

ORDINANCE TO REGULATE BLASTING

SECTION 1 PURPOSE

Unregulated blasting may cause undue psychological, physical or nuisance damage to the people and environment of the community.

Through the establishment of standards, notice requirements and instrument monitoring of blasting operations it is intended to minimize the effects of Airblast over pressure, ground vibration, dust and noise associated with blasting which may be detrimental to individuals and the community in the enjoyment of life, property and the conduct of business.

It is intended to prevent permanent damage to the geologic, hydrogeologic, wildlife resources and ecological balance in the region, and to have an ordinance which can be effectively and efficiently administered without causing undue financial and administrative hardship to blasting operators.

SECTION 2 AUTHORITY

This ordinance is enacted pursuant to Title 30-A, M.R.S.A. Section 3001 and shall be administered by the Codes Enforcement Officer, and the Board of Selectmen. The requirements of this ordinance are in addition to any other ordinances, regulations and statutes and where different standards are contained elsewhere, the more restrictive standards shall apply.

This ordinance in no way replaces or negates the requirements pertaining to explosives as contained in the Fire Prevention Code of the American Insurance Association, 1970 Edition, as the same may be amended, or any rule or regulation of any governmental agency.

SECTION 3 DEFINITIONS

- a. 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.
- b. Applicant: the person, company or corporation responsible for the managing and conducting blasting operations.
- c. Blasting: any activity entailing the use of explosives for the purpose of producing an explosion to demolish structures or to fragment rock for mining, quarrying, excavation and construction.
- d. Blasting operations: are herein defined to mean drilling and site preparation for blasting, and detonation itself.
- e. Decibel: the unit of sound pressure commonly used to measure Airblast from explosives. The decibel scale is logarithmic.
- f. Explosives: shall mean any substance, chemical compound, or mechanical mixture that is commonly 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.
- g. Flyrock: rock that is propelled through the air or along the ground as a result of the detonation of explosives.

- h. Ground vibration: a shaking of the ground caused by the blast wave emanating from the blast.
- i. Hertz: a term used to express the frequency of ground vibrations and airblasts. One hertz is one cycle per second.
- j. Particle Velocity: a measure of ground vibration. 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.
- k. Seismograph: an instrument that measures and may supply a permanent record of earthborn vibration induced by blasting.

SECTION 4 PERMIT REQUIRED

A permit shall be obtained prior to any blasting of more than 1000 cubic yards with explosive devices or materials for any purpose within the boundaries of the Town of Woolwich.

A. Applications for a permit may be obtained from the Selectmen's Office. Permits shall be issued by the Codes Enforcement Office. Permits for removal of a total of 1000 cubic yards of material per project may be issued by the Codes Enforcement Officer. Applications for blasting and removal of more than 1000 cubic yards of material total per project must be reviewed by the Planning Board. For the purposes of this ordinance, the "project" shall include all blasting anticipated to be undertaken during the completion of a contract or series of contracts, for demolition, excavation or construction.

B. Applications shall contain the following information:

1. Name of applicant
2. Name of property owner
3. General contractor
4. Locations of the proposed blasting activity
5. Total number of cubic yards of material to be removed by blasting.
6. An estimate of the number of blasts required to remove the specified amount of material
7. A description of the project for which the blasting is being undertaken
8. Adjacent land uses
9. Location of adjacent structures and distance to those structures
10. Projected dates work is to be undertaken
11. Any other studies or information deemed necessary by the Codes Enforcement Officer or Planning Board, which may include, but not limited to:
 - (a) Pre Blast Assessment
 - (b) Hydrological Studies
 - (c) Geological Studies
 - (d) Test Wells
 - (e) Hours of Blasting
 - (f) Seismographs

C. Upon receipt of a completed application, the Codes Enforcement Officer shall review and forward the application to the Planning Board within ten (10) calendar days as appropriate under Section 4.A. of this ordinance.

1. The Planning Board shall review and act upon the application within thirty (30) days of transmittal of a completed application.
2. The Board may approve, approve with conditions or deny the application based on

the performance standards contained herein and in the zoning ordinance. The applicant must be notified in writing by first class mail within ten (10) days of the decision.

D. Public Hearing - A public hearing shall be held on the application in excess of 1000 cubic yards.

1. All abutting property owners and/or those property owners within 250 feet of the property line of the property for which the permit is requested shall be notified at least ten (10) calendar days prior to the date of the hearing. A list of names and mailing address shall be provided as part of the application. Such notification shall be by certified mail and shall be the responsibility of the applicant. Evidence of such notification shall be provided to the Planning Board.

2. Notification of the public hearing shall be given in a newspaper of local publication twice; the first time being at least seven (7) calendar days prior to the date of the hearing. Cost of this publication will be paid by the applicant.

E. Fees.

The application fee shall be \$100.00 per 1000 cubic yards for each application for blasting.

F. Bond and Proof of Insurance.

1. The applicant and/or the blaster may be required to post a bond in an amount to be determined by the Planning Board for those cases reviewed by the board.

2. The applicant and/or the blaster shall present proof of liability insurance in a minimum amount of \$1,000,000 combined single limit per occurrence, except for agricultural purposes by an individual on his own property using binary explosives.

G. Effective Period.

Permits shall be effective for no more than 365 calendar days from the date of approval. For blasting operations the scope of which exceeds one year, renewal of the permit shall be accomplished by reapplying in accordance with the procedure for a new permit, except that a public hearing may be held to review past compliance with the standards contained herein and any effects on existing uses and property owners in the vicinity of such blasting operations.

SECTION 5 PERFORMANCE STANDARDS

A. Hours of detonation: Hours of detonation shall be limited to daylight hours, no earlier than 8:00 a.m. or later than 5:00 p.m. Monday through Friday inclusive, except by special exception as in section 11 of this ordinance; excluding the following legal holidays: New Years, Memorial Day, 4th of July, Labor Day, Thanksgiving and Christmas.

B. Water Quality Protection: Water is a precious resource and measures shall be taken to protect ground water quality as found in the nearest non-owned well within 250 feet from the property line. This is to be determined by the Codes Enforcement Officer and from post blast testing results. Post blast testing shall be done no sooner than 24 hours or no later than 48 hours following a blast. Turbidity in wells tested shall be no greater than that which existed prior to the blasting as established in the preblast survey if such survey has been completed.

C. Ground Vibration:

1. Peak Particle Velocity Limits (in/sec) not to be exceeded at any time.

QUARRIES OTHER

<30 Hz 0.5 in/sec. <30 Hz 0.5 in/sec.

>30 Hz 1.0 in/sec. 31-40 Hz 1.0 in/sec.

>40 Hz 2.0 in/sec.

2. Ground vibration shall be measured as particle velocity. Particle velocity shall be recorded in 3 mutually perpendicular directions. The maximum allowable peak particle velocity shall apply to each of the 3 measurements and the vector sum of the 3 measurements.

3. A seismographic record shall be provided for each blast. The applicant shall be responsible for such record and for providing proper instrumentation as specified in this Ordinance. Personnel conducting such monitoring shall be properly trained in the operation of the equipment being use.

D. Airblast Overpressure:

1. Level not to be exceeded at any time: 133 peak D.P. (linear) 2 Hz high-pass system. The requirements established herein apply to any property of concern as determined by the Planning Board but no closer than the property line of property under the control - through ownership or lease or other contractual arrangement - of persons having blasting operations performed.

E. The applicant shall also comply with all standards and conditions contained in other permits issued for such projects and local, state, and federal statutes and regulations. The requirements established herein shall be measured at the property line of the applicant.

SECTION 6 NOTIFICATION

A. All blasting operations greater than 50 cubic yards shall have notice of such blasting to the Town Clerk with a list of all property owners within 250 feet of the blasting site. Prior to any blast of greater than 50 cubic yards, the person responsible for the blast shall inform all property owners within 250 feet of the blast property.

B. All blasting operations greater than 1000 total cubic yards shall have notice of such blasting published in a newspaper of local publication and mailed by certified mail to all property owners within 250 feet of the blasting property 10 calendar days prior to the intended date of the commencement of blasting operations. Such notices shall be the responsibility of the applicant.

1. Notice shall include the description of the blasting signals to be used during the operation and an address and telephone number where property owners may request further information and notification. Any property owner requesting further notification shall do so in writing to the person conducting the blasting operation.

C. Any person intending to detonate explosives greater than 100 cubic yards shall first notify the Codes Enforcement Officer or his duly authorized representative that a blast is planned. Such notification shall be received at least four (4) hours prior to the planned detonation and shall give the time (within + 30 minutes), location where the blasting is to be done, the amount of explosives to be used, and the name an business address of the person responsible for the blasting operation. The notification may be given orally. However, the burden of proof as to whether the notification was in fact received rests with the person responsible for the blasting operation.

1. Prior to any blast, the person responsible for the blast shall inform all property owners, who have requested in writing to be so informed, of the impending blast. Such notification shall be given by telephone 24 hours prior to the blast stating the time of the blast + one (1) hour. The burden of proof as to whether the notification was in fact received rests with the person responsible for the blasting operation.

SECTION 7 INSTRUMENTATION

All seismographs used for compliance with this ordinance shall meet the following minimum specifications:

- (1) Seismic frequency range: 2 to 200 Hz (+ 3 Hz).
- (2) Acoustic frequency range: 2 to 200 Hz (+ 1 db).
- (3) Velocity range: 0.02 to 4.0 inches/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 according to manufacturer's recommendations.

SECTION 8 INSPECTION AND MONITORING

The Codes Enforcement Officer or his authorized representative may conduct tests and observe any authorized blasting operations, and may also 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 Section 5 are not exceeded.

SECTION 9 RECORDS

Persons responsible for blasting operations for blasts over 1000 cubic yards shall maintain a record of each blast. All records shall be retained at least three 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:

- A. Name of person responsible for the blasting operation.
- B. Location, date and time of blast
- C. Names of blaster in charge
- D. Type of material blasted
- E. Number of holes, burden and spacing
- F. Diameter and depth of holes
- G. Types of explosives used
- H. Amount of explosives used
- I. Maximum amount of explosives per delay period of eight milliseconds or greater
- J. Maximum number of holes per delay period of eight milliseconds or greater
- K. Method of firing and type of circuit
- L. Weather conditions (including such factors as wind direction, cloud cover, etc.)
- M. Height or length of stemming
- N. If mats or other protections were used
- O. Type of detonators used and delay periods used
- P. Seismograph and airblast readings when measured, and from where measured.

SECTION 10 COMPLIANCE SCHEDULE

- A. All blasting operations existing at the time of adoption of this ordinance, shall be immediately brought under the provisions of this ordinance.
- B. A complete review of all activities under this ordinance shall be undertaken by the

Codes Enforcement Officer twelve (12) months after adoption of the ordinance to determine if the levels are adequate and reasonable to achieve the purpose for which this ordinance is intended. The results of this review shall be reported to the Chairman of the Board of Selectmen of the Town of Woolwich.

SECTION 11 EXCEPTIONS BASED ON UNDUE HARDSHIP

Applications for a permit for exception from the performance standards designated in this ordinance may, on the basis of undue 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. The Codes Enforcement Officer may grant the exception as applied for only if:

- A. 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 ordinance; and
- B. no other reasonable alternative is available to the applicants; and
- C. applicants represent, and the Codes Enforcement Officer finds, that blasting as permitted will not violate recognized safety standards.

Upon the issuance of any exception permit, the Codes Enforcement Officer may prescribe any reasonable conditions or requirements he deems necessary to minimize adverse effects upon the community.

SECTION 12 PENALTIES

The submission of 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 and be penalized in accordance with Title 30-A, M.R.S.A. Section 4452.

SECTION 13 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.

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