

# Chapter 21

## Noise Regulation



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### 21.01 Purpose.

In order to protect the health, safety, welfare and convenience of the public, it is the policy of the Village to prohibit sound levels that substantially or unduly interfere with the use of any land, building, or other place within the Village, or which unreasonably disturb the peace and quiet of any such land, building, or other place.

### 21.02 Definitions.

The following words, phrases and terms as used in this chapter shall have the following meanings:

- (1) "Ambient sound level" means the composite of normal or existing sound from all sources measured at a given location. The ambient sound level shall be measured with a sound level meter, using slow response and A-weighting. The ambient sound level shall be determined with the intruding sound source(s) discontinued or stopped.
- (2) "A-Weighting" means a frequency response adjustment of a sound level meter with an American National Standards Institute (ANSI) defined A-weighting filter. The A-weighting filter approximates the human ear's response to various frequencies. Measurements made with this weighting are designated dBA.
- (3) "C-Weighting" means a frequency response adjustment of a sound level meter with an ANSI defined C-weighting filter. The C-weighting filter analyses the signal with approximately equal weight to all frequencies. Measurements made with this weighting are designated dBC.
- (4) "Decibel" or "dB" is a measure of the relative loudness of sounds that approximates the response of the human ear to sound. Decibel is defined by ANSI to mean a unit of measure that is ten

(10) times the logarithm of the ratio of a sound intensity to a reference intensity. The reference intensity is twenty (20) micropascal, which corresponds to zero (0) decibel (dB). One (1) dB is approximately the smallest difference of loudness ordinarily detectable by the human ear. Three (3) dB corresponds to a doubling of the sound energy. The decibel scale for human hearing ranges from zero dB (the threshold of audibility) to one hundred thirty dB (the threshold of pain). As examples: thirty (30) dB to forty (40) dB is the range typical of a whisper or a quiet library; forty five (45) dB to sixty five (65) dB is the range for most face-to-face conversations; seventy (70) to ninety (90) dB is typical of most home vacuum cleaners at close range; and ninety (90) to one hundred and ten (110) dB is typical of many rock bands.

- (5) "Leq" or "Equivalent Continuous Sound Level", as defined by ANSI, means the sound level corresponding to a steady state sound level containing the same total energy as the actual time-varying sound level over a one-hour period. It may be A-weighted (LAeq) or C-weighted (LCeq).
- (6) "Impulsive noise" means a noise that of a brief and abrupt character. Chopping wood and pile driving are examples of impulsive noise.
- (7) "Intermittent noise" means noise with one or more quiet periods interspersed within an hour period.
- (8) "Intruding sound level" means the sound level created, caused, maintained or originating from an alleged offensive source, measured in decibels, at a specified location while the alleged offensive source is in operation.
- (9) "One-Third Octave Band", as defined by ANSI, means the sound level contained within a frequency band that is one third of an octave wide. Each one-third octave band center frequency increases by the cube root of 2 (approximately 1.26). Examples of one-third octave band center frequencies include 50, 63, 80, 100, 125, 160, etc. hertz. Describing sound levels in one-third octave bands provides information as to the pitch or tone of the noise (low frequency versus high frequency), in addition to the intensity of the noise.
- (10) "Property line" means a vertical plane including the property line that determines the property boundaries in space.
- (11) "Simple tone noise" means any sound that is distinctly audible as a single pitch (frequency) or set of pitches including sound consisting of speech and music or sound predominately in a single one third (1/3) octave band.
- (12) "Sound level" means the sound pressure level in decibels as measured with a sound level meter using the A-weighting filter unless C-weighting is specified. The unit of measurement is referred to herein as dBA or dBC, respectively.
- (13) "Sound level meter" means an instrument meeting ANSI Standard S1.4-1983 as amended for Type 1 or Type 2 sound level meters or an instrument and the associated recording and analyzing equipment that will provide equivalent data.

### 21.03 Sound Measurement Methodology.

- (1) Compliance with this chapter shall be determined using methodology described in this section. Sound measurement shall be made with a sound level meter that meets Type 1 or Type 2 specifications under ANSI standard S1.4-1983 as amended using the A-weighting and C-weighting filter. All Leq measurements will be made for at least one minute. Both LAeq and LCEq will be recorded.
- (2) Calibration of the measurement equipment utilizing an acoustical calibrator meeting ANSI standards shall be performed immediately prior to recording any sound data.
- (3) Sound levels may be measured at the property line of the source property or at any location on the affected land, building, or other place. The location and height of the sound measurements shall be at the discretion of the Village Administrator or a person acting under his or her supervision. Ideally, external measurements will be made away from facades and obstacles, downwind of the source, in dry conditions with a wind speed of less than ten (10) mph, and with the microphone at least three (3) feet above ground level.
- (4) It is unlawful for any person to refuse to cooperate with or to obstruct any Village agent, officer or employee in determining the ambient sound level. Such cooperation shall include, but is not limited to, the shutting off or quieting of any sound source so that an ambient sound level can be measured whenever it is reasonable for the source to be silenced.

### 21.04 Sound Limits.

It is unlawful for any person at any location to create any sound, or to allow the creation of any sound, on property owned, leased, occupied or otherwise controlled by such person, which causes the exterior sound level when measured at the property line of the source property or at any location on an affected land, building, or other place to exceed the sound level standards as set forth in Table 1, below.

Table 1 - SOUND LEVEL STANDARDS

Sound Level Descriptor	Normal Hours	Quiet Hours
LAeq, A-weighting (dBA)	55	45
LCEq, C-weighting (dBC)	65	55

- (1) If the intruding sound source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient sound level can be measured, the sound level measured while the source is in operation shall be compared directly to the sound level standards of Table 1.
- (2) In the event the measured ambient sound level exceeds the applicable sound level standard identified in Table 1, the permitted sound level shall be the ambient sound level plus three (3) dBA.

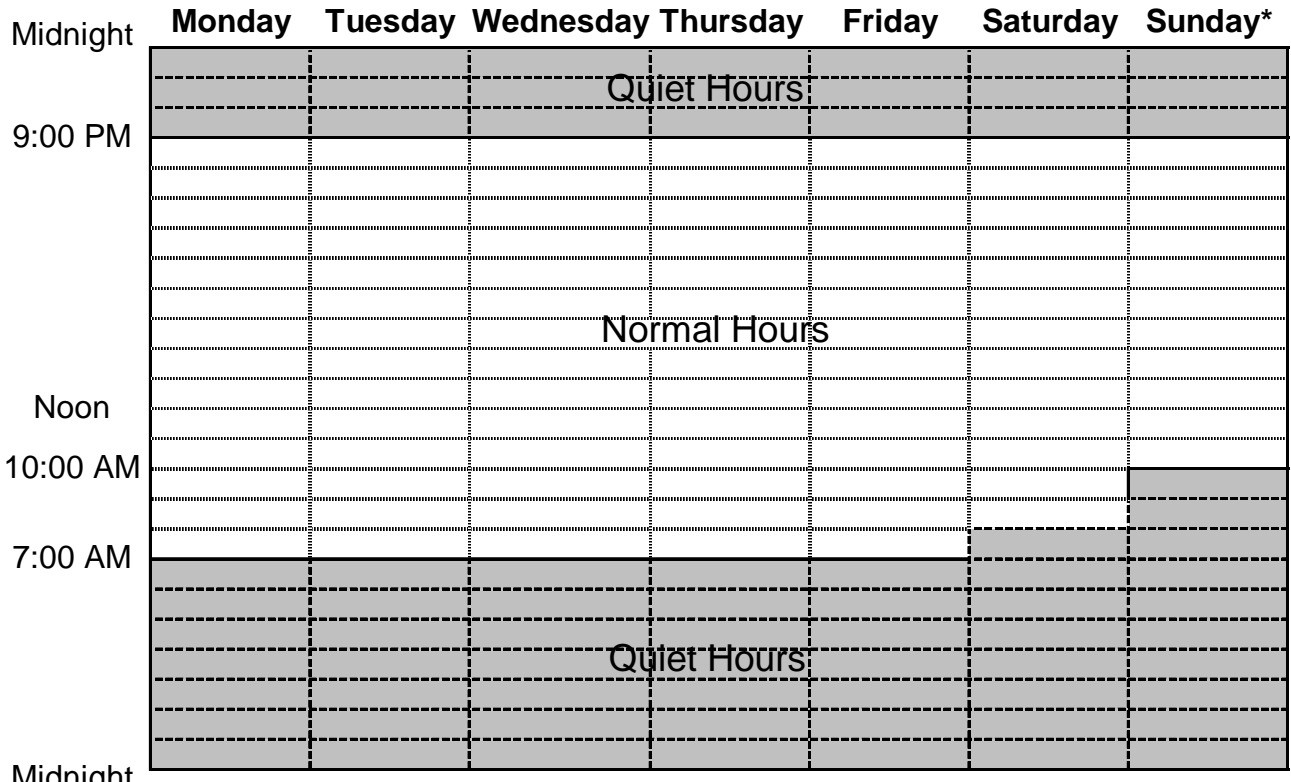
- (3) For simple tone noises or if the noise is of an intermittent or impulsive character, the permitted sound level shall be the LAeq and LCEq sound level standards specified in Table 1 reduced by five (5) dBA or dBC. However, when the ambient sound level can be determined, the permitted sound level shall be no lower than the ambient sound level plus three (3) dBA or dBC.
- (4) One-third (1/3) octave band sound level measurements may be used if the Village Administrator determines that the LAeq and LCEq measurements inadequately characterize the sound. If this approach is used, a five (5) dB increase in any one-third (1/3) octave band above an adjacent band shall be considered a violation of this chapter.

#### **21.05 Sounds that Constitute a Nuisance.**

- (1) Notwithstanding any other provisions of this chapter, and in addition thereto, it is unlawful for any person to make or cause any plainly audible sound to be made, or permit any plainly audible sound to be continued, which substantially or unduly interferes with the use of any land, building, or place within the Village, or which unreasonably disturbs the peace and quiet of any such land, building, or other place.
- (2) In determining whether enforcement is appropriate, the Village Administrator or a person acting under his or her supervision may consider the following:
  - (a) The volume and intensity of the sound;
  - (b) The vibration intensity of the sound;
  - (c) Whether the nature of the sound is usual or unusual;
  - (d) Whether the origin of the sound is natural or unnatural;
  - (e) The volume and intensity of the ambient sound, if any;
  - (f) The proximity of the sound to residential sleeping facilities;
  - (g) The nature and zoning of the area within which the sound emanates;
  - (h) The density of the inhabitation of the area within which the sound emanates;
  - (i) The time of the day or night the sound occurs;
  - (j) The duration of the sound; and
  - (k) Whether the sound is recurrent, intermittent, or constant.

#### **21.06 Noise Curfew.**

“Normal Hours” are seven (7:00) AM to nine (9:00) PM Monday through Friday, and eight (8:00) AM to nine (9:00) PM Saturday and ten (10:00) AM to nine (9:00) PM Sunday and all Village recognized holidays. All other times are “Quiet Hours”. The chart below shows the time periods graphically.



\* Village recognized holidays same as Sunday

**21.07 Additional Prohibitions.**

No person or entity operating, having charge of, or otherwise using or controlling any vehicular or other mechanized equipment for the collection of rubbish, garbage, trash; or for general construction purposes; or musical vending vehicles may operate the same within the Village limits during “quiet hours.” This section does not prohibit the operation of any of the aforementioned equipment when necessary under emergency conditions to prevent property damage, or destruction, or personal injury.

**21.08 Exemptions.**

Sound emanating from the following sources and activities are exempt from the provisions of this title:

- (1) Sound sources associated with property use and maintenance during “normal hours”.
- (2) Emergency response vehicles and equipment, and aircraft.
- (3) Safety, warning, and alarm devices including but not limited to: house and car alarms, and other warning devices that are designed to protect the health, safety and welfare. Railroad safety devices (e.g., train horns, train whistles, automated warning systems) used in emergencies or as required for the safe operation of rail traffic are also exempt.
- (4) Village sponsored fireworks displays during the fourth of July holiday period.
- (5) Maintenance of Village facilities, including but not limited to: parks, utilities, landscape corridors, the aquatic complex and other recreational facilities.

- (6) Activities related to the non-routine maintenance and repair of public utility equipment, facilities, and property.

**21.09 Applications for a Variance**

A person may apply to the Village Administrator for a variance from sections 21.04, 21.05, 21.06, or 21.07 of this Chapter in order to accommodate special circumstances of limited duration or to alleviate an undue hardship on the part of the applicant or the community. In deciding to grant or deny a variance, the Village Administrator shall balance the purposes and standards of this Chapter against any special circumstance or undue hardship that may be cited by the applicant. For applications to accommodate special circumstances of limited duration, the Village Administrator may grant or deny the application; grant the application with reasonable conditions to minimize the impact of anticipated sound levels; or refer the application to the Board of Trustees. Applications to alleviate undue hardship will be considered by the Board of Trustees, which may grant or deny the application, or grant the application with reasonable conditions to minimize the impact of anticipated sound levels.

**21.10 Enforcement.**

This Chapter will be enforced in accordance with Chapter 24 of this Code.

This ordinance shall take effect upon passage and after posting, as required by law.

Adopted by the Board of Trustees of the Village of Shorewood Hills, Dane County, Wisconsin, this \_\_\_\_ day of \_\_\_\_\_, 2004.

APPROVED:

Peter Hans, Village President

ATTEST:

Jennifer W. Anderson, Village Clerk