

DRAFT STATE HIGHWAY AGENCY NOISE POLICY TEMPLATE

The use of the following template is optional. It is provided to assist highway agencies as they update their noise policies. Highway agencies that prefer to use a different format are welcome to do so.

This template can also be used by Toll Road Authorities.

This template contains a section on Type II (retrofit noise barrier) programs. Such programs are voluntary. Highway agencies that have Type II programs can provide guidance on their programs in separate documents if they so wish.

The State Noise Policies can be prepared as document files or may be contained in websites. Regardless of format, FHWA strongly recommends that the noise policies be readily accessible to the public, consultants, and other government officials, including local public agency officials.

Questions on the template can be directed to Mark Ferroni, Team Leader, FHWA HQ Noise Team, HEPN, mark.ferroni@dot.gov, or Adam Alexander, Noise Specialist, FHWA HQ Noise Team, HEPN, adam.alexander@dot.gov

Cover Page

Title of Noise Policy

Name of highway agency Issuing the Policy

Date of Issuance:

Effective Date (if different from issuance date):

Phone number or email address of responsible highway agency official

Optional: Title/date of any previous policies this version replaces or supersedes.

Optional: Physical or website address where additional information can be found or inquiries sent.

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INTRODUCTION

This document contains the highway agency noise policy on highway traffic noise and construction noise. This policy describes the highway agency's implementation of the requirements of the Federal Highway Administration (FHWA) Noise Standard at 23 Code of Federal Regulations (CFR) Part 772 (see Appendix A). This policy was developed by the highway agency and reviewed and concurred with by FHWA.

Instructional Guidance: include brief history of highway traffic noise and a description of what it is, sources (tire-pavement, engine, exhaust), that impacts are defined by interference with human speech, etc.

During the rapid expansion of the Interstate Highway System and other roadways in the 20th century, communities began to recognize that highway traffic noise and construction noise had become important environmental impacts. In the 1972 Federal-aid Highway Act, Congress required FHWA to develop a noise standard for new Federal-aid highway projects. While providing national criteria and requirements for all highway agencies, the FHWA Noise Standard gives highway agencies flexibility that reflects state-specific attitudes and objectives in approaching the problem of highway traffic and construction noise. This policy contains the highway agency's policy on how highway traffic noise impacts are defined, how noise abatement is evaluated, and how noise abatement decisions are made.

In addition to defining traffic noise impacts, the FHWA Noise Standard requires that noise abatement measures be considered when traffic noise impacts are identified for Type I Federal projects. Noise abatement measures that are found to be feasible and reasonable must be constructed for such projects. Feasible and reasonable noise abatement measures are eligible for Federal-aid participation at the same ratio or percentage as other eligible project costs.

Instructional guidance: If the highway agency has a Type II program, and that program is covered in this document, include a brief statement to that effect.

PURPOSE

This policy describes the highway agency program to implement 23 CFR 772. Where FHWA has given the highway agency flexibility in implementing the standard, this policy describes the highway agency approach to implementation.

NOISE STANDARDS

This policy outlines the highway agency program to implement the FHWA Noise Standards found at 23 CFR 772. They include traffic noise prediction requirements, noise analyses, noise abatement criteria, and requirements for informing local officials.

Instructional guidance: If the highway agency policy also contains state requirements, such as State environmental review requirements for highway noise, briefly discuss the requirements here. Examples: California Environmental Quality Act, other state laws/regulations mandating noise analysis.

DEFINITIONS

Instructional guidance: It is suggested that this section include any State-specific definitions, such as those items that the highway agency is required to define by 23 CFR 772. Also recommend including the definition of Type I and Type III projects. A definition of Type II projects can also be included if the highway agency has a Type II program.

APPLICABILITY

This policy applies to all Type I Federal highway projects in the State of ____; that is, any projects that receive Federal-aid funds or are otherwise subject to FHWA approval. They include Federal projects that are administered by Local Public Agencies (LPAs) as well as the highway agency.

(If the State has a separate Toll Road Authority, state whether this policy applies to toll road projects. Note that even if the Toll Authority is otherwise exempt, the requirements of 23 CFR 772 apply for any project that requires federal approval.)

If there are any questions about whether a project is subject to this policy or the FHWA Noise Standard, contact (department name or point of contact at highway agency). Due to the long lead time to complete a traffic noise study, emphasize the need to determine if a noise study is necessary **early** in project scoping.

Instructional guidance: If the State has decided to apply this policy to projects that are not subject to FHWA review and approval, describe that requirement here.) Example: “In addition to Federal projects, this policy shall also apply to other State-funded projects that involve:

- 1) construction of a highway on new alignment; or
- 2) a significant change in the horizontal or vertical alignment of an existing highway; or
- 3) adding new through lanes to an existing highway.”

The requirements of this policy apply uniformly and consistently to all Type I Federal projects throughout the State.

Type II Program. If the highway agency has a Type II Program, state that the highway agency has developed a priority system to rank the projects in the program. This priority system shall be submitted to and approved by FHWA before Federal-aid funds can be used for projects in the program. Provide a list in the Appendix of the prioritized projects, including date the current priority system was approved by FHWA (or a link to

this information if available electronically.) The highway agency is required to re-analyze the priority system on a regular basis, not to exceed 5 years. If the highway agency elects to use a shorter interval, state it here.

Type III Projects: If the highway agency has any requirements for noise analysis of Type III projects, describe them here.

TRAFFIC NOISE PREDICTION

Explain requirement to use FHWA Traffic Noise Model (TNM) or other model found acceptable to FHWA, pursuant to 23 CFR 772.9. Explain future noise levels must be predicted for all build alternatives under consideration in NEPA document (all reasonable alternatives, but not alternatives rejected for detailed analysis because they are not reasonable).

Explain that average pavement type must be used for prediction of future noise levels unless highway agency has obtained FHWA approval to use a different pavement type.

If the highway agency allows use of noise contour lines, explain that they can only be used for project alternative screening or for land use planning purposes, NOT for determining highway traffic noise impacts. Describe the highway agency preferred method to determine noise contours.

Explain requirement to predict noise for design year and traffic conditions representing worst noise hour (generally, LOS C or D, with high heavy truck volumes). May need to explain that, in heavily congested urban areas, the peak traffic period (often LOS E or F) may NOT represent the worst noise conditions; i.e., speeds may be low and heavy truck volumes may drop as truckers try to avoid severe congestion.

Provide any highway agency guidance on addressing seasonal traffic variations, such as resort traffic, as appropriate.

Explain highway agency preferences for TNM input parameters such as grouping of receivers, modeling multiple lanes as single TNM roadways, modeling of shoulders, etc.

ANALYSIS OF TRAFFIC NOISE IMPACTS

Explain highway agency policy on use of measurements, modeling or both to determine existing noise levels.

For proposed highways on new alignments where no highway currently exists, explain that measurements must be taken at representative receptor locations.

Provide any highway agency requirements for taking measurements (time of day, number and length of measurement periods, traffic count/speed methodologies, weather

conditions and constraints, etc.) and provide a reference for the standard measurement proceedings required for use (ANSI, ASTM, FHWA, AASHTO, etc.)

Instructional guidance: Include a reference to FHWA guidance document on Noise Measurement. ANSI Type 1 or 2 integrating sound level meters are required.

Explain highway agency policy on validation of modeling results.

Explain highway agency policy on giving primary consideration to exterior areas of frequent human use. Provide any highway agency guidance on where noise levels should typically be measured and/or predicted. Some examples: at the ROW line or face of the structure for first row receivers; at patios or balconies of residential receivers.

For Type I projects, a traffic noise analysis is required for all build alternatives under detailed study in the National Environmental Policy Act (NEPA) process. That is, all reasonable alternatives that have been retained for detailed analysis in the categorical exclusion documentation, environmental assessment or environmental impact statement and NOT rejected as unreasonable during the alternatives screening process. For Tier 1 Environmental Impact Statements or other studies that will examine broad corridors, the appropriate scope and methodology of the noise analysis should be discussed with FHWA and other participating agencies early in the project planning process.

If any segment or component of an alternative meets the definition of a Type I project, then the entire alternative is considered to be Type I and is subject to the noise analysis requirements.

For Type I projects, describe any highway agency guidance on identifying the noise study area or project limits for the design year for the build alternatives.

The noise analysis must include analysis for each Activity Category present in the study area.

Activity Category A (lands on which serenity and quiet are of extraordinary significance and serve an important public need). The highway agency must submit justifications to FHWA on a case-by-case basis to designate any lands as Category A. Describe procedure for submitting such justifications to FHWA (e.g., “Proposals and justifications for designating land as Category A will be submitted through the state’s FHWA Division Office and FHWA Headquarters).

Activity Category B (exterior areas of single-family and multi-family homes.) State any highway agency guidance Category B receivers.

Activity Category C (exterior areas of non-residential lands such as schools, parks, cemeteries, etc)

Describe the highway agency standard practice for analyzing these land use facilities that is consistently and uniformly applied statewide.

Activity Category D (interiors of Category C facilities)

An indoor analysis shall only be done after exhausting all outdoor analysis options. Describe the highway agency standard practice for analyzing these land use facilities that is consistently and uniformly applied statewide.

Activity Category E (exteriors of developed lands that are less sensitive to highway noise).

Describe the highway agency standard practice for analyzing these land use facilities that is consistently and uniformly applied statewide.

Activity Category F (land uses that are not sensitive to highway traffic noise).

Briefly state that no highway noise analysis is required under 23 CFR 772. If they are subject to state noise analysis requirements, describe the requirements here.

Activity Category G (undeveloped land)

Land that is permitted for development (that is, a building permit has been issued on or before the date of public knowledge), that land shall be analyzed under the Activity Category for that type of development.

For land that is not permitted for development by the date of public knowledge, the highway agency shall determine future noise levels pursuant to 23 CFR 772.17(a). The results shall be documented in the project environmental documentation and in the noise analysis report. At a minimum, the analysis should report the distance – measured from the proposed edge of the traveled way – to the NAC for all exterior land use categories. Any noise abatement for such lands shall not be eligible for Federal-aid participation.

Highway Agency Definition of “Approach Level” for NAC.

Give the approach level to be used to determine if an impact will occur; it must be at least 1 dB(A) less than the NAC for Activity Categories A-E.

Explain that a traffic impact may occur even if the future noise level is lower than the existing noise level.

Highway Agency Definition of “Substantial Increase over Existing Noise Level”

The highway agency shall define a substantial increase between 5 dB(A) to 15 dB(A) over existing noise levels. Explain that a substantial increase is independent of the absolute noise level. A substantial noise increase is a noise impact, even if the future noise level does not approach or exceed the NAC.

Type II Projects (if applicable). Explain that Type II projects that propose to use Federal-aid funds must have a noise analysis. For Type II projects, traffic noise impacts are determined based on current year conditions.

For both Type I and Type II projects, explain how impacted receptors will be identified, including any non-residential receptors. Does the highway agency use street addresses, receptor ID numbers, or other methods?

If the highway agency has a sample format, suggest including it here or in an appendix.

ANALYSIS OF NOISE ABATEMENT MEASURES

When traffic noise impacts are identified, noise abatement shall be considered and evaluated for feasibility and reasonableness.

Explain the highway agency policy on consideration of noise barriers (minimum) for impacted receivers, and any other abatement measures (voluntary). For example, the highway agency policy on purchase of buffer zones on undeveloped land (some States allow this; others do not.) Other abatement measures can include changes to horizontal or vertical alignment; traffic control measures; restrictions on heavy truck traffic.

Instructional guidance: Recommend including the following topics if they are issues in your state. Explain that, unless part of an FHWA-approved Quiet Pavement Pilot Program, use of quieter pavements is not an acceptable Federal-aid noise abatement measure for Federal projects. Planting of vegetation or landscaping is not an acceptable Federal-aid noise abatement measure because only dense stands of evergreen vegetation at least 100 feet deep will reduce noise levels.

FEASIBILITY

Acoustic Feasibility. Provide the highway agency definition of minimum highway traffic noise reduction that must be achieved at impacted receivers. Define the number of receptors that must achieve this reduction for the noise abatement measure to be acoustically feasible and the basis for this definition.

Engineering Feasibility. Provide any highway agency guidance on safety, barrier height, topography, drainage, access, etc.

Instructional guidance: recommend referencing the AASTHO Green Book for site design requirements.

REASONABLENESS

Mandatory Reasonable Factors. Explain there are three reasonableness factors or “tests” that must be met for a noise abatement measure to be considered reasonable.

1. Viewpoints of the property owners and residents of the benefitted receptors. Describe how the viewpoints will be obtained. Define the number of receptor responses that are needed to make a decision whether or not noise abatement is desired.
2. Cost effectiveness. Give the allowable cost of abatement by defining a baseline cost reasonableness value based on actual construction costs as applied to a unit such as cost per square foot cost per benefitted receptor, or number of square feet of noise barrier per benefitted receptor. Explain that this allowable cost must be reanalyzed at a regular interval not to exceed 5 years (if less than 5 years, state what that interval is.) If the highway agency uses different cost allowances in different geographic areas of the State, describe those allowances. Note: the same cost reasonableness/construction cost ratio must be used statewide.
3. Noise reduction design goal. Provide the highway agency definition of the noise reduction design goal (at least 7 but not more than 10 dB(A)). Define the number of benefitted receptors that must achieve this design goal for the noise abatement to be considered reasonable, and the basis for this definition.

Optional Reasonableness Factors. If applicable, describe any optional factors that the highway agency uses. State that no single optional reasonable factor shall be used to determine that a noise abatement measure is unreasonable.

Assessment of Benefitted Receptors. Explain the noise reduction threshold that determines whether or not a receptor is a benefitted receptor. (It should be at least 5 dB(A) but cannot exceed the highway agency reasonableness design goal.)

Abatement Measure Reporting. Describe how the data required under 23 CFR 772.13(f) will be compiled.

Information Required for NEPA Decision: Explain that prior to CE approval or issuance of a FONSI or ROD for a Type I project, the highway agency must identify:

- (1) The noise abatement measures that are feasible and reasonable, and are likely to be incorporated into the project; and
- (2) Noise impacts for which no abatement appears to be feasible and reasonable;
- (3) The NEPA documentation shall identify the locations where noise impacts will occur, where noise abatement is feasible and reasonable, and the locations that have no feasible and reasonable abatement. Provide sample language for the statement of likelihood. It should include the preliminary locations of feasible and reasonable abatement and a statement that the final recommendation will be made after the final design and public involvement processes are complete.

Third Party Funding. Explain that for Federal projects, third party funding CANNOT be used to make up the difference in cost between the reasonable cost allowance and the actual cost. Third party funding can only be used to pay for additional features such as landscaping, aesthetic treatments, etc. for noise barriers that meet cost-effectiveness criteria.

Cost Averaging Among Benefitted Receptors. If applicable, describe the highway agency method to average noise abatement costs among benefitted receptors within common noise environments.

FEDERAL PARTICIPATION

Summarize the information in 23 CFR 772.15 and add any additional highway agency guidance (for example, any highway agency guidance regarding Type II projects.)

INFORMATION FOR LOCAL OFFICIALS

For Type I projects where there are undeveloped lands, describe the process for informing local officials of noise compatible land use planning concepts. Describe how estimates of future design year noise levels will be developed and provided to local officials. Describe how information on Federal-aid non-eligibility of noise abatement for lands permitted for development after the date of public knowledge will be conveyed to local officials.

If the highway agency has a Type II program or uses date of development as a reasonableness factor for Type 1 projects, describe the highway agency's statewide outreach program required under 23 CFR 772.17(b).

CONSTRUCTION NOISE

Summarize the requirements of 23 CFR 772.19. Describe any additional highway agency guidance on construction noise or vibration. This information can also be provided in a separate guidance document or in the Appendix.

NOISE ABATEMENT CRITERIA TABLE

APPENDICES

Recommend including FHWA 23 CFR 772, FHWA Noise Policy, and other guidance documents (or links to them). May want to include list of useful noise websites.