

## City of Aspen Construction Noise Suppression Plan

As the General Contractor for this construction project, I \_\_\_\_\_ hereby agree to the following restrictions and will provide the necessary noise suppression (outlined below), such that it will lesson the impact to the properties within 300 feet of the project located at \_\_\_\_\_ . I understand that if any construction activities exceed 80 decibels and are not covered by this document I will contact the City of Aspen Environmental Health Department to design a specific noise suppression plan for those activities.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Print name

On-site Contact Phone # \_\_\_\_\_

Many activities on construction sites are noisy. Although some noise may be unavoidable, it can often be controlled using improved work practices. Builders should make all reasonable efforts to minimize noise. Noise Suppression plans are required for all construction projects where activities will generate noise that exceeds 80 decibels. *Section 18.04.050(A)(2)(d)*

### Hours of operation

All construction activity is limited to the following days and times:

***Monday thru Friday***

7:30 am to 5:30 pm

***Saturday***

9:00 am to 5:00 pm

***Sunday***

No construction work is allowed

Constructions activities producing noise greater than 80 decibels are limited to the following days and times:

***Monday thru Friday***

9:00 am to 5:00 pm

Work that is over 80 decibels which by law requires a noise suppression plan will not be allowed for Saturday work that includes but not limited to the use of compressors, generators, jackhammers, power equipment, nail guns, drilling machinery, earth moving equipment and similar loud construction activities. This does not restrict quiet work inside and outside that does not require a power source, including a battery, on Saturday.

Construction activity is not allowed during all **federal holidays**.

Due to the congestion in Aspen when town is completely full, noise suppression plans will not be approved for the following dates: **Christmas Week (December 25 through Jan. 1), Food and Wine Week in June (Friday thru Sunday), 4<sup>th</sup> of July day and/or weekend if it falls on a Friday or Monday, and Labor Day weekend.**

## **Specific noise suppression requirements for all activities exceeding 80 decibels at a construction site include:**

1. Notify neighbors within two hundred fifty (300) feet of the project informing them of the kinds of equipment, expected noise levels and durations of loud work. Including the variation of noise levels during a typical construction days may be helpful. Such notification must be in writing and be done seven (7) days prior to the starting time of the project. Communication with neighbors can prevent complaints from arising, and resolve concerns before there is a problem. Provide a phone number where the foreman can be reached prior to the start of the job.
2. Operate equipment in accordance with manufacturer's specifications and with all standard manufacturers' mufflers and noise-reducing equipment in use and in properly operating condition.
3. Post notices to inform workers, including sub-contractors, about the basic noise requirements, as well as specific noise restrictions, to the project.
4. Install noise barriers around all equipment/activities specified in Table 1: TYPICAL CONSTRUCTION EQUIPMENT REQUIRING NOISE SUPPRESSION. Noise barriers not only significantly reduce construction noise, but they also provide an extra benefit of "hiding" the noise producing sources, thus increasing a neighbor's tolerance. **(See also the attached list of noise blocking methods for details on approved noise barriers.)**
5. Move portable loud equipment including generators, compressors, and cement mixers to different sides of the property to reduce impacts on individual neighbors.

## **What can you do about construction noise?**

- The use of radios on the site before 8:00 am are not allowed: remind laborers and sub-contractors.
- Noise suppression plans will not allow noisy machines such as brick cutters or jackhammers to be operated before 9.00 am.
- Noisy equipment such as cement mixers should be placed on the site to maximize the distance from neighboring houses and/or rotate location so as to not impact just one neighbor. Noise levels drop quickly with distance from the source.
- All equipment should be properly maintained, with special attention to mufflers and other noise control devices.
- Between work periods, builders are required by city ordinance to shut down machines such as backhoes, bobcats, loaders and generators.
- When dropping materials from a height—for example, into or out of a truck, or when loading or unloading scaffolding, noise suppression plans require a chute or side baffles.
- All vehicular movements to and from the site must only be made during the scheduled normal working hours. This includes off-site noise that is associated with a specific project such as staging of concrete trucks.

**TABLE 1: NOISE CONSTRUCTION EQUIPMENT REQUIRING NOISE SUPPRESSION PLANS**

<b>Equipment Category</b>
Auger Drill Rig
Backhoe
Chain Saw
Clam Shovel
Compressor (air)
Concrete Mixer
Concrete Pump
Concrete Saw
Crane (mobile or stationary)
Dozer
Drill Rig
Excavator
Front End Loader
Generator (more than 25 KVA)
Gradall
Grader
Horizontal Hydraulic Boring Jack
Impact Pile Driver (diesel or drop)
Impact Wrench
Jackhammer*
Mounted Impact Hammer (hoe ram)
Paver
Pneumatic Tools
Rock Drill
Scraper
Scarifier
Slurry Machine
Vibratory Pile Driver

## **Noise Blocking Methods**

**Contractors shall require all subcontractors and vendors to use:**

- Quieter vs. Louder equipment
- “Residential” grade combustion engine exhaust silencers
- Electrical vs. pneumatic hand power tools: **All pneumatic tools operated in the City of Aspen must be fitted with an effective silencer on their air exhaust port.**
- Hydraulic vs. air powered rock drills
- “Silenced” pile drivers vs. Diesel pile drivers

**In general, noise reduction equipment and materials may include, but not be limited to:**

1. Shields, shrouds, or intake and exhaust mufflers.
2. Noise-deadening material to line hoppers, conveyor transfer points, storage bins, or chutes.
3. Noise barriers using materials consistent with the Temporary Noise Barrier Materials Section.
4. Noise curtains
5. Plywood with concrete blankets at the height of the equipment and that it surrounds the activity such that it directs noise up more than out from the property.
6. Portable three sided enclosures made out of plywood to move with the activity such as jack hammering.
7. Internal combustion engines are to be fitted with a suitable muffler in good repair.

### **Specific Equipment:**

**Generators:** The local power grid shall be used wherever feasible to limit generator noise. No generators larger than 25 KVA shall be used and, where a generator is necessary, it shall have maximum noise muffling capability.

**Backup Alarms:** All equipment with backup alarms operated by the Contractor, vendors, suppliers, and subcontractors on the construction site shall be equipped with either audible self-adjusting ambient-sensitive backup alarms or manually-adjustable alarms. The ambient-sensitive alarms shall automatically adjust to a maximum of 5 dBA over the surrounding background noise levels. The manually-adjustable alarms shall be set at the lowest setting required to be audible above the surrounding noise. Installation and use of the alarms shall be consistent with the performance requirements of the current revisions of Society of Automotive Engineering (SAE) J994, J1446, and OSHA regulations.

**Compressors:** The unit with the lowest noise rating which meets the requirements of the job should be used where work is conducted in the City of Aspen, installed with mufflers and/or enclosed in a noise barrier.

Jackhammer: All jackhammers and pavement breakers used on the construction site shall have exhaust systems and mufflers that have been recommended by the manufacturer as having the lowest associated noise and shall be enclosed with shields or acoustical barrier enclosures.

Concrete crushers or pavement saws: Pre-augur pile holes to reduce the duration of impact or vibratory pile driving and tie to local power grid to reduce the use of generators and shall be enclosed with shields or acoustical barrier enclosures.

Pneumatic hand power tools: All pneumatic tools operated in the City of Aspen must be fitted with an effective silencer on their air exhaust port.

### **Temporary Noise Barrier Materials:**

Temporary barriers shall be constructed of 3/4-inch Medium Density Overlay (MDO) plywood sheeting, or other material of equivalent utility and appearance having a surface weight of 2 pounds per square foot or greater. The temporary barriers shall be lined on one side with glass fiber, mineral wool, or other similar noise curtain type noise-absorbing material at least 2-inches. The materials used for temporary barriers shall be sufficient to last through the duration of the construction project, and shall be maintained in good repair. Prefabricated acoustic barriers are available from various vendors. An equivalent barrier design can be submitted in lieu of the plywood barrier described above.

### **Impact Equipment:**

Impact noise is noise produced from impact or devices with discernible separation in sound pressure maxima. Examples for impact equipment include, but are not limited to; blasting, chisel drops, mounted impact hammers (hoe ram), and impact pile drivers.

Impact equipment is the loudest and most intrusive to the neighboring property. **The City of Aspen requires that this type activity have the strictest mitigation requirements and requires a customized noise suppression plan specific to the site.** General contractors must contact the City of Aspen Environmental Health Department for an application at 970-920-5039.

### **Noise Control**

- Replace worn, loose, or unbalanced machine parts that cause vibration.
- Keep machine parts well lubricated to reduce friction.
- Acoustical enclosures and barriers around generators
- Sound absorbing material and vibration isolation systems on hand tools
- Quiet work practices - use rubber mallets to erect and dismantle formwork.

**Noise Controls for Construction Equipment (Schneider et al., 1995)**

<b>Equipment</b>	<b>Noise Controls</b>
Pile Driver	Enclosure, muffler
Stone saw cutting	Noise control pad with water
Handheld impact drills	Reduction of reflected sound
Circular saw blades	15° tooth angle, new tooth configuration, slotted saw blades, viscoelastic damping
Pneumatic tools	Muffler
Pavement breaker/ Rock drill	Muffler, enclosure of cylinder case and front head, moil damping
Portable air compressor	Muffler, acoustic enclosures
Bulldozer	Bulldozer Cab-liner material, enclosure, sound absorption in canopy, sealing of all openings
Wheeled loader	Absorption of sound cooling air route
Vibratory roller	Flexible mounting for pump compartment
Joint Cutter	Anti-vibration mounting fixtures