

Title 7 ► Chapter 11

Use of Explosives; Blasting Activities

7-11-1	Authority and Purpose
7-11-2	Definitions
7-11-3	Regulation of Explosive Materials and Blasting
7-11-4	Temporary Permits
7-11-5	Regulation of Blasting Resultants
7-11-6	Applicability
7-11-7	Violations and Penalties

Sec. 7-11-1 Authority and Purpose.

- (a) **Authority.** This Chapter is adopted pursuant to the police powers granted to the Village under Chapter 61, Wis. Stats.
- (b) **Purpose.** The purpose of this Chapter is to:
 - (1) Protect the health, welfare and safety of Village residents;
 - (2) Protect public and private property located within the Village;
 - (3) Regulate the use of explosive materials and establish uniform limits on the permissible levels of blasting resultants to reasonably assure that blasting resultants do not cause injury, damage or nuisance to persons or property.

Cross-Reference: Section 13-1-57, Mineral Extraction or Landfill Overlay District.

Sec. 7-11-2 Definitions.

- (a) The following definitions shall apply in this Chapter. Terms not herein defined shall be understood to have their usual and ordinary dictionary meaning:
 - (1) **Airblast.** An airborne shock wave resulting from the detonation of explosives.
 - (2) **Approves.** Approval granted by the Village of Elmwood.
 - (3) **Blaster.** Any individual holding a valid blaster's license issued by the Wisconsin Department of Commerce or other appropriate state agencies.
 - (4) **Blasting.** Any method of loosening, moving or shattering means of solid matter by use of an explosive.
 - (5) **Blasting Operation.** Any operation, enterprise or activity involving the use of blasting.

- (6) **Blasting Resultants.** The physical manifestations of forces released by blasting, including, but not limited to, projectile matter, vibration and concussion, which might cause injury, damage or unreasonable nuisance to persons or property located outside the controlled blasting site area.
- (7) **Community.** A built-up inhabited area.
- (8) **Permitted Explosives Use Area.** The area that surrounds a blasting site and:
 - a. Is owned by the operator; or
 - b. With respect to which, because of property ownership, employment, relationship or agreement with the property owner, the operator can take reasonably adequate measures to exclude or to assure the safety of persons and property.
- (9) **Detonator.** Any device containing a detonating charge that is used for initiating detonation in an explosive. The term includes, but is not limited to, electric blasting caps of instantaneous and delay types, blasting caps for use with safety fuses, detonating cord delay connectors, and non-electric instantaneous and delay blasting caps.
- (10) **Department.** The Wisconsin Department of Commerce or other appropriate state agencies.
- (11) **Electric Blasting Cap.** A blasting cap designed for, and capable of, initiation by means of an electric current.
- (12) **Explosion.** The substantially instantaneous release of both gas and heat.
- (13) **Explosive.** Any chemical compound, mixture or device, the primary or common purpose of which is to function by explosion unless the compound, mixture or device is otherwise classified by the Department by rule.
- (14) **Explosive Materials.** Explosives, blasting agents and detonators. The term includes, but is not limited to, dynamite and other high explosives, slurries, emulsions, water gels, blasting agents, black power, pellet powder, initiating explosives, detonators, safety fuses, squibs, detonating cord, igniter cord and igniters.
- (15) **Flyrock.** Rock that is propelled through the air from a blast.
- (16) **Ground Vibration.** A shaking of the ground caused by the elastic wave emanating from a blast.
- (17) **Highway.** Any public street, public alley or public road.
- (18) **Inhabited Building.** A building regularly occupied in whole or in part as a habitation for human beings, or any church, schoolhouse, railroad station, store or other structure where people are accustomed to assemble, except any building or structure occupied in connection with the manufacture, transportation, storage or use of explosive materials.
- (19) **Particle Velocity.** Any measure of ground vibration describing the velocity at which a particle of ground vibrates when excited by a seismic wave.
- (20) **Person.** Any individual, corporation, company, association, firm, partnership, society or joint stock company.
- (21) **Powder Factor.** Any ratio between the amount of powder loaded and the amount of rock broken.

- (22) **Primer.** A capped fuse, electric detonator or any other detonating device inserted in or attached to a cartridge of explosive.
- (23) **Stemming.** The inert material, such as drill cutting, used in the collar portion or elsewhere of a blast hole to confine the gaseous products of detonation.
- (24) **Nuisance.** An injurious effect on the safety, health, or morals of the public, or use of property which works some substantial annoyance, inconvenience, or injury to the public and which causes hurt, inconvenience, or damage.
- (25) **Village.** The Village of Elmwood, Pierce County, Wisconsin.

Sec. 7-11-3 Regulation of Explosive Materials and Blasting.

(a) **General.**

- (1) **General Permit(s) Required.** No person shall handle or use explosive materials in the Village of Elmwood unless he/she:
 - a. Possesses a valid State of Wisconsin blaster's license with the proper classification or is supervised by a holder of a valid State of Wisconsin blaster's license with the proper classification; and
- (2) **Firearms Exception.** For purposes of this Chapter, blasting does not include the discharge of firearms for hunting.

(b) **Village Permit Requirements.** No person shall handle, use or cause explosives to be detonated within the Village of Elmwood without an explosives use permit issued by the Village of Elmwood, as hereafter set forth, to such person, his/her supervisor or employer:

- (1) **Application.** Applications for an explosives use permit shall be in writing upon forms provided by the Village Clerk-Treasurer. Applications shall be accompanied by a permit fee in accordance with the Village Board's current fee schedule. Permits shall be issued on an annual basis commencing January 1 and ending on December 31. Applications may be made by and permits issued to the blasting business, provided that the person doing the blasting or responsible for such blasting shall hold a valid Wisconsin blaster's license with proper classification. The application will identify the licensed blasters operating under the permit and the blasting locations within the Village of Elmwood.
- (2) **Financial Assurance.** Each application for an explosives use permit as herein stated, or a renewal thereof, shall be accompanied by a certificate of insurance evidencing comprehensive general public liability insurance against claims for bodily injury, death, or property damage arising out of the blasting operation; such insurance to afford protection to the Village of Elmwood and its residents of not less than One Million Dollars (\$1,000,000) with respect to bodily injury or death to any one (1) person, not less than Three Million Dollars (\$3,000,000) with respect to any one (1) accident, and not less than One Hundred Thousand Dollars (\$100,000) with respect to property damage. The certificate of insurance shall name the Village of Elmwood

and its residents as additional insureds under the relevant policy. Any insurance which the blaster is obligated to carry under the terms of this Chapter may be carried under so-called "blanket" policies covering other properties or liabilities of the blaster, provided, that such blanket policies otherwise comply with the provisions of this Subsection. Each insurance policy shall provide that it shall not be cancelled by the insurance company, except after not less than ninety (90) days' notice to the Village, in writing, by registered or certified mail. Not less than thirty (30) days prior to the expiration of the ninety (90) day notice of cancellation, the blaster must deliver to the Village a replacement insurance policy in absence of which all blasting shall cease. The liability insurance must be issued by a company licensed by the State of Wisconsin to issue the policy. The Village Board reserves the right to increase the amount of the insurance policy depending on the circumstances of the blasting activity.

- (3) **Explosives Use Plan.** Each application for an explosives use permit or a renewal thereof shall include a written description of the total area within which explosives are proposed to be used, blasting procedures to be employed, including types of explosives, initiating systems, and an aerial photograph or drawing acceptable to the Village Board with a scale of no less than one (1) inch equals one hundred (100) feet and having an overlaying grid of fifty (50) feet by fifty (50) feet which accurately includes all areas and inhabited buildings within five hundred (500) feet of all proposed blasting areas.
- (4) **Hours of Operation.** Blasting shall only be conducted between 9:00 a.m. and 4:00 p.m. on Monday through Friday, provided, however, that in the event an emergency has delayed a blast beyond 4:00 p.m., a loaded hole may be blown within a reasonable time thereafter. Blasting shall not be conducted at other times or on Sundays or legal holidays without written permission from the Village Board or its designee, which shall only be granted upon a showing of extreme need.
- (5) **Blasting Log.** An accurate blasting log shall be prepared and maintained for each blast fired, and a true and complete copy of said log shall be supplied to the Village Clerk-Treasurer within seven (7) working days of the initiation of the blast. The Village may require that the permittee furnish to the Village an analysis of any particular blasting log to be prepared by the permittee. In the event the permittee cannot or will not prepare a reliable analysis, the Village may obtain such analysis from an independent expert. The permittee shall be liable for the reasonable cost of such analysis if it is determined after an opportunity to be heard that this requirement was violated by the permittee. Each blasting log shall include, but not be restricted to, the following information:
 - a. Name and license number of blaster in charge of blast;
 - b. Blast location with grid coordinate references to the supplied aerial photograph or drawing of the explosives use area;
 - c. Date and time of blast;

- d. Weather conditions at time of blast;
- e. Diagram and cross-section of blast hole layout;
- f. Number of blast holes;
- g. Blast hole depth and diameter;
- h. Spacing and burden of blast holes;
- i. Maximum holes per delay;
- j. Maximum pounds of explosives per delay;
- k. Depth and type of stemming used;
- l. Total pounds of explosives used, including primers and initiating cord;
- m. Distance to nearest inhabited building not owned by permittee;
- n. Type of initiation system used;
- o. Seismographic and airblast information, which shall include:
 1. Type of instrument and last calibration date;
 2. Exact location of instrument and date, time and distance from the blast,
 3. Name and company affiliation of person taking reading;
 4. Name of the person and firm analyzing the seismographic and airblast data when required;
 5. Vibrations and airblast levels recorded; and
 6. Copy of the seismograph printout.

Sec. 7-11-4 Temporary Permits.

- (a) **Temporary Permit Requirements.** The Village Clerk-Treasurer, upon receipt of a properly completed temporary permit application form, may issue a temporary permit to allow for special construction or demolition activities requiring the use of explosives. Temporary permits shall be issued for a duration of fourteen (14) consecutive working days. The Village Board, in its discretion, may grant one (1) fourteen (14) day extension. Only one (1) temporary permit [and one (1) renewal] can be issued for any given site within the year of permit issuance. Applicants for temporary permits are required to provide financial assurance as specified in Section 7-11-4(b) and provide notice to all neighbors within five hundred (500) feet of the special construction or demolition activity.
- (b) **Temporary Permit Categories.** Permits shall be in the following categories:
 - (1) **Road, Sewer, Heavy Construction.** The fee shall be as prescribed in Section 1-3-1, determined by the Village Board based on the explosive use plan submitted by contractor or blaster.
 - (2) **Construction Authorized by Village Board.** Construction authorized by the Village Board for Village use is exempt from the fee. Applicants for these permits are required to file financial assurances as specified in Section 7-11-3(b) and provide notice to all neighbors within five hundred (500) feet.

- (3) **Construction.** This category includes home building, septic systems, swimming pools, etc. The fee is included in the building permit. If blasting becomes necessary after the issuance of a building permit, a fee in accordance with the Village Board's current fee schedule will be assessed for the blasting permit. No bond is required. However, proof of insurance and notice to all neighbors within five hundred (500) feet is required.
- (4) **Agricultural.** This category includes stump removal, silo demolition, manure pits, etc. The fee shall be a fee in accordance with the Village Board's current fee schedule for the permit. No bond is required. However, proof of insurance and notice to all neighbors within five hundred (500) feet is required.

Sec. 7-11-5 Regulation of Blasting Resultants.

- (a) **Purpose of Section.** It is the purpose of this Section to provide for the establishment of uniform limits on permissible levels of blasting resultants to reasonably assure that blasting within the Village does not cause injury, damage or a nuisance to persons or property outside and beyond the permitted explosives use area.
- (b) **Instrumentation.** All blast-monitoring instruments used to produce data to support compliance with this Subsection shall meet the following minimum specifications:
 - (1) **Seismic frequency range.** Two (2) to two hundred (200) Hz (± 3 Hz).
 - (2) **Acoustic frequency range.** Two (2) to two hundred (200) Hz (± 1 dB).
 - (3) **Velocity range.** 0.02 to four (4.0) inches per second.
 - (4) **Sound range.** One hundred (100) to one hundred forty (140) dB linear.
 - (5) **Transducers.** Three (3) mutually perpendicular axes.
 - (6) **Recording.** Provide time-history of wave form.
 - (7) **Printout.** Direct printout showing time, date, peak air pressure, peak particle velocity and frequency in three (3) directions and a printed waveform graph of the event depicting measured air blast and particle velocity in the three (3) directions.
 - (8) **Calibration.** At least once every twelve (12) months according to manufacturer's recommendations.
- (c) **Control of Adverse Effects Generally.** The permittee shall take necessary steps prescribed by the Village to control adverse effects from his/her activity.
- (d) **General Requirements.** Blasting shall be conducted so as to prevent injury and unreasonable annoyance to persons and damage to public or private property outside the permitted explosives use area.
- (e) **Airblast.**
 - (1) **Limits.** Airblast shall not exceed the maximum limits listed in Table A-1 at the location of any dwelling, public building, place of employment, school, church or community or institutional building outside and beyond the permitted explosives use area. Notwithstanding this general requirement, an annual permit holder subject to

this limitation may exceed the limitation on up to five percent (5%) of the blasts it initiates during the period from January 1 to December 31 without violating this Chapter, provided that the airblast produced by such blasts does not exceed the limitations on airblast imposed by the Wisconsin Department of Commerce in Subsection COMM 7.64(2), Wis. Adm. Code, as amended from time to time.

TABLE A-1
AIRBLAST LIMITS

Lower Frequency Limit of Measuring System in Hz	Maximum Level in db
2 Hz or lower — Flat response	123 peak
6 Hz or lower — Flat response	129 peak

(2) **Monitoring.**

- a. The permittee shall monitor all blasts at the closest location to the blast of any dwelling, public building, place of employment, school, church or community or institutional building outside and beyond the permittee explosives use area, provided, however, that the permittee may monitor, at another location, approximately the same distance from the blast site, if the permittee is unable to obtain permission to conduct the monitoring from the owner of the preferred location. The Village Board or its designee may, at its discretion, require the relocation of monitoring equipment to a more suitable site and/or may conduct independent air-blast monitoring to spot-check data supplied by the permittee. If independent monitoring by the Village after hearing discloses that this Chapter was violated by the permittee, then in that event, the permittee shall pay the reasonable costs incurred by the Village for the independent monitoring. Upon receiving and approving billings for such expenses, the Village shall cause notice of the expenses to be mailed to the permittee, who shall reimburse the Village for such expenses within thirty (30) days after receipt of such notice.
 - b. The measuring equipment used shall have an upper end flat frequency response of at least two hundred (200) Hz.
 - c. All measuring equipment during monitoring shall be spiked to the ground or sandbagged.
- (f) **Flyrock.** Flyrock produced as a result of explosives use shall be totally contained within the permitted explosives use area.
- (g) **Ground Vibration.**
- (1) **General.**
 - a. The maximum ground vibration at the location of any dwelling, public building, place of employment, school, church or community or institutional building

outside or beyond the permitted explosives use area shall have a maximum peak-particle-velocity limit as provided by the Department, the scaled-distance equation provided by the Department, or the blasting level chart provided by the Department, whichever is applicable hereunder.

- b. All structures in the vicinity of the permitted explosives use area, not listed in Subsection (g)(1), such as water towers, pipelines and other utilities, tunnels, dams, impoundments and underground mines shall be protected from damage by establishment by the permit holder of a maximum allowable limit on the ground vibration. The permit holder shall establish the limit after consulting with the owner of the structure.

(2) ***Seismic Monitoring.***

- a. The Village Board, in its discretion, may conduct independent seismic blast monitoring to spot-check data supplied by the permit holder. If the independent monitoring was done after good cause was shown therefor and after the permittee was given notice and an opportunity to be heard on the matter, the permittee shall be liable to the Village for all expenses incurred by the Village as a result of such independent monitoring. Upon receiving and approving billings for such expenses, the Village shall cause notice of the expenses to be mailed to the permittee, who shall reimburse the Village for such expenses within thirty (30) days after receipt of such notice.
- b. The Village Board, upon good cause shown and after giving the permittee notice and an opportunity to be heard, may request analysis of records and data for any or all blasts which occurred within the permitted explosives use area.

(3) ***Preblasting Notification.***

- a. Each explosives use permit application and all reapplications shall include the names and addresses of all residents or owners of dwellings or other structures located within an area affected by the permitted explosives use. The affected area shall be determined based on the maximum pounds of explosive per eight (8) MS delay from the previous three (3) years' high. This calculation's square root x one hundred (100) shall determine the affected in area in feet. This calculation shall be the maximum distance from the boundary of the quarry where a preblast survey may be requested. One thousand (1,000) feet shall be the minimum distance for which a preblast survey may be requested regardless of the above calculation. Residents outside of these boundaries may petition the Village Board for a preblast survey, with the survey to be at the quarry operator's expense. Residents denied this preblast survey may, at their own expense, secure a survey by a company acceptable to the quarry operator. The quarry operator may not unreasonably reject the company proposed to perform the survey. The surveys performed in this paragraph will serve as the basis for damage claims against the quarry operator. The blasting logs used to determine the previous three (3) years' high, as referenced in this Subsection, are available for inspection from the Village Clerk-Treasurer. [See Section 7-11-3(b)(5)].

- b. At the time of permit application, the applicant shall have notified, in writing, all residents or owners of dwellings or other structures located within the affected area, previously defined in Subsection (g)(3)a immediately above, who may request a preblast survey. All preblast surveys shall include a water quality test for existing wells. The applicant shall cause a preblast survey to be conducted as to such dwellings or structures, and extensive water quality testing for existing wells, provided, however, that the applicant shall not be required to conduct a preblast survey more than once every six (6) years and a well water quality test more than once every four (4) years. The applicant or permittee are responsible for the costs of all requested preblast surveys and water quality tests.
- c. The survey shall include a written report signed by the person who conducted the survey. Copies of the survey report shall be promptly provided to the Village Clerk-Treasurer, the owner or resident, and the applicant/permittee. The owner, resident or applicant/permittee shall promptly submit in writing to the Village any objections to the survey report, setting forth in detail such objections.
- d. The owner of a dwelling or structure that is within the affected area defined in Subsection (3)(a) above, who subsequent to the preblast survey has substantially modified or improved the dwelling or structure by fifty percent (50%) or more of the fair market value may request a new preblast survey. If it is found that a preblast survey is appropriate, the permittee may conduct such surveys within a reasonable period of time, but not exceeding twice a year for all such requests by all owners. These updated surveys shall be requested in writing submitted to the Village Board, which shall promptly notify the permittee of the request.
- e. All expenses incurred as a result of such independent surveys shall be the responsibility of the applicant/permittee. Upon receiving and approving billings for such expenses, the Village shall cause notice of the expenses to be mailed to the applicant/permittee, who shall reimburse the Village for such expenses within thirty (30) days after receipt of such notice.

Sec. 7-11-6 Applicability.

- (a) **Effective Date.** All use of explosives and blasting activity conducted in the Village shall be subject to the provisions of this Chapter. Existing operations of whatever nature, including without limitation nonmetallic mining operations, shall comply with the terms of this Chapter.
- (b) **Other Ordinances.** Where the provisions of this Chapter conflict with any provisions of any other Village Ordinance, the provisions of this Chapter, if more restrictive than those of the other ordinances, shall control and shall supersede the provisions of the other ordinances.

- (c) **State and Federal Laws.** Where the provisions of this Chapter conflict with the provisions of any applicable State or Federal law or regulation, the provisions of the most restrictive Ordinance, Statute or Regulation shall control, to the extent permitted by State and Federal law.

Sec. 7-11-7 Violations and Penalties.

(a) **Enforcement Provisions.**

- (1) **Enforcement.** The following are criteria that the Village Board may consider for issuance, re-issuance, suspension or revocation of a blasting permit:
- a. Compliance with the blasting standards established by the Village of Elmwood as noted herein by this Chapter.
 - b. Development and submittal to the Village Board the explosives use plan and fails upon operation to comply with the plan.
 - c. Development and submittal to the Village Board of the Village of Elmwood the blasting log and fails upon operation to comply with the information called for by the blasting log.
 - d. Maintaining the financial assurance requested by the Village Board.
 - e. Compliance with the operational hours for blasting as noted herein by this Chapter.
 - f. Compliance with airblast and ground vibration standards established by the Village of Elmwood as noted herein by this Chapter.
 - g. Compliance with the pre-blasting notification requirements to residents and the Village Board as noted herein by this Chapter.
 - h. Attempts made by the permittee or party in interest to comply with the provisions of this Chapter.
 - i. Consideration of atmospheric, unknown conditions including geophysical conditions, and other matters beyond the control of the permittee or party in interest.
- (2) **Suspension/Revocation.**
- a. Unless expressly provided herein or by other Village of Elmwood ordinance provisions, the explosive use permit may be suspended or revoked for cause for substantial noncompliance with this Chapter after the proper Village of Elmwood hearing noted below, unless in an emergency condition determined by a designated member of the Village Board and either the Village Clerk-Treasurer, Fire Inspector or the permit issuer of the Village of Elmwood wherein the license, registration or permit can be suspended temporarily for a set time period. Prior to any action for suspension or revocation, the Village Board must, by the Village Clerk-Treasurer, receive a verified complaint concerning the licensee, registrant

or permittee. The following persons may file a verified complaint with the Village Board of the Village of Elmwood:

1. The Village President.
 2. The Village Clerk-Treasurer.
 3. The Village Board.
 4. The Village Zoning Administrator/Building Inspector.
 5. Any law enforcement officer.
 6. Any Village of Elmwood resident.
 7. A landowner within one thousand (1,000) feet of the blasting site.
- b. The Village Board will make a determination if the allegations of the complaint are of sufficient magnitude, importance, or otherwise of such a nature as to require a formal evidentiary hearing.
- c. The person subject to charges for violation of any Village of Elmwood ordinance or any violation of a condition of the explosives use permit shall be provided a copy of the verified complaint and notice of hearing before the Village Board. The hearing shall be required to be not less than ten (10) days nor more than thirty (30) days after the receipt of notice, unless stipulated in writing by the Village Board and the person subject to charges.
- d. The person subject to charges for violation of any Village of Elmwood ordinance or any violation of a condition of the explosive use permit shall be entitled to the following:
1. Representation by legal counsel.
 2. Right to present and cross examine witnesses.
 3. Right to subpoena witnesses by the Village President issuing subpoenas to compel attendance of witnesses.
- e. The Village Board may, after the hearing for any person previously issued an explosive use permit by the Village Board, act as follows:
1. Revoke the permit as a final decision.
 2. Suspend the permit for a date certain as a final decision.
 3. Request additional information as an interim decision prior to taking future action.
 4. Take no action on the permit as a final decision.
- f. The final decision of the Village Board to revoke or suspend the explosives use permit shall be subject to appeal to the Circuit Court.
- (b) **Penalties for Violations.** In addition to the denial, suspension or revocation of a permit issued under this Chapter, any person who shall violate any provision of this Chapter or who shall fail to obtain a permit as required hereunder shall upon conviction of such violation, be subject to a penalty of a civil forfeiture as prescribed in Section 1-1-6 of this

Code of Ordinances, together with the costs of prosecution. Each violation and each day a violation continues or occurs shall constitute a separate offense. Nothing in this Chapter shall preclude the Village from maintaining any appropriate action to prevent or remove a violation of any provision of this Chapter. Any default of such forfeiture determined by a Court of competent jurisdiction shall be subject to any penalties as provided by Sections 66.0109, 66.0113, 66.0115 and 66.0114, Wis. Stats., as may be amended.