

ARTICLE VIII. PERFORMANCE STANDARDS

40-874. Intent and scope of regulations.



(a) Intent. The purpose of this article is to establish controls on the impacts generated by permitted uses so as to prevent an unreasonable negative impact that might interfere with another person's use of his property, or that might cause harm to the public health, safety and welfare.

(b) Scope of regulations. After the effective date of the ordinance from which this chapter is derived, no structure or tract of land shall hereafter be used or occupied, and no structure, or part thereof, shall be erected, altered, reconstructed or moved except in conformity with all applicable performance standards set forth in this article. No site plan shall be approved unless evidence is presented to indicate conformity with the requirements of this article.

(c) Submission of additional data. Nothing in this article shall preclude the applicant or other interested party from submitting additional data or evidence related to a specific case. In consideration of such data or evidence, the planning commission may waive or modify the regulations set forth in this article, provided that the planning commission finds that no harm to the public health, safety and welfare will result and that the intent of this chapter will be upheld.

(Ord. No. 147-43, § 8.001, 12-15-2003)

40-875. Performance standards.



No activity, operation or use of land, buildings or equipment shall be permitted if such activity, operation or use produces an environmental impact or irritant to sensory perception that exceeds the standards set forth in this section.

(1) Noise and vibration.

a. Definitions. The terms used in this section shall have the meaning ascribed to them as follows. Terms used in this section but not defined below or in section [40-3](#) shall have the meaning ascribed to them by the American National Standards Institute (ANSI) or its successor body.

A-weighted sound level means the sound pressure level in decibels as measured on a sound level meter using the A-weighted network. The level so read is designated dB(A).

Day-night average sound level means the 24-hour energy average of the A-weighted sound pressure level, with the levels during the period of 10:00 p.m. to 7:00 a.m. the following day increased by ten dB(A) before averaging.

Emergency means any occurrence or set of circumstances involving actual or imminent physical trauma or property damage that demands immediate attention.

Impulsive sound means sound of short duration, usually less than one second, with an abrupt onset and rapid decay. Examples of sources of impulsive sound include explosions, drop forge impacts and discharge of firearms.

Noise disturbance means any sound which:

1. Endangers or injures the safety or health of humans or animals;
2. Annoys or disturbs a reasonable person of normal sensitivities; or
3. Endangers or injures personal or real property.

Noise sensitive zone means an area which contains noise-sensitive activities, such as, but not limited to, operations of schools, libraries, churches, hospitals and nursing homes.

Pure tone means any sound that can be distinctly heard as a single pitch or a set of single pitches.

Sound means an oscillation in pressure, particle displacement, particle velocity or other physical parameter, in a medium with internal forces that causes compression and rarefaction of that medium.

Sound level means the weighted sound pressure level obtained by the use of a sound level meter and frequency-weighting network (for the purposes of this chapter an A-weighted network), as specified by the American National Standards Institute.

Vibration means an oscillatory motion of solid bodies of deterministic or random nature described by displacement, velocity or acceleration with respect to a given reference point.

b. Prohibited acts.

1. Noise disturbances prohibited. No person shall make, continue or cause to be made or continued, any noise disturbance.

2. Loading and unloading. Loading and unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans or similar objects shall be prohibited between the hours of 6:00 p.m. and 7:00 a.m. in such a manner as to cause a noise disturbance across a residential district boundary or within a noise sensitive zone.

3. Construction. Operation of any tools or equipment used in construction, drilling or demolition work shall be prohibited between the hours of 6:00 p.m. and 7:00 a.m. on weekdays or any time on Sundays or holidays, such that the sound therefrom creates a noise disturbance across a residential district boundary or within a noise sensitive zone, except for emergency work of public service utilities.

4. Vibration. Operating any device that creates vibration that is above the vibration perception threshold of an individual at or beyond the property of the source shall be prohibited. For the purposes of this section, the term "vibration perception threshold" means the minimum ground or structure-borne vibrational motion necessary to cause a normal person to be aware of the vibration by such direct means as, but not limited to, sensation by touch or visual observation of moving objects.

5. Noise sensitive zones. Creating any sound within any noise sensitive zone so as to disrupt the activities normally conducted within the zone shall be prohibited, provided that conspicuous signs are displayed indicating the presence of the zone.

c. Exceptions.

1. Emergency exceptions. The provisions in this section shall not apply to:

(i) The emission of sound for the purpose of alerting persons to existence of an emergency; or

(ii) The emission of sound in the performance of emergency work.

2. Additional exceptions. The provisions in this section shall not apply to the following activities, provided that such activities are conducted in a legally accepted manner:

(i) Snow plowing, street sweeping and other public works activities.

(ii) Church bells, chimes and carillons.

(iii) Lawn care and house maintenance that occurs between 9:00 a.m. and 9:00 p.m.

d. Variances. An application for a variance from the provisions in this section may be submitted to the zoning board of appeals. The owner or operator of equipment on the property shall submit a statement regarding the effects of noise from the equipment on the overall noise level in the area. The statement shall include a study of the background noise levels, predicted level on noise at the boundary line due to the proposed operation, and justification for the variance. Upon review of the request for a variance, the zoning board of appeals may grant a variance where strict adherence to the permitted sound level would create unnecessary hardship and only if the variance will not create a threat to the health, safety and welfare of the public. The zoning board of appeals may impose conditions of operation when granting a variance.

e. Maximum permitted sound levels by receiving zoning district. No person shall operate or cause to be operated any source of sound in such a manner as to create a sound level which exceeds the limits set forth for the receiving zoning district in table A when measured at or within the property boundary of the receiving district. All measurements and designations of sound levels shall be expressed in day-night average sound levels (Ldn).

Table A

Maximum Permitted Average A-Weighted Sound Levels

Receiving zoning district	Average sound time level (dB(A))
Residential—7:00 a.m. to 10:00 p.m.	55
Residential—10:00 p.m. to 7:00 a.m.	50
Commercial (not noise sensitive)—Day/night	65

Table A

Maximum Permitted Average A-Weighted Sound Levels

Receiving zoning district	Average sound time level (dB(A))
Commercial (noise sensitive)–Day/night	55
Industrial–Day/night	70

Footnotes:

- a. Correction for tonal sounds. For any source of sound which emits a pure tone sound, the maximum sound level limits in table A shall be reduced by five dB(A) where the receiving district is residential or commercial noise sensitive.
- b. Correction for impulsive or impact-type sounds. For any source of sound which emits an atypical impulsive or impact-type sound, the maximum sound level limits in table A shall be reduced by five dB(A) where the receiving district is residential or commercial noise sensitive.
- c. Planned development. Where the receiving district is a planned development district, the applicable standard in table A shall be based on the most noise sensitive use within the planned development.

The requirements stated above in this section shall not apply to the activities covered by subsection (1)c of this section.

- f. Permitted land use. No new or substantially modified structure shall be approved for construction unless the owner or developer of such land demonstrates that the completed structure and the activities associated with and on the same property as the structure will comply with the sound/noise standards set forth in subsection (1) of this section at all times of full-scale operation of such activities.
- (2) Dust, smoke, soot, dirt, fly ash and products of wind erosion.
- a. Dust, smoke, soot, dirt, fly ash and products of wind erosion shall be subject to the regulations established in conjunction with the air pollution act, Part 55 of Public Act No.

451 of 1994 (MCL [324.5501](#) et seq.), or other applicable state or federal regulations. No person, firm or corporation shall operate or maintain any process for any purpose, or furnace or combustion device for the burning of coal or other natural or synthetic fuels, unless such processes or devices use or are equipped with recognized and approved equipment, methods or technology to reduce the quantity of gas-borne or airborne solids or fumes emitted into the open air.

b. The drifting of air-borne matter beyond the lot line, including wind-blown dust, particles or debris from open stock piles, shall be prohibited. Emission of particulate matter from materials, products or surfaces subject to wind erosion shall be controlled by paving, oiling, wetting, covering, landscaping, fencing or other means.

(3) Odor. Offensive, noxious or foul odors shall not be allowed to escape into the atmosphere in concentrations which are offensive, which produce a public nuisance or hazard on adjoining property, or which could be detrimental to human, plant or animal life.

(4) Glare and heat. Any operation or activity which produces glare shall be conducted so that direct and indirect illumination from the source of light does not exceed one-half footcandle when measured at any point along the property line of the site on which the operation is located. Any operation that produces intense glare or heat shall be conducted within an enclosure so as to completely obscure and shield such operation from direct view from any point along the lot lines. If heat is a result of an industrial operation, it shall be so insulated as to not raise the temperature at any property line at any time.

(5) Fire and safety hazards.

a. General requirements. The storage and handling of flammable or combustible liquids or gases, and explosives shall comply with all applicable federal, state, county and local regulations. All underground storage tanks shall be registered with the state department of environmental quality, in accordance with Part 211 of Public Act No. 451 of 1994 (MCL [324.21101](#) et seq.). The location and contents of all such tanks shall be indicated on the site plan.

b. Detonable materials. The storage, utilization or manufacture of detonable materials shall be permitted subject to approval by the fire chief and the following restrictions:

Proposed activity	Restrictions
Storage, utilization or manufacture of five lbs. or less	Permitted accessory use in I-L and I-H districts
Storage or utilization of over five lbs.	Special land use in I-L and I-H districts
Manufacture of over five lbs.	Not permitted

Detonable materials covered by these requirements include, but are not necessarily limited to the following:

1. All primary explosives such as lead azide, lead styphnate, fulminates and tetracene.
 2. All high explosives such as TNT, RDX, HMX, PETN and picric acid.
 3. Propellants and components thereof such as dry nitrocellulose, black powder, boron hydrides and hydrazine and its derivatives.
 4. Pyrotechnics and fireworks such as magnesium powder, potassium chlorate and potassium nitrate.
 5. Blasting explosives such as dynamite and nitroglycerine.
 6. Unstable organic compounds such as acetylides, tetrazoles and ozonides.
 7. Strong unstable oxidizing agents such as perchloric acid, perchlorates, and hydrogen peroxide in concentrations greater than 35 percent.
 8. Nuclear fuels, fissionable materials and products, and reactor elements such as Uranium 235 and Plutonium 239.
- c. Liquefied petroleum gas. The storage or utilization of liquefied petroleum gas shall be permitted subject to approval by the fire chief and the following restrictions:

Proposed activity	Restrictions
Proposed activity	Restrictions
Storage, utilization of 80 lbs. or less	Permitted accessory use in all districts
Storage, utilization of more than 80 lbs.	Permitted in I-L and I-H districts

(6) Sewage wastes and water pollution. Sewage disposal (including septic systems) and water pollution shall be subject to the standards and regulations established by federal, state, county and local regulatory agencies, including the state department of public health, the state department of environmental quality, the county health department, and the U.S. Environmental Protection Agency.

(7) Gases. The escape of or emission of any gas which is injurious or destructive to life or property, or which is explosive, is prohibited. Gaseous emissions shall be subject to regulations established in conjunction with the air pollution act, Part 55 of Public Act No. 451 of 1994 (MCL [324.5501](#) et seq.), the federal Clean Air Act of 1963, as amended, and any other applicable state or federal regulations. Accordingly, gaseous emissions measured at the property line at ground level shall not exceed the levels indicated in the following chart, which is based on the National Ambient Air Quality Standards, unless a higher standard is imposed by a federal, state, county or local regulatory agency which has jurisdiction:

Gas	Maximum emissions level	Sampling period
Sulfur dioxide	0.14 ppm	24 hours
Hydrocarbons	0.24 ppm	3 hours
Photochemical oxidants	0.12 ppm	1 hour
Nitrogen dioxide	0.05 ppm	Annual
Carbon monoxide	9.0 ppm	8 hours
	35.0 ppm	1 hour

Gas	Maximum emissions level	Sampling period
Lead	1.5 ug/cubic meter	3 months
Mercury	0.01 mg/cubic meter	10 hours
Beryllium	2.0 ug/cubic meter	8 hours
Asbestos	0.5 fibers/cc	8 hours

(8) Electromagnetic radiation and radio transmission. Electronic equipment required in an industrial, commercial, or other operation shall be designed and used in accordance with applicable rules and regulations established by the Federal Communications Commission (FCC). The operation of such equipment shall not interfere with the use of radio, television or other electronic equipment on surrounding or nearby property.

(9) Radioactive materials. Radioactive materials, wastes and emissions, including electromagnetic radiation such as from an X-ray machine, shall not exceed levels established by federal agencies that have jurisdiction. No operation shall be permitted that causes any individual outside of the lot lines to be exposed to any radiation exceeding the lowest concentration permitted for the general population by federal and state laws and regulations currently in effect.

(Ord. No. 147-43, § 8.002, 12-15-2003)

40-876. Procedures for determining compliance. 

In the event that the township receives complaints or otherwise acquires evidence of possible violation of any of the performance standards set forth in this article, the following procedures shall be used to investigate, and if necessary, resolve the violation:

- (1) Official investigation.
 - a. Upon receipt of evidence of possible violation, the building official and/or the zoning administrator shall make a determination whether there is reasonable cause to suspect

the operation is indeed in violation of the performance standards. If a violation is suspected, the facts shall be reviewed by the township attorney to determine if an official investigation should be initiated.

b. Upon the initiation of an official investigation, the township attorney, with assistance from the building official and/or the zoning administrator, is empowered on behalf of the township to require the owner or operator of the facility in question to submit data along with any evidence deemed necessary to make an objective determination regarding the possible violation within a time period specified by the township attorney, but in every case a reply must be forthcoming within seven calendar days from the receipt of a notice by the owner. Failure of the owner or operator to supply requested data within the stated time period shall be considered an admission of violation and provide prima facie evidence of grounds for taking any action, including appropriate legal action, to terminate the use and/or deny or cancel any permits or licenses required for continued use of the land. Data which may be required includes, but is not limited to, the following:

1. Plans of the existing or proposed facilities, including buildings and equipment.
2. A description of the existing or proposed machinery, processes and/or products.
3. Specifications for the mechanisms and techniques used or proposed to be used to control emissions regulated under the provisions of this article.
4. Measurement of the amount or rate of emissions of the material, including, but not limited to, heat, sound and glare, purported to be in violation.
5. Copies of any studies, reports, specifications and any other compilation of data, including, but not limited to, Resource Conservation and Recovery Act (RCRA) filings.

(2) Method and cost of determination.

a. The building official, under direction of the township attorney, shall take measurements, or cause measurements to be taken by a competent contractor, and complete the investigation necessary to make an objective determination concerning the alleged violation. Where required measurements and investigation can be accurately

made by the building official using equipment and personnel normally available to the township without extraordinary expense, such measurements and investigation shall be completed before a notice of violation is issued. If skilled personnel and specialized equipment or instruments are necessary, they shall be secured by the building official in order to make the required determination.

b. If the alleged violation is found to exist in fact, all costs of making such determination shall be charged against those responsible, in addition to such other penalties as may be allowable. If the bill is not paid within 30 days, the township shall take all appropriate actions to recover its costs, including charging costs against the property where the violation occurred. If following the investigation, it is determined that no substantive violation exists, then all costs of this determination shall rest with the township.

(3) Appropriate remedies. If, after appropriate investigation, the building official determines that a violation does exist, the building official shall take or cause to be taken lawful action as provided by this chapter or any state or federal regulation to eliminate such violation. The owners or operators of the facility deemed responsible shall be given written notice of the violation. The building official shall take appropriate action in accordance with the owner or operator's response to the notice of violation. Appropriate action includes the following:

a. Correction of violation within time limit. If the alleged violation is corrected within the specified time limit, even if there is no reply to the notice, the building official shall note "Violation corrected" on the township's copy of the notice, and the notice shall be retained on file. If necessary, the building official may take other action as may be warranted by the circumstances of the case, pursuant to this chapter and any other applicable regulation.

b. Violation not corrected and no reply from owner or operator. If there is no reply from the owner or operator within the specified time limits, and the alleged violation is not corrected in accordance with the regulations set forth in this article, then the building official shall take any action reasonably calculated to correct or abate the violation.

c. Reply requesting extension of time. If the alleged violator responds to the township within the specified time limit of the original notice and requests an extension of time, the building official shall review the information submitted with the reply. Upon finding that an extension is warranted because of unique circumstances and that an extension will not

cause imminent peril to life, health or property, the building official may extend the specified time limit to a date certain, if the building official concurs that:

1. The information requested pursuant to subsection (1) of this section is impractical to readily produce;
2. An extreme hardship exists; or
3. The reply indicates that an alleged violation shall be corrected or abated by the date certain and that all future operations shall comply with the regulations as set forth herein.

d. Reply requesting technical determination.

1. If a reply is received within the specified time limit requesting further review and technical analysis even though the alleged violations continue, then the building official may call upon properly qualified experts to complete such analysis and confirm or refute the initial determination of violation.

2. If the findings of the expert indicates that an alleged violation of these performance standards exist in fact, the person responsible for the violations shall pay all costs incurred in making such a determination, in addition to such other penalties as may be appropriate under the terms of this chapter or other applicable regulations. Such costs shall be billed to those owners or operators of the subject use who are deemed responsible for the violation. If the bill is not paid within 30 calendar days, the township shall take whatever appropriate action is necessary to recover such costs, or alternatively, the cost shall be charged against the property where the violation occurred. If no substantial violation is found, cost of determination shall rest with the township.

(4) Continued violation. If, after the conclusion of the time period granted for compliance, the building official find that the violation continues to exists or is reinstituted, any permits issued shall be considered void and the township may initiate appropriate legal action, including possible pursuit of remedies in the county circuit court.