Executive Summary

Project Objectives
- Brief summary of project
- SR, MP limits jurisdiction vicinity
- Action triggering Type 1 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:
  - Type of roadway (elevated, depressed, at-grade)
  - Number of lanes
  - Changes to existing access
  - Travel speeds (existing and posted)
  - Year for Existing and Build/No-Build conditions
  - 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
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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
  - How the study area was established (i.e., description of method)
  - Study area boundaries including physical description of distance from roadway
  - Include aerial with noise study area identified
  - Reference appropriate Exhibit where study area is defined, if included elsewhere
  - 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
  - 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
  - Any complications with validations
  - Non-traffic noise sources
  - Adjustment factors used and justification
  - 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
  - If receivers don’t validate, provide detailed explanation for each
  - Table preferred

Traffic Noise Modeling – Predicted Traffic Noise Levels
- Aerial showing modeled receiver locations
  - Describe how color/shape/number of symbol distinguishes measured from modeled locations
- Describe modeled noise levels for Existing, No-Build, and Build conditions
  - Include information for ALL alternatives
  - 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
  - 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
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- 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,
  - describe public outreach
  - how public opinion was solicited
  - 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
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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
- 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