10	Yes	Yes	10	$48,888	No	No
8	26	683	24	13	No	Yes	16	N/A	No	No
9	17	594	24	8	No	N/A	8	N/A	No	No
10	16	3,317	17	0	No	N/A	0	N/A	No	No
11	5	1,145	16	5	Yes	Yes	5	$109,920	No	No
12	45	1,386	8-18	33	Yes	Yes	50	N/A	Yes	N/A

[1] Noise Wall includes receptors with future build noise levels of 70 dBA or above resulting in up to $52,500 wall allowance

N/A = not applicable for walls that don't meet feasibility

Noise Wall 1

Noise Wall 1 was evaluated 30 feet from the fog line of the northbound I-205 lanes extending 1,860 feet north from Blankenship Road (Figure A-20 and Figure A-21). The noise wall was evaluated to reduce traffic noise levels at affected residential receptors R48 to R53, R55 to R62, and R69 to R75. Consistent with the previous noise wall evaluation conducted for the prior noise analysis, Noise Wall 1 was evaluated closer to I-205 travel lanes and in connection with an existing earth berm. As shown in the noise modeling results shown in Table H-1 in Attachment H, Noise Wall 1 was evaluated at multiple wall heights ranging from 10 feet tall to 24 feet tall. At 1,860 feet long and 16 feet tall, Noise Wall 1 would reduce noise levels by 5 dBA or more at more than 50% of the affected receptors and therefore would be feasible. At 16 feet tall, Noise Wall 1 would achieve the design goal of a 7-dBA reduction at one or more receptors; would benefit 17 receptors; and would cost $892,800 ($52,518 per benefited receptor). Noise Wall 1 meets ODOT criteria for a feasible noise wall but would not meet ODOT criteria for a reasonable noise wall because it would exceed the maximum wall allowance of $682,500. Therefore, Noise Wall 1 is not recommended for inclusion in the Project at this time.

Noise Wall 2

Noise Wall 2 was evaluated along the north side of southbound I-205 where I-205 is elevated above the surrounding land uses, then would continue beside the I-205 the right-of-way. Noise Wall 2 would extent north approximately 2,072 feet from where I-205 crosses Blankenship Road (Figure A-20 and Figure A-21). The noise wall was evaluated to reduce traffic noise levels at affected residential receptors and at apartment pool receptors ST-5a, ST-5b, R20 to R41, R63 to R68, R77 to R81, and R96 to R101. As shown in noise modeling results in Table H-2, Noise Wall 2 was evaluated at multiple wall heights ranging from 10 feet tall to 24 feet tall. At 2,072 feet long and 12 feet tall, Noise Wall 2 would reduce noise levels by 5 dBA or more at more than 50% of the affected receptors and therefore would be feasible. At 12 feet tall, Noise Wall 2 would achieve the design goal of a 7-dBA reduction at one or more receptors; would benefit 30 receptors; and would cost $745,920, ($24,864 per benefited receptor). Noise Wall 2 meets ODOT criteria for a feasible and reasonable noise wall and is recommended for inclusion in the Project at this time.

Noise Wall 3

Noise Wall 3 was evaluated 30 feet from the fog line of the I-205 northbound lanes (Figure A-21 and Figure A-22). Noise Wall 3 would extend south approximately 2,161 feet from where I-205 crosses Blankenship Road. Noise Wall 3 was evaluated to reduce traffic noise levels at affected residential receptors ST-7, R114 to R131, R133 to R150, R152, R153, and R155 to R157. Consistent with the noise wall evaluation previously conducted for the prior noise analysis, Noise Wall 3 was evaluated closer to I-205 travel lanes and in connection with an existing earth berm. As shown in noise modeling results in Table H-3, Noise Wall 3 was evaluated at multiple wall heights ranging from 10 feet tall to 24 feet tall. At 2,161 feet long and 16 feet tall, Noise Wall 3 would reduce noise levels by 5 dBA or more at more than 50% of the receptors and therefore would be feasible. At 16 feet tall, Noise Wall 3 would achieve the design goal of a 7-dBA reduction at one or more receptors; would benefit 32 receptors; and would cost $1,037,280, ($32,415 per benefited receptor). Noise Wall 3 meets ODOT criteria for a feasible and reasonable noise wall and is recommended for inclusion in the Project at this time.

Noise Wall 4

Noise Wall 4 was evaluated along the north side of the southbound I-205 lanes where the facility is elevated above its surroundings (Figure A-22). Noise Wall 4 would extend south approximately 1,518 feet from where I-205 crosses Blankenship Road. Noise Wall 4 was evaluated to reduce traffic noise levels at affected residential receptors R168, R169, R171, R172, R174, R175, R177, R178, R180, R181, R183, R185, R187, R189, R191, R193, R195, R197, R199, R210, R211, R216, R217, R222, R223, R226, R229, R231, R232, R234, R235, R256, R272, and R273. As shown in noise modeling results in Table H-4, Noise Wall 4 was evaluated at multiple wall heights ranging from 8 feet tall to 24 feet tall. At 1,518 feet long and 14 feet tall, Noise Wall 4 would reduce noise levels by 5 dBA or more at more than 50% of the affected receptors and therefore would be feasible. At 14 feet tall, Noise Wall 4 would achieve the design goal of a 7-dBA reduction at one or more receptors; would benefit 82 receptors; and would cost $637,560, ($7,775 per benefited receptor). Noise Wall 4 meets ODOT criteria for a feasible and reasonable noise wall and is recommended for inclusion in the Project at this time.

Noise Wall 5

Noise Wall 5 was evaluated along the northbound I-205 right-of-way extending northwest 1,550 feet from 10th Street (Figure A-22 and Figure A-23). Noise Wall 5 was evaluated to reduce traffic noise levels at affected residential receptors ST-8, R275 to R279, R281 to R285, and R291. I-205 is located at a higher elevation than surrounding property in this area, and the topography between I-205 and the receptors is lower. ODOT right-of-way is at a lower elevation than both I-205 and the affected receptors in the area.

Because of local topography, a noise wall located along the right-of-way cannot block the line of sight between I-205 and the affected receptors. A noise wall cannot be placed closer to I-205 in this area due to the I-205 northbound on-ramp from 10th Street. Due to these factors and as shown in modeling results in Table H-5, noise wall heights evaluated ranging from 8 feet tall to 24 feet tall were not able to reduce noise levels by 5 dBA or greater at more than 50% of the receptors. Therefore, Noise Wall 5 would not be feasible and is not recommended for inclusion in the Project at this time.

Noise Wall 6A

Noise Wall 6A was recommended as part of the prior noise analysis. The community affected by Noise Wall 6A voted against the construction of the noise wall; therefore, Noise Wall 6A is considered not reasonable because of the results of the vote. No further analysis was performed as part of this study.

Noise Wall 6B

Noise Wall 6B was evaluated along the north side of the southbound I-205 lanes approximately 100 feet west of Noise Wall 6A. Noise Wall 6B would extend 1,164 feet along the ridge between Imperial Drive and the I-205 southbound lanes (Figure A-24 and Figure A-25). Noise Wall 6B was evaluated to reduce traffic noise levels at affected residential receptors R295 to R305. As shown in the noise modeling results in Table H-6, Noise Wall 6B was evaluated at wall heights ranging from 8 feet tall to 24 feet tall. At 10 feet or taller, Noise Wall 6B would reduce noise levels by 5 dBA or greater at more than 50% of the affected receptors and therefore would be feasible. At 14 feet tall, Noise Wall 6B would achieve the design goal of a 7-dBA reduction at one or more receptors; would benefit six receptors; and would cost $488,880, ($48,888 per benefited receptor). Noise Wall 6B meets ODOT feasible criteria; however, the noise wall would not meet ODOT criteria for a reasonable noise wall because it would exceed the maximum wall allowance of $405,000. Therefore, Noise Wall 6B is not recommended for inclusion in the Project at this time.

Noise Wall 7

Noise Wall 7 was recommended as part of the prior noise analysis. The community affected by Noise Wall 7 voted against the construction of the noise wall; therefore, Noise Wall 7 is considered not reasonable because of the results of the vote. No further analysis was performed as part of this study.

Noise Wall 8

Noise Wall 8 was evaluated along the north side of the southbound I-205 lanes between A Street and Oregon Route (OR) 43 in an area where the existing Broadway Bridge overpass would be removed as part of the Project (Figure A-26 and Figure A-27). ODOT obtained detailed survey data to identify the specific height of the footing of the noise wall in this area because there are steep slopes adjacent to the south between the on-ramp to I-205 southbound from OR 43 and the noise-sensitive receptors. Using this additional survey data, Noise Wall 8 was evaluated in the most feasible location to construct a noise wall in this area. Noise Wall 8 was evaluated to reduce traffic noise levels at affected residential receptors R489 to R492, R496 to R497, R501 to R507, R509, R510, R521 to R525, R527 to R532, and R536. As shown in the noise modeling results in Table H-7, noise wall heights evaluated from 10 feet tall to 24 feet tall were not able to reduce noise levels by 5 dBA or greater at more than 50% of the receptors. Therefore, Noise Wall 8 would not be feasible and is not recommended for inclusion in the Project at this time.

Noise Wall 9

Noise Wall 9 was evaluated along the I-205 northbound exit ramp to OR 43 for 594 feet (Figure A-26 and Figure A-27). Noise Wall 9 was evaluated to reduce traffic noise levels at affected residential receptors R467 to R483, apartment units, and two separate structures. Steep slopes in this area limit the placement of noise walls to effectively shield noise at the affected receptors. As shown in modeling results in Table

H-8, noise wall heights evaluated from 10 feet tall to 24 feet tall were not able to reduce noise levels by 5 dBA or greater at more than 50% of the receptors. Therefore, Noise Wall 9 would not be feasible and is not recommended for inclusion in the Project at this time.

Noise Wall 10

Noise Wall 10 was evaluated along the north side of the I-205 Abernethy Bridge adjacent to the southbound I-205 lanes and exit ramps to OR 43 and OR 99E for 3,317 feet (Figure A-26 through Figure A-28). Noise Wall 10 was evaluated to reduce traffic noise levels at affected residential receptors R538, R552, R553, R556, R557, R560 to R564, R571, R572 and R575 and at Jon Storm Park receptors ST-13 and R700 to R703. As shown in the modeling results in Table H-9, noise wall heights evaluated ranged from 9 feet tall to 17 feet tall and were not able to reduce noise levels by 5 dBA or greater at more than 50% of the receptors. Therefore, Noise Wall 10 would not be feasible and is not recommended for inclusion in the Project at this time.

Noise Wall 11

Noise Wall 11 was evaluated along the north side of the southbound I-205 right-of-way north of the OR 213 overcrossing for 1,145 feet (Figure A-30). Noise Wall 11 was evaluated to reduce traffic noise levels at affected residential receptors R695 to R699. As shown in the noise modeling results in Table H-10, Noise Wall 11 was evaluated at multiple wall heights ranging from 10 feet tall to 24 feet tall. At 14 feet or taller, Noise Wall 11 would reduce noise levels by 5 dBA or greater at more than 50% of the affected receptors and therefore would be feasible. At 16 feet tall, Noise Wall 11 would achieve the design goal of a 7-dBA reduction at one or more receptors; would benefit five receptors; and would cost $549,600, ($109,920 per benefited receptor). Noise Wall 11 meets ODOT feasible criteria; however, the noise wall would not meet ODOT criteria for a reasonable noise wall because it would exceed the maximum wall allowance of $217,500. Therefore, Noise Wall 11 is not recommended for inclusion in the Project at this time.

Noise Wall 12

Noise Wall 12 is an existing noise wall evaluated along the north side of the southbound I-205 right-of-way for 1,386 feet to provide shielding to the Edgewater at the Cove Apartments located within the Grand Cove Development (Figure A-28). The apartments that include balconies or patios are behind the Oregon City Shopping Center, east of OR 99E. Noise Wall 12 was evaluated to reduce traffic noise levels at affected residential receptors R704 to R707, R747 to R750, R789 to R792, R803, R843 to R848, R855 to R862, R877 to R880, R899 to R904, and R909 to RR916. As shown in the noise modeling results in Table H-11, Noise Wall 12 was evaluated at its existing height of 8 feet tall to 18 feet tall. At its existing length and height, Noise Wall 12 would reduce noise levels by 5 dBA or greater at more than 50% of the affected receptors and therefore would be feasible. At 8 to 18 feet tall, Noise Wall 12 would achieve the design goal of a 7-dBA reduction at one or more receptors and would benefit 50 receptors. The existing Noise Wall 12 provides noise reduction that meets the acoustic feasibility and noise reduction design goals; therefore, further consideration of abatement measures is not warranted.

7.3 Noise Abatement Summary

Noise abatement was considered at all modeled locations predicted to experience noise levels above the ODOT NAAC with the exception of two areas where the affected communities have voted against the placement of previously recommended noise walls (Noise Wall 6A and Noise Wall 7). Eleven noise walls were evaluated to abate noise levels at noise impact locations. Four of the evaluated noise walls (Noise Walls 5, 8, 9, and 10) would not feasibly reduce noise levels per ODOT policy and three noise walls (Noise Walls 1, 6B, and 11) can feasibly reduce noise levels but are unreasonably expensive per ODOT policy. The existing noise wall – Noise Wall 12 – provides noise reduction that meets the acoustic

feasibility and noise reduction design goals. The remaining three noise walls (Noise Walls 2, 3, and 4) are feasible and reasonable per ODOT policy and are recommended for further consideration in the Project. The three feasible and reasonable noise walls are described in detail in Section 7.2.2 of this report. Their general locations are listed below:

- Noise Wall 2: North side of the southbound I-205 lanes north of Blankenship Road, located parallel to the southbound I-205 lanes
- Noise Wall 3: Along the I-205 northbound lanes south of where I-205 crosses Blankenship Road
- Noise Wall 4: Along the north side of the southbound I-205 lanes south of Blankenship Road, parallel to the southbound I-205 lanes

8 Statement of Likelihood

Based on the findings presented in this report, ODOT will further evaluate traffic noise abatement measures in the form of noise walls during the final design of the Project. At a minimum, the three locations summarized in Section 7 (Noise Walls 2, 3, and 4) will be reevaluated in detail during final design.

The three noise walls would abate impacts at 84 residences and would benefit an additional 60 residences and the retirement home. Preliminary cost for the noise walls would total $2,420,760. If these conditions have changed substantially during final Project design, the abatement measure may no longer be feasible and reasonable and therefore would not be constructed as part of the Project. A final decision will be made upon the completion of the Project's final design, a cost-estimating process, and the public involvement process.

9 Information to Local Government Officials

ODOT will make a copy of this report available to the local planning departments. This report will serve to inform local government officials of the effects of the roadway and roadway construction-related noise in the area studied. The information contained within this report can assist local governments in their planning process.

It is recommended that local government officials use this information as a guide when developing future land use plans, zoning, or building code requirements. The use of this information may assist local government with future development plans and thereby result in development that is consistent with the noise environment.

Because this study relies on land use surveys prepared for the prior noise analysis, the location of all undeveloped or vacant lots have not been confirmed; however, these properties are presumed to exist. Table 9-1 provides the distances to ODOT's NAAC. Local governments should consider whether residential (NAAC B), public use areas such as schools and parks (NAAC C), and commercial uses (NAAC E) are compatible in these areas.

Table 9-1. Distances to ODOT's NAACs for Local Planning Agencies

I-205 Segment	Distance to NAAC B & C Threshold (feet)	Distance to NAAC E Threshold (feet)
Stafford to 10th (S)	300	130
Stafford to 10th (N)	280	170
10th to OR 43 (S)	460	220
10th to OR 43 (N)	460	220
OR 43 to OR 99E (S)	350	150
OR 43 to OR 99E (N)	350	150
OR 99E to OR 213 (S)	340	230
OR 99E to OR 213 (S)	340	230
OR 213 to Project End (S)	450	220
OR 213 to Project End (N)	460	210

10 Preparers

Table 10-1 identifies the individuals involved in preparing this report.

Table 10-1. List of Preparers

Name	Role	Education	Years of Experience
Patrick Romero	Noise Technical Lead	MS, Environmental Policy and Management BS, Environmental Science	23
Michael Lieu	Noise Modeling	B.S., Applied Ecology, University of California-Irvine, 1999	19
Kevin Keller	Noise Modeling	B.A., Geography, Minor in History, California State University at Fullerton, 1987	28
Gabriella Yanez-Uribe	Noise Technical QC	MS Civil Engineering, Georgia Institute of Technology. B.S., Civil Engineering, ULA	20

11 References

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Attachment A Figures

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Figure A-1. Existing Conditions/No Build Alternative – Measurement and Modeled Receptor Locations

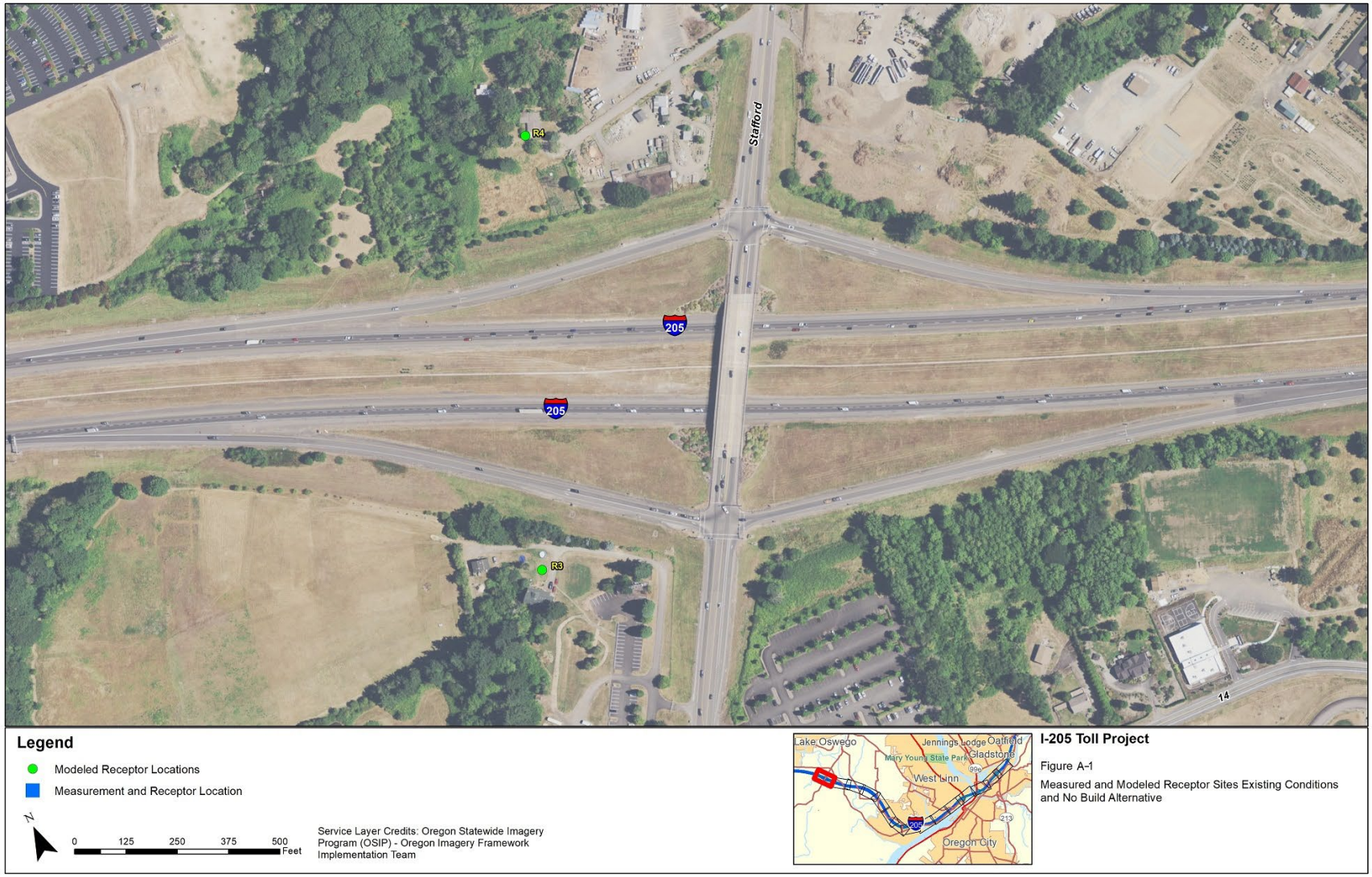


Figure A-2. Existing Conditions/No Build Alternative – Measurement and Modeled Receptor Locations

Figure A-3. Existing Conditions/No Build Alternative – Measurement and Modeled Receptor Locations

Figure A-4. Existing Conditions/No Build Alternative – Measurement and Modeled Receptor Locations

Figure A-5. Existing Conditions/No Build Alternative – Measurement and Modeled Receptor Locations

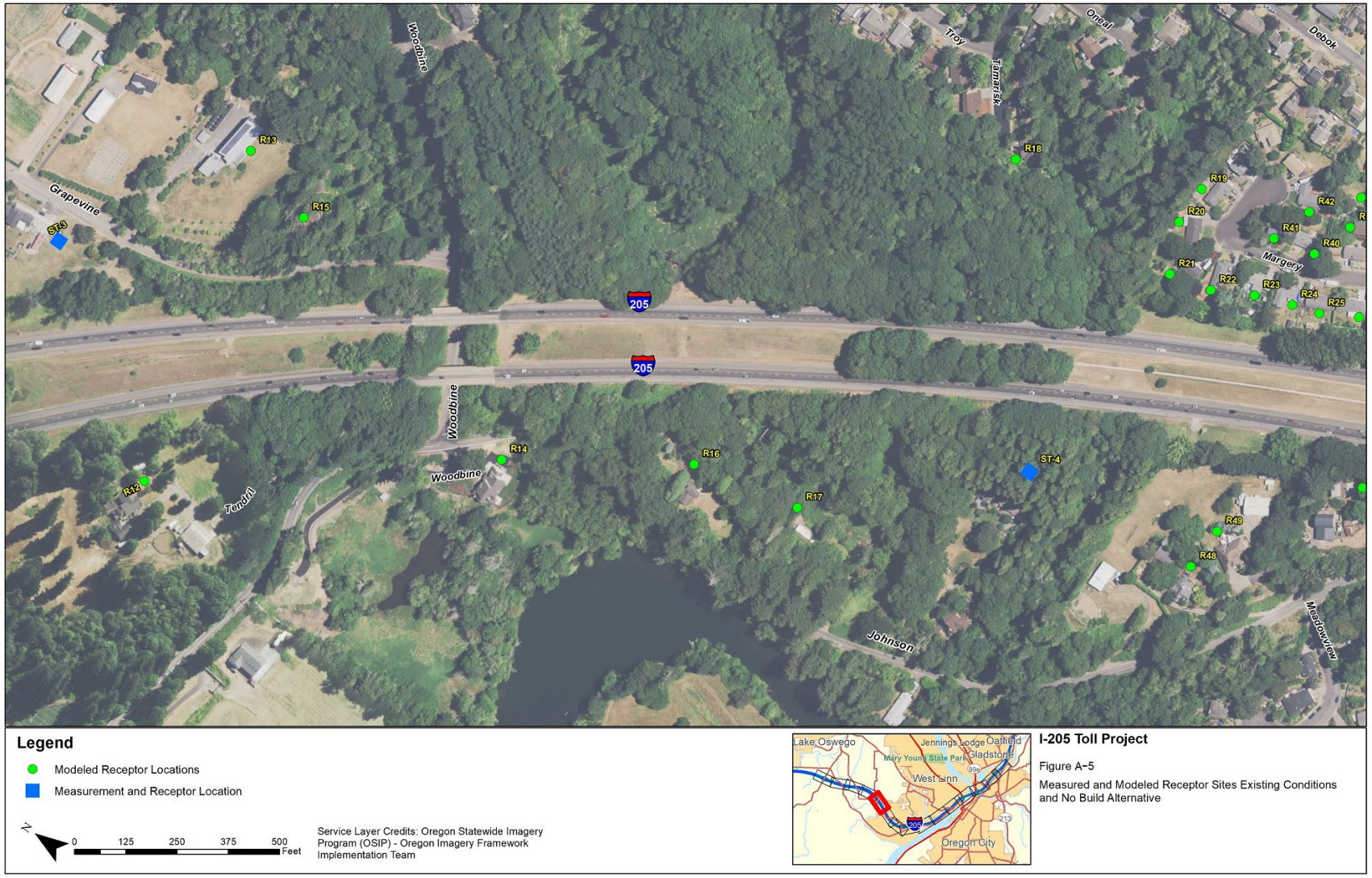


Figure A-6. Existing Conditions/No Build Alternative – Measurement and Modeled Receptor Locations

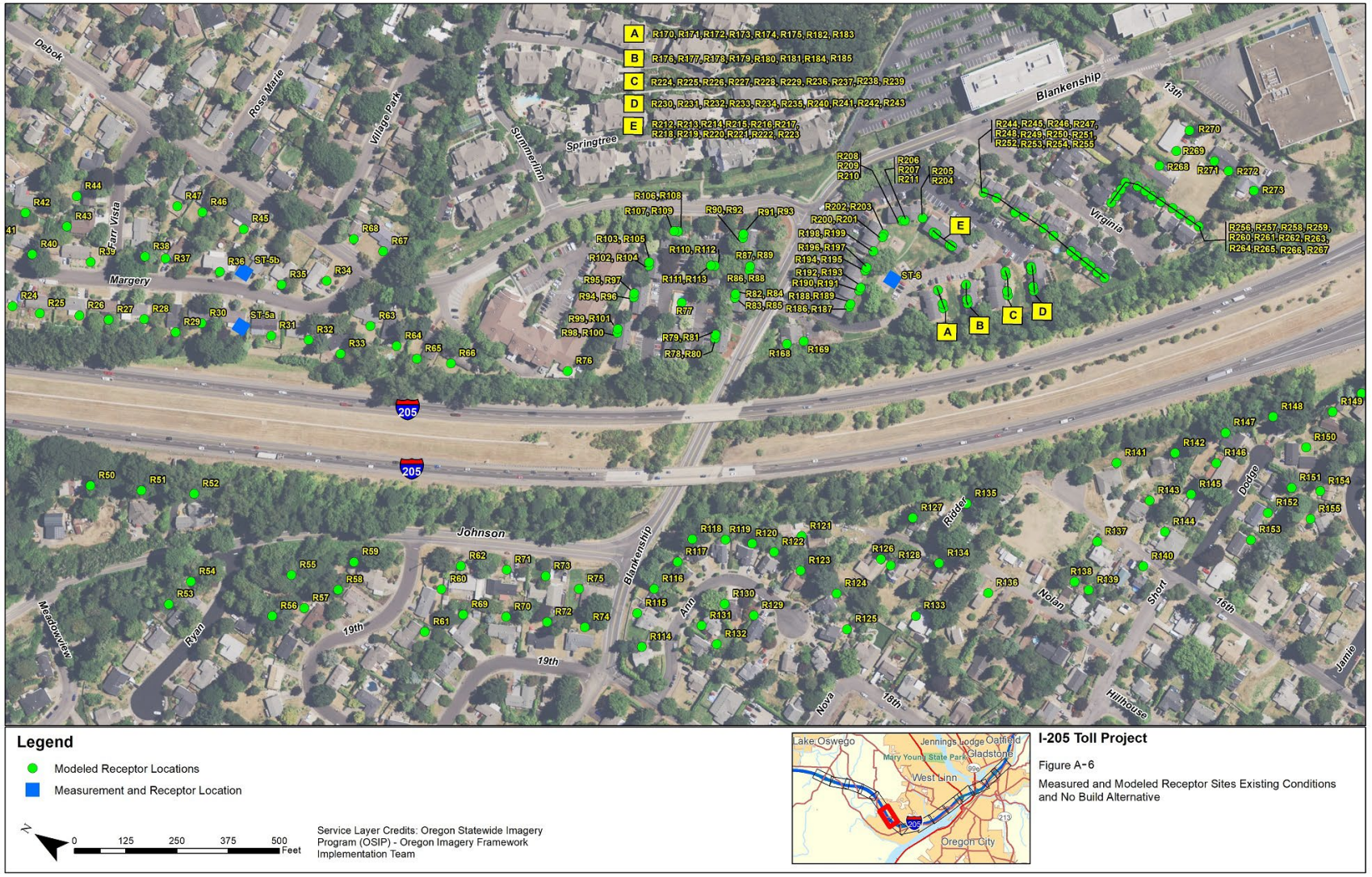


Figure A-7. Existing Conditions/No Build Alternative – Measurement and Modeled Receptor Locations

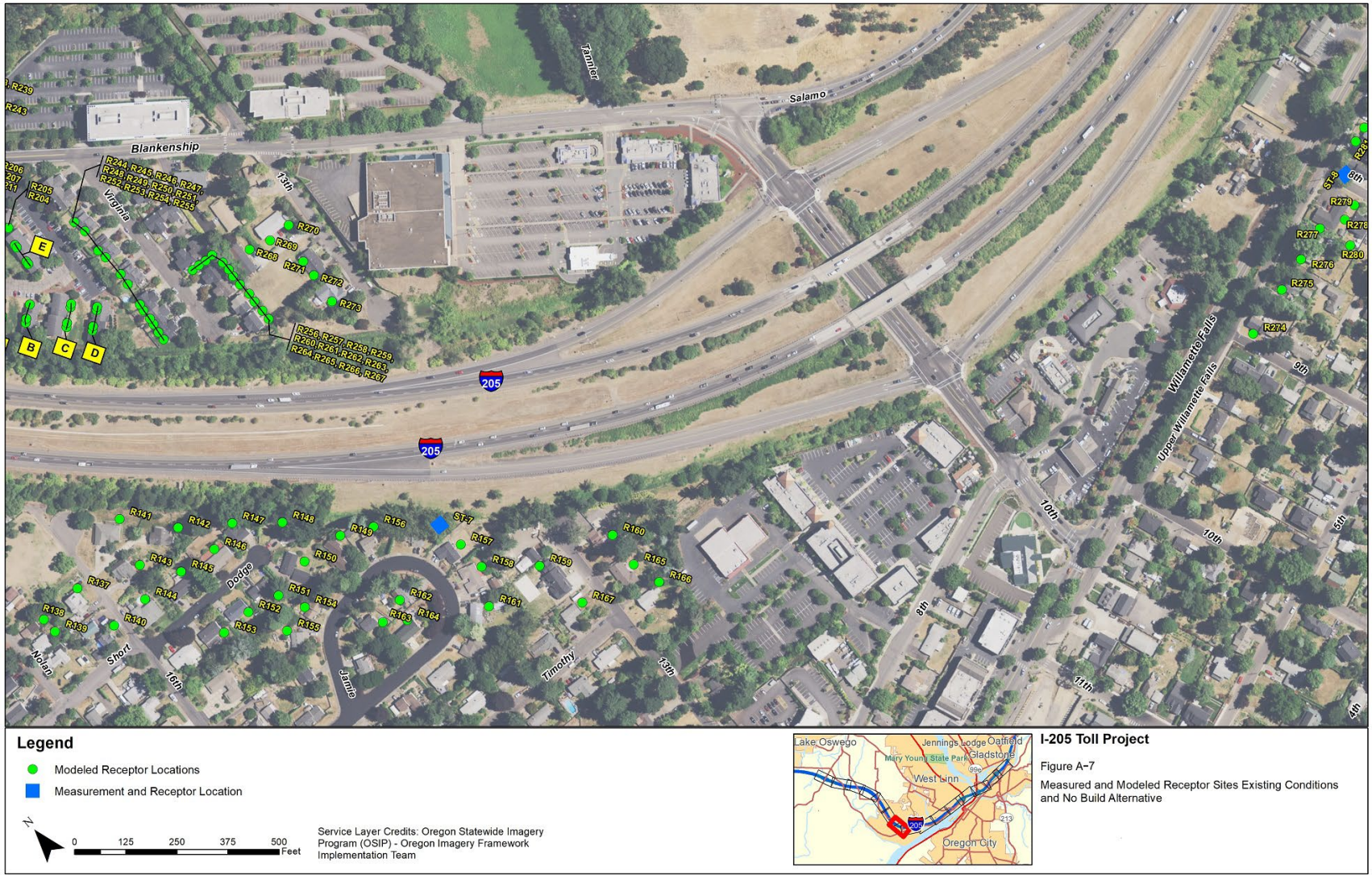


Figure A-8. Existing Conditions/No Build Alternative – Measurement and Modeled Receptor Locations

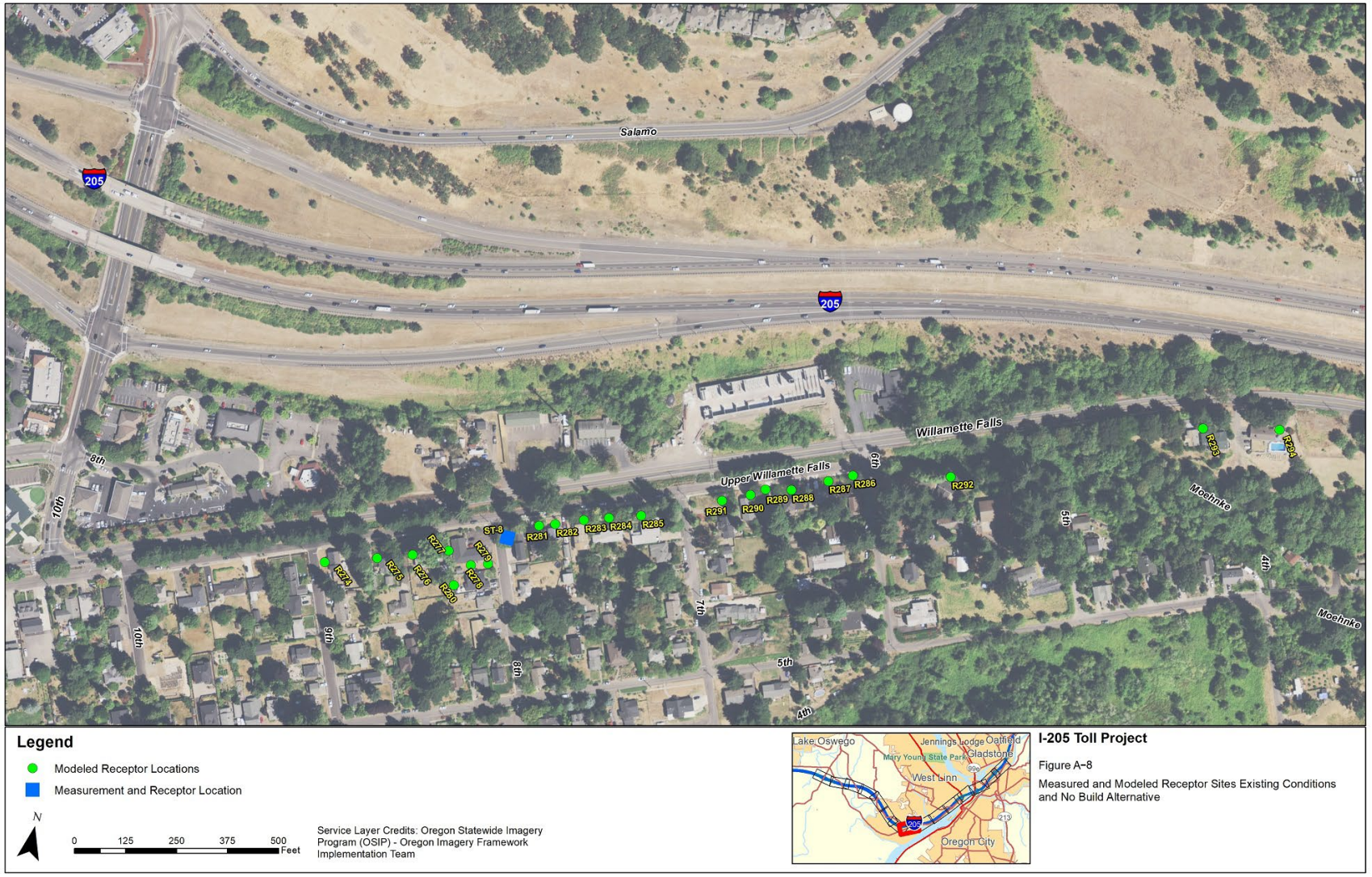


Figure A-9. Existing Conditions/No Build Alternative – Measurement and Modeled Receptor Locations

Figure A-10. Existing Conditions/No Build Alternative – Measurement and Modeled Receptor Locations

Figure A-11. Existing Conditions/No Build Alternative – Measurement and Modeled Receptor Locations

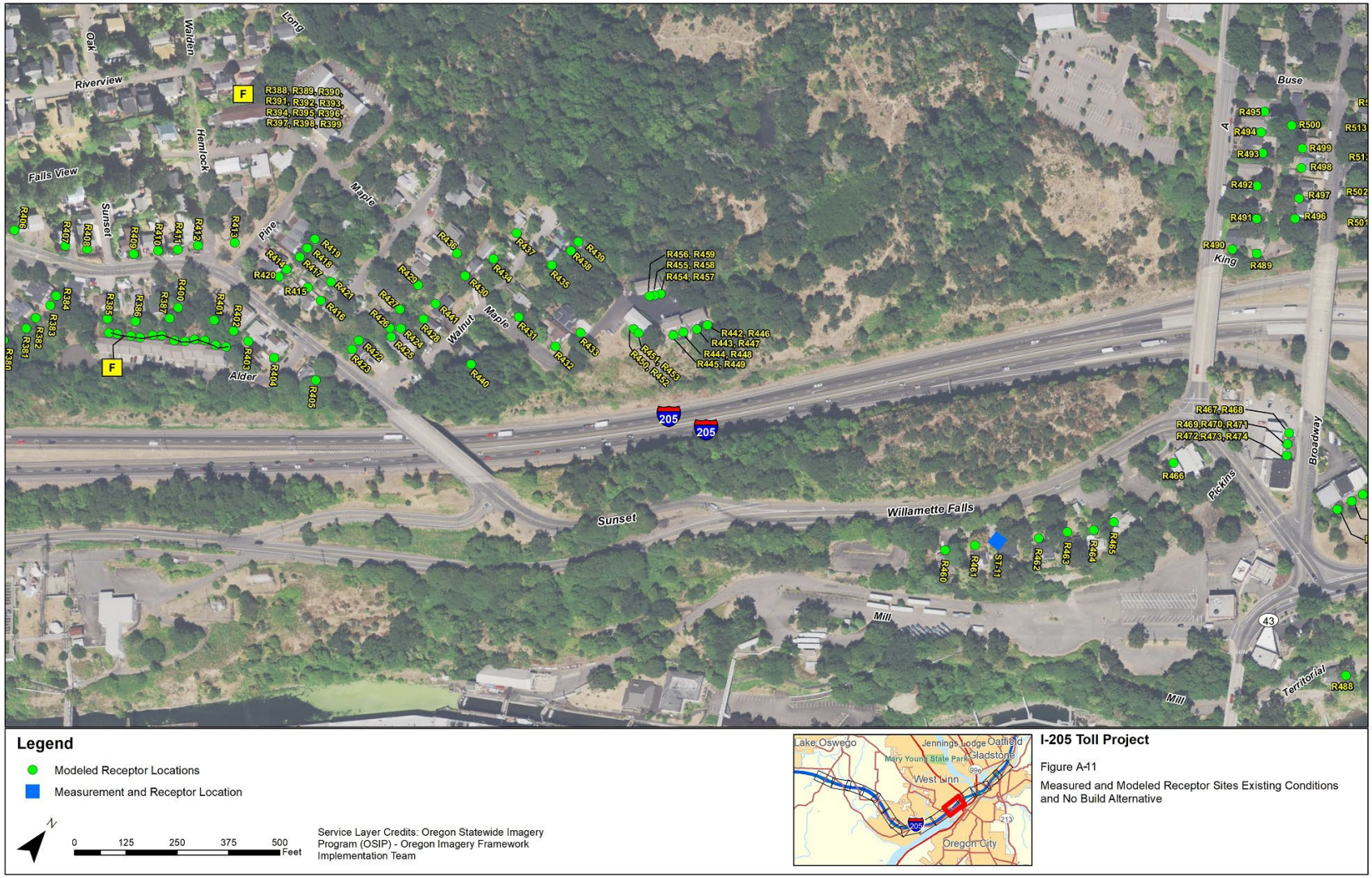


Figure A-12. Existing Conditions/No Build Alternative – Measurement and Modeled Receptor Locations

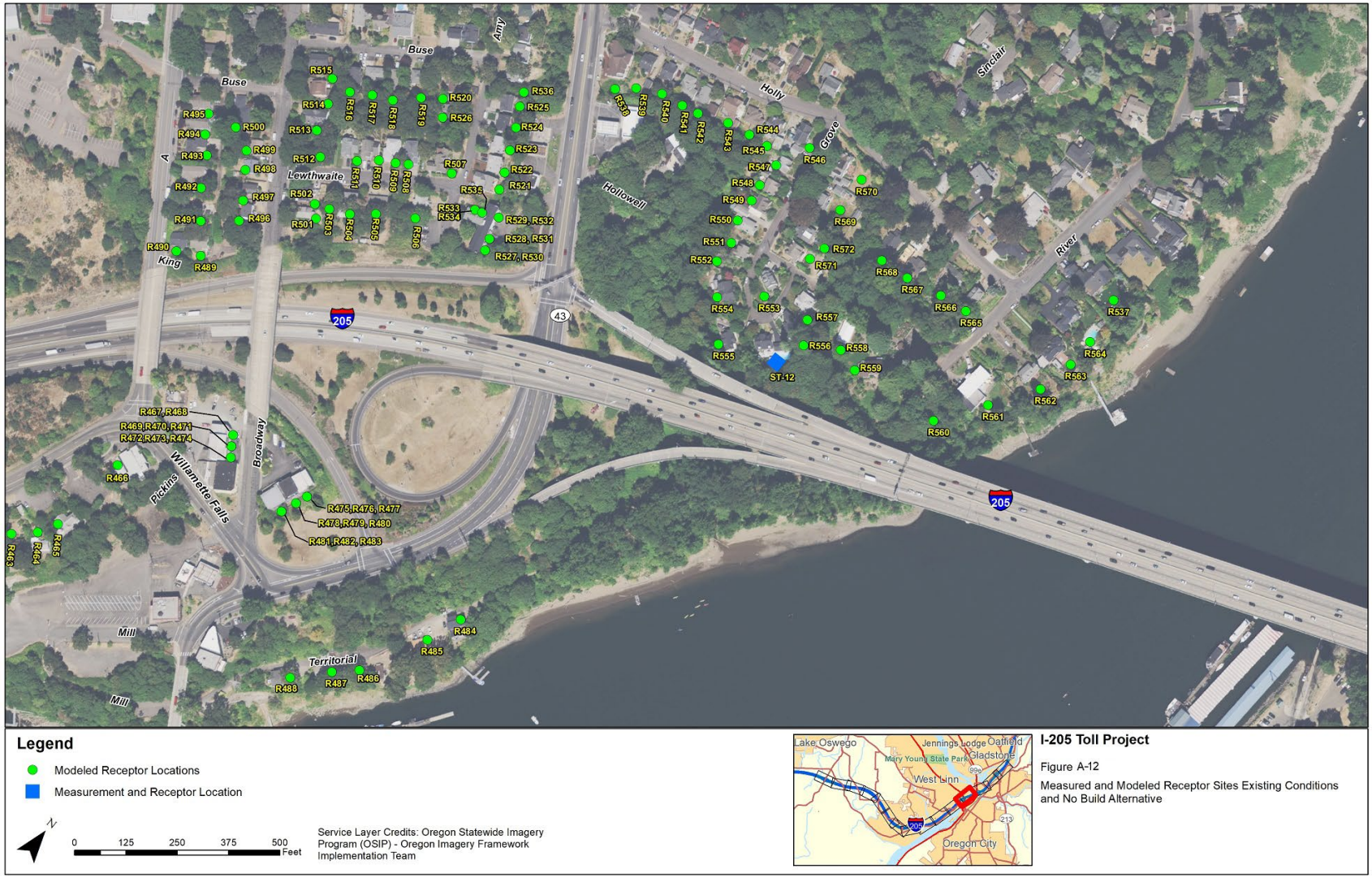


Figure A-13. Existing Conditions/No Build Alternative – Measurement and Modeled Receptor Locations

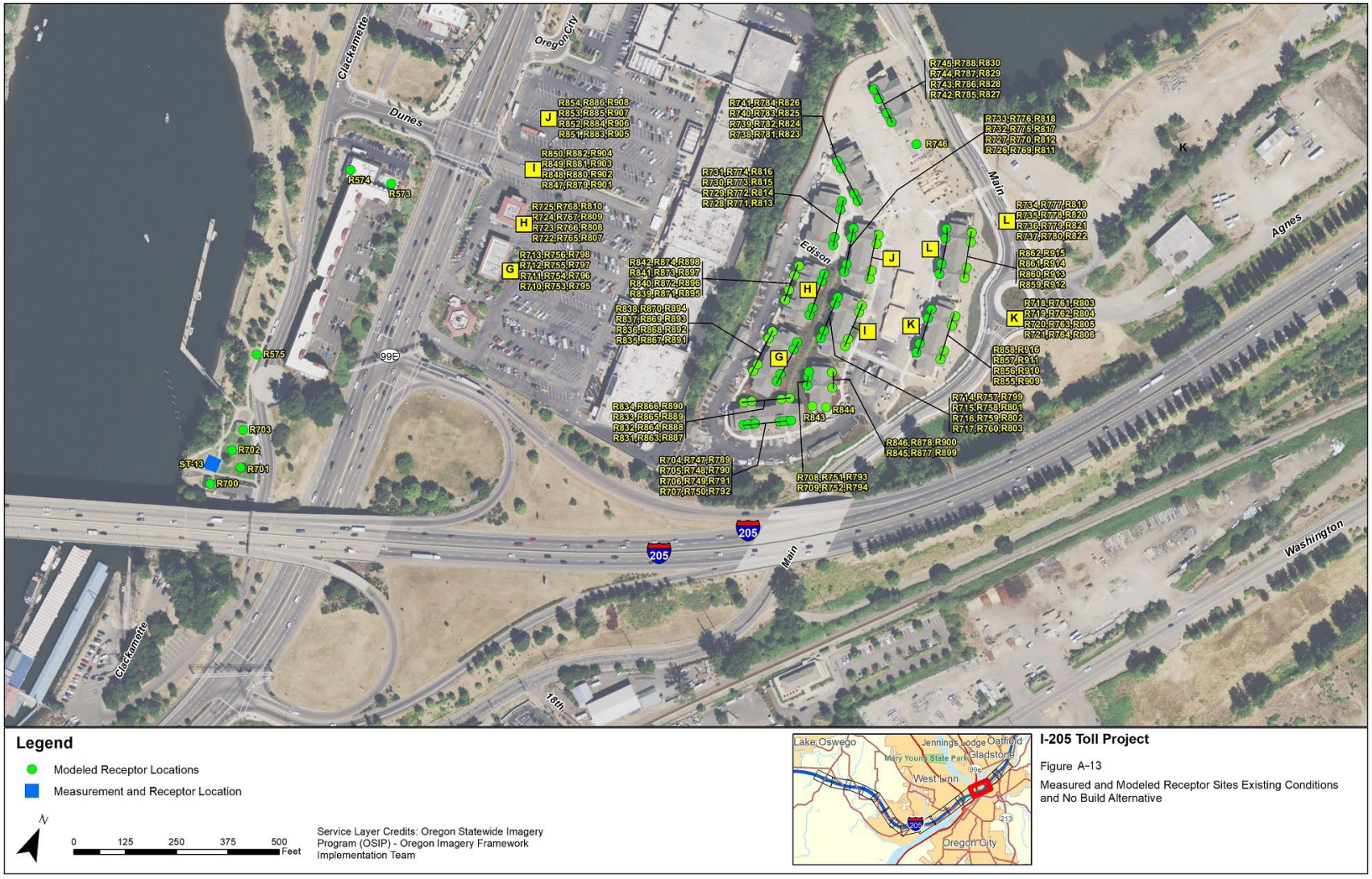


Figure A-14. Existing Conditions/No Build Alternative – Measurement and Modeled Receptor Locations

Figure A-15. Existing Conditions/No Build Alternative – Measurement and Modeled Receptor Locations

Figure A-16. Build Alternative – NAAC Impacts (No Noise Wall Evaluation)

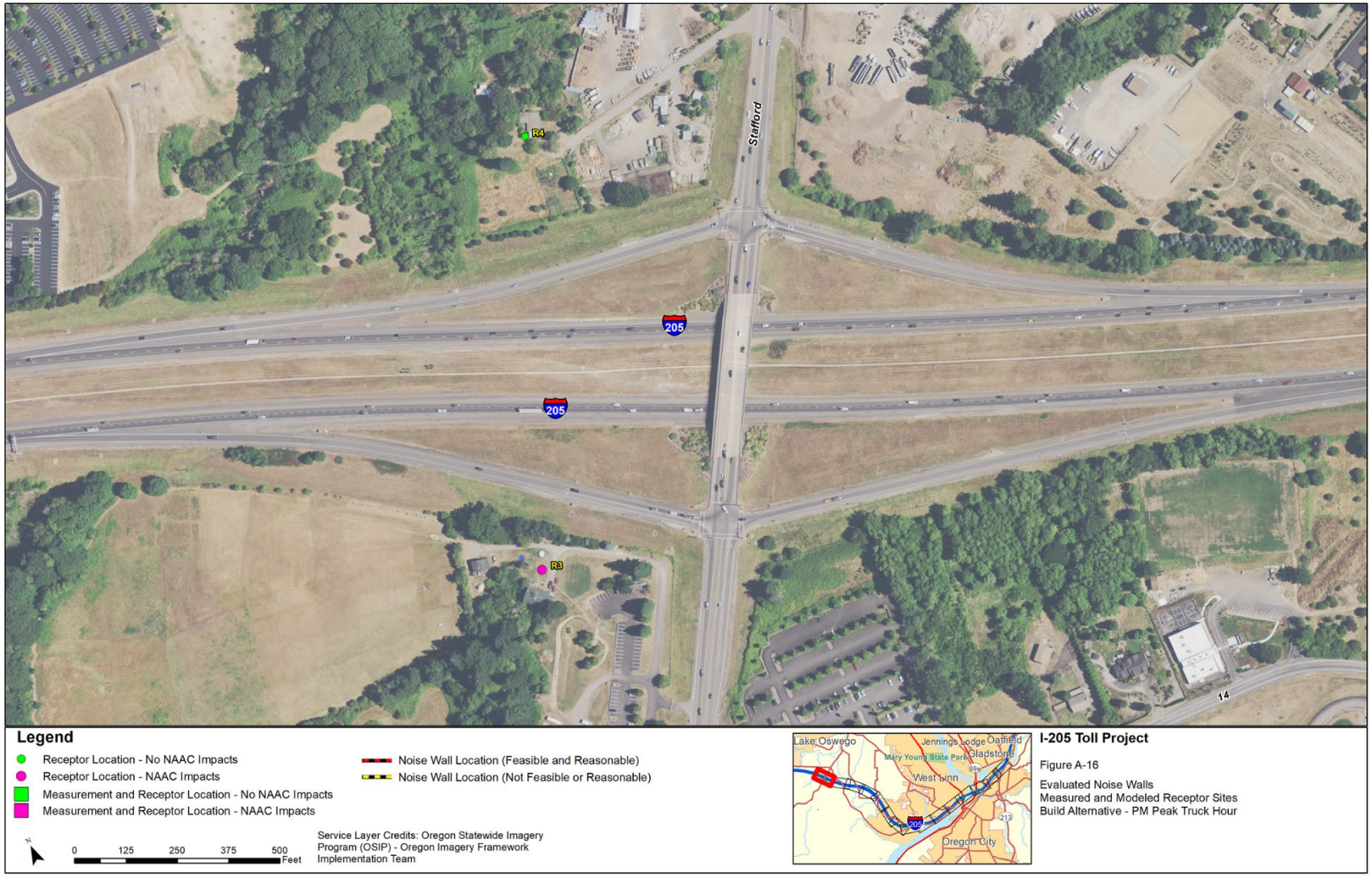


Figure A-17. Build Alternative – NAAC Impacts (No Noise Wall Evaluation)

Figure A-18. Build Alternative – NAAC Impacts (No Noise Wall Evaluation)

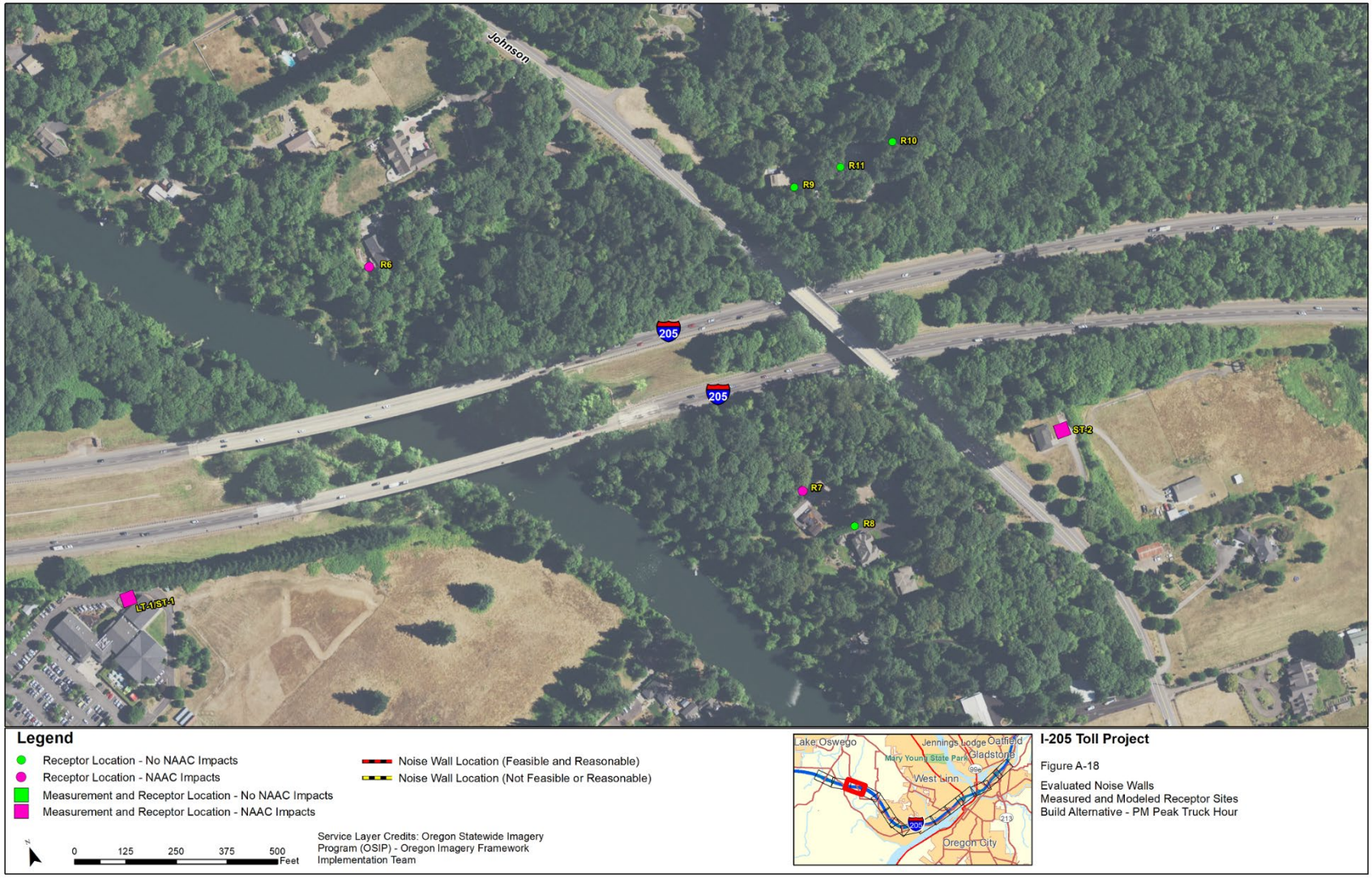


Figure A-19. Build Alternative – NAAC Impacts (No Noise Wall Evaluation)

Figure A-20. Build Alternative – NAAC Impacts (Noise Wall 1 and Noise Wall 2)

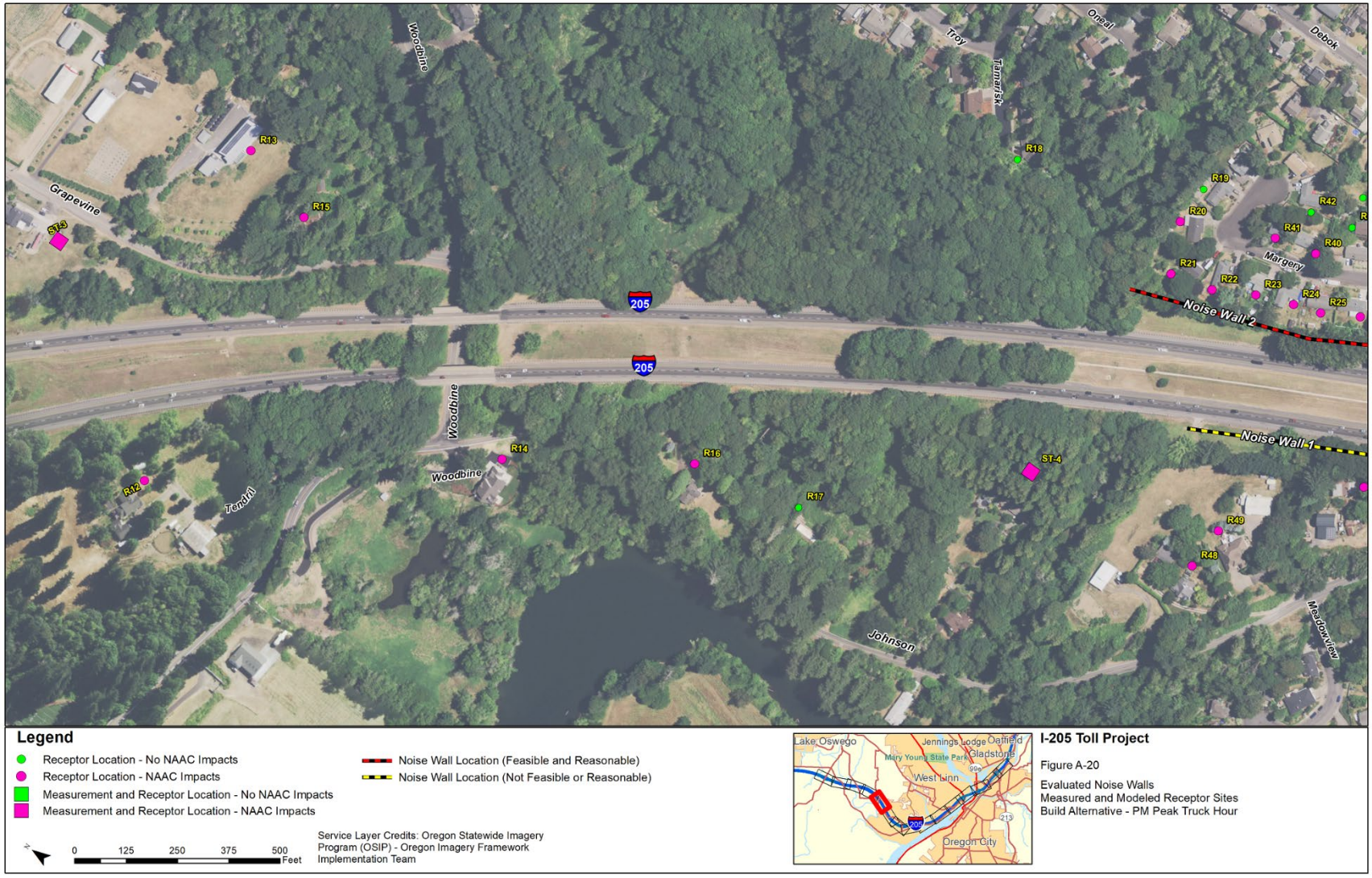


Figure A-21. Build Alternative – NAAC Impacts (Noise Wall 1 through Noise Wall 4)

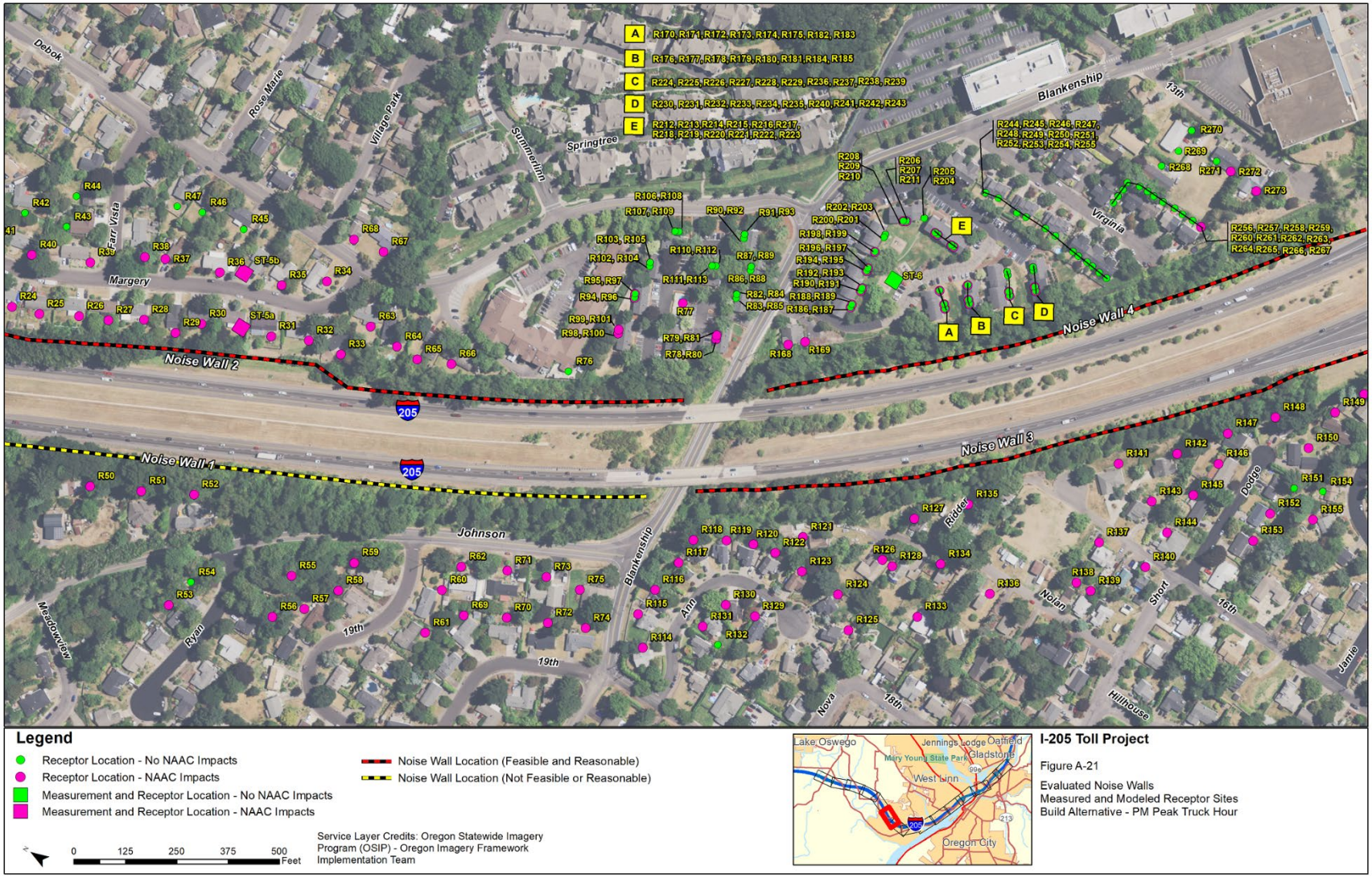


Figure A-22. Build Alternative – NAAC Impacts (Noise Wall 3 through Noise Wall 5)

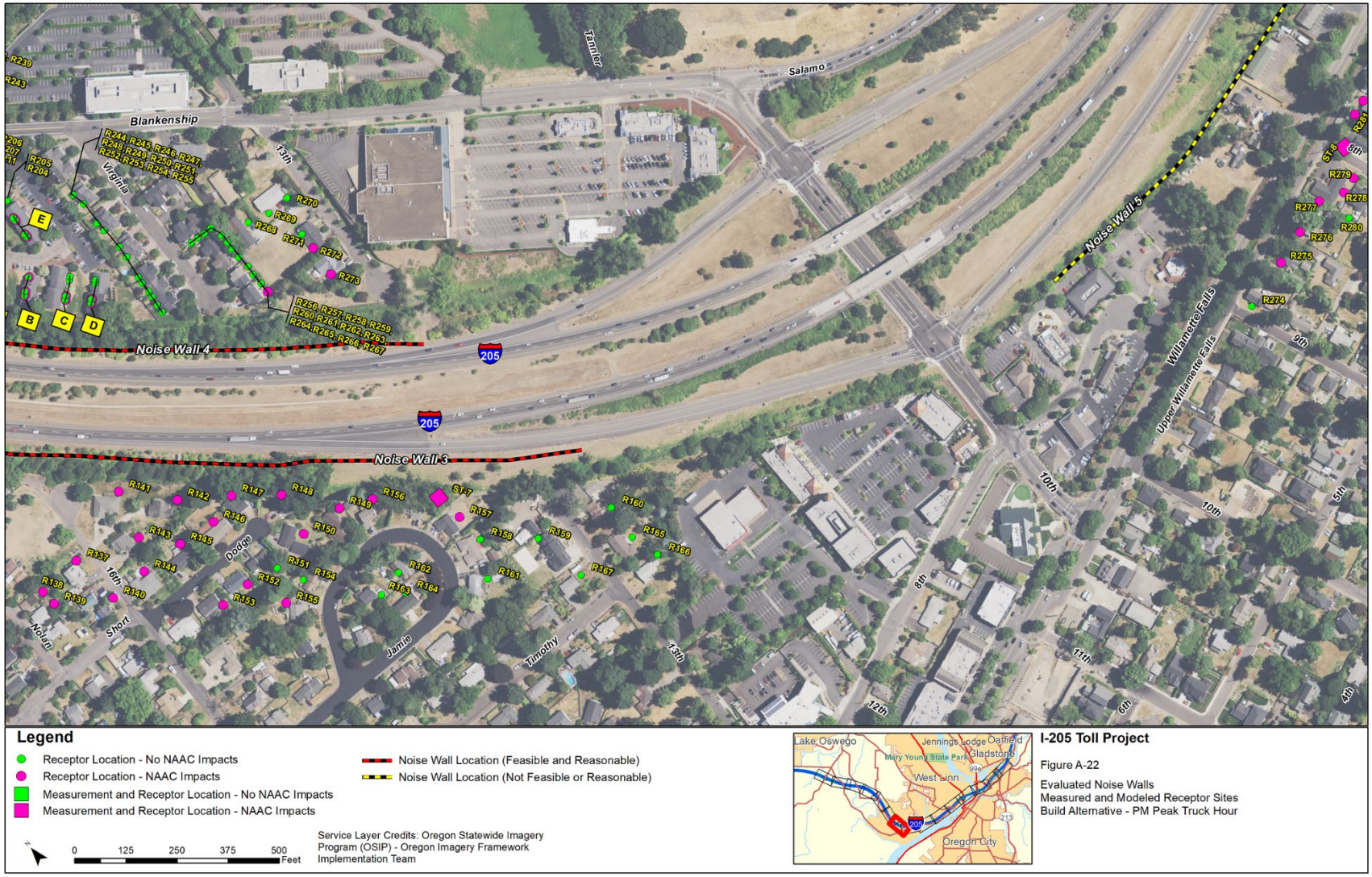


Figure A-23. Build Alternative – NAAC Impacts (Noise Wall 5)

Figure A-24. Build Alternative – NAAC Impacts (Noise Wall 6B)

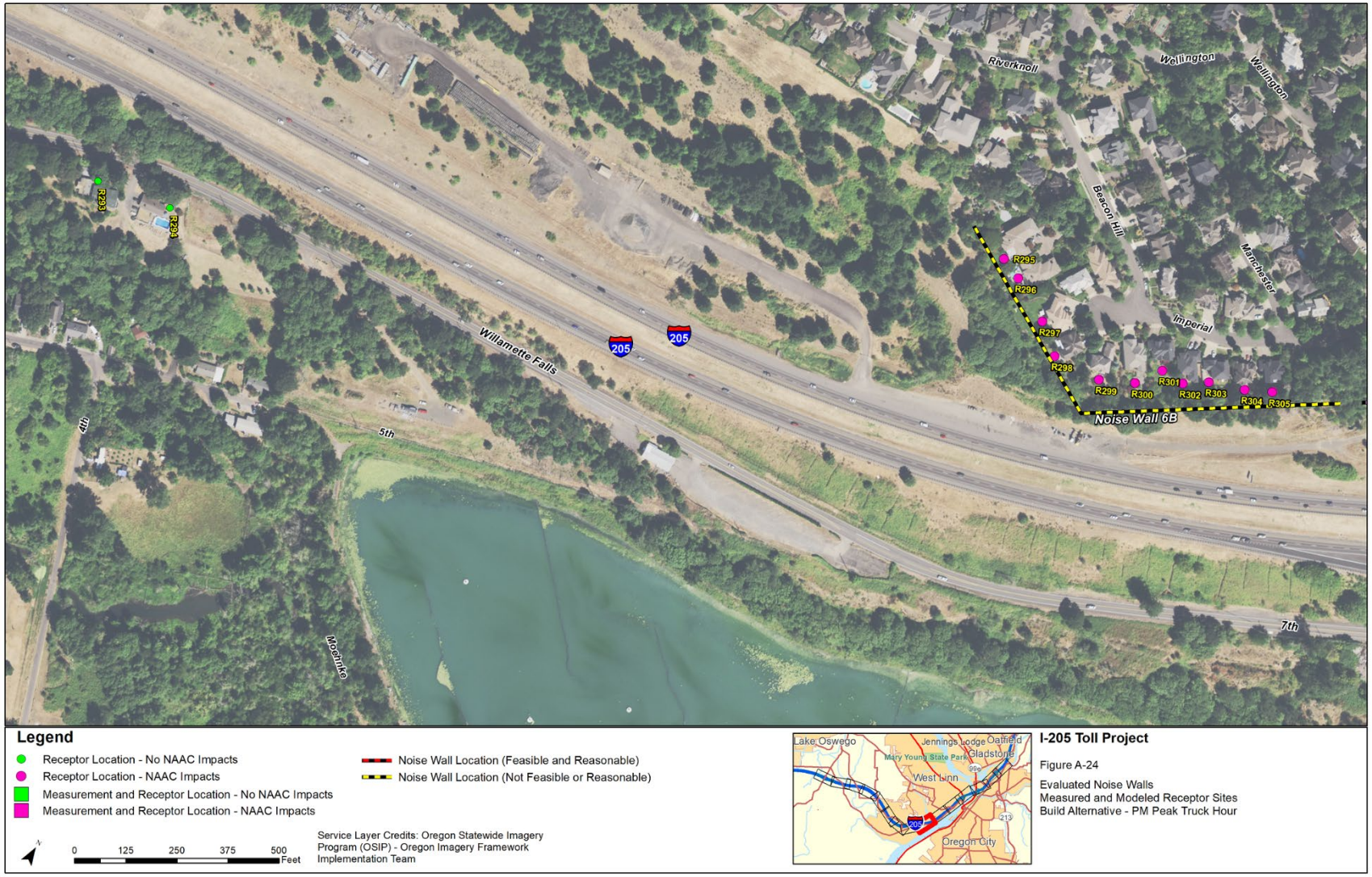


Figure A-25. Build Alternative – NAAC Impacts (Noise Wall 6A and Noise Wall 6B)

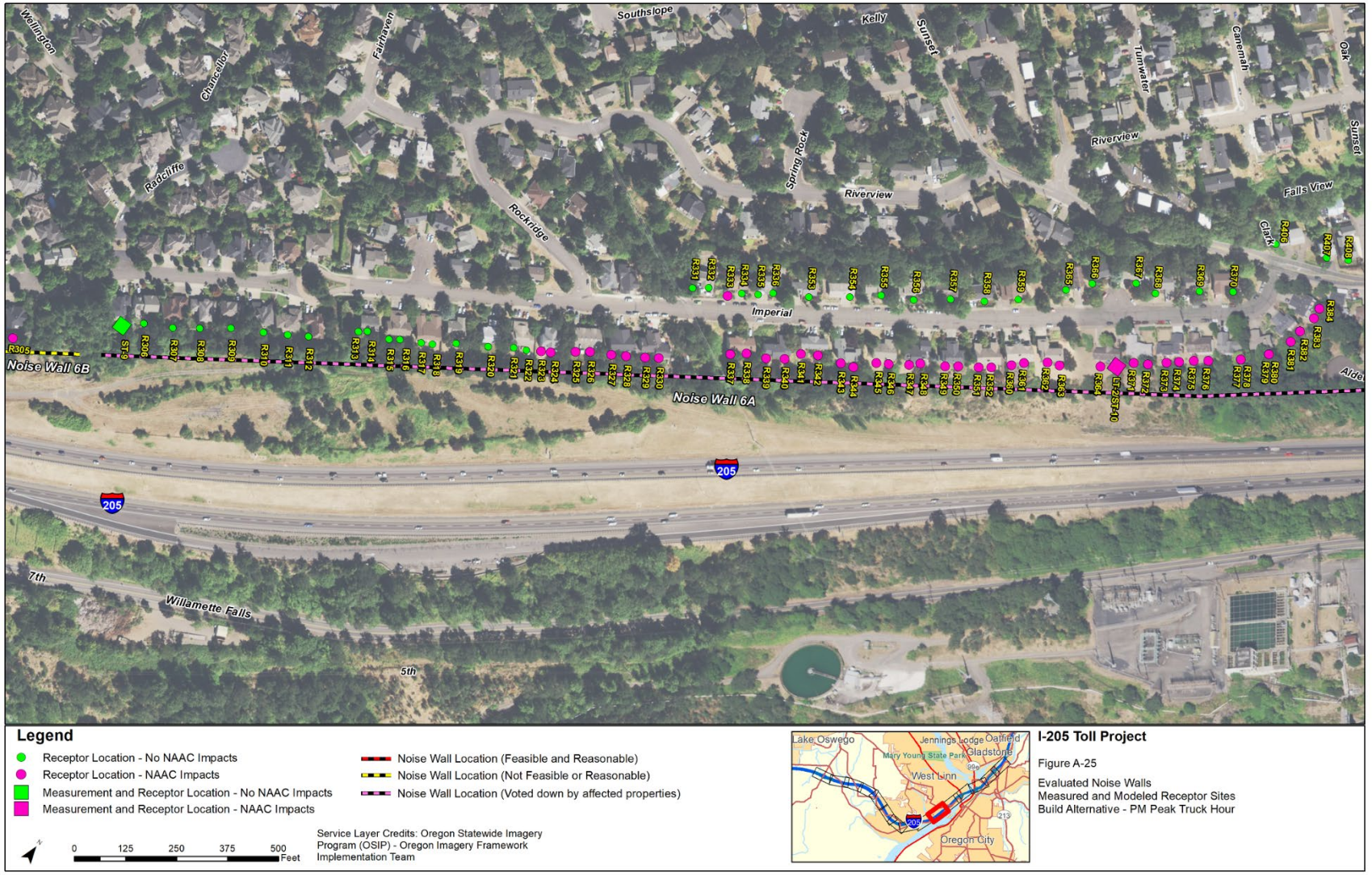


Figure A-26. Build Alternative – NAAC Impacts (Noise Wall 6A and Noise Wall 7 through Noise Wall 9)

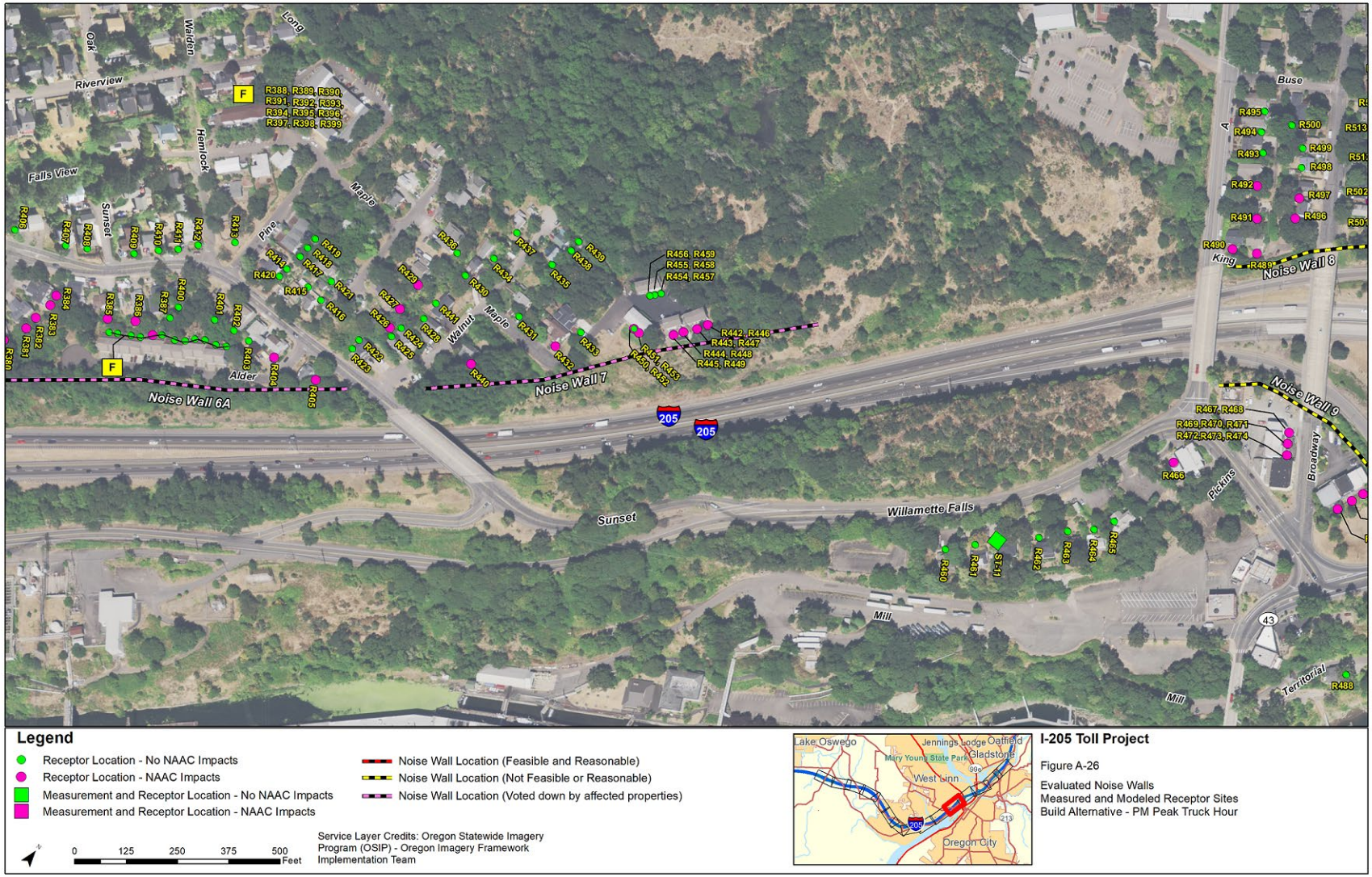


Figure A-27. Build Alternative – NAAC Impacts (Noise Wall 8 through Noise Wall 10)

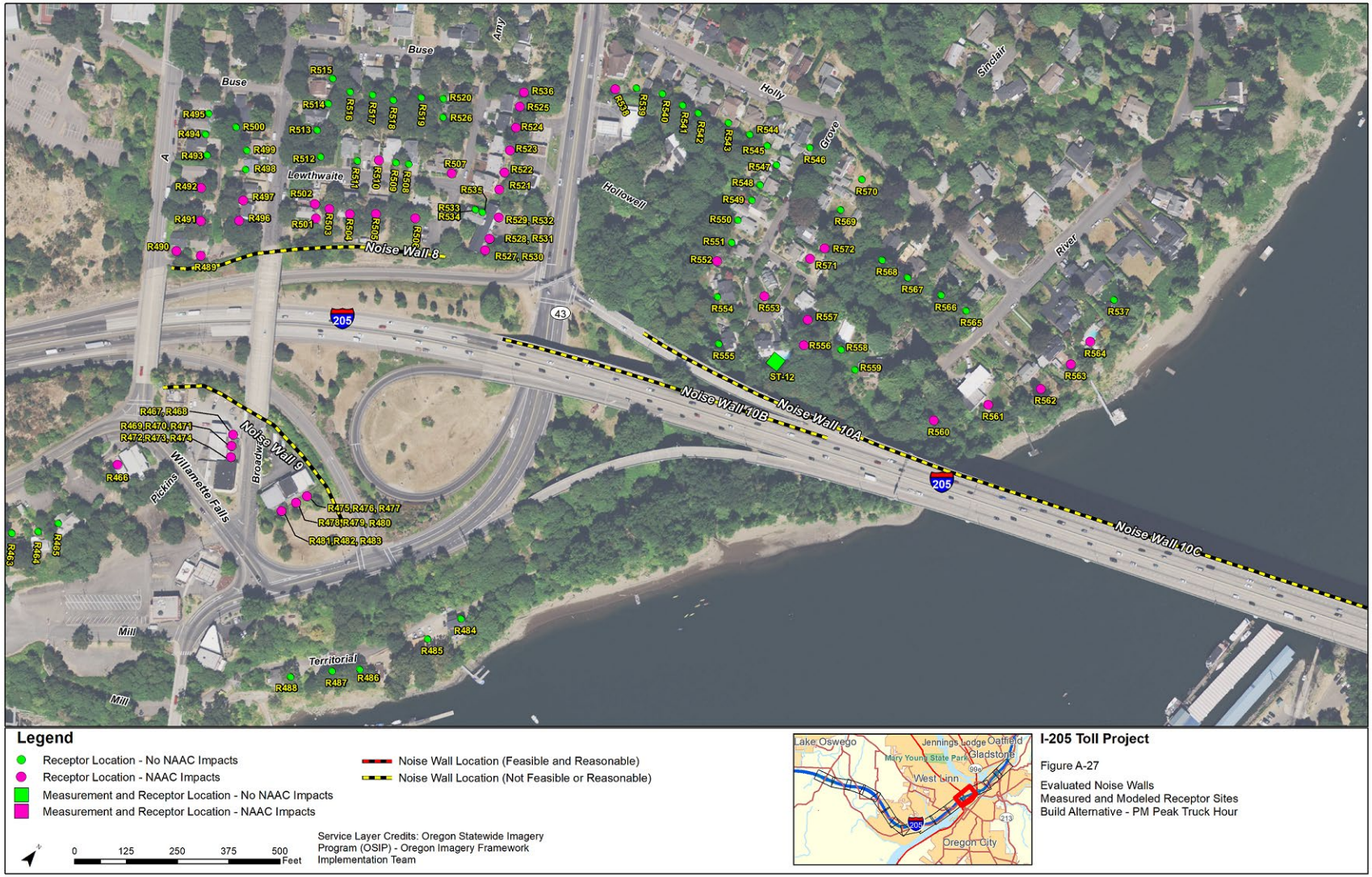


Figure A-28. Build Alternative – NAAC Impacts (Noise Wall 10 and Noise Wall 12)

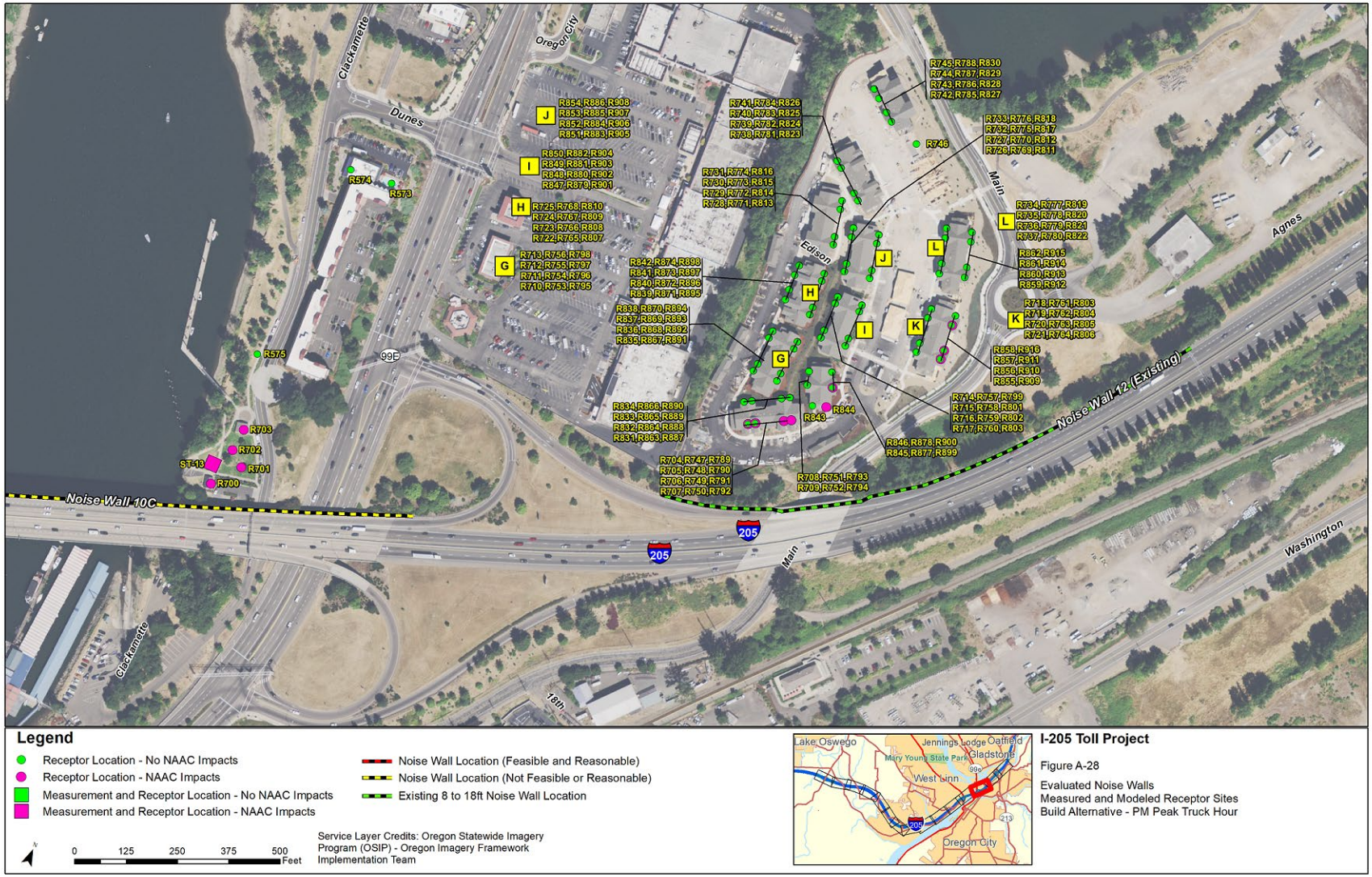


Figure A-29. Build Alternative – NAAC Impacts (Noise Wall 11)

Figure A-30. Build Alternative – NAAC Impacts (Noise Wall 11)

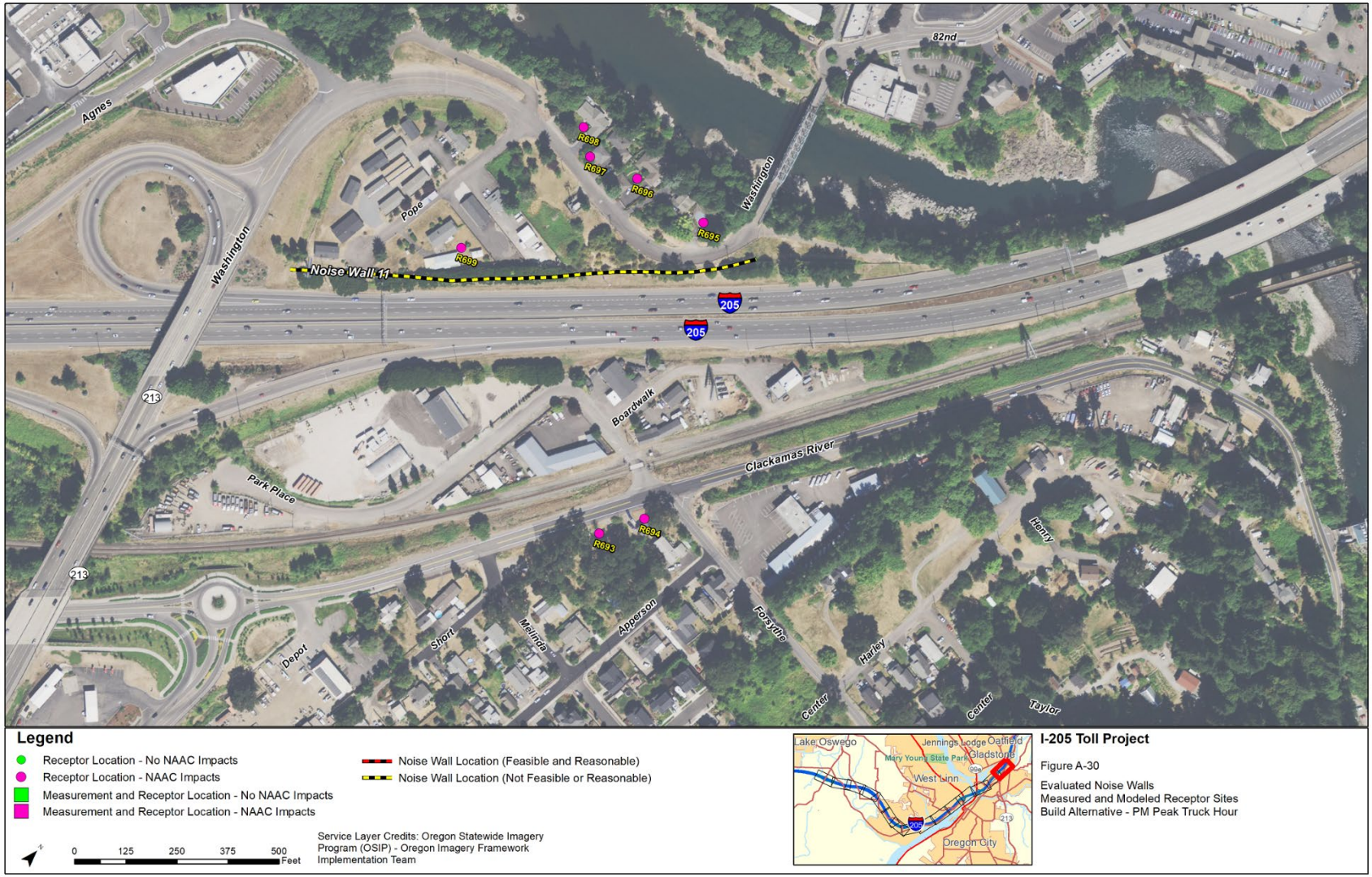


Figure A-31. Estimated Change in Future Non-Highway Traffic Noise Levels – Existing Conditions to Build Alternative

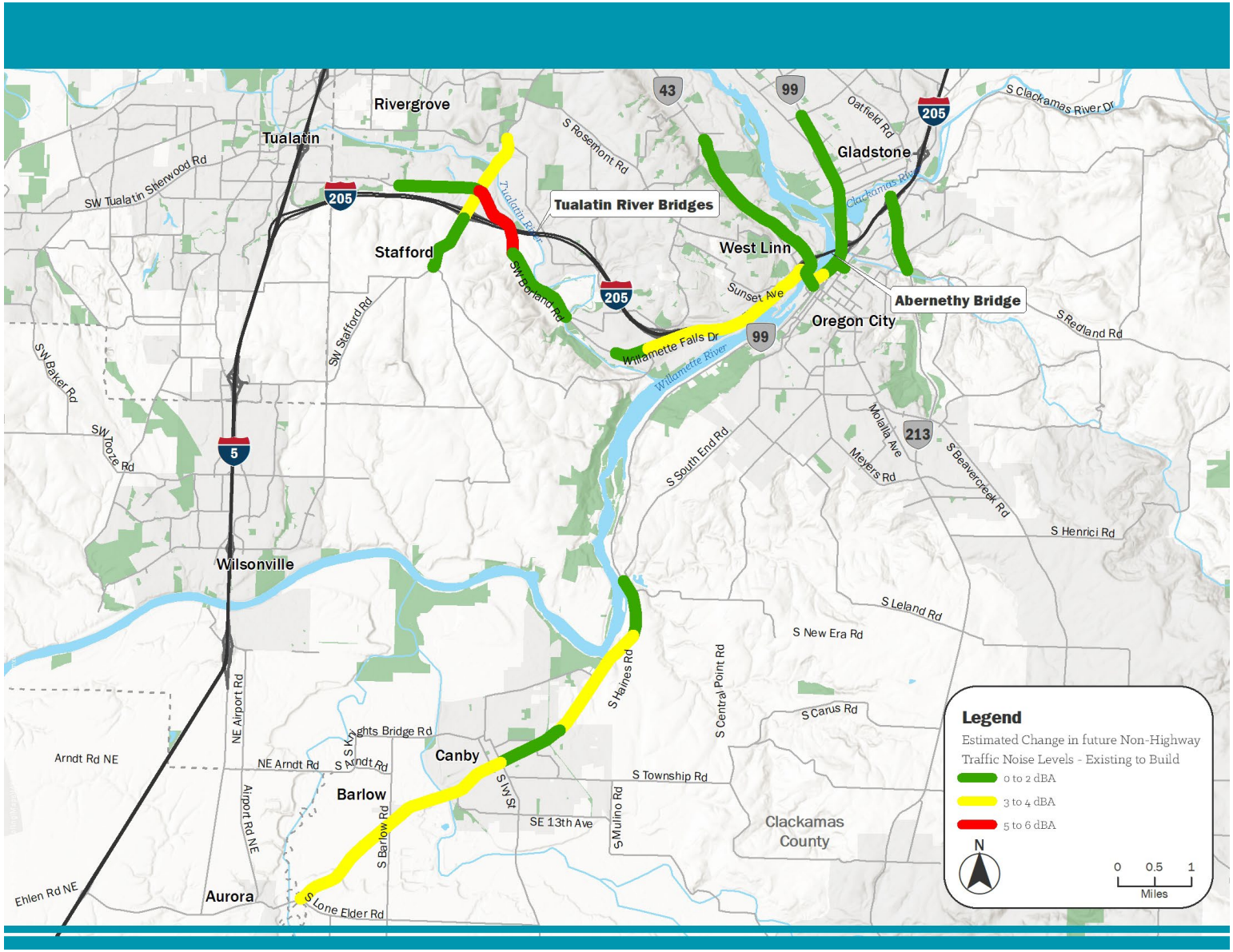


Figure A-32. Estimated Change in Future Non-Highway Traffic Noise Levels – Existing Conditions to No Build Alternative

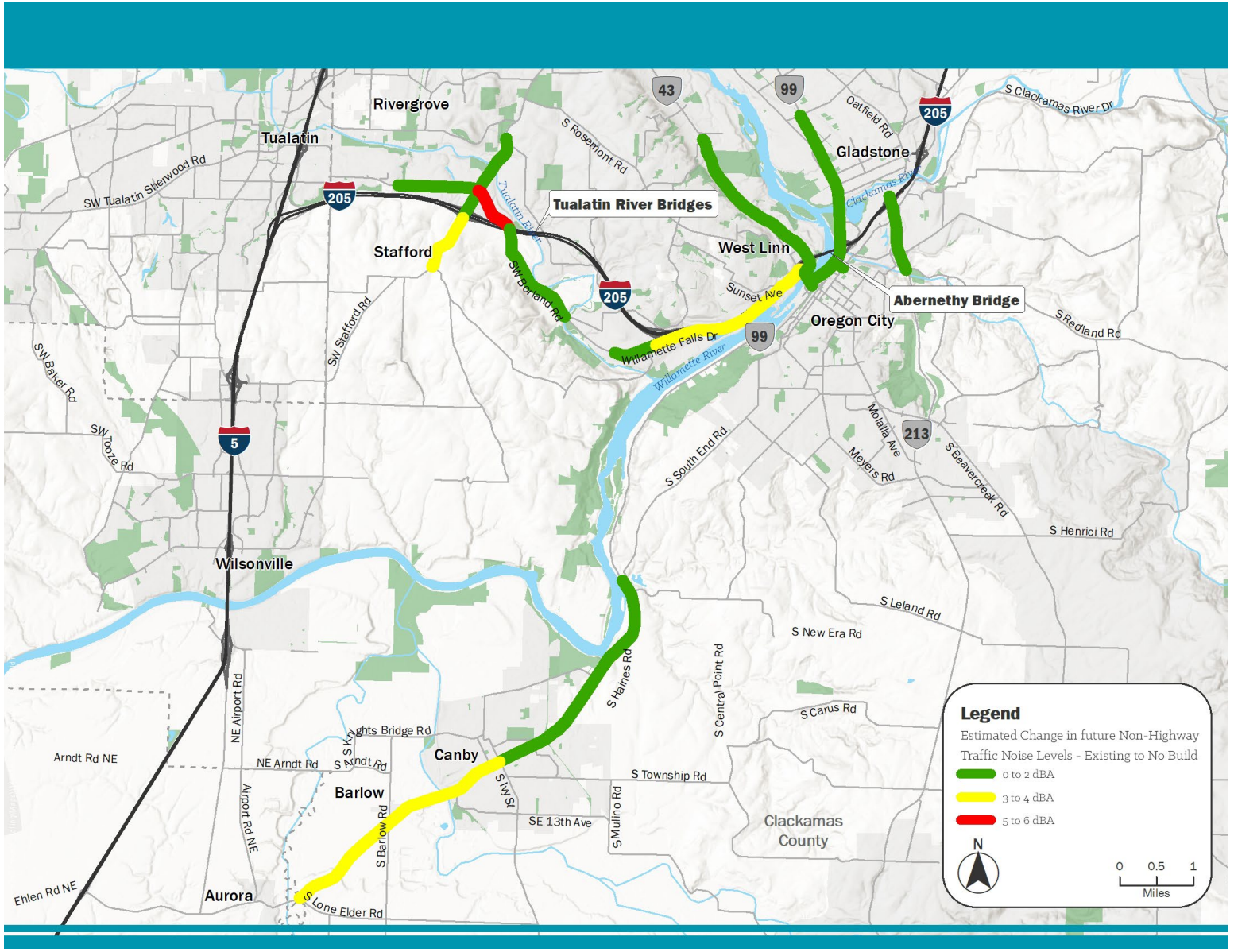
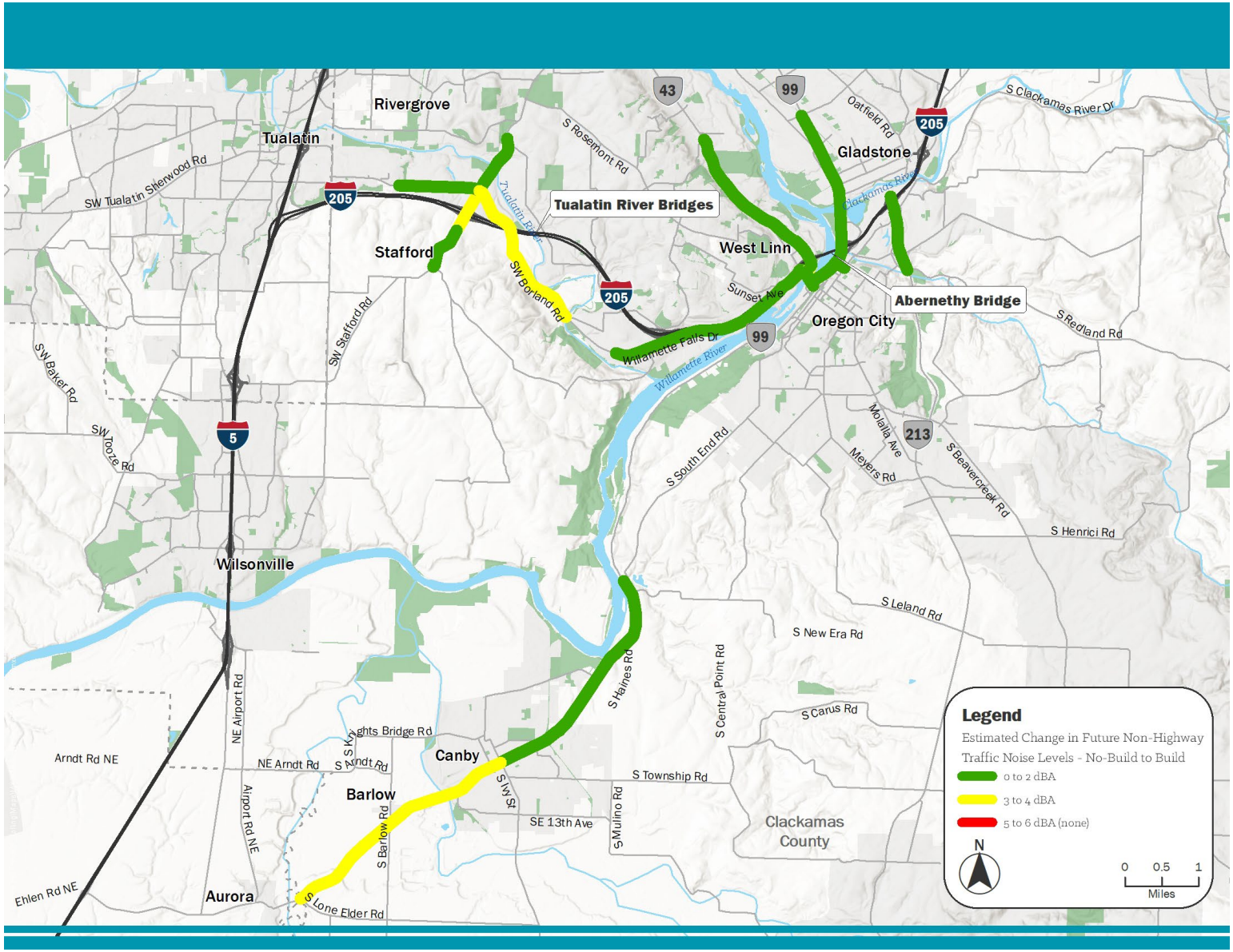


Figure A-33. Estimated Change in Future Non-Highway Traffic Noise Levels – No Build Alternative to Build Alternative



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Attachment B Characteristics of Noise

Sound is created when objects vibrate, resulting in a minute variation in surrounding atmospheric pressure called sound pressure. The human response to sound depends on the magnitude of a sound as a function of its frequency and time pattern (EPA 1974). Magnitude measures the physical sound energy in the air. The range of magnitude from the faintest to the loudest sound the ear can hear is so large that sound pressure is expressed on a logarithmic scale in units called decibels (dB). Loudness, compared to physical sound measurement, refers to how people subjectively judge a sound and varies from person to person. Magnitudes of typical noise levels are presented in Table A-1.

Humans respond to a sound's frequency or pitch. The human ear is very effective at perceiving sounds with a frequency between approximately 1,000 Hz and 5,000 Hz, with the efficiency decreasing outside this range. Environmental noise is composed of many frequencies, each occurring simultaneously at its own sound pressure level. Frequency weighting, which is applied electronically by a sound level meter, combines the overall sound frequency into one sound level that simulates how an average person hears sounds. The commonly used frequency weighting for environmental noise is A-weighted decibels (dBA), which is most similar to how humans perceive sounds of low to moderate magnitude.

Because of the logarithmic decibel scale, a doubling of the number of noise sources, such as the number of cars operating on a roadway, increases noise levels by 3 dBA. A tenfold increase in the number of noise sources will add 10 dBA. As a result, a noise source emitting a noise level of 60 dBA combined with another noise source of 60 dBA yields a combined noise level of 63 dBA, not 120 dBA. The human ear can barely perceive a 3-dBA increase, while a 5 dBA or 6 dBA increase is readily noticeable and sounds as if the noise is about 1.5 times as loud. A 10-dBA increase appears to be a doubling in noise level to most listeners.

Noise levels from traffic sources depend on volume, speed, and the type of vehicle. Generally, an increase in volume, speed, or vehicle size increases traffic noise levels. Vehicular noise is a combination of noises from the engine, exhaust, and tires. Other conditions affecting traffic noise include defective mufflers, steep grades, terrain, vegetation, distance from the roadway, and shielding by barriers and buildings.

Noise levels decrease with distance from the noise source. For a line source, such as a roadway, noise levels decrease 3 dBA over hard ground (concrete, pavement) or 4.5 dBA over soft ground (grass) for every doubling of distance between the source and the receptor. For a point source, such as construction sources, noise levels will decrease between 6 dBA and 7.5 dBA for every doubling of distance from the source.

The propagation of noise can be greatly affected by terrain and the elevation of the receiver relative to the noise source (Figure A-1). Level ground is the simplest case. Noise travels in a straight line-of-sight path between the source and the receiver. The addition of a berm or other area of high terrain will reduce the noise energy arriving at the receiver. Breaking the line of sight between the receiver and the highest noise source results in a noise reduction of approximately 5 dBA.

If the noise source is depressed or the receiver is elevated, noise generally will travel directly to the receiver. In some situations, noise levels may be reduced because the terrain crests between the source and receiver, resulting in a partial noise barrier near the receiver. If the noise source is elevated or the

receiver is depressed, noise is often reduced at the receiver, because the edge of the roadway can act as a partial noise barrier, blocking some sound transmission between the source and receiver.

Table B-1. Typical Noise Levels

Transportation Sources	Sound Level (dBA)	Other Sources	Description
	130		Painfully loud
Jet takeoff (200 feet)	120		
Car horn (3 feet)	110		Maximum vocal effort
	100	Shout (0.5 feet)	
	95		Very annoying
Heavy truck (50 feet)	90	Jack hammer (50 feet)	Loss of hearing with prolonged exposure
		Home shop tools (3 feet)	
Train on a structure (50 feet)	85	Backhoe (50 feet)	
City bus (50 feet)	80	Bulldozer (50 feet)	Annoying
		Vacuum cleaner (3 feet)	
Train (50 feet)	75	Blender (3 feet)	
City bus at stop (50 feet)			
Freeway traffic (50 feet)	70	Lawn mower (50 feet)	
		Large office	
Train in station (50 feet)	65	Washing machine (3 feet)	Intrusive
	60	TV (10 feet)	
Light traffic (50 feet)	55	Talking (10 feet)	
Light traffic (100 feet)	50		Quiet
	45	Refrigerator (3 feet)	
	40	Library	
	30	Soft whisper (15 feet)	Very quiet

Sources: USDOT (1995); EPA (1971, 1974).

B.1 Noise Level Descriptors

A widely used descriptor for environmental noise is the equivalent sound level (L_{eq}). The L_{eq} can be considered a measure of the average noise energy level during a specified period of time. It is a measure of total noise, or a summation of all sound energy averaged over a time period. L_{eq} is defined as the constant level that, over a given period of time, transmits to the receiver the same amount of acoustical energy as the actual time-varying sound. For example, two sounds, one of which contains twice as much energy but lasts only half as long, have the same L_{eq} noise levels. L_{eq} measured over a 1-hour period is the hourly L_{eq} [$L_{eq(h)}$], which is used for highway noise impact and abatement analyses.

Short-term noise levels, such as those from a single truck pass-by, can be described by either the total noise energy or the highest instantaneous noise level that occurs during the event. The sound exposure level is a measure of total sound energy from an event and is useful in determining what the L_{eq} would be over a period in time when several noise events occur. The maximum sound level (L_{max}) is the greatest short-duration sound level that occurs during a single event. L_{max} is related to impacts on speech interference and sleep disruption. In comparison, L_{min} is the minimum sound level during a period of time.

B.2 Effects of Noise

Environmental noise at high intensities directly affects human health by causing the disease of hearing loss. Although scientific evidence currently is not conclusive, noise is suspected of causing or aggravating

other diseases. Environmental noise indirectly affects human welfare by interfering with sleep, thought, and conversation. The Federal Highway Administration NAC are based on speech interference, which is a well-documented impact that is relatively reproducible in human response studies.

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Attachment C Traffic Data

Traffic data for the No Build Alternative (2045) and Build Alternative (2045) was developed by WSP USA as part of the traffic analysis for the I-205 Toll Project for worst hourly condition (Tables C-1 and C-2). The TNM® model uses five categories of traffic vehicles, namely automobiles, medium trucks, heavy trucks, buses, and motorcycles. Automobiles are defined as vehicles with two axles and four wheels, including pickup trucks, SUVs, and vans. Medium trucks have two axles with six wheels and include most buses. Heavy trucks are defined as vehicles having more than two axles. Current posted speeds will be maintained on I-205 and other roadways included in the TNM modeling for the I-205 Toll Project.

Modeled traffic data provided in Table C-3 was provided by WSP USA to estimate the change in existing to future noise levels with the I-205 Toll Project along roadways outside the noise study area.

Table C-1. Modeled Traffic Volumes – No Build Alternative (2045)

Direction	Roadway Segment	Total PM Peak Truck Hour Volume	Autos	Medium Trucks	Heavy Trucks	Motorcycles	Buses	Speed (mph)
NB	Off-Ramp to Stafford Rd	1250	967	140	130	5	8	45
NB	Between the Stafford Rd Off-Ramp and the Stafford Rd On-Ramp	2540	1955	290	270	10	15	65
NB	On-Ramp from Stafford Rd	550	425	60	60	2	3	65
NB	Between Stafford Rd and 10th St	3090	2379	350	330	12	19	65
NB	Off-Ramp to 10th St	140	108	20	10	1	1	45
NB	Between the 10th St Off-Ramp and the 10th St On-Ramp	2950	2270	340	310	12	18	55
NB	On-Ramp from 10th St	730	563	80	80	3	4	55
NB	Between 10th St and OR-43	3680	2833	420	390	15	22	55
NB	Off-Ramp to OR-43	180	138	20	20	1	1	35
NB	Between the OR-43 Off-Ramp and the OR-43 Loop Ramp	3500	2695	400	370	14	21	55
NB	Loop On-Ramp from OR-43	1240	958	140	130	5	7	25
NB	Between the OR-43 Loop Ramp and the OR-43 On-Ramp	3480	2675	400	370	14	21	55
NB	Between OR-43 and OR-99E	3480	2675	400	370	14	21	55
NB	Off-Ramp to OR-99E	560	435	60	60	2	3	35
NB	Between the OR-99E Off-Ramp and the OR-99E On-Ramp	2920	2250	330	310	12	18	55
NB	On-Ramp from OR-99E	970	750	110	100	4	6	55
NB	Between OR-99E and OR-213	4260	3277	490	450	17	26	55
NB	Off-Ramp to OR-213	970	750	110	100	4	6	35
NB	Between the OR-213 Off-Ramp and the OR-213 On-Ramp	3290	2527	380	350	13	20	55
NB	On-Ramp from OR-213	1540	1185	180	160	6	9	55
SB	Off-Ramp to OR-213	2110	1885	90	120	8	7	25
SB	Between the OR-213 Off-Ramp and the OR-213 On-Ramp	4400	3927	190	250	18	15	55
SB	On-Ramp from OR-213	1440	1289	60	80	6	5	55
SB	Between OR-213 and OR-99E	5840	5207	260	330	23	20	55
SB	Off-Ramp to OR-99E	1840	1647	80	100	7	6	45
SB	Between the OR-99E Off-Ramp and the OR-99E On-Ramp	4000	3560	180	230	16	14	55
SB	On-Ramp from OR-99E	1010	903	40	60	4	3	25
SB	Between OR-99E and OR-43	5010	4463	220	290	20	17	55
SB	Off-Ramp to OR-43	970	872	40	50	4	4	45
SB	Between the OR-43 Off-Ramp and the OR-43 On-Ramp	4040	3625	180	210	15	10	55
SB	On-Ramp from OR-43	340	308	10	20	1	1	55
SB	Between OR-43 and 10th St	4380	3776	310	250	18	26	55
SB	Off-Ramp to 10th St	620	544	40	30	2	4	45
SB	Between the 10th St Off-Ramp and the 10th St On-Ramp	3760	3252	260	210	15	23	55
SB	On-Ramp from 10th St	370	317	30	20	1	2	65
SB	Between 10th St and Stafford Rd	4130	3568	290	230	17	25	65
SB	Off-Ramp to Stafford Rd	680	583	50	40	3	4	45
SB	Between the Stafford Rd Off-Ramp and the Stafford Rd On-Ramp	3450	2985	240	190	14	21	65
SB	On-Ramp from Stafford Rd	310	267	20	20	1	2	65

Table C-2. Modeled Traffic Volumes – Build Alternative (2045)

Direction	Roadway Segment	Total PM Peak Truck Hour Volume	Autos	Medium Trucks	Heavy Trucks	Motorcycles	Buses	Speed (mph)
NB	Off-Ramp to Stafford Rd	1350	917	220	200	8	5	45
NB	Between the Stafford Rd Off-Ramp and the Stafford Rd On-Ramp	4330	3737	250	300	26	17	65
NB	On-Ramp from Stafford Rd	540	455	40	40	3	2	65
NB	Between Stafford Rd and 10th St	4870	4192	290	340	29	19	65
NB	Off-Ramp to 10th St	160	118	20	20	1	1	45
NB	Between the 10th St Off-Ramp and the 10th St On-Ramp	4710	4073	270	320	28	19	55
NB	On-Ramp from 10th St	730	633	40	50	4	3	55
NB	Between 10th St and OR-43	5440	4705	310	370	33	22	55
NB	Off-Ramp to OR-43	130	78	30	20	1	1	35
NB	Between the OR-43 Off-Ramp and the OR-43 Loop Ramp	5310	4627	280	350	32	21	55
NB	Loop On-Ramp from OR-43	890	721	120	40	5	4	25
NB	Between the OR-43 Loop Ramp and the OR-43 On-Ramp	6200	5348	400	390	37	25	55
NB	Between OR-43 and OR-99E	6200	5348	400	390	37	25	55
NB	Off-Ramp to OR-99E	770	673	40	50	4	3	35
NB	Between the OR-99E Off-Ramp and the OR-99E On-Ramp	5430	4769	280	330	29	22	55
NB	On-Ramp from OR-99E	1320	1158	70	80	7	5	55
NB	Between OR-99E and OR-213	5360	4719	270	320	29	22	55
NB	Off-Ramp to OR-213	1320	1158	70	80	7	5	35
NB	Between the OR-213 Off-Ramp and the OR-213 On-Ramp	4040	3552	210	240	22	16	55
NB	On-Ramp from OR-213	1410	1246	70	80	8	6	55
SB	Off-Ramp to OR-213	2080	1855	90	120	7	8	25
SB	Between the OR-213 Off-Ramp and the OR-213 On-Ramp	4320	3848	190	250	15	17	55
SB	On-Ramp from OR-213	1500	1329	70	90	5	6	55
SB	Between OR-213 and OR-99E	5820	5187	260	330	20	23	55
SB	Off-Ramp to OR-99E	2180	1944	100	120	7	9	45
SB	Between the OR-99E Off-Ramp and the OR-99E On-Ramp	3640	3244	160	210	12	14	55
SB	On-Ramp from OR-99E	840	744	40	50	3	3	25
SB	Between OR-99E and OR-43	4480	3987	200	260	15	18	55
SB	Off-Ramp to OR-43	810	714	40	50	3	3	45
SB	Between the OR-43 Off-Ramp and the OR-43 On-Ramp	3670	3272	160	210	13	15	55
SB	On-Ramp from OR-43	80	71	4	5	0	0	55
SB	Between OR-43 and 10th St	3750	3422	150	140	23	15	55
SB	Off-Ramp to 10th St	1090	1000	40	40	6	4	45
SB	Between the 10th St Off-Ramp and the 10th St On-Ramp	2660	2423	110	100	16	11	55
SB	On-Ramp from 10th St	300	187	60	50	2	1	65
SB	Between 10th St and Stafford Rd	2960	2610	170	150	18	12	65
SB	Off-Ramp to Stafford Rd	480	445	10	20	3	2	45
SB	Between the Stafford Rd Off-Ramp and the Stafford Rd On-Ramp	2480	2165	160	130	15	10	65
SB	On-Ramp from Stafford Rd	760	662	50	40	5	3	65

Table C-3. Modeled Traffic Volumes, Existing (2020), No Build Alternative (2045) and Build Alternative 3 (2045) Outside the Noise Study Area for the I-205 Toll Project

Roadway Name	Existing AM Peak Hour Volume NB / EB (2020)	Existing AM Peak Hour Volume SB / WB (2020)	Existing PM Peak Hour Volume NB / EB (2020)	Existing PM Peak Hour Volume SB / WB (2020)	Future No Build AM Peak Hour Volume NB / EB (2045)	Future No Build AM Peak Hour Volume SB / WB (2045)	Future No Build PM Peak Hour Volume NB / EB (2045)	Future No Build PM Peak Hour Volume SB / WB (2045)	Future Build AM Peak Hour Volume NB / EB (2045)	Future Build AM Peak Hour Volume SB / WB (2045)	Future Build PM Peak Hour Volume NB / EB (2045)	Future Build PM Peak Hour Volume SB / WB (2045)
SW Stafford Road (Rosemont)												
N/of Borland Rd	575	600	740	700	790	845	830	855	625	975	880	1380
S/of Borland Rd	670	535	725	610	960	710	765	700	665	995	925	1365
Between I-205 ramps	510	490	575	740	800	660	580	855	745	530	1000	1180
S/of I-205 ramp	490	420	405	1175	995	550	410	1290	730	405	725	1610
N/of Mountain Rd	390	440	390	1080	930	540	400	1210	680	400	-	-
SW Borland Road												
W/of Stafford Rd	305	525	605	485	390	740	620	620	340	755	460	525
E/of Stafford Rd	140	200	350	155	195	240	380	290	205	600	430	505
N/of EK Rd	110	200	310	150	190	220	360	270	210	590	-	-
N/of Tualatin River Br	420	205	150	650	190	230	360	270	210	590	-	-
Willamette Falls Drive												
E/of 19th St	130	160	560	220	130	160	560	220	130	160	0	225
W/of 10th St	340	380	840	360	530	415	840	440	405	705	1010	805
W/of OR 43	350	440	690	435	570	495	690	585	185	490	590	600
OR 43 (Willamette Drive) Pacific Hwy												
S/of Hidden Springs Rd	850	540	700	1030	950	720	965	1055	1005	710	1070	970
N/of McKillican St	840	600	715	805	1280	600	865	805	1280	765	910	575
N/of I-205 SB ramps	940	690	795	1175	1405	705	985	1205	1380	1025	1080	945
N/of I-205 NB ramps	840	520	760	725	965	635	910	800	950	1150	905	785
S/of Willamette Falls Dr	820	410	695	915	830	575	975	970	780	675	1040	910
Arch Bridge												
Bridge	820	410	695	915	830	575	975	970	780	675	1040	910
OR 99E Marion												
S/of Jennings Ave	1010	730	1250	1550	1065	1120	1495	2155	1020	1085	1470	2065
N/of Gloucester St	1100	770	1230	1400	1195	1095	1325	2015	1175	1120	1280	1990
N/of Arlington St	1085	800	1170	1650	1275	1235	1330	2215	1220	1185	1275	2215
N/of Dunes Dr	1380	1240	1670	2210	-	-	-	-	1810	1700	-	-
N/of I-205 SB ramps	1370	1070	1600	2040	1495	1800	2005	2810	1435	1730	1945	2635
Between I-205 ramps	1250	1030	1470	2520	1410	1520	1840	3410	1380	1545	1650	3570
S/of I-205 NB ramps	1650	920	1810	2340	1755	1300	2460	3110	1965	1350	2315	3285
S/of 14th St	950	690	1130	1810	990	980	1450	2390	1110	1040	-	-
S/of 10th St	890	530	940	1490	890	560	1180	1955	985	505	1090	2265
S/of Main St	930	500	1270	2320	1090	910	1530	3010	1110	710	-	-
S/of South End Rd	850	550	1450	1920	1210	870	1900	2950	1260	690	-	-
N/of N Redmond St	500	310	860	1170	780	460	1150	1810	840	390	-	-
OR 99E Haines												
N/of S Ivy St	400	270	790	1050	540	420	1100	1590	620	370	-	-
N/of Lone Elder Rd	150	130	420	530	270	240	750	1010	400	240	-	-
OR 213												
Between I-205 ramps	1000	1470	1080	1960	1105	1490	1350	1965	1180	1700	1435	1940
S/of I-205 NB ramps	2660	2090	2690	3020	2805	2415	3180	3115	2850	2460	3095	3495
S/of Washington St/Clackamas River Dr	2250	1710	2350	2360	2405	2210	2695	2445	2345	2130	2520	2665
I-5												
N/of I-205 ramps	5770	5140	6100	6130	6400	6040	6830	6750	6310	5820	-	-
Between I-205 ramps	3870	3240	4580	4610	3980	3690	4550	4530	4070	3780	-	-
S/of I-205 ramps	5220	4590	5920	5950	5000	5170	6050	6040	4870	5040	-	-

Note: "-" denotes no value developed in traffic analysis.

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Attachment D TNM 2.5 Output Files

TNM® models included electronically. Modeling files developed for the I-205 Toll Project in 2045 and included in this report are as follows:

Table D-1. Model Run Identification – Build Alternative

Noise Model ID	Model Description
Existing_Apt_v2	Existing Conditions for additional receivers added for the Edgewater at the Cove Apartment
No_Build_West	No Build Western Portion
No_Build_East	No Build Eastern Portion
No_Build_East_New_ ST9-12	No Build Eastern Portion – Run for ST9 to ST12, were not active on other models. Ran separately due to time constraint.
No_Build_East_Invalids	No Build Eastern Portion - corrections for invalid receptors
NoBuild_Ph1A_E1_D	No Build with updated design for Phase 1A (area West of Willamette River)
NoBuild_Ph1A_E1_D_ Invalids	No Build with updated design for Phase 1A (area West of Willamette River) – Corrections for invalid receptors
NoBuild_Ph1A_E2_D	No Build with updated design for Phase 1A (area East of Willamette River)
No_Build_Wall_E_ UpdatedRecs	No Build with 15 receptors with updated XYZ coordinates to match Build receivers (Only for Active Receptors in file, R704-R707, R709, R747-R750, R752, R789-R792, R794)
Build_West _AM	Build Alternative (2045) AM peak hour noise levels, Western Portion.
Build West_AM_Truck	Build Alternative (2045) AM Truck peak hour noise levels, Western Portion.
Build_West_PM	Build Alternative (2045) PM peak hour noise levels, Western Portion.
Build_West_PM_Truck	Build Alternative (2045) PM Truck peak hour noise levels, Western Portion.
Build_East_AM	Build Alternative (2045) AM peak hour noise levels, Eastern Portion.
Build_East_AM_R574	Build Alternative (2045) AM peak hour noise levels, Eastern Portion. For Site R574 only.
Build_East_AM_Truck	Build Alternative (2045) AM Truck peak hour noise levels, Eastern Portion.
Build_East_AM_Truck_ R574	Build Alternative (2045) AM Truck peak hour noise levels, Eastern Portion. For Site R574 only.
Build_East_PM	Build Alternative (2045) PM peak hour noise levels, Eastern Portion.
Build_East_PM_R574	Build Alternative (2045) PM peak hour noise levels, Eastern Portion. For Site R574 only.
Build_East_PMTr_Area1	Build Alternative (2045) PM Truck peak hour noise levels, From End of West Models south to West A Street.
Build_East_PMTr_Area2	Build Alternative (2045) PM Truck peak hour noise levels, Eastern Portion. From West A Street to Southern Terminus
Build_East Apartment_Wall_E	Build Alternative with the addition of Wall E for the Edgewater at the Cove Apartment Complex. Only for receptors at this location.
Eval_Barrier_Sept2022	Barrier analysis files Walls 1 to 12.

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Attachment E Noise Modeling Results Comparing Peak Hour to Peak Truck Hour Traffic

Attachment E contains a comparison of noise modeling results using traffic data for peak hour and peak truck hour. As provided in Table E-1, traffic volumes for peak truck hour resulted in the same or higher noise modeling results than peak hour; therefore, peak truck hour traffic volumes were used to model Build Alternative (2045) for the I-205 Toll Project. Traffic for all four peak hours modeled without mitigation were included in the prior noise analysis to identify the condition resulting in the highest noise modeling results.

Table E-1. Comparison of Modeled Noise Levels – Peak Hour (AM and PM) and Peak Truck Hour (AM and PM) – Build Alternative 3

Receiver	NAAC	Dwelling Units	Build AM Peak Hour Noise Level dBA Leq(h) 2045	Build AM Peak Truck Hour Noise Level dBA Leq(h) 2045	Build PM Peak Hour Noise Level dBA Leq(h) 2045	Build PM Peak Truck Hour Noise Level dBA Leq(h) 2045
LT-1/ST-1	C (65)	1	69	69	69	70
ST-2	B (65)	1	66	65	65	66
ST-3	B (65)	1	69	69	69	69
ST-4	B (65)	1	69	69	68	69
ST-5a	B (65)	1	72	73	73	73
ST-5b	B (65)	1	66	66	67	67
ST-6	C (65)	1	61	61	61	62
ST-7	B (65)	1	65	65	63	65
ST-8	B (65)	1	64	64	63	65
ST-9	B (65)	1	60	61	60	61
LT-2/ST-10	B (65)	1	64	64	64	65
ST-11	B (65)	1	59	59	60	61
ST-12	B (65)	1	60	63	59	62
ST-13	C (65)	1	65	66	64	66
R1	B (65)	1	70	70	69	71
R2	B (65)	1	65	65	65	66
R3	B (65)	2	64	65	65	66
R4	B (65)	1	60	61	61	62
R5	B (65)	1	69	70	70	70
R6	B (65)	1	65	66	66	66
R7	B (65)	1	66	66	66	67
R8	B (65)	1	57	57	56	58
R9	B (65)	1	60	60	60	61

Receiver	NAAC	Dwelling Units	Build AM Peak Hour Noise Level dBA Leq(h) 2045	Build AM Peak Truck Hour Noise Level dBA Leq(h) 2045	Build PM Peak Hour Noise Level dBA Leq(h) 2045	Build PM Peak Truck Hour Noise Level dBA Leq(h) 2045
R10	B (65)	1	60	60	60	61
R11	B (65)	1	61	61	61	62
R12	B (65)	1	72	72	72	73
R13	B (65)	1	67	67	68	68
R14	B (65)	1	67	67	66	67
R15	B (65)	1	71	71	72	72
R16	B (65)	1	69	69	68	70
R17	B (65)	1	55	55	55	56
R18	B (65)	1	59	60	60	60
R19	B (65)	1	64	64	64	64
R20	B (65)	1	66	66	66	66
R21	B (65)	1	71	71	72	72
R22	B (65)	1	73	73	73	74
R23	B (65)	1	72	72	73	73
R24	B (65)	1	73	73	74	74
R25	B (65)	1	73	74	74	74
R26	B (65)	1	73	74	74	74
R27	B (65)	1	73	73	74	74
R28	B (65)	1	72	73	73	73
R29	B (65)	1	74	74	74	74
R30	B (65)	1	73	73	73	73
R31	B (65)	1	73	73	74	74
R32	B (65)	1	72	73	73	73
R33	B (65)	1	73	74	74	74
R34	B (65)	1	68	68	68	69
R35	B (65)	1	67	68	68	68
R36	B (65)	1	66	66	66	67
R37	B (65)	1	66	66	66	66
R38	B (65)	1	67	67	67	67
R39	B (65)	1	66	67	67	67
R40	B (65)	1	66	66	66	67
R41	B (65)	1	65	65	65	65
R42	B (65)	1	63	63	63	63
R43	B (65)	1	63	63	64	64

Receiver	NAAC	Dwelling Units	Build AM Peak Hour Noise Level dBA Leq(h) 2045	Build AM Peak Truck Hour Noise Level dBA Leq(h) 2045	Build PM Peak Hour Noise Level dBA Leq(h) 2045	Build PM Peak Truck Hour Noise Level dBA Leq(h) 2045
R44	B (65)	1	64	64	64	64
R45	B (65)	1	63	63	63	64
R46	B (65)	1	63	63	63	64
R47	B (65)	1	64	64	64	64
R48	B (65)	1	64	64	63	65
R49	B (65)	1	66	66	65	66
R50	B (65)	1	74	74	74	75
R51	B (65)	1	70	70	69	71
R52	B (65)	1	69	69	68	70
R53	B (65)	1	67	66	66	67
R54	B (65)	1	64	63	62	64
R55	B (65)	1	67	67	66	67
R56	B (65)	1	67	66	66	67
R57	B (65)	1	67	67	67	68
R58	B (65)	1	67	67	66	68
R59	B (65)	1	65	65	64	66
R60	B (65)	1	66	66	65	67
R61	B (65)	1	64	64	64	65
R62	B (65)	1	67	66	65	67
R63	B (65)	1	71	71	71	71
R64	B (65)	1	72	72	73	73
R65	B (65)	1	73	73	74	73
R66	B (65)	1	70	70	71	71
R67	B (65)	1	67	67	67	68
R68	B (65)	1	66	66	67	67
R69	B (65)	1	64	64	63	65
R70	B (65)	1	65	65	64	65
R71	B (65)	1	67	66	66	67
R72	B (65)	1	65	65	64	66
R73	B (65)	1	67	67	66	67
R74	B (65)	1	66	65	65	66
R75	B (65)	1	67	67	66	68
R76	D (50)	71	43	44	44	44
R77	C (65)	1	64	*64*	*65*	65

Receiver	NAAC	Dwelling Units	Build AM Peak Hour Noise Level dBA Leq(h) 2045	Build AM Peak Truck Hour Noise Level dBA Leq(h) 2045	Build PM Peak Hour Noise Level dBA Leq(h) 2045	Build PM Peak Truck Hour Noise Level dBA Leq(h) 2045
R78	B (65)	1	65	65	65	66
R79	B (65)	1	64	65	65	65
R80	B (65)	1	69	69	70	70
R81	B (65)	1	68	68	69	69
R82	B (65)	1	59	59	59	60
R83	B (65)	1	58	58	59	59
R84	B (65)	1	61	61	62	62
R85	B (65)	1	60	61	61	61
R86	B (65)	1	51	51	52	52
R87	B (65)	1	53	53	53	54
R88	B (65)	1	54	54	54	55
R89	B (65)	1	56	56	56	57
R90	B (65)	1	53	54	53	54
R91	B (65)	1	53	53	53	54
R92	B (65)	1	55	56	56	56
R93	B (65)	1	55	55	55	56
R94	B (65)	1	61	61	62	62
R95	B (65)	1	61	61	62	62
R96	B (65)	1	64	64	64	65
R97	B (65)	1	64	64	65	65
R98	B (65)	1	65	65	66	66
R99	B (65)	1	65	65	66	66
R100	B (65)	1	68	68	69	69
R101	B (65)	1	68	68	69	69
R102	B (65)	1	59	59	59	60
R103	B (65)	1	59	59	59	60
R104	B (65)	1	62	62	63	63
R105	B (65)	1	62	63	63	63
R106	B (65)	1	48	48	48	49
R107	B (65)	1	48	48	47	48
R108	B (65)	1	51	51	50	51
R109	B (65)	1	50	50	50	51
R110	B (65)	1	53	54	54	54
R111	B (65)	1	50	50	50	50

Receiver	NAAC	Dwelling Units	Build AM Peak Hour Noise Level dBA Leq(h) 2045	Build AM Peak Truck Hour Noise Level dBA Leq(h) 2045	Build PM Peak Hour Noise Level dBA Leq(h) 2045	Build PM Peak Truck Hour Noise Level dBA Leq(h) 2045
R112	B (65)	1	55	56	56	56
R113	B (65)	1	52	52	52	52
R114	B (65)	1	65	65	65	66
R115	B (65)	1	66	66	66	67
R116	B (65)	1	67	67	66	68
R117	B (65)	1	69	69	68	69
R118	B (65)	1	70	70	70	71
R119	B (65)	1	70	70	70	71
R120	B (65)	1	69	69	69	70
R121	B (65)	1	67	67	66	67
R122	B (65)	1	68	68	67	69
R123	B (65)	1	66	66	66	67
R124	B (65)	1	66	66	65	66
R125	B (65)	1	64	64	63	65
R126	B (65)	1	68	67	67	68
R127	B (65)	1	66	66	65	67
R128	B (65)	1	68	68	67	68
R129	B (65)	1	66	66	65	66
R130	B (65)	1	65	65	65	66
R131	B (65)	1	65	65	65	66
R132	B (65)	1	61	61	61	62
R133	B (65)	1	67	66	66	67
R134	B (65)	1	67	67	67	68
R135	B (65)	1	67	67	66	68
R136	B (65)	1	68	68	68	69
R137	B (65)	1	69	69	69	70
R138	B (65)	1	68	68	67	68
R139	B (65)	1	67	67	67	68
R140	B (65)	1	68	68	68	69
R141	B (65)	1	69	68	67	69
R142	B (65)	1	68	68	67	69
R143	B (65)	1	69	69	68	70
R144	B (65)	1	69	69	69	70
R145	B (65)	1	68	68	67	69

Receiver	NAAC	Dwelling Units	Build AM Peak Hour Noise Level dBA Leq(h) 2045	Build AM Peak Truck Hour Noise Level dBA Leq(h) 2045	Build PM Peak Hour Noise Level dBA Leq(h) 2045	Build PM Peak Truck Hour Noise Level dBA Leq(h) 2045
R146	B (65)	1	68	68	68	69
R147	B (65)	1	68	68	67	69
R148	B (65)	1	68	68	67	69
R149	B (65)	1	67	67	66	68
R150	B (65)	1	66	66	65	66
R151	B (65)	1	63	63	63	64
R152	B (65)	1	64	64	64	65
R153	B (65)	1	64	64	64	65
R154	B (65)	1	64	63	63	64
R155	B (65)	1	65	65	64	66
R156	B (65)	1	66	66	65	67
R157	B (65)	1	64	64	63	65
R158	B (65)	1	63	63	62	64
R159	B (65)	1	60	60	59	61
R160	B (65)	1	64	64	62	64
R161	B (65)	1	62	62	61	63
R162	B (65)	1	61	61	61	62
R163	B (65)	1	61	61	61	62
R164	B (65)	1	61	61	60	62
R165	B (65)	1	63	63	62	63
R166	B (65)	1	62	62	62	63
R167	B (65)	1	62	62	62	63
R168	B (65)	1	65	66	66	66
R169	B (65)	1	65	65	65	66
R170	B (65)	1	58	59	59	60
R171	B (65)	1	65	65	65	66
R172	B (65)	1	70	70	71	71
R173	B (65)	1	58	59	59	59
R174	B (65)	1	64	65	65	65
R175	B (65)	1	69	69	70	70
R176	B (65)	1	58	59	59	59
R177	B (65)	1	65	66	66	66
R178	B (65)	1	70	70	70	70
R179	B (65)	1	58	59	59	59

Receiver	NAAC	Dwelling Units	Build AM Peak Hour Noise Level dBA Leq(h) 2045	Build AM Peak Truck Hour Noise Level dBA Leq(h) 2045	Build PM Peak Hour Noise Level dBA Leq(h) 2045	Build PM Peak Truck Hour Noise Level dBA Leq(h) 2045
R180	B (65)	1	65	66	66	66
R181	B (65)	1	69	69	70	70
R182	B (65)	1	56	57	57	58
R183	B (65)	1	64	64	65	65
R184	B (65)	1	57	58	58	58
R185	B (65)	1	65	66	66	66
R186	B (65)	1	60	61	61	61
R187	B (65)	1	66	66	67	67
R188	B (65)	1	60	61	61	61
R189	B (65)	1	66	66	67	67
R190	B (65)	1	60	61	61	61
R191	B (65)	1	66	67	67	67
R192	B (65)	1	60	61	61	61
R193	B (65)	1	66	66	67	67
R194	B (65)	1	60	61	61	61
R195	B (65)	1	65	66	66	66
R196	B (65)	1	60	61	61	61
R197	B (65)	1	65	65	66	66
R198	B (65)	1	60	60	60	61
R199	B (65)	1	64	64	65	65
R200	B (65)	1	59	60	60	60
R201	B (65)	1	63	64	64	64
R202	B (65)	1	60	60	60	60
R203	B (65)	1	64	64	64	64
R204	B (65)	1	58	58	58	59
R205	B (65)	1	62	62	63	63
R206	B (65)	1	59	60	59	60
R207	B (65)	1	63	63	64	64
R208	B (65)	1	59	59	59	60
R209	B (65)	1	63	63	64	64
R210	B (65)	1	66	66	66	66
R211	B (65)	1	66	66	66	66
R212	B (65)	1	59	59	60	60
R213	B (65)	1	63	63	64	64

Receiver	NAAC	Dwelling Units	Build AM Peak Hour Noise Level dBA Leq(h) 2045	Build AM Peak Truck Hour Noise Level dBA Leq(h) 2045	Build PM Peak Hour Noise Level dBA Leq(h) 2045	Build PM Peak Truck Hour Noise Level dBA Leq(h) 2045
R214	B (65)	1	59	59	59	60
R215	B (65)	1	63	63	64	64
R216	B (65)	1	65	65	65	66
R217	B (65)	1	65	65	65	66
R218	B (65)	1	59	59	59	60
R219	B (65)	1	63	63	63	64
R220	B (65)	1	59	59	59	60
R221	B (65)	1	63	63	63	64
R222	B (65)	1	65	65	65	65
R223	B (65)	1	65	65	65	65
R224	B (65)	1	58	58	58	59
R225	B (65)	1	63	64	64	64
R226	B (65)	1	70	70	71	71
R227	B (65)	1	58	59	59	59
R228	B (65)	1	63	63	63	64
R229	B (65)	1	69	69	70	70
R230	B (65)	1	58	58	58	59
R231	B (65)	1	64	65	65	65
R232	B (65)	1	70	70	71	71
R233	B (65)	1	58	59	59	59
R234	B (65)	1	64	64	64	65
R235	B (65)	1	69	69	70	70
R236	B (65)	1	57	58	58	58
R237	B (65)	1	61	62	62	62
R238	B (65)	1	57	57	57	58
R239	B (65)	1	61	61	61	62
R240	B (65)	1	57	57	57	58
R241	B (65)	1	62	63	63	63
R242	B (65)	1	56	57	57	58
R243	B (65)	1	62	62	62	63
R244	B (65)	1	61	61	61	62
R245	B (65)	1	61	62	62	63
R246	B (65)	1	61	62	62	62
R247	B (65)	1	61	62	61	62

Receiver	NAAC	Dwelling Units	Build AM Peak Hour Noise Level dBA Leq(h) 2045	Build AM Peak Truck Hour Noise Level dBA Leq(h) 2045	Build PM Peak Hour Noise Level dBA Leq(h) 2045	Build PM Peak Truck Hour Noise Level dBA Leq(h) 2045
R248	B (65)	1	60	61	61	62
R249	B (65)	1	60	61	60	61
R250	B (65)	1	59	59	59	60
R251	B (65)	1	58	59	58	59
R252	B (65)	1	59	59	59	59
R253	B (65)	1	58	58	58	59
R254	B (65)	1	58	58	58	58
R255	B (65)	1	58	58	58	58
R256	B (65)	1	64	64	65	65
R257	B (65)	1	63	63	64	64
R258	B (65)	1	62	62	62	63
R259	B (65)	1	61	61	62	62
R260	B (65)	1	60	60	60	61
R261	B (65)	1	59	59	59	60
R262	B (65)	1	59	59	59	60
R263	B (65)	1	58	58	58	59
R264	B (65)	1	60	60	60	61
R265	B (65)	1	60	60	60	61
R266	B (65)	1	57	57	57	58
R267	B (65)	1	58	58	58	59
R268	B (65)	1	60	61	61	61
R269	B (65)	1	61	62	62	62
R270	B (65)	1	61	62	62	62
R271	B (65)	1	63	64	64	64
R272	B (65)	1	65	65	65	66
R273	B (65)	1	67	67	68	68
R274	B (65)	1	63	63	63	64
R275	B (65)	1	64	64	63	65
R276	B (65)	1	63	64	63	65
R277	B (65)	1	64	64	63	65
R278	B (65)	1	64	64	63	65
R279	B (65)	1	64	64	64	65
R280	B (65)	1	63	64	63	64
R281	B (65)	1	64	65	64	66

Receiver	NAAC	Dwelling Units	Build AM Peak Hour Noise Level dBA Leq(h) 2045	Build AM Peak Truck Hour Noise Level dBA Leq(h) 2045	Build PM Peak Hour Noise Level dBA Leq(h) 2045	Build PM Peak Truck Hour Noise Level dBA Leq(h) 2045
R282	B (65)	1	65	65	64	66
R283	B (65)	1	65	65	65	66
R284	B (65)	1	65	65	65	66
R285	B (65)	1	65	65	65	66
R286	B (65)	1	62	63	62	64
R287	B (65)	1	63	63	62	64
R288	B (65)	1	63	63	62	64
R289	B (65)	1	63	63	62	64
R290	B (65)	1	63	63	63	64
R291	B (65)	1	64	64	63	65
R292	B (65)	1	62	62	61	63
R293	B (65)	1	63	63	62	64
R294	B (65)	1	62	62	61	64
R295	B (65)	1	64	64	64	65
R296	B (65)	1	65	65	65	66
R297	B (65)	1	67	67	67	68
R298	B (65)	1	69	70	69	70
R299	B (65)	1	69	70	70	70
R300	B (65)	1	69	69	69	70
R301	B (65)	1	67	68	67	68
R302	B (65)	1	68	69	68	69
R303	B (65)	1	67	67	67	68
R304	B (65)	1	67	68	67	68
R305	B (65)	1	66	67	66	67
R306	B (65)	1	63	63	62	63
R307	B (65)	1	61	62	61	62
R308	B (65)	1	61	62	61	62
R309	B (65)	1	62	62	62	63
R310	B (65)	1	63	63	63	64
R311	B (65)	1	63	63	63	64
R312	B (65)	1	63	63	63	64
R313	B (65)	1	62	63	62	63
R314	B (65)	1	62	62	61	63
R315	B (65)	1	62	63	62	63

Receiver	NAAC	Dwelling Units	Build AM Peak Hour Noise Level dBA Leq(h) 2045	Build AM Peak Truck Hour Noise Level dBA Leq(h) 2045	Build PM Peak Hour Noise Level dBA Leq(h) 2045	Build PM Peak Truck Hour Noise Level dBA Leq(h) 2045
R316	B (65)	1	62	63	62	63
R317	B (65)	1	62	63	62	63
R318	B (65)	1	62	63	62	63
R319	B (65)	1	62	63	62	63
R320	B (65)	1	62	63	62	63
R321	B (65)	1	62	63	62	64
R322	B (65)	1	63	63	63	64
R323	B (65)	1	66	66	66	67
R324	B (65)	1	66	66	66	67
R325	B (65)	1	66	66	65	67
R326	B (65)	1	66	66	66	67
R327	B (65)	1	66	66	66	67
R328	B (65)	1	66	66	66	67
R329	B (65)	1	66	67	66	68
R330	B (65)	1	67	67	66	68
R331	B (65)	1	63	64	63	64
R332	B (65)	1	63	63	62	64
R333	B (65)	1	64	64	64	65
R334	B (65)	1	62	63	62	63
R335	B (65)	1	61	61	61	62
R336	B (65)	1	63	63	63	64
R337	B (65)	1	67	67	66	68
R338	B (65)	1	66	67	66	68
R339	B (65)	1	66	66	66	67
R340	B (65)	1	66	66	66	67
R341	B (65)	1	65	65	65	66
R342	B (65)	1	65	65	65	66
R343	B (65)	1	67	67	67	68
R344	B (65)	1	69	69	68	70
R345	B (65)	1	66	66	66	67
R346	B (65)	1	67	67	66	68
R347	B (65)	1	68	68	68	69
R348	B (65)	1	67	67	66	68
R349	B (65)	1	69	69	68	70

Receiver	NAAC	Dwelling Units	Build AM Peak Hour Noise Level dBA Leq(h) 2045	Build AM Peak Truck Hour Noise Level dBA Leq(h) 2045	Build PM Peak Hour Noise Level dBA Leq(h) 2045	Build PM Peak Truck Hour Noise Level dBA Leq(h) 2045
R350	B (65)	1	69	69	69	70
R351	B (65)	1	69	69	69	70
R352	B (65)	1	69	69	69	70
R353	B (65)	1	63	63	62	64
R354	B (65)	1	57	57	56	58
R355	B (65)	1	60	60	60	61
R356	B (65)	1	59	60	59	60
R357	B (65)	1	56	56	55	57
R358	B (65)	1	58	58	58	59
R359	B (65)	1	58	59	58	60
R360	B (65)	1	68	68	68	69
R361	B (65)	1	67	67	67	69
R362	B (65)	1	67	67	67	68
R363	B (65)	1	67	67	67	68
R364	B (65)	1	67	67	67	68
R365	B (65)	1	57	57	56	58
R366	B (65)	1	56	56	55	57
R367	B (65)	1	55	56	55	56
R368	B (65)	1	51	51	51	52
R369	B (65)	1	51	51	51	52
R370	B (65)	1	52	52	51	53
R371	B (65)	1	67	67	67	68
R372	B (65)	1	67	67	67	68
R373	B (65)	1	71	71	71	72
R374	B (65)	1	71	71	71	72
R375	B (65)	1	71	71	71	72
R376	B (65)	1	71	71	71	72
R377	B (65)	1	70	71	70	71
R378	B (65)	1	71	72	71	72
R379	B (65)	1	70	70	70	71
R380	B (65)	1	71	71	71	72
R381	B (65)	1	69	69	69	70
R382	B (65)	1	68	68	68	69
R383	B (65)	1	66	66	66	67

Receiver	NAAC	Dwelling Units	Build AM Peak Hour Noise Level dBA Leq(h) 2045	Build AM Peak Truck Hour Noise Level dBA Leq(h) 2045	Build PM Peak Hour Noise Level dBA Leq(h) 2045	Build PM Peak Truck Hour Noise Level dBA Leq(h) 2045
R384	B (65)	1	65	65	64	66
R385	B (65)	1	65	65	65	66
R386	B (65)	1	67	67	67	68
R387	B (65)	1	61	61	61	62
R388	B (65)	1	63	63	62	64
R389	B (65)	1	63	63	63	64
R390	B (65)	1	60	60	60	61
R391	B (65)	1	59	59	59	60
R392	B (65)	1	63	63	62	64
R393	B (65)	1	63	64	63	64
R394	B (65)	1	62	62	62	63
R395	B (65)	1	64	64	63	65
R396	B (65)	1	62	62	62	63
R397	B (65)	1	62	62	62	63
R398	B (65)	1	63	63	63	64
R399	B (65)	1	63	63	63	64
R400	B (65)	1	59	60	59	61
R401	B (65)	1	59	59	59	60
R402	B (65)	1	58	58	58	59
R403	B (65)	1	59	59	59	60
R404	B (65)	1	68	68	67	69
R405	B (65)	1	72	72	72	73
R406	B (65)	1	53	53	52	52
R407	B (65)	1	53	53	53	53
R408	B (65)	1	53	53	53	53
R409	B (65)	1	54	54	54	54
R410	B (65)	1	55	55	55	56
R411	B (65)	1	55	56	55	56
R412	B (65)	1	56	56	56	56
R413	B (65)	1	56	57	56	57
R414	B (65)	1	56	56	55	56
R415	B (65)	1	56	56	56	57
R416	B (65)	1	60	60	60	61
R417	B (65)	1	55	55	55	55

Receiver	NAAC	Dwelling Units	Build AM Peak Hour Noise Level dBA Leq(h) 2045	Build AM Peak Truck Hour Noise Level dBA Leq(h) 2045	Build PM Peak Hour Noise Level dBA Leq(h) 2045	Build PM Peak Truck Hour Noise Level dBA Leq(h) 2045
R418	B (65)	1	55	55	54	55
R419	B (65)	1	55	55	54	54
R420	B (65)	1	55	56	55	56
R421	B (65)	1	58	58	57	58
R422	B (65)	1	63	63	62	64
R423	B (65)	1	63	63	63	64
R424	B (65)	1	61	61	61	62
R425	B (65)	1	61	61	61	62
R426	B (65)	1	64	64	64	65
R427	B (65)	1	65	65	65	66
R428	B (65)	1	60	61	60	62
R429	B (65)	1	65	65	65	66
R430	B (65)	1	58	59	58	59
R431	B (65)	1	59	59	58	60
R432	B (65)	1	64	64	64	65
R433	B (65)	1	63	63	62	64
R434	B (65)	1	56	56	56	57
R435	B (65)	1	54	54	53	53
R436	B (65)	1	62	62	62	63
R437	B (65)	1	54	54	54	53
R438	B (65)	1	54	54	54	53
R439	B (65)	1	54	55	54	53
R440	B (65)	1	70	70	70	71
R441	B (65)	1	62	62	61	63
R442	B (65)	1	70	70	70	71
R443	B (65)	1	71	71	71	72
R444	B (65)	1	71	71	71	72
R445	B (65)	1	71	71	71	72
R446	B (65)	1	72	72	72	73
R447	B (65)	1	72	73	72	73
R448	B (65)	1	73	73	73	73
R449	B (65)	1	73	73	73	74
R450	B (65)	1	63	63	63	64
R451	B (65)	1	64	65	64	65

Receiver	NAAC	Dwelling Units	Build AM Peak Hour Noise Level dBA Leq(h) 2045	Build AM Peak Truck Hour Noise Level dBA Leq(h) 2045	Build PM Peak Hour Noise Level dBA Leq(h) 2045	Build PM Peak Truck Hour Noise Level dBA Leq(h) 2045
R452	B (65)	1	69	69	69	70
R453	B (65)	1	71	71	71	72
R454	B (65)	1	60	60	59	60
R455	B (65)	1	60	60	59	60
R456	B (65)	1	60	60	60	60
R457	B (65)	1	63	63	62	63
R458	B (65)	1	62	63	62	63
R459	B (65)	1	63	63	62	63
R460	B (65)	1	57	57	59	59
R461	B (65)	1	59	59	60	61
R462	B (65)	1	58	58	59	59
R463	B (65)	1	58	58	59	59
R464	B (65)	1	59	59	60	60
R465	B (65)	1	59	60	60	61
R466	C (65)	1	68	68	69	69
R467	B (65)	1	69	70	69	71
R468	B (65)	1	71	71	70	72
R469	B (65)	1	68	68	68	69
R470	B (65)	1	69	69	69	70
R471	B (65)	1	70	70	69	71
R472	B (65)	1	67	67	67	68
R473	B (65)	1	68	69	68	69
R474	B (65)	1	69	69	69	70
R475	B (65)	1	68	68	66	68
R476	B (65)	1	69	69	68	69
R477	B (65)	1	69	69	67	69
R478	B (65)	1	66	66	65	66
R479	B (65)	1	67	67	66	67
R480	B (65)	1	67	67	66	67
R481	B (65)	1	65	65	65	66
R482	B (65)	1	66	66	66	67
R483	B (65)	1	67	67	66	67
R484	B (65)	1	59	59	59	60
R485	B (65)	1	58	58	58	59

Receiver	NAAC	Dwelling Units	Build AM Peak Hour Noise Level dBA Leq(h) 2045	Build AM Peak Truck Hour Noise Level dBA Leq(h) 2045	Build PM Peak Hour Noise Level dBA Leq(h) 2045	Build PM Peak Truck Hour Noise Level dBA Leq(h) 2045
R486	B (65)	1	57	57	57	58
R487	B (65)	1	56	56	56	57
R488	B (65)	1	55	56	56	56
R489	B (65)	1	73	73	73	74
R490	B (65)	1	73	73	73	73
R491	B (65)	1	70	70	70	70
R492	B (65)	1	68	68	68	68
R493	B (65)	1	65	65	65	64
R494	B (65)	1	64	64	64	63
R495	B (65)	1	63	63	62	62
R496	B (65)	1	69	70	69	66
R497	B (65)	1	68	68	68	66
R498	B (65)	1	65	65	65	63
R499	B (65)	1	63	64	63	62
R500	B (65)	1	62	62	62	61
R501	B (65)	1	71	71	71	72
R502	B (65)	1	70	71	70	71
R503	B (65)	1	70	71	70	71
R504	B (65)	1	71	71	71	72
R505	B (65)	1	71	71	71	72
R506	B (65)	1	71	71	71	72
R507	B (65)	1	64	65	64	65
R508	B (65)	1	62	62	62	63
R509	B (65)	1	63	64	63	64
R510	B (65)	1	64	64	64	65
R511	B (65)	1	63	64	63	64
R512	B (65)	1	63	63	63	63
R513	B (65)	1	62	63	62	63
R514	B (65)	1	61	61	61	62
R515	B (65)	1	59	59	59	60
R516	B (65)	1	59	60	59	60
R517	B (65)	1	58	58	58	59
R518	B (65)	1	60	61	60	61
R519	B (65)	1	55	56	55	56

Receiver	NAAC	Dwelling Units	Build AM Peak Hour Noise Level dBA Leq(h) 2045	Build AM Peak Truck Hour Noise Level dBA Leq(h) 2045	Build PM Peak Hour Noise Level dBA Leq(h) 2045	Build PM Peak Truck Hour Noise Level dBA Leq(h) 2045
R520	B (65)	1	54	55	54	55
R521	B (65)	1	66	67	66	66
R522	B (65)	1	67	67	66	66
R523	B (65)	1	66	67	66	66
R524	B (65)	1	66	66	65	66
R525	B (65)	1	65	66	65	65
R526	B (65)	1	60	61	60	61
R527	B (65)	1	70	71	70	70
R528	B (65)	1	69	70	69	69
R529	B (65)	1	68	69	68	68
R530	B (65)	1	71	72	71	72
R531	B (65)	1	70	70	70	70
R532	B (65)	1	69	69	69	69
R533	B (65)	1	57	58	57	57
R534	B (65)	1	61	62	61	62
R535	B (65)	1	56	57	56	56
R536	B (65)	1	65	65	65	65
R537	B (65)	1	62	63	62	64
R538	B (65)	1	67	67	66	66
R539	B (65)	1	62	62	61	62
R540	B (65)	1	60	61	60	61
R541	B (65)	1	60	60	59	60
R542	B (65)	1	59	60	59	60
R543	B (65)	1	59	60	59	60
R544	B (65)	1	59	60	59	60
R545	B (65)	1	60	61	59	61
R546	B (65)	1	N/A	N/A	N/A	63
R547	B (65)	1	61	61	60	62
R548	B (65)	1	61	62	61	62
R549	B (65)	1	61	62	61	62
R550	B (65)	1	60	62	60	62
R551	B (65)	1	61	62	60	62
R552	B (65)	1	62	64	62	64
R553	B (65)	1	63	65	63	65

Receiver	NAAC	Dwelling Units	Build AM Peak Hour Noise Level dBA Leq(h) 2045	Build AM Peak Truck Hour Noise Level dBA Leq(h) 2045	Build PM Peak Hour Noise Level dBA Leq(h) 2045	Build PM Peak Truck Hour Noise Level dBA Leq(h) 2045
R554	B (65)	1	61	63	60	62
R555	B (65)	1	58	62	57	62
R556	B (65)	1	62	64	61	64
R557	B (65)	1	63	65	63	65
R558	B (65)	1	59	62	58	62
R559	B (65)	1	59	62	58	63
R560	B (65)	1	60	63	59	66
R561	B (65)	1	61	64	60	64
R562	B (65)	1	63	65	62	64
R563	B (65)	1	62	64	62	64
R564	B (65)	1	62	64	62	64
R565	B (65)	1	62	63	61	63
R566	B (65)	1	61	63	61	63
R567	B (65)	1	61	63	61	63
R568	B (65)	1	61	63	60	63
R569	B (65)	1	63	64	63	64
R570	B (65)	1	62	63	62	64
R571	B (65)	1	64	65	63	65
R572	B (65)	1	63	64	63	65
R573	E (70)	1	62	62	64	64
R574	E (70)	1	59	59	59	60
R575	E (70)	118	64	65	64	65
R693	B (65)	1	65	65	65	65
R694	B (65)	1	66	66	65	66
R695	B (65)	1	71	72	71	72
R696	B (65)	1	68	68	68	69
R697	B (65)	1	68	68	67	68
R698	B (65)	1	66	66	65	66
R699	B (65)	1	73	74	74	75
R700	C (65)	1	66	66	65	66
R701	C (65)	1	66	66	66	67
R702	C (65)	1	66	67	65	67
R703	C (65)	1	66	67	65	67
R704	B (65)	1	67	68	68	64

Receiver	NAAC	Dwelling Units	Build AM Peak Hour Noise Level dBA Leq(h) 2045	Build AM Peak Truck Hour Noise Level dBA Leq(h) 2045	Build PM Peak Hour Noise Level dBA Leq(h) 2045	Build PM Peak Truck Hour Noise Level dBA Leq(h) 2045
R705	B (65)	1	68	68	68	64
R706	B (65)	1	68	69	69	65
R707	B (65)	1	69	69	69	66
R708	B (65)	1	57	58	58	56
R709	B (65)	1	56	56	56	53
R710	B (65)	1	49	49	49	48
R711	B (65)	1	52	53	52	48
R712	B (65)	1	55	56	56	54
R713	B (65)	1	56	56	56	53
R714	B (65)	1	44	45	45	44
R715	B (65)	1	44	45	45	44
R716	B (65)	1	45	46	46	45
R717	B (65)	1	45	46	46	45
R718	B (65)	1	61	62	61	58
R719	B (65)	1	60	61	60	58
R720	B (65)	1	58	58	58	55
R721	B (65)	1	57	58	57	55
R722	B (65)	1	51	51	51	49
R723	B (65)	1	50	51	51	49
R724	B (65)	1	50	50	50	49
R725	B (65)	1	47	47	47	47
R726	B (65)	1	46	46	46	46
R727	B (65)	1	46	46	46	46
R728	B (65)	1	46	46	46	46
R729	B (65)	1	46	46	46	46
R730	B (65)	1	47	47	47	47
R731	B (65)	1	46	46	46	46
R732	B (65)	1	45	45	45	45
R733	B (65)	1	45	45	45	45
R734	B (65)	1	56	57	56	55
R735	B (65)	1	56	56	56	54
R736	B (65)	1	55	55	55	53
R737	B (65)	1	55	55	55	53
R738	B (65)	1	46	46	46	46

Receiver	NAAC	Dwelling Units	Build AM Peak Hour Noise Level dBA Leq(h) 2045	Build AM Peak Truck Hour Noise Level dBA Leq(h) 2045	Build PM Peak Hour Noise Level dBA Leq(h) 2045	Build PM Peak Truck Hour Noise Level dBA Leq(h) 2045
R739	B (65)	1	46	46	46	46
R740	B (65)	1	48	48	48	48
R741	B (65)	1	50	50	50	51
R742	B (65)	1	54	55	54	53
R743	B (65)	1	54	55	54	53
R744	B (65)	1	54	55	55	54
R745	B (65)	1	55	55	55	54
R746	C (65)	1	53	53	53	53
R747	B (65)	1	69	70	70	66
R748	B (65)	1	70	70	70	66
R749	B (65)	1	70	71	71	67
R750	B (65)	1	70	71	71	67
R751	B (65)	1	58	59	59	58
R752	B (65)	1	55	56	56	52
R753	B (65)	1	49	49	49	48
R754	B (65)	1	52	53	53	46
R755	B (65)	1	56	57	56	55
R756	B (65)	1	57	58	58	54
R757	B (65)	1	45	46	46	45
R758	B (65)	1	46	46	46	45
R759	B (65)	1	46	47	47	46
R760	B (65)	1	46	47	47	46
R761	B (65)	1	63	63	63	60
R762	B (65)	1	62	62	62	59
R763	B (65)	1	59	60	59	56
R764	B (65)	1	59	59	59	56
R765	B (65)	1	51	51	51	50
R766	B (65)	1	50	51	51	50
R767	B (65)	1	51	51	51	51
R768	B (65)	1	48	48	48	48
R769	B (65)	1	47	47	47	47
R770	B (65)	1	47	47	47	47
R771	B (65)	1	47	47	47	47
R772	B (65)	1	47	47	47	47

Receiver	NAAC	Dwelling Units	Build AM Peak Hour Noise Level dBA Leq(h) 2045	Build AM Peak Truck Hour Noise Level dBA Leq(h) 2045	Build PM Peak Hour Noise Level dBA Leq(h) 2045	Build PM Peak Truck Hour Noise Level dBA Leq(h) 2045
R773	B (65)	1	47	48	47	48
R774	B (65)	1	47	47	47	47
R775	B (65)	1	46	47	46	46
R776	B (65)	1	46	46	46	46
R777	B (65)	1	58	58	58	56
R778	B (65)	1	57	58	58	56
R779	B (65)	1	56	57	57	55
R780	B (65)	1	56	56	56	54
R781	B (65)	1	47	47	47	47
R782	B (65)	1	47	48	47	47
R783	B (65)	1	49	50	50	50
R784	B (65)	1	52	52	52	53
R785	B (65)	1	57	57	57	55
R786	B (65)	1	57	58	57	56
R787	B (65)	1	57	58	57	57
R788	B (65)	1	57	58	58	57
R789	B (65)	1	70	71	71	68
R790	B (65)	1	70	71	71	68
R791	B (65)	1	71	72	72	69
R792	B (65)	1	71	72	72	69
R793	B (65)	1	59	60	60	59
R794	B (65)	1	57	57	57	54
R795	B (65)	1	52	52	52	51
R796	B (65)	1	54	54	54	50
R797	B (65)	1	57	58	58	56
R798	B (65)	1	58	59	59	56
R799	B (65)	1	48	49	49	48
R800	B (65)	1	49	49	49	49
R801	B (65)	1	50	51	50	51
R802	B (65)	1	50	51	50	51
R803	B (65)	1	64	65	64	61
R804	B (65)	1	63	63	63	61
R805	B (65)	1	60	61	60	58
R806	B (65)	1	60	60	60	57

Receiver	NAAC	Dwelling Units	Build AM Peak Hour Noise Level dBA Leq(h) 2045	Build AM Peak Truck Hour Noise Level dBA Leq(h) 2045	Build PM Peak Hour Noise Level dBA Leq(h) 2045	Build PM Peak Truck Hour Noise Level dBA Leq(h) 2045
R807	B (65)	1	53	53	53	52
R808	B (65)	1	53	53	53	52
R809	B (65)	1	53	54	53	53
R810	B (65)	1	51	52	51	51
R811	B (65)	1	51	51	51	51
R812	B (65)	1	50	51	50	51
R813	B (65)	1	50	51	50	50
R814	B (65)	1	50	50	50	50
R815	B (65)	1	50	51	50	50
R816	B (65)	1	50	50	50	49
R817	B (65)	1	50	50	50	50
R818	B (65)	1	49	50	49	49
R819	B (65)	1	60	60	60	59
R820	B (65)	1	60	61	60	60
R821	B (65)	1	58	58	58	57
R822	B (65)	1	57	57	57	55
R823	B (65)	1	50	50	50	50
R824	B (65)	1	50	51	51	50
R825	B (65)	1	55	56	55	56
R826	B (65)	1	56	56	56	57
R827	B (65)	1	58	59	59	58
R828	B (65)	1	59	60	60	59
R829	B (65)	1	60	61	60	60
R830	B (65)	1	60	61	61	60

Note: Receivers R831 to R916 were not included in the Peak Hour and Peak Truck Hour comparisons due to representative receivers already included in comparison.

Attachment F Predicted Noise Levels

Table F-1. Predicted Noise Levels

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} TNM dB(A)	No Build 2045 Alternative L_{eq} dB(A)	No Build 2045 Increase over Existing Noise Level dB	Build 2045 Alternative L_{eq} dB(A)	Build 2045 Increase over Existing Noise Level dB	Build 2045 Increase over No Build 2045 Noise Level dB
LT-1/ST-1	Church, Daycare, School	C (65)	1	69	70	1	70	1	0
ST-2	Residence	B (65)	1	63	63	0	66	3	3
ST-3	Residence	B (65)	1	67	68	1	69	2	1
ST-4	Residence	B (65)	1	67	68	1	69	2	1
ST-5a	Residence	B (65)	1	72	73	1	73	1	0
ST-5b	Residence	B (65)	1	66	66	0	67	1	1
ST-6	Play Structure at Apts	C (65)	1	60	61	1	62	2	1
ST-7	Residence	B (65)	1	64	64	0	65	1	1
ST-8	Residence	B (65)	1	63	63	0	65	2	2
ST-9	Residence	B (65)	1	60	62	2	61	1	-1
LT-2/ST-10	Residence	B (65)	1	63	65	2	65	2	0
ST-11	Residence	B (65)	1	57	59	2	61	4	2
ST-12*	Residence	B (65)	1	62	64	2	64	2	0
ST-13*	Jon Storm Park	C (65)	1	68	68	0	68	0	0
R1	Residence	B (65)	1	70	71	1	71	1	0
R2	Residence	B (65)	1	64	64	0	66	2	2
R3	Residence	B (65)	2	60	61	1	66	6	5
R4	Residence	B (65)	1	60	61	1	62	2	1
R5	Residence	B (65)	1	70	71	1	70	0	-1
R6	Residence	B (65)	1	64	65	1	66	2	1
R7	Residence	B (65)	1	65	65	0	67	2	2
R8	Residence	B (65)	1	55	56	1	58	3	2
R9	Residence	B (65)	1	58	58	0	61	3	3
R10	Residence	B (65)	1	57	57	0	61	4	4
R11	Residence	B (65)	1	58	59	1	62	4	3
R12	Residence	B (65)	1	70	70	0	73	3	3
R13	Residence	B (65)	1	67	67	0	68	1	1

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} TNM dB(A)	No Build 2045 Alternative L_{eq} dB(A)	No Build 2045 Increase over Existing Noise Level dB	Build 2045 Alternative L_{eq} dB(A)	Build 2045 Increase over Existing Noise Level dB	Build 2045 Increase over No Build 2045 Noise Level dB
R14	Residence	B (65)	1	66	66	0	67	1	1
R15	Residence	B (65)	1	71	71	0	72	1	1
R16	Residence	B (65)	1	67	68	1	70	3	2
R17	Residence	B (65)	1	54	54	0	56	2	2
R18	Residence	B (65)	1	58	58	0	60	2	2
R19	Residence	B (65)	1	62	62	0	64	2	2
R20	Residence	B (65)	1	64	65	1	66	2	1
R21	Residence	B (65)	1	70	71	1	72	2	1
R22	Residence	B (65)	1	72	72	0	74	2	2
R23	Residence	B (65)	1	72	72	0	73	1	1
R24	Residence	B (65)	1	72	73	1	74	2	1
R25	Residence	B (65)	1	73	73	0	74	1	1
R26	Residence	B (65)	1	73	73	0	74	1	1
R27	Residence	B (65)	1	73	73	0	74	1	1
R28	Residence	B (65)	1	72	73	1	73	1	0
R29	Residence	B (65)	1	73	74	1	74	1	0
R30	Residence	B (65)	1	72	72	0	73	1	1
R31	Residence	B (65)	1	73	73	0	74	1	1
R32	Residence	B (65)	1	73	73	0	73	0	0
R33	Residence	B (65)	1	74	74	0	74	0	0
R34	Residence	B (65)	1	67	68	1	69	2	1
R35	Residence	B (65)	1	67	67	0	68	1	1
R36	Residence	B (65)	1	65	66	1	67	2	1
R37	Residence	B (65)	1	65	65	0	66	1	1
R38	Residence	B (65)	1	65	66	1	67	2	1
R39	Residence	B (65)	1	65	65	0	67	2	2
R40	Residence	B (65)	1	65	65	0	67	2	2
R41	Residence	B (65)	1	63	63	0	65	2	2
R42	Residence	B (65)	1	61	61	0	63	2	2
R43	Residence	B (65)	1	62	62	0	64	2	2
R44	Residence	B (65)	1	62	62	0	64	2	2
R45	Residence	B (65)	1	62	62	0	64	2	2

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} TNM dB(A)	No Build 2045 Alternative L_{eq} dB(A)	No Build 2045 Increase over Existing Noise Level dB	Build 2045 Alternative L_{eq} dB(A)	Build 2045 Increase over Existing Noise Level dB	Build 2045 Increase over No Build 2045 Noise Level dB
R46	Residence	B (65)	1	61	62	1	64	3	2
R47	Residence	B (65)	1	62	62	0	64	2	2
R48	Residence	B (65)	1	63	63	0	65	2	2
R49	Residence	B (65)	1	65	65	0	66	1	1
R50	Residence	B (65)	1	73	74	1	75	2	1
R51	Residence	B (65)	1	70	70	0	71	1	1
R52	Residence	B (65)	1	67	68	1	70	3	2
R53	Residence	B (65)	1	66	67	1	67	1	0
R54	Residence	B (65)	1	62	62	0	64	2	2
R55	Residence	B (65)	1	66	67	1	67	1	0
R56	Residence	B (65)	1	67	67	0	67	0	0
R57	Residence	B (65)	1	67	67	0	68	1	1
R58	Residence	B (65)	1	66	67	1	68	2	1
R59	Residence	B (65)	1	64	65	1	66	2	1
R60	Residence	B (65)	1	65	66	1	67	2	1
R61	Residence	B (65)	1	63	64	1	65	2	1
R62	Residence	B (65)	1	65	65	0	67	2	2
R63	Residence	B (65)	1	71	71	0	71	0	0
R64	Residence	B (65)	1	72	72	0	73	1	1
R65	Residence	B (65)	1	72	73	1	73	1	0
R66	Residence	B (65)	1	70	70	0	71	1	1
R67	Residence	B (65)	1	66	66	0	68	2	2
R68	Residence	B (65)	1	65	65	0	67	2	2
R69	Residence	B (65)	1	63	63	0	65	2	2
R70	Residence	B (65)	1	63	64	1	65	2	1
R71	Residence	B (65)	1	65	65	0	67	2	2
R72	Residence	B (65)	1	63	64	1	66	3	2
R73	Residence	B (65)	1	65	65	0	67	2	2
R74	Residence	B (65)	1	64	65	1	66	2	1
R75	Residence	B (65)	1	65	66	1	68	3	2
R76	Retirement Home (no outdoor use	D (50)	71	45	45	0	44	-1	-1

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} TNM dB(A)	No Build 2045 Alternative L_{eq} dB(A)	No Build 2045 Increase over Existing Noise Level dB	Build 2045 Alternative L_{eq} dB(A)	Build 2045 Increase over Existing Noise Level dB	Build 2045 Increase over No Build 2045 Noise Level dB
R77	Pool at Apts	C (65)	1	63	64	1	65	2	1
R78	Multifamily	B (65)	1	65	65	0	66	1	1
R79	Multifamily	B (65)	1	64	64	0	65	1	1
R80	Multifamily	B (65)	1	68	69	1	70	2	1
R81	Multifamily	B (65)	1	68	68	0	69	1	1
R82	Multifamily	B (65)	1	57	57	0	60	3	3
R83	Multifamily	B (65)	1	57	57	0	59	2	2
R84	Multifamily	B (65)	1	61	61	0	62	1	1
R85	Multifamily	B (65)	1	60	61	1	61	1	0
R86	Multifamily	B (65)	1	50	50	0	52	2	2
R87	Multifamily	B (65)	1	53	53	0	54	1	1
R88	Multifamily	B (65)	1	53	54	1	55	2	1
R89	Multifamily	B (65)	1	56	56	0	57	1	1
R90	Multifamily	B (65)	1	53	53	0	54	1	1
R91	Multifamily	B (65)	1	52	53	1	54	2	1
R92	Multifamily	B (65)	1	55	56	1	56	1	0
R93	Multifamily	B (65)	1	55	55	0	56	1	1
R94	Multifamily	B (65)	1	60	60	0	62	2	2
R95	Multifamily	B (65)	1	60	60	0	62	2	2
R96	Multifamily	B (65)	1	64	64	0	65	1	1
R97	Multifamily	B (65)	1	64	65	1	65	1	0
R98	Multifamily	B (65)	1	63	63	0	66	3	3
R99	Multifamily	B (65)	1	63	64	1	66	3	2
R100	Multifamily	B (65)	1	68	69	1	69	1	0
R101	Multifamily	B (65)	1	68	68	0	69	1	1
R102	Multifamily	B (65)	1	57	58	1	60	3	2
R103	Multifamily	B (65)	1	57	58	1	60	3	2
R104	Multifamily	B (65)	1	62	63	1	63	1	0
R105	Multifamily	B (65)	1	62	63	1	63	1	0
R106	Multifamily	B (65)	1	47	47	0	49	2	2
R107	Multifamily	B (65)	1	47	47	0	48	1	1
R108	Multifamily	B (65)	1	50	50	0	51	1	1

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} TNM dB(A)	No Build 2045 Alternative L_{eq} dB(A)	No Build 2045 Increase over Existing Noise Level dB	Build 2045 Alternative L_{eq} dB(A)	Build 2045 Increase over Existing Noise Level dB	Build 2045 Increase over No Build 2045 Noise Level dB
R109	Multifamily	B (65)	1	49	50	1	51	2	1
R110	Multifamily	B (65)	1	52	52	0	54	2	2
R111	Multifamily	B (65)	1	48	49	1	50	2	1
R112	Multifamily	B (65)	1	55	56	1	56	1	0
R113	Multifamily	B (65)	1	51	51	0	52	1	1
R114	Residence	B (65)	1	64	64	0	66	2	2
R115	Residence	B (65)	1	65	66	1	67	2	1
R116	Residence	B (65)	1	66	67	1	68	2	1
R117	Residence	B (65)	1	67	68	1	69	2	1
R118	Residence	B (65)	1	69	69	0	71	2	2
R119	Residence	B (65)	1	68	69	1	71	3	2
R120	Residence	B (65)	1	68	68	0	70	2	2
R121	Residence	B (65)	1	65	66	1	67	2	1
R122	Residence	B (65)	1	67	68	1	69	2	1
R123	Residence	B (65)	1	65	66	1	67	2	1
R124	Residence	B (65)	1	64	65	1	66	2	1
R125	Residence	B (65)	1	63	63	0	65	2	2
R126	Residence	B (65)	1	66	66	0	68	2	2
R127	Residence	B (65)	1	64	65	1	67	3	2
R128	Residence	B (65)	1	66	66	0	68	2	2
R129	Residence	B (65)	1	64	65	1	66	2	1
R130	Residence	B (65)	1	64	65	1	66	2	1
R131	Residence	B (65)	1	64	64	0	66	2	2
R132	Residence	B (65)	1	60	61	1	62	2	1
R133	Residence	B (65)	1	65	65	0	67	2	2
R134	Residence	B (65)	1	66	66	0	68	2	2
R135	Residence	B (65)	1	65	66	1	68	3	2
R136	Residence	B (65)	1	66	67	1	69	3	2
R137	Residence	B (65)	1	67	68	1	70	3	2
R138	Residence	B (65)	1	66	66	0	68	2	2
R139	Residence	B (65)	1	65	66	1	68	3	2
R140	Residence	B (65)	1	66	67	1	69	3	2

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} TNM dB(A)	No Build 2045 Alternative L_{eq} dB(A)	No Build 2045 Increase over Existing Noise Level dB	Build 2045 Alternative L_{eq} dB(A)	Build 2045 Increase over Existing Noise Level dB	Build 2045 Increase over No Build 2045 Noise Level dB
R141	Residence	B (65)	1	67	67	0	69	2	2
R142	Residence	B (65)	1	66	67	1	69	3	2
R143	Residence	B (65)	1	67	68	1	70	3	2
R144	Residence	B (65)	1	68	68	0	70	2	2
R145	Residence	B (65)	1	67	67	0	69	2	2
R146	Residence	B (65)	1	68	68	0	69	1	1
R147	Residence	B (65)	1	66	66	0	69	3	3
R148	Residence	B (65)	1	65	66	1	69	4	3
R149	Residence	B (65)	1	65	66	1	68	3	2
R150	Residence	B (65)	1	64	65	1	66	2	1
R151	Residence	B (65)	1	62	63	1	64	2	1
R152	Residence	B (65)	1	63	63	0	65	2	2
R153	Residence	B (65)	1	63	63	0	65	2	2
R154	Residence	B (65)	1	62	63	1	64	2	1
R155	Residence	B (65)	1	64	64	0	66	2	2
R156	Residence	B (65)	1	65	66	1	67	2	1
R157	Residence	B (65)	1	63	64	1	65	2	1
R158	Residence	B (65)	1	62	63	1	64	2	1
R159	Residence	B (65)	1	59	60	1	61	2	1
R160	Residence	B (65)	1	63	63	0	64	1	1
R161	Residence	B (65)	1	61	62	1	63	2	1
R162	Residence	B (65)	1	60	61	1	62	2	1
R163	Residence	B (65)	1	61	61	0	62	1	1
R164	Residence	B (65)	1	60	61	1	62	2	1
R165	Residence	B (65)	1	62	63	1	63	1	0
R166	Residence	B (65)	1	62	63	1	63	1	0
R167	Residence	B (65)	1	62	62	0	63	1	1
R168	Multifamily	B (65)	1	65	65	0	66	1	1
R169	Multifamily	B (65)	1	65	65	0	66	1	1
R170	Multifamily	B (65)	1	59	60	1	60	1	0
R171	Multifamily	B (65)	1	64	64	0	66	2	2
R172	Multifamily	B (65)	1	70	71	1	71	1	0

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} TNM dB(A)	No Build 2045 Alternative L_{eq} dB(A)	No Build 2045 Increase over Existing Noise Level dB	Build 2045 Alternative L_{eq} dB(A)	Build 2045 Increase over Existing Noise Level dB	Build 2045 Increase over No Build 2045 Noise Level dB
R173	Multifamily	B (65)	1	59	59	0	59	0	0
R174	Multifamily	B (65)	1	63	64	1	65	2	1
R175	Multifamily	B (65)	1	69	70	1	70	1	0
R176	Multifamily	B (65)	1	59	60	1	59	0	-1
R177	Multifamily	B (65)	1	65	65	0	66	1	1
R178	Multifamily	B (65)	1	70	70	0	70	0	0
R179	Multifamily	B (65)	1	59	59	0	59	0	0
R180	Multifamily	B (65)	1	64	65	1	66	2	1
R181	Multifamily	B (65)	1	69	70	1	70	1	0
R182	Multifamily	B (65)	1	57	57	0	58	1	1
R183	Multifamily	B (65)	1	63	63	0	65	2	2
R184	Multifamily	B (65)	1	57	58	1	58	1	0
R185	Multifamily	B (65)	1	64	65	1	66	2	1
R186	Multifamily	B (65)	1	61	61	0	61	0	0
R187	Multifamily	B (65)	1	65	66	1	67	2	1
R188	Multifamily	B (65)	1	61	61	0	61	0	0
R189	Multifamily	B (65)	1	65	66	1	67	2	1
R190	Multifamily	B (65)	1	60	61	1	61	1	0
R191	Multifamily	B (65)	1	65	66	1	67	2	1
R192	Multifamily	B (65)	1	60	60	0	61	1	1
R193	Multifamily	B (65)	1	65	66	1	67	2	1
R194	Multifamily	B (65)	1	59	60	1	61	2	1
R195	Multifamily	B (65)	1	65	65	0	66	1	1
R196	Multifamily	B (65)	1	59	60	1	61	2	1
R197	Multifamily	B (65)	1	64	65	1	66	2	1
R198	Multifamily	B (65)	1	59	59	0	61	2	2
R199	Multifamily	B (65)	1	63	64	1	65	2	1
R200	Multifamily	B (65)	1	58	59	1	60	2	1
R201	Multifamily	B (65)	1	63	63	0	64	1	1
R202	Multifamily	B (65)	1	58	59	1	60	2	1
R203	Multifamily	B (65)	1	63	63	0	64	1	1
R204	Multifamily	B (65)	1	57	58	1	59	2	1

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} TNM dB(A)	No Build 2045 Alternative L_{eq} dB(A)	No Build 2045 Increase over Existing Noise Level dB	Build 2045 Alternative L_{eq} dB(A)	Build 2045 Increase over Existing Noise Level dB	Build 2045 Increase over No Build 2045 Noise Level dB
R205	Multifamily	B (65)	1	61	62	1	63	2	1
R206	Multifamily	B (65)	1	58	59	1	60	2	1
R207	Multifamily	B (65)	1	62	63	1	64	2	1
R208	Multifamily	B (65)	1	58	59	1	60	2	1
R209	Multifamily	B (65)	1	62	63	1	64	2	1
R210	Multifamily	B (65)	1	64	65	1	66	2	1
R211	Multifamily	B (65)	1	64	65	1	66	2	1
R212	Multifamily	B (65)	1	58	58	0	60	2	2
R213	Multifamily	B (65)	1	62	63	1	64	2	1
R214	Multifamily	B (65)	1	58	58	0	60	2	2
R215	Multifamily	B (65)	1	62	63	1	64	2	1
R216	Multifamily	B (65)	1	64	65	1	66	2	1
R217	Multifamily	B (65)	1	64	65	1	66	2	1
R218	Multifamily	B (65)	1	58	58	0	60	2	2
R219	Multifamily	B (65)	1	62	63	1	64	2	1
R220	Multifamily	B (65)	1	58	58	0	60	2	2
R221	Multifamily	B (65)	1	62	63	1	64	2	1
R222	Multifamily	B (65)	1	64	65	1	65	1	0
R223	Multifamily	B (65)	1	64	65	1	65	1	0
R224	Multifamily	B (65)	1	57	57	0	59	2	2
R225	Multifamily	B (65)	1	62	62	0	64	2	2
R226	Multifamily	B (65)	1	70	70	0	71	1	1
R227	Multifamily	B (65)	1	58	58	0	59	1	1
R228	Multifamily	B (65)	1	61	62	1	64	3	2
R229	Multifamily	B (65)	1	69	69	0	70	1	1
R230	Multifamily	B (65)	1	57	58	1	59	2	1
R231	Multifamily	B (65)	1	63	64	1	65	2	1
R232	Multifamily	B (65)	1	70	71	1	71	1	0
R233	Multifamily	B (65)	1	58	59	1	59	1	0
R234	Multifamily	B (65)	1	63	63	0	65	2	2
R235	Multifamily	B (65)	1	69	70	1	70	1	0
R236	Multifamily	B (65)	1	57	57	0	58	1	1

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} TNM dB(A)	No Build 2045 Alternative L_{eq} dB(A)	No Build 2045 Increase over Existing Noise Level dB	Build 2045 Alternative L_{eq} dB(A)	Build 2045 Increase over Existing Noise Level dB	Build 2045 Increase over No Build 2045 Noise Level dB
R237	Multifamily	B (65)	1	60	61	1	62	2	1
R238	Multifamily	B (65)	1	56	57	1	58	2	1
R239	Multifamily	B (65)	1	60	60	0	62	2	2
R240	Multifamily	B (65)	1	57	57	0	58	1	1
R241	Multifamily	B (65)	1	61	61	0	63	2	2
R242	Multifamily	B (65)	1	56	57	1	58	2	1
R243	Multifamily	B (65)	1	60	61	1	63	3	2
R244	Residence	B (65)	1	60	60	0	62	2	2
R245	Residence	B (65)	1	61	62	1	63	2	1
R246	Residence	B (65)	1	61	61	0	62	1	1
R247	Residence	B (65)	1	60	60	0	62	2	2
R248	Residence	B (65)	1	60	60	0	62	2	2
R249	Residence	B (65)	1	59	59	0	61	2	2
R250	Residence	B (65)	1	57	57	0	60	3	3
R251	Residence	B (65)	1	57	57	0	59	2	2
R252	Residence	B (65)	1	57	57	0	59	2	2
R253	Residence	B (65)	1	56	56	0	59	3	3
R254	Residence	B (65)	1	56	57	1	58	2	1
R255	Residence	B (65)	1	56	57	1	58	2	1
R256	Residence	B (65)	1	63	63	0	65	2	2
R257	Residence	B (65)	1	62	62	0	64	2	2
R258	Residence	B (65)	1	61	61	0	63	2	2
R259	Residence	B (65)	1	60	60	0	62	2	2
R260	Residence	B (65)	1	59	59	0	61	2	2
R261	Residence	B (65)	1	58	58	0	60	2	2
R262	Residence	B (65)	1	58	58	0	60	2	2
R263	Residence	B (65)	1	57	57	0	59	2	2
R264	Residence	B (65)	1	58	58	0	61	3	3
R265	Residence	B (65)	1	58	58	0	61	3	3
R266	Residence	B (65)	1	55	55	0	58	3	3
R267	Residence	B (65)	1	57	57	0	59	2	2
R268	Residence	B (65)	1	59	60	1	61	2	1

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} TNM dB(A)	No Build 2045 Alternative L_{eq} dB(A)	No Build 2045 Increase over Existing Noise Level dB	Build 2045 Alternative L_{eq} dB(A)	Build 2045 Increase over Existing Noise Level dB	Build 2045 Increase over No Build 2045 Noise Level dB
R269	Residence	B (65)	1	61	61	0	62	1	1
R270	Residence	B (65)	1	61	61	0	62	1	1
R271	Residence	B (65)	1	62	63	1	64	2	1
R272	Residence	B (65)	1	64	64	0	66	2	2
R273	Residence	B (65)	1	66	66	0	68	2	2
R274	Residence	B (65)	1	62	63	1	64	2	1
R275	Residence	B (65)	1	63	63	0	65	2	2
R276	Residence	B (65)	1	63	63	0	65	2	2
R277	Residence	B (65)	1	63	64	1	65	2	1
R278	Residence	B (65)	1	63	64	1	65	2	1
R279	Residence	B (65)	1	63	64	1	65	2	1
R280	Residence	B (65)	1	63	63	0	64	1	1
R281	Residence	B (65)	1	63	64	1	66	3	2
R282	Residence	B (65)	1	64	64	0	66	2	2
R283	Residence	B (65)	1	64	65	1	66	2	1
R284	Residence	B (65)	1	64	64	0	66	2	2
R285	Residence	B (65)	1	64	64	0	66	2	2
R286	Residence	B (65)	1	62	63	1	64	2	1
R287	Residence	B (65)	1	62	63	1	64	2	1
R288	Residence	B (65)	1	62	63	1	64	2	1
R289	Residence	B (65)	1	62	63	1	64	2	1
R290	Residence	B (65)	1	63	63	0	64	1	1
R291	Residence	B (65)	1	63	63	0	65	2	2
R292	Residence	B (65)	1	62	63	1	63	1	0
R293	Residence	B (65)	1	63	64	1	64	1	0
R294	Residence	B (65)	1	62	63	1	64	2	1
R295	Residence	B (65)	1	62	63	1	65	3	2
R296	Residence	B (65)	1	63	64	1	66	3	2
R297	Residence	B (65)	1	65	67	2	68	3	1
R298	Residence	B (65)	1	68	69	1	70	2	1
R299	Residence	B (65)	1	68	70	2	70	2	0
R300	Residence	B (65)	1	68	69	1	70	2	1

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} TNM dB(A)	No Build 2045 Alternative L_{eq} dB(A)	No Build 2045 Increase over Existing Noise Level dB	Build 2045 Alternative L_{eq} dB(A)	Build 2045 Increase over Existing Noise Level dB	Build 2045 Increase over No Build 2045 Noise Level dB
R301	Residence	B (65)	1	66	68	2	68	2	0
R302	Residence	B (65)	1	68	69	1	69	1	0
R303	Residence	B (65)	1	66	68	2	68	2	0
R304	Residence	B (65)	1	66	68	2	68	2	0
R305	Residence	B (65)	1	65	67	2	67	2	0
R306	Residence	B (65)	1	62	64	2	63	1	-1
R307	Residence	B (65)	1	62	63	1	62	0	-1
R308	Residence	B (65)	1	61	63	2	62	1	-1
R309	Residence	B (65)	1	62	63	1	63	1	0
R310	Residence	B (65)	1	62	64	2	64	2	0
R311	Residence	B (65)	1	62	64	2	64	2	0
R312	Residence	B (65)	1	62	64	2	64	2	0
R313	Residence	B (65)	1	62	63	1	63	1	0
R314	Residence	B (65)	1	61	63	2	63	2	0
R315	Residence	B (65)	1	62	63	1	63	1	0
R316	Residence	B (65)	1	62	63	1	63	1	0
R317	Residence	B (65)	1	62	63	1	63	1	0
R318	Residence	B (65)	1	62	63	1	63	1	0
R319	Residence	B (65)	1	62	63	1	63	1	0
R320	Residence	B (65)	1	62	63	1	63	1	0
R321	Residence	B (65)	1	62	63	1	64	2	1
R322	Residence	B (65)	1	62	64	2	64	2	0
R323	Residence	B (65)	1	64	66	2	67	3	1
R324	Residence	B (65)	1	64	66	2	67	3	1
R325	Residence	B (65)	1	64	65	1	67	3	2
R326	Residence	B (65)	1	64	66	2	67	3	1
R327	Residence	B (65)	1	64	66	2	67	3	1
R328	Residence	B (65)	1	64	66	2	67	3	1
R329	Residence	B (65)	1	65	66	1	68	3	2
R330	Residence	B (65)	1	65	67	2	68	3	1
R331	Residence	B (65)	1	62	64	2	64	2	0
R332	Residence	B (65)	1	61	63	2	64	3	1

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} TNM dB(A)	No Build 2045 Alternative L_{eq} dB(A)	No Build 2045 Increase over Existing Noise Level dB	Build 2045 Alternative L_{eq} dB(A)	Build 2045 Increase over Existing Noise Level dB	Build 2045 Increase over No Build 2045 Noise Level dB
R333	Residence	B (65)	1	63	65	2	65	2	0
R334	Residence	B (65)	1	61	62	1	63	2	1
R335	Residence	B (65)	1	60	61	1	62	2	1
R336	Residence	B (65)	1	61	63	2	64	3	1
R337	Residence	B (65)	1	65	66	1	68	3	2
R338	Residence	B (65)	1	65	66	1	68	3	2
R339	Residence	B (65)	1	65	66	1	67	2	1
R340	Residence	B (65)	1	65	66	1	67	2	1
R341	Residence	B (65)	1	64	65	1	66	2	1
R342	Residence	B (65)	1	63	65	2	66	3	1
R343	Residence	B (65)	1	66	67	1	68	2	1
R344	Residence	B (65)	1	67	69	2	70	3	1
R345	Residence	B (65)	1	65	67	2	67	2	0
R346	Residence	B (65)	1	66	67	1	68	2	1
R347	Residence	B (65)	1	67	69	2	69	2	0
R348	Residence	B (65)	1	65	67	2	68	3	1
R349	Residence	B (65)	1	67	69	2	70	3	1
R350	Residence	B (65)	1	68	70	2	70	2	0
R351	Residence	B (65)	1	68	70	2	70	2	0
R352	Residence	B (65)	1	68	69	1	70	2	1
R353	Residence	B (65)	1	61	63	2	64	3	1
R354	Residence	B (65)	1	56	57	1	58	2	1
R355	Residence	B (65)	1	59	61	2	61	2	0
R356	Residence	B (65)	1	58	60	2	60	2	0
R357	Residence	B (65)	1	55	57	2	57	2	0
R358	Residence	B (65)	1	57	59	2	59	2	0
R359	Residence	B (65)	1	57	59	2	60	3	1
R360	Residence	B (65)	1	67	69	2	69	2	0
R361	Residence	B (65)	1	66	68	2	69	3	1
R362	Residence	B (65)	1	66	68	2	68	2	0
R363	Residence	B (65)	1	66	68	2	68	2	0
R364	Residence	B (65)	1	66	68	2	68	2	0

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} TNM dB(A)	No Build 2045 Alternative L_{eq} dB(A)	No Build 2045 Increase over Existing Noise Level dB	Build 2045 Alternative L_{eq} dB(A)	Build 2045 Increase over Existing Noise Level dB	Build 2045 Increase over No Build 2045 Noise Level dB
R365	Residence	B (65)	1	55	57	2	58	3	1
R366	Residence	B (65)	1	55	56	1	57	2	1
R367	Residence	B (65)	1	55	57	2	56	1	-1
R368	Residence	B (65)	1	51	52	1	52	1	0
R369	Residence	B (65)	1	50	52	2	52	2	0
R370	Residence	B (65)	1	51	53	2	53	2	0
R371	Residence	B (65)	1	66	68	2	68	2	0
R372	Residence	B (65)	1	66	67	1	68	2	1
R373	Residence	B (65)	1	69	71	2	72	3	1
R374	Residence	B (65)	1	70	72	2	72	2	0
R375	Residence	B (65)	1	70	72	2	72	2	0
R376	Residence	B (65)	1	70	72	2	72	2	0
R377	Residence	B (65)	1	69	71	2	71	2	0
R378	Residence	B (65)	1	71	72	1	72	1	0
R379	Residence	B (65)	1	68	70	2	71	3	1
R380	Residence	B (65)	1	70	72	2	72	2	0
R381	Residence	B (65)	1	67	69	2	70	3	1
R382	Residence	B (65)	1	66	68	2	69	3	1
R383	Residence	B (65)	1	65	66	1	67	2	1
R384	Residence	B (65)	1	63	65	2	66	3	1
R385	Residence	B (65)	1	64	65	1	66	2	1
R386	Residence	B (65)	1	65	67	2	68	3	1
R387	Residence	B (65)	1	59	61	2	62	3	1
R388	Multifamily	B (65)	1	61	63	2	64	3	1
R389	Multifamily	B (65)	1	61	63	2	64	3	1
R390	Multifamily	B (65)	1	59	60	1	61	2	1
R391	Multifamily	B (65)	1	58	59	1	60	2	1
R392	Multifamily	B (65)	1	61	63	2	64	3	1
R393	Multifamily	B (65)	1	62	64	2	64	2	0
R394	Multifamily	B (65)	1	60	62	2	63	3	1
R395	Multifamily	B (65)	1	62	64	2	65	3	1
R396	Multifamily	B (65)	1	61	63	2	63	2	0

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} TNM dB(A)	No Build 2045 Alternative L_{eq} dB(A)	No Build 2045 Increase over Existing Noise Level dB	Build 2045 Alternative L_{eq} dB(A)	Build 2045 Increase over Existing Noise Level dB	Build 2045 Increase over No Build 2045 Noise Level dB
R397	Multifamily	B (65)	1	61	62	1	63	2	1
R398	Multifamily	B (65)	1	62	64	2	64	2	0
R399	Multifamily	B (65)	1	62	64	2	64	2	0
R400	Residence	B (65)	1	58	59	1	61	3	2
R401	Residence	B (65)	1	57	59	2	60	3	1
R402	Residence	B (65)	1	56	58	2	59	3	1
R403	Residence	B (65)	1	57	59	2	60	3	1
R404	Residence	B (65)	1	65	67	2	69	4	2
R405	Residence	B (65)	1	72	73	1	73	1	0
R406	Residence	B (65)	1	52	54	2	52	0	-2
R407	Residence	B (65)	1	52	54	2	53	1	-1
R408	Residence	B (65)	1	52	54	2	53	1	-1
R409	Residence	B (65)	1	53	54	1	54	1	0
R410	Residence	B (65)	1	54	56	2	56	2	0
R411	Residence	B (65)	1	54	56	2	56	2	0
R412	Residence	B (65)	1	54	56	2	56	2	0
R413	Residence	B (65)	1	55	56	1	57	2	1
R414	Residence	B (65)	1	54	55	1	56	2	1
R415	Residence	B (65)	1	54	55	1	57	3	2
R416	Residence	B (65)	1	57	59	2	61	4	2
R417	Residence	B (65)	1	53	55	2	55	2	0
R418	Residence	B (65)	1	53	55	2	55	2	0
R419	Residence	B (65)	1	53	55	2	54	1	-1
R420	Residence	B (65)	1	53	55	2	56	3	1
R421	Residence	B (65)	1	55	57	2	58	3	1
R422	Residence	B (65)	1	61	62	1	64	3	2
R423	Residence	B (65)	1	62	63	1	64	2	1
R424	Residence	B (65)	1	59	61	2	62	3	1
R425	Residence	B (65)	1	59	61	2	62	3	1
R426	Residence	B (65)	1	62	64	2	65	3	1
R427	Residence	B (65)	1	63	65	2	66	3	1
R428	Residence	B (65)	1	58	60	2	62	4	2

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} TNM dB(A)	No Build 2045 Alternative L_{eq} dB(A)	No Build 2045 Increase over Existing Noise Level dB	Build 2045 Alternative L_{eq} dB(A)	Build 2045 Increase over Existing Noise Level dB	Build 2045 Increase over No Build 2045 Noise Level dB
R429	Residence	B (65)	1	63	64	1	66	3	2
R430	Residence	B (65)	1	56	58	2	59	3	1
R431	Residence	B (65)	1	57	59	2	60	3	1
R432	Residence	B (65)	1	63	64	1	65	2	1
R433	Residence	B (65)	1	61	62	1	64	3	2
R434	Residence	B (65)	1	54	56	2	57	3	1
R435	Residence	B (65)	1	53	54	1	53	0	-1
R436	Residence	B (65)	1	60	61	1	63	3	2
R437	Residence	B (65)	1	53	55	2	53	0	-2
R438	Residence	B (65)	1	53	55	2	53	0	-2
R439	Residence	B (65)	1	54	55	1	53	-1	-2
R440	Residence	B (65)	1	69	70	1	71	2	1
R441	Residence	B (65)	1	59	61	2	63	4	2
R442	Multifamily	B (65)	1	68	70	2	71	3	1
R443	Multifamily	B (65)	1	69	71	2	72	3	1
R444	Multifamily	B (65)	1	69	71	2	72	3	1
R445	Multifamily	B (65)	1	69	71	2	72	3	1
R446	Multifamily	B (65)	1	71	73	2	73	2	0
R447	Multifamily	B (65)	1	72	74	2	73	1	-1
R448	Multifamily	B (65)	1	72	74	2	73	1	-1
R449	Multifamily	B (65)	1	72	74	2	74	2	0
R450	Multifamily	B (65)	1	62	64	2	64	2	0
R451	Multifamily	B (65)	1	63	65	2	65	2	0
R452	Multifamily	B (65)	1	67	68	1	70	3	2
R453	Multifamily	B (65)	1	69	71	2	72	3	1
R454	Multifamily	B (65)	1	58	60	2	60	2	0
R455	Multifamily	B (65)	1	58	60	2	60	2	0
R456	Multifamily	B (65)	1	58	60	2	60	2	0
R457	Multifamily	B (65)	1	61	63	2	63	2	0
R458	Multifamily	B (65)	1	61	63	2	63	2	0
R459	Multifamily	B (65)	1	61	63	2	63	2	0
R460	Residence	B (65)	1	55	58	3	59	4	1

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} TNM dB(A)	No Build 2045 Alternative L_{eq} dB(A)	No Build 2045 Increase over Existing Noise Level dB	Build 2045 Alternative L_{eq} dB(A)	Build 2045 Increase over Existing Noise Level dB	Build 2045 Increase over No Build 2045 Noise Level dB
R461	Residence	B (65)	1	56	59	3	61	5	2
R462	Residence	B (65)	1	55	58	3	59	4	1
R463	Residence	B (65)	1	56	58	2	59	3	1
R464	Residence	B (65)	1	57	59	2	60	3	1
R465	Residence	B (65)	1	57	60	3	61	4	1
R466	School (Atlas Immersion Academy)	C (65)	1	65	67	2	69	4	2
R467	Multifamily	B (65)	1	67	70	3	71	4	1
R468	Multifamily	B (65)	1	68	71	3	72	4	1
R469	Multifamily	B (65)	1	66	68	2	69	3	1
R470	Multifamily	B (65)	1	67	69	2	70	3	1
R471	Multifamily	B (65)	1	68	70	2	71	3	1
R472	Multifamily	B (65)	1	65	67	2	68	3	1
R473	Multifamily	B (65)	1	66	69	3	69	3	0
R474	Multifamily	B (65)	1	67	69	2	70	3	1
R475	Multifamily	B (65)	1	64	67	3	68	4	1
R476	Multifamily	B (65)	1	65	68	3	69	4	1
R477	Multifamily	B (65)	1	65	68	3	69	4	1
R478	Multifamily	B (65)	1	63	65	2	66	3	1
R479	Multifamily	B (65)	1	64	67	3	67	3	0
R480	Multifamily	B (65)	1	64	67	3	67	3	0
R481	Multifamily	B (65)	1	62	65	3	66	4	1
R482	Multifamily	B (65)	1	63	66	3	67	4	1
R483	Multifamily	B (65)	1	64	67	3	67	3	0
R484	Residence	B (65)	1	56	59	3	60	4	1
R485	Residence	B (65)	1	55	58	3	59	4	1
R486	Residence	B (65)	1	54	57	3	58	4	1
R487	Residence	B (65)	1	54	57	3	57	3	0
R488	Residence	B (65)	1	54	56	2	56	2	0
R489	Residence	B (65)	1	72	73	1	74	2	1
R490	Residence	B (65)	1	72	73	1	73	1	0
R491	Residence	B (65)	1	69	70	1	70	1	0

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} TNM dB(A)	No Build 2045 Alternative L_{eq} dB(A)	No Build 2045 Increase over Existing Noise Level dB	Build 2045 Alternative L_{eq} dB(A)	Build 2045 Increase over Existing Noise Level dB	Build 2045 Increase over No Build 2045 Noise Level dB
R492	Residence	B (65)	1	67	68	1	68	1	0
R493	Residence	B (65)	1	64	65	1	64	0	-1
R494	Residence	B (65)	1	63	64	1	63	0	-1
R495	Residence	B (65)	1	62	63	1	62	0	-1
R496	Residence	B (65)	1	68	69	1	66	-2	-3
R497	Residence	B (65)	1	67	67	0	66	-1	-1
R498	Residence	B (65)	1	64	65	1	63	-1	-2
R499	Residence	B (65)	1	62	63	1	62	0	-1
R500	Residence	B (65)	1	61	62	1	61	0	-1
R501	Residence	B (65)	1	70	71	1	72	2	1
R502	Residence	B (65)	1	69	70	1	71	2	1
R503	Residence	B (65)	1	69	70	1	71	2	1
R504	Residence	B (65)	1	70	71	1	72	2	1
R505	Residence	B (65)	1	70	71	1	72	2	1
R506	Residence	B (65)	1	69	71	2	72	3	1
R507	Residence	B (65)	1	63	65	2	65	2	0
R508	Residence	B (65)	1	61	62	1	63	2	1
R509	Residence	B (65)	1	62	64	2	64	2	0
R510	Residence	B (65)	1	63	64	1	65	2	1
R511	Residence	B (65)	1	62	63	1	64	2	1
R512	Residence	B (65)	1	61	63	2	63	2	0
R513	Residence	B (65)	1	61	62	1	63	2	1
R514	Residence	B (65)	1	60	61	1	62	2	1
R515	Residence	B (65)	1	58	59	1	60	2	1
R516	Residence	B (65)	1	58	60	2	60	2	0
R517	Residence	B (65)	1	57	59	2	59	2	0
R518	Residence	B (65)	1	60	61	1	61	1	0
R519	Residence	B (65)	1	54	56	2	56	2	0
R520	Residence	B (65)	1	53	55	2	55	2	0
R521	Residence	B (65)	1	65	66	1	66	1	0
R522	Residence	B (65)	1	65	66	1	66	1	0
R523	Residence	B (65)	1	64	66	2	66	2	0

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} TNM dB(A)	No Build 2045 Alternative L_{eq} dB(A)	No Build 2045 Increase over Existing Noise Level dB	Build 2045 Alternative L_{eq} dB(A)	Build 2045 Increase over Existing Noise Level dB	Build 2045 Increase over No Build 2045 Noise Level dB
R524	Residence	B (65)	1	64	66	2	66	2	0
R525	Residence	B (65)	1	63	65	2	65	2	0
R526	Residence	B (65)	1	59	61	2	61	2	0
R527	Multifamily	B (65)	1	69	71	2	70	1	-1
R528	Multifamily	B (65)	1	68	70	2	69	1	-1
R529	Multifamily	B (65)	1	67	68	1	68	1	0
R530	Multifamily	B (65)	1	70	71	1	72	2	1
R531	Multifamily	B (65)	1	69	70	1	70	1	0
R532	Multifamily	B (65)	1	68	69	1	69	1	0
R533	Multifamily	B (65)	1	54	57	3	57	3	0
R534	Multifamily	B (65)	1	60	62	2	62	2	0
R535	Multifamily	B (65)	1	53	56	3	56	3	0
R536	Residence	B (65)	1	62	65	3	65	3	0
R537*	Residence	B (65)	1	64	64	0	64	0	0
R538*	Residence	B (65)	1	62	66	4	66	4	0
R539*	Residence	B (65)	1	60	62	2	62	2	0
R540*	Residence	B (65)	1	60	62	2	62	2	0
R541*	Residence	B (65)	1	60	61	1	61	1	0
R542*	Residence	B (65)	1	60	61	1	61	1	0
R543*	Residence	B (65)	1	60	61	1	61	1	0
R544*	Residence	B (65)	1	60	61	1	61	1	0
R545*	Residence	B (65)	1	60	61	1	62	2	1
R546*	Residence	B (65)	1	62	63	1	63	1	0
R547*	Residence	B (65)	1	61	62	1	63	2	1
R548*	Residence	B (65)	1	62	63	1	63	1	0
R549*	Residence	B (65)	1	62	63	1	63	1	0
R550*	Residence	B (65)	1	61	62	1	63	2	1
R551*	Residence	B (65)	1	62	63	1	63	1	0
R552*	Residence	B (65)	1	63	64	1	65	2	1
R553*	Residence	B (65)	1	64	65	1	66	2	1
R554*	Residence	B (65)	1	62	62	0	63	1	1
R555*	Residence	B (65)	1	60	62	2	64	4	2

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} TNM dB(A)	No Build 2045 Alternative L_{eq} dB(A)	No Build 2045 Increase over Existing Noise Level dB	Build 2045 Alternative L_{eq} dB(A)	Build 2045 Increase over Existing Noise Level dB	Build 2045 Increase over No Build 2045 Noise Level dB
R556*	Residence	B (65)	1	64	64	0	65	1	1
R557*	Residence	B (65)	1	65	65	0	66	1	1
R558*	Residence	B (65)	1	62	63	1	63	1	0
R559*	Residence	B (65)	1	62	63	1	64	2	1
R560*	Residence	B (65)	1	64	65	1	67	3	2
R561*	Residence	B (65)	1	64	64	0	65	1	1
R562*	Residence	B (65)	1	65	65	0	65	0	0
R563*	Residence	B (65)	1	65	65	0	65	0	0
R564*	Residence	B (65)	1	65	65	0	65	0	0
R565*	Residence	B (65)	1	64	64	0	64	0	0
R566*	Residence	B (65)	1	64	64	0	64	0	0
R567*	Residence	B (65)	1	63	64	1	64	1	0
R568*	Residence	B (65)	1	63	63	0	64	1	1
R569*	Residence	B (65)	1	64	64	0	64	0	0
R570*	Residence	B (65)	1	63	63	0	64	1	1
R571*	Residence	B (65)	1	65	65	0	65	0	0
R572*	Residence	B (65)	1	64	65	1	65	1	0
R573*	Best Western (Pool)	E (70)	1	60	64	4	64	4	0
R574*	Best Western (Outdoor Seating)	E (70)	1	60	62	2	61	1	-1
R575*	Best Western	E (70)	118	65	66	1	66	1	0
R693	Residence	B (65)	1	69	69	0	69	0	0
R694	Residence	B (65)	1	69	69	0	69	0	0
R695	Residence	B (65)	1	68	68	0	68	0	0
R696	Residence	B (65)	1	67	68	1	68	1	0
R697	Residence	B (65)	1	64	64	0	65	1	1
R698	Residence	B (65)	1	65	65	0	66	1	1
R699	Residence	B (65)	1	62	63	1	63	1	0
R700*	Jon Storm Park	C (65)	1	69	69	0	69	0	0
R701*	Jon Storm Park	C (65)	1	69	69	0	69	0	0
R702*	Jon Storm Park	C (65)	1	68	68	0	68	0	0
R703*	Jon Storm Park	C (65)	1	67	68	1	68	1	0

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} TNM dB(A)	No Build 2045 Alternative L_{eq} dB(A)	No Build 2045 Increase over Existing Noise Level dB	Build 2045 Alternative L_{eq} dB(A)	Build 2045 Increase over Existing Noise Level dB	Build 2045 Increase over No Build 2045 Noise Level dB
R704	Multifamily	B (65)	1	67	64	-3	64	-3	0
R705	Multifamily	B (65)	1	67	65	-2	64	-3	-1
R706	Multifamily	B (65)	1	68	66	-2	65	-3	-1
R707	Multifamily	B (65)	1	68	66	-2	66	-2	0
R708	Multifamily	B (65)	1	57	57	0	56	-1	-1
R709	Multifamily	B (65)	1	55	55	0	53	-2	-2
R710	Multifamily	B (65)	1	48	48	0	48	0	0
R711	Multifamily	B (65)	1	51	48	-3	48	-3	0
R712	Multifamily	B (65)	1	55	53	-2	54	-1	1
R713	Multifamily	B (65)	1	56	53	-3	53	-3	0
R714	Multifamily	B (65)	1	44	44	0	44	0	0
R715	Multifamily	B (65)	1	44	44	0	44	0	0
R716	Multifamily	B (65)	1	45	45	0	45	0	0
R717	Multifamily	B (65)	1	45	46	1	45	0	-1
R718	Multifamily	B (65)	1	61	58	-3	58	-3	0
R719	Multifamily	B (65)	1	60	58	-2	58	-2	0
R720	Multifamily	B (65)	1	58	56	-2	55	-3	-1
R721	Multifamily	B (65)	1	57	55	-2	55	-2	0
R722	Multifamily	B (65)	1	50	50	0	49	-1	-1
R723	Multifamily	B (65)	1	50	50	0	49	-1	-1
R724	Multifamily	B (65)	1	49	50	1	49	0	-1
R725	Multifamily	B (65)	1	47	47	0	47	0	0
R726	Multifamily	B (65)	1	45	46	1	46	1	0
R727	Multifamily	B (65)	1	45	46	1	46	1	0
R728	Multifamily	B (65)	1	45	46	1	46	1	0
R729	Multifamily	B (65)	1	45	46	1	46	1	0
R730	Multifamily	B (65)	1	46	47	1	47	1	0
R731	Multifamily	B (65)	1	46	47	1	46	0	-1
R732	Multifamily	B (65)	1	44	45	1	45	1	0
R733	Multifamily	B (65)	1	44	45	1	45	1	0
R734	Multifamily	B (65)	1	56	55	-1	55	-1	0
R735	Multifamily	B (65)	1	56	55	-1	54	-2	-1

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} TNM dB(A)	No Build 2045 Alternative L_{eq} dB(A)	No Build 2045 Increase over Existing Noise Level dB	Build 2045 Alternative L_{eq} dB(A)	Build 2045 Increase over Existing Noise Level dB	Build 2045 Increase over No Build 2045 Noise Level dB
R736	Multifamily	B (65)	1	54	54	0	53	-1	-1
R737	Multifamily	B (65)	1	54	53	-1	53	-1	0
R738	Multifamily	B (65)	1	45	46	1	46	1	0
R739	Multifamily	B (65)	1	45	46	1	46	1	0
R740	Multifamily	B (65)	1	47	49	2	48	1	-1
R741	Multifamily	B (65)	1	49	51	2	51	2	0
R742	Multifamily	B (65)	1	54	54	0	53	-1	-1
R743	Multifamily	B (65)	1	54	54	0	53	-1	-1
R744	Multifamily	B (65)	1	54	55	1	54	0	-1
R745	Multifamily	B (65)	1	54	55	1	54	0	-1
R746	Pool at Apts	C (65)	1	52	54	2	53	1	-1
R747	Multifamily	B (65)	1	69	67	-2	66	-3	-1
R748	Multifamily	B (65)	1	69	67	-2	66	-3	-1
R749	Multifamily	B (65)	1	70	67	-3	67	-3	0
R750	Multifamily	B (65)	1	70	68	-2	67	-3	-1
R751	Multifamily	B (65)	1	58	59	1	58	0	-1
R752	Multifamily	B (65)	1	55	53	-2	52	-3	-1
R753	Multifamily	B (65)	1	48	48	0	48	0	0
R754	Multifamily	B (65)	1	51	47	-4	46	-5	-1
R755	Multifamily	B (65)	1	56	53	-3	55	-1	2
R756	Multifamily	B (65)	1	57	54	-3	54	-3	0
R757	Multifamily	B (65)	1	45	45	0	45	0	0
R758	Multifamily	B (65)	1	45	46	1	45	0	-1
R759	Multifamily	B (65)	1	46	46	0	46	0	0
R760	Multifamily	B (65)	1	46	46	0	46	0	0
R761	Multifamily	B (65)	1	62	60	-2	60	-2	0
R762	Multifamily	B (65)	1	61	59	-2	59	-2	0
R763	Multifamily	B (65)	1	59	56	-3	56	-3	0
R764	Multifamily	B (65)	1	58	56	-2	56	-2	0
R765	Multifamily	B (65)	1	50	50	0	50	0	0
R766	Multifamily	B (65)	1	50	50	0	50	0	0
R767	Multifamily	B (65)	1	50	52	2	51	1	-1

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} TNM dB(A)	No Build 2045 Alternative L_{eq} dB(A)	No Build 2045 Increase over Existing Noise Level dB	Build 2045 Alternative L_{eq} dB(A)	Build 2045 Increase over Existing Noise Level dB	Build 2045 Increase over No Build 2045 Noise Level dB
R768	Multifamily	B (65)	1	47	48	1	48	1	0
R769	Multifamily	B (65)	1	47	47	0	47	0	0
R770	Multifamily	B (65)	1	46	47	1	47	1	0
R771	Multifamily	B (65)	1	46	47	1	47	1	0
R772	Multifamily	B (65)	1	46	47	1	47	1	0
R773	Multifamily	B (65)	1	47	48	1	48	1	0
R774	Multifamily	B (65)	1	46	47	1	47	1	0
R775	Multifamily	B (65)	1	46	46	0	46	0	0
R776	Multifamily	B (65)	1	45	46	1	46	1	0
R777	Multifamily	B (65)	1	57	56	-1	56	-1	0
R778	Multifamily	B (65)	1	57	56	-1	56	-1	0
R779	Multifamily	B (65)	1	56	55	-1	55	-1	0
R780	Multifamily	B (65)	1	56	55	-1	54	-2	-1
R781	Multifamily	B (65)	1	47	47	0	47	0	0
R782	Multifamily	B (65)	1	47	47	0	47	0	0
R783	Multifamily	B (65)	1	49	50	1	50	1	0
R784	Multifamily	B (65)	1	51	53	2	53	2	0
R785	Multifamily	B (65)	1	57	57	0	55	-2	-2
R786	Multifamily	B (65)	1	57	57	0	56	-1	-1
R787	Multifamily	B (65)	1	57	58	1	57	0	-1
R788	Multifamily	B (65)	1	57	58	1	57	0	-1
R789	Multifamily	B (65)	1	70	68	-2	68	-2	0
R790	Multifamily	B (65)	1	70	68	-2	68	-2	0
R791	Multifamily	B (65)	1	71	69	-2	69	-2	0
R792	Multifamily	B (65)	1	71	69	-2	69	-2	0
R793	Multifamily	B (65)	1	59	60	1	59	0	-1
R794	Multifamily	B (65)	1	56	55	-1	54	-2	-1
R795	Multifamily	B (65)	1	51	52	1	51	0	-1
R796	Multifamily	B (65)	1	53	50	-3	50	-3	0
R797	Multifamily	B (65)	1	57	54	-3	56	-1	2
R798	Multifamily	B (65)	1	58	56	-2	56	-2	0
R799	Multifamily	B (65)	1	48	49	1	48	0	-1

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} TNM dB(A)	No Build 2045 Alternative L_{eq} dB(A)	No Build 2045 Increase over Existing Noise Level dB	Build 2045 Alternative L_{eq} dB(A)	Build 2045 Increase over Existing Noise Level dB	Build 2045 Increase over No Build 2045 Noise Level dB
R800	Multifamily	B (65)	1	48	49	1	49	1	0
R801	Multifamily	B (65)	1	50	51	1	51	1	0
R802	Multifamily	B (65)	1	50	51	1	51	1	0
R803	Multifamily	B (65)	1	63	61	-2	61	-2	0
R804	Multifamily	B (65)	1	62	61	-1	61	-1	0
R805	Multifamily	B (65)	1	60	57	-3	58	-2	1
R806	Multifamily	B (65)	1	59	57	-2	57	-2	0
R807	Multifamily	B (65)	1	52	53	1	52	0	-1
R808	Multifamily	B (65)	1	52	53	1	52	0	-1
R809	Multifamily	B (65)	1	53	54	1	53	0	-1
R810	Multifamily	B (65)	1	51	51	0	51	0	0
R811	Multifamily	B (65)	1	50	51	1	51	1	0
R812	Multifamily	B (65)	1	50	51	1	51	1	0
R813	Multifamily	B (65)	1	50	50	0	50	0	0
R814	Multifamily	B (65)	1	49	50	1	50	1	0
R815	Multifamily	B (65)	1	50	51	1	50	0	-1
R816	Multifamily	B (65)	1	50	50	0	49	-1	-1
R817	Multifamily	B (65)	1	49	50	1	50	1	0
R818	Multifamily	B (65)	1	48	50	2	49	1	-1
R819	Multifamily	B (65)	1	59	59	0	59	0	0
R820	Multifamily	B (65)	1	60	60	0	60	0	0
R821	Multifamily	B (65)	1	57	57	0	57	0	0
R822	Multifamily	B (65)	1	56	55	-1	55	-1	0
R823	Multifamily	B (65)	1	49	50	1	50	1	0
R824	Multifamily	B (65)	1	50	51	1	50	0	-1
R825	Multifamily	B (65)	1	55	56	1	56	1	0
R826	Multifamily	B (65)	1	55	57	2	57	2	0
R827	Multifamily	B (65)	1	58	59	1	58	0	-1
R828	Multifamily	B (65)	1	59	60	1	59	0	-1
R829	Multifamily	B (65)	1	60	61	1	60	0	-1
R830	Multifamily	B (65)	1	60	61	1	60	0	-1
R831	Multifamily	B (65)	1	51	53	2	53	2	0

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} TNM dB(A)	No Build 2045 Alternative L_{eq} dB(A)	No Build 2045 Increase over Existing Noise Level dB	Build 2045 Alternative L_{eq} dB(A)	Build 2045 Increase over Existing Noise Level dB	Build 2045 Increase over No Build 2045 Noise Level dB
R832	Multifamily	B (65)	1	52	53	1	53	1	0
R833	Multifamily	B (65)	1	52	53	1	53	1	0
R834	Multifamily	B (65)	1	52	53	1	53	1	0
R835	Multifamily	B (65)	1	59	60	1	60	1	0
R836	Multifamily	B (65)	1	54	56	2	56	2	0
R837	Multifamily	B (65)	1	52	53	1	53	1	0
R838	Multifamily	B (65)	1	51	53	2	53	2	0
R839	Multifamily	B (65)	1	51	53	2	53	2	0
R840	Multifamily	B (65)	1	51	53	2	53	2	0
R841	Multifamily	B (65)	1	51	52	1	52	1	0
R842	Multifamily	B (65)	1	51	53	2	53	2	0
R843	Multifamily	B (65)	1	68	64	-4	64	-4	0
R844	Multifamily	B (65)	1	68	64	-4	65	-3	1
R845	Multifamily	B (65)	1	67	62	-5	62	-5	0
R846	Multifamily	B (65)	1	66	60	-6	61	-5	1
R847	Multifamily	B (65)	1	64	59	-5	59	-5	0
R848	Multifamily	B (65)	1	63	58	-5	59	-4	1
R849	Multifamily	B (65)	1	62	57	-5	57	-5	0
R850	Multifamily	B (65)	1	61	57	-4	57	-4	0
R851	Multifamily	B (65)	1	60	57	-3	56	-4	-1
R852	Multifamily	B (65)	1	60	56	-4	56	-4	0
R853	Multifamily	B (65)	1	57	55	-2	54	-3	-1
R854	Multifamily	B (65)	1	57	54	-3	54	-3	0
R855	Multifamily	B (65)	1	69	63	-6	63	-6	0
R856	Multifamily	B (65)	1	69	64	-5	63	-6	-1
R857	Multifamily	B (65)	1	68	64	-4	63	-5	-1
R858	Multifamily	B (65)	1	67	63	-4	62	-5	-1
R859	Multifamily	B (65)	1	66	63	-3	62	-4	-1
R860	Multifamily	B (65)	1	66	63	-3	63	-3	0
R861	Multifamily	B (65)	1	65	63	-2	62	-3	-1
R862	Multifamily	B (65)	1	65	63	-2	62	-3	-1
R863	Multifamily	B (65)	1	56	57	1	57	1	0

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} TNM dB(A)	No Build 2045 Alternative L_{eq} dB(A)	No Build 2045 Increase over Existing Noise Level dB	Build 2045 Alternative L_{eq} dB(A)	Build 2045 Increase over Existing Noise Level dB	Build 2045 Increase over No Build 2045 Noise Level dB
R864	Multifamily	B (65)	1	55	57	2	57	2	0
R865	Multifamily	B (65)	1	54	55	1	55	1	0
R866	Multifamily	B (65)	1	54	55	1	55	1	0
R867	Multifamily	B (65)	1	61	62	1	62	1	0
R868	Multifamily	B (65)	1	60	61	1	61	1	0
R869	Multifamily	B (65)	1	54	56	2	56	2	0
R870	Multifamily	B (65)	1	54	56	2	56	2	0
R871	Multifamily	B (65)	1	54	55	1	55	1	0
R872	Multifamily	B (65)	1	54	55	1	55	1	0
R873	Multifamily	B (65)	1	54	55	1	55	1	0
R874	Multifamily	B (65)	1	54	56	2	56	2	0
R877	Multifamily	B (65)	1	68	63	-5	64	-4	1
R878	Multifamily	B (65)	1	66	62	-4	62	-4	0
R879	Multifamily	B (65)	1	65	60	-5	60	-5	0
R880	Multifamily	B (65)	1	64	59	-5	59	-5	0
R881	Multifamily	B (65)	1	63	58	-5	58	-5	0
R882	Multifamily	B (65)	1	62	58	-4	58	-4	0
R883	Multifamily	B (65)	1	61	58	-3	58	-3	0
R884	Multifamily	B (65)	1	61	57	-4	57	-4	0
R885	Multifamily	B (65)	1	59	56	-3	55	-4	-1
R886	Multifamily	B (65)	1	58	56	-2	55	-3	-1
R887	Multifamily	B (65)	1	57	59	2	59	2	0
R888	Multifamily	B (65)	1	57	59	2	59	2	0
R889	Multifamily	B (65)	1	56	58	2	58	2	0
R890	Multifamily	B (65)	1	56	58	2	58	2	0
R891	Multifamily	B (65)	1	62	64	2	64	2	0
R892	Multifamily	B (65)	1	61	62	1	63	2	1
R893	Multifamily	B (65)	1	59	61	2	61	2	0
R894	Multifamily	B (65)	1	58	60	2	60	2	0
R895	Multifamily	B (65)	1	58	59	1	60	2	1
R896	Multifamily	B (65)	1	58	59	1	59	1	0
R897	Multifamily	B (65)	1	59	60	1	60	1	0

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} TNM dB(A)	No Build 2045 Alternative L_{eq} dB(A)	No Build 2045 Increase over Existing Noise Level dB	Build 2045 Alternative L_{eq} dB(A)	Build 2045 Increase over Existing Noise Level dB	Build 2045 Increase over No Build 2045 Noise Level dB
R898	Multifamily	B (65)	1	59	60	1	60	1	0
R899	Multifamily	B (65)	1	68	65	-3	65	-3	0
R900	Multifamily	B (65)	1	67	63	-4	63	-4	0
R901	Multifamily	B (65)	1	66	61	-5	62	-4	1
R902	Multifamily	B (65)	1	65	61	-4	61	-4	0
R903	Multifamily	B (65)	1	63	59	-4	59	-4	0
R904	Multifamily	B (65)	1	63	59	-4	59	-4	0
R905	Multifamily	B (65)	1	61	59	-2	59	-2	0
R906	Multifamily	B (65)	1	61	58	-3	58	-3	0
R907	Multifamily	B (65)	1	59	57	-2	56	-3	-1
R908	Multifamily	B (65)	1	59	57	-2	56	-3	-1
R909	Multifamily	B (65)	1	69	65	-4	65	-4	0
R910	Multifamily	B (65)	1	68	65	-3	65	-3	0
R911	Multifamily	B (65)	1	68	65	-3	64	-4	-1
R912	Multifamily	B (65)	1	67	64	-3	63	-4	-1
R913	Multifamily	B (65)	1	67	64	-3	64	-3	0
R914	Multifamily	B (65)	1	66	64	-2	63	-3	-1
R915	Multifamily	B (65)	1	66	64	-2	63	-3	-1
R916	Multifamily	B (65)	1	70	65	-5	65	-5	0

See Table 3-1 for information on the NAAC activity categories.
Traffic data used to model future noise levels is provided in Table B-1 and Table B-2 in Appendix B.
Build noise level was not calculated for R546 due to error in the model. No impact is assumed at this site due to noise levels below ODOT NAAC in the vicinity of R546.
Receivers R576 to R692 were not included in the prior noise analysis used to analyze the I-205 Toll Project.
* Receivers ST-12, ST-13, R537 to R575 and R700 to R703 include predicted noise levels with structure-borne bridge provided separately in Table F-2.

Table F-2. Predicted Noise Levels with Structure-borne Bridge Noise

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} dB(A)	Existing 2017 + Bridge Noise L_{eq} dB(A)	No Build 2045 Alternative Noise L_{eq} dB(A)	No Build 2045 Alternative + Bridge Noise L_{eq} dB(A)	Build 2045 Alternative Noise L_{eq} dB(A)	Build 2045 Alternative + Bridge Noise L_{eq} dB(A)
ST-12	Residence	B (65)	1	59	62	62	64	62	64
ST-13	Jon Storm Park	C (65)	1	66	68	66	68	66	68
R537	Residence	B (65)	1	63	64	64	64	64	64
R538	Residence	B (65)	1	61	62	66	66	66	66
R539	Residence	B (65)	1	59	60	62	62	62	62
R540	Residence	B (65)	1	59	60	61	62	61	62
R541	Residence	B (65)	1	59	60	60	61	60	61
R542	Residence	B (65)	1	59	60	60	61	60	61
R543	Residence	B (65)	1	59	60	60	61	60	61
R544	Residence	B (65)	1	59	60	60	61	60	61
R545	Residence	B (65)	1	59	60	60	61	61	62
R546	Residence	B (65)	1	61	62	62	63	63	63
R547	Residence	B (65)	1	60	61	61	62	62	63
R548	Residence	B (65)	1	61	62	62	63	62	63
R549	Residence	B (65)	1	61	62	62	63	62	63
R550	Residence	B (65)	1	60	61	61	62	62	63
R551	Residence	B (65)	1	61	62	62	63	62	63
R552	Residence	B (65)	1	62	63	63	64	64	65
R553	Residence	B (65)	1	63	64	64	65	65	66
R554	Residence	B (65)	1	60	62	61	62	62	63
R555	Residence	B (65)	1	58	60	59	62	62	64
R556	Residence	B (65)	1	62	64	63	64	64	65
R557	Residence	B (65)	1	64	65	64	65	65	66
R558	Residence	B (65)	1	59	62	61	63	62	63
R559	Residence	B (65)	1	59	62	61	63	63	64
R560	Residence	B (65)	1	61	64	62	65	66	67
R561	Residence	B (65)	1	63	64	63	64	64	65
R562	Residence	B (65)	1	64	65	64	65	64	65
R563	Residence	B (65)	1	64	65	64	65	64	65
R564	Residence	B (65)	1	64	65	64	65	64	65
R565	Residence	B (65)	1	63	64	63	64	63	64

Receptor ID	Land Use	ODOT Criteria NAAC	Number of Uses	Existing 2017 L_{eq} dB(A)	Existing 2017 + Bridge Noise L_{eq} dB(A)	No Build 2045 Alternative Noise L_{eq} dB(A)	No Build 2045 Alternative + Bridge Noise L_{eq} dB(A)	Build 2045 Alternative Noise L_{eq} dB(A)	Build 2045 Alternative + Bridge Noise L_{eq} dB(A)
R566	Residence	B (65)	1	63	64	63	64	63	64
R567	Residence	B (65)	1	62	63	63	64	63	64
R568	Residence	B (65)	1	62	63	62	63	63	64
R569	Residence	B (65)	1	63	64	64	64	64	64
R570	Residence	B (65)	1	62	63	63	63	64	64
R571	Residence	B (65)	1	64	65	65	65	65	65
R572	Residence	B (65)	1	63	64	64	65	65	65
R573	Best Western (Pool)	E (70)	1	60	60	64	64	64	64
R574	Best Western (Outdoor Seating)	E (70)	1	59	60	60	62	60	61
R575	Best Western	E (70)	1	65	65	66	66	65	66
R700	Jon Storm Park	C (65)	1	66	69	66	69	66	69
R701	Jon Storm Park	C (65)	1	67	69	67	69	67	69
R702	Jon Storm Park	C (65)	1	67	68	67	68	67	68
R703	Jon Storm Park	C (65)	1	66	67	67	68	67	68

See Table 3-1 for information on the NAAC activity categories.
Traffic data used to model future noise levels is provided in Table B-1 and Table B-2 in Appendix B.

Attachment G Estimated Change in Future Noise Levels at Non-Highway Roadways

Table G-1. Estimated Change in Future Build and No Build Traffic Noise Levels (2045) from Existing Conditions (2017) at Non-Highway Roadways for the I-205 Toll Project based on Change in Traffic Volumes

Roadway Name	Estimated Change in Future No Build AM Peak-Hour Noise Levels (dB) (2045) from Existing Noise Levels (2017)	Estimated Change in Future No Build PM Peak-Hour Noise Levels (dB) (2045) from Existing Noise Levels (2017)	Estimated Change in Future No Build Truck Peak-Hour Noise Levels (dB) (2045) from Existing Noise Levels (2017)	Estimated Change in Future Build AM Peak-Hour Noise Levels (dB) (2045) from Existing Noise Levels (2017)	Estimated Change in Future Build PM Peak-Hour Noise Levels (dB) (2045) from Existing Noise Levels (2017)	Estimated Change in Future Build Truck Peak-Hour Noise Levels (dB) (2045) from Existing Noise Levels (2017)	Estimated Change in Future Build AM Peak-Hour Noise Levels (dB) (2045) from No Build Noise Levels (2045)	Estimated Change in Future Build PM Peak-Hour Noise Levels (dB) (2045) from No Build Noise Levels (2045)	Estimated Change in Future Build Truck Peak-Hour Noise Levels (dB) (2045) from No Build Noise Levels (2045)
SW Stafford Road (Rosemont)									
N/of Borland Rd	1.4	0.7	1.2	2.3	3.0	2.2	0.8	2.3	1.0
S/of Borland Rd	1.5	0.4	1.2	2.3	3.5	2.7	0.8	3.0	1.5
Between I-205 ramps	1.7	0.2	1.7	2.7	3.5	2.8	0.9	3.3	1.1
S/of I-205 ramp	2.6	-0.1	1.1	2.8	2.4	1.5	0.2	2.5	0.4
N/of Mountain Rd	2.7	0.0	1.2	2.9	NA	-1.9	0.2	NA	-3.1
SW Borland Road									
W/of Stafford Rd	1.1	0.6	1.6	1.8	0.9	1.4	0.7	0.3	-0.2
E/of Stafford Rd	1.0	1.4	4.5	4.1	4.1	5.8	3.1	2.7	1.3
N/of EK Rd	1.3	1.4	4.7	4.6	3.3	5.4	3.3	2.0	0.7
N/of Tualatin River Bridge	-1.8	-1.0	0.3	1.5	1.0	1.1	3.2	2.0	0.7
Willamette Falls Drive									
E/of 19th St	0.0	0.1	1.0	1.3	-5.8	1.2	1.3	-6.0	0.1
W/of 10th St	1.3	0.3	0.9	2.7	1.6	2.2	1.4	1.3	1.3
W/of OR 43	1.3	0.5	2.8	-0.2	0.1	2.4	-1.6	-0.5	-0.3
OR 43 (Willamette Drive) Pacific Hwy									
S/of Hidden Springs Rd	0.9	0.6	0.5	2.6	1.0	0.2	1.7	0.5	-0.3
N/of McKillican St	1.3	0.4	0.4	3.3	0.4	-0.5	2.0	0.0	-0.9
N/of I-205 SB ramps	1.3	0.3	0.5	3.4	0.5	-0.2	2.1	0.1	-0.7
N/of I-205 NB ramps	0.8	0.7	0.0	3.2	1.0	0.7	2.4	0.3	0.7
S/of Willamette Falls Drive	0.6	0.8	0.7	2.3	1.2	1.0	1.7	0.4	0.3
Arch Bridge									
Bridge	0.6	0.8	0.7	2.3	1.2	1.0	1.0	0.4	0.3
OR 99E Marion									
S/of Jennings Ave	1.0	1.1	1.6	0.7	0.9	1.5	-0.3	-0.2	-0.1
N/of Gloucester St	0.9	1.0	1.5	0.8	0.8	1.3	-0.1	-0.1	-0.1
N/of Arlington St	1.2	0.9	1.5	0.9	0.8	1.4	-0.3	-0.1	-0.1
N/of Dunes Dr	NA	NA	1.7	1.8	NA	1.5	NA	NA	-0.1
N/of I-205 SB ramps	1.3	1.2	1.2	1.0	0.9	1.0	-0.3	-0.3	-0.2
Between I-205 ramps	1.0	0.9	0.9	1.8	0.8	1.0	0.8	0.3	0.1
S/of I-205 NB ramps	0.9	1.2	1.1	2.3	1.6	1.2	1.4	0.4	0.1
S/of 14th St	0.8	0.9	0.9	2.1	NA	1.1	1.3	NA	0.1
S/of 10th St	0.3	0.9	1.6	1.6	1.4	2.5	1.3	0.5	0.9
S/of Main St	1.5	0.7	1.5	2.2	NA	1.8	0.8	NA	0.3
S/of South End Rd	1.8	1.4	1.9	2.8	NA	2.2	0.9	NA	0.3
N/of N Redmond St	2.1	1.3	1.8	3.2	NA	2.3	1.1	NA	0.5
OR 99E Haines									
N/of S Ivy St	1.7	1.4	1.4	3.5	NA	1.3	1.8	NA	-0.1
N/of Lone Elder Rd	2.7	2.4	2.1	5.5	NA	2.2	2.8	NA	0.1

Roadway Name	Estimated Change in Future No Build AM Peak-Hour Noise Levels (dB) (2045) from Existing Noise Levels (2017)	Estimated Change in Future No Build PM Peak-Hour Noise Levels (dB) (2045) from Existing Noise Levels (2017)	Estimated Change in Future No Build Truck Peak-Hour Noise Levels (dB) (2045) from Existing Noise Levels (2017)	Estimated Change in Future Build AM Peak-Hour Noise Levels (dB) (2045) from Existing Noise Levels (2017)	Estimated Change in Future Build PM Peak-Hour Noise Levels (dB) (2045) from Existing Noise Levels (2017)	Estimated Change in Future Build Truck Peak-Hour Noise Levels (dB) (2045) from Existing Noise Levels (2017)	Estimated Change in Future Build AM Peak-Hour Noise Levels (dB) (2045) from No Build Noise Levels (2045)	Estimated Change in Future Build PM Peak-Hour Noise Levels (dB) (2045) from No Build Noise Levels (2045)	Estimated Change in Future Build Truck Peak-Hour Noise Levels (dB) (2045) from No Build Noise Levels (2045)
OR 213									
Between I-205 ramps	0.0	0.2	0.9	-0.1	0.2	0.9	-0.1	NA	0.0
S/of I-205 NB ramps	0.5	0.4	0.9	0.0	0.4	0.8	-0.6	NA	0.0
S/of Washington St/Clackamas River Dr	0.8	0.4	0.7	0.0	0.2	0.6	-0.8	NA	0.0

Source: Caltrans Technical Noise Supplement 2013 – Equation 2-11.
Note: Traffic data used for to calculate the estimated change in future noise levels is provide in Attachment C, Table C-3.
Figures showing locations of estimated noise level changes are provided in Figures 31, 32, and 33
N/A = not available—traffic data was not provided for these roadway segments.

Attachment H Noise Abatement Worksheets

Table H-1a: I-205 Toll Project – Noise Wall 1 Abatement Worksheet

Site	Type	NAC	DU	Build	Impact	10ft	I.L.	Benefit	12ft	I.L.	Benefit	14ft	I.L.	Benefit	16ft	I.L.	Benefit	18ft	I.L.	Benefit	20ft	I.L.	Benefit	22ft	I.L.	Benefit	24ft	I.L.	Benefit
R48	Residence	B (65)	1	65	Yes	64	1	Imp w/Bar	64	1	Imp w/Bar	64	1	Imp w/Bar	63	2	Imp w/Bar	62	3	Imp w/Bar	61	4	Imp w/Bar	61	4	Imp w/Bar	61	4	Imp w/Bar
R49	Residence	B (65)	1	66	Yes	66	0	Imp w/Bar	65	1	Imp w/Bar	65	1	Imp w/Bar	64	2	Imp w/Bar	63	3	Imp w/Bar	62	4	Imp w/Bar	62	4	Imp w/Bar	61	5	Benefit
R50	Residence	B (65)	1	**75**	Yes	72	3	Imp w/Bar	71	4	Imp w/Bar	69	6	Benefit	67	8	Benefit	65	10	Benefit	64	11	Benefit	63	12	Benefit	63	12	Benefit
R51	Residence	B (65)	1	**71**	Yes	71	0	Imp w/Bar	69	2	Imp w/Bar	67	4	Imp w/Bar	65	6	Benefit	64	7	Benefit	63	8	Benefit	62	9	Benefit	61	10	Benefit
R52	Residence	B (65)	1	**70**	Yes	67	3	Imp w/Bar	65	5	Benefit	63	7	Benefit	62	8	Benefit	62	8	Benefit	61	9	Benefit	60	10	Benefit	60	10	Benefit
R53	Residence	B (65)	1	67	Yes	65	2	Imp w/Bar	64	3	Imp w/Bar	63	4	Imp w/Bar	62	5	Benefit	61	6	Benefit	60	7	Benefit	59	8	Benefit	59	8	Benefit
R54	Residence	B (65)	1	64	No	62	2	Imp w/Bar	61	3	Imp w/Bar	60	4	Imp w/Bar	59	5	Benefit	58	6	Benefit	57	7	Benefit	57	7	Benefit	56	8	Benefit
R55	Residence	B (65)	1	67	Yes	64	3	Imp w/Bar	63	4	Imp w/Bar	62	5	Benefit	61	6	Benefit	60	7	Benefit	59	8	Benefit	58	9	Benefit	58	9	Benefit
R56	Residence	B (65)	1	67	Yes	65	2	Imp w/Bar	64	3	Imp w/Bar	62	5	Benefit	62	5	Benefit	61	6	Benefit	60	7	Benefit	59	8	Benefit	59	8	Benefit
R57	Residence	B (65)	1	68	Yes	65	3	Imp w/Bar	63	5	Benefit	62	6	Benefit	61	7	Benefit	60	8	Benefit	60	8	Benefit	59	9	Benefit	59	9	Benefit
R58	Residence	B (65)	1	68	Yes	64	4	Imp w/Bar	63	5	Benefit	62	6	Benefit	61	7	Benefit	60	8	Benefit	59	9	Benefit	59	9	Benefit	58	10	Benefit
R59	Residence	B (65)	1	66	Yes	62	4	Imp w/Bar	61	5	Benefit	60	6	Benefit	60	6	Benefit	59	7	Benefit	58	8	Benefit	58	8	Benefit	57	9	Benefit
R60	Residence	B (65)	1	67	Yes	64	3	Imp w/Bar	62	5	Benefit	62	5	Benefit	61	6	Benefit	60	7	Benefit	60	7	Benefit	59	8	Benefit	59	8	Benefit
R61	Residence	B (65)	1	65	Yes	62	3	Imp w/Bar	61	4	Imp w/Bar	60	5	Benefit	59	6	Benefit	58	7	Benefit	58	7	Benefit	58	7	Benefit	58	7	Benefit
R62	Residence	B (65)	1	67	Yes	63	4	Imp w/Bar	62	5	Benefit	61	6	Benefit	61	6	Benefit	60	7	Benefit	60	7	Benefit	60	7	Benefit	59	8	Benefit
R69	Residence	B (65)	1	65	Yes	62	3	Imp w/Bar	60	5	Benefit	59	6	Benefit	59	6	Benefit	58	7	Benefit	58	7	Benefit	58	7	Benefit	58	7	Benefit
R70	Residence	B (65)	1	65	Yes	63	2	Imp w/Bar	61	4	Imp w/Bar	61	4	Imp w/Bar	60	5	Benefit	60	5	Benefit	59	6	Benefit	59	6	Benefit	59	6	Benefit
R71	Residence	B (65)	1	67	Yes	63	4	Imp w/Bar	63	4	Imp w/Bar	62	5	Benefit	61	6	Benefit	61	6	Benefit	61	6	Benefit	61	6	Benefit	60	7	Benefit
R72	Residence	B (65)	1	66	Yes	63	3	Imp w/Bar	62	4	Imp w/Bar	61	5	Benefit	61	5	Benefit	60	6	Benefit	60	6	Benefit	60	6	Benefit	59	7	Benefit
R73	Residence	B (65)	1	67	Yes	64	3	Imp w/Bar	64	3	Imp w/Bar	63	4	Imp w/Bar	63	4	Imp w/Bar	62	5	Benefit	62	5	Benefit	62	5	Benefit	62	5	Benefit
R74	Residence	B (65)	1	66	Yes	64	2	Imp w/Bar	63	3	Imp w/Bar	63	3	Imp w/Bar	62	4	Imp w/Bar	62	4	Imp w/Bar	62	4	Imp w/Bar	62	4	Imp w/Bar	62	4	Imp w/Bar
R75	Residence	B (65)	1	68	Yes	65	3	Imp w/Bar	65	3	Imp w/Bar	64	4	Imp w/Bar	64	4	Imp w/Bar	63	5	Benefit	63	5	Benefit	63	5	Benefit	63	5	Benefit
			22	**Total Impacts**	**21**	**Impact Benefit**	**0**		**7**			**13**			**16**			**18**			**18**			**18**			**19**		

NAC = Noise Abatement Criteria
DU = Dwelling Unit
I.L. = Insertion Loss
Imp w/Bar = Impacted site with Barrier (The terms Wall and Barrier are interchangeable.)
The table shows the noise reduction for each noise wall height. Locations receiving benefit have at least 5 dba noise reduction.

Table H-1b: I-205 Wall 1 Abatement by Height

Wall Height	10 ft	12 ft	14ft	16 ft	18 ft	20 ft	22 ft	24 ft
Impact Benefit	**0**	**7**	**13**	**16**	**18**	**18**	**18**	**19**
5dBA	*0*	*7*	*12*	*12*	*7*	*5*	*5*	*4*
7dBA	*0*	*0*	*1*	*4*	*11*	*13*	*13*	*15*
Sites Not Impacted but Benefited by Wall	*0*	*0*	*0*	*1*	*1*	*1*	*1*	*1*
Total Impacted Sites that receive Benefits	**0**	**7**	**13**	**16**	**18**	**18**	**18**	**19**
%	**0.0%**	**33.3%**	**61.9%**	**76.2%**	**85.7%**	**85.7%**	**85.7%**	**90.5%**
Total Benefit	**0**	**7**	**13**	**17**	**19**	**19**	**19**	**20**
Acoustically Feasible majority of impacted receptors receive 5dBA reduction	No	No	Yes	Yes	Yes	Yes	Yes	Yes
7dBA Design Goal	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Benefit 70dBA+	0	1	2	3	3	3	3	3

Table H-1c: I-205 Wall 1 Allowance

Wall Allowance	Wall Height	Wall Cost
Barrier Length	1860	N/A
Cost per square foot	up to 16ft	$30
	17 to 25	$37.50
Cost per Benefitted Residence	up to 16ft	$37,500
	17 to 25	$37,500
Max Area	up to 16ft	1,250
	17 to 25	1,000

N/A = not applicable

Table H-1d: I-205 Wall 1 Feasibility and Reasonableness

Barrier Height (Feet)	Sq Ft	Sq ft/Ben Rec	Total Wall Cost	Cost per Benefitted Receptor	Acoustically Feasible	Reasonable Cost	Reasonable Cost	Allowance	Over 70dBA Allow	TOTAL ALLOW
10	18,600	0	$558,000	0	No	No	No	-	-	-
12	22,320	3,189	$669,600	$95,657	No*	No	No	$262,500	15000	$277,500
14	26,040	2,003	$781,200	$60,092	Yes	No	No	$487,500	30000	$517,500
16	29,760	1,751	$892,800	$52,518	Yes	No	No	$637,500	45000	$682,500
18	33,480	1,762	$1,255,500	$66,079	Yes	No	No	$712,500	45000	$757,500
20	37,200	1,958	$1,395,000	$73,421	Yes	No	No	$712,500	45000	$757,500
22	40,920	2,154	$1,534,500	$80,763	Yes	No	No	$712,500	45000	$757,500
24	44,640	2,232	$1,674,000	$83,700	Yes	No	No	$750,000	45000	$795,000

*Does not meet criteria of majority of impacted receptors achieving 5dBA reduction.
Sq Ft = square feet
Sq Ft/Ben Rec = square feet/benefited receptor

Table H-1e: I-205 Wall 1 Abatement Summary

Wall Abatement Feature	Value
wall height (feet)	16
wall length (feet)	1860
area (square feet)	29760
cost/square feet	$30.00
wall cost	$892,800
wall allowance	$682,500
cost per benefitted	$52,518
allowable cost per benefitted	$34,125
cost per benefitted < allowable cost per benefitted	**No**

Table H-2a: I-205 Toll Project – Noise Wall 2 Abatement Worksheet

Site	Type	NAC	DU	Build	Impact	10ft	I.L.	Benefit	12ft	I.L.	Benefit	14ft	I.L.	Benefit	16ft	I.L.	Benefit	18ft	I.L.	Benefit	20ft	I.L.	Benefit	22ft	I.L.	Benefit	24ft	I.L.	Benefit
ST-5a	Residence	B (65)	1	73	Yes	69	4	Imp w/Bar	68	5	Benefit	66	7	Benefit	64	9	Benefit	63	10	Benefit	62	11	Benefit	61	12	Benefit	61	12	Benefit
ST-5b	Residence	B (65)	1	67	Yes	66	1	Imp w/Bar	65	2	Imp w/Bar	64	3	Imp w/Bar	63	4	Imp w/Bar	61	6	Benefit	60	7	Benefit	59	8	Benefit	58	9	Benefit
R19	Residence	B (65)	1	64	No	63	1	No	62	2	No	62	2	No	61	3	No	60	4	No	59	5	Benefit	59	5	Benefit	58	6	Benefit
R20	Residence	B (65)	1	66	Yes	65	1	Imp w/Bar	64	2	Imp w/Bar	63	3	Imp w/Bar	62	4	Imp w/Bar	62	4	Imp w/Bar	61	5	Benefit	61	5	Benefit	61	5	Benefit
R21	Residence	B (65)	1	72	Yes	66	6	Benefit	65	7	Benefit	64	8	Benefit	63	9	Benefit	63	9	Benefit	62	10	Benefit	62	10	Benefit	62	10	Benefit
R22	Residence	B (65)	1	74	Yes	67	7	Benefit	65	9	Benefit	64	10	Benefit	62	12	Benefit	62	12	Benefit	61	13	Benefit	60	14	Benefit	60	14	Benefit
R23	Residence	B (65)	1	73	Yes	67	6	Benefit	65	8	Benefit	64	9	Benefit	63	10	Benefit	62	11	Benefit	61	12	Benefit	60	13	Benefit	60	13	Benefit
R24	Residence	B (65)	1	74	Yes	69	5	Benefit	67	7	Benefit	65	9	Benefit	64	10	Benefit	63	11	Benefit	62	12	Benefit	61	13	Benefit	60	14	Benefit
R25	Residence	B (65)	1	74	Yes	69	5	Benefit	66	8	Benefit	65	9	Benefit	64	10	Benefit	63	11	Benefit	62	12	Benefit	61	13	Benefit	60	14	Benefit
R26	Residence	B (65)	1	74	Yes	69	5	Benefit	67	7	Benefit	65	9	Benefit	64	10	Benefit	63	11	Benefit	62	12	Benefit	61	13	Benefit	61	13	Benefit
R27	Residence	B (65)	1	74	Yes	69	5	Benefit	66	8	Benefit	65	9	Benefit	64	10	Benefit	63	11	Benefit	62	12	Benefit	61	13	Benefit	60	14	Benefit
R28	Residence	B (65)	1	73	Yes	69	4	Imp w/Bar	67	6	Benefit	65	8	Benefit	64	9	Benefit	63	10	Benefit	62	11	Benefit	61	12	Benefit	60	13	Benefit
R29	Residence	B (65)	1	74	Yes	69	5	Benefit	67	7	Benefit	65	9	Benefit	64	10	Benefit	63	11	Benefit	62	12	Benefit	61	13	Benefit	60	14	Benefit
R30	Residence	B (65)	1	73	Yes	69	4	Imp w/Bar	67	6	Benefit	65	8	Benefit	64	9	Benefit	63	10	Benefit	62	11	Benefit	61	12	Benefit	60	13	Benefit
R31	Residence	B (65)	1	74	Yes	70	4	Imp w/Bar	68	6	Benefit	66	8	Benefit	64	10	Benefit	63	11	Benefit	62	12	Benefit	62	12	Benefit	61	13	Benefit
R32	Residence	B (65)	1	73	Yes	69	4	Imp w/Bar	67	6	Benefit	65	8	Benefit	64	9	Benefit	63	10	Benefit	62	11	Benefit	61	12	Benefit	61	12	Benefit
R33	Residence	B (65)	1	74	Yes	68	6	Benefit	66	8	Benefit	64	10	Benefit	63	11	Benefit	62	12	Benefit	62	12	Benefit	61	13	Benefit	60	14	Benefit
R34	Residence	B (65)	1	69	Yes	67	2	Imp w/Bar	66	3	Imp w/Bar	64	5	Benefit	63	6	Benefit	62	7	Benefit	60	9	Benefit	60	9	Benefit	59	10	Benefit
R35	Residence	B (65)	1	68	Yes	67	1	Imp w/Bar	65	3	Imp w/Bar	64	4	Imp w/Bar	63	5	Benefit	61	7	Benefit	60	8	Benefit	59	9	Benefit	59	9	Benefit
R36	Residence	B (65)	1	67	Yes	66	1	Imp w/Bar	65	2	Imp w/Bar	64	3	Imp w/Bar	62	5	Benefit	61	6	Benefit	60	7	Benefit	59	8	Benefit	58	9	Benefit
R37	Residence	B (65)	1	66	Yes	66	0	Imp w/Bar	65	1	Imp w/Bar	63	3	Imp w/Bar	62	4	Imp w/Bar	61	5	Benefit	60	6	Benefit	59	7	Benefit	58	8	Benefit
R38	Residence	B (65)	1	67	Yes	66	1	Imp w/Bar	65	2	Imp w/Bar	63	4	Imp w/Bar	62	5	Benefit	61	6	Benefit	60	7	Benefit	59	8	Benefit	58	9	Benefit
R39	Residence	B (65)	1	67	Yes	66	1	Imp w/Bar	65	2	Imp w/Bar	64	3	Imp w/Bar	62	5	Benefit	61	6	Benefit	60	7	Benefit	59	8	Benefit	58	9	Benefit
R40	Residence	B (65)	1	67	Yes	65	2	Imp w/Bar	64	3	Imp w/Bar	63	4	Imp w/Bar	62	5	Benefit	61	6	Benefit	60	7	Benefit	59	8	Benefit	58	9	Benefit
R41	Residence	B (65)	1	65	Yes	64	1	Imp w/Bar	63	2	Imp w/Bar	62	3	Imp w/Bar	61	4	Imp w/Bar	60	5	Benefit	59	6	Benefit	58	7	Benefit	58	7	Benefit
R42	Residence	B (65)	1	63	No	62	1	No	61	2	No	60	3	No	59	4	No	58	5	Benefit	57	6	Benefit	57	6	Benefit	56	7	Benefit
R43	Residence	B (65)	1	64	No	63	1	No	62	2	No	61	3	No	59	5	Benefit	58	6	Benefit	58	6	Benefit	57	7	Benefit	56	8	Benefit
R44	Residence	B (65)	1	64	No	63	1	No	63	1	No	62	2	No	61	3	No	60	4	No	59	5	Benefit	58	6	Benefit	57	7	Benefit
R45	Residence	B (65)	1	64	No	63	1	No	62	2	No	61	3	No	59	5	Benefit	59	5	Benefit	57	7	Benefit	56	8	Benefit	56	8	Benefit
R46	Residence	B (65)	1	64	No	63	1	No	62	2	No	61	3	No	60	4	No	59	5	Benefit	58	6	Benefit	56	8	Benefit	56	8	Benefit
R47	Residence	B (65)	1	64	No	63	1	No	62	2	No	61	3	No	60	4	No	59	5	Benefit	58	6	Benefit	56	8	Benefit	56	8	Benefit
R63	Residence	B (65)	1	71	Yes	67	4	Imp w/Bar	65	6	Benefit	64	7	Benefit	62	9	Benefit	61	10	Benefit	60	11	Benefit	60	11	Benefit	59	12	Benefit
R64	Residence	B (65)	1	73	Yes	67	6	Benefit	64	9	Benefit	63	10	Benefit	62	11	Benefit	62	11	Benefit	61	12	Benefit	60	13	Benefit	60	13	Benefit
R65	Residence	B (65)	1	73	Yes	66	7	Benefit	64	9	Benefit	63	10	Benefit	62	11	Benefit	62	11	Benefit	61	12	Benefit	61	12	Benefit	60	13	Benefit
R66	Residence	B (65)	1	71	Yes	65	6	Benefit	64	7	Benefit	63	8	Benefit	62	9	Benefit	62	9	Benefit	61	10	Benefit	61	10	Benefit	60	11	Benefit
R67	Residence	B (65)	1	68	Yes	66	2	Imp w/Bar	65	3	Imp w/Bar	64	4	Imp w/Bar	62	6	Benefit	61	7	Benefit	60	8	Benefit	59	9	Benefit	58	10	Benefit
R68	Residence	B (65)	1	67	Yes	65	2	Imp w/Bar	64	3	Imp w/Bar	63	4	Imp w/Bar	62	5	Benefit	61	6	Benefit	59	8	Benefit	58	9	Benefit	58	9	Benefit
R76	Retirement Home (no outdoor use)	D (50)	1	44	No	39	5	Benefit	39	5	Benefit	38	6	Benefit	38	6	Benefit	37	7	Benefit	62	-18	Imp w/Bar	37	7	Benefit	37	7	Benefit
R77	Pool at Apts	C (65)	1	65	Yes	64	1	Imp w/Bar	64	1	Imp w/Bar	64	1	Imp w/Bar	64	1	Imp w/Bar	64	1	Imp w/Bar	64	1	Imp w/Bar	64	1	Imp w/Bar	64	1	Imp w/Bar
R78	Multifamily	B (65)	1	66	Yes	65	1	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar
R79	Multifamily	B (65)	1	65	Yes	64	1	Imp w/Bar	64	1	Imp w/Bar	64	1	Imp w/Bar	64	1	Imp w/Bar	64	1	Imp w/Bar	64	1	Imp w/Bar	64	1	Imp w/Bar	63	2	Imp w/Bar
R80	Multifamily	B (65)	1	70	Yes	67	3	Imp w/Bar	67	3	Imp w/Bar	67	3	Imp w/Bar	67	3	Imp w/Bar	67	3	Imp w/Bar	67	3	Imp w/Bar	67	3	Imp w/Bar	67	3	Imp w/Bar
R81	Multifamily	B (65)	1	69	Yes	67	2	Imp w/Bar	66	3	Imp w/Bar	66	3	Imp w/Bar	66	3	Imp w/Bar	66	3	Imp w/Bar	66	3	Imp w/Bar	66	3	Imp w/Bar	66	3	Imp w/Bar
R82	Multifamily	B (65)	1	60	No	58	2	No	57	3	No	57	3	No	57	3	No	57	3	No	57	3	No	57	3	No	57	3	Imp w/Bar
R83	Multifamily	B (65)	1	59	No	57	2	No	56	3	No	56	3	No	55	4	No	55	4	No	55	4	No	55	4	No	55	4	Imp w/Bar
R84	Multifamily	B (65)	1	62	No	59	3	No	59	3	No	59	3	No	58	4	No	58	4	No	58	4	No	58	4	No	58	4	Imp w/Bar
R85	Multifamily	B (65)	1	61	No	58	3	No	58	3	No	57	4	No	57	4	No	57	4	No	57	4	No	57	4	No	56	5	Benefit
R86	Multifamily	B (65)	1	52	No	50	2	No	50	2	No	49	3	No	48	4	No	48	4	No	48	4	No	48	4	No	47	5	Benefit
R87	Multifamily	B (65)	1	54	No	51	3	No	51	3	No	50	4	No	49	5	Benefit	49	5	Benefit	49	5	Benefit	48	6	Benefit	48	6	Benefit

Site	Type	NAC	DU	Build	Impact	10ft	I.L.	Benefit	12ft	I.L.	Benefit	14ft	I.L.	Benefit	16ft	I.L.	Benefit	18ft	I.L.	Benefit	20ft	I.L.	Benefit	22ft	I.L.	Benefit	24ft	I.L.	Benefit
R88	Multifamily	B (65)	1	55	No	52	3	No	52	3	No	51	4	No	51	4	No	50	5	Benefit	50	5	Benefit	50	5	Benefit	50	5	Benefit
R89	Multifamily	B (65)	1	57	No	53	4	No	53	4	No	52	5	Benefit	51	6	Benefit	51	6	Benefit	51	6	Benefit	50	7	Benefit	50	7	Benefit
R90	Multifamily	B (65)	1	54	No	53	1	No	53	1	No	53	1	No	53	1	No	52	2	No	52	2	No	52	2	No	52	2	Imp w/Bar
R91	Multifamily	B (65)	1	54	No	53	1	No	53	1	No	53	1	No	52	2	No	52	2	No	52	2	No	52	2	No	52	2	Imp w/Bar
R92	Multifamily	B (65)	1	56	No	56	0	No	55	1	No	55	1	No	55	1	No	55	1	No	54	2	No	54	2	No	54	2	Imp w/Bar
R93	Multifamily	B (65)	1	56	No	55	1	No	55	1	No	55	1	No	55	1	No	54	2	No	54	2	No	54	2	No	54	2	Imp w/Bar
R94	Multifamily	B (65)	1	62	No	57	5	Benefit	57	5	Benefit	55	7	Benefit	55	7	Benefit	54	8	Benefit	53	9	Benefit	53	9	Benefit	52	10	Benefit
R95	Multifamily	B (65)	1	62	No	58	4	No	57	5	Benefit	56	6	Benefit	55	7	Benefit	54	8	Benefit	54	8	Benefit	53	9	Benefit	53	9	Benefit
R96	Multifamily	B (65)	1	65	Yes	60	5	Benefit	59	6	Benefit	57	8	Benefit	56	9	Benefit	55	10	Benefit	55	10	Benefit	54	11	Benefit	53	12	Benefit
R97	Multifamily	B (65)	1	65	Yes	60	5	Benefit	59	6	Benefit	58	7	Benefit	57	8	Benefit	56	9	Benefit	55	10	Benefit	54	11	Benefit	54	11	Benefit
R98	Multifamily	B (65)	1	66	Yes	61	5	Benefit	59	7	Benefit	58	8	Benefit	57	9	Benefit	56	10	Benefit	56	10	Benefit	55	11	Benefit	55	11	Benefit
R99	Multifamily	B (65)	1	66	Yes	61	5	Benefit	58	8	Benefit	58	8	Benefit	57	9	Benefit	56	10	Benefit	55	11	Benefit	55	11	Benefit	54	12	Benefit
R100	Multifamily	B (65)	1	69	Yes	63	6	Benefit	62	7	Benefit	60	9	Benefit	59	10	Benefit	58	11	Benefit	57	12	Benefit	56	13	Benefit	56	13	Benefit
R101	Multifamily	B (65)	1	69	Yes	62	7	Benefit	62	7	Benefit	59	10	Benefit	58	11	Benefit	57	12	Benefit	57	12	Benefit	56	13	Benefit	55	14	Benefit
R102	Multifamily	B (65)	1	60	No	56	4	No	55	5	Benefit	54	6	Benefit	53	7	Benefit	53	7	Benefit	52	8	Benefit	52	8	Benefit	51	9	Benefit
R103	Multifamily	B (65)	1	60	No	56	4	No	56	4	No	54	6	Benefit	54	6	Benefit	53	7	Benefit	53	7	Benefit	52	8	Benefit	52	8	Benefit
R104	Multifamily	B (65)	1	63	No	59	4	No	58	5	Benefit	57	6	Benefit	56	7	Benefit	55	8	Benefit	54	9	Benefit	53	10	Benefit	53	10	Benefit
R105	Multifamily	B (65)	1	63	No	60	3	No	58	5	Benefit	57	6	Benefit	56	7	Benefit	55	8	Benefit	54	9	Benefit	53	10	Benefit	53	10	Benefit
R106	Multifamily	B (65)	1	49	No	48	1	No	48	1	No	48	1	No	48	1	No	48	1	No	48	1	No	48	1	No	48	1	No
R107	Multifamily	B (65)	1	48	No	48	0	No	48	0	No	48	0	No	48	0	No	48	0	No	48	0	No	47	1	No	47	1	No
R108	Multifamily	B (65)	1	51	No	51	0	No	51	0	No	51	0	No	51	0	No	51	0	No	51	0	No	51	0	No	51	0	No
R109	Multifamily	B (65)	1	51	No	51	0	No	51	0	No	50	1	No	50	1	No	50	1	No	50	1	No	50	1	No	50	1	No
R110	Multifamily	B (65)	1	54	No	54	0	No	54	0	No	54	0	No	54	0	No	54	0	No	54	0	No	54	0	No	54	0	No
R111	Multifamily	B (65)	1	50	No	50	0	No	50	0	No	50	0	No	50	0	No	50	0	No	50	0	No	50	0	No	50	0	No
R112	Multifamily	B (65)	1	56	No	56	0	No	56	0	No	56	0	No	56	0	No	56	0	No	56	0	No	56	0	No	56	0	No
R113	Multifamily	B (65)	1	52	No	52	0	No	52	0	No	52	0	No	52	0	No	52	0	No	52	0	No	52	0	No	52	0	No
			75	**Total Impacts**	**41**	**Impact Benefit**	**18**			**24**			**25**			**32**			**35**			**36**			**36**			**36**	

NAC = Noise Abatement Criteria
DU = Dwelling Unit
I.L. = Insertion Loss
Imp w/Bar = Impacted site with Barrier (The terms Wall and Barrier are interchangeable.)
The table shows the noise reduction for each noise wall height. Locations receiving benefit have at least 5 dba noise reduction.

Table H-2b: I-205 Wall 2 Abatement by Height

Wall Height	10 ft	12 ft	14ft	16 ft	18 ft	20 ft	22 ft	24 ft
Impact Benefit	**18**	**24**	**25**	**32**	**35**	**36**	**36**	**36**
5dBA	*15*	*8*	*1*	*8*	*8*	*3*	*1*	*1*
7dBA	*3*	*16*	*24*	*24*	*27*	*33*	*35*	*35*
Sites Not Impacted but Benefited by Wall	*2*	*6*	*8*	*11*	*15*	*16*	*17*	*19*
Total Impacted Sites that receive Benefits	**18**	**24**	**25**	**32**	**35**	**36**	**36**	**36**
%	**43.9%**	**58.5%**	**61.0%**	**78.0%**	**85.4%**	**87.8%**	**87.8%**	**87.8%**
Total Benefit	**20**	**30**	**33**	**43**	**50**	**52**	**53**	**55**
Acoustically Feasible majority of impacted receptors receive 5dBA reduction	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7dBA Design Goal	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Benefit 70dBA+	12	18	18	18	18	18	18	18

Table H-2c: I-205 Wall 2 Allowance

Wall Allowance	Wall Height	Wall Cost
Barrier Length	**2072**	N/A
Cost per square foot	up to 16ft	$30
	17 to 25	$37.50
Cost per Benefitted Residence	up to 16ft	$37,500
	17 to 25	$37,500
Max Area	up to 16ft	1,250
	17 to 25	1,000

N/A = not applicable

Table H-2d: I-205 Wall 2 Feasibility and Reasonableness

Barrier Height (Feet)	Sq Ff	Sq ft/Ben Rec	Total Wall Cost	Cost per Benefitted Receptor	Acoustically Feasible	Reasonable Cost	Allowance	Over 70dBA Allow	TOTAL ALLOW
10	20,720	1,036	$621,600	$31,080	No*	Yes	$750,000	180000	$930,000
12	24,864	829	$745,920	$24,864	Yes	Yes	$1,125,000	270000	$1,395,000
14	29,008	879	$870,240	$26,371	Yes	Yes	$1,237,500	270000	$1,507,500
16	33,152	771	$994,560	$23,129	Yes	Yes	$1,612,500	270000	$1,882,500
18	37,296	746	$1,118,880	$22,378	Yes	Yes	$1,875,000	270000	$2,145,000
20	41,440	797	$1,554,000	$29,885	Yes	Yes	$1,950,000	270000	$2,220,000
22	45,584	860	$1,709,400	$32,253	Yes	Yes	$1,987,500	270000	$2,257,500
24	49,728	904	$1,864,800	$33,905	Yes	Yes	$2,062,500	270000	$2,332,500

*Does not meet criteria of majority of impacted receptors achieving 5dBA reduction.
Sq Ft = square feet
Sq Ft/Ben Rec = square feet/benefited receptor

Table H-2e: I-205 Wall 2 Abatement Summary

Wall Abatement Feature	Value
wall height (feet)	12
wall length (feet)	2072
area (square feet)	24864
cost/square feet	$30.00
wall cost	$745,920
wall allowance	$1,395,000
cost per benefitted	$24,864
allowable cost per benefitted	$46,500
cost per benefitted < allowable cost per benefitted	**Yes**

Table H-3a: I-205 Toll Project – Noise Wall 3 Abatement Worksheet

Site	Type	NAC	DU	Build	Impact	10ft	I.L.	Benefit	12ft	I.L.	Benefit	14ft	I.L.	Benefit	16ft	I.L.	Benefit	18ft	I.L.	Benefit	20ft	I.L.	Benefit	22ft	I.L.	Benefit	24ft	I.L.	Benefit
ST-7	Residence	B (65)	1	65	Yes	62	3	Imp w/Bar	61	4	Imp w/Bar	60	5	Benefit	60	5	Benefit	59	6	Benefit	58	7	Benefit	58	7	Benefit	57	8	Benefit
R114	Residence	B (65)	1	66	Yes	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar
R115	Residence	B (65)	1	67	Yes	67	0	Imp w/Bar	66	1	Imp w/Bar	66	1	Imp w/Bar	66	1	Imp w/Bar	66	1	Imp w/Bar	66	1	Imp w/Bar	66	1	Imp w/Bar	66	1	Imp w/Bar

Site	Type	NAC	DU	Build	Impact	10ft	I.L.	Benefit	12ft	I.L.	Benefit	14ft	I.L.	Benefit	16ft	I.L.	Benefit	18ft	I.L.	Benefit	20ft	I.L.	Benefit	22ft	I.L.	Benefit	24ft	I.L.	Benefit
R116	Residence	B (65)	1	68	Yes	67	1	Imp w/Bar	67	1	Imp w/Bar	67	1	Imp w/Bar	67	1	Imp w/Bar	67	1	Imp w/Bar	67	1	Imp w/Bar	67	1	Imp w/Bar	67	1	Imp w/Bar
R117	Residence	B (65)	1	69	Yes	68	1	Imp w/Bar	68	1	Imp w/Bar	68	1	Imp w/Bar	68	1	Imp w/Bar	68	1	Imp w/Bar	68	1	Imp w/Bar	68	1	Imp w/Bar	68	1	Imp w/Bar
R118	Residence	B (65)	1	71	Yes	69	2	Imp w/Bar	69	2	Imp w/Bar	69	2	Imp w/Bar	69	2	Imp w/Bar	69	2	Imp w/Bar	69	2	Imp w/Bar	69	2	Imp w/Bar	69	2	Imp w/Bar
R119	Residence	B (65)	1	71	Yes	68	3	Imp w/Bar	68	3	Imp w/Bar	67	4	Imp w/Bar	67	4	Imp w/Bar	67	4	Imp w/Bar	67	4	Imp w/Bar	67	4	Imp w/Bar	67	4	Imp w/Bar
R120	Residence	B (65)	1	70	Yes	67	3	Imp w/Bar	66	4	Imp w/Bar	66	4	Imp w/Bar	66	4	Imp w/Bar	66	4	Imp w/Bar	65	5	Benefit	65	5	Benefit	65	5	Benefit
R121	Residence	B (65)	1	67	Yes	64	3	Imp w/Bar	63	4	Imp w/Bar	63	4	Imp w/Bar	62	5	Benefit	62	5	Benefit	62	5	Benefit	62	5	Benefit	62	5	Benefit
R122	Residence	B (65)	1	69	Yes	66	3	Imp w/Bar	65	4	Imp w/Bar	65	4	Imp w/Bar	64	5	Benefit	64	5	Benefit	64	5	Benefit	64	5	Benefit	64	5	Benefit
R123	Residence	B (65)	1	67	Yes	64	3	Imp w/Bar	63	4	Imp w/Bar	63	4	Imp w/Bar	63	4	Imp w/Bar	62	5	Benefit	62	5	Benefit	62	5	Benefit	62	5	Benefit
R124	Residence	B (65)	1	66	Yes	64	2	Imp w/Bar	63	3	Imp w/Bar	62	4	Imp w/Bar	62	4	Imp w/Bar	62	4	Imp w/Bar	61	5	Benefit	61	5	Benefit	61	5	Benefit
R125	Residence	B (65)	1	65	Yes	62	3	Imp w/Bar	61	4	Imp w/Bar	61	4	Imp w/Bar	60	5	Benefit	60	5	Benefit	60	5	Benefit	60	5	Benefit	59	6	Benefit
R126	Residence	B (65)	1	68	Yes	65	3	Imp w/Bar	64	4	Imp w/Bar	63	5	Benefit	63	5	Benefit	62	6	Benefit	62	6	Benefit	62	6	Benefit	62	6	Benefit
R127	Residence	B (65)	1	67	Yes	62	5	Benefit	61	6	Benefit	61	6	Benefit	60	7	Benefit	60	7	Benefit	59	8	Benefit	59	8	Benefit	58	9	Benefit
R128	Residence	B (65)	1	68	Yes	65	3	Imp w/Bar	64	4	Imp w/Bar	63	5	Benefit	63	5	Benefit	62	6	Benefit	62	6	Benefit	62	6	Benefit	61	7	Benefit
R129	Residence	B (65)	1	66	Yes	65	1	Imp w/Bar	65	1	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar
R130	Residence	B (65)	1	66	Yes	65	1	Imp w/Bar	65	1	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar
R131	Residence	B (65)	1	66	Yes	65	1	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar
R132	Residence	B (65)	1	62	No	61	1	Imp w/Bar	61	1	Imp w/Bar	60	2	Imp w/Bar	60	2	Imp w/Bar	60	2	Imp w/Bar	60	2	Imp w/Bar	60	2	Imp w/Bar	60	2	Imp w/Bar
R133	Residence	B (65)	1	67	Yes	65	2	Imp w/Bar	65	2	Imp w/Bar	64	3	Imp w/Bar	63	4	Imp w/Bar	63	4	Imp w/Bar	63	4	Imp w/Bar	62	5	Benefit	62	5	Benefit
R134	Residence	B (65)	1	68	Yes	65	3	Imp w/Bar	64	4	Imp w/Bar	63	5	Benefit	63	5	Benefit	63	5	Benefit	62	6	Benefit	62	6	Benefit	62	6	Benefit
R135	Residence	B (65)	1	68	Yes	62	6	Benefit	61	7	Benefit	61	7	Benefit	60	8	Benefit	59	9	Benefit	58	10	Benefit	58	10	Benefit	57	11	Benefit
R136	Residence	B (65)	1	69	Yes	66	3	Imp w/Bar	65	4	Imp w/Bar	64	5	Benefit	63	6	Benefit	62	7	Benefit	62	7	Benefit	61	8	Benefit	61	8	Benefit
R137	Residence	B (65)	1	**70**	Yes	67	3	Imp w/Bar	66	4	Imp w/Bar	65	5	Benefit	63	7	Benefit	62	8	Benefit	61	9	Benefit	61	9	Benefit	60	10	Benefit
R138	Residence	B (65)	1	68	Yes	66	2	Imp w/Bar	65	3	Imp w/Bar	64	4	Imp w/Bar	63	5	Benefit	62	6	Benefit	62	6	Benefit	61	7	Benefit	61	7	Benefit
R139	Residence	B (65)	1	68	Yes	66	2	Imp w/Bar	65	3	Imp w/Bar	64	4	Imp w/Bar	63	5	Benefit	62	6	Benefit	62	6	Benefit	61	7	Benefit	61	7	Benefit
R140	Residence	B (65)	1	69	Yes	67	2	Imp w/Bar	66	3	Imp w/Bar	65	4	Imp w/Bar	64	5	Benefit	63	6	Benefit	62	7	Benefit	61	8	Benefit	61	8	Benefit
R141	Residence	B (65)	1	69	Yes	63	6	Benefit	62	7	Benefit	61	8	Benefit	60	9	Benefit	59	10	Benefit	59	10	Benefit	58	11	Benefit	57	12	Benefit
R142	Residence	B (65)	1	69	Yes	63	6	Benefit	62	7	Benefit	61	8	Benefit	60	9	Benefit	59	10	Benefit	59	10	Benefit	58	11	Benefit	57	12	Benefit
R143	Residence	B (65)	1	**70**	Yes	65	5	Benefit	64	6	Benefit	62	8	Benefit	61	9	Benefit	60	10	Benefit	59	11	Benefit	59	11	Benefit	58	12	Benefit
R144	Residence	B (65)	1	**70**	Yes	66	4	Imp w/Bar	66	4	Imp w/Bar	64	6	Benefit	63	7	Benefit	62	8	Benefit	61	9	Benefit	60	10	Benefit	59	11	Benefit
R145	Residence	B (65)	1	69	Yes	64	5	Benefit	63	6	Benefit	61	8	Benefit	60	9	Benefit	59	10	Benefit	59	10	Benefit	58	11	Benefit	57	12	Benefit
R146	Residence	B (65)	1	69	Yes	63	6	Benefit	62	7	Benefit	61	8	Benefit	60	9	Benefit	59	10	Benefit	59	10	Benefit	58	11	Benefit	57	12	Benefit
R147	Residence	B (65)	1	69	Yes	62	7	Benefit	61	8	Benefit	60	9	Benefit	60	9	Benefit	59	10	Benefit	59	10	Benefit	58	11	Benefit	57	12	Benefit
R148	Residence	B (65)	1	69	Yes	61	8	Benefit	61	8	Benefit	60	9	Benefit	59	10	Benefit	59	10	Benefit	58	11	Benefit	58	11	Benefit	57	12	Benefit
R149	Residence	B (65)	1	68	Yes	64	4	Imp w/Bar	62	6	Benefit	61	7	Benefit	61	7	Benefit	60	8	Benefit	59	9	Benefit	59	9	Benefit	58	10	Benefit
R150	Residence	B (65)	1	66	Yes	62	4	Imp w/Bar	61	5	Benefit	60	6	Benefit	59	7	Benefit	58	8	Benefit	58	8	Benefit	57	9	Benefit	57	9	Benefit
R151	Residence	B (65)	1	64	No	60	4	Imp w/Bar	59	5	Benefit	58	6	Benefit	57	7	Benefit	55	9	Benefit	55	9	Benefit	54	10	Benefit	54	10	Benefit
R152	Residence	B (65)	1	65	Yes	62	3	Imp w/Bar	61	4	Imp w/Bar	60	5	Benefit	59	6	Benefit	58	7	Benefit	57	8	Benefit	56	9	Benefit	55	10	Benefit
R153	Residence	B (65)	1	65	Yes	63	2	Imp w/Bar	62	3	Imp w/Bar	61	4	Imp w/Bar	61	4	Imp w/Bar	60	5	Benefit	59	6	Benefit	58	7	Benefit	58	7	Benefit
R154	Residence	B (65)	1	64	No	61	3	Imp w/Bar	60	4	Imp w/Bar	59	5	Benefit	58	6	Benefit	57	7	Benefit	56	8	Benefit	56	8	Benefit	55	9	Benefit
R155	Residence	B (65)	1	66	Yes	63	3	Imp w/Bar	62	4	Imp w/Bar	61	5	Benefit	60	6	Benefit	59	7	Benefit	58	8	Benefit	58	8	Benefit	57	9	Benefit
R156	Residence	B (65)	1	67	Yes	63	4	Imp w/Bar	62	5	Benefit	61	6	Benefit	60	7	Benefit	60	7	Benefit	59	8	Benefit	59	8	Benefit	58	9	Benefit
R157	Residence	B (65)	1	65	Yes	63	2	Imp w/Bar	62	3	Imp w/Bar	61	4	Imp w/Bar	60	5	Benefit	60	5	Benefit	59	6	Benefit	58	7	Benefit	58	7	Benefit
R158	Residence	B (65)	1	64	No	63	1	Imp w/Bar	62	2	Imp w/Bar	61	3	Imp w/Bar	60	4	Imp w/Bar	59	5	Benefit	59	5	Benefit	58	6	Benefit	58	6	Benefit
R159	Residence	B (65)	1	61	No	60	1	Imp w/Bar	59	2	Imp w/Bar	58	3	Imp w/Bar	57	4	Imp w/Bar	57	4	Imp w/Bar	57	4	Imp w/Bar	56	5	Benefit	56	5	Benefit
R160	Residence	B (65)	1	64	No	64	0	Imp w/Bar	64	0	Imp w/Bar	63	1	Imp w/Bar	63	1	Imp w/Bar	63	1	Imp w/Bar	63	1	Imp w/Bar	63	1	Imp w/Bar	63	1	Imp w/Bar
R161	Residence	B (65)	1	63	No	61	2	Imp w/Bar	61	2	Imp w/Bar	60	3	Imp w/Bar	59	4	Imp w/Bar	59	4	Imp w/Bar	58	5	Benefit	58	5	Benefit	58	5	Benefit
R162	Residence	B (65)	1	62	No	60	2	Imp w/Bar	59	3	Imp w/Bar	59	3	Imp w/Bar	57	5	Benefit	56	6	Benefit	55	7	Benefit	55	7	Benefit	54	8	Benefit
R163	Residence	B (65)	1	62	No	60	2	Imp w/Bar	60	2	Imp w/Bar	59	3	Imp w/Bar	59	3	Imp w/Bar	57	5	Benefit	57	5	Benefit	56	6	Benefit	56	6	Benefit
R164	Residence	B (65)	1	62	No	60	2	Imp w/Bar	59	3	Imp w/Bar	58	4	Imp w/Bar	57	5	Benefit	56	6	Benefit	56	6	Benefit	55	7	Benefit	55	7	Benefit
R165	Residence	B (65)	1	63	No	63	0	Imp w/Bar	63	0	Imp w/Bar	63	0	Imp w/Bar	63	0	Imp w/Bar	62	1	Imp w/Bar	62	1	Imp w/Bar	62	1	Imp w/Bar	62	1	Imp w/Bar

Site	Type	NAC	DU	Build	Impact	10ft	I.L.	Benefit	12ft	I.L.	Benefit	14ft	I.L.	Benefit	16ft	I.L.	Benefit	18ft	I.L.	Benefit	20ft	I.L.	Benefit	22ft	I.L.	Benefit	24ft	I.L.	Benefit
R166	Residence	B (65)	1	63	No	63	0	Imp w/Bar	63	0	Imp w/Bar	63	0	Imp w/Bar	63	0	Imp w/Bar	62	1	Imp w/Bar	62	1	Imp w/Bar	62	1	Imp w/Bar	62	1	Imp w/Bar
R167	Residence	B (65)	1	63	No	63	0	Imp w/Bar	62	1	Imp w/Bar	62	1	Imp w/Bar	62	1	Imp w/Bar	61	2	Imp w/Bar	61	2	Imp w/Bar	60	3	Imp w/Bar	60	3	Imp w/Bar
			55	**Total Impacts**	**42**	**Impact Benefit**		**9**		**12**			**21**			**28**			**30**			**32**			**33**			**33**	

NAC = Noise Abatement Criteria
DU = Dwelling Unit
I.L. = Insertion Loss
Imp w/Bar = Impacted site with Barrier (The terms Wall and Barrier are interchangeable.)
The table shows the noise reduction for each noise wall height. The locations receiving benefit have at least 5 dba noise reduction.

Table H-3b: I-205 Wall 3 Abatement by Height

Wall Height	10 ft	12 ft	14ft	16 ft	18 ft	20 ft	22 ft	24 ft
Impact Benefit	**9**	**12**	**21**	**28**	**30**	**32**	**33**	**33**
5dBA	*7*	*6*	*12*	*14*	*13*	*13*	*10*	*9*
7dBA	*2*	*6*	*9*	*14*	*17*	*19*	*23*	*24*
Sites Not Impacted but Benefited by Wall	*0*	*1*	*2*	*4*	*6*	*7*	*8*	*8*
Total Impacted Sites that receive Benefits	**9**	**12**	**21**	**28**	**30**	**32**	**33**	**33**
%	**21.4%**	**28.6%**	**50.0%**	**66.7%**	**71.4%**	**76.2%**	**78.6%**	**78.6%**
Total Benefit	**9**	**13**	**23**	**32**	**36**	**39**	**41**	**41**
Acoustically Feasible majority of impacted receptors receive 5dBA reduction	No	No	Yes	Yes	Yes	Yes	Yes	Yes
7dBA Design Goal	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Benefit 70dBA+	1	1	3	3	3	4	4	4

Table H-3c: I-205 Wall 3 Allowance

Wall Allowance	Wall Height	Wall Cost
Barrier Length	2161	N/A
Cost per square foot	up to 16ft	$30
	17 to 25	$37.50
Cost per Benefitted Residence	up to 16ft	$37,500
	17 to 25	$37,500
Max Area	up to 16ft	1,250
	17 to 25	1,000

N/A = not applicable

Table H-3d: I-205 Wall 3 Feasibility and Reasonableness

Barrier Height (Feet)	Sq Ff	Sq ft/Ben Rec	Total Wall Cost	Cost per Benefitted Receptor	Acoustically Feasible	Reasonable Cost	Allowance	Over 70dBA Allow	TOTAL ALLOW
10	21,610	2,401	$648,300	$72,033	No*	No	$337,500	15000	$352,500
12	25,932	1,995	$777,960	$59,843	No*	No	$487,500	15000	$502,500
14	30,254	1,315	$907,620	$39,462	No*	No	$862,500	45000	$907,500
16	34,576	1,081	$1,037,280	$32,415	Yes	Yes	$1,200,000	45000	$1,245,000
18	38,898	1,081	$1,458,675	$40,519	Yes	No	$1,350,000	45000	$1,395,000
20	43,220	1,108	$1,620,750	$41,558	Yes	No	$1,462,500	60000	$1,522,500
22	47,542	1,160	$1,782,825	$43,484	Yes	No	$1,537,500	60000	$1,597,500
24	51,864	1,265	$1,944,900	$47,437	Yes	No	$1,537,500	60000	$1,597,500

*Does not meet criteria of majority of impacted receptors achieving 5dBA reduction.
Sq Ft = square feet
Sq Ft/Ben Rec = square feet/benefited receptor

Table H-3e: I-205 Wall 3 Abatement Summary

Wall Abatement Feature	Value
wall height (feet)	16
wall length (feet)	2161
area (square feet)	34576
cost/square feet	$30.00
wall cost	$1,037,280
wall allowance	$1,245,000
cost per benefitted	$32,415
allowable cost per benefitted	$38,906
cost per benefitted < allowable cost per benefitted	**Yes**

Table H-4a: I-205 Toll Project – Noise Wall 4 Abatement Worksheet

Site	Type	NAC	DU	Build	Impact	8ft	I.L.	Benefit	10ft	I.L.	Benefit	12ft	I.L.	Benefit	14ft	I.L.	Benefit	16ft	I.L.	Benefit	18ft	I.L.	Benefit	20ft	I.L.	Benefit	22ft	I.L.	Benefit	24ft	I.L.	Benefit
ST-6	Play Structure at Apts	C (65)	1	62	No	60	2	Imp w/Bar	59	3	Imp w/Bar	59	3	Imp w/Bar	59	3	Imp w/Bar	58	4	Imp w/Bar	58	4	Imp w/Bar	58	4	Imp w/Bar	58	4	Imp w/Bar	57	5	Benefit
R168	Multifamily	B (65)	1	66	Yes	67	-1	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar
R169	Multifamily	B (65)	1	66	Yes	66	0	Imp w/Bar	66	0	Imp w/Bar	65	1	Imp w/Bar	65	1	Imp w/Bar	65	1	Imp w/Bar	65	1	Imp w/Bar	65	1	Imp w/Bar	65	1	Imp w/Bar	65	1	Imp w/Bar
R170	Multifamily	B (65)	1	60	No	57	3	Imp w/Bar	56	4	Imp w/Bar	55	5	Benefit	54	6	Benefit	54	6	Benefit	53	7	Benefit	53	7	Benefit	52	8	Benefit	52	8	Benefit
R171	Multifamily	B (65)	1	66	Yes	59	7	Benefit	58	8	Benefit	57	9	Benefit	56	10	Benefit	56	10	Benefit	55	11	Benefit	54	12	Benefit	54	12	Benefit	53	13	Benefit
R172	Multifamily	B (65)	1	**71**	Yes	63	8	Benefit	61	10	Benefit	60	11	Benefit	58	13	Benefit	57	14	Benefit	56	15	Benefit	56	15	Benefit	55	16	Benefit	54	17	Benefit
R173	Multifamily	B (65)	1	59	No	56	3	Imp w/Bar	55	4	Imp w/Bar	55	4	Imp w/Bar	54	5	Benefit	53	6	Benefit	52	7	Benefit	52	7	Benefit	51	8	Benefit	51	8	Benefit
R174	Multifamily	B (65)	1	65	Yes	59	6	Benefit	58	7	Benefit	57	8	Benefit	56	9	Benefit	55	10	Benefit	54	11	Benefit	54	11	Benefit	53	12	Benefit	52	13	Benefit
R175	Multifamily	B (65)	1	**70**	Yes	63	7	Benefit	61	9	Benefit	59	11	Benefit	58	12	Benefit	57	13	Benefit	55	15	Benefit	55	15	Benefit	54	16	Benefit	53	17	Benefit
R176	Multifamily	B (65)	1	59	No	56	3	Imp w/Bar	56	3	Imp w/Bar	55	4	Imp w/Bar	54	5	Benefit	54	5	Benefit	53	6	Benefit	53	6	Benefit	52	7	Benefit	52	7	Benefit
R177	Multifamily	B (65)	1	66	Yes	59	7	Benefit	58	8	Benefit	57	9	Benefit	56	10	Benefit	56	10	Benefit	55	11	Benefit	54	12	Benefit	54	12	Benefit	53	13	Benefit
R178	Multifamily	B (65)	1	**70**	Yes	63	7	Benefit	61	9	Benefit	59	11	Benefit	58	12	Benefit	57	13	Benefit	56	14	Benefit	56	14	Benefit	55	15	Benefit	54	16	Benefit
R179	Multifamily	B (65)	1	59	No	56	3	Imp w/Bar	55	4	Imp w/Bar	55	4	Imp w/Bar	54	5	Benefit	53	6	Benefit	53	6	Benefit	52	7	Benefit	52	7	Benefit	51	8	Benefit
R180	Multifamily	B (65)	1	66	Yes	59	7	Benefit	58	8	Benefit	57	9	Benefit	56	10	Benefit	55	11	Benefit	54	12	Benefit	54	12	Benefit	53	13	Benefit	53	13	Benefit
R181	Multifamily	B (65)	1	**70**	Yes	63	7	Benefit	60	10	Benefit	59	11	Benefit	58	12	Benefit	57	13	Benefit	56	14	Benefit	55	15	Benefit	54	16	Benefit	54	16	Benefit
R182	Multifamily	B (65)	1	58	No	55	3	Imp w/Bar	54	4	Imp w/Bar	53	5	Benefit	53	5	Benefit	52	6	Benefit	51	7	Benefit	51	7	Benefit	50	8	Benefit	50	8	Benefit
R183	Multifamily	B (65)	1	65	Yes	57	8	Benefit	56	9	Benefit	55	10	Benefit	54	11	Benefit	53	12	Benefit	52	13	Benefit	52	13	Benefit	51	14	Benefit	51	14	Benefit
R184	Multifamily	B (65)	1	58	No	55	3	Imp w/Bar	54	4	Imp w/Bar	54	4	Imp w/Bar	53	5	Benefit	52	6	Benefit	52	6	Benefit	51	7	Benefit	51	7	Benefit	51	7	Benefit
R185	Multifamily	B (65)	1	66	Yes	57	9	Benefit	56	10	Benefit	55	11	Benefit	54	12	Benefit	53	13	Benefit	53	13	Benefit	52	14	Benefit	52	14	Benefit	51	15	Benefit
R186	Multifamily	B (65)	1	61	No	59	2	Imp w/Bar	58	3	Imp w/Bar	57	4	Imp w/Bar	57	4	Imp w/Bar	56	5	Benefit	56	5	Benefit	55	6	Benefit	55	6	Benefit	54	7	Benefit
R187	Multifamily	B (65)	1	67	Yes	62	5	Benefit	60	7	Benefit	59	8	Benefit	58	9	Benefit	57	10	Benefit	57	10	Benefit	56	11	Benefit	56	11	Benefit	55	12	Benefit
R188	Multifamily	B (65)	1	61	No	59	2	Imp w/Bar	58	3	Imp w/Bar	57	4	Imp w/Bar	57	4	Imp w/Bar	56	5	Benefit	56	5	Benefit	55	6	Benefit	55	6	Benefit	54	7	Benefit
R189	Multifamily	B (65)	1	67	Yes	62	5	Benefit	60	7	Benefit	59	8	Benefit	58	9	Benefit	57	10	Benefit	57	10	Benefit	56	11	Benefit	56	11	Benefit	55	12	Benefit
R190	Multifamily	B (65)	1	61	No	59	2	Imp w/Bar	58	3	Imp w/Bar	57	4	Imp w/Bar	56	5	Benefit	56	5	Benefit	55	6	Benefit	55	6	Benefit	54	7	Benefit	54	7	Benefit
R191	Multifamily	B (65)	1	67	Yes	62	5	Benefit	60	7	Benefit	59	8	Benefit	58	9	Benefit	57	10	Benefit	56	11	Benefit	55	12	Benefit	55	12	Benefit	55	12	Benefit
R192	Multifamily	B (65)	1	61	No	59	2	Imp w/Bar	58	3	Imp w/Bar	57	4	Imp w/Bar	56	5	Benefit	55	6	Benefit	55	6	Benefit	54	7	Benefit	54	7	Benefit	53	8	Benefit
R193	Multifamily	B (65)	1	67	Yes	62	5	Benefit	60	7	Benefit	58	9	Benefit	58	9	Benefit	57	10	Benefit	56	11	Benefit	55	12	Benefit	55	12	Benefit	54	13	Benefit
R194	Multifamily	B (65)	1	61	No	58	3	Imp w/Bar	57	4	Imp w/Bar	56	5	Benefit	55	6	Benefit	55	6	Benefit	54	7	Benefit	53	8	Benefit	53	8	Benefit	53	8	Benefit
R195	Multifamily	B (65)	1	66	Yes	61	5	Benefit	59	7	Benefit	58	8	Benefit	57	9	Benefit	56	10	Benefit	55	11	Benefit	54	12	Benefit	54	12	Benefit	53	13	Benefit
R196	Multifamily	B (65)	1	61	No	58	3	Imp w/Bar	57	4	Imp w/Bar	56	5	Benefit	55	6	Benefit	54	7	Benefit	54	7	Benefit	53	8	Benefit	53	8	Benefit	52	9	Benefit
R197	Multifamily	B (65)	1	66	Yes	61	5	Benefit	59	7	Benefit	58	8	Benefit	56	10	Benefit	56	10	Benefit	55	11	Benefit	54	12	Benefit	54	12	Benefit	53	13	Benefit
R198	Multifamily	B (65)	1	61	No	58	3	Imp w/Bar	56	5	Benefit	55	6	Benefit	54	7	Benefit	54	7	Benefit	53	8	Benefit	53	8	Benefit	52	9	Benefit	52	9	Benefit
R199	Multifamily	B (65)	1	65	Yes	60	5	Benefit	59	6	Benefit	57	8	Benefit	56	9	Benefit	55	10	Benefit	55	10	Benefit	54	11	Benefit	53	12	Benefit	53	12	Benefit
R200	Multifamily	B (65)	1	60	No	57	3	Imp w/Bar	56	4	Imp w/Bar	55	5	Benefit	54	6	Benefit	53	7	Benefit	53	7	Benefit	52	8	Benefit	52	8	Benefit	52	8	Benefit
R201	Multifamily	B (65)	1	64	No	60	4	Imp w/Bar	59	5	Benefit	57	7	Benefit	56	8	Benefit	55	9	Benefit	54	10	Benefit	54	10	Benefit	53	11	Benefit	53	11	Benefit
R202	Multifamily	B (65)	1	60	No	57	3	Imp w/Bar	56	4	Imp w/Bar	55	5	Benefit	54	6	Benefit	54	6	Benefit	53	7	Benefit	53	7	Benefit	52	8	Benefit	52	8	Benefit
R203	Multifamily	B (65)	1	64	No	60	4	Imp w/Bar	59	5	Benefit	57	7	Benefit	56	8	Benefit	55	9	Benefit	54	10	Benefit	54	10	Benefit	54	10	Benefit	53	11	Benefit
R204	Multifamily	B (65)	1	59	No	56	3	Imp w/Bar	55	4	Imp w/Bar	54	5	Benefit	53	6	Benefit	53	6	Benefit	52	7	Benefit	52	7	Benefit	52	7	Benefit	51	8	Benefit
R205	Multifamily	B (65)	1	63	No	60	3	Imp w/Bar	59	4	Imp w/Bar	57	6	Benefit	56	7	Benefit	55	8	Benefit	54	9	Benefit	53	10	Benefit	53	10	Benefit	52	11	Benefit
R206	Multifamily	B (65)	1	60	No	57	3	Imp w/Bar	56	4	Imp w/Bar	55	5	Benefit	55	5	Benefit	54	6	Benefit	53	7	Benefit	53	7	Benefit	53	7	Benefit	52	8	Benefit
R207	Multifamily	B (65)	1	64	No	60	4	Imp w/Bar	59	5	Benefit	58	6	Benefit	56	8	Benefit	55	9	Benefit	55	9	Benefit	54	10	Benefit	54	10	Benefit	53	11	Benefit
R208	Multifamily	B (65)	1	60	No	57	3	Imp w/Bar	56	4	Imp w/Bar	55	5	Benefit	54	6	Benefit	54	6	Benefit	53	7	Benefit	53	7	Benefit	53	7	Benefit	52	8	Benefit
R209	Multifamily	B (65)	1	64	No	60	4	Imp w/Bar	59	5	Benefit	58	6	Benefit	56	8	Benefit	55	9	Benefit	55	9	Benefit	54	10	Benefit	54	10	Benefit	53	11	Benefit
R210	Multifamily	B (65)	1	66	Yes	62	4	Imp w/Bar	61	5	Benefit	60	6	Benefit	59	7	Benefit	58	8	Benefit	57	9	Benefit	57	9	Benefit	56	10	Benefit	56	10	Benefit
R211	Multifamily	B (65)	1	66	Yes	62	4	Imp w/Bar	61	5	Benefit	60	6	Benefit	59	7	Benefit	58	8	Benefit	57	9	Benefit	57	9	Benefit	56	10	Benefit	56	10	Benefit
R212	Multifamily	B (65)	1	60	No	58	2	Imp w/Bar	57	3	Imp w/Bar	56	4	Imp w/Bar	55	5	Benefit	55	5	Benefit	55	5	Benefit	54	6	Benefit	54	6	Benefit	54	6	Benefit
R213	Multifamily	B (65)	1	64	No	60	4	Imp w/Bar	59	5	Benefit	58	6	Benefit	57	7	Benefit	56	8	Benefit	55	9	Benefit	55	9	Benefit	55	9	Benefit	54	10	Benefit
R214	Multifamily	B (65)	1	60	No	58	2	Imp w/Bar	56	4	Imp w/Bar	56	4	Imp w/Bar	55	5	Benefit	55	5	Benefit	54	6	Benefit	54	6	Benefit	54	6	Benefit	53	7	Benefit
R215	Multifamily	B (65)	1	64	No	60	4	Imp w/Bar	59	5	Benefit	57	7	Benefit	56	8	Benefit	55	9	Benefit	55	9	Benefit	55	9	Benefit	54	10	Benefit	54	10	Benefit

Site	Type	NAC	DU	Build	Impact	8ft	I.L.	Benefit	10ft	I.L.	Benefit	12ft	I.L.	Benefit	14ft	I.L.	Benefit	16ft	I.L.	Benefit	18ft	I.L.	Benefit	20ft	I.L.	Benefit	22ft	I.L.	Benefit	24ft	I.L.	Benefit
R216	Multifamily	B (65)	1	66	Yes	62	4	Imp w/Bar	61	5	Benefit	60	6	Benefit	58	8	Benefit	57	9	Benefit	57	9	Benefit	56	10	Benefit	56	10	Benefit	56	10	Benefit
R217	Multifamily	B (65)	1	66	Yes	62	4	Imp w/Bar	61	5	Benefit	60	6	Benefit	58	8	Benefit	58	8	Benefit	57	9	Benefit	57	9	Benefit	57	9	Benefit	56	10	Benefit
R218	Multifamily	B (65)	1	60	No	58	2	Imp w/Bar	57	3	Imp w/Bar	57	3	Imp w/Bar	56	4	Imp w/Bar	56	4	Imp w/Bar	56	4	Imp w/Bar	56	4	Imp w/Bar	55	5	Benefit	55	5	Benefit
R219	Multifamily	B (65)	1	64	No	60	4	Imp w/Bar	59	5	Benefit	58	6	Benefit	58	6	Benefit	57	7	Benefit	57	7	Benefit	56	8	Benefit	56	8	Benefit	56	8	Benefit
R220	Multifamily	B (65)	1	60	No	58	2	Imp w/Bar	57	3	Imp w/Bar	57	3	Imp w/Bar	56	4	Imp w/Bar	56	4	Imp w/Bar	55	5	Benefit	55	5	Benefit	55	5	Benefit	55	5	Benefit
R221	Multifamily	B (65)	1	64	No	60	4	Imp w/Bar	59	5	Benefit	58	6	Benefit	57	7	Benefit	57	7	Benefit	57	7	Benefit	56	8	Benefit	56	8	Benefit	56	8	Benefit
R222	Multifamily	B (65)	1	65	Yes	62	3	Imp w/Bar	61	4	Imp w/Bar	60	5	Benefit	59	6	Benefit	58	7	Benefit	58	7	Benefit	58	7	Benefit	57	8	Benefit	57	8	Benefit
R223	Multifamily	B (65)	1	65	Yes	62	3	Imp w/Bar	61	4	Imp w/Bar	60	5	Benefit	59	6	Benefit	58	7	Benefit	58	7	Benefit	58	7	Benefit	58	7	Benefit	57	8	Benefit
R224	Multifamily	B (65)	1	59	No	57	2	Imp w/Bar	57	2	Imp w/Bar	56	3	Imp w/Bar	55	4	Imp w/Bar	54	5	Benefit	54	5	Benefit	53	6	Benefit	53	6	Benefit	52	7	Benefit
R225	Multifamily	B (65)	1	64	No	60	4	Imp w/Bar	59	5	Benefit	58	6	Benefit	57	7	Benefit	56	8	Benefit	55	9	Benefit	55	9	Benefit	54	10	Benefit	53	11	Benefit
R226	Multifamily	B (65)	1	**71**	Yes	65	6	Benefit	63	8	Benefit	61	10	Benefit	59	12	Benefit	58	13	Benefit	57	14	Benefit	56	15	Benefit	55	16	Benefit	55	16	Benefit
R227	Multifamily	B (65)	1	59	No	57	2	Imp w/Bar	56	3	Imp w/Bar	55	4	Imp w/Bar	55	4	Imp w/Bar	54	5	Benefit	53	6	Benefit	53	6	Benefit	52	7	Benefit	52	7	Benefit
R228	Multifamily	B (65)	1	64	No	60	4	Imp w/Bar	58	6	Benefit	57	7	Benefit	56	8	Benefit	56	8	Benefit	55	9	Benefit	54	10	Benefit	54	10	Benefit	53	11	Benefit
R229	Multifamily	B (65)	1	**70**	Yes	64	6	Benefit	63	7	Benefit	60	10	Benefit	59	11	Benefit	57	13	Benefit	57	13	Benefit	55	15	Benefit	55	15	Benefit	54	16	Benefit
R230	Multifamily	B (65)	1	59	No	57	2	Imp w/Bar	56	3	Imp w/Bar	56	3	Imp w/Bar	55	4	Imp w/Bar	54	5	Benefit	54	5	Benefit	53	6	Benefit	53	6	Benefit	52	7	Benefit
R231	Multifamily	B (65)	1	65	Yes	60	5	Benefit	59	6	Benefit	58	7	Benefit	57	8	Benefit	56	9	Benefit	55	10	Benefit	55	10	Benefit	54	11	Benefit	53	12	Benefit
R232	Multifamily	B (65)	1	**71**	Yes	64	7	Benefit	62	9	Benefit	60	11	Benefit	59	12	Benefit	58	13	Benefit	57	14	Benefit	56	15	Benefit	55	16	Benefit	55	16	Benefit
R233	Multifamily	B (65)	1	59	No	57	2	Imp w/Bar	56	3	Imp w/Bar	55	4	Imp w/Bar	54	5	Benefit	54	5	Benefit	53	6	Benefit	53	6	Benefit	52	7	Benefit	52	7	Benefit
R234	Multifamily	B (65)	1	65	Yes	59	6	Benefit	58	7	Benefit	57	8	Benefit	56	9	Benefit	55	10	Benefit	55	10	Benefit	54	11	Benefit	54	11	Benefit	53	12	Benefit
R235	Multifamily	B (65)	1	**70**	Yes	64	6	Benefit	62	8	Benefit	60	10	Benefit	58	12	Benefit	57	13	Benefit	56	14	Benefit	55	15	Benefit	55	15	Benefit	54	16	Benefit
R236	Multifamily	B (65)	1	58	No	56	2	Imp w/Bar	55	3	Imp w/Bar	54	4	Imp w/Bar	53	5	Benefit	52	6	Benefit	52	6	Benefit	51	7	Benefit	51	7	Benefit	50	8	Benefit
R237	Multifamily	B (65)	1	62	No	59	3	Imp w/Bar	57	5	Benefit	56	6	Benefit	55	7	Benefit	54	8	Benefit	53	9	Benefit	53	9	Benefit	52	10	Benefit	51	11	Benefit
R238	Multifamily	B (65)	1	58	No	55	3	Imp w/Bar	54	4	Imp w/Bar	54	4	Imp w/Bar	53	5	Benefit	52	6	Benefit	52	6	Benefit	51	7	Benefit	50	8	Benefit	50	8	Benefit
R239	Multifamily	B (65)	1	62	No	59	3	Imp w/Bar	57	5	Benefit	56	6	Benefit	55	7	Benefit	54	8	Benefit	53	9	Benefit	52	10	Benefit	52	10	Benefit	51	11	Benefit
R240	Multifamily	B (65)	1	58	No	55	3	Imp w/Bar	55	3	Imp w/Bar	54	4	Imp w/Bar	53	5	Benefit	52	6	Benefit	52	6	Benefit	51	7	Benefit	51	7	Benefit	50	8	Benefit
R241	Multifamily	B (65)	1	63	No	59	4	Imp w/Bar	57	6	Benefit	55	8	Benefit	55	8	Benefit	54	9	Benefit	53	10	Benefit	52	11	Benefit	52	11	Benefit	51	12	Benefit
R242	Multifamily	B (65)	1	58	No	55	3	Imp w/Bar	54	4	Imp w/Bar	54	4	Imp w/Bar	53	5	Benefit	52	6	Benefit	52	6	Benefit	51	7	Benefit	51	7	Benefit	50	8	Benefit
R243	Multifamily	B (65)	1	63	No	59	4	Imp w/Bar	56	7	Benefit	55	8	Benefit	54	9	Benefit	53	10	Benefit	53	10	Benefit	52	11	Benefit	51	12	Benefit	51	12	Benefit
R244	Residence	B (65)	1	62	No	60	2	Imp w/Bar	60	2	Imp w/Bar	59	3	Imp w/Bar	58	4	Imp w/Bar	58	4	Imp w/Bar	57	5	Benefit	57	5	Benefit	56	6	Benefit	55	7	Benefit
R245	Residence	B (65)	1	63	No	60	3	Imp w/Bar	59	4	Imp w/Bar	58	5	Benefit	58	5	Benefit	57	6	Benefit	56	7	Benefit	56	7	Benefit	55	8	Benefit	55	8	Benefit
R246	Residence	B (65)	1	62	No	60	2	Imp w/Bar	59	3	Imp w/Bar	58	4	Imp w/Bar	57	5	Benefit	56	6	Benefit	56	6	Benefit	55	7	Benefit	54	8	Benefit	54	8	Benefit
R247	Residence	B (65)	1	62	No	59	3	Imp w/Bar	58	4	Imp w/Bar	57	5	Benefit	57	5	Benefit	56	6	Benefit	55	7	Benefit	55	7	Benefit	54	8	Benefit	54	8	Benefit
R248	Residence	B (65)	1	62	No	59	3	Imp w/Bar	58	4	Imp w/Bar	57	5	Benefit	56	6	Benefit	56	6	Benefit	55	7	Benefit	54	8	Benefit	54	8	Benefit	53	9	Benefit
R249	Residence	B (65)	1	61	No	59	2	Imp w/Bar	58	3	Imp w/Bar	57	4	Imp w/Bar	56	5	Benefit	55	6	Benefit	54	7	Benefit	54	7	Benefit	53	8	Benefit	53	8	Benefit
R250	Residence	B (65)	1	60	No	58	2	Imp w/Bar	57	3	Imp w/Bar	56	4	Imp w/Bar	55	5	Benefit	55	5	Benefit	54	6	Benefit	54	6	Benefit	53	7	Benefit	53	7	Benefit
R251	Residence	B (65)	1	59	No	58	1	Imp w/Bar	56	3	Imp w/Bar	56	3	Imp w/Bar	55	4	Imp w/Bar	55	4	Imp w/Bar	54	5	Benefit	54	5	Benefit	53	6	Benefit	53	6	Benefit
R252	Residence	B (65)	1	59	No	58	1	Imp w/Bar	57	2	Imp w/Bar	56	3	Imp w/Bar	55	4	Imp w/Bar	55	4	Imp w/Bar	55	4	Imp w/Bar	54	5	Benefit	54	5	Benefit	54	5	Benefit
R253	Residence	B (65)	1	59	No	57	2	Imp w/Bar	56	3	Imp w/Bar	55	4	Imp w/Bar	54	5	Benefit	53	6	Benefit	53	6	Benefit	52	7	Benefit	52	7	Benefit	52	7	Benefit
R254	Residence	B (65)	1	58	No	57	1	Imp w/Bar	56	2	Imp w/Bar	55	3	Imp w/Bar	54	4	Imp w/Bar	53	5	Benefit	53	5	Benefit	53	5	Benefit	52	6	Benefit	52	6	Benefit
R255	Residence	B (65)	1	58	No	57	1	Imp w/Bar	56	2	Imp w/Bar	55	3	Imp w/Bar	54	4	Imp w/Bar	54	4	Imp w/Bar	53	5	Benefit	53	5	Benefit	53	5	Benefit	53	5	Benefit
R256	Residence	B (65)	1	65	Yes	60	5	Benefit	60	5	Benefit	59	6	Benefit	59	6	Benefit	59	6	Benefit	58	7	Benefit	58	7	Benefit	58	7	Benefit	58	7	Benefit
R257	Residence	B (65)	1	64	No	59	5	Benefit	59	5	Benefit	58	6	Benefit	58	6	Benefit	58	6	Benefit	58	6	Benefit	58	6	Benefit	57	7	Benefit	57	7	Benefit
R258	Residence	B (65)	1	63	No	58	5	Benefit	58	5	Benefit	58	5	Benefit	58	5	Benefit	57	6	Benefit	57	6	Benefit	57	6	Benefit	57	6	Benefit	57	6	Benefit
R259	Residence	B (65)	1	62	No	58	4	Imp w/Bar	58	4	Imp w/Bar	57	5	Benefit	57	5	Benefit	57	5	Benefit	57	5	Benefit	57	5	Benefit	56	6	Benefit	56	6	Benefit
R260	Residence	B (65)	1	61	No	58	3	Imp w/Bar	57	4	Imp w/Bar	57	4	Imp w/Bar	57	4	Imp w/Bar	56	5	Benefit	56	5	Benefit	56	5	Benefit	56	5	Benefit	56	5	Benefit
R261	Residence	B (65)	1	60	No	57	3	Imp w/Bar	57	3	Imp w/Bar	56	4	Imp w/Bar	56	4	Imp w/Bar	56	4	Imp w/Bar	56	4	Imp w/Bar	56	4	Imp w/Bar	55	5	Benefit	55	5	Benefit
R262	Residence	B (65)	1	60	No	57	3	Imp w/Bar	56	4	Imp w/Bar	56	4	Imp w/Bar	56	4	Imp w/Bar	56	4	Imp w/Bar	56	4	Imp w/Bar	55	5	Benefit	55	5	Benefit	55	5	Benefit
R263	Residence	B (65)	1	59	No	57	2	Imp w/Bar	56	3	Imp w/Bar	56	3	Imp w/Bar	56	3	Imp w/Bar	55	4	Imp w/Bar	55	4	Imp w/Bar	55	4	Imp w/Bar	55	4	Imp w/Bar	55	4	Imp w/Bar
R264	Residence	B (65)	1	61	No	59	2	Imp w/Bar	58	3	Imp w/Bar	56	5	Benefit	55	6	Benefit	55	6	Benefit	54	7	Benefit	53	8	Benefit	52	9	Benefit	52	9	Benefit
R265	Residence	B (65)	1	61	No	59	2	Imp w/Bar	58	3	Imp w/Bar	56	5	Benefit	56	5	Benefit	55	6	Benefit	54	7	Benefit	53	8	Benefit	53	8	Benefit	52	9	Benefit
R266	Residence	B (65)	1	58	No	57	1	Imp w/Bar	56	2	Imp w/Bar	55	3	Imp w/Bar	55	3	Imp w/Bar	54	4	Imp w/Bar	54	4	Imp w/Bar	53	5	Benefit	53	5	Benefit	53	5	Benefit

Site	Type	NAC	DU	Build	Impact	8ft	I.L.	Benefit	10ft	I.L.	Benefit	12ft	I.L.	Benefit	14ft	I.L.	Benefit	16ft	I.L.	Benefit	18ft	I.L.	Benefit	20ft	I.L.	Benefit	22ft	I.L.	Benefit	24ft	I.L.	Benefit
R267	Residence	B (65)	1	59	No	57	2	Imp w/Bar	57	2	Imp w/Bar	56	3	Imp w/Bar	56	3	Imp w/Bar	56	3	Imp w/Bar	55	4	Imp w/Bar	55	4	Imp w/Bar	55	4	Imp w/Bar	55	4	Imp w/Bar
R268	Residence	B (65)	1	61	No	59	2	Imp w/Bar	59	2	Imp w/Bar	58	3	Imp w/Bar	58	3	Imp w/Bar	57	4	Imp w/Bar	57	4	Imp w/Bar	57	4	Imp w/Bar	57	4	Imp w/Bar	56	5	Benefit
R269	Residence	B (65)	1	62	No	61	1	Imp w/Bar	60	2	Imp w/Bar	60	2	Imp w/Bar	59	3	Imp w/Bar	59	3	Imp w/Bar	58	4	Imp w/Bar	58	4	Imp w/Bar	58	4	Imp w/Bar	57	5	Benefit
R270	Residence	B (65)	1	62	No	61	1	Imp w/Bar	61	1	Imp w/Bar	60	2	Imp w/Bar	59	3	Imp w/Bar	59	3	Imp w/Bar	58	4	Imp w/Bar	58	4	Imp w/Bar	58	4	Imp w/Bar	58	4	Imp w/Bar
R271	Residence	B (65)	1	64	No	62	2	Imp w/Bar	61	3	Imp w/Bar	60	4	Imp w/Bar	60	4	Imp w/Bar	59	5	Benefit	59	5	Benefit	59	5	Benefit	59	5	Benefit	59	5	Benefit
R272	Residence	B (65)	1	66	Yes	62	4	Imp w/Bar	62	4	Imp w/Bar	61	5	Benefit	60	6	Benefit	60	6	Benefit	60	6	Benefit	60	6	Benefit	59	7	Benefit	59	7	Benefit
R273	Residence	B (65)	1	68	Yes	63	5	Benefit	62	6	Benefit	62	6	Benefit	62	6	Benefit	61	7	Benefit	61	7	Benefit	61	7	Benefit	61	7	Benefit	61	7	Benefit
			107	**Total Impacts**	**34**	**Impact Benefit**	**25**			**29**			**32**			**32**			**32**			**32**			**32**			**32**			**32**	

NAC = Noise Abatement Criteria
DU = Dwelling Unit
I.L. = Insertion Loss
Imp w/Bar = Impacted site with Barrier (The terms Wall and Barrier are interchangeable.)
The table shows the noise reduction for each noise wall height. The locations receiving benefit have at least 5 dba noise reduction.

Table H-4b: I-205 Wall 4 Abatement by Height

Wall Height	8 ft	10 ft	12 ft	14 ft	16 ft	18 ft	20 ft	22 ft	24 ft
Impact Benefit	**25**	**29**	**32**	**32**	**32**	**32**	**32**	**32**	**32**
5dBA	*15*	*8*	*9*	*5*	*2*	*1*	*1*	*0*	*0*
7dBA	*10*	*21*	*23*	*27*	*30*	*31*	*31*	*32*	*32*
Sites Not Impacted but Benefited by Wall	*2*	*17*	*33*	*50*	*58*	*62*	*65*	*67*	*70*
Total Impacted Sites that receive Benefits	**25**	**29**	**32**	**32**	**32**	**32**	**32**	**32**	**32**
%	**73.5%**	**85.3%**	**94.1%**	**94.1%**	**94.1%**	**94.1%**	**94.1%**	**94.1%**	**94.1%**
Total Benefit	**27**	**46**	**65**	**82**	**90**	**94**	**97**	**99**	**102**
Acoustically Feasible majority of impacted receptors receive 5dBA reduction	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7dBA Design Goal	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Benefit 70dBA+	8	8	8	8	8	8	8	8	8

Table H-4c: I-205 Wall 4 Allowance

Wall Allowance	Wall Height	Wall Cost
Barrier Length	1518	N/A
Cost per square foot	up to 16ft	$30
	17 to 25	$37.50
Cost per Benefitted Residence	up to 16ft	$37,500
	17 to 25	$37,500
Max Area	up to 16ft	1,250
	17 to 25	1,000

N/A = not applicable

Table H-4d: I-205 Wall 4 Feasibility and Reasonableness

Barrier Height (Feet)	Sq Ft	Sq ft/Ben Rec	Total Wall Cost	Cost per Benefitted Receptor	Acoustically Feasible	Reasonable Cost	Allowance	Over 70dBA Allow	TOTAL ALLOW
8	12,144	450	$364,320	$13,493	Yes	Yes	$1,012,500	120000	$1,132,500
10	15,180	330	$455,400	$9,900	Yes	Yes	$1,725,000	120000	$1,845,000
12	18,216	280	$546,480	$8,407	Yes	Yes	$2,437,500	120000	$2,557,500
14	21,252	259	$637,560	$7,775	Yes	Yes	$3,075,000	120000	$3,195,000
16	24,288	270	$728,640	$8,096	Yes	Yes	$3,375,000	120000	$3,495,000
18	27,324	291	$1,024,650	$10,901	Yes	Yes	$3,525,000	120000	$3,645,000
20	30,360	313	$1,138,500	$11,737	Yes	Yes	$3,637,500	120000	$3,757,500
22	33,396	337	$1,252,350	$12,650	Yes	Yes	$3,712,500	120000	$3,832,500
24	36,432	357	$1,366,200	$13,394	Yes	Yes	$3,825,000	120000	$3,945,000

Sq Ft = square feet
Sq Ft/Ben Rec = square feet/benefited receptor

Table H-4e: I-205 Wall 4 Abatement Summary

Wall Abatement Feature	Value
wall height (feet)	14
wall length (feet)	1518
area (square feet)	21252
cost/square feet	$30.00
wall cost	$637,560
wall allowance	$3,195,000
cost per benefitted	$7,775
allowable cost per benefitted	$38,963
cost per benefitted < allowable cost per benefitted	Yes

Table H-5a: I-205 Toll Project – Noise Wall 5 Abatement Worksheet

Site	Type	NAC	DU	Build	Impact	8ft	I.L.	Benefit	10ft	I.L.	Benefit	12ft	I.L.	Benefit	14ft	I.L.	Benefit	16ft	I.L.	Benefit	18ft	I.L.	Benefit	20ft	I.L.	Benefit	22ft	I.L.	Benefit	24ft	I.L.	Benefit
ST-8	Residence	B (65)	1	65	Yes	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar
R274	Residence	B (65)	1	64	No	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar
R275	Residence	B (65)	1	65	Yes	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar
R276	Residence	B (65)	1	65	Yes	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar
R277	Residence	B (65)	1	65	Yes	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar
R278	Residence	B (65)	1	65	Yes	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar
R279	Residence	B (65)	1	65	Yes	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar
R280	Residence	B (65)	1	64	No	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar
R281	Residence	B (65)	1	66	Yes	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar
R282	Residence	B (65)	1	66	Yes	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar
R283	Residence	B (65)	1	66	Yes	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar
R284	Residence	B (65)	1	66	Yes	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar
R285	Residence	B (65)	1	66	Yes	67	-1	Imp w/Bar	67	-1	Imp w/Bar	67	-1	Imp w/Bar	67	-1	Imp w/Bar	67	-1	Imp w/Bar	67	-1	Imp w/Bar	67	-1	Imp w/Bar	67	-1	Imp w/Bar	67	-1	Imp w/Bar
R286	Residence	B (65)	1	64	No	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	63	1	Imp w/Bar
R287	Residence	B (65)	1	64	No	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar
R288	Residence	B (65)	1	64	No	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar
R289	Residence	B (65)	1	64	No	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar
R290	Residence	B (65)	1	64	No	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar
R291	Residence	B (65)	1	65	Yes	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar
R292	Residence	B (65)	1	63	No	63	0	Imp w/Bar	63	0	Imp w/Bar	63	0	Imp w/Bar	63	0	Imp w/Bar	63	0	Imp w/Bar	63	0	Imp w/Bar	63	0	Imp w/Bar	63	0	Imp w/Bar	63	0	Imp w/Bar
			20	**Total Impacts**	**12**	**Impact Benefit**	**0**			**0**			**0**			**0**			**0**			**0**			**0**			**0**			**0**	

NAC = Noise Abatement Criteria
DU = Dwelling Unit
I.L. = Insertion Loss
Imp w/Bar = Impacted site with Barrier (The terms Wall and Barrier are interchangeable.)
The table shows the noise reduction for each noise wall height. The locations receiving benefit have at least 5 dba noise reduction.

Table H-5b: I-205 Wall 5 Abatement by Height

Wall Height	8	10	12	14	16	18	20	22	24
Impact Benefit	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5dBA	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
7dBA	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Sites Not Impacted but Benefited by Wall	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Impacted Sites that receive Benefits	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
%	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
Total Benefit	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Acoustically Feasible majority of impacted receptors receive 5dBA reduction	No	No	No	No	No	No	No	No	No
7dBA Design Goal	No	No	No	No	No	No	No	No	No

Table H-5c: 5-205 Wall 5 Allowance

Wall Allowance	Wall Height	Wall Cost
Barrier Length	1550	N/A
Cost per square foot	up to 16ft	$30
	17 to 25	$37.50
Cost per Benefitted Residence	up to 16ft	$37,500
	17 to 25	$37,500
Max Area	up to 16ft	1,250
	17 to 25	1,000

Table H-5d: I-205 Wall 5 Feasibility and Reasonableness – Not Feasible

Barrier Height (Feet)	Sq FT	Sq ft/Ben Rec	Total Wall Cost	Cost per Benefitted Receptor	Acoustically Feasible	Reasonable Cost
8	12,400	0	$372,000	0	No	No
10	15,500	0	$465,000	0	No	No
12	18,600	0	$558,000	0	No	No
14	21,700	0	$651,000	0	No	No
16	24,800	0	$744,000	0	No	No
18	27,900	0	$1,046,250	0	No	No
20	31,000	0	$1,162,500	0	No	No
22	34,100	0	$1,278,750	0	No	No
24	37,200	0	$1,395,000	0	No	No

Sq Ft = square feet
Sq Ft/Ben Rec = square feet/benefited receptor

Table H-6a: I-205 Toll Project – Noise Wall 6A Abatement Worksheet

Site	Type	NAC	DU	Build	Impact	8ft	I.L.	Benefit	10ft	I.L.	Benefit	12ft	I.L.	Benefit	14ft	I.L.	Benefit	16ft	I.L.	Benefit	18ft	I.L.	Benefit	20ft	I.L.	Benefit	22ft	I.L.	Benefit	24ft	I.L.	Benefit
ST-9	Residence	B (65)	1	61	No	60	1	Imp w/Bar	60	1	Imp w/Bar	60	1	Imp w/Bar	60	1	Imp w/Bar	59	2	Imp w/Bar	59	2	Imp w/Bar	59	2	Imp w/Bar	59	2	Imp w/Bar	59	2	Imp w/Bar
LT-2/ST-10	Residence	B (65)	1	65	Yes	59	6	Benefit	58	7	Benefit	57	8	Benefit	57	8	Benefit	56	9	Benefit	56	9	Benefit	55	10	Benefit	55	10	Benefit	54	11	Benefit
R306	Residence	B (65)	1	63	No	61	2	Imp w/Bar	60	3	Imp w/Bar	60	3	Imp w/Bar	59	4	Imp w/Bar	59	4	Imp w/Bar	59	4	Imp w/Bar	58	5	Benefit	58	5	Benefit	58	5	Benefit
R307	Residence	B (65)	1	62	No	59	3	Imp w/Bar	58	4	Imp w/Bar	58	4	Imp w/Bar	57	5	Benefit	57	5	Benefit	57	5	Benefit	56	6	Benefit	56	6	Benefit	56	6	Benefit
R308	Residence	B (65)	1	62	No	59	3	Imp w/Bar	59	3	Imp w/Bar	58	4	Imp w/Bar	57	5	Benefit	57	5	Benefit	57	5	Benefit	56	6	Benefit	56	6	Benefit	56	6	Benefit
R309	Residence	B (65)	1	63	No	59	4	Imp w/Bar	59	4	Imp w/Bar	58	5	Benefit	57	6	Benefit	57	6	Benefit	57	6	Benefit	56	7	Benefit	56	7	Benefit	55	8	Benefit
R310	Residence	B (65)	1	64	No	60	4	Imp w/Bar	59	5	Benefit	58	6	Benefit	58	6	Benefit	57	7	Benefit	57	7	Benefit	56	8	Benefit	56	8	Benefit	55	9	Benefit
R311	Residence	B (65)	1	64	No	60	4	Imp w/Bar	59	5	Benefit	58	6	Benefit	58	6	Benefit	57	7	Benefit	57	7	Benefit	56	8	Benefit	56	8	Benefit	55	9	Benefit
R312	Residence	B (65)	1	64	No	60	4	Imp w/Bar	59	5	Benefit	58	6	Benefit	58	6	Benefit	57	7	Benefit	57	7	Benefit	56	8	Benefit	56	8	Benefit	55	9	Benefit
R313	Residence	B (65)	1	63	No	59	4	Imp w/Bar	58	5	Benefit	58	5	Benefit	57	6	Benefit	57	6	Benefit	56	7	Benefit	56	7	Benefit	56	7	Benefit	55	8	Benefit
R314	Residence	B (65)	1	63	No	58	5	Benefit	58	5	Benefit	57	6	Benefit	57	6	Benefit	57	6	Benefit	56	7	Benefit	56	7	Benefit	55	8	Benefit	55	8	Benefit
R315	Residence	B (65)	1	63	No	59	4	Imp w/Bar	58	5	Benefit	58	5	Benefit	57	6	Benefit	57	6	Benefit	56	7	Benefit	56	7	Benefit	56	7	Benefit	55	8	Benefit
R316	Residence	B (65)	1	63	No	59	4	Imp w/Bar	58	5	Benefit	58	5	Benefit	58	5	Benefit	57	6	Benefit	56	7	Benefit	56	7	Benefit	56	7	Benefit	55	8	Benefit
R317	Residence	B (65)	1	63	No	60	3	Imp w/Bar	59	4	Imp w/Bar	58	5	Benefit	58	5	Benefit	57	6	Benefit	57	6	Benefit	56	7	Benefit	56	7	Benefit	55	8	Benefit
R318	Residence	B (65)	1	63	No	60	3	Imp w/Bar	59	4	Imp w/Bar	58	5	Benefit	58	5	Benefit	57	6	Benefit	57	6	Benefit	56	7	Benefit	56	7	Benefit	55	8	Benefit
R319	Residence	B (65)	1	63	No	59	4	Imp w/Bar	58	5	Benefit	58	5	Benefit	57	6	Benefit	57	6	Benefit	56	7	Benefit	56	7	Benefit	55	8	Benefit	55	8	Benefit
R320	Residence	B (65)	1	63	No	59	4	Imp w/Bar	59	4	Imp w/Bar	58	5	Benefit	57	6	Benefit	57	6	Benefit	56	7	Benefit	56	7	Benefit	55	8	Benefit	55	8	Benefit
R321	Residence	B (65)	1	64	No	59	5	Benefit	59	5	Benefit	58	6	Benefit	57	7	Benefit	57	7	Benefit	56	8	Benefit	56	8	Benefit	55	9	Benefit	55	9	Benefit
R322	Residence	B (65)	1	64	No	59	5	Benefit	59	5	Benefit	58	6	Benefit	57	7	Benefit	57	7	Benefit	56	8	Benefit	56	8	Benefit	55	9	Benefit	55	9	Benefit
R323	Residence	B (65)	1	67	Yes	66	1	Imp w/Bar	64	3	Imp w/Bar	62	5	Benefit	60	7	Benefit	59	8	Benefit	58	9	Benefit	58	9	Benefit	57	10	Benefit	57	10	Benefit
R324	Residence	B (65)	1	67	Yes	66	1	Imp w/Bar	63	4	Imp w/Bar	61	6	Benefit	60	7	Benefit	59	8	Benefit	58	9	Benefit	58	9	Benefit	57	10	Benefit	56	11	Benefit
R325	Residence	B (65)	1	67	Yes	62	5	Benefit	60	7	Benefit	59	8	Benefit	59	8	Benefit	58	9	Benefit	57	10	Benefit	57	10	Benefit	56	11	Benefit	56	11	Benefit
R326	Residence	B (65)	1	67	Yes	62	5	Benefit	61	6	Benefit	60	7	Benefit	59	8	Benefit	59	8	Benefit	58	9	Benefit	58	9	Benefit	57	10	Benefit	57	10	Benefit
R327	Residence	B (65)	1	67	Yes	61	6	Benefit	60	7	Benefit	59	8	Benefit	58	9	Benefit	58	9	Benefit	57	10	Benefit	57	10	Benefit	56	11	Benefit	56	11	Benefit
R328	Residence	B (65)	1	67	Yes	61	6	Benefit	60	7	Benefit	59	8	Benefit	58	9	Benefit	58	9	Benefit	57	10	Benefit	56	11	Benefit	56	11	Benefit	56	11	Benefit
R329	Residence	B (65)	1	68	Yes	61	7	Benefit	60	8	Benefit	59	9	Benefit	58	10	Benefit	58	10	Benefit	57	11	Benefit	57	11	Benefit	56	12	Benefit	55	13	Benefit
R330	Residence	B (65)	1	68	Yes	61	7	Benefit	60	8	Benefit	59	9	Benefit	58	10	Benefit	58	10	Benefit	57	11	Benefit	56	12	Benefit	56	12	Benefit	55	13	Benefit
R331	Residence	B (65)	1	64	No	62	2	Imp w/Bar	62	2	Imp w/Bar	61	3	Imp w/Bar	60	4	Imp w/Bar	59	5	Benefit	58	6	Benefit	57	7	Benefit	56	8	Benefit	55	9	Benefit
R332	Residence	B (65)	1	64	No	62	2	Imp w/Bar	61	3	Imp w/Bar	60	4	Imp w/Bar	59	5	Benefit	58	6	Benefit	57	7	Benefit	56	8	Benefit	56	8	Benefit	55	9	Benefit
R333	Residence	B (65)	1	65	Yes	64	1	Imp w/Bar	63	2	Imp w/Bar	62	3	Imp w/Bar	61	4	Imp w/Bar	60	5	Benefit	58	7	Benefit	57	8	Benefit	56	9	Benefit	56	9	Benefit
R334	Residence	B (65)	1	63	No	62	1	Imp w/Bar	61	2	Imp w/Bar	60	3	Imp w/Bar	59	4	Imp w/Bar	58	5	Benefit	57	6	Benefit	56	7	Benefit	56	7	Benefit	55	8	Benefit
R335	Residence	B (65)	1	62	No	60	2	Imp w/Bar	60	2	Imp w/Bar	59	3	Imp w/Bar	58	4	Imp w/Bar	57	5	Benefit	56	6	Benefit	56	6	Benefit	55	7	Benefit	55	7	Benefit
R336	Residence	B (65)	1	64	No	62	2	Imp w/Bar	61	3	Imp w/Bar	60	4	Imp w/Bar	59	5	Benefit	58	6	Benefit	57	7	Benefit	56	8	Benefit	56	8	Benefit	55	9	Benefit
R337	Residence	B (65)	1	68	Yes	61	7	Benefit	60	8	Benefit	59	9	Benefit	58	10	Benefit	58	10	Benefit	57	11	Benefit	57	11	Benefit	56	12	Benefit	56	12	Benefit
R338	Residence	B (65)	1	68	Yes	60	8	Benefit	60	8	Benefit	59	9	Benefit	58	10	Benefit	58	10	Benefit	57	11	Benefit	57	11	Benefit	56	12	Benefit	56	12	Benefit
R339	Residence	B (65)	1	67	Yes	60	7	Benefit	59	8	Benefit	59	8	Benefit	58	9	Benefit	57	10	Benefit	57	10	Benefit	56	11	Benefit	56	11	Benefit	55	12	Benefit
R340	Residence	B (65)	1	67	Yes	60	7	Benefit	59	8	Benefit	59	8	Benefit	58	9	Benefit	58	9	Benefit	57	10	Benefit	57	10	Benefit	56	11	Benefit	56	11	Benefit
R341	Residence	B (65)	1	66	Yes	60	6	Benefit	59	7	Benefit	59	7	Benefit	58	8	Benefit	58	8	Benefit	57	9	Benefit	57	9	Benefit	56	10	Benefit	56	10	Benefit
R342	Residence	B (65)	1	66	Yes	60	6	Benefit	60	6	Benefit	59	7	Benefit	58	8	Benefit	58	8	Benefit	57	9	Benefit	57	9	Benefit	56	10	Benefit	56	10	Benefit
R343	Residence	B (65)	1	68	Yes	62	6	Benefit	60	8	Benefit	60	8	Benefit	59	9	Benefit	58	10	Benefit	58	10	Benefit	57	11	Benefit	56	12	Benefit	56	12	Benefit
R344	Residence	B (65)	1	70	Yes	63	7	Benefit	61	9	Benefit	60	10	Benefit	59	11	Benefit	59	11	Benefit	58	12	Benefit	57	13	Benefit	57	13	Benefit	56	14	Benefit
R345	Residence	B (65)	1	67	Yes	61	6	Benefit	60	7	Benefit	60	7	Benefit	59	8	Benefit	58	9	Benefit	58	9	Benefit	58	9	Benefit	57	10	Benefit	57	10	Benefit
R346	Residence	B (65)	1	68	Yes	61	7	Benefit	60	8	Benefit	59	9	Benefit	58	10	Benefit	58	10	Benefit	57	11	Benefit	57	11	Benefit	56	12	Benefit	56	12	Benefit
R347	Residence	B (65)	1	69	Yes	61	8	Benefit	60	9	Benefit	59	10	Benefit	58	11	Benefit	58	11	Benefit	57	12	Benefit	57	12	Benefit	56	13	Benefit	56	13	Benefit
R348	Residence	B (65)	1	68	Yes	60	8	Benefit	59	9	Benefit	59	9	Benefit	58	10	Benefit	57	11	Benefit	57	11	Benefit	56	12	Benefit	56	12	Benefit	56	12	Benefit
R349	Residence	B (65)	1	70	Yes	60	10	Benefit	60	10	Benefit	59	11	Benefit	58	12	Benefit	58	12	Benefit	57	13	Benefit	57	13	Benefit	56	14	Benefit	56	14	Benefit
R350	Residence	B (65)	1	70	Yes	61	9	Benefit	60	10	Benefit	59	11	Benefit	58	12	Benefit	58	12	Benefit	57	13	Benefit	57	13	Benefit	56	14	Benefit	56	14	Benefit
R351	Residence	B (65)	1	70	Yes	60	10	Benefit	60	10	Benefit	59	11	Benefit	58	12	Benefit	58	12	Benefit	57	13	Benefit	57	13	Benefit	56	14	Benefit	56	14	Benefit
R352	Residence	B (65)	1	70	Yes	60	10	Benefit	60	10	Benefit	59	11	Benefit	58	12	Benefit	58	12	Benefit	57	13	Benefit	57	13	Benefit	56	14	Benefit	56	14	Benefit
R353	Residence	B (65)	1	64	No	61	3	Imp w/Bar	60	4	Imp w/Bar	60	4	Imp w/Bar	59	5	Benefit	58	6	Benefit	57	7	Benefit	56	8	Benefit	56	8	Benefit	55	9	Benefit

Site	Type	NAC	DU	Build	Impact	8ft	I.L.	Benefit	10ft	I.L.	Benefit	12ft	I.L.	Benefit	14ft	I.L.	Benefit	16ft	I.L.	Benefit	18ft	I.L.	Benefit	20ft	I.L.	Benefit	22ft	I.L.	Benefit	24ft	I.L.	Benefit
R354	Residence	B (65)	1	58	No	57	1	Imp w/Bar	57	1	Imp w/Bar	56	2	Imp w/Bar	55	3	Imp w/Bar	55	3	Imp w/Bar	54	4	Imp w/Bar	54	4	Imp w/Bar	54	4	Imp w/Bar	53	5	Benefit
R355	Residence	B (65)	1	61	No	58	3	Imp w/Bar	57	4	Imp w/Bar	56	5	Benefit	56	5	Benefit	55	6	Benefit	55	6	Benefit	55	6	Benefit	54	7	Benefit	54	7	Benefit
R356	Residence	B (65)	1	60	No	57	3	Imp w/Bar	56	4	Imp w/Bar	56	4	Imp w/Bar	55	5	Benefit	55	5	Benefit	54	6	Benefit	54	6	Benefit	54	6	Benefit	53	7	Benefit
R357	Residence	B (65)	1	57	No	56	1	Imp w/Bar	55	2	Imp w/Bar	55	2	Imp w/Bar	54	3	Imp w/Bar	54	3	Imp w/Bar	53	4	Imp w/Bar	53	4	Imp w/Bar	53	4	Imp w/Bar	52	5	Benefit
R358	Residence	B (65)	1	59	No	56	3	Imp w/Bar	56	3	Imp w/Bar	55	4	Imp w/Bar	55	4	Imp w/Bar	54	5	Benefit	54	5	Benefit	53	6	Benefit	53	6	Benefit	53	6	Benefit
R359	Residence	B (65)	1	60	No	56	4	Imp w/Bar	55	5	Benefit	55	5	Benefit	54	6	Benefit	54	6	Benefit	54	6	Benefit	53	7	Benefit	53	7	Benefit	53	7	Benefit
R360	Residence	B (65)	1	69	Yes	61	8	Benefit	60	9	Benefit	59	10	Benefit	58	11	Benefit	58	11	Benefit	57	12	Benefit	57	12	Benefit	56	13	Benefit	56	13	Benefit
R361	Residence	B (65)	1	69	Yes	60	9	Benefit	60	9	Benefit	59	10	Benefit	58	11	Benefit	58	11	Benefit	57	12	Benefit	57	12	Benefit	56	13	Benefit	56	13	Benefit
R362	Residence	B (65)	1	68	Yes	60	8	Benefit	60	8	Benefit	59	9	Benefit	58	10	Benefit	58	10	Benefit	57	11	Benefit	57	11	Benefit	56	12	Benefit	56	12	Benefit
R363	Residence	B (65)	1	68	Yes	60	8	Benefit	60	8	Benefit	59	9	Benefit	58	10	Benefit	58	10	Benefit	57	11	Benefit	57	11	Benefit	56	12	Benefit	56	12	Benefit
R364	Residence	B (65)	1	68	Yes	60	8	Benefit	59	9	Benefit	59	9	Benefit	58	10	Benefit	57	11	Benefit	57	11	Benefit	56	12	Benefit	56	12	Benefit	55	13	Benefit
R365	Residence	B (65)	1	58	No	55	3	Imp w/Bar	54	4	Imp w/Bar	54	4	Imp w/Bar	54	4	Imp w/Bar	54	4	Imp w/Bar	53	5	Benefit	53	5	Benefit	53	5	Benefit	52	6	Benefit
R366	Residence	B (65)	1	57	No	54	3	Imp w/Bar	54	3	Imp w/Bar	54	3	Imp w/Bar	53	4	Imp w/Bar	53	4	Imp w/Bar	53	4	Imp w/Bar	53	4	Imp w/Bar	52	5	Benefit	52	5	Benefit
R367	Residence	B (65)	1	56	No	54	2	Imp w/Bar	53	3	Imp w/Bar	53	3	Imp w/Bar	53	3	Imp w/Bar	52	4	Imp w/Bar	52	4	Imp w/Bar	52	4	Imp w/Bar	51	5	Benefit	51	5	Benefit
R368	Residence	B (65)	1	52	No	53	-1	Imp w/Bar	53	-1	Imp w/Bar	53	-1	Imp w/Bar	52	0	Imp w/Bar	52	0	Imp w/Bar	51	1	Imp w/Bar	52	0	Imp w/Bar	51	1	Imp w/Bar	51	1	Imp w/Bar
R369	Residence	B (65)	1	52	No	52	0	Imp w/Bar	52	0	Imp w/Bar	52	0	Imp w/Bar	51	1	Imp w/Bar	51	1	Imp w/Bar	51	1	Imp w/Bar	51	1	Imp w/Bar	51	1	Imp w/Bar	51	1	Imp w/Bar
R370	Residence	B (65)	1	53	No	52	1	Imp w/Bar	51	2	Imp w/Bar	51	2	Imp w/Bar	52	1	Imp w/Bar	52	1	Imp w/Bar	52	1	Imp w/Bar	51	2	Imp w/Bar	51	2	Imp w/Bar	51	2	Imp w/Bar
R371	Residence	B (65)	1	68	Yes	61	7	Benefit	60	8	Benefit	59	9	Benefit	59	9	Benefit	58	10	Benefit	58	10	Benefit	57	11	Benefit	57	11	Benefit	56	12	Benefit
R372	Residence	B (65)	1	68	Yes	62	6	Benefit	61	7	Benefit	60	8	Benefit	59	9	Benefit	59	9	Benefit	58	10	Benefit	58	10	Benefit	57	11	Benefit	56	12	Benefit
R373	Residence	B (65)	1	72	Yes	69	3	Imp w/Bar	68	4	Imp w/Bar	67	5	Benefit	67	5	Benefit	65	7	Benefit	63	9	Benefit	61	11	Benefit	60	12	Benefit	59	13	Benefit
R374	Residence	B (65)	1	72	Yes	71	1	Imp w/Bar	70	2	Imp w/Bar	69	3	Imp w/Bar	69	3	Imp w/Bar	68	4	Imp w/Bar	67	5	Benefit	64	8	Benefit	62	10	Benefit	61	11	Benefit
R375	Residence	B (65)	1	72	Yes	71	1	Imp w/Bar	71	1	Imp w/Bar	71	1	Imp w/Bar	70	2	Imp w/Bar	69	3	Imp w/Bar	69	3	Imp w/Bar	67	5	Benefit	64	8	Benefit	62	10	Benefit
R376	Residence	B (65)	1	72	Yes	72	0	Imp w/Bar	71	1	Imp w/Bar	71	1	Imp w/Bar	70	2	Imp w/Bar	70	2	Imp w/Bar	69	3	Imp w/Bar	67	5	Benefit	65	7	Benefit	63	9	Benefit
R377	Residence	B (65)	1	71	Yes	71	0	Imp w/Bar	70	1	Imp w/Bar	70	1	Imp w/Bar	68	3	Imp w/Bar	65	6	Benefit	63	8	Benefit	62	9	Benefit	61	10	Benefit	60	11	Benefit
R378	Residence	B (65)	1	72	Yes	72	0	Imp w/Bar	72	0	Imp w/Bar	72	0	Imp w/Bar	71	1	Imp w/Bar	71	1	Imp w/Bar	70	2	Imp w/Bar	69	3	Imp w/Bar	66	6	Benefit	64	8	Benefit
R379	Residence	B (65)	1	71	Yes	70	1	Imp w/Bar	69	2	Imp w/Bar	68	3	Imp w/Bar	65	6	Benefit	63	8	Benefit	62	9	Benefit	60	11	Benefit	60	11	Benefit	59	12	Benefit
R380	Residence	B (65)	1	72	Yes	72	0	Imp w/Bar	71	1	Imp w/Bar	71	1	Imp w/Bar	70	2	Imp w/Bar	70	2	Imp w/Bar	69	3	Imp w/Bar	66	6	Benefit	64	8	Benefit	62	10	Benefit
R381	Residence	B (65)	1	70	Yes	68	2	Imp w/Bar	67	3	Imp w/Bar	64	6	Benefit	63	7	Benefit	61	9	Benefit	60	10	Benefit	59	11	Benefit	58	12	Benefit	58	12	Benefit
R382	Residence	B (65)	1	69	Yes	67	2	Imp w/Bar	65	4	Imp w/Bar	63	6	Benefit	61	8	Benefit	60	9	Benefit	59	10	Benefit	59	10	Benefit	58	11	Benefit	57	12	Benefit
R383	Residence	B (65)	1	67	Yes	64	3	Imp w/Bar	62	5	Benefit	61	6	Benefit	60	7	Benefit	59	8	Benefit	58	9	Benefit	57	10	Benefit	57	10	Benefit	56	11	Benefit
R384	Residence	B (65)	1	66	Yes	61	5	Benefit	60	6	Benefit	59	7	Benefit	58	8	Benefit	57	9	Benefit	57	9	Benefit	56	10	Benefit	56	10	Benefit	55	11	Benefit
R385	Residence	B (65)	1	66	Yes	61	5	Benefit	60	6	Benefit	59	7	Benefit	58	8	Benefit	58	8	Benefit	57	9	Benefit	57	9	Benefit	57	9	Benefit	56	10	Benefit
R386	Residence	B (65)	1	68	Yes	65	3	Imp w/Bar	64	4	Imp w/Bar	62	6	Benefit	61	7	Benefit	60	8	Benefit	59	9	Benefit	59	9	Benefit	58	10	Benefit	58	10	Benefit
R387	Residence	B (65)	1	62	No	58	4	Imp w/Bar	58	4	Imp w/Bar	57	5	Benefit	57	5	Benefit	56	6	Benefit	56	6	Benefit	56	6	Benefit	55	7	Benefit	55	7	Benefit
R388	Multifamily	B (65)	1	64	No	59	5	Benefit	58	6	Benefit	58	6	Benefit	57	7	Benefit	57	7	Benefit	56	8	Benefit	56	8	Benefit	56	8	Benefit	55	9	Benefit
R389	Multifamily	B (65)	1	64	No	59	5	Benefit	58	6	Benefit	57	7	Benefit	57	7	Benefit	56	8	Benefit	56	8	Benefit	56	8	Benefit	55	9	Benefit	55	9	Benefit
R390	Multifamily	B (65)	1	61	No	58	3	Imp w/Bar	58	3	Imp w/Bar	57	4	Imp w/Bar	57	4	Imp w/Bar	56	5	Benefit	56	5	Benefit	56	5	Benefit	55	6	Benefit	55	6	Benefit
R391	Multifamily	B (65)	1	60	No	58	2	Imp w/Bar	58	2	Imp w/Bar	57	3	Imp w/Bar	57	3	Imp w/Bar	56	4	Imp w/Bar	56	4	Imp w/Bar	55	5	Benefit	55	5	Benefit	55	5	Benefit
R392	Multifamily	B (65)	1	64	No	59	5	Benefit	59	5	Benefit	58	6	Benefit	57	7	Benefit	57	7	Benefit	56	8	Benefit	56	8	Benefit	55	9	Benefit	55	9	Benefit
R393	Multifamily	B (65)	1	64	No	58	6	Benefit	58	6	Benefit	57	7	Benefit	57	7	Benefit	56	8	Benefit	56	8	Benefit	56	8	Benefit	55	9	Benefit	55	9	Benefit
R394	Multifamily	B (65)	1	63	No	59	4	Imp w/Bar	58	5	Benefit	58	5	Benefit	57	6	Benefit	56	7	Benefit	56	7	Benefit	56	7	Benefit	55	8	Benefit	55	8	Benefit
R395	Multifamily	B (65)	1	65	Yes	59	6	Benefit	59	6	Benefit	58	7	Benefit	58	7	Benefit	57	8	Benefit	57	8	Benefit	56	9	Benefit	56	9	Benefit	56	9	Benefit
R396	Multifamily	B (65)	1	63	No	59	4	Imp w/Bar	58	5	Benefit	57	6	Benefit	57	6	Benefit	56	7	Benefit	56	7	Benefit	55	8	Benefit	55	8	Benefit	54	9	Benefit
R397	Multifamily	B (65)	1	63	No	58	5	Benefit	57	6	Benefit	57	6	Benefit	56	7	Benefit	56	7	Benefit	55	8	Benefit	55	8	Benefit	54	9	Benefit	54	9	Benefit
R398	Multifamily	B (65)	1	64	No	58	6	Benefit	58	6	Benefit	57	7	Benefit	57	7	Benefit	56	8	Benefit	56	8	Benefit	55	9	Benefit	55	9	Benefit	54	10	Benefit
R399	Multifamily	B (65)	1	64	No	58	6	Benefit	58	6	Benefit	57	7	Benefit	56	8	Benefit	56	8	Benefit	55	9	Benefit	55	9	Benefit	54	10	Benefit	54	10	Benefit
R400	Residence	B (65)	1	61	No	58	3	Imp w/Bar	57	4	Imp w/Bar	57	4	Imp w/Bar	56	5	Benefit	56	5	Benefit	56	5	Benefit	55	6	Benefit	55	6	Benefit	55	6	Benefit
R401	Residence	B (65)	1	60	No	57	3	Imp w/Bar	57	3	Imp w/Bar	57	3	Imp w/Bar	56	4	Imp w/Bar	56	4	Imp w/Bar	56	4	Imp w/Bar	55	5	Benefit	55	5	Benefit	55	5	Benefit
R402	Residence	B (65)	1	59	No	57	2	Imp w/Bar	57	2	Imp w/Bar	56	3	Imp w/Bar	56	3	Imp w/Bar	56	3	Imp w/Bar	55	4	Imp w/Bar	55	4	Imp w/Bar	55	4	Imp w/Bar	54	5	Benefit
R403	Residence	B (65)	1	60	No	58	2	Imp w/Bar	58	2	Imp w/Bar	57	3	Imp w/Bar	57	3	Imp w/Bar	56	4	Imp w/Bar	56	4	Imp w/Bar	56	4	Imp w/Bar	55	5	Benefit	55	5	Benefit
R404	Residence	B (65)	1	69	Yes	62	7	Benefit	62	7	Benefit	61	8	Benefit	61	8	Benefit	60	9	Benefit	60	9	Benefit	60	9	Benefit	59	10	Benefit	59	10	Benefit

Site	Type	NAC	DU	Build	Impact	8ft	I.L.	Benefit	10ft	I.L.	Benefit	12ft	I.L.	Benefit	14ft	I.L.	Benefit	16ft	I.L.	Benefit	18ft	I.L.	Benefit	20ft	I.L.	Benefit	22ft	I.L.	Benefit	24ft	I.L.	Benefit
R405	Residence	B (65)	1	73	Yes	64	9	Benefit	63	10	Benefit	62	11	Benefit	61	12	Benefit	61	12	Benefit	60	13	Benefit	60	13	Benefit	59	14	Benefit	59	14	Benefit
R406	Residence	B (65)	1	52	No	51	1	Imp w/Bar	51	1	Imp w/Bar	51	1	Imp w/Bar	51	1	Imp w/Bar	51	1	Imp w/Bar	51	1	Imp w/Bar	52	0	Imp w/Bar	52	0	Imp w/Bar	52	0	Imp w/Bar
R407	Residence	B (65)	1	53	No	52	1	Imp w/Bar	51	2	Imp w/Bar	51	2	Imp w/Bar	51	2	Imp w/Bar	51	2	Imp w/Bar	51	2	Imp w/Bar	51	2	Imp w/Bar	52	1	Imp w/Bar	52	1	Imp w/Bar
R408	Residence	B (65)	1	53	No	52	1	Imp w/Bar	52	1	Imp w/Bar	52	1	Imp w/Bar	52	1	Imp w/Bar	51	2	Imp w/Bar	51	2	Imp w/Bar	51	2	Imp w/Bar	52	1	Imp w/Bar	52	1	Imp w/Bar
R409	Residence	B (65)	1	54	No	52	2	Imp w/Bar	52	2	Imp w/Bar	52	2	Imp w/Bar	52	2	Imp w/Bar	51	3	Imp w/Bar	51	3	Imp w/Bar	51	3	Imp w/Bar	51	3	Imp w/Bar	51	3	Imp w/Bar
R410	Residence	B (65)	1	56	No	54	2	Imp w/Bar	54	2	Imp w/Bar	53	3	Imp w/Bar	53	3	Imp w/Bar	53	3	Imp w/Bar	53	3	Imp w/Bar	53	3	Imp w/Bar	53	3	Imp w/Bar	53	3	Imp w/Bar
R411	Residence	B (65)	1	56	No	54	2	Imp w/Bar	54	2	Imp w/Bar	54	2	Imp w/Bar	54	2	Imp w/Bar	54	2	Imp w/Bar	54	2	Imp w/Bar	53	3	Imp w/Bar	53	3	Imp w/Bar	53	3	Imp w/Bar
R412	Residence	B (65)	1	56	No	55	1	Imp w/Bar	55	1	Imp w/Bar	55	1	Imp w/Bar	55	1	Imp w/Bar	55	1	Imp w/Bar	55	1	Imp w/Bar	54	2	Imp w/Bar	54	2	Imp w/Bar	54	2	Imp w/Bar
R413	Residence	B (65)	1	57	No	56	1	Imp w/Bar	56	1	Imp w/Bar	55	2	Imp w/Bar	55	2	Imp w/Bar	55	2	Imp w/Bar	55	2	Imp w/Bar	55	2	Imp w/Bar	55	2	Imp w/Bar	55	2	Imp w/Bar
R414	Residence	B (65)	1	56	No	55	1	Imp w/Bar	55	1	Imp w/Bar	55	1	Imp w/Bar	55	1	Imp w/Bar	55	1	Imp w/Bar	55	1	Imp w/Bar	55	1	Imp w/Bar	55	1	Imp w/Bar	55	1	Imp w/Bar
R415	Residence	B (65)	1	57	No	56	1	Imp w/Bar	56	1	Imp w/Bar	56	1	Imp w/Bar	56	1	Imp w/Bar	56	1	Imp w/Bar	56	1	Imp w/Bar	56	1	Imp w/Bar	56	1	Imp w/Bar	56	1	Imp w/Bar
R416	Residence	B (65)	1	61	No	60	1	Imp w/Bar	60	1	Imp w/Bar	60	1	Imp w/Bar	60	1	Imp w/Bar	59	2	Imp w/Bar	59	2	Imp w/Bar	59	2	Imp w/Bar	59	2	Imp w/Bar	59	2	Imp w/Bar
R417	Residence	B (65)	1	55	No	54	1	Imp w/Bar	54	1	Imp w/Bar	54	1	Imp w/Bar	54	1	Imp w/Bar	54	1	Imp w/Bar	54	1	Imp w/Bar	54	1	Imp w/Bar	54	1	Imp w/Bar	54	1	Imp w/Bar
R418	Residence	B (65)	1	55	No	54	1	Imp w/Bar	54	1	Imp w/Bar	54	1	Imp w/Bar	54	1	Imp w/Bar	54	1	Imp w/Bar	54	1	Imp w/Bar	54	1	Imp w/Bar	54	1	Imp w/Bar	54	1	Imp w/Bar
R419	Residence	B (65)	1	54	No	54	0	Imp w/Bar	54	0	Imp w/Bar	54	0	Imp w/Bar	54	0	Imp w/Bar	54	0	Imp w/Bar	54	0	Imp w/Bar	54	0	Imp w/Bar	54	0	Imp w/Bar	54	0	Imp w/Bar
R420	Residence	B (65)	1	56	No	55	1	Imp w/Bar	55	1	Imp w/Bar	55	1	Imp w/Bar	55	1	Imp w/Bar	55	1	Imp w/Bar	55	1	Imp w/Bar	55	1	Imp w/Bar	55	1	Imp w/Bar	55	1	Imp w/Bar
R421	Residence	B (65)	1	58	No	58	0	Imp w/Bar	58	0	Imp w/Bar	58	0	Imp w/Bar	58	0	Imp w/Bar	58	0	Imp w/Bar	58	0	Imp w/Bar	58	0	Imp w/Bar	58	0	Imp w/Bar	58	0	Imp w/Bar
R422	Residence	B (65)	1	64	No	63	1	Imp w/Bar	63	1	Imp w/Bar	63	1	Imp w/Bar	63	1	Imp w/Bar	62	2	Imp w/Bar	62	2	Imp w/Bar	62	2	Imp w/Bar	62	2	Imp w/Bar	62	2	Imp w/Bar
R423	Residence	B (65)	1	64	No	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar
			120	**Total Impacts**	**50**	**Impact Benefit**		**35**		**36**			**42**			**43**			**45**			**46**			**49**			**50**			**50**	

NAC = Noise Abatement Criteria
DU = Dwelling Unit
I.L. = Insertion Loss
Imp w/Bar = Impacted site with Barrier (The terms Wall and Barrier are interchangeable.)
The table shows the noise reduction for each noise wall height. The locations receiving benefit have at least 5 dba noise reduction.

Table H-6b: I-205 Wall 6A Abatement by Height

Wall Height	8 ft	10 ft	12 ft	14 ft	16 ft	18 ft	20 ft	22 ft	24 ft
Impact Benefit	**35**	**36**	**42**	**43**	**45**	**46**	**49**	**50**	**50**
5dBA	*13*	*6*	*7*	*2*	*2*	*1*	*3*	*1*	*0*
7dBA	*22*	*30*	*35*	*41*	*43*	*45*	*46*	*49*	*50*
Sites Not Impacted but Benefited by Wall	*10*	*20*	*26*	*33*	*38*	*39*	*42*	*45*	*48*
Total Impacted Sites that receive Benefits	**35**	**36**	**42**	**43**	**45**	**46**	**49**	**50**	**50**
%	**70.0%**	**72.0%**	**84.0%**	**86.0%**	**90.0%**	**92.0%**	**98.0%**	**100.0%**	**100.0%**
Total Benefit	**45**	**56**	**68**	**76**	**83**	**85**	**91**	**95**	**98**
Acoustically Feasible majority of impacted receptors receive 5dBA reduction	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7dBA Design Goal	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Benefit 70dBA+	6	6	8	9	10	11	14	15	15

Table H-6c: I-205 Wall 6A Allowance

Wall Allowance	Wall Height	Wall Cost
Barrier Length	**3706**	N/A
Cost per square foot	up to 16ft	$30
	17 to 25	$37.50
Cost per Benefitted Residence	up to 16ft	$37,500
	17 to 25	$37,500
Max Area	up to 16ft	1,250
	17 to 25	1,000

Notes:
N/A = not applicable

Table H-6d: I-205 Wall 6A Feasibility and Reasonableness

Wall Features							Voted Down by the Community		
Barrier Height (Feet)	Sq Ff	Sq ft/Ben Rec	Total Wall Cost	Cost per Benefitted Receptor	Acoustically Feasible	Reasonable Cost	Allowance	Over 70dBA Allow	TOTAL ALLOW
8	29,648	659	$889,440	$19,765	Yes	Yes	$1,687,500	90000	$1,777,500
10	37,060	662	$1,111,800	$19,854	Yes	Yes	$2,100,000	90000	$2,190,000
12	44,472	654	$1,334,160	$19,620	Yes	Yes	$2,550,000	120000	$2,670,000
14	51,884	683	$1,556,520	$20,481	Yes	Yes	$2,850,000	135000	$2,985,000
16	59,296	714	$1,778,880	$21,432	Yes	Yes	$3,112,500	150000	$3,262,500
18	66,708	785	$2,501,550	$29,430	Yes	Yes	$3,187,500	165000	$3,352,500
20	74,120	815	$2,779,500	$30,544	Yes	Yes	$3,412,500	210000	$3,622,500
22	81,532	858	$3,057,450	$32,184	Yes	Yes	$3,562,500	225000	$3,787,500
24	88,944	908	$3,335,400	$34,035	Yes	Yes	$3,675,000	225000	$3,900,000

Sq Ft = square feet
Sq Ft/Ben Rec = square feet/benefited receptor

Table H-7a: I-205 Toll Project – Noise Wall 6B Abatement Worksheet

Site	Type	NAC	DU	Build	Impact	8ft	I.L.	Benefit	10ft	I.L.	Benefit	12ft	I.L.	Benefit	14ft	I.L.	Benefit	16ft	I.L.	Benefit	18ft	I.L.	Benefit	20ft	I.L.	Benefit	22ft	I.L.	Benefit	24ft	I.L.	Benefit
R295	Residence	B (65)	1	65	Yes	59	6	Benefit	58	7	Benefit	58	7	Benefit	57	8	Benefit	57	8	Benefit	56	9	Benefit	55	10	Benefit	55	10	Benefit	54	11	Benefit
R296	Residence	B (65)	1	66	Yes	60	6	Benefit	60	6	Benefit	59	7	Benefit	59	7	Benefit	58	8	Benefit	57	9	Benefit	57	9	Benefit	56	10	Benefit	55	11	Benefit
R297	Residence	B (65)	1	68	Yes	63	5	Benefit	63	5	Benefit	62	6	Benefit	62	6	Benefit	61	7	Benefit	60	8	Benefit	59	9	Benefit	58	10	Benefit	57	11	Benefit
R298	Residence	B (65)	1	**70**	Yes	69	1	Imp w/Bar	67	3	Imp w/Bar	66	4	Imp w/Bar	65	5	Benefit	63	7	Benefit	61	9	Benefit	60	10	Benefit	59	11	Benefit	58	12	Benefit
R299	Residence	B (65)	1	**70**	Yes	71	-1	Imp w/Bar	70	0	Imp w/Bar	69	1	Imp w/Bar	66	4	Imp w/Bar	64	6	Benefit	63	7	Benefit	61	9	Benefit	60	10	Benefit	60	10	Benefit
R300	Residence	B (65)	1	**70**	Yes	70	0	Imp w/Bar	68	2	Imp w/Bar	65	5	Benefit	63	7	Benefit	62	8	Benefit	61	9	Benefit	60	10	Benefit	59	11	Benefit	59	11	Benefit
R301	Residence	B (65)	1	68	Yes	68	0	Imp w/Bar	66	2	Imp w/Bar	64	4	Imp w/Bar	62	6	Benefit	61	7	Benefit	61	7	Benefit	60	8	Benefit	59	9	Benefit	58	10	Benefit
R302	Residence	B (65)	1	69	Yes	69	0	Imp w/Bar	66	3	Imp w/Bar	64	5	Benefit	62	7	Benefit	61	8	Benefit	60	9	Benefit	60	9	Benefit	59	10	Benefit	58	11	Benefit
R303	Residence	B (65)	1	68	Yes	65	3	Imp w/Bar	63	5	Benefit	62	6	Benefit	61	7	Benefit	60	8	Benefit	59	9	Benefit	58	10	Benefit	58	10	Benefit	57	11	Benefit
R304	Residence	B (65)	1	68	Yes	65	3	Imp w/Bar	62	6	Benefit	61	7	Benefit	60	8	Benefit	59	9	Benefit	58	10	Benefit	58	10	Benefit	57	11	Benefit	56	12	Benefit
R305	Residence	B (65)	1	67	Yes	60	7	Benefit	59	8	Benefit	58	9	Benefit	58	9	Benefit	57	10	Benefit	57	10	Benefit	56	11	Benefit	56	11	Benefit	55	12	Benefit
			11	**Total Impacts**	**11**	**Impact Benefit**	**4**		**6**				**8**			**10**			**11**			**11**			**11**			**11**			**11**	

NAC = Noise Abatement Criteria
DU = Dwelling Unit
I.L. = Insertion Loss
Imp w/Bar = Impacted site with Barrier (The terms Wall and Barrier are interchangeable.)
The table shows the noise reduction for each noise wall height. The locations receiving benefit have at least 5 dba noise reduction.

Table H-7b: I-205 Wall 6B Abatement by Height

Wall Height	8 ft	10 ft	12 ft	14 ft	16 ft	18 ft	20 ft	22 ft	24 ft
Impact Benefit	**4**	**6**	**8**	**10**	**11**	**11**	**11**	**11**	**11**
5dBA	*3*	*4*	*4*	*3*	*1*	*0*	*0*	*0*	*0*
7dBA	*1*	*2*	*4*	*7*	*10*	*11*	*11*	*11*	*11*
Sites Not Impacted but Benefited by Wall	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Impacted Sites that receive Benefits	**4**	**6**	**8**	**10**	**11**	**11**	**11**	**11**	**11**
%	**36.4%**	**54.5%**	**72.7%**	**90.9%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Total Benefit	**4**	**6**	**8**	**10**	**11**	**11**	**11**	**11**	**11**
Acoustically Feasible majority of impacted receptors receive 5dBA reduction	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7dBA Design Goal	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Benefit 70dBA+	0	0	1	2	3	3	3	3	3

Table H-7c: I-205 Wall 6B Allowance

Wall Allowance	Wall Height	Wall Cost
Barrier Length	1164	N/A
Cost per square foot	up to 16ft	$30
	17 to 25	$37.50
Cost per Benefitted Residence	up to 16ft	$37,500
	17 to 25	$37,500
Max Area	up to 16ft	1,250
	17 to 25	1,000

N/A = not applicable

Table H-7d: I-205 Wall 6B Feasibility and Reasonableness

Barrier Height (Feet)	Sq Ff	Sq ft/Ben Rec	Total Wall Cost	Cost per Benefitted Receptor	Acoustically Feasible	Reasonable Cost	Allowance	Over 70dBA Allow	TOTAL ALLOW
8	9,312	2,328	$279,360	$69,840	No*	No	$150,000	0	$150,000
10	11,640	1,940	$349,200	$58,200	Yes	No	$225,000	0	$225,000
12	13,968	1,746	$419,040	$52,380	Yes	No	$300,000	15000	$315,000
14	16,296	1,630	$488,880	$48,888	Yes	No	$375,000	30000	$405,000
16	18,624	1,693	$558,720	$50,793	Yes	No	$412,500	45000	$457,500
18	20,952	1,905	$785,700	$71,427	Yes	No	$412,500	45000	$457,500
20	23,280	2,116	$873,000	$79,364	Yes	No	$412,500	45000	$457,500
22	25,608	2,328	$960,300	$87,300	Yes	No	$412,500	45000	$457,500
24	27,936	2,540	$1,047,600	$95,236	Yes	No	$412,500	45000	$457,500

*Does not meet criteria of majority of impacted receptors achieving 5dBA reduction.
Sq Ft = square feet
Sq Ft/Ben Rec = square feet/benefited receptor

Table H-7e: I-205 Wall 6B Abatement Summary

Wall Abatement Feature	Value
wall height (feet)	14
wall length (feet)	1164
area (square feet)	16296
cost/square feet	$30.00
wall cost	$488,880
wall allowance	$405,000
cost per benefitted	$48,888
allowable cost per benefitted	$40,500
cost per benefitted < allowable cost per benefitted	**No**

Table H-8a: I-205 Toll Project – Noise Wall 7 Abatement Worksheet

Site	Type	NAC	DU	Build	Impact	10ft	I.L.	Benefit	12ft	I.L.	Benefit	14ft	I.L.	Benefit	16ft	I.L.	Benefit	18ft	I.L.	Benefit	20ft	I.L.	Benefit	22ft	I.L.	Benefit	24ft	I.L.	Benefit
R414	Residence	B (65)	1	56	No	54	2	Imp w/Bar	54	2	Imp w/Bar	54	2	Imp w/Bar	54	2	Imp w/Bar	54	2	Imp w/Bar	54	2	Imp w/Bar	54	2	Imp w/Bar	54	2	Imp w/Bar
R415	Residence	B (65)	1	57	No	55	2	Imp w/Bar	55	2	Imp w/Bar	55	2	Imp w/Bar	55	2	Imp w/Bar	55	2	Imp w/Bar	55	2	Imp w/Bar	55	2	Imp w/Bar	54	3	Imp w/Bar
R416	Residence	B (65)	1	61	No	60	1	Imp w/Bar	60	1	Imp w/Bar	60	1	Imp w/Bar	60	1	Imp w/Bar	60	1	Imp w/Bar	59	2	Imp w/Bar	59	2	Imp w/Bar	59	2	Imp w/Bar
R417	Residence	B (65)	1	55	No	53	2	Imp w/Bar	53	2	Imp w/Bar	53	2	Imp w/Bar	53	2	Imp w/Bar	53	2	Imp w/Bar	53	2	Imp w/Bar	53	2	Imp w/Bar	53	2	Imp w/Bar
R418	Residence	B (65)	1	55	No	53	2	Imp w/Bar	53	2	Imp w/Bar	53	2	Imp w/Bar	53	2	Imp w/Bar	53	2	Imp w/Bar	53	2	Imp w/Bar	53	2	Imp w/Bar	53	2	Imp w/Bar
R419	Residence	B (65)	1	54	No	53	1	Imp w/Bar	53	1	Imp w/Bar	53	1	Imp w/Bar	53	1	Imp w/Bar	53	1	Imp w/Bar	53	1	Imp w/Bar	53	1	Imp w/Bar	53	1	Imp w/Bar
R420	Residence	B (65)	1	56	No	54	2	Imp w/Bar	54	2	Imp w/Bar	54	2	Imp w/Bar	54	2	Imp w/Bar	54	2	Imp w/Bar	54	2	Imp w/Bar	54	2	Imp w/Bar	54	2	Imp w/Bar
R421	Residence	B (65)	1	58	No	56	2	Imp w/Bar	56	2	Imp w/Bar	56	2	Imp w/Bar	56	2	Imp w/Bar	56	2	Imp w/Bar	56	2	Imp w/Bar	56	2	Imp w/Bar	56	2	Imp w/Bar
R422	Residence	B (65)	1	64	No	63	1	Imp w/Bar	63	1	Imp w/Bar	63	1	Imp w/Bar	63	1	Imp w/Bar	63	1	Imp w/Bar	63	1	Imp w/Bar	63	1	Imp w/Bar	63	1	Imp w/Bar
R423	Residence	B (65)	1	64	No	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar
R424	Residence	B (65)	1	62	No	61	1	Imp w/Bar	61	1	Imp w/Bar	61	1	Imp w/Bar	61	1	Imp w/Bar	61	1	Imp w/Bar	61	1	Imp w/Bar	61	1	Imp w/Bar	61	1	Imp w/Bar
R425	Residence	B (65)	1	62	No	61	1	Imp w/Bar	61	1	Imp w/Bar	61	1	Imp w/Bar	61	1	Imp w/Bar	61	1	Imp w/Bar	61	1	Imp w/Bar	61	1	Imp w/Bar	61	1	Imp w/Bar
R426	Residence	B (65)	1	65	Yes	64	1	Imp w/Bar	63	2	Imp w/Bar	63	2	Imp w/Bar	63	2	Imp w/Bar	63	2	Imp w/Bar	63	2	Imp w/Bar	63	2	Imp w/Bar	63	2	Imp w/Bar
R427	Residence	B (65)	1	66	Yes	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar
R428	Residence	B (65)	1	62	No	60	2	Imp w/Bar	60	2	Imp w/Bar	59	3	Imp w/Bar	59	3	Imp w/Bar	59	3	Imp w/Bar	59	3	Imp w/Bar	59	3	Imp w/Bar	59	3	Imp w/Bar
R429	Residence	B (65)	1	66	Yes	63	3	Imp w/Bar	63	3	Imp w/Bar	63	3	Imp w/Bar	62	4	Imp w/Bar	62	4	Imp w/Bar	62	4	Imp w/Bar	62	4	Imp w/Bar	62	4	Imp w/Bar
R430	Residence	B (65)	1	59	No	56	3	Imp w/Bar	56	3	Imp w/Bar	56	3	Imp w/Bar	55	4	Imp w/Bar	55	4	Imp w/Bar	55	4	Imp w/Bar	55	4	Imp w/Bar	55	4	Imp w/Bar
R431	Residence	B (65)	1	60	No	57	3	Imp w/Bar	57	3	Imp w/Bar	56	4	Imp w/Bar	56	4	Imp w/Bar	56	4	Imp w/Bar	55	5	Benefit	55	5	Benefit	55	5	Benefit
R432	Residence	B (65)	1	65	Yes	60	5	Benefit	59	6	Benefit	59	6	Benefit	58	7	Benefit	58	7	Benefit	57	8	Benefit	57	8	Benefit	57	8	Benefit
R433	Residence	B (65)	1	64	No	60	4	Imp w/Bar	59	5	Benefit	58	6	Benefit	58	6	Benefit	57	7	Benefit	57	7	Benefit	57	7	Benefit	56	8	Benefit
R434	Residence	B (65)	1	57	No	56	1	Imp w/Bar	56	1	Imp w/Bar	56	1	Imp w/Bar	56	1	Imp w/Bar	55	2	Imp w/Bar	55	2	Imp w/Bar	55	2	Imp w/Bar	55	2	Imp w/Bar
R435	Residence	B (65)	1	53	No	54	-1	Imp w/Bar	54	-1	Imp w/Bar	54	-1	Imp w/Bar	53	0	Imp w/Bar	53	0	Imp w/Bar	53	0	Imp w/Bar	53	0	Imp w/Bar	53	0	Imp w/Bar
R436	Residence	B (65)	1	63	No	59	4	Imp w/Bar	59	4	Imp w/Bar	59	4	Imp w/Bar	58	5	Benefit	58	5	Benefit	58	5	Benefit	58	5	Benefit	58	5	Benefit
R437	Residence	B (65)	1	53	No	54	-1	Imp w/Bar	54	-1	Imp w/Bar	54	-1	Imp w/Bar	54	-1	Imp w/Bar	54	-1	Imp w/Bar	53	0	Imp w/Bar	53	0	Imp w/Bar	53	0	Imp w/Bar
R438	Residence	B (65)	1	53	No	53	0	Imp w/Bar	53	0	Imp w/Bar	53	0	Imp w/Bar	53	0	Imp w/Bar	53	0	Imp w/Bar	53	0	Imp w/Bar	52	1	Imp w/Bar	52	1	Imp w/Bar
R439	Residence	B (65)	1	53	No	54	-1	Imp w/Bar	53	0	Imp w/Bar	53	0	Imp w/Bar	53	0	Imp w/Bar	53	0	Imp w/Bar	53	0	Imp w/Bar	53	0	Imp w/Bar	53	0	Imp w/Bar
R440	Residence	B (65)	1	71	Yes	61	10	Benefit	60	11	Benefit	60	11	Benefit	59	12	Benefit	59	12	Benefit	59	12	Benefit	58	13	Benefit	58	13	Benefit
R441	Residence	B (65)	1	63	No	59	4	Imp w/Bar	59	4	Imp w/Bar	59	4	Imp w/Bar	59	4	Imp w/Bar	59	4	Imp w/Bar	59	4	Imp w/Bar	59	4	Imp w/Bar	59	4	Imp w/Bar
R442	Multifamily	B (65)	1	71	Yes	63	8	Benefit	62	9	Benefit	61	10	Benefit	60	11	Benefit	60	11	Benefit	59	12	Benefit	59	12	Benefit	59	12	Benefit
R443	Multifamily	B (65)	1	72	Yes	64	8	Benefit	62	10	Benefit	61	11	Benefit	60	12	Benefit	60	12	Benefit	59	13	Benefit	58	14	Benefit	58	14	Benefit
R444	Multifamily	B (65)	1	72	Yes	64	8	Benefit	62	10	Benefit	61	11	Benefit	61	11	Benefit	60	12	Benefit	59	13	Benefit	59	13	Benefit	58	14	Benefit
R445	Multifamily	B (65)	1	72	Yes	63	9	Benefit	62	10	Benefit	61	11	Benefit	61	11	Benefit	60	12	Benefit	59	13	Benefit	59	13	Benefit	58	14	Benefit
R446	Multifamily	B (65)	1	73	Yes	70	3	Imp w/Bar	69	4	Imp w/Bar	68	5	Benefit	65	8	Benefit	63	10	Benefit	62	11	Benefit	61	12	Benefit	60	13	Benefit
R447	Multifamily	B (65)	1	73	Yes	70	3	Imp w/Bar	69	4	Imp w/Bar	68	5	Benefit	67	6	Benefit	65	8	Benefit	62	11	Benefit	61	12	Benefit	60	13	Benefit
R448	Multifamily	B (65)	1	73	Yes	68	5	Benefit	67	6	Benefit	67	6	Benefit	65	8	Benefit	64	9	Benefit	63	10	Benefit	61	12	Benefit	61	12	Benefit
R449	Multifamily	B (65)	1	74	Yes	67	7	Benefit	66	8	Benefit	65	9	Benefit	64	10	Benefit	64	10	Benefit	63	11	Benefit	61	13	Benefit	61	13	Benefit
R450	Multifamily	B (65)	1	64	No	61	3	Imp w/Bar	61	3	Imp w/Bar	60	4	Imp w/Bar	60	4	Imp w/Bar	59	5	Benefit	59	5	Benefit	58	6	Benefit	58	6	Benefit
R451	Multifamily	B (65)	1	65	No	62	3	Imp w/Bar	61	4	Imp w/Bar	61	4	Imp w/Bar	60	5	Benefit	60	5	Benefit	59	6	Benefit	59	6	Benefit	58	7	Benefit
R452	Multifamily	B (65)	1	70	Yes	64	6	Benefit	63	7	Benefit	63	7	Benefit	62	8	Benefit	62	8	Benefit	61	9	Benefit	60	10	Benefit	60	10	Benefit
R453	Multifamily	B (65)	1	72	Yes	65	7	Benefit	64	8	Benefit	63	9	Benefit	63	9	Benefit	62	10	Benefit	62	10	Benefit	61	11	Benefit	60	12	Benefit
R454	Multifamily	B (65)	1	60	No	60	0	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar	58	2	Imp w/Bar
R455	Multifamily	B (65)	1	60	No	60	0	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar	58	2	Imp w/Bar
R456	Multifamily	B (65)	1	60	No	60	0	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar
R457	Multifamily	B (65)	1	63	No	62	1	Imp w/Bar	62	1	Imp w/Bar	61	2	Imp w/Bar	61	2	Imp w/Bar	61	2	Imp w/Bar	61	2	Imp w/Bar	60	3	Imp w/Bar	60	3	Imp w/Bar

Site	Type	NAC	DU	Build	Impact	10ft	I.L.	Benefit	12ft	I.L.	Benefit	14ft	I.L.	Benefit	16ft	I.L.	Benefit	18ft	I.L.	Benefit	20ft	I.L.	Benefit	22ft	I.L.	Benefit	24ft	I.L.	Benefit
R458	Multifamily	B (65)	1	63	No	62	1	Imp w/Bar	62	1	Imp w/Bar	61	2	Imp w/Bar	61	2	Imp w/Bar	61	2	Imp w/Bar	61	2	Imp w/Bar	60	3	Imp w/Bar	60	3	Imp w/Bar
R459	Multifamily	B (65)	1	63	No	62	1	Imp w/Bar	62	1	Imp w/Bar	62	1	Imp w/Bar	61	2	Imp w/Bar	61	2	Imp w/Bar	61	2	Imp w/Bar	60	3	Imp w/Bar	60	3	Imp w/Bar
			46	**Total Impacts**	**15**	**Impact Benefit**	**10**			**10**			**12**			**12**			**12**			**12**			**12**			**12**	

NAC = Noise Abatement Criteria
DU = Dwelling Unit
I.L. = Insertion Loss
Imp w/Bar = Impacted site with Barrier (The terms Wall and Barrier are interchangeable.).
The table shows the noise reduction for each noise wall height. The locations receiving benefit have at least 5 dba noise reduction.

Table H-8b: I-205 Wall 7 Abatement by Height

Wall Height	10 ft	12 ft	14ft	16 ft	18 ft	20 ft	22 ft	24 ft
Impact Benefit	**10**	**10**	**12**	**12**	**12**	**12**	**12**	**12**
5dBA	*3*	*2*	*4*	*1*	*0*	*0*	*0*	*0*
7dBA	*7*	*8*	*8*	*11*	*12*	*12*	*12*	*12*
Sites Not Impacted but Benefited by Wall	*0*	*1*	*1*	*3*	*4*	*5*	*5*	*5*
Total Impacted Sites that receive Benefits	**10**	**10**	**12**	**12**	**12**	**12**	**12**	**12**
%	**66.7%**	**66.7%**	**80.0%**	**80.0%**	**80.0%**	**80.0%**	**80.0%**	**80.0%**
Total Benefit	**10**	**11**	**13**	**15**	**16**	**17**	**17**	**17**
Acoustically Feasible majority of impacted receptors receive 5dBA reduction	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7dBA Design Goal	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Benefit 70dBA+	9	9	11	11	11	11	11	11

Table H-8c: I-205 Wall 7 Allowance

Wall Allowance	Wall Height	Wall Cost
Barrier Length	974	N/A
Cost per square foot	up to 16ft	$30
	17 to 25	$37.50
Cost per Benefitted Residence	up to 16ft	$37,500
	17 to 25	$37,500
Max Area	up to 16ft	1,250
	17 to 25	1,000

N/A = not applicable

Table H-8d: I-205 Wall 7 Feasibility and Reasonableness

Wall Feature							Voted Down by the Community		
Barrier Height (Feet)	Sq Ff	Sq ft/Ben Rec	Total Wall Cost	Cost per Benefitted Receptor	Acoustically Feasible	Reasonable Cost	Allowance	Over 70dBA Allow	TOTAL ALLOW
10	9,740	974	$292,200	$29,220	Yes	Yes	$375,000	135000	$510,000
12	11,688	1,063	$350,640	$31,876	Yes	Yes	$412,500	135000	$547,500
14	13,636	1,049	$409,080	$31,468	Yes	Yes	$487,500	165000	$652,500
16	15,584	1,039	$467,520	$31,168	Yes	Yes	$562,500	165000	$727,500
18	17,532	1,096	$657,450	$41,091	Yes	No	$600,000	165000	$765,000
20	19,480	1,146	$730,500	$42,971	Yes	No	$637,500	165000	$802,500
22	21,428	1,260	$803,550	$47,268	Yes	No	$637,500	165000	$802,500
24	23,376	1,375	$876,600	$51,565	Yes	No	$637,500	165000	$802,500

Sq Ft = square feet
Sq Ft/Ben Rec = square feet/benefited receptor

Table H-9a: I-205 Toll Project – Noise Wall 8 Abatement Worksheet

Site	Type	NAC	DU	Build	Impact	10ft	I.L.	Benefit	12ft	I.L.	Benefit	14ft	I.L.	Benefit	16ft	I.L.	Benefit	18ft	I.L.	Benefit	20ft	I.L.	Benefit	22ft	I.L.	Benefit	24ft	I.L.	Benefit
R489	Residence	B (65)	1	74	Yes	64	10	Benefit	63	11	Benefit	63	11	Benefit	62	12	Benefit	62	12	Benefit	61	13	Benefit	61	13	Benefit	61	13	Benefit
R490	Residence	B (65)	1	73	Yes	69	4	Imp w/Bar	69	4	Imp w/Bar	69	4	Imp w/Bar	69	4	Imp w/Bar	69	4	Imp w/Bar	69	4	Imp w/Bar	69	4	Imp w/Bar	68	5	Benefit
R491	Residence	B (65)	1	70	Yes	64	6	Benefit	64	6	Benefit	64	6	Benefit	63	7	Benefit	63	7	Benefit	63	7	Benefit	63	7	Benefit	63	7	Benefit
R492	Residence	B (65)	1	68	Yes	65	3	Imp w/Bar	65	3	Imp w/Bar	64	4	Imp w/Bar	64	4	Imp w/Bar	64	4	Imp w/Bar	63	5	Benefit	63	5	Benefit	62	6	Benefit
R493	Residence	B (65)	1	64	No	63	1	Imp w/Bar	62	2	Imp w/Bar	62	2	Imp w/Bar	61	3	Imp w/Bar	61	3	Imp w/Bar	60	4	Imp w/Bar	60	4	Imp w/Bar	60	4	Imp w/Bar
R494	Residence	B (65)	1	63	No	62	1	Imp w/Bar	62	1	Imp w/Bar	62	1	Imp w/Bar	61	2	Imp w/Bar	61	2	Imp w/Bar	61	2	Imp w/Bar	60	3	Imp w/Bar	60	3	Imp w/Bar
R495	Residence	B (65)	1	62	No	61	1	Imp w/Bar	61	1	Imp w/Bar	61	1	Imp w/Bar	60	2	Imp w/Bar	60	2	Imp w/Bar	60	2	Imp w/Bar	60	2	Imp w/Bar	59	3	Imp w/Bar
R496	Residence	B (65)	1	66	Yes	62	4	Imp w/Bar	61	5	Benefit	61	5	Benefit	61	5	Benefit	60	6	Benefit	60	6	Benefit	60	6	Benefit	59	7	Benefit
R497	Residence	B (65)	1	66	Yes	64	2	Imp w/Bar	63	3	Imp w/Bar	62	4	Imp w/Bar	61	5	Benefit	60	6	Benefit	60	6	Benefit	60	6	Benefit	59	7	Benefit
R498	Residence	B (65)	1	63	No	61	2	Imp w/Bar	61	2	Imp w/Bar	60	3	Imp w/Bar	60	3	Imp w/Bar	59	4	Imp w/Bar	59	4	Imp w/Bar	59	4	Imp w/Bar	59	4	Imp w/Bar
R499	Residence	B (65)	1	62	No	60	2	Imp w/Bar	60	2	Imp w/Bar	60	2	Imp w/Bar	59	3	Imp w/Bar	59	3	Imp w/Bar	59	3	Imp w/Bar	58	4	Imp w/Bar	58	4	Imp w/Bar
R500	Residence	B (65)	1	61	No	60	1	Imp w/Bar	59	2	Imp w/Bar	59	2	Imp w/Bar	59	2	Imp w/Bar	58	3	Imp w/Bar	58	3	Imp w/Bar	58	3	Imp w/Bar	58	3	Imp w/Bar
R501	Residence	B (65)	1	72	Yes	67	5	Benefit	65	7	Benefit	63	9	Benefit	62	10	Benefit	61	11	Benefit	60	12	Benefit	60	12	Benefit	59	13	Benefit
R502	Residence	B (65)	1	71	Yes	68	3	Imp w/Bar	67	4	Imp w/Bar	65	6	Benefit	64	7	Benefit	63	8	Benefit	62	9	Benefit	61	10	Benefit	60	11	Benefit
R503	Residence	B (65)	1	71	Yes	66	5	Benefit	65	6	Benefit	63	8	Benefit	62	9	Benefit	61	10	Benefit	61	10	Benefit	60	11	Benefit	60	11	Benefit
R504	Residence	B (65)	1	72	Yes	68	4	Imp w/Bar	66	6	Benefit	65	7	Benefit	63	9	Benefit	62	10	Benefit	62	10	Benefit	61	11	Benefit	61	11	Benefit
R505	Residence	B (65)	1	72	Yes	68	4	Imp w/Bar	66	6	Benefit	65	7	Benefit	64	8	Benefit	64	8	Benefit	63	9	Benefit	63	9	Benefit	63	9	Benefit
R506	Residence	B (65)	1	72	Yes	68	4	Imp w/Bar	67	5	Benefit	66	6	Benefit	65	7	Benefit	65	7	Benefit	64	8	Benefit	64	8	Benefit	64	8	Benefit
R507	Residence	B (65)	1	65	Yes	64	1	Imp w/Bar	64	1	Imp w/Bar	63	2	Imp w/Bar	63	2	Imp w/Bar	63	2	Imp w/Bar	63	2	Imp w/Bar	63	2	Imp w/Bar	63	2	Imp w/Bar
R508	Residence	B (65)	1	63	No	61	2	Imp w/Bar	60	3	Imp w/Bar	60	3	Imp w/Bar	60	3	Imp w/Bar	59	4	Imp w/Bar	59	4	Imp w/Bar	59	4	Imp w/Bar	59	4	Imp w/Bar
R509	Residence	B (65)	1	64	No	62	2	Imp w/Bar	61	3	Imp w/Bar	61	3	Imp w/Bar	60	4	Imp w/Bar	60	4	Imp w/Bar	59	5	Benefit	59	5	Benefit	59	5	Benefit
R510	Residence	B (65)	1	65	Yes	62	3	Imp w/Bar	62	3	Imp w/Bar	61	4	Imp w/Bar	60	5	Benefit	60	5	Benefit	59	6	Benefit	59	6	Benefit	59	6	Benefit
R511	Residence	B (65)	1	64	No	62	2	Imp w/Bar	61	3	Imp w/Bar	60	4	Imp w/Bar	60	4	Imp w/Bar	59	5	Benefit	59	5	Benefit	59	5	Benefit	58	6	Benefit
R512	Residence	B (65)	1	63	No	62	1	Imp w/Bar	61	2	Imp w/Bar	60	3	Imp w/Bar	60	3	Imp w/Bar	59	4	Imp w/Bar	59	4	Imp w/Bar	59	4	Imp w/Bar	58	5	Benefit
R513	Residence	B (65)	1	63	No	61	2	Imp w/Bar	61	2	Imp w/Bar	60	3	Imp w/Bar	60	3	Imp w/Bar	59	4	Imp w/Bar	59	4	Imp w/Bar	59	4	Imp w/Bar	59	4	Imp w/Bar
R514	Residence	B (65)	1	62	No	61	1	Imp w/Bar	60	2	Imp w/Bar	60	2	Imp w/Bar	60	2	Imp w/Bar	59	3	Imp w/Bar	59	3	Imp w/Bar	59	3	Imp w/Bar	59	3	Imp w/Bar
R515	Residence	B (65)	1	60	No	59	1	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar
R516	Residence	B (65)	1	60	No	60	0	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar	59	1	Imp w/Bar
R517	Residence	B (65)	1	59	No	59	0	Imp w/Bar	59	0	Imp w/Bar	59	0	Imp w/Bar	59	0	Imp w/Bar	59	0	Imp w/Bar	59	0	Imp w/Bar	59	0	Imp w/Bar	59	0	Imp w/Bar
R518	Residence	B (65)	1	61	No	61	0	Imp w/Bar	61	0	Imp w/Bar	60	1	Imp w/Bar	60	1	Imp w/Bar	60	1	Imp w/Bar	60	1	Imp w/Bar	60	1	Imp w/Bar	60	1	Imp w/Bar
R519	Residence	B (65)	1	56	No	55	1	Imp w/Bar	56	0	Imp w/Bar	56	0	Imp w/Bar	56	0	Imp w/Bar	56	0	Imp w/Bar	56	0	Imp w/Bar	56	0	Imp w/Bar	56	0	Imp w/Bar
R520	Residence	B (65)	1	55	No	54	1	Imp w/Bar	55	0	Imp w/Bar	55	0	Imp w/Bar	55	0	Imp w/Bar	55	0	Imp w/Bar	55	0	Imp w/Bar	55	0	Imp w/Bar	55	0	Imp w/Bar
R521	Residence	B (65)	1	66	Yes	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar
R522	Residence	B (65)	1	66	Yes	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar
R523	Residence	B (65)	1	66	Yes	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar
R524	Residence	B (65)	1	66	Yes	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar
R525	Residence	B (65)	1	65	Yes	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar
R526	Residence	B (65)	1	61	No	61	0	Imp w/Bar	61	0	Imp w/Bar	61	0	Imp w/Bar	61	0	Imp w/Bar	61	0	Imp w/Bar	61	0	Imp w/Bar	61	0	Imp w/Bar	61	0	Imp w/Bar
R527	Multifamily	B (65)	1	70	Yes	70	0	Imp w/Bar	70	0	Imp w/Bar	70	0	Imp w/Bar	70	0	Imp w/Bar	70	0	Imp w/Bar	70	0	Imp w/Bar	70	0	Imp w/Bar	70	0	Imp w/Bar
R528	Multifamily	B (65)	1	69	Yes	69	0	Imp w/Bar	69	0	Imp w/Bar	69	0	Imp w/Bar	69	0	Imp w/Bar	69	0	Imp w/Bar	69	0	Imp w/Bar	69	0	Imp w/Bar	69	0	Imp w/Bar
R529	Multifamily	B (65)	1	68	Yes	68	0	Imp w/Bar	68	0	Imp w/Bar	68	0	Imp w/Bar	68	0	Imp w/Bar	68	0	Imp w/Bar	68	0	Imp w/Bar	68	0	Imp w/Bar	68	0	Imp w/Bar
R530	Multifamily	B (65)	1	72	Yes	72	0	Imp w/Bar	72	0	Imp w/Bar	72	0	Imp w/Bar	72	0	Imp w/Bar	72	0	Imp w/Bar	72	0	Imp w/Bar	72	0	Imp w/Bar	72	0	Imp w/Bar
R531	Multifamily	B (65)	1	70	Yes	70	0	Imp w/Bar	70	0	Imp w/Bar	70	0	Imp w/Bar	70	0	Imp w/Bar	70	0	Imp w/Bar	70	0	Imp w/Bar	70	0	Imp w/Bar	70	0	Imp w/Bar
R532	Multifamily	B (65)	1	69	Yes	69	0	Imp w/Bar	69	0	Imp w/Bar	69	0	Imp w/Bar	69	0	Imp w/Bar	69	0	Imp w/Bar	69	0	Imp w/Bar	69	0	Imp w/Bar	69	0	Imp w/Bar
R533	Multifamily	B (65)	1	57	No	57	0	Imp w/Bar	57	0	Imp w/Bar	57	0	Imp w/Bar	57	0	Imp w/Bar	57	0	Imp w/Bar	57	0	Imp w/Bar	57	0	Imp w/Bar	57	0	Imp w/Bar

Site	Type	NAC	DU	Build	Impact	10ft	I.L.	Benefit	12ft	I.L.	Benefit	14ft	I.L.	Benefit	16ft	I.L.	Benefit	18ft	I.L.	Benefit	20ft	I.L.	Benefit	22ft	I.L.	Benefit	24ft	I.L.	Benefit
R534	Multifamily	B (65)	1	62	No	62	0	Imp w/Bar	62	0	Imp w/Bar	62	0	Imp w/Bar	62	0	Imp w/Bar	62	0	Imp w/Bar	62	0	Imp w/Bar	62	0	Imp w/Bar	62	0	Imp w/Bar
R535	Multifamily	B (65)	1	56	No	56	0	Imp w/Bar	56	0	Imp w/Bar	56	0	Imp w/Bar	56	0	Imp w/Bar	56	0	Imp w/Bar	56	0	Imp w/Bar	56	0	Imp w/Bar	56	0	Imp w/Bar
R536	Residence	B (65)	1	65	Yes	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar
			48	**Total Impacts**	**26**	**Impact Benefit**	**4**			**8**			**9**			**11**			**11**			**12**			**12**			**13**	

NAC = Noise Abatement Criteria
DU = Dwelling Unit
I.L. = Insertion Loss
Imp w/Bar = Impacted site with Barrier (The terms Wall and Barrier are interchangeable.)
The table shows the noise reduction for each noise wall height. The locations receiving benefit have at least 5 dba noise reduction.

Table H-9b: I-205 Wall 8 Abatement by Height

Wall Height	10 ft	12 ft	14ft	16 ft	18 ft	20 ft	22 ft	24 ft
Impact Benefit	**4**	**8**	**9**	**11**	**11**	**12**	**12**	**13**
5dBA	*3*	*6*	*4*	*3*	*3*	*4*	*4*	*3*
7dBA	*1*	*2*	*5*	*8*	*8*	*8*	*8*	*10*
Sites Not Impacted but Benefited by Wall	*0*	*0*	*0*	*0*	*1*	*2*	*2*	*3*
Total Impacted Sites that receive Benefits	**4**	**8**	**9**	**11**	**11**	**12**	**12**	**13**
%	**15.4%**	**30.8%**	**34.6%**	**42.3%**	**42.3%**	**46.2%**	**46.2%**	**50.0%**
Total Benefit	**4**	**8**	**9**	**11**	**12**	**14**	**14**	**16**
Acoustically Feasible majority of impacted receptors receive 5dBA reduction	No	No	No	No	No	No	No	No
7dBA Design Goal	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Benefit 70dBA+	4	7	8	8	8	8	8	9

Table H-9c: I-205 Wall 8 Allowance

Wall Allowance	Wall Height	Wall Cost
Barrier Length	**683**	N/A
Cost per square foot	up to 16ft	$30
	17 to 25	$37.50
Cost per Benefitted Residence	up to 16ft	$37,500
	17 to 25	$37,500
Max Area	up to 16ft	1,250
	17 to 25	1,000

N/A = not applicable

Table H-9d: I-205 Wall 8 Feasibility and Reasonableness

Barrier Height (Feet)	Sq Ff	Sq ft/Ben Rec	Total Wall Cost	Cost per Benefitted Receptor	Acoustically Feasible	Reasonable Cost	Allowance	Over 70dBA Allow	TOTAL ALLOW
10	6,830	1,708	$204,900	$51,225	No*	Yes	$150,000	60000	$210,000
12	8,196	1,025	$245,880	$30,735	No*	Yes	$300,000	105000	$405,000
14	9,562	1,062	$286,860	$31,873	No*	Yes	$337,500	120000	$457,500
16	10,928	993	$327,840	$29,804	No*	Yes	$412,500	120000	$532,500
18	12,294	1,025	$461,025	$38,419	No*	Yes	$450,000	120000	$570,000
20	13,660	976	$512,250	$36,589	No*	Yes	$525,000	120000	$645,000
22	15,026	1,073	$563,475	$40,248	No*	Yes	$525,000	120000	$645,000
24	16,392	1,025	$614,700	$38,419	No*	Yes	$600,000	135000	$735,000

*Does not meet criteria of majority of impacted receptors achieving 5dBA reduction.
Sq Ft = square feet
Sq Ft/Ben Rec = square feet/benefited receptor

Table H-9e: I-205 Wall 8 Abatement Summary

Wall Abatement Feature	Value
wall height (feet)	24
wall length (feet)	683
area (square feet)	16392
cost/square feet	$37.50
wall cost	$614,700
wall allowance	$735,000
cost per benefitted	$38,419
allowable cost per benefitted	$45,938
cost per benefitted < allowable cost per benefitted	**Yes**

Table H-10a: I-205 Toll Project – Noise Wall 9 Abatement Worksheet

Site	Type	NAC	DU	Build	Impact	10ft	I.L.	Benefit	12ft	I.L.	Benefit	14ft	I.L.	Benefit	16ft	I.L.	Benefit	18ft	I.L.	Benefit	20ft	I.L.	Benefit	22ft	I.L.	Benefit	24ft	I.L.	Benefit
R467	Multifamily	B (65)	1	**71**	Yes	63	8	Benefit	61	10	Benefit	60	11	Benefit	60	11	Benefit	59	12	Benefit	59	12	Benefit	58	13	Benefit	58	13	Benefit
R468	Multifamily	B (65)	1	**72**	Yes	71	1	Imp w/Bar	69	3	Imp w/Bar	67	5	Benefit	65	7	Benefit	63	9	Benefit	61	11	Benefit	60	12	Benefit	59	13	Benefit
R469	Multifamily	B (65)	1	69	Yes	62	7	Benefit	60	9	Benefit	60	9	Benefit	59	10	Benefit	59	10	Benefit	58	11	Benefit	58	11	Benefit	58	11	Benefit
R470	Multifamily	B (65)	1	**70**	Yes	67	3	Imp w/Bar	66	4	Imp w/Bar	65	5	Benefit	63	7	Benefit	62	8	Benefit	61	9	Benefit	60	10	Benefit	59	11	Benefit
R471	Multifamily	B (65)	1	**71**	Yes	71	0	Imp w/Bar	70	1	Imp w/Bar	70	1	Imp w/Bar	69	2	Imp w/Bar	67	4	Imp w/Bar	66	5	Benefit	65	6	Benefit	63	8	Benefit
R472	Multifamily	B (65)	1	68	Yes	62	6	Benefit	61	7	Benefit	60	8	Benefit	60	8	Benefit	60	8	Benefit	60	8	Benefit	60	8	Benefit	59	9	Benefit
R473	Multifamily	B (65)	1	69	Yes	66	3	Imp w/Bar	65	4	Imp w/Bar	64	5	Benefit	63	6	Benefit	62	7	Benefit	62	7	Benefit	61	8	Benefit	61	8	Benefit
R474	Multifamily	B (65)	1	**70**	Yes	69	1	Imp w/Bar	69	1	Imp w/Bar	68	2	Imp w/Bar	67	3	Imp w/Bar	66	4	Imp w/Bar	65	5	Benefit	64	6	Benefit	63	7	Benefit
R475	Multifamily	B (65)	1	68	Yes	68	0	Imp w/Bar	68	0	Imp w/Bar	67	1	Imp w/Bar	67	1	Imp w/Bar	67	1	Imp w/Bar	67	1	Imp w/Bar	66	2	Imp w/Bar	65	3	Imp w/Bar
R476	Multifamily	B (65)	1	69	Yes	69	0	Imp w/Bar	69	0	Imp w/Bar	69	0	Imp w/Bar	68	1	Imp w/Bar	68	1	Imp w/Bar	68	1	Imp w/Bar	68	1	Imp w/Bar	68	1	Imp w/Bar
R477	Multifamily	B (65)	1	69	Yes	69	0	Imp w/Bar	69	0	Imp w/Bar	69	0	Imp w/Bar	69	0	Imp w/Bar	68	1	Imp w/Bar	68	1	Imp w/Bar	68	1	Imp w/Bar	68	1	Imp w/Bar
R478	Multifamily	B (65)	1	67	Yes	66	1	Imp w/Bar	66	1	Imp w/Bar	66	1	Imp w/Bar	66	1	Imp w/Bar	66	1	Imp w/Bar	66	1	Imp w/Bar	66	1	Imp w/Bar	65	2	Imp w/Bar
R479	Multifamily	B (65)	1	67	Yes	67	0	Imp w/Bar	67	0	Imp w/Bar	67	0	Imp w/Bar	67	0	Imp w/Bar	67	0	Imp w/Bar	67	0	Imp w/Bar	67	0	Imp w/Bar	67	0	Imp w/Bar
R480	Multifamily	B (65)	1	68	Yes	67	1	Imp w/Bar	67	1	Imp w/Bar	67	1	Imp w/Bar	67	1	Imp w/Bar	67	1	Imp w/Bar	67	1	Imp w/Bar	67	1	Imp w/Bar	67	1	Imp w/Bar
R481	Multifamily	B (65)	1	66	Yes	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	65	1	Imp w/Bar	65	1	Imp w/Bar	65	1	Imp w/Bar
R482	Multifamily	B (65)	1	67	Yes	66	1	Imp w/Bar	66	1	Imp w/Bar	66	1	Imp w/Bar	66	1	Imp w/Bar	66	1	Imp w/Bar	66	1	Imp w/Bar	66	1	Imp w/Bar	66	1	Imp w/Bar
R483	Multifamily	B (65)	1	67	Yes	67	0	Imp w/Bar	67	0	Imp w/Bar	67	0	Imp w/Bar	67	0	Imp w/Bar	67	0	Imp w/Bar	67	0	Imp w/Bar	67	0	Imp w/Bar	67	0	Imp w/Bar
			17	**Total Impacts**	**17**	**Impact Benefit**	**3**			**3**			**6**			**6**			**6**			**8**			**8**			**8**	

NAC = Noise Abatement Criteria
DU = Dwelling Unit
I.L. = Insertion Loss
Imp w/Bar = Impacted site with Barrier (The terms Wall and Barrier are interchangeable.)
The table shows the noise reduction for each noise wall height. The locations receiving a benefit have at least 5 dba noise reduction.

Table H-10b: I-205 Wall 9 Abatement by Height

Wall Height	10 ft	12 ft	14ft	16 ft	18 ft	20 ft	22 ft	24 ft
Impact Benefit	**3**	**3**	**6**	**6**	**6**	**8**	**8**	**8**
5dBA	*1*	*0*	*3*	*1*	*0*	*2*	*2*	*0*
7dBA	*2*	*3*	*3*	*5*	*6*	*6*	*6*	*8*
Sites Not Impacted but Benefited by Wall	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Impacted Sites that receive Benefits	**3**	**3**	**6**	**6**	**6**	**8**	**8**	**8**
%	**17.6%**	**17.6%**	**35.3%**	**35.3%**	**35.3%**	**47.1%**	**47.1%**	**47.1%**
Total Benefit	**3**	**3**	**6**	**6**	**6**	**8**	**8**	**8**
Acoustically Feasible majority of impacted receptors receive 5dBA reduction	No	No	No	No	No	No	No	No
7dBA Design Goal	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Benefit 70dBA+	1	1	3	3	3	5	5	5

Table H-10c: I-205 Wall 9 Allowance

Wall Allowance	Wall Height	Wall Cost
Barrier Length	**594**	N/A
Cost per square foot	up to 16ft	$30
	17 to 25	$37.50
Cost per Benefitted Residence	up to 16ft	$37,500
	17 to 25	$37,500
Max Area	up to 16ft	1,250
	17 to 25	1,000

N/A = not applicable

Table H-10d: I-205 Wall 9 Feasibility and Reasonableness – Not Feasible

Barrier Height (Feet)	Sq Ff	Sq ft/Ben Rec	Total Wall Cost	Cost per Benefitted Receptor	Acoustically Feasible	Reasonable Cost	Allowance	Over 70dBA Allow	TOTAL ALLOW
10	5,940	1,980	$178,200	$59,400	No*	No	$112,500	15000	$127,500
12	7,128	2,376	$213,840	$71,280	No*	No	$112,500	15000	$127,500
14	8,316	1,386	$249,480	$41,580	No*	Yes	$225,000	45000	$270,000
16	9,504	1,584	$285,120	$47,520	No*	No	$225,000	45000	$270,000
18	10,692	1,782	$400,950	$66,825	No*	No	$225,000	45000	$270,000
20	11,880	1,485	$445,500	$55,688	No*	No	$300,000	75000	$375,000
22	13,068	1,634	$490,050	$61,256	No*	No	$300,000	75000	$375,000
24	14,256	1,782	$534,600	$66,825	No*	No	$300,000	75000	$375,000

*Does not meet criteria of majority of impacted receptors achieving 5dBA reduction.
Sq Ft = square feet
Sq Ft/Ben Rec = square feet/benefited receptor

Table H-10e: I-205 Wall 9 Abatement Summary

Wall Abatement Feature	Value
wall height (feet)	24
wall length (feet)	594
area (square feet)	14256
cost/square feet	$37.50
wall cost	$534,600
wall allowance	$375,000
cost per benefitted	$66,825
allowable cost per benefitted	$46,875
cost per benefitted < allowable cost per benefitted	**No**

Table H-11a: I-205 Toll Project – Noise Wall 10 with Structure Noise Abatement Worksheet

Site	Type	NAC	DU	Build	Build + Structure	Impact	9ft	I.L.	Benefit	11ft	I.L.	Benefit	13ft	I.L.	Benefit	15ft	I.L.	Benefit	17ft	I.L.	Benefit
ST-12	Residence	B (65)	1	62	64	No	65	-1	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar
ST-13	Jon Storm Park	C (65)	1	66	68	Yes	68	0	Imp w/Bar	68	0	Imp w/Bar	68	0	Imp w/Bar	68	0	Imp w/Bar	68	0	Imp w/Bar
R537	Residence	B (65)	1	64	64	No	63	1	Imp w/Bar	62	2	Imp w/Bar	61	3	Imp w/Bar	61	3	Imp w/Bar	61	3	Imp w/Bar
R538	Residence	B (65)	1	66	66	Yes	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar	66	0	Imp w/Bar
R539	Residence	B (65)	1	62	62	No	62	0	Imp w/Bar	62	0	Imp w/Bar	61	1	Imp w/Bar	61	1	Imp w/Bar	61	1	Imp w/Bar
R540	Residence	B (65)	1	61	62	No	61	1	Imp w/Bar	60	2	Imp w/Bar	60	2	Imp w/Bar	60	2	Imp w/Bar	60	2	Imp w/Bar
R541	Residence	B (65)	1	60	61	No	60	1	Imp w/Bar	60	1	Imp w/Bar	59	2	Imp w/Bar	59	2	Imp w/Bar	59	2	Imp w/Bar
R542	Residence	B (65)	1	60	61	No	60	1	Imp w/Bar	59	2	Imp w/Bar	58	3	Imp w/Bar	58	3	Imp w/Bar	58	3	Imp w/Bar
R543	Residence	B (65)	1	60	61	No	60	1	Imp w/Bar	59	2	Imp w/Bar	58	3	Imp w/Bar	58	3	Imp w/Bar	58	3	Imp w/Bar
R544	Residence	B (65)	1	60	61	No	60	1	Imp w/Bar	59	2	Imp w/Bar	58	3	Imp w/Bar	58	3	Imp w/Bar	58	3	Imp w/Bar
R545	Residence	B (65)	1	61	62	No	60	2	Imp w/Bar	59	3	Imp w/Bar	58	4	Imp w/Bar	58	4	Imp w/Bar	58	4	Imp w/Bar
R546	Residence	B (65)	1	63	63	No	62	1	Imp w/Bar	62	1	Imp w/Bar	61	2	Imp w/Bar	61	2	Imp w/Bar	60	3	Imp w/Bar
R547	Residence	B (65)	1	62	63	No	61	2	Imp w/Bar	60	3	Imp w/Bar	59	4	Imp w/Bar	59	4	Imp w/Bar	59	4	Imp w/Bar
R548	Residence	B (65)	1	62	63	No	61	2	Imp w/Bar	61	2	Imp w/Bar	60	3	Imp w/Bar	60	3	Imp w/Bar	59	4	Imp w/Bar
R549	Residence	B (65)	1	62	63	No	61	2	Imp w/Bar	60	3	Imp w/Bar	59	4	Imp w/Bar	59	4	Imp w/Bar	59	4	Imp w/Bar
R550	Residence	B (65)	1	62	63	No	61	2	Imp w/Bar	60	3	Imp w/Bar	60	3	Imp w/Bar	60	3	Imp w/Bar	60	3	Imp w/Bar
R551	Residence	B (65)	1	62	63	No	61	2	Imp w/Bar	61	2	Imp w/Bar	60	3	Imp w/Bar	60	3	Imp w/Bar	60	3	Imp w/Bar
R552	Residence	B (65)	1	64	65	Yes	63	2	Imp w/Bar	62	3	Imp w/Bar	61	4	Imp w/Bar	61	4	Imp w/Bar	61	4	Imp w/Bar
R553	Residence	B (65)	1	65	66	Yes	65	1	Imp w/Bar	64	2	Imp w/Bar	63	3	Imp w/Bar	63	3	Imp w/Bar	62	4	Imp w/Bar
R554	Residence	B (65)	1	62	63	No	63	0	Imp w/Bar	62	1	Imp w/Bar	62	1	Imp w/Bar	62	1	Imp w/Bar	62	1	Imp w/Bar
R555	Residence	B (65)	1	62	64	No	65	-1	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar
R556	Residence	B (65)	1	64	65	Yes	66	-1	Imp w/Bar	66	-1	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar
R557	Residence	B (65)	1	65	66	Yes	66	0	Imp w/Bar	65	1	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar
R558	Residence	B (65)	1	62	63	No	65	-2	Imp w/Bar	64	-1	Imp w/Bar	64	-1	Imp w/Bar	64	-1	Imp w/Bar	64	-1	Imp w/Bar
R559	Residence	B (65)	1	63	64	No	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar	65	-1	Imp w/Bar
R560	Residence	B (65)	1	66	67	Yes	68	-1	Imp w/Bar	68	-1	Imp w/Bar	68	-1	Imp w/Bar	68	-1	Imp w/Bar	68	-1	Imp w/Bar
R561	Residence	B (65)	1	64	65	Yes	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar	65	0	Imp w/Bar
R562	Residence	B (65)	1	64	65	Yes	64	1	Imp w/Bar	64	1	Imp w/Bar	63	2	Imp w/Bar	63	2	Imp w/Bar	63	2	Imp w/Bar
R563	Residence	B (65)	1	64	65	Yes	63	2	Imp w/Bar	63	2	Imp w/Bar	62	3	Imp w/Bar	62	3	Imp w/Bar	62	3	Imp w/Bar
R564	Residence	B (65)	1	64	65	Yes	63	2	Imp w/Bar	62	3	Imp w/Bar	62	3	Imp w/Bar	62	3	Imp w/Bar	62	3	Imp w/Bar
R565	Residence	B (65)	1	63	64	No	64	0	Imp w/Bar	64	0	Imp w/Bar	63	1	Imp w/Bar	63	1	Imp w/Bar	63	1	Imp w/Bar
R566	Residence	B (65)	1	63	64	No	64	0	Imp w/Bar	64	0	Imp w/Bar	63	1	Imp w/Bar	63	1	Imp w/Bar	63	1	Imp w/Bar
R567	Residence	B (65)	1	63	64	No	64	0	Imp w/Bar	63	1	Imp w/Bar	63	1	Imp w/Bar	63	1	Imp w/Bar	63	1	Imp w/Bar
R568	Residence	B (65)	1	63	64	No	63	1	Imp w/Bar	63	1	Imp w/Bar	62	2	Imp w/Bar	62	2	Imp w/Bar	62	2	Imp w/Bar
R569	Residence	B (65)	1	64	64	No	64	0	Imp w/Bar	63	1	Imp w/Bar	63	1	Imp w/Bar	62	2	Imp w/Bar	62	2	Imp w/Bar
R570	Residence	B (65)	1	64	64	No	63	1	Imp w/Bar	62	2	Imp w/Bar	62	2	Imp w/Bar	61	3	Imp w/Bar	61	3	Imp w/Bar
R571	Residence	B (65)	1	65	65	Yes	65	0	Imp w/Bar	64	1	Imp w/Bar	64	1	Imp w/Bar	64	1	Imp w/Bar	63	2	Imp w/Bar
R572	Residence	B (65)	1	65	65	Yes	65	0	Imp w/Bar	64	1	Imp w/Bar	63	2	Imp w/Bar	63	2	Imp w/Bar	63	2	Imp w/Bar
R573	Best Western (Pool)	E (70)	1	64	64	No	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar	64	0	Imp w/Bar
R574	Best Western (Outdoor Seating)	E (70)	1	60	61	No	59	2	Imp w/Bar	59	2	Imp w/Bar	59	2	Imp w/Bar	58	3	Imp w/Bar	58	3	Imp w/Bar
R575	Best Western	E (70)	1	65	66	Yes	65	1	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar	64	2	Imp w/Bar
R700	Jon Storm Park	C (65)	1	66	69	Yes	69	0	Imp w/Bar	69	0	Imp w/Bar	69	0	Imp w/Bar	69	0	Imp w/Bar	69	0	Imp w/Bar

Site	Type	NAC	DU	Build	Build + Structure	Impact	9ft	I.L.	Benefit	11ft	I.L.	Benefit	13ft	I.L.	Benefit	15ft	I.L.	Benefit	17ft	I.L.	Benefit
R701	Jon Storm Park	C (65)	1	67	69	Yes	68	1	Imp w/Bar	68	1	Imp w/Bar	68	1	Imp w/Bar	68	1	Imp w/Bar	68	1	Imp w/Bar
R702	Jon Storm Park	C (65)	1	67	68	Yes	68	0	Imp w/Bar	67	1	Imp w/Bar	67	1	Imp w/Bar	67	1	Imp w/Bar	67	1	Imp w/Bar
R703	Jon Storm Park	C (65)	1	67	68	Yes	67	1	Imp w/Bar	66	2	Imp w/Bar	67	1	Imp w/Bar	67	1	Imp w/Bar	67	1	Imp w/Bar
			45		**Total Impacts**	**18**	**Impact Benefit**	**0**			**0**			**0**			**0**			**0**	

Notes:
NAC = Noise Abatement Criteria
DU = Dwelling Unit
I.L. = Insertion Loss
Imp w/Bar = Impacted site with Barrier (The terms Wall and Barrier are interchangeable.)
The table shows the noise reduction for each noise wall height. The locations receiving benefit have at least 5 dba noise reduction.

Table H-11b: I-205 Wall 10 with Structure Noise Abatement by Height

Wall Height	9 ft	11 ft	13 ft	15 ft	17 ft
Impact Benefit	**0**	**0**	**0**	**0**	**0**
5dBA	*0*	*0*	*0*	*0*	*0*
7dBA	*0*	*0*	*0*	*0*	*0*
Sites Not Impacted but Benefited by Wall	*0*	*0*	*0*	*0*	*0*
Total Impacted Sites that receive Benefits	**0**	**0**	**0**	**0**	**0**
%	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
Total Benefit	**0**	**0**	**0**	**0**	**0**
Acoustically Feasible majority of impacted receptors receive 5dBA reduction	No	No	No	No	No
7dBA Design Goal	No	No	No	No	No

Table H-11c: I-205 Wall 10 with Structure Noise Allowance

Wall Allowance	Wall Height	Wall Cost
Barrier Length	3317	N/A
Cost per square foot	up to 16ft	$30
	17 to 25	$37.50
Cost per Benefitted Residence	up to 16ft	$37,500
	17 to 25	$37,500
Max Area	up to 16ft	1,250
	17 to 25	1,000

N/A = not applicable

Table H-11d: I-205 Wall 10 with Structure Noise Feasibility and Reasonableness – Not Feasible

Barrier Height (Feet)	Sq Ft	Sq Ft/Ben Rec	Total Wall Cost	Cost per Benefitted Receptor	Acoustically Feasible	Reasonable Cost
9	29,853	0	$895,590	0	No	No
11	36,487	0	$1,094,610	0	No	No
13	43,121	0	$1,293,630	0	No	No
15	49,755	0	$1,492,650	0	No	No
17	56,389	0	$2,114,588	0	No	No

Sq Ft = square feet
Sq Ft/Ben Rec = square feet/benefited receptor

Table H-12a: I-205 Toll Project – Noise Wall 11 Abatement Worksheet

Site	Type	NAC	DU	Build	Impact	10ft	I.L.	Benefit	12ft	I.L.	Benefit	14ft	I.L.	Benefit	16ft	I.L.	Benefit	18ft	I.L.	Benefit	20ft	I.L.	Benefit	22ft	I.L.	Benefit	24ft	I.L.	Benefit
R695	Residence	B (65)	1	**72**	Yes	68	4	Imp w/Bar	67	5	Benefit	66	6	Benefit	66	6	Benefit	66	6	Benefit	65	7	Benefit	65	7	Benefit	65	7	Benefit
R696	Residence	B (65)	1	69	Yes	66	3	Imp w/Bar	65	4	Imp w/Bar	64	5	Benefit	63	6	Benefit	63	6	Benefit	62	7	Benefit	62	7	Benefit	62	7	Benefit
R697	Residence	B (65)	1	68	Yes	65	3	Imp w/Bar	64	4	Imp w/Bar	63	5	Benefit	62	6	Benefit	62	6	Benefit	61	7	Benefit	61	7	Benefit	61	7	Benefit
R698	Residence	B (65)	1	66	Yes	64	2	Imp w/Bar	63	3	Imp w/Bar	62	4	Imp w/Bar	61	5	Benefit	61	5	Benefit	60	6	Benefit	60	6	Benefit	60	6	Benefit
R699	Residence	B (65)	1	**75**	Yes	69	6	Benefit	67	8	Benefit	65	10	Benefit	64	11	Benefit	64	11	Benefit	63	12	Benefit	62	13	Benefit	62	13	Benefit
			5	**Total Impacts**	**5**	**Impact Benefit**	**1**			**2**			**4**			**5**			**5**			**5**			**5**			**5**	

NAC = Noise Abatement Criteria
DU = Dwelling Unit
I.L. = Insertion Loss
Imp w/Bar = Impacted site with Barrier (The terms Wall and Barrier are interchangeable.)
The table shows the noise reduction for each noise wall height. The locations receiving benefit have at least 5 dba noise reduction.

Table H-12b: I-205 Wall 11 Abatement by Height

Wall Height	10 ft	12 ft	14ft	16 ft	18 ft	20 ft	22 ft	24 ft
Impact Benefit	**1**	**2**	**4**	**5**	**5**	**5**	**5**	**5**
5dBA	*1*	*1*	*3*	*4*	*4*	*1*	*1*	*1*
7dBA	*0*	*1*	*1*	*1*	*1*	*4*	*4*	*4*
Sites Not Impacted but Benefited by Wall	*0*	*0*	*0*	0	0	0	0	0
Total Impacted Sites that receive Benefits	**1**	**2**	**4**	**5**	**5**	**5**	**5**	**5**
%	**20.0%**	**40.0%**	**80.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Total Benefit	**1**	**2**	**4**	**5**	**5**	**5**	**5**	**5**
Acoustically Feasible majority of impacted receptors receive 5dBA reduction	No	No	Yes	Yes	Yes	Yes	Yes	Yes
7dBA Design Goal	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Benefit 70dBA+	1	2	2	2	2	2	2	2

Table H-12c: I-205 Wall 11 Allowance

Wall Allowance	Wall Height	Wall Cost
Barrier Length	1145	N/A
Cost per square foot	up to 16ft	$30
	17 to 25	$37.50
Cost per Benefitted Residence	up to 16ft	$37,500
	17 to 25	$37,500
Max Area	up to 16ft	1,250
	17 to 25	1,000

N/A = not applicable

Table H-12d: I-205 Wall 11 Feasibility and Reasonableness

Barrier Height (Feet)	Sq Ft	Sq ft/Ben Rec	Total Wall Cost	Cost per Benefitted Receptor	Acoustically Feasible	Reasonable Cost	Allowance	Over 70dBA Allow	TOTAL ALLOW
10	11,450	11,450	$343,500	$343,500	No*	No	$37,500	15000	$52,500
12	13,740	6,870	$412,200	$206,100	No*	No	$75,000	30000	$105,000
14	16,030	4,008	$480,900	$120,225	Yes	No	$150,000	30000	$180,000
16	18,320	3,664	$549,600	$109,920	Yes	No	$187,500	30000	$217,500
18	20,610	4,122	$772,875	$154,575	Yes	No	$187,500	30000	$217,500
20	22,900	4,580	$858,750	$171,750	Yes	No	$187,500	30000	$217,500
22	25,190	5,038	$944,625	$188,925	Yes	No	$187,500	30000	$217,500
24	27,480	5,496	$1,030,500	$206,100	Yes	No	$187,500	30000	$217,500

*Does not meet criteria of majority of impacted receptors achieving 5dBA reduction.
Sq Ft = square feet
Sq Ft/Ben Rec = square feet/benefited receptor

Table H-12e: I-205 Wall 11 Abatement Summary

Wall Abatement Feature	Value
wall height (feet)	16
wall length (feet)	1145
area (square feet)	18320
cost/square feet	$30.00
wall cost	$549,600
wall allowance	$217,500
cost per benefitted	$109,920
allowable cost per benefitted	$43,500
cost per benefitted < allowable cost per benefitted	**No**

Table H-13a: I-205 Toll Project – Noise Wall 12 Existing Barrier Abatement Worksheet

Site	Type	NAC	DU	Build-No Wall	Impact	8-18ft	I.L.	Benefit
R704	Multifamily	B (65)	1	69	Yes	64	5	Benefit
R705	Multifamily	B (65)	1	69	Yes	64	5	Benefit
R706	Multifamily	B (65)	1	70	Yes	65	5	Benefit
R707	Multifamily	B (65)	1	70	Yes	66	4	Imp w/Bar
R708	Multifamily	B (65)	1	59	No	56	3	Imp w/Bar
R709	Multifamily	B (65)	1	56	No	53	3	Imp w/Bar
R710	Multifamily	B (65)	1	50	No	48	2	Imp w/Bar
R711	Multifamily	B (65)	1	53	No	48	5	Benefit
R712	Multifamily	B (65)	1	56	No	54	2	Imp w/Bar
R713	Multifamily	B (65)	1	57	No	53	4	Imp w/Bar
R714	Multifamily	B (65)	1	46	No	44	2	Imp w/Bar
R715	Multifamily	B (65)	1	46	No	44	2	Imp w/Bar
R716	Multifamily	B (65)	1	47	No	45	2	Imp w/Bar
R717	Multifamily	B (65)	1	47	No	45	2	Imp w/Bar
R718	Multifamily	B (65)	1	63	No	58	5	Benefit
R719	Multifamily	B (65)	1	61	No	58	3	Imp w/Bar
R720	Multifamily	B (65)	1	59	No	55	4	Imp w/Bar
R721	Multifamily	B (65)	1	58	No	55	3	Imp w/Bar
R722	Multifamily	B (65)	1	52	No	49	3	Imp w/Bar
R723	Multifamily	B (65)	1	52	No	49	3	Imp w/Bar
R724	Multifamily	B (65)	1	51	No	49	2	Imp w/Bar
R725	Multifamily	B (65)	1	48	No	47	1	Imp w/Bar
R726	Multifamily	B (65)	1	47	No	46	1	Imp w/Bar
R727	Multifamily	B (65)	1	47	No	46	1	Imp w/Bar
R728	Multifamily	B (65)	1	47	No	46	1	Imp w/Bar
R729	Multifamily	B (65)	1	47	No	46	1	Imp w/Bar
R730	Multifamily	B (65)	1	48	No	47	1	Imp w/Bar
R731	Multifamily	B (65)	1	47	No	46	1	Imp w/Bar
R732	Multifamily	B (65)	1	47	No	45	2	Imp w/Bar
R733	Multifamily	B (65)	1	46	No	45	1	Imp w/Bar
R734	Multifamily	B (65)	1	58	No	55	3	Imp w/Bar
R735	Multifamily	B (65)	1	57	No	54	3	Imp w/Bar
R736	Multifamily	B (65)	1	56	No	53	3	Imp w/Bar
R737	Multifamily	B (65)	1	56	No	53	3	Imp w/Bar
R738	Multifamily	B (65)	1	47	No	46	1	Imp w/Bar
R739	Multifamily	B (65)	1	47	No	46	1	Imp w/Bar
R740	Multifamily	B (65)	1	48	No	48	0	Imp w/Bar
R741	Multifamily	B (65)	1	51	No	51	0	Imp w/Bar
R742	Multifamily	B (65)	1	54	No	53	1	Imp w/Bar
R743	Multifamily	B (65)	1	54	No	53	1	Imp w/Bar
R744	Multifamily	B (65)	1	55	No	54	1	Imp w/Bar
R745	Multifamily	B (65)	1	55	No	54	1	Imp w/Bar
R746	Pool at Apts	C (65)	1	53	No	53	0	Imp w/Bar
R747	Multifamily	B (65)	1	71	Yes	66	5	Benefit
R748	Multifamily	B (65)	1	71	Yes	66	5	Benefit
R749	Multifamily	B (65)	1	72	Yes	67	5	Benefit
R750	Multifamily	B (65)	1	72	Yes	67	5	Benefit
R751	Multifamily	B (65)	1	60	No	58	2	Imp w/Bar
R752	Multifamily	B (65)	1	56	No	52	4	Imp w/Bar
R753	Multifamily	B (65)	1	50	No	48	2	Imp w/Bar

Site	Type	NAC	DU	Build-No Wall	Impact	8-18ft	I.L.	Benefit
R754	Multifamily	B (65)	1	53	No	46	7	Benefit
R755	Multifamily	B (65)	1	57	No	55	2	Imp w/Bar
R756	Multifamily	B (65)	1	58	No	54	4	Imp w/Bar
R757	Multifamily	B (65)	1	47	No	45	2	Imp w/Bar
R758	Multifamily	B (65)	1	47	No	45	2	Imp w/Bar
R759	Multifamily	B (65)	1	48	No	46	2	Imp w/Bar
R760	Multifamily	B (65)	1	48	No	46	2	Imp w/Bar
R761	Multifamily	B (65)	1	64	No	60	4	Imp w/Bar
R762	Multifamily	B (65)	1	63	No	59	4	Imp w/Bar
R763	Multifamily	B (65)	1	60	No	56	4	Imp w/Bar
R764	Multifamily	B (65)	1	60	No	56	4	Imp w/Bar
R765	Multifamily	B (65)	1	53	No	50	3	Imp w/Bar
R766	Multifamily	B (65)	1	52	No	50	2	Imp w/Bar
R767	Multifamily	B (65)	1	52	No	51	1	Imp w/Bar
R768	Multifamily	B (65)	1	49	No	48	1	Imp w/Bar
R769	Multifamily	B (65)	1	48	No	47	1	Imp w/Bar
R770	Multifamily	B (65)	1	48	No	47	1	Imp w/Bar
R771	Multifamily	B (65)	1	48	No	47	1	Imp w/Bar
R772	Multifamily	B (65)	1	48	No	47	1	Imp w/Bar
R773	Multifamily	B (65)	1	48	No	48	0	Imp w/Bar
R774	Multifamily	B (65)	1	48	No	47	1	Imp w/Bar
R775	Multifamily	B (65)	1	47	No	46	1	Imp w/Bar
R776	Multifamily	B (65)	1	47	No	46	1	Imp w/Bar
R777	Multifamily	B (65)	1	59	No	56	3	Imp w/Bar
R778	Multifamily	B (65)	1	59	No	56	3	Imp w/Bar
R779	Multifamily	B (65)	1	58	No	55	3	Imp w/Bar
R780	Multifamily	B (65)	1	57	No	54	3	Imp w/Bar
R781	Multifamily	B (65)	1	48	No	47	1	Imp w/Bar
R782	Multifamily	B (65)	1	48	No	47	1	Imp w/Bar
R783	Multifamily	B (65)	1	50	No	50	0	Imp w/Bar
R784	Multifamily	B (65)	1	53	No	53	0	Imp w/Bar
R785	Multifamily	B (65)	1	57	No	55	2	Imp w/Bar
R786	Multifamily	B (65)	1	57	No	56	1	Imp w/Bar
R787	Multifamily	B (65)	1	57	No	57	0	Imp w/Bar
R788	Multifamily	B (65)	1	58	No	57	1	Imp w/Bar
R789	Multifamily	B (65)	1	72	Yes	68	4	Imp w/Bar
R790	Multifamily	B (65)	1	72	Yes	68	4	Imp w/Bar
R791	Multifamily	B (65)	1	73	Yes	69	4	Imp w/Bar
R792	Multifamily	B (65)	1	73	Yes	69	4	Imp w/Bar
R793	Multifamily	B (65)	1	61	No	59	2	Imp w/Bar
R794	Multifamily	B (65)	1	57	No	54	3	Imp w/Bar
R795	Multifamily	B (65)	1	53	No	51	2	Imp w/Bar
R796	Multifamily	B (65)	1	55	No	50	5	Benefit
R797	Multifamily	B (65)	1	58	No	56	2	Imp w/Bar
R798	Multifamily	B (65)	1	60	No	56	4	Imp w/Bar
R799	Multifamily	B (65)	1	49	No	48	1	Imp w/Bar
R800	Multifamily	B (65)	1	50	No	49	1	Imp w/Bar
R801	Multifamily	B (65)	1	51	No	51	0	Imp w/Bar
R802	Multifamily	B (65)	1	51	No	51	0	Imp w/Bar
R803	Multifamily	B (65)	1	65	Yes	61	4	Imp w/Bar
R804	Multifamily	B (65)	1	64	No	61	3	Imp w/Bar

Site	Type	NAC	DU	Build-No Wall	Impact	8-18ft	I.L.	Benefit
R805	Multifamily	B (65)	1	61	No	58	3	Imp w/Bar
R806	Multifamily	B (65)	1	61	No	57	4	Imp w/Bar
R807	Multifamily	B (65)	1	54	No	52	2	Imp w/Bar
R808	Multifamily	B (65)	1	54	No	52	2	Imp w/Bar
R809	Multifamily	B (65)	1	54	No	53	1	Imp w/Bar
R810	Multifamily	B (65)	1	52	No	51	1	Imp w/Bar
R811	Multifamily	B (65)	1	52	No	51	1	Imp w/Bar
R812	Multifamily	B (65)	1	51	No	51	0	Imp w/Bar
R813	Multifamily	B (65)	1	51	No	50	1	Imp w/Bar
R814	Multifamily	B (65)	1	51	No	50	1	Imp w/Bar
R815	Multifamily	B (65)	1	51	No	50	1	Imp w/Bar
R816	Multifamily	B (65)	1	51	No	49	2	Imp w/Bar
R817	Multifamily	B (65)	1	51	No	50	1	Imp w/Bar
R818	Multifamily	B (65)	1	50	No	49	1	Imp w/Bar
R819	Multifamily	B (65)	1	61	No	59	2	Imp w/Bar
R820	Multifamily	B (65)	1	61	No	60	1	Imp w/Bar
R821	Multifamily	B (65)	1	59	No	57	2	Imp w/Bar
R822	Multifamily	B (65)	1	58	No	55	3	Imp w/Bar
R823	Multifamily	B (65)	1	51	No	50	1	Imp w/Bar
R824	Multifamily	B (65)	1	52	No	50	2	Imp w/Bar
R825	Multifamily	B (65)	1	57	No	56	1	Imp w/Bar
R826	Multifamily	B (65)	1	57	No	57	0	Imp w/Bar
R827	Multifamily	B (65)	1	59	No	58	1	Imp w/Bar
R828	Multifamily	B (65)	1	60	No	59	1	Imp w/Bar
R829	Multifamily	B (65)	1	61	No	60	1	Imp w/Bar
R830	Multifamily	B (65)	1	61	No	60	1	Imp w/Bar
R831	Multifamily	B (65)	1	53	No	53	0	Imp w/Bar
R832	Multifamily	B (65)	1	54	No	53	1	Imp w/Bar
R833	Multifamily	B (65)	1	53	No	53	0	Imp w/Bar
R834	Multifamily	B (65)	1	53	No	53	0	Imp w/Bar
R835	Multifamily	B (65)	1	60	No	60	0	Imp w/Bar
R836	Multifamily	B (65)	1	56	No	56	0	Imp w/Bar
R837	Multifamily	B (65)	1	54	No	53	1	Imp w/Bar
R838	Multifamily	B (65)	1	54	No	53	1	Imp w/Bar
R839	Multifamily	B (65)	1	53	No	53	0	Imp w/Bar
R840	Multifamily	B (65)	1	53	No	53	0	Imp w/Bar
R841	Multifamily	B (65)	1	53	No	52	1	Imp w/Bar
R842	Multifamily	B (65)	1	53	No	53	0	Imp w/Bar
R843	Multifamily	B (65)	1	70	Yes	64	6	Benefit
R844	Multifamily	B (65)	1	70	Yes	65	5	Benefit
R845	Multifamily	B (65)	1	68	Yes	62	6	Benefit
R846	Multifamily	B (65)	1	67	Yes	61	6	Benefit
R847	Multifamily	B (65)	1	65	Yes	59	6	Benefit
R848	Multifamily	B (65)	1	65	Yes	59	6	Benefit
R849	Multifamily	B (65)	1	63	No	57	6	Benefit
R850	Multifamily	B (65)	1	63	No	57	6	Benefit
R851	Multifamily	B (65)	1	61	No	56	5	Benefit
R852	Multifamily	B (65)	1	61	No	56	5	Benefit
R853	Multifamily	B (65)	1	59	No	54	5	Benefit
R854	Multifamily	B (65)	1	58	No	54	4	Imp w/Bar
R855	Multifamily	B (65)	1	70	Yes	63	7	Benefit

Site	Type	NAC	DU	Build-No Wall	Impact	8-18ft	I.L.	Benefit
R856	Multifamily	B (65)	1	70	Yes	63	7	Benefit
R857	Multifamily	B (65)	1	69	Yes	63	6	Benefit
R858	Multifamily	B (65)	1	68	Yes	62	6	Benefit
R859	Multifamily	B (65)	1	67	Yes	62	5	Benefit
R860	Multifamily	B (65)	1	67	Yes	63	4	Imp w/Bar
R861	Multifamily	B (65)	1	66	Yes	62	4	Imp w/Bar
R862	Multifamily	B (65)	1	66	Yes	62	4	Imp w/Bar
R863	Multifamily	B (65)	1	57	No	57	0	Imp w/Bar
R864	Multifamily	B (65)	1	57	No	57	0	Imp w/Bar
R865	Multifamily	B (65)	1	56	No	55	1	Imp w/Bar
R866	Multifamily	B (65)	1	56	No	55	1	Imp w/Bar
R867	Multifamily	B (65)	1	62	No	62	0	Imp w/Bar
R868	Multifamily	B (65)	1	61	No	61	0	Imp w/Bar
R869	Multifamily	B (65)	1	56	No	56	0	Imp w/Bar
R870	Multifamily	B (65)	1	56	No	56	0	Imp w/Bar
R871	Multifamily	B (65)	1	56	No	55	1	Imp w/Bar
R872	Multifamily	B (65)	1	56	No	55	1	Imp w/Bar
R873	Multifamily	B (65)	1	56	No	55	1	Imp w/Bar
R874	Multifamily	B (65)	1	56	No	56	0	Imp w/Bar
R877	Multifamily	B (65)	1	69	Yes	64	5	Benefit
R878	Multifamily	B (65)	1	68	Yes	62	6	Benefit
R879	Multifamily	B (65)	1	67	Yes	60	7	Benefit
R880	Multifamily	B (65)	1	66	Yes	59	7	Benefit
R881	Multifamily	B (65)	1	64	No	58	6	Benefit
R882	Multifamily	B (65)	1	64	No	58	6	Benefit
R883	Multifamily	B (65)	1	62	No	58	4	Imp w/Bar
R884	Multifamily	B (65)	1	62	No	57	5	Benefit
R885	Multifamily	B (65)	1	60	No	55	5	Benefit
R886	Multifamily	B (65)	1	60	No	55	5	Benefit
R887	Multifamily	B (65)	1	60	No	59	1	Imp w/Bar
R888	Multifamily	B (65)	1	59	No	59	0	Imp w/Bar
R889	Multifamily	B (65)	1	58	No	58	0	Imp w/Bar
R890	Multifamily	B (65)	1	58	No	58	0	Imp w/Bar
R891	Multifamily	B (65)	1	64	No	64	0	Imp w/Bar
R892	Multifamily	B (65)	1	63	No	63	0	Imp w/Bar
R893	Multifamily	B (65)	1	61	No	61	0	Imp w/Bar
R894	Multifamily	B (65)	1	60	No	60	0	Imp w/Bar
R895	Multifamily	B (65)	1	60	No	60	0	Imp w/Bar
R896	Multifamily	B (65)	1	60	No	59	1	Imp w/Bar
R897	Multifamily	B (65)	1	60	No	60	0	Imp w/Bar
R898	Multifamily	B (65)	1	60	No	60	0	Imp w/Bar
R899	Multifamily	B (65)	1	70	Yes	65	5	Benefit
R900	Multifamily	B (65)	1	69	Yes	63	6	Benefit
R901	Multifamily	B (65)	1	67	Yes	62	5	Benefit
R902	Multifamily	B (65)	1	67	Yes	61	6	Benefit
R903	Multifamily	B (65)	1	65	Yes	59	6	Benefit
R904	Multifamily	B (65)	1	65	Yes	59	6	Benefit
R905	Multifamily	B (65)	1	63	No	59	4	Imp w/Bar
R906	Multifamily	B (65)	1	63	No	58	5	Benefit
R907	Multifamily	B (65)	1	61	No	56	5	Benefit
R908	Multifamily	B (65)	1	61	No	56	5	Benefit

Site	Type	NAC	DU	Build-No Wall	Impact	8-18ft	I.L.	Benefit
R909	Multifamily	B (65)	1	71	Yes	65	6	Benefit
R910	Multifamily	B (65)	1	70	Yes	65	5	Benefit
R911	Multifamily	B (65)	1	69	Yes	64	5	Benefit
R912	Multifamily	B (65)	1	68	Yes	63	5	Benefit
R913	Multifamily	B (65)	1	68	Yes	64	4	Imp w/Bar
R914	Multifamily	B (65)	1	67	Yes	63	4	Imp w/Bar
R915	Multifamily	B (65)	1	67	Yes	63	4	Imp w/Bar
R916	Multifamily	B (65)	1	71	Yes	65	6	Benefit
			211	**Total Impacts**	**45**	**Impact Benefit**	**33**	

NAC = Noise Abatement Criteria
DU = Dwelling Unit
I.L. = Insertion Loss
Imp w/Bar = Impacted site with Barrier (The terms Wall and Barrier are interchangeable.)
The table shows the noise reduction for each noise wall height. The locations receiving benefit have at least 5 dba noise reduction.

Table H-13b: I-205 Wall 12 Existing Barrier Abatement by Height

Wall Height	8-18 ft
Impact Benefit	**33**
5dBA	*29*
7dBA	*4*
Sites Not Impacted but Benefited by Wall	*17*
Total Impacted Sites that receive Benefits	**33**
%	**73.3%**
Total Benefit	**50**
Acoustically Feasible majority of impacted receptors receive 5dBA reduction	Yes
7dBA Design Goal	Yes

Table H-13c: I-205 Wall 12 Existing Barrier Allowance

Wall Allowance	Wall Height	Wall Cost
Barrier Length	1386	N/A
Cost per square foot	up to 16ft	$30
	17 to 25	$37.50
Cost per Benefitted Residence	up to 16ft	$37,500
	17 to 25	$37,500
Max Area	up to 16ft	1,250
	17 to 25	1,000

N/A = not applicable

Table H-13d: I-205 Wall 12 Existing Barrier Feasibility

Barrier Height (Feet)	Sq Ft	Sq ft/Ben Rec	Total Wall Cost	Cost per Benefitted Receptor	Acoustically Feasible
8-18ft wall	19,894	398	$596,820	$11,936	Yes

Sq Ft = square feet
Sq Ft/Ben Rec = square feet/benefited receptor