

Blasting Mitigation Requirements

1. Permit:

- a. A permit for blasting operations issued by the City of Liberty Lake shall be required.
- b. Application Requirements:
 - i. Current and valid explosive license issued by Washington State Labor & Industry
 - ii. Transportation Plan, as detailed in paragraph 4 below.
 - iii. Blasting Plan, as detailed in paragraph 6 (a) below.
 - iv. Pre-blast Notification, Inspection and Monitoring Plan, as detailed in paragraph 6 (c), 6 (d), and 6 (e) below.
 - v. Proof of insurance, consistent with the requirements detailed as detailed in paragraph 2 below.
 - vi. Fees in accordance with the City of Liberty Community Development Fee Schedule.
 - vii. All required submittals shall be provided to the City of Liberty in an electronic format.
- c. Blasting permit shall be valid for a period not to exceed 6 month; renewals shall be permitted with updated documentation.
- d. Revocation:
 - i. The Community Development Director has the power to revoke said permit if the permit holder fails to comply with the approved plans detailed above, or any other blasting mitigation requirement detailed herein.
 - ii. The permit holder must remove all explosive materials within 24 hours of being notified that their permit has been revoked.
 - iii. The revocation of said permit is appealable under the provisions detailed in City Development Code §10-4G.

2. Liability insurance requirements:

- a. The applicant shall provide a certificate of liability insurance in the minimum amount of \$5 million per incident, with the City of Liberty Lake, and the owners of all properties falling within the separation distance detailed in the preblast notification plan in paragraph 6(c)(ii)(2) below as additional named insured. The City of Liberty Lake reserves the right to adjust the required liability insurances as based upon the number and value of the properties falling within the separation distance detailed in the preblast notification plan in paragraph 6(c)(ii)(2) below
- b. The certificate must also state that the insurance company must give the City of Liberty Lake a minimum of 10 days notice of cancellation of liability insurance coverage.

3. **City of Liberty Lake not to assume liability:**

- a. The City of Liberty Lake is not responsible for any damage caused by the person, company or corporation blasting within the City of Liberty Lake.

4. **Transportation of explosives (transportation plan):**

- a. A plan for the transportation of explosive materials within the City of Liberty Lake must be included in the blasting permit application.
- b. The plan must include the following information:
 - i. Route used for deliveries and returns.
 - ii. Hours of Transportation.
 - iii. Maximum quantities of explosives being transported.
 - iv. Types of vehicles being used. Vehicles must be in compliance with state and federal transportation regulation for transportation of explosive materials.

5. **Storage of explosives.**

- a. No overnight storage of explosive materials is permitted within the limits of the City of Liberty Lake.
- b. The required method of handling explosives in the City of Liberty Lake is as follows:
 - i. Same day delivery;
 - ii. Stand during loading; and,
 - iii. Return of all unused explosive materials.

6. **Use of explosives.**

- a. **Blasting plan.** A blasting plan must be submitted to the City of Liberty Lake and approved by the Community Development Department prior to issuing a blast permit. The plan must include additional documentation for the proposed blasting operation, including maps, site plans, and excavation drawings. Specifically, the following information must be included:
 - i. The location where the blast (or blasts, if more than one) will occur;
 - ii. The approximate total amount of material to be blasted;
 - iii. The incremental volumes, per blast, of the materials to be blasted;
 - iv. The types and packaging of explosive materials to be used;
 - v. The drill hole diameters, depths, patterns, subdrilling depths and drill hole orientation to be used;
 - vi. The initiation system, the incremental delay times, and the location of the primers in the explosive column;

- vii. The stemming depths and stemming material for the various estimated depths of drill holes to be blasted;
 - viii. The approximate powder factors anticipated;
 - ix. The flyrock control procedures and equipment to be used;
 - x. The maximum number of blasts that will be made in one day;
 - xi. The blast warning sound system and equipment to be used;
 - xii. The scheduled start date and finish date of blasting operations; and,
 - xiii. Additional requirements as may be needed.
- b. **Traffic control plan.** A traffic control plan acceptable to the City of Liberty Lake detailing signing, flagging, temporary road closures, and detour routes for blasting operations shall be filed before the blasting permit is issued, if traffic control is required.
- c. **Pre-blast notification plan.** A plan outlining preblast public notifications, structural inspections, and blast effect monitoring within a specified distance of the blasting is required before the blasting permit is issued.
- i. Separation distance. The distances from the blasting where the notification, preblast structural inspection, and blast monitoring is required must be determined by the scaled distance formulas described below. Blasting will not be permitted until the notification and inspection requirements are completed.
 - ii. Scaled distance formula = The distance from the blast within which:
 - 1) Notification of all occupied structures is required: $D_a = 90 w$;
 - 2) Inspection of all occupied structures is required: $D_b = 75 w$;
 - 3) Monitoring of selected structures is required: $D_c = 60 w$.
 - 4) In the above formulas:
 - D_a , D_b , and D_c are the actual distances in feet from the closest point in the blast.
 - w is the square root of the maximum weight of the explosives in pounds detonated with a minimum 8 millisecond from another **detonation event**.
- d. **Notification letter.**
- i. The preblast notification must consist of a letter advising all residents within the distance (specified in WAC 296-52-720 section 10 (3)(b)) of the blasts.
 - ii. The letter must include the intent of the blasting program, its anticipated impact on local residents, the proposed duration of blasting activities, and provide telephone numbers for public contact.
 - iii. Distribution of this notification must be made a minimum of seven days before the start of blasting.
- e. **Preblast inspection.**
- i. A preblast inspection of resident's property must be offered to all residents within the distance (specified in Paragraph 6(c)(ii) above) of the blasting at no cost to

the resident and will be performed by a qualified third party who is not an employee of the contractor.

- ii. A copy of the individual inspection reports and a log of all photos taken are to be provided to City of Liberty Lake.
 - iii. Where inspections are not allowed by the resident or are not possible for other reasons, a certified letter must be sent to the occupant/owner at the unsurveyed address advising them of their right to a preblast inspection and the possible consequences of denying an inspection.
 - iv. The preblast inspection program for residences within the specified distance must be complete two days prior to the start of blasting and the City of Liberty Lake Planning, Engineering & Building Services should be notified.
- f. **Blasting plan compliance inspections.** Blast-plan compliance inspections may be required for every blast until the operator can demonstrate an ability to safely blast according to the blast plan and control the extraneous effects of blasting such as flyrock, noise/air blast, and ground vibration. If more than two blasting inspections are required, an additional fee of \$50 per blast inspection will be assessed.
- g. **Monitoring.** All blasts which require monitoring by Paragraph 6(c)(ii)(3) are to be monitored using blast monitoring equipment designed for the purpose and carrying a certificate of calibration dated within the previous twelve months.
- i. The blast monitors must record peak particle velocity and frequency in three orthogonal directions and air over pressure.
 - ii. Monitored shots in which the pounds detonated per an 8-millisecond time increment is less than ten pounds, one blast monitor is required.
 - iii. When ten or more pounds is detonated per an 8-millisecond time interval, two or more blast monitors are required.
 - iv. All blast-monitoring records are to be signed and submitted to City of Liberty Lake within twenty-four hours of each blast.
- h. **Maximum peak particle velocity.** The maximum peak particle velocity in any seismic trace at the dominant frequency allowed on any residential, business or public structure designed for human occupancy is to be determined by the chart in WAC [296-52-67065\(1\)](#).
- i. **Air blast.** The maximum air blast over pressure permitted at the closest residential, business or public structure designed for human occupancy is not to exceed 133 dBL @ 2.0 Hz hi pass system per WAC [296-52-67065\(3\)](#).
- j. **Utilities.** Whenever blasting is being conducted in close proximity to existing utilities, the utility owner must be notified a minimum of twenty-four hours in advance of blasting.

- k. **Blast Report.** A signed blast report needs to be filed with City of Liberty Lake within twenty-four hours of the blast. The report must include the following blast information:
- i. Date, time, and location of the blast;
 - ii. Number of drill holes;
 - iii. Maximum, minimum and average drill hole depth;
 - iv. Drill hole diameter;
 - v. Subdrill depth;
 - vi. Total pounds of each type of explosive used;
 - vii. A drill hole section schematic showing the loading of a typical hole;
 - viii. Amount and type of stemming material;
 - ix. Schematic showing the drill hole pattern;
 - x. Initiated delayed sequence;
 - xi. Maximum pounds of explosives detonated in any eight millisecond time interval;
 - xii. Type and size of any flyrock protection devices used, if any; and
 - xiii. Comment regarding the outcomes of the blast.
- l. City of Liberty Lake Department of Planning, Engineering and Building Services must be notified immediately of any unplanned or unusual events that resulted from the blast. The permittee must also report any incident, damage claim, or neighbor annoyance report brought to the permittee's attention within twenty-four hours.