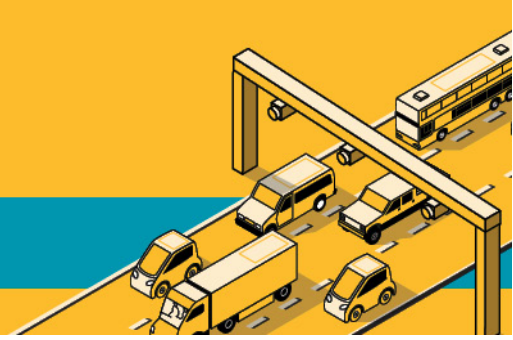
I-205 Toll Project

MEMORANDUM



Date	September 1, 2021
To	Lucinda Broussard, Daniel Burgin, Carol Snead, and Robert Schiavone (ODOT)
From	Patrick Romero, WSP
Subject	Noise Methodology Memorandum
CC	

INTRODUCTION

This memorandum describes the methods that will be used in the I-205 Toll Project (Project) Environmental Assessment (EA) analysis to evaluate noise impacts of the Project alternatives. The analysis and results will be documented in a technical report and summarized in the EA that will be developed to comply with federal guidelines and regulations, including the National Environmental Policy Act (NEPA) and local and state policies, standards, and regulations.

The improvements included in the Project are defined by the ODOT Noise Manual as a Type III Project that do not require a full traffic noise study. As such, the noise analysis will evaluate noise levels from the construction, operations, and maintenance of the Project and will identify locations where noise levels exceed the ODOT Noise Abatement Approach Criteria and any substantial increases in noise levels at noise-sensitive land uses.

The noise analysis for the Project will update the traffic noise analysis previously prepared for the I-205 Improvements Stafford Road to OR 213 Project (ODOT 2018). Noise modeling for the Project will use noise models developed for the 2018 noise analysis and updated traffic data to reflect future traffic projections with and without the Project.

LEGAL REGULATIONS AND STANDARDS

Laws, Plans, Policies, Regulations, and Guidance

The following is a list of federal, state, and local laws, regulations plans, policies, and guidance documents that guide or inform the assessment of noise:

- Federal Highway Administration (FHWA) regulations set forth in 23 Code of Federal Regulations (CFR) Part 772; July 13, 2010; Effective date July 13, 2011
- Oregon Department of Transportation (ODOT) Noise Manual, July 13, 2011
- Clackamas County Noise Regulations; County Code Title 6.05, 2000
- West Linn Municipal Code Title 5, Section 5.487, 2004

- Oregon City Municipal Code Chapter 9.12.020
- Gladstone Municipal Code, Title 8, Chapter 8.12

The methodology presented below satisfies FHWA and ODOT requirements for corresponding project improvements for a Type III analysis. Documentation of methods, analysis, and results will generally follow the checklists and templates developed by ODOT for technical report development.

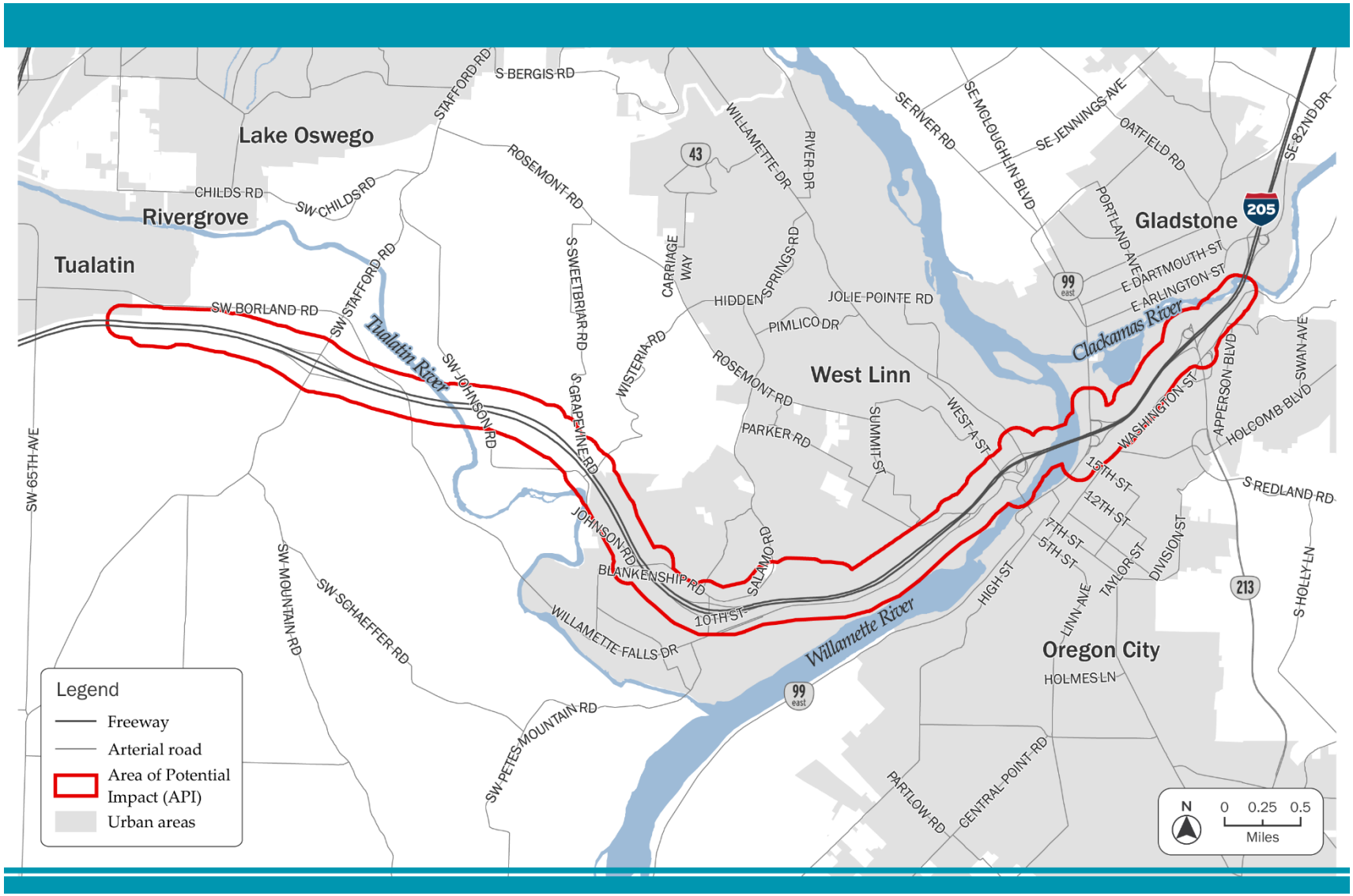
AREA OF POTENTIAL IMPACT

The area of potential impact (API) is the geographic boundary within which physical impacts to the environment could occur with the Project alternatives. The API encompasses the area anticipated for direct and indirect impacts to noise-sensitive land uses resulting from construction and operation of the Project, as shown in Figure 1.

The API for direct long-term and short-term noise impacts is determined by using CFR 772 requiring identification of all existing land uses and undeveloped lands permitted for development that may include noise-sensitive land uses.

The API is defined as the I-205 right-of-way between the SW Stafford Road and Oregon Route 213 (OR 213) interchanges, plus a 500-foot buffer from the right-of-way. The noise study area is consistent with the study area used for the noise study completed for the I-205 Improvements Stafford Road to OR 213 Project (I-205 Improvements Project) (ODOT 2018) which extends beyond 500 feet from I-205. Within the noise study area, future noise modeling reflects updates to future traffic noise levels with and without the I-205 Toll Project. Outside the noise study area, a comparison of existing and future traffic volumes will identify locations where acoustic arithmetic will be applied to estimate an increase in noise levels due to an increase in traffic volume (Caltrans 2013). Estimates of noise levels increases will be identified at the community level and focused on areas near I-205 and other roadways located closest to project improvements. The API for the noise analysis is shown below in Figure 1.

Figure 1. Noise API



DESCRIBING THE AFFECTED ENVIRONMENT

Published Sources and Databases

Data used in the 2018 Documented Categorical Exclusion (DCE) prepared for the I-205 Improvements Project will be reviewed to confirm its relevancy and applicability to this study. The 2018 noise analysis will be updated to include updated future design and traffic volumes and resulting long-term impacts on noise levels and abatement measures (ODOT 2018). The following coordination, data gathering, analysis, and reporting will be collected in support of the traffic noise analysis.

Contacts and Coordination

There will be coordination with the Project team to obtain future project design files, traffic data, and related data on other physical features that may affect noise levels. Data used in the study completed in 2018 will be reviewed to confirm its relevancy and applicability to this study. The primary technical contact for the noise study will be Daniel Burgin, ODOT Noise Program Coordinator, (503) 986-3447.

Field Surveys or Testing

Land use surveys and noise monitoring performed for the 2018 noise study will be used, unchanged, to support the update of future noise levels with and without the Project, and abatement measures. No additional field surveys are proposed for this analysis.

IMPACT ASSESSMENT METHODS

The impacts analysis will analyze the long-term and short-term impacts upon noise-sensitive land use in the built environment for each of the Project alternatives consistent with the ODOT Noise Manual.

Any exceedances of the ODOT Noise Abatement Approach Criteria or substantial increases are considered impacts resulting from the I-205 Improvements Project thus would be evaluated in the next NEPA action for the I-205 Improvements Project following FHWA requirements, including those specifically described in 23 CFR 772 and the ODOT Noise Manual.

Long-Term Impact Assessment Methods

The implementation of tolling is expected to alter traffic patterns, which could result in long-term noise impacts. The analysis of direct long-term noise impacts resulting from the Project will consider the traffic noise levels predicted using FHWA's Traffic Noise Model Version 2.5 (TNM 2.5) to identify areas with ODOT Noise Abatement Approach Criteria and substantial increases that would require abatement consideration during a separate Type I Project. A comparison of existing and future traffic volumes and estimation of resulting changes in traffic noise levels near I-205 or other roadways located beyond the study area will supplement the modeling effort.

Short-Term Impact Assessment Methods

The analysis of direct short-term noise impacts that would occur during Project construction will consider a qualitative assessment of construction noise not previously considered in the 2018 noise study.

Indirect Impacts Assessment Methods

The noise analysis will be based on the transportation-demand forecasting model that generates projected traffic volumes and includes the impacts of unmet 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.

Cumulative Impacts Assessment Methods

In accordance with ODOT guidance (ODOT 2010), the cumulative impacts assessment will consist of an eight-step process to identify and evaluate cumulative impacts. The long-term, short-term, and indirect impacts identified for noise will be used in Step 1 to identify whether the Project has the potential to contribute to cumulative impacts on noise when considered in combination with other past, present, and future actions. For those resources studied in the cumulative impact assessment, the direct and indirect impacts identified in the respective technical analysis will also be used in Step 4: "Identify direct and indirect impacts that may contribute to a cumulative impact." See the I-205 Toll Project Cumulative Impacts Methodology Memorandum for additional details on the eight-step process and cumulative impacts methodology.

MITIGATION APPROACH

The Project is defined by the ODOT Noise Manual as a Type III Project that does not require the consideration of mitigation measures. Construction noise would generally be reduced through the use of ODOT's standard specifications for construction.

PERFORMANCE MEASURES

Table 1 presents a preliminary list of performance measures identified to evaluate how the alternatives compare in terms of impacts and benefits to noise.

Table 1. Preliminary Noise Performance Measures

Performance Measure	How	Tool and/or Data Source used for Assessment of Measure
Change in the quality of life in areas impacted by diversion; delineate between the general population and Equity Framework-identified communities[1]	Qualitative Best professional judgement based on analysis	Comparison of existing and future traffic noise levels. Comparison of existing and future noise impacts.
Number of sensitive noise receptors experiencing noise levels that reach the ODOT Noise Abatement Approach Criteria	Quantitative	Project design imported into FHWA TNM 2.5. Traffic Data from Regional Travel Demand Model and Dynamic Traffic Assignment Model (peak hour and truck peak hour) with vehicle mix and posted speed limits. Traffic noise levels modeled with FHWA TNM 2.5. Comparison of modeled traffic noise levels to ODOT Noise Abatement Approach Criteria.
Number of sensitive noise receptors experiencing noise levels that reach the ODOT Substantial Increase (10 dBA over existing noise levels)	Quantitative	Comparison of modeled traffic noise levels to ODOT Substantial Increase.
Anticipated construction noise levels and duration of construction noise at sensitive noise receptors	Qualitative	Qualitative assessment consistent with ODOT Noise Manual.
Distance of noise impact contour from future project alignment to undeveloped properties	Quantitative	Graphical representation of modeled Noise Abatement Approach Criteria distance for ODOT Land Use Activity Categories B and E using FHWA TNM 2.5 and graphics software.

Additional performance measures may be identified during the course of analysis.

[1] Other quality of life factors such as health and safety will be assessed in the environmental justice and social and community resources technical reports.

REFERENCES

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