Executive Summary

Project Objectives

- ☐ Brief summary of project
- ☐ SR, MP limits jurisdiction vicinity
- ☐ Action triggering Type1 study

Current Noise Environment

- ☐ Brief summary of adjacent land uses
- ☐ Brief summary of current impacts, if any
- ☐ Table(s) preferred

Noise Impacts of Alternatives

- ☐ Brief comparison of Build vs. No-Build impacts
- ☐ Table(s) preferred

Abatement (Recommended/Not Recommended)

- ☐ If abatement is recommended - brief summary of wall(s) heights and general alignments
- ☐ If not recommended - why abatement is not recommended

Introduction

Project Description

- ☐ Typically provided by the project office, but can be summarized to include only relevant design features.
- ☐ Vicinity map, including project area and state map reference maps comparing alternatives (if applicable). Typically provided by PEO and can be used for Exhibit 1

Type 1 Trigger for Noise Analysis

- ☐ Description of Type 1 activity on this project

Noise Relevant Project Information

- ☐ List of items relevant to traffic noise analysis for existing, No-Build, and Build conditions, including:
  - o Type of roadway (elevated, depressed, at-grade)
  - o Number of lanes
  - o Changes to existing access
  - o Travel speeds (existing and posted)
  - o Year for Existing and Build/No-Build conditions
  - o Project design elements that may reduce future noise levels (e.g. crash barriers vs. guardrail)

Characteristics of Sound and Noise

Definition of Sound

- ☐ General description of sound and dBA/dB(A) metric

Definition of Noise

- ☐ General description of noise

Traffic Noise Sources

- ☐ General description of traffic noise and noise sources

Exhibit 1: Typical Noise Levels

- ☐ Example of noise sources to understand relative levels of traffic noise

Sound Propagation

- ☐ General description of sound propagation, line-of-sight, and terrain affects\ Line and Point Sources

- ☐ General description of line and point source sound attenuation

Noise Level Descriptors

- ☐ General description of 'L' metrics
- ☐ Include use of 15-minute L_{eq} to represent 1-hour here or in Methodology chapter

Noise Regulations and Impact Criteria

- ☐ Description of NAC and land use categories

Traffic Noise Analysis Methodology

Determination of the Traffic Noise Study Area

- ☐ Describe the noise study area
  - o How the study area was established (i.e., description of method)
  - o Study area boundaries including physical description of distance from roadway
  - o Include aerial with noise study area identified
  - o Reference appropriate Exhibit where study area is defined, if included elsewhere
  - o Describe why model was not validated beyond impacted receivers if applicable

Traffic Noise Measurement

- ☐ Uses 15-minute L_{eq} to represent 1-hour here or in "Characteristics" chapter
- ☐ Clarify that measurements are not used to describe Existing conditions
  - o Unless Type I activity is a new roadway where none previously existed or measured values do not validate

Traffic Noise Model Validation

- ☐ Describe validation process
  - o Any complications with validations
  - o Non-traffic noise sources
  - o Adjustment factors used and justification
  - o Reference table in appendix with traffic counts, speeds and vehicle mix info for validation points
- ☐ Provide visual showing validation points
- ☐ Describe how validation was within +/- 2.0 dBA for each
  - o If receivers don't validate, provide detailed explanation for each
  - o Table preferred

Traffic Noise Modeling – Predicted Traffic Noise Levels

- ☐ Aerial showing modeled receiver locations
  - o Describe how color/shape/number of symbol distinguishes measured from modeled locations
- ☐ Describe modeled noise levels for Existing, No-Build, and Build conditions
  - o Include information for ALL alternatives
  - o Table(s) comparing condition to each other is/are preferred
- ☐ Traffic information including speed, volumes, and vehicle mix referenced to appendix containing this information for each condition and alternative
  - o Decision to use AM or PM peak – must be same period for all conditions and alternatives

Traffic Noise Levels

Operational Traffic Noise

- ☐ Clearly describe the number of traffic noise impacts in Existing, No-build, and Build conditions for each alternative

Existing Noise Levels

- ☐ Summary description of Existing conditions, including impacts and other relevant information

Design Year Traffic Noise Levels – No-Build

- ☐ Describe the general effect of not building the project on future traffic noise levels and compare design year No-Build to existing noise levels.

Design Year Traffic Noise Levels –Build

- ☐ Describe how/why the Type 1 activity effects traffic noise levels in general terms and compare design year Build to existing noise levels.

Traffic Noise Abatement

Traffic Noise Abatement - Background

- ☐ Briefly state if traffic noise abatement was considered for the project, or why not. Other forms of abatement should be discussed only if they were evaluated and/or recommended for the project.

Feasibility

- ☐ Describe feasibility
- ☐ Describe what abatement was evaluated. If wall, height, length, alignment
- ☐ Include graphic of wall/abatement evaluated, if appropriate
- ☐ Describe the minimum feasible abatement

Reasonableness

- ☐ Describe reasonableness
- ☐ If abatement is feasible - describe reasonableness analysis of minimum feasible abatement. If reasonable, include maximum reasonable abatement and "optimized" abatement that attempts to meet WSDOT 10 dBA goal
- ☐ Include graphic of wall/abatement evaluated, if appropriate
- ☐ If abatement was not feasible, describe why reasonableness was not evaluated
  1. Cost Effectiveness
     - ➢ Describe cost-effectiveness or wall area comparison (allowed vs. required)
     - ➢ Table is required that includes each benefitting receiver per WSDOT reasonableness table
  2. Design Goal Achievement
     - ➢ Describe if/how abatement is able to achieve WSDOT's reasonableness design goal
  3. Desire for abatement from the public within the noise study area
- ☐ If outreach occurs prior to report completion or if report is updated after outreach has occurred,
  - o describe public outreach
  - o how public opinion was solicited
  - o whether outreach was determined that abatement was/was not desired if outreach has not occurred, clarify that outreach must occur before the abatement can be constructed

Recommendation for Traffic Noise Abatement

- ☐ Clarify recommendation for/against abatement and clarify reasons why

Construction Noise

Construction Noise Background

- ☐ Describe general information on construction noise

Construction Noise Levels Limits

- ☐ Describe exemptions and restrictions on construction noise

levels include table of maximum permissible levels and EDNA

Construction Noise Variance for Night Work

- ☐ Clarify jurisdictions within project area and/or affected by potential night work briefly describe night variance/exemption requirements where applicable

Construction Noise Abatement

- ☐ Describe general/standard abatement considerations and any particular abatement requirements for this project
- ☐ Include description/examples of construction noise

Appendix B – Traffic Data

- ☐ Validation traffic counts, speeds, vehicle mix data
- ☐ Existing, No-build, and Build traffic volumes speeds, vehicle mix data reference document and/or contact for traffic data

Appendix C – TNM Barrier Graphics

- ☐ Graphics for all barriers discussed in the analysis

Appendix D - TNM Data

TNM Data

- ☐ Include 2 copies of CD-ROMs with all TNM v2.5 model files marked as follows:
  - Project Name_Validation
  - Project Name_Build
  - Project Name_NoBuild
  - Project Name_Existing
  - Project Name_BarrierX

Appendix E – Field Data Sheets

- ☐ Include data sheets from the field that describe the validation measurement locations and conditions