

**Report to Town Meeting on the Proposed  
Noise By-Law Included in the Town  
Meeting Warrant**



**Prepared by the Noise By-Law Committee  
Gladys Unger, Chair  
April 7, 2002**

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## **1. Introduction**

The members of the Noise By-Law Review Committee are Gladys Unger (chair), Robert Berens, Guy Carbone, Charles Counselman, Charles Dietrich, Robert Gallant, and Richard Pew. These Committee members have various backgrounds in acoustics, physics, engineering, ergonomics, and law.

The Noise By-Law Committee was established by the Selectmen "to review our current Noise By-Law and to make recommendations as to any changes needed to better protect citizens or to make it more enforceable." Specific charge was given to the Committee to review the regulation of construction noise under the existing By-Law, and to recommend an alternative, "consistent with the approaches that provide the best protection for residents in other communities."

The Committee has systematically examined and revised the existing By-Law. We have taken into account:

- The types and levels of noise one encounters in the Town of Belmont, and the types of measurements available to monitor that noise;
- Ordinances and by-laws from surrounding communities and model noise ordinances;
- The type of measuring equipment owned by the Town of Belmont.
- The need to keep measurements simple;
- Input from citizens who attended both our public meetings and our regular Committee meetings.

## **2. Significant or new items in the proposed By-Law when compared o the Existing By-Law**

Proposed changes to the existing By-Law are best understood by comparing the proposed By-Law to the existing By-Law, section by section. The section numbers used below are from the proposed By-Law. The proposed By-Law is published in the Warrant. A copy of the existing By-Law is attached to this report starting at page 5.

### Section 23.2 Definitions

In the proposed By-Law, the acoustical definitions have been updated to the current American National Standards Institute (ANSI) standards. Construction activities have been defined so as to be clearly differentiated from maintenance activities. Impact devices have also been defined. The definition of residential

properties was updated for consistency with the existing Zoning By-Law. Authorized personnel from the Office of Community Development have been added as enforcing persons for construction noise enforcement.

### Section 23.3 Designated Noise Zones

The two residential Noise Zones of the existing By-Law have been combined into one residential Noise Zone in the proposed By-Law.

### Section 23.4 Exterior Sound Level Standards

Under the existing by-law, one residential noise zone has a daytime "Allowable Exterior Noise Level" of 50 dBA; the other has a 55 dBA baseline standard. Similarly, nighttime standards for one is now 45 dBA, and 50 dBA for the other. The existing by-law complicates things further by allowing noise levels higher than the "Allowable Exterior Noise Level" for certain limited durations: in fact, one can make noise up to 20 dB higher than the "Allowable" limit for a short period (70-75 dBA daytimes), and can make noise 5 dB higher than "Allowable" for up to a half-hour out of every hour (55-60 dBA daytimes). Needless to say, this creates considerable confusion on the part of the enforcing officer -- and the public, and has contributed to a general reluctance to strictly enforce the existing by-law.

In the proposed By-Law, all residential areas are covered with a 55 dBA daytime Maximum Allowable Exterior Sound Level and a 45 dBA night-time level. During the day if one makes noise that exceeds 55 dBA even for a fraction of a minute, there is a violation. The proposed Noise By-Law is in fact more restrictive in allowable noise level in all residential areas. Levels in the range 55 to 75 dBA are never allowed, even for short durations, as they are in the existing By-Law.

### Section 23.5 Construction Noise Standards

In the existing By-Law, construction noise is treated as an exception to the Exterior Sound Level Standards. In the proposed By-Law, we have rearranged the paragraphs to bring the Construction Noise Standards to the same level of importance as the Exterior Sound Level Standards.

The existing By-Law requires a complicated measurement for construction noise that can take as long as one hour. In the proposed By-Law, sound-level standards are established for general construction noise and, separately, for noise due to impact machinery, such as jackhammers or pile drivers. In the case of general construction noise, a 10-minute measurement duration is required during which the sound level is averaged, a capability incorporated in the Police Department's sound level meter. In the case of noise due to impact machinery,

the limits are stated as maximum levels with no measurement duration requirement.

The maximum allowable sound level standards for construction noise in the proposed By-Law have been determined as being applicable to new construction equipment provided with operating mufflers. These levels have been validated by measurements on certain construction equipment as reported in Paragraph 3 of this report.

The Committee proposes that construction noise standards be enforced predominantly by authorized personnel from the Office of Community Development.

### 23.6 Maintenance Noise Standards

The existing By-Law puts no limit on noise due to maintenance activities. There were requests from a number of citizen's at the Committee's public meeting to limit noise from leaf blowers. After consideration of those requests, the Committee added Section 23.6 which limits maintenance noise, including that from leaf blowers, to the same level used in Waltham for leaf blowers.

### Section 23.7 Special Provisions

This section in the proposed By-Law is largely the same as the existing By-Law. However, construction noise was moved out of the Special Provisions section of the existing By-Law and put into its own separate section, 23.5, as discussed above. Maintenance noise was also moved to its own separate section, 23.6.

In the proposed By-Law, the exception for noise due to emergency work and vehicles is more clearly defined.

The exception that allows snow removal at anytime is new in the proposed By-Law. This allows private or contractor sidewalk and driveway clearing and Town clearing of roadways at anytime, night or day.

### Section 23.9 Penalties for Violations

Penalty for a violation has been changed to non-criminal disposition in the proposed By-Law and escalating fine rates for successive violations, different for construction noise than all other noise, is provided. Additionally, for violations of the construction noise section, enforcement can include suspension of construction activity.

As we noted in the discussion of definitions above, authorized personnel from the Office of Community Development have been added as enforcing persons for construction noise.

### **3. Measurements conducted**

Exterior noise and construction noise were measured to validate the levels set in the proposed By-Law. The measurements included day and night exterior sound levels sampled in various areas in Town and construction noise at sites involving a pile driver, a hoeram, an excavator digging a trench for a water line, jackhammers at two sites and two excavators digging a foundation in Cambridge.

### **4. Town employees whose views were solicited by the Committee**

Views were solicited in meetings with Lt. Hoerr of the Police Department, Tom Gatzunis of the Office of Community Development and Donna Moultrup of the Health Department. The Police Chief offered his views in a letter to the Committee. A discussion with the Fire Chief was held to clarify some issues. Town Counsel was asked his opinion on a few specific items.

### **5. Training and Equipment**

Currently, only one Police Officer is experienced in enforcing the existing Noise By-Law. Training for enforcement of the new By-Law should be encouraged for additional members of the Police Department and some members of the Office of Community Development. This may require Town-paid training session(s) by an acoustic consulting firm and/or members of this Committee. Also, a second sound level meter for OCD should be purchased to supplement that owned by the Police Department. The Committee will provide cost estimates for such equipment and training to the Selectmen. The committee expects that the total cost for training by the consulting firm and for additional equipment will not exceed \$5000.

### **6. Noise from Barking Dogs**

While the Committee is very aware that barking dogs are a real nuisance we felt that noise from barking dogs was covered under Section 20.10.5 of the General By-Laws, "no owner shall keep a barking dog which disturbs the quiet of any neighborhood".

## EXISTING NOISE BY-LAW

### ARTICLE 23

#### Belmont Noise By-Law

##### 23.1. Declaration of Policy.

In order to control unnecessary, excessive and annoying noise in the Town of Belmont, it is hereby declared to be the policy of the Town to prohibit such noise generated from or by all sources as specified in this By-Law.

##### 23.2. Definitions.

The following words, phrases and terms as used in this By-Law shall have the meanings as indicated below:

(a) AMBIENT NOISE LEVEL shall mean the all encompassing noise level associated with a given environment, being a composite of sounds from all sources, excluding the alleged offensive noise, at the location and approximate time at which a comparison with the alleged offensive noise is to be made.

(b) "A" WEIGHTED SOUND LEVEL shall mean the total sound level in decibels of all sound as measured with a sound level meter with a reference pressure of 20 micro-pascals using the "A" weighted network (scale) at slow response. The unit of measurement shall be defined as dB(A) or dBA.

(c) BUSINESS PROPERTY shall mean a parcel of real property which under the Belmont Zoning By-Law is in whole or in part in a Local Business I, Local Business II, Local Business III, General Business or Parking Lot District.

(d) CUMULATIVE PERIOD shall mean an additive period of time composed of individual time segments which may be continuous or interrupted.

(e) DECIBEL (dB) shall mean a unit which denotes the ratio between two (2) quantities which are proportional to power; the number of decibels corresponding to the ratio of two (2) amounts of power is ten (10) times the logarithm to the base ten (10) of this ratio.

(f) DWELLING UNIT shall mean a group of rooms designated or occupied as a habitable resident for one family with facilities intended to be used for living, sleeping, cooking, eating and bathroom purposes.

(g) EMERGENCY MACHINERY, VEHICLE, WORK OR ALARM shall mean any machinery, vehicle, work or alarm used, employed, performed or operated in

an effort to protect, provide or restore safe conditions in the community or for the citizenry, or work by private or public utilities when restoring utility service.

(h) INTRUDING NOISE LEVEL shall mean the total sound level in decibels, created, caused, maintained or originating from an alleged offensive source at a specified location while the alleged offensive source is in operation.

(i) MAJOR ROADWAY shall mean Route 2, Belmont Street, Blanchard Road, Bright Road, Brighton Street (from Blanchard Road to Pleasant Street), Common Street, Concord Avenue (from the Belmont-Cambridge line to Pleasant Street), Cross Street, Lake Street, Leonard Street, Lexington Street, Mill Street, Pleasant Street, Trapelo Road and Winter Street.

(j) MOBILE NOISE SOURCE shall mean any noise source other than a fixed noise source.

(k) PERSON shall mean a person, firm, association, co-partnership, joint venture, corporation or any entity, public or private in nature.

(l) RESIDENTIAL PROPERTY shall mean a parcel of real property which under the Belmont Zoning By-Law is in whole or in part in a Single Residence A, Single Residence B, Single Residence C, General Residence or Apartment House District.

(m) SOUND LEVEL METER shall mean an instrument meeting American National Standard Institute's Standard SI-4-1971 or most recent revision thereof for Type 1 or Type 2 sound level meters or an instrument and the associated recording and analyzing equipment which will provide equivalent data.

### **23.3. Decibel Measurement Criteria.**

Any decibel measurement made pursuant to the provisions of this By-Law shall be based on a reference sound pressure of 20 micropascals as measured with a sound level meter using the "A" weighted network (scale) at slow response.

### **23.4. Designated Noise Zones.**

The properties hereinafter described are hereby assigned to the following noise zones:

NOISE ZONE I: All residential properties located at a distance more than 200 feet from a major roadway or from a business property.

NOISE ZONE II: All residential properties located at a distance less than 200 feet from a major roadway or from a business property.

NOISE ZONE III: All business properties.

**23.5. Exterior Noise Standards.**

(a) The following noise standards, unless otherwise specifically indicated shall apply to all property within a designated noise zone:

<b>Noise Zone</b>	<b>Type of Land Use</b>	<b>Time Interval</b>	<b>Allowable Exterior Noise Level</b>
I	Residential	9:00 pm to 7:00 am 7:00 am to 9:00 pm	45 dB(A) 50 dB(A)
II	Residential	9:00 pm to 7:00 am 7:00 am to 9:00 pm	50 dB(A) 55 dB(A)
III	Business	10:00 pm to 7:00 am 7:00 am to 10:00 pm	60 dB(A) 65 dB(A)

Each of the noise limits specified above shall be reduced by 5 dB for noises consisting in whole or in part of speech or music, provided however, that if the ambient noise level exceeds the resulting standard, the ambient shall be the standard.

(b) It shall be unlawful for any person at any location within the area of the Town to create any loud noise, or to allow the creation of any noise, on property owned, leased, occupied or otherwise controlled by such person, which causes the noise level when measured on any other property to exceed:

- (1) The noise standard for a cumulative period of more than thirty minutes in any hour; or
- (2) The noise standard plus 5 dB for a cumulative period of more than fifteen minutes in any hour; or
- (3) The noise standard plus 10 dB for a cumulative period of more than five minutes in any hour; or
- (4) The noise standard plus 15 dB for a cumulative period of more than one minute in any hour; or
- (5) The noise standard plus 20 dB for any period of time.

(c) If the measurement location is on a boundary between two different noise zones, the lower noise level standard applicable to the noise zone shall apply.

(d) If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be determined, the measured noise level obtained while the source is in operation shall be compared directly to the allowable noise level standards as specified respective to the measurement location's designated land use and for the time of day the noise level is measured.

### **23.6. Special Provisions.**

The following activities shall be exempted from the provisions of this By-Law:

(a) Activities conducted on public parks, public playgrounds and public or private school grounds so long as authorized by the appropriate jurisdiction including but not limited to school athletic and school entertainment events.

(b) Occasional outdoor gatherings, public dances, shows, and sporting and entertainment events provided said events are conducted pursuant to a permit or license issued by the appropriate jurisdiction relative to the staging of said events.

(c) Any mechanical device, apparatus or equipment used, related to or connected with emergency machinery, vehicle, work or warning alarm or bell provided the sound of any bell or alarm on any building or motor vehicle shall terminate its operation within 30 minutes in any hour of its being activated.

(d) Noise sources associated with construction, repair, remodeling or grading of any real property or during authorized seismic surveys, provided said activities do not take place between the hours of 8:00 p.m. and 7:00 a.m. on week days, including Saturday, or at any time on Sunday or a legal holiday, and provided the noise level created by such activities do not exceed the noise standard of 65 dB(A) plus the limits specified in Section 23.5(b) as measured on residential property and any vibration created does not endanger the public health, welfare and safety.

(e) Noise sources associated with the maintenance of real property provided said activities take place between the hours of 7:00 a.m. and 8:00 p.m. on any day except Sunday, or between the hours of 9:00 a.m. and 8:00 p.m. on Sunday.

(f) Any activity to the extent regulation thereof has been preempted by State or Federal Law.

**23.7. Schools, Health Care Institutions, Houses of Worship, Libraries—  
Special Provisions.**

It shall be unlawful for any person to create any noise at any location in the Town which causes the noise level at any school, hospital or similar health care institution, house of worship or library while the same is in use, to exceed the noise standards specified in Section 23.5 prescribed for the assigned noise zone in which the school, hospital, church or library is located, or which the noise level unreasonably disturbs or annoys patients in a hospital, convalescent home or other similar health care institutions, provided conspicuous signs are displayed in three separate locations within one-tenth (1/10) mile of the institution or facility indicating a quiet zone.

**23.8. Air Conditioning and Refrigeration—Special Provisions.**

Until the January 1 next following the date on which this By-Law was enacted, the noise standards enumerated in Sections 23.5 and 23.6 shall be increased 5 dB(A) where the alleged intruding noise source is an air-conditioning or refrigeration system or associated equipment which was installed prior to the effective date of the By-Law.

**23.9. Noise Level Measurement.**

The location selected for measuring exterior noise levels shall be at any point on an affected property. The measurements shall be made at a point at least four (4) feet from the wall, ceiling or floor nearest the noise source with windows in an open position depending on the normal seasonal ventilation requirements.

**23.10. Prima Facie Violation.**

Any noise exceeding the noise level standards for a designated noise zone as specified in Section 23.5 shall be deemed to be prima facie evidence of a violation of the provisions of this By-Law.

**23.11. Violations.**

Any person violating any provision of this By-Law shall be subject to a fine not exceeding \$200.00 for each offense. Each day or part thereof if any violation continues shall constitute a separate offense.

**23.12. Manner of Enforcement.**

Violations of this Article shall be prosecuted in the same manner as other violations of the Town By-Laws provided, however, that in the event of an initial violation of the provision of this Article, a written notice shall be given the

alleged violator which specifies the time by which the condition shall be corrected. No complaint or further action shall be taken in the event the cause of the violation has been removed, the condition abated or fully corrected within the time period specified in the written notice.

In the event the alleged violator cannot be located in order to serve the notice of intention to prosecute, the notice as required herein shall be deemed to be given upon mailing such notice by registered or certified mail to the alleged violator at his last known address or at the place where the violation occurred in which event the specified time period for abating the violation shall commence at the date of the day following the mailing of such notice. Subsequent violations of the same offense shall result in the immediate filing of a complaint.

**23.13. Severability.**

The invalidity of any section or provision of this By-Law shall not invalidate any other section or provision hereof.