



NEPA Noise Guidance

Introduction

Pursuant to 23 United States Code 327 and the implementing Memorandum of Understanding (MOU) executed on XX, the Maine Department of Transportation (MaineDOT) has assumed, and the Federal Highway Administration (FHWA) has assigned its responsibilities under the National Environmental Policy Act (NEPA) for highway projects and Local Agency Program (LAP). MaineDOT's assumption includes all highway projects in Maine with FHWA federal funding or other FHWA federal action. This assumption of FHWA responsibilities or NEPA Assignment includes responsibility for environmental review, interagency consultation, and approval of NEPA actions. MaineDOT will be the Lead Federal Agency for MaineDOT-sponsored highway projects.

The following provides guidance for noise evaluation.

Procedures for abatement of highway traffic noise and construction noise under 23 CFR 772 and MaineDOT's Highway Traffic Noise Policy apply to MaineDOT Type I and Type II projects. Type I highway noise evaluations are conducted for new highway or capacity-adding projects (i.e. additional travel lanes) to existing highways. Type II noise evaluations may be conducted for noise abatement measures along existing highways that are not included in a highway improvement project. Highway traffic noise analysis for Type II projects will only be performed for development that predated the existence of the highway and has not previously been analyzed as a part of a previous Type I or Type II project. Therefore, Type II projects are not part of this process.

A Type I project includes the following types of proposed highway projects as defined in 23 CFR 772.5:

- A. The construction of a highway on a new location; or,
- B. The physical alteration of an existing highway where there is either:
 - 1. Substantial Horizontal Alteration. A project that halves the distance between the traffic noise source and the closest receptor between the existing condition to the future build condition; or,
 - 2. Substantial Vertical Alteration. A project that removes shielding therefore exposing the line-of-sight between the receptor and the traffic noise source. This is done by either altering the vertical alignment of the highway or by altering the topography between the highway traffic noise source and the receptor; or,
 - 3. The addition of a through-traffic lane(s). This includes the addition of a through-traffic lane that functions as an HOV lane, High-Occupancy Toll (HOT) lane, bus lane, truck climbing lane; or,
 - 4. The addition of an auxiliary lane, except for when the auxiliary lane is a turn lane; or,
 - 5. The addition or relocation of interchange lanes or ramps added to a quadrant to complete an existing partial interchange; or MaineDOT Highway Traffic Noise Policy 4
 - 6. Restriping existing pavement for the purpose of adding a through-traffic lane or an auxiliary lane; or,
 - 7. The addition of a new or substantial alteration of a weigh station, rest stop, ride-share lot, or toll plaza.

MaineDOT Environmental Office Environmental Specialist is responsible for assessing and ensuring compliance with 23 CFR 772 and MaineDOT's Noise Policy under NEPA Assignment (23 U.S.C. 327).



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Noise information is provided to and discussed with the Team Leader. This information is incorporated into the overall NEPA decision.

1.0 Noise Initial Project Question and Documentation

The following question is required to be answered by the Environmental Specialist:
Is this a Type I project?

A Yes response to Question 1 indicates the project will require a Noise Analysis (go to 2.0). A No response concludes the Noise assessment and no abatement measures will be required. All actions will be processed and documented in MaineDOT's ProjEx database and MaineDOT's Environmental CPD e-file.

2.0 Noise Analysis

The Environmental Specialist in MaineDOT's Environmental Office will perform or oversee the highway traffic noise analysis for Type I projects. The purpose of a highway traffic noise analysis is to identify impacted land uses based on the Noise Abatement Criteria (NAC) and determine the feasibility and reasonableness of abatement measures. MaineDOT Environmental Office maintains a noise monitoring procedure and TNM input guide (saved in <R:\Region0\Environment\Public\@ENV - Common\ENV - Agreements, general permits\Air Noise\Noise> for internal use only).

For Type I Projects, highway traffic noise analysis will be performed for developed lands and undeveloped lands for which development is planned, designed, and programmed. The development will be deemed to be planned, designed, and programmed if a land use, such as, but not limited to residences, schools, churches, hospitals, or libraries, has received site approval or a building permit from the local agency with jurisdiction prior to the approval of the highway project's environmental document, i.e., the date of approval of the NEPA document.

Type I analyses are performed during the NEPA stage of a project. The costs for Type I analyses, including abatement, are funded as part of the highway project. Type II analyses are performed only after a municipality has submitted a formal request in writing. Type II analyses are dependent upon available Workplan funding. Type II noise abatement will be considered separately in the Workplan for future available funding.

The basic steps involved in a Highway Traffic Noise Analysis include 1) Determination of Existing Noise Levels; 2) Prediction of Future Noise Levels 3) Determination of Impacts; 4) Evaluation of Abatement Measures; 5) Incorporation of Feasible and Reasonable Criteria; 6) Selection of Abatement Measures; and 7) Completion of Follow-up Measures.

A typical noise analysis takes approximately 4 weeks (160 hours) to complete, including fieldwork, modeling, and technical documentation. The number of impacted properties and alignment alternatives considered during NEPA may increase the timeline.



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Existing noise levels will be determined throughout the highway traffic noise study area through a combination of Leq¹ noise measurements and computer modeling. The study area is defined as 500' from the proposed edge of pavement for Type I analyses. All computer modeling will be done using the most current readily available version of the FHWA Traffic Noise Model (FHWA TNM).

For Type I projects only, future highway traffic noise levels will be predicted for the design year, usually twenty years in the future, for each alternative under detailed study, including the “no-build” alternative, within the study area.

Highway traffic noise impacts will be determined for each Type I project. Type I project impacts occur when the predicted future highway traffic noise levels approach within 1 dBA or exceed the NAC or when the predicted future highway traffic noise levels exceed the existing levels by at least 15 dBA.

In determining traffic noise impacts, primary consideration is to be given to exterior areas where frequent human use occurs such as patios, porches, swimming pools, playgrounds, etc. If no exterior areas are present, the interior NAC will be used as the basis for determining noise impacts.

The following question is required to be answered by MaineDOT Environmental Specialist:

1. Does the noise analysis approach or exceed noise abatement criteria levels?

A Yes response to Question 2 indicates the project will require evaluation of abatement measures (go to 3.0). A No response concludes the Noise assessment and no abatement measures will be required. All actions will be processed and documented in MaineDOT’s ProjEx database and MaineDOT’s Environmental CPD e-file.

3.0 Evaluation of Abatement Measures

If a highway traffic noise impact is identified, the following abatement measures will be evaluated:

- a. Traffic management measures such as traffic control devices and signing for the prohibition of certain vehicle types, time use restrictions for certain vehicle types, modified speed limits, and exclusive lane designations.
- b. Alteration of the highway project’s horizontal and vertical alignments.
- c. Construction of noise barriers (including landscaping for aesthetic purposes and the acquisition of property rights) within or outside the highway right of way.
- d. Acquisition of real property or interests therein (predominantly unimproved property) to serve as a buffer zone to preempt development that would be adversely impacted by traffic noise. This measure may be included in Type I projects only.
- c. Noise insulation of public use or non-profit institutional structures only, such as, but not limited to churches, schools, hospitals, or libraries.

¹ Leq. The equivalent steady state sound level which in a stated period of time contains the same acoustic energy as the time varying sound level during the same time period. Leq (h). The hourly value of Leq in decibels (dBA) is used for highway traffic noise analysis..



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All Type I noise abatement measures will be evaluated based upon Feasible and Reasonable criteria in MaineDOT's Highway Traffic Noise Policy.

The following question is required to be answered by MaineDOT Environmental Specialist:

2. Are abatement measures reasonable and feasible?

A Yes response to Question 3 indicates the project will require the selection and completion of abatement measures (go to 4.0). A No response concludes the Noise assessment and no abatement measures will be required. All actions will be processed and documented in MaineDOT's ProjEx database and MaineDOT's Environmental CPD e-file.

4.0 Selection and Completion of Abatement Measures

The last step of the analysis will include a selection of the noise abatement measures to be used if the abatement has met all the necessary criteria.

After the abatement is complete, follow-up noise measurements will be taken to determine the effectiveness of the abatement and to verify the noise model analysis. MaineDOT will provide the necessary maintenance to ensure the effectiveness of any abatement measure. However, MaineDOT will not maintain the noise insulation of publicly owned buildings, such as schools, or any other noise abatement measures not constructed by MaineDOT.

All actions will be processed and documented in MaineDOT's ProjEx database and MaineDOT's Environmental CPD e-file.

All Noise commitments are tracked in ProjEx.

5.0 Links

Procedures for Abatement of Highway Traffic and Construction Noise
[23 CFR 772](#)

FHWA Noise Guidance
<https://www.fhwa.dot.gov/environment/noise/>

MaineDOT Noise Policy
[MaineDOT Noise Policy 2021.PDF](#)

MaineDOT Monitoring Procedures (internal)
[R:\Region0\Environment\Public\@ENV - Common\ENV - Agreements, general permits\Air Noise\Noise\Noise Procedures](#)

MaineDOT TNM Inputs (internal)
[R:\Region0\Environment\Public\@ENV - Common\ENV - Agreements, general permits\Air Noise\Noise\Noise Procedures](#)