

## Appendix 1 – State Funds Option

Project offices have the option of limiting the traffic noise analysis areas on projects that do not use FHWA funding or require FHWA approvals. Instead of analyzing all areas adjacent to the roadway between the full project limits, this policy allows limiting analysis to the specific location(s) adjacent to where Type I noise activities occur on a project (refer to the list of Type I activities below). The State Funds Option also describes a screening process to reduce the burden of analysis on projects where there are no sensitive receivers present or where noise barriers are not likely to be feasible and reasonable.

Applying the State Funds Option does not absolve projects from mitigating traffic noise impacts when they are generated by the project. Instead, this policy is intended to promote the responsible use of transportation funds by focusing analysis and mitigation on areas where traffic noise impacts are caused by a project and are directly tied to project activity. This policy is consistent with WSDOT’s commitment to environmental protection.

### How does the WSDOT State-Funds Option Noise Policy differ from how FHWA evaluates traffic noise?

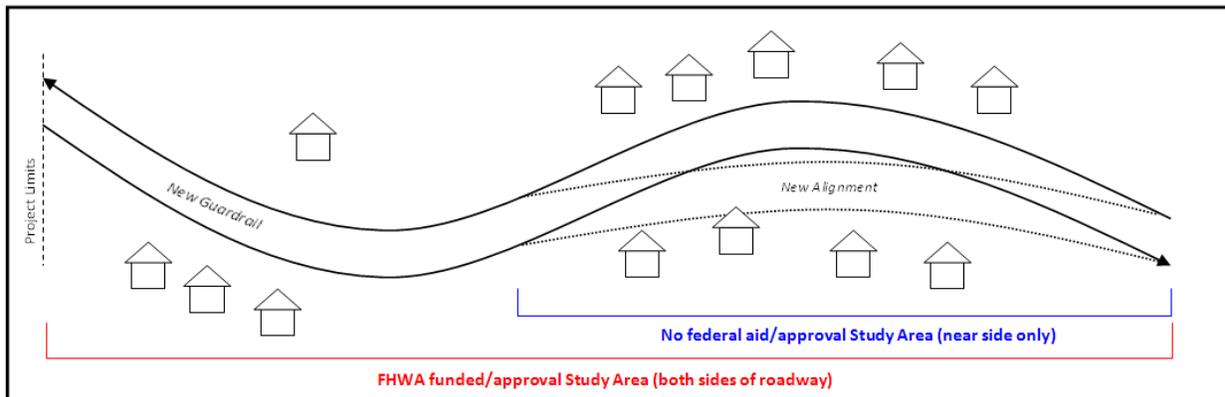
Using the state-funds option, traffic noise is addressed using the same methodology as is required by FHWA for federally-funded projects, except for three major differences. These alternatives methods of evaluation can be used independently or in combination.

1. The limits of the Type I activity, not the full project limits, may be considered the lateral study area boundaries. Exhibits 12-14 provide examples of how the scope of the noise analysis can differ for state-funds only projects compared to federal-aid projects.
2. A screening level traffic noise analysis using a “straight line” noise model using TNM (described in Section 4 – *Determination of Sound Levels*) may be considered sufficient for some projects where noise barriers are not likely to be considered reasonable/feasible, even when traffic noise impacts are expected. This screening level method is applicable for rural/low-density residential areas and/or areas with numerous access roads or driveways that would restrict the effectiveness of a noise barrier<sup>1</sup>.
3. When there are no sensitive receivers located adjacent to a project Type I activity, a noise impact analysis is not required. However, for the purposes of public disclosure, a “straight line” noise model using TNM, described in Section 4 – *Determination of Sound Levels* must be run to disclose sound levels adjacent to the roadway for noise compatible land use planning efforts.

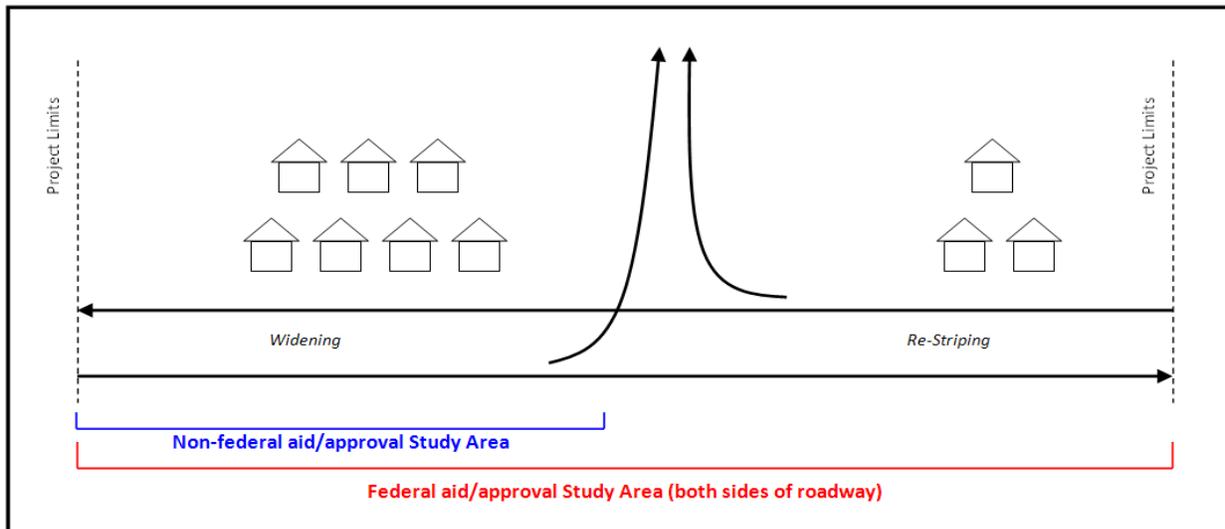
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<sup>1</sup> Breaks in a noise barrier severely limit the barrier’s effectiveness. A barrier must extend beyond the final home at least four times the distance that the final home is from the barrier to prevent “end around” noise.

**Exhibit 12: Examples of Noise Study Area Difference between Federal-Aid and Non-Federal Aid Projects – Significant Horizontal Re-Alignment**



**Exhibit 13: Examples of Noise Study Area Difference between Federal-Aid and Non-Federal Aid Projects – Type I and Non-Type I Activity on Single Project**



When using the state-funds option, other evaluation criteria are consistent with the methodology used on federally-funded projects, including the noise abatement criteria (66 dBA), the extension of noise analysis boundaries when adjacent to contiguous neighborhoods, and the feasibility and reasonableness evaluation for noise barriers.

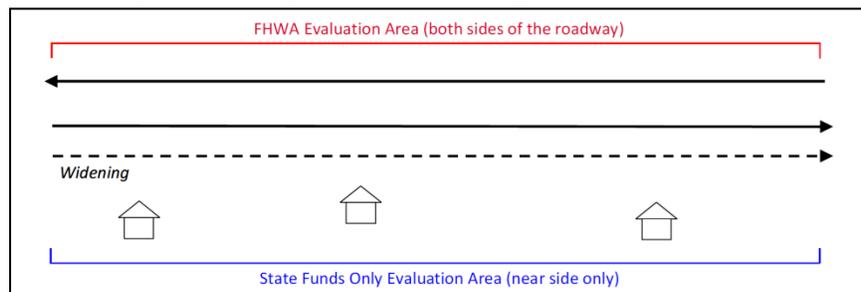
The State Environmental Policy Act (SEPA) process requires the disclosure of changes to traffic noise levels regardless of whether noise sensitive receivers are present. This requirement can be met using a straight line TNM screen to evaluate areas adjacent to Type I activities, and not the full project boundaries. When a project team elects to pursue the state-funds option, SEPA environmental documentation for the project must fully disclose changes to the noise environment and evaluation area boundaries if applicable. Standard SEPA environmental checklist response language is provided in the appendices to this policy.

Exhibit 12 demonstrates the differences between the State-Funds Option and federally funded noise study requirements when a project includes horizontal realignment of the roadway. With federal funding the noise analysis is required on both sides of the road for the entire length of the project. With the State-Funds Option, evaluation of noise impacts and abatement is triggered for the near-side receivers because the roadway re-alignment will bring the traffic noise source closer to the residences. Evaluation of traffic noise impacts may not be required for receivers on the opposite side because the traffic noise source is shifted away from residents on the far side of the road, which will lower traffic noise levels for them. Installation of new guardrail alone does not require noise analysis.

**When should the State-Funds Option be considered for a project?**

The State-Funds Option is intended for use on projects where there is clear division of activities (Type I vs. non-Type I) and the effect of those activities will not directly influence traffic noise levels for all sensitive receivers within the full project boundaries. For example, the State-Funds Option may be appropriate for projects where widening occurs on only one side of a roadway and receivers on the non-widened side of the roadway will not experience traffic noise level increases directly attributable to the widening (see Exhibit 14).

**Exhibit 14 - Comparison of the federal noise study area to the potential noise study area with the State-Funds Option – single side widening**



The state funds option allowing the use of the WSDOT approved screening method is also appropriate for areas where a Type I activity occurs but there are no sensitive receivers or where the density and/or location of sensitive receivers make the possibility of mitigation highly unlikely (not reasonable/feasible).

In contrast, the State-Funds Option may not be appropriate when Type I activities on one part of the project will directly increase noise levels for all sensitive receivers within the project limits. For example, if a project widens one side of a roadway to the inside median and brings new traffic closer to the opposite side of the highway. Although widening does not occur on both sides of the roadway, the project would still have the potential to increase traffic noise levels on both sides of the roadway.

Topography, land use patterns, and the presence or absence of sensitive receivers will influence the exact application of the State-Funds Option on a project. Consultation with the WSDOT ANE

Program is required to determine the precise area where traffic noise effects are directly attributable to Type I project activities.

### **What other considerations should be made before applying the state funds option?**

There are four primary issues to consider before applying the State-Funds Only provision on a project.

1. **Study Area** - If the State Funds Option is applied to a project, the noise study area must include all areas adjacent to the limits of the Type I activity. To ensure equitable application, the study area may extend only beyond the lateral Type I activity boundaries if there are no natural breaks in receiver locations (e.g. contiguous neighborhood) or if a receiver is located at the project end point and mitigation must extend beyond the receiver to prevent traffic noise from curling around the noise wall edge.
2. **Funding Changes** - If a project's funding source changes to include federal funds, a full noise analysis of all areas between project limits will be required by federal rule. If the decision to access federal aid on a project is made late in the project development process, there is potential that the project schedule could be delayed and the project budget could be affected depending on the time it takes to prepare the additional noise analysis and whether new/additional noise barriers are required on the project as a result of the additional noise analysis.
3. **Public Disclosure** - In the environmental documentation and during the public information process, the reduced scope of the noise analysis must be disclosed. This could present challenges during the public information process with residents not included in the State Funds Option study area.
4. **Screening Model** - If a "straight line" TNM screening analysis is performed and traffic noise levels are over 66 dBA, or an increase of 15 dBA over the No Build conditions, a full TNM model shall be used to determine the potential for traffic noise abatement. Depending on the presence and density of sensitive receivers, additional consideration may include a full TNM model run to determine the reasonableness/feasibility of mitigation, including noise barriers.

### **Example of State Funds Option traffic noise analysis language**

Under the scenario presented in Exhibit 12, the following would be included as the traffic noise analysis:

- Project Title and brief description of Type I activities.
- Disclosure statement describing application of the State Funds Option on the project.

For example:

*The WSDOT state funds noise policy is being applied to the **Project Name** which is funded entirely by **state** sources. The project will shift the roadway more than one-half the distance to the nearest receiver adjacent to the eastbound travel lanes and, therefore, is considered a significant horizontal re-alignment and a Type I activity that has the potential to increase traffic noise levels for the neighborhood adjacent to the eastbound direction of traffic from MP **XX.XX** - MP **XX.XX**. The project will shift traffic*

away from receivers adjacent to the westbound direction of traffic and lower traffic noise levels are expected in the neighborhood adjacent to the westbound travel lanes than without the project.

Since there is a clear distinction between the potential for traffic noise impacts directly related to Type I project activities in the separate neighborhoods adjacent to eastbound and westbound SR XX and no federal funds are being pursued, the project office has elected to evaluate traffic noise per the WSDOT state funds policy for non-federal aid projects outlined in WSDOT Noise Policy and the WSDOT Environmental Procedures Manual. The State Funds Option allows the traffic noise analysis to be restricted to those areas directly affected by Type I activities on a project. For Project Name, traffic noise analysis was restricted to the eastbound side of SR XX between the limits of the planned re-alignment from MP XX.XX - MP XX.XX.

If at any time federal funds are used on the project, the entire noise study area within between the full project limits, on both sides of the roadway, will need to be analyzed per WSDOT noise policy and procedures.

- Traffic data used to perform traffic noise analysis including vehicle mix (Auto, Medium and Heavy Truck volumes) and existing and future speeds.
- A “straight line” TNM screening model shall show noise levels for 50’ increments from the edge of the roadway to a point where traffic noise is below the NAC for residential land use for Build and No-Build conditions. If full TNM model is constructed, then Existing, Build and No-Build traffic noise levels at all sensitive receivers, or representative locations, shall be included.

The WSDOT approved screening method provides “worst case” values for traffic noise and was used to evaluate future traffic noise levels with and without the project (Screening values are attached). Traffic noise levels between XX and XX dBA are expected at the nearest receiver and no substantial increases over the No Build scenario are expected.

- Recommendation for/against mitigation.

A noise wall is not recommended for this project. Although noise levels would exceed the 66 dBA noise abatement criteria at XX residences, the low-density of the residences in the area adjacent to the Type I activity, within the noise study area adjacent to the eastbound traveled lanes, make noise barrier mitigation neither feasible nor reasonable. The allowable (reasonable) wall size is insufficient to satisfy WSDOT feasibility requirements for sound level reductions, per 2011 WSDOT noise policy.

## Sample SEPA checklist response when using the state funds option

(For Question B.7. - Environmental Health, b. Noise)

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

- Describe the existing noise environment in the project area, both from the existing highway, and from other land uses if applicable.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

- **Construction Noise:** The temporary nature of construction noise means that any construction noise effects will be of limited duration. In most jurisdictions, construction noise is exempt from sound level restrictions during daytime hours. If night work is planned, a night noise variance will be needed from the local jurisdiction.
- **Traffic Noise:** A "straight line" TNM model was used according to the State Funds Option outlined in the 2011 WSDOT noise policy and procedures for non-federal aid projects (2011). The project will **XX** (widen, realign, add lanes) which is considered a Type I activity and has the potential to increase traffic noise for areas adjacent to MP **XX.XX – XX.XX**. The noise abatement criteria for residential land use are 66 dBA. In the future Build scenario, traffic noise is expected to be 66 dBA at approximately **distance** from the pavement edge, compared to 66 dBA at approximately distance in the No Build scenario.

3) Proposed measures to reduce or control noise impacts, if any:

- No sensitive receivers are present within the Type I study area and, therefore, no mitigation measures are recommended.
- There are **number** residential receivers that are expected to be impacted by the Type I activity attributable to the project. However, because of the distance separating the homes, abatement is not reasonable/feasible per 2011 WSDOT noise policy.