MAINE TURNPIKE AUTHORITY HIGHWAY TRAFFIC NOISE POLICY

July 22, 2021

This cancels and replaces the
Previous version approved in
January 22, 2015

CONTENTS

EXECUTIVE SUMMARY

The Maine Turnpike Authority (MTA) is an independent quasi-state agency receiving no state or federal funds for its construction and maintenance, and as such, the MTA is not subject to regulation by the Maine Department of Transportation (MEDOT) or Federal Highway Administration (FHWA). However, the MTA and MEDOT work closely with each other to provide consistent regulation of roadways. As a result, the MTA and MEDOT have developed a uniform noise policy that benefits users and abutters along their principle roadways and provides consistent and well defined actions as it relates to highway traffic noise.

This document serves as the Maine Turnpike Authority's policy on the evaluation and abatement of highway traffic noise impacts. The MTA's original highway traffic noise policy was adopted in 2000 and revised in 2008, 2011 and 2015. This policy updates several areas of the 2015 policy including the reasonable cost threshold for abatement.

Noise abatement measures are evaluated in two separate categories by FHWA. 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 in special circumstances. The Maine Turnpike Authority does not have a Type II Noise Abatement Program and, thus, Type II projects will not be discussed further in this document and will not be evaluated by the MTA.

The purpose of a highway traffic noise analysis is to identify impacted land uses (homes, schools, business, etc.) and determine the feasibility and reasonableness of abatement measures. The terms "feasibility" and "reasonableness" are terms commonly used in highway traffic noise analysis to determine, among other things, the effectiveness (in terms of noise reduction) and the acceptable cost for any noise abatement measure. All noise abatement measures are evaluated based on the feasibility and reasonableness criteria identified in this policy.

Appropriate land-use strategies along Maine's highways can be an effective means of avoiding highway traffic noise impacts. MTA encourages municipalities to establish appropriate land use controls over undeveloped lands adjacent to highways to prevent the development of incompatible activities along existing highways.

Appendix A provides useful information regarding the basics of sound, the fundamentals of highway traffic noise, and strategies for highway traffic noise abatement and control. Appendix B provides a glossary of specific terms used throughout the policy.

I. INTRODUCTION

This document details the Maine Turnpike Authority's (MTA's) policy on noise impacts as it relates to the Turnpike roadway. This policy mirrors federal and state noise policies, which are advisory for the MTA as the Authority does not receive state or federal funds, and provides foundation materials on the properties and nature of sound with regard to the Turnpike.

The MTA will use the following guidelines to determine the need, feasibility, and reasonableness of noise abatement or reduction measures along proposed highway construction projects. This policy is based on established principles, practices, and procedures used by federal and state transportation agencies to assess highway-related noise levels.

The MTA will use the requirements of Title 23, Part 772 of the U.S. Code of Federal Regulations (23 CFR 772), the FHWA Highway Traffic Noise Analysis and Abatement Guidance, June 2010 (Revised January 2011), or the most recent version, and the noise related requirements of the National Environmental Policy Act (NEPA) of 1969 as guidelines to its interpretation of this policy.

Noise abatement measures are evaluated in two separate categories by FHWA. 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 review noise abatement measures along existing highways in special circumstances. The implementation of a Type II program is not required by federal or state statute or FHWA regulation. The Maine Turnpike Authority does not have a Type II Noise Abatement Program and, thus, Type II projects will not be discussed further in this document and will not be evaluated by the Authority.

MTA will review this policy every three years and adopt appropriate revisions when necessary. The MTA will also consider revisions to this policy whenever federal or state statutory, regulatory or policy changes make such a review appropriate.

II. HIGHWAY TRAFFIC NOISE ANALYSIS

MTA's Right of Way Department will perform or oversee the highway traffic noise analysis for Type I projects. Requirements for the analysis and abatement of highway construction noise are discussed in Section VIII. ***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***.

For Type I Projects, highway traffic noise analysis will be performed for developed lands, and for undeveloped lands that are permitted for development, prior to the approval of the highway project's environmental document, i.e. the date of the Categorical Exclusion (CE), Finding of No Significant Impact (FONSI), or Record of Decision (ROD) if applicable.

Subsequent to this date, MTA is not responsible for providing noise abatement for new development.

A highway traffic noise analysis will include the following steps:

A. Identification of Noise Sensitive Areas and Receptors

The first step in the highway traffic noise analysis it to identify areas with potential for noise impacts, the receptors of noise in each area, and the applicable Noise Abatement Criteria (NAC) for each receptor in the study area. The study area is defined as 500 feet from the *proposed* edge of pavement for Type I analysis. However, if highway traffic noise impacts are identified at 500 feet then the study area will be expanded to identify all potential impacts.

When determining the number of receptors in the study area the following rules apply:

NAC Activity Category B- Single family residential units are considered one receptor. Structures that contain multiple residential units (apartments, condominiums, and duplexes) are considered one receptor per residential unit.

NAC Activity Categories C, D, and E: A single structure is considered a single receptor. For outdoor noise-sensitive land uses (parks, campgrounds, cemeteries, trails, etc.) the number of receptors will be determined by dividing the frontage of the land use by the average lot frontage in the study area.

B. Determination of Existing Noise Levels.

Existing noise levels will be determined throughout the highway traffic noise study area through a combination of LEQ noise measurements and traffic noise modeling. All traffic noise modeling will be done using the most current readily available version of the FHWA Traffic Noise Model (FHWA TNM). Noise measurements and noise modeling will be conducted using equivalent continuous noise levels (LEQ) during the hour that is predicted to yield the greatest traffic noise levels.

C. Prediction of Future Noise Levels

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.

D. Determination of Impacts

All highway traffic noise impacts associated with the project will be identified during the highway traffic noise analysis. Type I project impacts occur when the predicted future highway traffic noise levels are within 1 dBA of, or exceed the NAC or when the predicted future highway traffic noise levels exceed the existing levels by at least 15 dBA (substantial increase). (See Appendix B, Table B-1 for the NAC).

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 where applicable.

E. Evaluation of Abatement Measures

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

1. Traffic management measures such as traffic control devices and signing for prohibition of certain vehicle types, time-use restrictions for certain vehicle types, modified speed limits, and exclusive lane designations.
2. Alteration of the highway project's horizontal and vertical alignments.
3. Construction of noise barriers (including landscaping for aesthetic purposes and the acquisition of property rights) within or outside the highway right-of-way.
4. Acquisition of real property or interests therein (predominantly unimproved property) to serve as a buffer zone to preempt development which would be adversely impacted by traffic noise. This measure may be included in Type I projects only.
5. Noise insulation of Category D facilities only (See Appendix B, Table B-1)

F. Incorporation of Feasible and Reasonable Criteria

Type I noise abatement measures will be evaluated based upon Feasible and Reasonable criteria in Sections IV and V.

G. Selection of Abatement Measures

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

H. Documentation

The noise analysis completed under this policy, including project description, existing and future noise levels, impacts, evaluations, and abatement considered, will be documented in the project files. A Statement of Likelihood will be included in the environmental document, since feasibility and reasonableness may change due to changes in project design after approval of the environmental document. The Statement of Likelihood will include the preliminary location and physical description of noise abatement measures determined feasible and reasonable in the preliminary analysis. The statement of likelihood shall also indicate that final recommendations on the construction of an abatement measure(s) is determined during the completion of the project's final design and the public involvement processes.

I. Completion of Follow up measures

After abatement is complete, follow-up noise measurements will be taken to determine the effectiveness of the abatement and to verify the noise model analysis. MTA will

provide the necessary maintenance to ensure the effectiveness of any abatement measure. However, MTA will not pay for the maintenance or operational costs of noise insulation of Activity Category D facilities, or any other noise abatement measures not constructed by MTA.

III. TYPE I PROJECTS

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 new location;

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 changes the topography 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 a HOV lane, High Occupancy Toll (HOT) lane, bus lane, or truck climbing lane, *or*

4. The addition of an auxiliary lane, except 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*

6. Restriping existing pavement for the purpose of adding a through traffic lane or an auxiliary lane, *or*

7. The construction of new or substantial capacity increases to existing weigh station, rest stop, ride share lot, or toll plaza.

If the project is determined to be a Type I project under this definition then the entire project area, as defined in the environmental document, is a Type I project. Such projects require the completion of an approved Environmental Impact Statement, Environmental Assessment, or Categorical Exclusion to satisfy the requirements of the National Environmental Policy Act. As part of this analysis, the need for noise abatement is evaluated for each individual highway project. Noise abatement measures for Type I projects may be funded as part of the proposed highway project.

To be considered for funding, noise abatement must be feasible and reasonable as defined in Sections IV and V.

IV. FEASIBILITY CRITERIA

Feasibility is defined as the engineering and acoustical ability of abatement measures to provide effective noise reduction. When noise abatement measures are evaluated, feasibility criteria will include the following:

A. Noise Reduction

Can a 5dBA or greater noise reduction be achieved? Abatement measures are not feasible if a 5 dBA noise reduction cannot be achieved for a majority (greater than 50%) of impacted receptors.

B. Safety

Will the barrier, or other measure, create a safety issue? If so, the abatement measures are not feasible. Safety factors that should be considered in the design of the barrier include maintaining a clear recovery zone, redirection of crash vehicles, adequate sight distance, and emergency vehicle access. MTA will use the most recent version of the American Association of State Highway and Transportation Officials (AASHTO) publication entitled “A Policy on Geometric Design of Highways and Streets” when making safety determinations.

C. Barrier Height

The maximum height of a noise barrier allowed under this policy is 20 feet based on safety and engineering considerations.

D. Other Considerations

Other issues including, but not limited to, maintenance, drainage, snow removal, right of way acquisition, access to adjacent land owners, and environmental impacts will also be considered when determining the feasibility of abatement. For any other considerations that may arise, MTA will make a feasibility determination based on best engineering practices. For example, it is possible that a noise barrier, or other abatement measure, may satisfy Parts A, B and C of this Section, but not be feasible if wetland mitigation impacts and mitigation, other environmental impacts, or substantial fill and drainage are necessary to complete the project.

V. REASONABLENESS CRITERIA

Reasonableness implies that common sense and good judgment have been applied in arriving at a decision. The overall noise abatement benefits must outweigh the overall adverse social, economic, and environmental effects and the costs of the abatement measures. When noise abatement measures are considered, reasonableness criteria will include the following:

A. Maximum Cost of Abatement

The maximum cost of abatement is $36,000 per benefited receptor. All receptors within the study area, as defined in Section II A, attaining at least a 5 dBA reduction will be counted as "benefited" and included in the cost calculation.

For the purposes of developing the total barrier cost, a cost of $39.00 per square foot for Preliminary Engineering (PE), ROW acquisition, and construction will be used, realizing that actual costs will vary. However, additional project costs, not included in the $39.00 per square foot figure, may occur as a result of unique physical or natural conditions when modeling and designing a noise abatement barrier or other measure. Section IV (D) of this policy addresses “other considerations” that will be evaluated when determining the feasibility of proposed noise abatement measures.

Abatement costs are estimated on recent construction costs and historical data provided by FHWA. Both the unit cost and cost per benefited receiver will be updated when the policy is reviewed, as defined in Section I, to reflect actual barrier costs.

B. Noise Reduction Design Goal

During a traffic noise modeling and design stage, MTA will attempt to reduce predicted noise levels at impacted receptors by 10 dBA. Various factors, including topography or the limitation of barrier height (see section IV C) may reduce the effectiveness of noise abatement for certain receptors. At a minimum, noise abatement measures will be designed to reduce noise levels at a majority (greater that 50%) of benefitted receptors by 7 dBA. Abatement measures are not Reasonable if the 7 dBA design goal cannot be achieved for a majority of benefitted receptors.

C. Third Party Funding

Third party funding is not allowed on projects if the noise abatement measure would require the additional funding from the third party for the project to be considered feasible and/or reasonable. Third party funding is acceptable on a project to make functional enhancements, such as adsorptive treatment, access doors, or aesthetic enhancements, to a noise abatement measure already determined to be reasonable and feasible.

D. Resident’s Desires

A noise barrier will not be considered reasonable if fewer than 75% of the benefited receptors approve of the construction of a noise barrier. In the case of rental or

leased properties, the views of both the owner and the residents will be solicited to determine reasonableness. The MTA will establish the approval rate of a noise barrier for benefited receivers by conducting a survey through certified or registered mail and a self-addressed stamped envelope.

VI. LOCAL COORDINATION & COMMUNITY INVOLVEMENT

Coordination with local agencies and community involvement is an important part of highway traffic noise control and the prevention of future impacts. Highway traffic noise impacts can be most effectively reduced through a program of shared responsibility. The Authority encourages local governments to use their power to regulate land development in such a way that particularly noise sensitive land uses are either prohibited from being located adjacent to a highway or that developments are planned, designed, and constructed so that highway traffic noise impacts are minimized.

Upon completion of the highway traffic noise analysis, information shall be provided to local government agencies within whose jurisdiction the highway project is located as to the implications of the project on that particular local community in the future. At a minimum, this will include modeled future highway traffic noise levels for both developed and undeveloped lands in the immediate vicinity of the project. The information will be disseminated through the distribution of highway project environmental documents and noise analysis reports and informational public meetings. The overall goal of this effort will be to prevent future highway traffic noise impacts on currently undeveloped lands and to promote noise compatible planning.

VII. LOCAL/PRIVATE PROJECTS

The use of MTA's right-of-way for local/private noise abatement projects is prohibited.

VIII. CONSTRUCTION NOISE

The following general steps are to be performed for all Type I projects:

During the design phase of transportation projects, MTA will work with local public officials and community members to limit, minimize, or eliminate adverse construction noise impacts to the community, as practicable. Construction noise control measures will be incorporated into the plans and specifications on a project by project basis.

APPENDIX A. HIGHWAY NOISE FUNDAMENTALS

The Basics of Sound

The decibel (dB) is the unit of measurement for sound. The decibel scale audible to humans spans approximately 140 decibels. A level of 0 decibels corresponds to the threshold of human hearing, while 140 decibels produces a sensation more akin to pain than sound, similar to standing near a jet engine as it takes off. Table A-1 shows sound levels for some common noise sources.

Table A-1 Typical Sound Levels[1]

NOISE SOURCE OR ACTIVITY	SOUND LEVEL dBA
Jet engine at takeoff	140
Fire engine siren	130
Jackhammer	120
Rock Concert	110
Circular Saw	100
Heavy truck or motorcycle	90
Garbage disposal	80
Busy restaurant	70
Normal Speech	60
Background music	50
Bedroom, Bird song	40
Quiet library, soft whisper	30
Quiet basement w/o mechanical equipment	20
Human breathing	10
Threshold of Hearing	0

The decibel scale is logarithmic rather than arithmetic. Consequently, traffic sound levels cannot be added by ordinary arithmetic means. For instance, two noise sources, each producing 90 dBA, will combine to produce 93 dBA, not 180 dBA. In other words, a doubling of the noise source produces only a 3 dBA increase in the sound pressure level. Studies have shown that this increase is barely detectable by the human ear. Furthermore, an increase or decrease of 5 dB would result in a clearly noticeable change in the sound level. A change of 10 dB in the sound pressure level will be perceived by an observer to be a doubling or halving of the sound.

The "A" weighting scale for decibel measurement is widely used in environmental work because it closely resembles the ear's sensitivity to high frequency noise. Therefore, the unit of measurement for highway traffic noise becomes dBA. The noise descriptor used for environmental analysis is the equivalent sound level, Leq. The equivalent sound level is the steady sound level that has the same acoustic energy as the time varying sound level over the same time period.

[1] Actual sound levels may vary depending on a number of factors, including the distance between source and receiver, intensity of the particular activity, and the degree of background noise.

Highway Traffic Noise

Sound can be either desirable or undesirable. Music is an example of desirable sound. Sound generated by motor vehicles traveling along highways is, generally, undesirable and is referred to in this policy as highway traffic noise.

Highway traffic noise is generated by four major sources: engine/drive train, exhaust, aerodynamics, and tire-to-pavement friction. Recent research indicates that tires are the dominant noise source at speeds greater than 20 mph for cars and 30 mph for trucks. Tire sound levels increase with vehicle speed but also depend upon road surface, vehicle weight, tread design and wear. Changes in any of these factors can vary highway traffic noise levels. At lower speeds especially in trucks and buses, the dominant noise source is the engine and related accessories.
The level of highway traffic noise depends on three things: (1) the volume of free flow traffic, (2) the speed of the traffic, and (3) the number of trucks in the flow of traffic. Generally, the loudness of highway traffic noise is increased by heavier traffic volumes, higher speeds, and greater numbers of trucks. The loudness of highway traffic noise can also be increased by defective or modified exhaust systems and other faulty equipment on vehicles. Any condition (such as a steep incline) that causes heavy laboring of motor vehicle engines will also increase highway traffic noise levels. Other physical and environmental factors, such as distance from source to receiver, terrain, vegetation, and natural and manmade obstacles, also affect the loudness of highway traffic noise.

Highway Traffic Noise Strategies

Highway traffic noise can be addressed by a number of different strategies including: motor vehicle control, land use control, highway planning and design, and abatement. The responsibilities for implementing these strategies are shared by all levels of government: federal, state, and local.

Motor Vehicle Control

The State of Maine requires[2] that all automobiles (excluding motorcycles) must be equipped with a muffler in good working order and prohibits amplification of exhaust noise above that emitted by the muffler originally installed on the vehicle. However, modifications are allowed if the muffler or exhaust system does not emit noise in excess of 95 decibels. In general, quieter vehicles would bring about a substantial reduction in highway traffic noise along Maine's roads and streets. MTA does not have the authority to regulate motor vehicles. The Environmental Protection Agency (EPA) has issued regulations that limit the noise levels for new trucks with a gross vehicle weight rating (GVWR) of more than 10,000 pounds. In addition, many local governments have passed some form of community noise ordinance.

Land Use Control

Proper land use control along Maine's highways is an effective means of controlling the

[2] MRSA 29-A§ 1912

impacts of highway traffic noise. The MTA encourages municipalities to plan, design, and construct new development projects and roadways that minimize potential highway traffic noise impacts. More specifically, municipalities are encouraged to establish building setbacks and vegetative buffer zones along existing highways. Noise-compatible planning encourages the location of less noise-sensitive land uses near highways, promotes the use of berms and open space separating roads from developments, and suggests special construction techniques that minimize the impact of highway traffic noise.

According to FHWA, there are several hundred thousand miles of existing highways in this country bordered by vacant land which may someday be developed. Proper land use control can help to prevent many future highway traffic noise problems in these areas. For more information about noise compatible planning visit FHWA's website at http://www.fhwa.dot.gov/environment/comgrwth.htm .

Highway Planning and Design

Early in the highway planning and design stages, MTA evaluates highway traffic noise and construction noise as part of the NEPA process. The purpose of this study is to determine if any of the proposed project alternatives will create noise impacts. MTA will use the procedures outlined in Section II to identify noise impacts (if any) and evaluate potential abatement measures. Any noise abatement measures that satisfy all the requirements of this policy will be implemented as part of a Noise Abatement project.

Abatement

Noise barrier walls and earth berms are frequently used to provide abatement for highway traffic noise. Noise barriers are solid walls built between the highway and noise-sensitive land uses (such as homes and schools) along the highway. Barriers can be formed from earth mounds along the road (earth berms) or from high, vertical walls. MTA limits noise walls to a maximum of 20 feet in height for safety and structural concerns. Noise walls can be built from a variety of materials, including, but not limited to: wood, concrete, masonry, and metal.

Openings in noise walls for driveways, business entrances, or intersecting streets defeat the effectiveness of noise barriers. In many areas of Maine, homes are scattered too far apart to permit highway noise barriers to be built at a reasonable cost.

See Section II. D of this policy for the list of eligible noise abatement measures.

APPENDIX B. GLOSSARY

Abatement. A reduction in sound levels.

Benefited Receptor. A receptor that is expected to receive a minimum noise reduction of 5 dBA from the proposed abatement measure.

dBA. A-weighted decibel unit used to measure sound that best corresponds to the frequency response of the human ear.

Design Year. The future year used to estimate the probable traffic volume for which a highway is designed. For highway projects, the "Design Year" is determined to be 20 years from the completion date (construction complete) of the proposed project.

Existing Noise Level. The worst noise hour, resulting from the combination of natural and mechanical sources and human activity, present in a particular area.

Highway Traffic Noise Impacts. Impacts which occur when the predicted highway traffic noise levels approach or exceed the noise abatement criteria (Table B-1 -above), or when the predicted highway traffic noise levels substantially exceed the existing noise levels.

Impacted Receptor. Any receptor that approaches (within 1 dBA) or exceeds the NAC for the corresponding land use category, or any receptor that exceeds existing noise levels by 15 dBA.

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.

National Environmental Policy Act (NEPA). Federal legislation that establishes environmental policy for the nation for federally funded projects. It provides an interdisciplinary framework to ensure that decision-makers adequately take environmental factors into account.

Noise. Any unwanted sound.

Noise Abatement Criteria (NAC). FHWA-determined noise levels for various land uses and activities used to identify traffic noise impacts. The NAC are listed in Table B-1.

Table B-1 Noise Abatement Criteria (NAC)

NOISE ABATEMENT CRITERIA (NAC)		
ACTIVITY CATEGORY	Leq(h) dBA	DESCRIPTION OF ACTIVITY CATEGORY
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 Exterior	Residential
C	67 Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	----------	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing
G	----------	Undeveloped lands that are not permitted.

Noise Barrier. A natural or man-made object that interrupts the path of sound. A barrier could be a wall, an earth berm, or a combination of both.

Permitted. A definite commitment to develop land with an approved specific design of land use activities, as evidenced by the issuance of a building permit.

Receptor. The technical term used to describe the location of any properties included in the noise analysis. Only ground floor properties are counted as receptors.

Study Area. The study area is defined as 500 feet from the *proposed* edge of pavement for Type I analysis. However, if highway traffic noise impacts are identified at 500 feet then the study area will be expanded to identify all potential impacts.

Substantial Noise Increase. For a Type I project an increase in noise levels of 15 dBA in the design year over the existing noise level.

Type I Projects. A proposed highway project for:

A. The construction of a highway on new location;

B. The physical alteration of an existing highway that:

1. Creates 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. Creates Substantial Vertical Alteration- A project that changes the topography 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. Addition of a through traffic lane(s)- This includes the addition of a through traffic lane that functions as a HOV lane, High Occupancy Toll (HOT) lane, bus lane, or truck climbing lane, *or*

4. The addition of an auxiliary lane, except 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*

6. Restriping existing pavement for the purpose of adding a through traffic lane or an auxiliary lane, *or*

7. The construction of new or substantial capacity increases to existing weigh station, rest stop, ride share lot, or toll plaza. If a project is deemed to be a Type I project under this definition then the entire project area as defined in the environmental document is defined as a Type I project.

Type II Projects. A proposed project for noise abatement along an existing highway.