

DIVISION 4: BLASTING ORDINANCE

Sec. 6-80. Purpose.

- (a) Blasting is an activity essential to the economic viability of Augusta. Unregulated blasting and/or irresponsible blasting may cause undue psychological, physical or nuisance damage to the people, property and environment of the city.
- (b) This ordinance establishes specific standards for blasting operations, notice requirements, instrument monitoring requirements of blasting operations, a permit process for blasting and other associated standards and requirements.
- (c) It is intended to minimize the effects of airblast overpressure, ground vibration, dust, and noise associated with blasting which may be detrimental to the enjoyment of life, property and the conduct of business for those individuals affected.
- (d) It is also intended to provide standards that will also prevent permanent damage to the geologic, hydrogeologic and wildlife resources and ecological balance in the region outside the immediate blast area. The ordinance is intended to protect the quality of life and the homes of residents, neighborhoods, property, groundwater, wildlife resources, scenic beauty and/or businesses; all lying outside the approved work area and potentially affected by the blasting.
- (e) It is intended to be effectively and efficiently administered without causing undue financial and administrative hardship to blasting operators.
- (f) It is intended to provide standards and requirements in conjunction with the City of Augusta Mineral Extraction Ordinance (MEO) if quarrying is to be utilized in the mineral extraction process.
- (g) This ordinance is enacted pursuant to 30-A M.R.S.A. § 3001 entitled ORDINANCE POWER and shall be administered by the Codes Enforcement Officer.

Sec. 6-81. Definitions.

Airblast. An airborne shock wave resulting from detonation of explosives. "Airblast" may be caused by burden movement or the release of expanding gas into the air. "Airblast" may or may not be audible.

Applicant. The Owner or other individual, corporation or other business entity which applies for the legal right to conduct blasting at real property which it has the legal right to use.

Blast Site. Means the area where explosive material is handled during the loading of drilled blastholes, including the perimeter formed by the loaded blastholes and 50 feet in all directions from loaded blastholes (see MRSA Title 38, Section 490-W(5)).

Blaster. An Applicant who has been awarded a permit to conduct blasting.

Blasting. The use of explosives to break up or otherwise aid in the extraction or removal of rock or other consolidated material.

Blasting Operations. Herein defined to mean all processes conducted in association with site or other preparation for blasting, and the detonation of explosives.

Decibel. The unit of sound pressure commonly used to measure airblast from explosives. The decibel scale is logarithmic.

Explosives. Any substance, chemical compound or mechanical mixture that is used for the purpose of producing an explosion to fragment rock for mining, quarrying, excavation and construction. Initiating devices (detonators, detonating cords, etc.) are also included under this definition.

Flyrock. Rock that is propelled through the air or along the ground, which leaves the secured blast area as a result of the detonation of explosives.

Ground Vibrations. Shaking of the ground caused by blasting. Ground vibrations are to be measured along three (3) principal axes (x,y,z) namely, transverse, vertical, and longitudinal, all of which are subject to the performance standards herein.

Groundwater. Water beneath the earth's surface often between saturated soil and rock that supplies wells and streams.

Hertz. A term used, in the case of blasting, to express the frequency of ground vibrations and airblast. One "hertz" is one cycle per second.

Particle Velocity. A measure of ground vibration in the case of blasting. "Particle velocity" describes the velocity at which a particle of ground vibrates when excited by a seismic wave. It is measured in inches per second.

Production Quarry. A production quarry is a quarry where the primary use of the quarry is to produce material for commercial sale or beneficiation. The distinguishing characteristic is that the quarry is not being operated in association with an approved and permitted on-site development or construction project.

Quarry. The property designated in the application and permit where rock is excavated (see MRSA Title 38, Section 490-W(17)).

Secured Blast Area. The area designated by permit in which blasting is permitted.

Seismograph. An instrument that measures and has the capability to provide a permanent record of hertz and decibel readings concerning ground vibrations caused by blasting.

Sec. 6-82. Blasting Permit Required; Effect on Other Regulations.

(a) No blasting within the City of Augusta shall be allowed unless a permit has been obtained from the Bureau of Code Enforcement, except as otherwise exempted per this ordinance.

(b) The requirements of this ordinance are in addition to any other applicable ordinances, regulations and statutes, and where different standards are contained therein, the more restrictive standards shall apply.

(c) This ordinance does not replace or negate federal and/or state requirements pertaining to explosives.

Sec. 6-83. Permits.

(a) **Blasting Permit Required.** The following shall require a permit:

(1) **Production Quarry.** Production quarries shall require approval by the Planning Board as required by the Mineral Extraction Ordinance or the Land Use Ordinance. After the Planning Board issues an approval authorizing production quarrying, a Blasting Permit may be issued by the Bureau of Code Enforcement, subject to conditions as set forth in the ordinance required by the Planning Board.

(2) **Project.** The following construction projects require a blasting permit:

a. Planning Board Approved. Construction projects required by the Augusta Land Use ordinance to be reviewed and approved by the Planning Board shall follow the process for approval outlined in the Land Use Ordinance. After Planning Board review and approval, the Bureau of Code Enforcement may issue a blasting permit.

b. Non-Planning Board Approved. Any construction project that does not require Planning Board review, requires a building permit, and is not exempt from the permit process by Section 4.02 of this ordinance shall be required to obtain a blasting permit from the Bureau of Code Enforcement.

(b) **Notice Required.** The following activities shall not require a blasting permit from the Bureau of Code Enforcement, but shall require notice of blasting be given to the Bureau of Code Enforcement. Notice shall be provided in writing to the Bureau of Code Enforcement at least one (1) business day prior to the proposed start of blasting.

(1) Public Roadway. Road projects conducted by the MaineDOT, City of Augusta, or a contractor under contract with MaineDOT or the City of Augusta.

(2) Utility. Projects that are undertaken by any entity whose business it is to provide water, sewer, electricity, telephone, gas, cable television or other underground services.

(3) Other. For any project that does not fit into another category, the Code Enforcement Officer will determine if an application for a blasting permit is required.

(c) Blasting Application Information. All Applications for permits to conduct blasting shall contain the following information referred to as the Blast Plan:

(1) Applicant. The Applicant's name, address, daytime telephone number, fax number, and email address.

(2) Blasting Contractor. The blasting contractor's name, address, daytime telephone number, fax number, and email address (if other than the Blaster).

(3) General Contractor. The general contractor's name, address, daytime telephone number, fax number, and email address.

(4) Work Site. The street address and Tax Assessor's Map and Lot number for the proposed blasting activity.

(5) Volume of Material. The estimated number of cubic yards (measured in place) of material to be removed by blasting.

(6) Number of Blasts. The estimated of the number of blasts required to remove the specified amount of material.

(7) Blast Period. The planned starting and ending dates of the blasting activity.

(8) Purpose of Blast. A brief description of the work for which the blasting activity is requested.

(9) Site Diagram. A sketch or diagram showing the property where blasting will be conducted, including the location of adjacent structures and distance to those structures.

(d) Insurance. Prior to commencing blasting operations, evidence of liability insurance shall be submitted to the Codes Enforcement Office in a minimum amount of \$5,000,000 combined single limit per occurrence.

(e) Public Hearing. A public hearing shall be required for all blasting permits issued by the Planning Board.

(f) Fees. Fees for blasting permits shall be as determined, and amended from time to time, by City Council Order.

(g) Permit Duration.

(1) Production Quarry. As stipulated by the Planning Board.

(2) Project, Planning Board Approved. Blasting permits for projects approved by the Planning Board shall be valid for one (1) year from the date they are issued.

(3) Project, Non-Planning Board Approved. Blasting permits for projects that do not require Planning Board approval shall be valid for ninety (90) days from the date of issue.

(h) Pre-blast Survey. The following pre-blast survey requirements shall be required for all blasting permits prior to commencing blasting:

(1) Production Quarry. As stipulated by the Planning Board.

(2) Project, Planning Board Approved. A pre-blast survey shall be indicated for all occupied structures within 500 feet of the blast site.

(3) Project, Non-Planning Board Approved. A pre-blast survey shall be indicated for all occupied structures within 300 feet of the blast site.

(4) All Other Blasting. No pre-blast survey shall be required, but one may be conducted at the discretion of the blaster.

Sec. 6-84. Performance Standards. All Blasters must comply with the following performance standards:

(a) Hours of detonation.

(1) Production Quarry. As stipulated by the Planning Board, or as required by the City of Augusta Mineral Extraction Ordinance which states allows production blasting between 11:00 a.m. and 3:00 p.m., Monday through Saturday, with the exception of New Year's Day, Memorial Day, the Fourth of July, Labor Day, Thanksgiving Day, and Christmas Day. Emergency blasting for misfires shall be allowed after the 3:00 p.m. cutoff time provided that the city and abutters are notified prior to detonation.

(2) All other blasting. Hours of detonation are limited to between sunrise and sunset or between 7:00 a.m. and 7:00 p.m., whichever is greater, Monday through Friday inclusive, except by special exception as allowed under Section 6-88 of this ordinance. In no case shall a blast occur on the following legal holidays: New Year's, Memorial Day, Fourth of July, Labor Day, Veterans Day, Thanksgiving and Christmas. Blasting which occurs as part of a mineral extraction license must occur between 11:00 a.m. and 3:00 p.m. pursuant to §6-76(b)(9)(b) of the Code of Ordinances.

(Ord 14-108, July 17, 2014)

(3) Emergency Situations. Blasting of any type may occur at any time in situations deemed to be emergencies by the Bureau of Code Enforcement, after possible consultation with other City staff. Emergency situations may include, but are not limited to, blasting to install utilities damaged by weather events or blasting to correct a misfire of explosives in an otherwise permitted blast event.

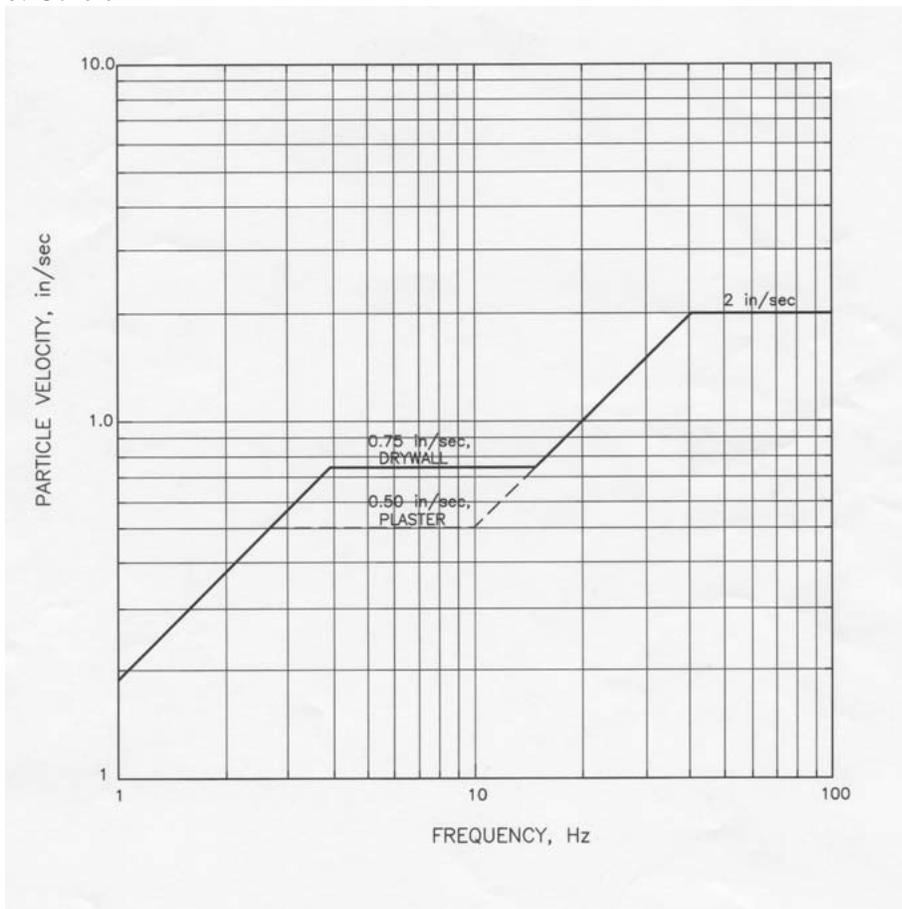
(b) Water quality protection. Water is a precious resource and the applicant must take measures to assure that the quality of the groundwater is protected. Prior to the initial blast, the applicant must conduct water quality tests on all non applicant-owned wells within 300 feet of the property line or as determined by the Planning Board for production blasting and

Planning Board approved projects. Water quality testing must also be done post-blast if requested by the property owner because of evidence of a substantive change in water quality. Turbidity in wells tested shall be no greater than that which existed prior to the blasting as established in the pre-blast survey.

(c) Ground Vibration.

(1) Peak Particle Velocity. Peak particle velocity limits (inches per second) not to be exceeded at any time, and in any one of the three principal directions: Distance from blast (feet)	Max Peak Particle Velocity (in/sec)
Less than 300	1.25
300 to less than 500	0.94
500 to less than 5000	0.75
5000 or more	0.54

b. Other.



Source: U.S. Bureau of Mines USBM RI 8507, 1980

- (i) Up to 30 Hertz:** 0.5 inches per second.
- (ii) 30 to 40 Hertz:** 1.0 inches per second.
- (iii) More than 40 Hertz:** 2.0 inches per second.

(2) Measurement. Ground vibration shall be measured as particle velocity. Particle velocity shall be recorded in three mutually perpendicular directions (x,y,z). The maximum allowable peak particle velocity shall apply to each of the three measurements.

(3) Seismographic Record. A seismographic record for all blasts shall be retained by the Applicant and provided to the Bureau of Code Enforcement or the Planning Board, if requested. The applicant is responsible for such record and for providing proper instrumentation as specified in this chapter. Personnel conducting such monitoring shall be properly trained in the operation of the equipment being used.

(d) Airblast Overpressure. Level not to be exceeded at any time: 133 peak dB (linear) two Hertz high-pass system.

(e) Instrumentation. All seismographs used for compliance with this ordinance shall meet the following minimum specifications:

(1) Seismic frequency range: 2 to 200 Hz (\pm three \pm Hz).

(2) Acoustic frequency range: 2 to 200 Hz (\pm one \pm db).

(3) Velocity range: 0.02 to 4.0 inches per second.

(4) Sound range: 110 to 140 dB linear.

(5) Transducers: three mutually perpendicular axes.

(6) Recording: provide time-history of waveform.

(7) Calibration: be laboratory calibrated as often as necessary, but at least once every 12 months or according to manufacturer's recommendations, whichever is less.

(8) Measurements. The requirements established herein shall be measured at the closest building(s) on abutting properties as determined by the Code Enforcement Officer or Planning Board.

(f) Other Permits. The applicant must also comply with all standards and conditions contained in other permits issued for such projects and local, state and federal statutes and regulations.

Sec. 6-85. Notices.

(a) Required Notification of Blasting. The following notice requirements for any blast requiring a blasting permit shall be adhered to by the Blaster.

(1) Initial Notice. The following initial notice of blasting shall be required:

a Production Quarry. Notice shall be sent no later than ten (10) calendar days and no earlier than fourteen (14) calendar days prior to the initiation of blasting. Blaster must develop and implement a plan that provides an opportunity for prior notification of a blast to all property owners located within 2,000 feet of the blast site. Notification may be made by telephone, and/or by mail,

and/or by public notice in the local newspaper, as set forth in the permit.

b. Project Blasting (any type). The Blaster must deliver, or send by first class mail, an advisement notice to all property owners within 300 feet of the Secured Blasting Area. If notification is sent by first class mail, it shall be mailed no later than five (5) calendar days prior to the initiation of blasting. If notification is hand delivered, it shall be delivered no later than two (2) calendar days prior to the initiation of blasting. Such notice must include the description of the blasting signals to be utilized during the operation.

The Blaster of either a production quarry or project must provide notice to a property owner who has made a written request to the Blaster.

(b) 24 hour Requirement: Prior to every blast, the Blaster shall notify all property owners within 300 feet of the Secured Blasting Area for Project Blasting and 1000 feet for production quarries. This will be done whether or not the property owners requested to be notified. The blaster shall also notify all others who have requested in writing to be so notified. Such notification shall be given by telephone, or by door hangars on the door of the residence or business, between 24 and 48 hours prior to the blast. The notification shall state the time the blast is proposed to occur, and the blast may occur as early as one hour prior to the noticed time and as late as one hour after the noticed time. notifying the start time of the blast within one hour. The burden of proof of notification is the responsibility of the blaster.

(c) Waiver of Notice. The requirement of notice in accordance with this section of this ordinance for a Project blast may be waived by the Bureau of Code Enforcement for the removal of less than 50 cubic yards of rock, as estimated in place, when that rock is unexpectedly encountered after work on the project has begun.

Sec. 6-86. Inspection, Monitoring, and Record Keeping

(a) Entry and Testing. The Codes Enforcement Officer or his authorized representative may enter the Secured Blasting Area or adjacent area to conduct tests and observe any authorized blasting operations and may order that additional ground vibration and airblast overpressure measurements using approved instrumentation be made by persons responsible for blasting operations to ensure that the limits specified in this ordinance are not exceeded, if excess readings are indicated.

(b) Additional Monitoring. The Blaster shall maintain a record of each blast. All records shall be retained at least three (3) years following cessation of the blasting operation, and shall be available for inspection by the Codes Enforcement Officer and shall contain the following minimum data for traceability purposes:

- (1) **Name of Responsible Party.** The name of person(s) responsible for the blasting operation.
- (2) **Location, Date, Time.** The location, date and time of each blast.
- (3) **Blaster.** The name(s) of blaster in charge.
- (4) **Weather.** The weather conditions (including such factors as wind direction, cloud cover, etc.).
- (5) **Data.** Seismograph and airblast readings, including date, time, and location of instrument.
- (6) **Notice.** Name, addresses, date and time of all persons who were notified prior to every blast.

Sec. 6-87. Compliance Schedule.

- (a) **Applicability.** Upon adoption of this ordinance, all existing and new blasting operations are subject to its terms and must obtain a permit to conduct any further blasting.
- (b) **Review.** A complete review of all activities under this ordinance shall be undertaken by the Code Enforcement Officer 12 months after adoption of this chapter to determine if the levels are adequate and reasonable to achieve the purpose for which this chapter is intended. The results of this review shall be reported to the Planning Board, which will report to the City Council with recommendations of the review.

Sec. 6-88. Exceptions for Undue Hardship.

- (a) **Application.** Applications for a permit for exception from the performance standards designated in this chapter may, on the basis of hardship, be made to the Codes Enforcement Officer. Any permit granted hereunder shall contain all conditions upon which said permit has been granted and shall specify a reasonable time that the permit shall be effective.
- (b) **Standards.** The Codes Enforcement Officer may grant the exception as applied for only if:
 - (1) **Limited in Scope.** The activity or operation will be of a temporary duration, i.e., a limited number of blasts at a specific site, and cannot be done in a manner that would comply with this chapter;
 - (2) **Reasonable Alternative.** No other reasonable alternative is available to the applicants; and

(3) Safety. The applicants represent, and the Codes Enforcement Officer finds, that blasting as permitted will not violate recognized safety standards.

(c) Conditions. Upon the issuance of any exception permit, the Codes Enforcement Officer may limit the scope of the exception and prescribe any reasonable conditions or requirements he deems necessary to minimize adverse effects.

Sec. 6-89. Violations and Penalties.

(a) Penalties. The submission of willful false information required by this ordinance, or the violation of this ordinance or the violation of any condition attached to a permit granted under this ordinance shall constitute a land use violation for which an enforcement action may be commenced by the City in accordance with Title 30-A MRSA § 4452.

Sec. 6-90. Severability

(a) Severability. If any provision of this ordinance is declared unconstitutional or held invalid, it shall not affect any other section, clause or provision thereof, but the same shall remain in full force and effect.