Appendix 4 - Contents of the Traffic Noise Analysis/Study

The traffic noise study should describe the procedures used in developing and performing the analysis and considerations made in arriving at the appropriate conclusions. The report should be easily understood by both the technical reviewer and the layperson and be presented in a plain talk format. WSDOT Noise Policy and related procedures provide guidance on the required elements of the noise study. The following outlines the minimum requirements for a traffic noise study that are required for approval by the WSDOT Air, Noise, and Energy Program.

Consultant qualifications

- Documented completion "The Fundamentals and Abatement of Highway Traffic Noise," the more current, NHI Course: “142051 Highway Traffic Noise,” or equivalent as determined by the Air, Noise, and Energy Program. This requirement may be satisfied if the document reviewer meets these qualifications.

Project description, including

- Official project limits
- Detailed description of any Type I activity
- Description of all project alternatives
- Existing and Design years

Existing and design year traffic, including:

- Traffic volumes
- Speeds modeled
- Vehicle mix (cars, medium & heavy trucks)
- Source for traffic information

Land use description, including:

- Land uses throughout the project area
- Topography
- Non-traffic noise source, if appropriate
- Map of noise sensitive receiver locations (including all Category A - E locations)
- Confirmation of that no new building permits have been approved (or are pending approval) for noise sensitive land use in the study area

Validation process, including:

- Description of measurement locations
- Description of traffic recorded (volumes, speed, vehicle mix) during validation measurements
- Measurement equipment and methodology
- Graphic describing validation locations

- Table comparing validation measurements to modeled results; reported to nearest one-tenth of decibel (model validation is the only place the noise results should be reported in tenths of decibels).

Existing and projected sound levels in the design year for all alternatives, including:

- Graphic verification of noise study area; distance from roadway to 66 dBA at representative locations
- Graphic showing modeling locations
- Description of the noise sensitive properties represented by each modeled location
- Table comparing the Existing, No Build, and Build condition noise levels for each alternative
- All reported sound levels shall be rounded to the nearest whole decibel
- Identify impacts for each modeled receiver
- Model file(s) showing Validation, Existing, No Build, and Build conditions

If impacts occur in the Build Condition(s)

Feasibility, including:

- Description of the type(s) of abatement considered
- Description of modeling to determine the minimum feasible abatement
    - TNM Model file(s) that include barrier or other abatement considered
- Description of any engineering considerations/challenges

If abatement is feasible

Reasonableness, including:

- Description of the cost effectiveness evaluation (*Table preferred)*
- If cost effective, determination of design goal achievement
    - TNM Model file(s) that include barrier or other abatement considered
- If cost effective, status of Community Input process

If Community input is received

- Method of determining property owners' and residents' opinions and the results of such if abatement is recommended and there is potential community concern about noise barrier placement;
- Complete basis for recommendation regarding abatement, including:
    - Abatement design; if a barrier is recommended, include panel heights and alignment(s)
    - Identified challenges or unknowns to be resolved during final design
    - Description of any relevant other considerations or extenuating circumstances per Section 6 of WSDOT Policy

Description of potential for construction noise to affect noise sensitive receivers

- Requirements for noise variances from local jurisdiction