

# Maine

## Noise Related Statutes, Policies, and Review Standards

### TITLE 5 PART 12 CHAPTER 337-B

#### **§4684-B. Additional protections**

1. Definitions. As used in this section, unless the context otherwise indicates, the following terms have the following meanings.

A. "Building" means any structure having a roof or a partial roof supported by columns or walls that is used or intended to be used for shelter or enclosure of persons or objects regardless of the materials of which it is constructed.

B. "Health service" means any medical, surgical, laboratory, testing or counseling service relating to the human body.

C. "Physical obstruction" means rendering impassable ingress to or egress from a building or rendering passage to or from a building unreasonably difficult or hazardous.

2. Violation. It is a violation of this section for any person, whether or not acting under color of law, to intentionally interfere or attempt to intentionally interfere with the exercise or enjoyment by any other person of rights secured by the United States Constitution or the laws of the United States or of rights secured by the Constitution of Maine or laws of the State by any of the following conduct:

A. Engaging in the physical obstruction of a building;

B. Making or causing repeated telephone calls to a person or a building, whether or not conversation ensues, with the intent to impede access to a person's or building's telephone lines or otherwise disrupt a person's or building's activities;

C. Activating a device or exposing a substance that releases noxious and offensive odors within a building; or

D. After having been ordered by a law enforcement officer to cease such **noise**, intentionally making **noise** that can be heard within a building and with the further intent either:

(1) To jeopardize the health of persons receiving health services within the building; or

(2) To interfere with the safe and effective delivery of those services within the building.

### TITLE 6 CHAPTER 6

#### **§102. Minimum airport standards; airport managers; fire equipment and safety**

2. Airport managers.

A. All air carrier and commuter air carrier airports, as defined under chapter 4, shall designate a person generally available who shall have administrative responsibility for operation and management of the airport. All general aviation commercial airports, as defined under chapter 6, shall have at least a part-time airport manager.

B. All airport managers shall perform the following duties.

(1) The airport manager, or his authorized representative, shall be available during all hours of operation. A current telephone number shall be on file with the department.

(2) The manager shall file a notice to airmen with the Federal Aviation

Administration designating any changes in airport conditions that may effect safety. A "notice to airmen" file shall be maintained at the airport.

(3) The manager shall display the local traffic pattern, airport traffic safety rules, any **noise** abatement procedures, and any special orders relating to the airport and its operations at a prominent location on the airport.

## TITLE 6 CHAPTER 13

### **§241. Regulations**

Every political subdivision may adopt, administer and enforce, under the police power and in the manner and upon the conditions prescribed, airport zoning regulations, which regulations shall divide the area surrounding any airport within the jurisdiction of said political subdivision into zones and within such zones specify the land uses permitted and regulate and restrict the height to which structures and trees may be erected or allowed to grow. In adopting or revising any such zoning regulations, the political subdivision shall consider, among other things, the character of the flying operations expected to be conducted at the airport, the nature of the terrain, the height of existing structures and trees above the level of the airport, the possibility of lowering or removing existing obstructions and the views of the agency of the Federal Government charged with the fostering of civil aeronautics, as to the aerial approaches necessary to safe flying operations at the airport.

In the event that a political subdivision has adopted, or hereafter adopts, a general zoning ordinance regulating, among other things, the height of buildings, any airport zoning regulations adopted for the same area or portion thereof under this chapter may be incorporated in and made a part of such general zoning regulations, and be administered and enforced in connection therewith, but such general zoning regulations shall not limit the effectiveness or scope of the regulations adopted under this chapter.

Any 2 or more political subdivisions may agree, by ordinance duly adopted, to create a joint board and delegate to said board the powers to promulgate, administer and enforce airport zoning regulations to protect the aerial approaches of any airport located within the corporate limits of any one or more of said political subdivisions. Such joint boards shall have as members 2 representatives appointed by the chief executive officers of each political subdivision participating in the creation of said board and a chairman elected by a majority of the members so appointed.

The jurisdiction of each political subdivision is extended to promulgation, administration and enforcement of airport zoning regulations to protect the approaches of any airport which is owned by said political subdivision but located outside the corporate limits of said political subdivision. In case of conflict with any airport zoning or other regulations promulgated by any other political subdivision, the regulations adopted pursuant to this section shall prevail.

All airport zoning regulations adopted under this chapter shall be reasonable and none shall require the removal, lowering or other change or alteration of any structure or tree not conforming to the regulations when adopted or amended, or otherwise interfere with the continuance of any nonconforming use, except as provided in section 242, subsection 1.

## TITLE 12 PART 2 CHAPTER 206-A SUBCHAPTER 2

### **§685-A. Land use districts and standards**

3. Land use standards. The commission, acting on principles of sound land use planning and development, shall prepare land use standards prescribing standards for the use of air, lands

and waters. Except as provided in this chapter, these standards shall be adopted by the commission in accordance with the procedures set forth in Title 5, chapter 375, subchapter II. In addition to the purposes set forth in section 681, the land use standards shall:

- A. Encourage the most desirable and appropriate use of air, land and water resources consistent with the comprehensive land use plan;
- B. Protect public health by reduction of **noise**, air pollution, water pollution and other environmental intrusions;

#### TITLE 12 PART 13 SUBPART 6 CHAPTER 935

#### **§13068-A. Operating watercraft; prohibitions**

10. Operating motorboat that exceeds **noise** limits. The following provisions govern **noise** limits.

- A. A person may not operate a motorboat in such a manner as to exceed:
  - (1) A **noise** level of 90 decibels when subjected to a stationary sound level test with and without cutouts engaged and as prescribed by the commissioner; or
  - (2) A **noise** level of 75 decibels when subjected to an operational test measured with and without cutouts engaged and as prescribed by the commissioner.
- B. The following penalties apply to violations of this subsection.
  - (1) A person who violates this subsection commits a civil violation for which a fine of not less than \$300 nor more than \$500 may be adjudged.
  - (2) A person who violates this subsection after having been adjudicated as having committed 3 or more civil violations under this Part within the previous 5-year period commits a Class E crime.
- C. This subsection does not apply to motorboats that are operating in a regatta or race approved by the commissioner under section 13061.

11. Operating motorboat without **muffler**. A person may not operate a motorboat that is not equipped at all times with an effective and suitable muffling device on its engine or engines to effectively deaden or muffle the **noise** of the exhaust, except that motorboats that are operating in a regatta or race approved by the commissioner under section 13061 may use cutouts for these motorboats while on trial runs or competing in speed events, for a period not to exceed 48 hours immediately preceding or following such an authorized event.

- A. The following penalties apply to violations of this subsection.
  - (1) A person who violates this subsection commits a civil violation for which a fine of not less than \$100 nor more than \$500 may be adjudged.
  - (2) A person who violates this subsection after having been adjudicated as having committed 3 or more civil violations under this Part within the previous 5-year period commits a Class E crime.

12. Tampering with motorboat **muffler** system. A person may not modify a motorboat muffler system in any way that results in an increase in the decibels of **sound** emitted by that motorboat.

- A. A person who violates this subsection commits a civil violation for which a fine not to exceed \$100 may be adjudged.
- B. A person who violates this subsection after having been adjudicated as having committed 3 or more civil violations under this Part within the previous 5-year period commits a Class E crime.

#### TITLE 12 PART 13 SUBPART 6 CHAPTER 935

**§13070. Operating airmobile**

7. Operating airmobile that exceeds **noise** limit. Airmobiles are subject to the following noise level limits.

A. Except as provided in this paragraph, a person may not operate an airmobile that exceeds 78 decibels of sound pressure at 50 feet on the "A" scale, as measured by the Society of Automotive Engineers standards J-192. Airmobiles that are operating in a race approved by the commissioner under section 13061 may exceed this maximum noise level.

B. A person may not operate an airmobile in such a manner as to exceed:

- (1) A noise level of 90 decibels when subjected to a stationary sound level test with and without cutouts engaged and as prescribed by the commissioner; or
- (2) A noise level of 75 decibels when subjected to an operational test measured with and without cutouts engaged and as prescribed by the commissioner.

C. The following penalties apply to violations of this subsection.

- (1) A person who violates this subsection commits a civil violation for which a fine of not less than \$300 nor more than \$500 may be adjudged.
- (2) A person who violates this subsection after having been adjudicated as having committed 3 or more civil violations under this Part within the previous 5-year period commits a Class E crime.

TITLE 12 PART 13 SUBPART 6 CHAPTER 937

**§13106-A. Operation of snowmobile**

14. Snowmobile noise level limits. This subsection governs noise levels for snowmobiles.

A. Except as provided in section 13112, a person may not:

- (1) Operate a snowmobile that exceeds the **noise** limits for that snowmobile established in paragraph B; or
- (2) Operate a snowmobile with an exhaust system that has been modified in a manner that amplifies or otherwise increases total **noise** emission above that of the snowmobile as originally constructed, regardless of the date of manufacture.

B. The following noise levels are established:

- (1) Every snowmobile manufactured after February 1, 1975 and offered for sale or sold in this State must be constructed to limit total vehicle **noise** to not more than 78 decibels of sound pressure level at 50 feet on the "A" scale, as measured by the SAE standards J-192;
- (2) Snowmobiles manufactured after October 1, 1973, but on or before February 1, 1975, and offered for sale or sold in this State must be constructed to limit the total vehicle **noise** to not more than 82 decibels of sound pressure level at 50 feet on the "A" scale, as measured by the SAE standards J-192; and
- (3) Snowmobiles manufactured on or before October 1, 1973 are not subject to a specific **noise** level, except that they may not be modified in violation of this subsection.

C. The following penalties apply to violations of this subsection.

- (1) A person who violates this subsection commits a civil violation for which a fine of not less than \$100 nor more than \$500 may be adjudged.
- (2) A person who violates this subsection after having been adjudicated as having committed 3 or more civil violations under this Part within the previous 5-year

period commits a Class E crime

### **§13112. Racing meets**

Notwithstanding section 10650 and section 13106-A, subsections 14, 15 and 16, snowmobiles operated at a prearranged racing meet whose sponsor has obtained a permit to hold such a meet from the commissioner are exempt from the provisions of this chapter concerning registration, **noise**, horsepower and lights during the time of operation at such meets and at all prerace practices at the location of the meet.

TITLE 12 PART 13 SUBPART 6 CHAPTER 939

### **§13157-A. Operation of ATVs**

15. ATV **noise** and fire control devices. The following provisions pertain to ATV muffling and fire control devices and **noise** level limits.

A. Except as provided in section 13159, a person may not:

(1) Operate an ATV that is not equipped at all times with an effective and suitable muffling device on its engine to effectively deaden or muffle the **noise** of the exhaust;

(2) Modify the exhaust system of an ATV in any manner that will increase the **noise** emitted above the following emission standard:

(a) Each ATV must meet **noise** emission standards of the United States Environmental Protection Agency and in no case exceed 82 decibels of sound pressure level at 50 feet on the "A" scale, as measured by the SAE standards J-192; or

(3) Operate an ATV without a working spark arrester.

B. The following penalties apply to violations of this subsection.

(1) A person who violates this subsection commits a civil violation for which a fine of not less than \$100 nor more than \$500 may be adjudged.

(2) A person who violates this subsection after having been adjudicated as having committed 3 or more civil violations under this Part within the previous 5-year period commits a Class E crime.

(3) In addition to any penalties imposed under this subsection, the court may, subject to section 9321 and Title 17-A, chapter 54, order restitution for fire suppression costs incurred by state or municipal government entities in suppressing a fire caused by an ATV operating without a working spark arrester.

TITLE 17 CHAPTER 91 SUBCHAPTER 3

### **§2806. Sport shooting ranges**

1. Acquisition of property near existing range. Except as provided in this subsection, a person may not maintain a nuisance action for **noise** against a shooting range located in the vicinity of that person's property if the shooting range was established as of the date the person acquired the property. If there is a substantial change in use of the range after the person acquires the property, the person may maintain a nuisance action if the action is brought within 3 years from the beginning of the substantial change.

2. Establishment of shooting range near existing property. A person who owns property in the vicinity of a shooting range that was established after the person acquired the property may maintain a nuisance action for noise against that shooting range only if the action is brought within 5 years after establishment of the range or 3 years after a substantial change in

use of the range.

3. Dormant shooting range. If there has been no shooting activity at a range for a period of 3 years, resumption of shooting is considered establishment of a new shooting range for purposes of this section.

4. Application. This section does not limit nuisance actions against shooting ranges established after the effective date of this section.

### **§2807. Commercial fishing activities and commercial fishing operations**

1. Definitions. As used in this section, unless the context otherwise indicates, the following terms have the following meanings.

A. "Commercial fishing activity" means an activity directly related to commercial fishing or a commercial activity commonly associated with or supportive of commercial fishing, such as the manufacture or sale of ice, bait, traps or nets or the manufacture, installation or repair of boats, engines or other equipment commonly used on boats or in facilities that involve the catching, transporting, buying, selling or processing of seafood for commercial purposes.

B. "Commercial fishing operation" means a condition or activity that occurs in connection with the commercial harvesting, purchasing, selling or processing of seafood and includes **noise**, odors, operation of a vessel, operation of harvesting or processing equipment and transfer or storage of bait.

## TITLE 17-A PART 2 CHAPTER 21

### **§501-A. Disorderly conduct**

1. A person is guilty of disorderly conduct if:

A. In a public place, the person intentionally or recklessly causes annoyance to others by intentionally:

(1) Making loud and unreasonable **noises**;

(2) Activating a device, or exposing a substance, that releases noxious and offensive odors; or

(3) Engaging in fighting, without being licensed or privileged to do so;

B. In a public or private place, the person knowingly accosts, insults, taunts or challenges any person with offensive, derisive or annoying words, or by gestures or other physical conduct, that would in fact have a direct tendency to cause a violent response by an ordinary person in the situation of the person so accosted, insulted, taunted or challenged;

C. In a private place, the person makes loud and unreasonable **noise** that can be heard by another person, who may be a law enforcement officer, as unreasonable **noise** in a public place or in another private place, after having been ordered by a law enforcement officer to cease the **noise**;

## TITLE 29-A CHAPTER 1

### **§101. Definitions**

20. *Daytime*. "Daytime" means any time from 1/2 hour before sunrise to 1/2 hour after sunset.

26. *Gross weight*. "Gross weight" means the weight in pounds of an empty vehicle or axle plus the weight of the maximum load to be carried by the vehicle or axle.

26-A. *Gross vehicle weight*. "Gross vehicle weight" or "GVW" means the actual total weight of the vehicle and load.

26-B. *Gross vehicle weight rating*. "Gross vehicle weight rating" or "GVWR" means the weight of the vehicle and load as determined by the final-stage manufacturer, as the rating appears on the vehicle.

38. *Motorcycle*. "Motorcycle" means a motor vehicle that has a seat or a saddle for the use of the rider and is designed to travel with only 2 or 3 10-inch or larger diameter wheels in ground contact and has a motor with a cylinder capacity of more than 50 cubic centimeters or an electric motor with a capacity of not less than 1,500 watts.

42. *Motor vehicle*. "Motor vehicle" means a self-propelled vehicle not operated exclusively on tracks but does not include:

A. A *snowmobile* as defined in Title 12, section 13001

B. An *all-terrain vehicle* as defined in Title 12, section 13001, unless the all-terrain vehicle is permitted in accordance with section 501, subsection 8 or is operated on a way and section 2080 applies.

C. A *motorized wheelchair* or an electric personal assistive mobility device.

*Muffler*. "Muffler" means a device consisting of a series of chambers or baffle plates or another mechanical design for receiving exhaust gas from an internal combustion engine and reducing **noise**.

46. *Nighttime*. "Nighttime" means a time other than daytime.

47-A. *Off-road vehicle*. "Off-road vehicle" means a motor vehicle that, because of the vehicle's design and configuration, does not meet the inspection standards of chapter 15 and that is not a moped or motorcycle

54. *Person*. "Person" means an individual, corporation, firm, partnership, joint venture, association, fiduciary, trust, estate or any other legal or commercial entity.

78. *Sunrise and sunset*. "Sunrise" and "sunset" are the times given in the Maine Farmers' Almanac for sunrise and sunset respectively on that particular day.

## TITLE 29-A CHAPTER 17 SUBCHAPTER 1

### **§1912. Mufflers**

1. Muffler required. A person may not operate a motor vehicle unless that vehicle is equipped with an adequate muffler properly maintained to prevent excessive or unusual noise. For purposes of this subsection, "excessive or unusual noise" includes motor noise emitted by a motor vehicle that is noticeably louder than similar vehicles in the environment.

2. Cutouts prohibited. Except as provided in subsection 5, a muffler or exhaust system may not be equipped with a cutout, bypass or similar device.

3. Amplification prohibited. A person may not operate a motor vehicle with an exhaust system that has been modified when the result of that modification is the amplification or increase of noise emitted by the motor above that emitted by the muffler originally installed on the vehicle.

4. Exhaust system fastened to engine. The entire exhaust system must be complete, without leakage and securely fastened to the engine block and frame.

5. Exception; racing meets. Notwithstanding subsection 2, an owner or operator of a motor vehicle used occasionally in racing meets may obtain a permit from the Secretary of State for installing a cutout, bypass or similar device on the exhaust system of that motor vehicle pursuant to this subsection.

A. The cutout, bypass or similar modification must be kept closed and inoperative while

the vehicle is on a public way.

B. The permit must be in the vehicle at all times while on a public way.

C. The Secretary of State shall determine the eligibility of all applicants for a permit.

D. The permit fee is \$1 for the registration year

6. Exception. Subsections 1 and 3 do not apply to a muffler or exhaust system that does not emit noise in excess of 95 decibels as measured in accordance with standards and specifications outlined in standard J-1169 adopted by the Society of Automotive Engineers in May 1998. A person served with a Violation Summons and Complaint charging a violation of subsection 1 or 3 must provide satisfactory evidence that the muffler or exhaust system does not emit a noise in excess of 95 decibels as measured in accordance with standards and specifications outlined in standard J-1169 adopted by the Society of Automotive Engineers in May 1998. Measurements must be made by participating certified inspection stations. This subsection applies to motor vehicles as defined in section 101, subsection 42, except that it does not apply to motorcycles.

#### TITLE 29-A CHAPTER 19 SUBCHAPTER 1

##### **§2079. Unnecessary noise**

Braking or acceleration may not be unnecessarily made so as to cause a harsh and objectionable noise.

##### **§2079-A. Excessive sound system noise**

1. Prohibition. A person may not operate a **sound** system in a vehicle on a public way at a volume that is audible at a distance of greater than 25 feet and that exceeds 85 decibels or that is greater than is reasonable with due regard to the location of the vehicle and the effect on persons in proximity to the vehicle. It is a prima facie violation of this section if the vehicle is located near buildings and the buildings or windows in the buildings are shaken or rattled by the sound of the sound system.

2. Penalty. Violation of subsection 1 is a traffic infraction for which the following forfeitures must be assessed:

A. For a first offense, \$50;

B. For a 2nd offense, \$100; and

C. For a 3rd or subsequent offense, \$150.

#### TITLE 30-A PART 2 SUBPART 4 CHAPTER 141

##### **§3011. Regulation of sport shooting ranges**

1. Definition. As used in this section, "sport shooting range" means an area designed and used for archery, skeet and trap shooting or other similar shooting sports and the shooting of rifles, shotguns and pistols.

2. Limitation. A municipal **noise** control ordinance may not require or be applied so as to require a sport shooting range to limit or eliminate shooting activities that have occurred on a regular basis at the range prior to the enactment date of the ordinance.

3. Expansion of activity. Nothing in this section limits the ability of a municipality to regulate noise produced by the expansion of activity at a sport shooting range.

#### TITLE 35-A PART 3 CHAPTER 34-A



**§3456. Siting considerations for smaller-scale wind energy development in organized areas**

1. Construction and operation requirements. A person may not construct or operate a wind energy development, other than a grid-scale wind energy development, that is located in the State's organized area without first obtaining a certification from the department that the generating facilities:

- A. Will meet the requirements of the **noise** control rules adopted by the Board of Environmental Protection pursuant to Title 38, chapter 3, subchapter 1, article 6;
- B. Will be designed and sited to avoid unreasonable adverse shadow flicker effects; and
- C. Will be constructed with setbacks adequate to protect public safety. In making a finding pursuant to this paragraph, the department shall consider the recommendation of a professional, licensed civil engineer as well as any applicable setback recommended by a manufacturer of the generating facilities.

TITLE 38 CHAPTER 3 SUBCHAPTER 1 ARTICLE 6

**§481. Findings and purpose**

The Legislature finds that the economic and social well-being of the citizens of the State of Maine depends upon the location of state, municipal, quasi-municipal, educational, charitable, commercial and industrial developments with respect to the natural environment of the State; that many developments because of their size and nature are capable of causing irreparable damage to the people and the environment on the development sites and in their surroundings; that the location of such developments is too important to be left only to the determination of the owners of such developments; and that discretion must be vested in state authority to regulate the location of developments which may substantially affect the environment and quality of life in Maine.

The Legislature further finds that certain geological formations particularly sand and gravel deposits, contain large amounts of high quality ground water. The ground water in these formations is an important public and private resource, for drinking water supplies and other industrial, commercial and agricultural uses. The ground water in these formations is particularly susceptible to injury from pollutants, and once polluted, may not recover for hundreds of years. It is the intent of the Legislature, that activities that discharge or may discharge pollutants to ground water may not be located on these formations.

The purpose of this subchapter is to provide a flexible and practical means by which the State, acting through the department, in consultation with appropriate state agencies, may exercise the police power of the State to control the location of those developments substantially affecting local environment in order to insure that such developments will be located in a manner which will have a minimal adverse impact on the natural environment within the development sites and of their surroundings and protect the health, safety and general welfare of the people.

The Legislature further finds that **noise** generated at development sites has primarily a geographically restricted and frequently transient impact that is best regulated at the municipal level pursuant to a municipality's economic development and land use plans. It is the intent of the Legislature that regulation of **noise** from developments be primarily the responsibility of local municipal governments\

#### **§484. Standards for development**

The department shall approve a development proposal whenever it finds the following.

3. No adverse effect on the natural environment. The developer has made adequate provision for fitting the development harmoniously into the existing natural environment and that the development will not adversely affect existing uses, scenic character, air quality, water quality or other natural resources in the municipality or in neighboring municipalities.

A. In making a determination under this subsection, the department may consider the effect of **noise** from a commercial or industrial development. **Noise** from a residential development approved under this article may not be regulated under this subsection, and **noise** generated between the hours of 7 a.m. and 7 p.m. or during daylight hours, whichever is longer, by construction of a development approved under this article may not be regulated under this subsection.

B. In determining whether a developer has made adequate provision for the control of **noise** generated by a commercial or industrial development, the department shall consider board rules relating to **noise** and the quantifiable **noise** standards of the municipality in which the development is located and of any municipality that may be affected by the **noise**.

C. Nothing in this subsection may be construed to prohibit a municipality from adopting **noise** regulations stricter than those adopted by the board.

#### TITLE 38 CHAPTER 3 SUBCHAPTER 1 ARTICLE 7

#### **§490-D. Performance standards**

12. **Noise.** Noise levels may not exceed applicable noise limits in rules adopted by the board.

#### TITLE 38 CHAPTER 3 SUBCHAPTER 1 ARTICLE 8-A

#### **§490-Z. Performance standards for quarries**

11. **Noise.** Noise levels may not exceed applicable noise limits in rules adopted by the board.

#### TITLE 38 CHAPTER 13 SUBCHAPTER 1-A ARTICLE 3

#### **§1310-U. Municipal ordinances**

Municipalities are prohibited from enacting stricter standards than those contained in this chapter and in the solid waste management rules adopted pursuant to this chapter governing the hydrogeological criteria for siting or designing solid waste disposal facilities or governing the engineering criteria related to waste handling and disposal areas of a solid waste disposal facility. Except as provided in section 2173, municipalities are further prohibited from enacting or applying ordinances that regulate solid waste disposal facilities owned by the office or a regional association. [1995, c. 656, Pt. A, §26 (AMD).]

Under the municipal home rule authority granted by the Constitution of Maine, Article VIII, Part Second and Title 30-A, section 3001, municipalities, except as provided in this section, may enact ordinances with respect to solid waste facilities that contain standards the municipality finds reasonable, including, without limitation, conformance with federal and state solid waste rules; fire safety; traffic safety; levels of **noise** heard outside the facility; distance from existing residential, commercial or institutional uses; ground water protection; surface water protection; erosion and sedimentation control; and compatibility of the solid

waste facility with local zoning and land use controls, provided that the standards are not more strict than those contained in this chapter and in chapter 3, subchapter I, articles 5-A and 6 and the rules adopted under these articles. Municipal ordinances must use definitions consistent with those adopted by the board.

A municipality adopting an ordinance under this section shall forward a copy of the ordinance to the commissioner within 30 days of its adoption.

## HIGHWAY TRAFFIC NOISE POLICY

### 1. BACKGROUND

The Federal Highway Administration (FHWA) issued a directive on June 12, 1995 stating that within one year from this date the Department must adopt a written statewide noise policy and have it approved by the FHWA. The policy must demonstrate substantial compliance with the Federal noise regulation, Procedures for Abatement of Highway Traffic and Construction Noise, 23 CFR 772 as well as with the reissued FHWA Policy and Guidance document dated June, 1995. This traffic and construction noise policy and procedures should be a guide for judgment in decision making on noise matters during the planning process.

A formal, written noise policy can assist in the management of the highway traffic noise analysis and abatement decision making process. It will allow for more uniform and equitable treatment of problems and issues and provide a rational basis for decision making. It will help the traffic noise analyst by serving as a reminder and a guide for management decision making and by documenting the decision making process to aid in answering questions raised by the general public and elected officials.

### 2. PURPOSE

A. The purpose of this document is to establish a policy for noise abatement measures due to Highway Traffic Noise for Type I and Type II projects on highways of the State of Maine.

### 3. POLICY

A. It is the policy of the Maine Department of Transportation (MDOT) to establish, maintain, and periodically update guidelines for a Type I and Type II Noise Abatement Program. This policy implements the requirements of Title 23, Part 772 of the U.S. Code of Federal Regulations (23 CFR 772) and the noise related requirements of the National Environmental Policy Act of 1969. It is applicable to Type I and Type II projects and provides a basis for statewide consistency and uniformity in the identification of highway traffic impacts and the implementation of reasonable and feasible noise abatement measures. The implementation of Type II projects is optional and not required by Federal Law or FHWA regulations.

### 4. RESPONSIBILITY

The Bureau of Planning is responsible for implementing the policy for a Type I and Type II Noise Abatement Program.

Division Offices have the responsibility to be certain that local officials are aware of Type II requirements.

### 5. APPLICABILITY

This policy applies to all Type I projects as defined by the regulation. A Type I project is a proposed highway project for the construction of a highway on new location or the physical

alteration of an existing highway which significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes.

A Type II project is a proposed highway project for noise abatement on an existing highway commonly called a "retrofit" noise abatement project.

C. Type II noise abatement measures will not normally be considered for those activities and land uses which come into existence after May 14, 1976, the date that the FHWA regulation was first issued. However, noise abatement measures may be considered for activities and land uses which come into existence after May 14, 1976, provided authorities in the local jurisdiction have taken action to exercise land use control over the remaining undeveloped lands adjacent to highways that will prevent further development of incompatible activities. After June 12, 1995, the date of an FHWA memorandum changing the existing policy, Type II projects may be considered only if an active local land use control program was adopted prior to the existence of the new development. In no case, however, shall Type II noise barriers be considered along lands that were developed or were under substantial construction after approval of the acquisition of the right-of-way for or construction of the existing highway per National Highway System Designation Act of 1995, P.L. 104-59, November 15, 1995.

D. If a traffic noise impact is identified, the abatement measures listed below must be considered:

Traffic management measures such as traffic control devices and signing for prohibition of certain vehicle type, time-use restrictions for certain vehicle types, modified speed limits, and exclusive lane designations.

Alteration of horizontal and vertical alignments.

Construction of noise barriers with the acquisition of property rights (either in fee or lesser interest).

Construction of noise barriers (including landscaping for aesthetic purposes) within the highway right-of-way.

Acquisition of real property or interests therein (predominantly unimproved property) to serve as a buffer zone to pre-empt development which would be adversely impacted by traffic noise. This measure may be included in Type I projects only.

Noise insulation of publicly owned school buildings which are off the highway right-of-way in connection with a Department construction project. It must be determined that it is in the best interest of the State considering, among other factors, the cost and feasibility of other alternatives for this measure to be recommended.

## 6. DEFINITIONS

**Design Year.** The future year used to estimate the probable traffic volume for which a highway is designed. A time of 20 years, from the start of construction is usually used.

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

**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.

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

**Type I Projects.** A proposed highway project for the construction of a highway on new location or the physical alteration of an existing highway which substantially changes either the horizontal or vertical alignment or increases the number of through-traffic lanes.

Type II Projects. A proposed highway project for noise abatement on an existing highway. Insertion Loss (IL). Is calculated by subtracting the sound level with the barrier from the sound level without the barrier.

Impacted Receiver. Any receiver which approaches (within 1 dBA) or exceeds the Noise Abatement Criteria (NAC) for the corresponding land use category, or any receiver that exceeds existing noise levels by 15 dBA.

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

FHWA. Federal Highway Administration.

Barrier. A solid wall, earth berm, or wall/berm combination located between the roadway and a ground-level receiver location, which breaks the line-of-sight between the receiver and the roadway noise sources. Earth berm and berm/wall combinations are preferred where space and other environmental constraints permit. The barrier is designed to reduce exterior traffic noise levels at a ground level property adjacent to the highway.

Receiver/Receptor. The precise ground level location on any property where frequent outdoor activity is found to occur.

**MAINE DEPARTMENT OF TRANSPORTATION TABLE 1 - NOISE ABATEMENT CRITERIA (NAC)**

[Hourly A - Weighted Sound Level -- decibels (dBA)]

<u>Activity Category</u>	<u>Leq(h)</u>	<u>Description of Activity Category</u>
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)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	.	.
E	Undeveloped lands 52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

**7. ANALYSIS**

A. The traffic noise analysis shall include the following steps for each alternative under detailed study.

1. Identification of existing activities.
2. Type II projects will be considered only along lands where land development or substantial construction predated the existence of any highway.
3. The granting of a building permit, filing of a plot plan, or a similar action must have occurred prior to right-of-way acquisition or construction approval of the original highway.
4. Noise abatement measures will not be approved at locations where such measures were previously determined not to be reasonable and feasible for a Type I project.
5. The locality has in effect an ordinance requiring developers or individuals to include noise abatement in their plans for residential and other noise sensitive developments adjacent to existing highways or approved highway corridors. A highway corridor is considered approved once FHWA issues a Record of Decision (ROD), Finding of No Significant Impact (FONSI), or Categorical Exclusion (CE) for a specific project.
6. The ordinance must be in effect prior to the submission of any locations for consideration and must require that all noise abatement measures constructed by developers must at a minimum provide 7 dBA Insertion Loss (IL) for each structure or activity that the abatement measures are designed to protect.
7. Noise Abatement measures located within or adjacent to the state highway right of way must comply with MDOT's design, construction and materials specifications. In addition, the design must be reviewed and approved by MDOT. The local municipality, and not the developer, will be responsible for maintaining such noise abatement measures if constructed within the state right of way.
8. The threshold of noise reduction which establishes a benefited property is five (5) decibels.

## 8. COORDINATION WITH LOCAL OFFICIALS

- A. MDOT will encourage communities and developers to practice noise compatible development, and local coordination will be accomplished through the distribution of highway project environmental documents and noise study reports.
- B. Coordination with and providing information to local officials is an important part of noise control and the prevention of future impacts. Highway traffic noise should be reduced through a program of shared responsibility. Local governments should 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 traffic noise impacts are minimized. Thus, local government officials need to know what noise levels to expect from a highway and what techniques they can use to prevent future impacts.
- C. The Department shall inform local officials within whose jurisdiction the highway project is located of the following:
  - 1) The best estimation of future highway traffic noise levels for both developed and undeveloped lands in the immediate vicinity of the project. The eligibility for Type II projects as described by Federal law and regulation and by this policy. The critical importance of a prior active local land use control program must be communicated and emphasized.

## 9. CONSTRUCTION NOISE

A. The following general steps are to be performed for all Type I and Type II projects:

- 1) Identify land uses or activities which may be affected by noise during construction of the project. The identification is to be performed during the planning studies.
- 2) Determine the measures which are needed in the plans and specifications to minimize or eliminate adverse construction noise impacts to the community. This determination will include a weighing of the benefits achieved and the overall adverse social, economic, and environmental effects and the costs of the abatement measures.
- 3) Incorporate the needed abatement measures in the plans and specifications.
- 4) The Contractor shall take measures to control the noise intensity caused by his construction operations and equipment including, but not limited to, equipment used for drilling, pile driving, blasting, excavation, and hauling.
- 5) All methods and devices employed to minimize noise shall be subject to the continuing approval of the engineer. The maximum allowable level of noise at the nearest residence or occupied building shall be 90 decibels on the "A" weighted scale (dBA). Any operation that exceeds the standard will cease until a different construction methodology is developed to allow the work to proceed within the 90 dBA limit.

## 10. EXTENUATING CIRCUMSTANCES

A. There may be extenuating circumstances where unique or unusual conditions warrant special consideration of highway traffic noise impacts and/or implementation of noise abatement measures. This could involve the following areas:

1. That are extremely noise sensitive.
2. Where severe traffic noise impacts are anticipated
3. That contain Section 4(f) resources.

B. If a municipality insists on providing a noise abatement measure deemed unnecessary by MDOT, arrangements may be made for the use of MDOT's right of way, provided that the local community is willing to assume 100% of the cost of the abatement measure, including but not limited to preliminary engineering, construction and maintenance, that MDOT's materials, design and construction specifications are met, and that MDOT's review and approval of the design for both engineering and aesthetics is obtained.

## 11. FUNDING

- A. Type I projects will be funded as part of the Highway Project.
- B. Type II projects (Retrofit) noise abatement projects are funded with Federal, State, and Local dollars. The municipality must participate in the design and construction costs of the proposed noise abatement measures depending on the roadway's functional classification.

## 12. ELIGIBILITY REQUIREMENTS

A. An area or site must meet the following criteria to be eligible for a Type I and Type II Noise Abatement Program.

- 1) Existing land use control must be exercised by local authorities with controls over undeveloped lands adjacent to highways to prevent further development of incompatible activities.
- 2) Impacted receptors must be adjacent to a highway project and reflect the land use categories of the Noise Abatement Criteria.
- 3) There must be an Impacted Receiver or a noise impact which will be defined by a minimum Leq (h) at the right-of-way line of the highway and the activity center of the abutting properties.
- 4) Noise barriers must be reasonable and feasible.
- 5) Maximum barrier height is 20 feet.
- 6) The project must be eligible for federal-aid construction costs.
- 7) Overall cost of abatement shall be equal to or less than \$20,000 per impacted receiver.
- 8) A noise barrier that is not reasonable, based on its anticipated cost, may be viable if the municipality elects to pay the amount above the allowable cost. No barrier will be funded by the Department, regardless of contribution sharing, which does not meet the "Feasibility" requirements.

### 13. THE INCORPORATION OF FEASIBLE AND REASONABLE NOISE MITIGATION MEASURES

- A. Feasibility. Feasibility deals with engineering considerations. Can a 7 dBA or greater noise reduction be achieved given the geometry and topography? Cross streets, ramps, entrances, access to property, and other noise sources will influence the amount of noise reduction that can be achieved. Safety, maintenance, drainage, snow removal, and environmental impacts are important considerations in determining whether a barrier is feasible. For initial screening purposes, an attempt should be made to attain a 10 dBA insertion loss (IL) at the first row benefited receivers, with the majority of the first row benefited receivers attaining a minimum of 7 dBA insertion loss. 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 fire/emergency vehicle access. The design of the barrier should also consider environmental impacts such as wetlands, historic properties, animal migratory paths, etc. The construction of a noise barrier is NOT FEASIBLE if at least a 7 dBA noise reduction cannot be achieved.
- B. Reasonableness. 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. Reasonableness will be based on a number of factors which include number of units protected, cost effectiveness, land use, future noise levels, and the residents' desires. Noise barriers will not be built if most affected residents do not want them.
  - 1) Type II traffic noise abatement is not considered to be reasonable under the following circumstances:
    - a. At locations with uncontrolled access to abutting property.
    - b. At locations where a minimum 7 dBA benefit in noise climate cannot be achieved with abatement for the first row receptors, at the center of the noise abatement system.
    - c. At locations where the height of a barrier must be greater than 20 feet above



the ground elevation to achieve a minimum noise reduction benefit of 7 dBA (at the center of the noise abatement system for first row receptors).

#### 14. PROCEDURES AND GUIDELINES

A. The following procedures and guidelines shall be pursued to identify noise impacted areas.

- 1) A review will be conducted of all pertinent information of the subject area including, but not limited to aerial photographs and mapping, construction and right-of-way plans, and land use records to identify sensitive receivers and obtain topographic data and elevations.
- 2) A preliminary field reconnaissance will be conducted to positively identify receptors, take field measurements as necessary, to verify data on maps, plans, and to identify any non-feasible locations.
- 3) The present and the design year traffic data shall be analyzed, including design and maximum speeds, the Annual Average Daily Traffic (AADT), the percentage of heavy trucks, medium trucks, and automobiles, and the directional distribution factor.
- 4) All computer modeling will be done using the current FHWA Highway Traffic Noise Prediction Model and Noise Barrier Cost Reduction Procedure.
- 5) For the segments where barriers are feasible, the ambient noise will be measured and the barrier heights, lengths, and costs needed to provide a substantial noise level reduction at the subject sites will be determined using the current FHWA Highway Traffic Noise Prediction Model.
- 6) Only first floor receivers will be considered in barrier design for multi-story structures.

B. After a project is determined to meet or exceed the NAC, residents in the impacted areas will be notified. The concerns and sentiments of these residents regarding the existing noise and possible abatement measures will be determined through personal contact, questionnaires, or public meetings which will be held to provide information about possible abatement measures. The views of the impacted residents will be a major consideration in reaching a decision on the reasonableness of abatement measures to be provided. Noise barriers will not be built if most affected residents do not want them.

C. The traffic noise analysis will include the following:

- 1) Traffic noise analysis will be done for developed lands and undeveloped lands for which development is planned, designed, and programmed. Development will be deemed to be planned, designed, and programmed if a noise-sensitive land use, such as a residence, school, church, hospital, library, etc., has received site approval or a building permit from the local agency with jurisdiction at the time the noise analysis is performed. The date of public knowledge shall be the date of approval of the project's environmental documents, i.e., the date of approval of the CE, FONSI or ROD. Subsequent to this date, the MDOT is responsible for analyzing changes in traffic noise impacts, when appropriate, but is no longer responsible for providing noise abatement for new development.
- 2) Determination of existing noise levels.
- 3) Prediction of traffic noise levels.
- 4) Determination of traffic noise impacts.
- 5) Examination and evaluation of alternative noise abatement measures for reducing the

noise impacts.

- 6) Consideration of benefits and cost of abatement measures versus overall social, economic, and environmental effects.
- 7) The noise analysis shall comply with the Federal Highway Administration requirements for Highway Traffic Noise analysis as described in 23 CFR 772.
- D. Economical reasonableness is assumed to be achieved if:
  - 1) The overall cost of Abatement including construction, engineering, and right-of-way is equal to or less than \$20,000 per benefited receiver.
  - 2) All benefited receivers and any other receiver with a minimum 5 dBA insertion loss will be considered in the above calculations.
- E. The last step of the analysis will include selection of the noise abatement measures to be used, if abatement is deemed feasible.
- F. After abatement is complete, follow-up measures will be taken to determine the effectiveness of the abatement, to verify the computer mode analysis, and to provide for maintenance.

**15. REASONABLENESS FACTORS**

"YES" means construction of a barrier is reasonable.

"NO" means construction of a barrier is not reasonable.

"HIGH" and "LOW" indicate differences in degree of reasonableness.

YES		NO	
HIGH	LOW	LOW	HIGH
Supports Mitigation		Neutral	Does Not Support Mitigation

High Yes = Very likely to mitigate

Low Yes = Might mitigate

mitigate

Low No = Probably won't mitigate

High No =

Definitely won't mitigate

The following reasonableness factors are to be used with the checklist. See Attachment 1.

**A. Number of Units Protected**

Units with at least a 5 dBA reduction      Reasonableness

>6	High	Yes
6-4	Low	Yes
4-2	Low	No
2-0	High	No

**B. Cost Effectiveness Index (CEI)**

A Cost Effectiveness Index (CEI) should be calculated for each barrier. The units of CEI are: \$\$/Unit

Where:

\$\$ = total barrier cost

Unit = number of receivers protected

All receivers beyond the right-of-way attaining at least a 5 dBA IL will be counted as

"protected" and included in the cost effectiveness calculation. All noise barriers shall be designed to protect ground level exterior activity. Only receivers at a ground level property will be included in a cost effectiveness calculation. For the purpose of developing the CEI, calculation shall be based on the square meter (square foot) cost of the most recently constructed noise barrier of the same material. If actual barrier costs are not available, a cost of \$215.00 per square meter (\$20.00 per square foot) will be used, realizing that actual costs will vary. Every effort should be made to keep the overall cost under \$20,000/unit.

\$\$/Unit	Reasonablene	
<\$20,000	High	Yes
\$20,000 - \$25,000	Low	Yes
\$25,000 - \$30,000	Low	No
<\$30,000	High	No

It should be noted that, if a noise barrier is not reasonable based on its anticipated cost but the municipality expresses a desire to pay the difference above the allowable costs, this option will be further explored and considered to be a viable option. No barrier will be funded by the Department, regardless of contribution sharing, which does not meet the "Feasibility" requirements.

C. Land Use

The Department will not generally consider noise abatement for areas zoned industrial or commercial. In areas that have mixed zoning and are clearly evolving from residential to commercial or industrial uses, the Department will not generally consider it reasonable to mitigate for noise impacts.

At least 50% of the properties in the area should be noncommercial for a barrier to be considered.

% of Residential	Reasonablene	
> 90	High	Yes
65-90	Low	Yes .
50-65	Low	No
< 50	High	No

D. Future Noise Levels - Greater than or Equal to 66 dBA

Future Noise Level dBA	Reasonablene	
> 75	High	Yes
66-74	Low	Yes
60-65	Low	No
< 60	High	No

E. Build vs. Existing Noise Levels

Increase In Noise Level	Reasonablene	
> 15	High	Yes
13-15	Low	Yes
10-13	Low	No
< 10	High	No

F. Residents Desires

A Low No or a High No in this case is sufficient justification in itself to eliminate an area for consideration.

Property Owners in	Reasonablene	
> 90	High	Yes
75-90	Low	Yes
50-75	Low	No
< 50	High	No

**SECTION 5. NOISE:**

**A. Developments Producing a Minor Noise Impact:**

**(4) Other Developments**

(a) Type, source and location of noise. The bulk of the noise generated on site, including: people; music; slot machines; and PA systems, will be contained inside the building. The development will develop human voice and traffic noise as people move on and about the site. The facility may have low music at the entrances similar to some restaurants. Mechanical units will be roof mounted and enclosed. An emergency generator will be located outside, but enclosed. Considering that the building and all the uses noted above will be hundreds of feet from the property boundary, no impact is anticipated.

(b) Uses, zoning and plans. The property is and has been zoned as Multi-Use. All along Route 26 is so zoned specifically to encourage commercial activity there.

(c) Protected locations. There are no nearby protected areas.

(d) Minor nature of impact. The applicant states that the noise impact will be minor and consistent with applicable Oxford ordinances. If some future outdoor event is planned that might cause more noise than stated, the applicant understands that this necessitates a modification to the permit.

(e). Demonstration. The project is similar in use and scope to a department store development. The applicant submits that no demonstration is necessary.

## REVIEW STANDARDS

This section presents review standards which should be included in the site plan review process of a zoning ordinance or in a standalone site plan review ordinance. Several alternatives having varying amounts of detail are presented. The standards should be applicable to new development, expansions, and changes in use. Standards are presented in the left column, and a discussion of the standard appears in the right column.

Three (3) alternatives are presented: a basic standard, several additions to the basic standard which consider areas that may be unusually quiet and areas which currently exceed the standard, and a more detailed standard that varies with expected uses or zones.

The more detailed alternative is best used in towns with zoning so that there is no doubt about the type of future abutting land

uses. It is most relevant to towns which have distinct patterns of growth and which expect considerable industrial development for which noise may be a factor. The discussion provides additional guidance on use.

### I. BASIC STANDARD

This is a relatively simple sound level standard which should be easily administered. It is most suitable for small communities with few planning and code enforcement resources. It may also be suitable for many rural communities where there are few noise sensitive uses such as schools, and it is unlikely that significant noise sources would locate near them. In these communities, it is anticipated that there would be sufficient open space to buffer significant noise on the source's land so that they would not create a

A. The proposed development shall not increase noise levels to the extent that abutting or nearby properties are adversely affected. In order to comply with this, the development must meet the following requirements.

1. The maximum permissible sound level of any continuous, regular, frequent, or intermittent source of sound produced by any activity shall be limited according to the time of day and land use which abuts it as listed below

<b>Abutting Use</b>	<b>Sound Level Limits dBA</b>	
	<i>7 a.m. – 7 p.m.</i>	<i>7 p.m. – 7 a.m.</i>
<b>Residential</b>	55	45
<b>Commercial</b>	65	55
<b>Industrial</b>	70	60
<b>Institutional</b>	55	45

2. Where the abutting property is undeveloped, the sound level shall be equal to or less than the most restrictive other abutting use. Where there are no uses on abutting properties, the sound level at the property line shall be equal to or less than the least stringent use allowed by zoning.
3. Sound levels shall be measured at least four (4) feet above the ground at the property line of the development. Sound levels shall be measured by a meter set on the A-weighted response scale, fast response. The meter shall meet the latest version of American National Standards Institute (ANSI S1.4.) “American Standard Specification for General Purpose Sound Level Meters” and shall have been calibrated at a recognized laboratory within the past year.
4. The following uses and activities shall be exempt from the sound pressure level regulations.
  - a. Noises created by construction and temporary maintenance activities between 6:30 a.m. and 8:00 p.m.
  - b. The noises of safety signals, warning devices, and emergency pressure relief valves and other emergency activities.
  - c. Traffic noise on public roads.
  - d. Resource uses in rural areas.

## II. POSSIBLE ADDITIONS TO BASIC STANDARD

Either one or all of these additions can be included in the Basic Standard (I). (Numbering is consecutive to that standard.)

Additional standard #5 provides additional protection to areas of the community where the ambient sound level is Considerably below the allowed level. It is suitable for rural communities similar to the first alternative, but which may have some very quiet areas which the town wishes to preserve.

Standard #6 provides for areas which currently have noise levels above the allowable standard. The second is suitable for communities which have a noisy area(s) which the town would like to keep from becoming worse and would like to bring more in line with the standards as existing sources cease.

Standard #7 provides for sound measurement to determine compliance in the case where no pre-development ambient sound level measurements were taken.

5. When a proposed development is to be located in an area where the daytime pre-development ambient hourly sound level (Leq 60) is equal to or less than 45 dBA and/or the nighttime pre-development ambient hourly sound level is equal to or less than 35 dBA, the hourly sound level resulting from the development shall not cause the ambient hourly sound levels at the property lines of the development to be 5 dBA more than the ambient hourly sound level prior to development.

6. If the daytime and/or nighttime pre-development ambient sound level at property line of the development site exceeds the daytime and/or nighttime limits by at least 5 dBA, then the daytime and/or nighttime limits shall be 5 dBA less than the measured daytime and/or nighttime predevelopment ambient hourly sound level.

7. In the absence of a measurement of “predevelopment ambient” sound level, enforcement may be based on the post-development background

## III. MORE DETAILED STANDARD – SUITABLE FOR USE WITH A ZONING ORDINANCE

This is an alternative standard which is somewhat more complex. It parallels DEP’s existing Site Location of Development rules but has been simplified. The sound levels and the times may be

changed to reflect community needs. It accounts for future land use by referencing zoning and is probably best used as part of a Site Plan Review (or Conditional Use) procedure within a Zoning Ordinance. It is most suitable, with the levels used here, for a more developed community than the first alternative. Note that sound levels are generally 5 dB higher. It may be modified for use with a Site Plan Review Ordinance or for a more rural community.

**A.** The hourly sound levels at the property line of the development and resulting from the development shall not exceed the following limits:

1. Any location for which the zoning is not predominantly commercial or industrial:  
60 dBA between 7:00 a.m. and 7:00 p.m.  
50 dBA between 7:00 p.m. and 7:00 a.m.
2. At any location for which the zoning is predominantly commercial or industrial:  
70 dBA between 7:00 a.m. and 7:00 p.m.  
60 dBA between 7:00 p.m. and 7:00 a.m.
3. When a proposed development is to be located in an area where the daytime pre-development ambient hourly sound level is equal to or less than 45 dBA and/or the nighttime pre-development ambient hourly sound level is equal to or less than 35 dBA, the hourly sound levels resulting from the development shall not exceed the following limits when the zoning of the abutting use is not predominantly commercial or industrial.  
55 dBA between 7:00 a.m. and 7:00 p.m.  
45 dBA between 7:00 p.m. and 7:00 a.m.
4. If the daytime and/or nighttime pre-development ambient sound environment exceeds the daytime and/or nighttime limits in subsection 2(a) or 2(b) by at least 5 dBA, then the daytime and/or nighttime limits shall be 5 dBA less than the measured daytime and/or nighttime pre-development ambient hourly sound level at the location of the measurement for the Corresponding time period.
5. When development produces tonal sounds or short duration repetitive sounds:  
Five (5) dBA shall be added to the observed levels of these sounds for the purposes of determining compliance with the sound level limits herein established.
6. The maximum sound level of the short duration repetitive sounds shall not exceed the following limits:
  - a. At any location for which the zoning is not predominantly commercial, transportation, or industrial: 65 dBA between 7:00 a.m. and 7:00 p.m. and 55 dBA between 7:00 p.m. and 7:00 a.m.
  - b. At any location for which the zoning is predominantly commercial, transportation, or industrial: 75 dBA between 7:00 a.m. and 7:00 p.m., and 65 dBA between 7:00 p.m. and 7:00 a.m.
7. Sound from construction activities between 6:30 a.m. and 8:00 p.m. shall not exceed the limits established in the table on page 11 at the property 8. All equipment used in construction on development sites shall comply with applicable federal Noise regulations and shall include environmental noise control devices in proper working condition as originally provided with the equipment by its manufacturer.
8. All equipment used in construction on development sites shall comply with applicable federal noise regulations and shall include environmental noise control devices in proper working condition as originally provided with the equipment by its manufacturer.

9. Noise shall be measured by a meter set on the A-weighted response scale, fast response. The meter shall meet the latest version of American National Standards Institute (ANSI S1.4.) “American Standard Specification for General Purpose Sound Level Meters.”

10. In the absence of a measurement of “predevelopment ambient” sound level, enforcement may be based on the Post-development background level.

11. Sound associated with the following shall be exempt from regulation by the Board:

<b>Construction Activity Sound Limits (7:00 a.m. to 7:00 p.m.)</b>	
<b>Duration of Activity</b>	<b>Hourly Sound Level Limit</b>
<b>12 hours</b>	87 dBA
<b>8 hours</b>	90 dBA
<b>6 hours</b>	92 dBA
<b>4 hours</b>	95 dBA
<b>3 hours</b>	97 dBA
<b>2 hours</b>	100 dBA
<b>1 hour or less</b>	105 dBA

The noises of safety signals, warning devices and emergency pressure relief valves and other emergency activities.

- Traffic noise on public roads.
- Railroad equipment which is subject to federal noise regulations.
- Aircraft operations at public airports or which are subject to federal noise regulations.
- Bells, chimes, and carillons.
- Occasional sporting, cultural, religious, or public events.
- Farming and forest management, harvesting, and transportation activities.

#### **DEFINITIONS**

**Ambient Sound.** At a specified time, the all-encompassing sound associated with a given environment, being usually a composite of sounds from many sources at many directions, near and far, including the specific development of interest.

**Background Sound:** The all-encompassing sound associated with a given environment, being a composite of sounds from many sources at many directions, near and far, prior to the construction of the proposed development. Also referred to as the **pre-development ambient sound**.



**Equivalent Sound Level:** The level of the mean-square A-weighted sound pressure during a stated time period, or equivalently the level of the sound exposure during a stated time period divided by the duration of the period.

**Hourly Sound Level:** The equivalent sound level for a one- (1) hour period.

**Maximum Sound:** Largest A-weighted and fast exponential-time-weighted sound during a specified time interval. Unit of measure is the Pascal (Pa).

**Pre-Development Ambient:** The ambient sound at a specified location in the vicinity of a development site prior to the construction and operation of the proposed development or expansion.

**Short Duration Repetitive Sounds:** A sequence of repetitive sounds which occur more than once within an hour, each clearly discernible as an event and causing an increase in the sound level of at least 6 dBA on the fast meter response above the sound level observed immediately before and after the event, each typically less than ten (10) seconds in duration, and which are inherent to the process or operation of the development and are foreseeable. They include sounds which repeat on a regular basis and sounds which have a scattered time of occurrence.

**Sound Level:** Ten (10) times the common logarithm of the square of the ratio of the frequency-weighted and time-exponentially averaged sound pressure to the reference sound of 20 micropascals. For the purpose of this regulation, sound level measurements are obtained using the A-weighted frequency response and fast dynamic response of the measuring system, unless otherwise noted.

**Sound Pressure:** Root-mean-square of the instantaneous sound pressure in a stated frequency band and during a specified time interval. Unit of measure is the Pascal (Pa).

**Sound Pressure Level:** Ten (10) times the common logarithm of the square of the ratio of the sound pressure to the reference sound pressure of 20 micropascals.

**Tonal Sound:** For the purpose of this regulation, a tonal sound exists if the one-third (1/3) octave band sound pressure level in the band containing the tonal sound exceeds the arithmetic average of the sound pressure levels of the two (2) contiguous one-third (1/3) octave bands by 5 dB for center frequencies at or between 500 Hz and 10,000 Hz, by 8 dB for center frequencies at or between 160 and 400 Hz, and by 15 dB for center frequencies at or between 25 Hz. and 125 Hz.