



## MAYOR AND COUNCIL COMMUNICATION

DATE: 12/20/2016

**REGULAR**

ITEM #: 29

**AGENDA ITEM:** Noise Ordinance Amendment  
**SUBMITTED BY:** Emily Becker, City Planner  
**THROUGH:** Kristina Handt, City Administrator  
**REVIEWED BY:** Stephen Wensman, Planning Director

---

### **BACKGROUND:**

The Planning Commission held a public hearing and made recommendation on an amendment to the City's Noise Ordinance in April of 2016. The amendment was requested by the City Engineer, who suggested that extending working hours similarly to other cities may allow for more competitive pricing on City projects and allow more timely completion of projects to minimize disruption to Lake Elmo properties. The recommended amendment amended the following in the City's Noise Ordinance as it pertains to construction activity:

- Further clarified construction activity that was prohibited.
- Added exemptions from the prohibition of construction activity, including snow removal activity, parking lot maintenance or sweeping, and work on public infrastructure projects.
- Clarified that the City Administrator was able to grant certain exemptions for activity that is of urgent necessity and in the interest of public health and safety.
- Removed language that allowed a special permit to be granted for economic loss and replaced with a provision that allows the City Administrator to grant permission to allow construction during outlined times. There was also a change that restricts construction occurring during specially-allowed hours to at least 1000 feet away from any dwelling (previously 600 feet).

Staff tabled the issue and did not bring the ordinance amendment to Council in order to give the amendment a more in-depth review and gain more input from the City Attorney. The Builders Association of the Twin Cities also weighed in on the proposed amendment, expressing concern about arbitrarily restricting private construction projects and exempting public projects; there being lack of evidence of a problem; and noise thresholds. Staff would like to bring forth a further look at the ordinance for the following reasons:

- The City Administrator is often asked for permission to allow construction on Saturdays 8:00am or 9:00 am to 3:30pm or extended hours until 7:00pm on weekdays. These requests are almost always granted, and so Staff feels that this standard should be given another thought. Only one complaint has been received by Staff from an Oakdale resident by granting permission for these extended hours. Additionally, amending the ordinance will save Staff time by not having to write approval letters each time a request is made.

- To add clarification to the Construction subdivision of the Noise Ordinance, taking in to consideration feedback received from the City Engineer, Planning Commission and Builders Association of the Twin Cities.

### **ISSUE BEFORE COUNCIL:**

Staff respectfully requests the Council to consider the proposed Noise Ordinance amendment.

### **PROPOSAL DETAILS/ANALYSIS:**

The revised, proposed ordinance amends the following:

- The table in Section 130.46: Measurement of Noise is repealed and replaced with standards set forth by Minn. Administrative Rules Ch. 7030. These standards are below\*, \*\*:

Noise Area Classification	Daytime		Nighttime	
	L <sub>50</sub>	L <sub>10</sub>	L <sub>50</sub>	L <sub>10</sub>
1 (Residential housing, religious activities, camping and picknicking areas, health services, hotels, educational services.)	60	65	50	55
2 (Retail, business and government services, recreational activities, transit passenger terminals.)	65	70	65	70
3 (Manufacturing, fairgrounds and amusement parks, agricultural and forestry activities.)	75	80	75	80

Nighttime is defined as the hours between 10:00 p.m. and 7:00 a.m. and Daytime is defined as the hours between 7:00 a.m. and 10:00 p.m. The “L” measurements in the table signify the time during a one-hour period of monitoring that decibel level can occur; L<sub>10</sub>=10% of that time (6 minutes) and L<sub>50</sub>=50% of that time (30 minutes).

\* There is a land use classification 4: Undeveloped and unused land, water areas, under construction. These land use activities are not regulated in the table above.

\*\* Noise Emission Reference Levels and Usage Factors is attached, giving examples of noise producers at various decibel levels.

- Saturday construction 9:00 a.m. – 3:30 p.m. is allowed.
  - This allows time for residents to comfortably sleep in and be quiet in time for dinner on Saturdays.
  - The City Administrator has communicated that requests for this are almost always granted (from 8:00 a.m. or 9:00 a.m. to 3:30 p.m.), so this provision eliminates the time the Administrator must review and approve these requests.
  - 9:00 a.m. to 3:30 p.m. is still as or more restrictive than other cities.

- This would help allow for more competitive pricing on City projects and allow more timely completion of projects to minimize disruption to Lake Elmo properties. It does not limit these extended hours to City projects so as to not be viewed as arbitrary.
- Construction hours are extended from 6:00 p.m. to 7:00 p.m.
- The ordinance still allows the City Administrator to grant written permission for construction activity to occur when he/she finds that the activity is of urgent necessity and in the interest of public health and safety. This seems to be a common standard in other City ordinances.
- The ordinance no longer states that permission may be granted for construction during specific extended hours. It does still allow construction noise of up to 95 decibels to take place during any hour of any day if the construction takes place no less than 1200 feet from any dwelling. Noise of this decibel level will dissipate to ambient levels at 1200 feet from the noise source.

**FISCAL IMPACT:**

Allowing extended working hours may allow for more competitive pricing on City projects and allow more timely completion of projects to minimize disruption to Lake Elmo properties.

**OPTIONS:**

The Council may:

- Approve the ordinance amendment as presented.
- Amend the ordinance amendment and approve as amended.
- Deny the ordinance amendment.

**RECOMMENDATION:**

Staff recommends that the Council approve the ordinance amendment as presented.

***“Move to approve Ordinance 08-\_\_\_ amending Chapter 130: Noise Control.”***

If approved, the Council may adopt Resolution 2016- , approving summary publication of Ord. 08-.

***“Move to adopt Resolution 2016- , approving summary publication of Ord. 08- “***

**ATTACHMENTS:**

- Ord 08- amending Chapter 130: Noise Control
- Resolution 2016- Summary Publication of Ord 08-
- Ord 08- amendment to Chapter 130: Noise Control, as recommended by the Planning Commission
- Other Cities Noise Ordinance Comparison Table
- Summary of Construction Noise Approval Letters
- Noise Level Chart
- Estimating Sound Levels Diagram
- Letter from BATC

CITY OF LAKE ELMO  
COUNTY OF WASHINGTON  
STATE OF MINNESOTA

ORDINANCE NO. 08-\_\_\_\_

SECTION 1. The City Council of the City of Lake Elmo hereby amends Title VIII, Chapter 130: General Offenses; Noise Control, Sections 130.45 - 130.48 of the Lake Elmo Code of Ordinances to read as follows:

***NOISE CONTROL***

**§ 130.45 NOISE PROHIBITED.**

It shall be unlawful to make, continue, or cause to be made or continued, any noise in excess of the noise levels set forth unless noise is reasonably necessary to preserve life, health, safety, or property.

(1997 Code, § 1370.01) Penalty, see § 10.99

**§ 130.46 MEASUREMENT OF NOISE.**

(A) Any activity not expressly exempted by this section which creates or produces sound regardless of frequency exceeding the ambient noise levels of the property line of any property (or if a condominium or apartment house within any adjoining apartment) by more than 6 decibels above the ambient noise levels as designated ~~in the following table at the time and place and for the duration then mentioned, is a violation of this section, but any enumeration in this section is not exclusive.~~ by Minnesota Rule Part 7030.0040, Noise Standards.

<del>Duration of Sound</del>	<del>7:00 a.m. to 6:00 p.m. (All Districts)</del>	<del>6:00 p.m. to 7:00 a.m. Residential District and 6:00 p.m. to 7:00 a.m. (All Other Districts)</del>	<del>10:00 p.m. to 7:00 a.m. (Residential Districts)</del>
<del>Less than 10 minutes</del>	<del>75 db</del>	<del>70 db</del>	<del>60 db</del>
<del>Between 10 minutes and 2 hours</del>	<del>70 db</del>	<del>60 db</del>	<del>50 db</del>
<del>In excess of 2 hours</del>	<del>60 db</del>	<del>50 db</del>	<del>40 db</del>

~~(B) In determining whether a particular sound exceeds the maximum permissible sound level in the above table:~~

~~—(1) Sounds in excess of the residential district limitations as measured in a residential district or other districts; and/or~~

~~—(2) During all hours of Sunday and state and federal holidays, the maximum allowable decibel levels for residential districts are as set forth in the table in division (A) above.~~

(1997 Code, § 1370.02) Penalty, see § 10.99

## **§ 130.47 CONSTRUCTION EQUIPMENT.**

(A) Purpose. The City understands that exceeding decibels above the ambient noise levels is necessary from time to time in order to use heavy equipment to perform construction activities and make necessary improvements within the City. The following sets forth specific times during which such heavy equipment that exceeds the ambient noise level may be used.

(B) Definitions. For purposes of this Section, the following definitions shall apply:

**HEAVY EQUIPMENT.** Compactors/rollers, cranes, bulldozers, dump trucks, excavators, forklifts, graders, jackhammers, loaders, pavement breakers, pile drivers, portable crushers, tractors, trenchers, or other pieces of equipment that generate similar levels of noise.

**OPERATED.** Engine start-up or warm-up, delivery and loading/unloading of equipment/supplies or any activity involving heavy equipment that exceeds ambient noise levels.

~~(A)-(C) Except as stated, no pile driver, jackhammer, or other construction equipment shall be operated between the hours of 6:00 p.m. to 7:00 a.m. on weekdays and during any hours on Saturdays, Sundays, and state and federal holidays. Heavy equipment may be operated in excess of ambient noise levels between the hours of 7:00 a.m. to 7:00 p.m. on weekdays and on Saturdays from 9:00 a.m. to 3:30 p.m. No heavy equipment exceeding ambient noise levels shall be operated on Sundays or state and federal holidays. No heavy equipment shall be operated at any time under any circumstances if the sound noise level from the operation exceeds 100 decibels measured along any property line. However, if the decibel maximum sound limit is reduced to 95 decibels effective the second anniversary of the enactment of this code, and 90 decibels effective the fourth anniversary; and the operation of the equipment conforms to the maximum allowable sound levels as stated in this section; it may be operated during the above prohibited hours and days. When any of the above named equipment is used for any purpose other than construction, the ambient noise levels apply.~~

~~—(B) No internal combustion engine or any other power unit when operated in connection with construction or demolition equipment shall be operated at any time other than at the times as set forth in this section and any sound emitted from any engine or power unit shall not exceed 83 decibels measured along the property line.~~

~~(C)(D) If an emergency situation exists or if substantial economic loss would result to any person unless allowed additional hours of equipment operation, a special permit may be granted for extended hours of operation of the construction equipment and internal combustion engine or power unit as follows. In the event of an emergency situation, a permit Heavy equipment may be operated in excess of the ambient noise levels during times not allowed by paragraph (C) of this Section if it is found by the City Administrator that the activity is of urgent necessity and is in the interest of the public health, safety or welfare. The City Administrator must grant written permission. Permission by the City Administrator may be granted for the operation of heavy equipment in excess of the ambient noise levels during any hour of any day for a period not to exceed 3 days or less while the emergency continues. This permit Written permission may be renewed by the City Administrator for periods of 3 days or less while if the emergency continues.~~

~~(E) (2) In the event of a determination of substantial economic loss to a person, a special permit may be granted for the operation throughout the hours of 7:00 a.m. to 9:30 p.m. on weekdays and throughout the hours of 1:00 p.m. to 5:00 p.m. on Saturdays, Sundays, and state and federal holidays upon the condition that while any construction equipment, internal combustion engine, or power unit is in operation, its location shall not be less than 600 feet in any direction from any dwellings, except that if while any construction equipment, internal combustion, or power unit is in operation, its location shall be no less than Activities involving operation of heavy equipment producing a noise level of up to 95 decibels that takes place no less than 1,200 feet in any direction from any dwelling, a permit may be allowed, by written permission granted by the City Administrator, for operation during any hour of any day. Ambient noise levels must be maintained at all property lines.~~

#### § 130.48 OUTDOOR IMPLEMENT.

(A) Except as stated, any power lawn mower, snowblower, power hedge clipper, power saw, or other implement, designed primarily for outdoor use, shall be operated only between the hours of 7:30 a.m. to 9:00 p.m. on weekdays, or between the hours of 9:00 a.m. to 9:30 p.m. on Saturdays, Sundays, and state and federal holidays.

(B) However, if the equipment operation conforms to the ~~maximum allowable sound ambient noise~~ levels as stated, it may be operated during the above prohibited hours.

**SECTION 2. Effective Date.** This ordinance shall become effective immediately upon adoption and publication in the official newspaper of the City of Lake Elmo.

**SECTION 3. Adoption Date.** This Ordinance 08-\_\_ was adopted on this \_\_ day of \_\_\_\_, 2016, by a vote of \_\_ Ayes and \_\_ Nays.

LAKE ELMO CITY COUNCIL

---

Mike Pearson, Mayor

ATTEST:

---

Julie Johnson, City Clerk

This Ordinance 08-\_\_ was published on the \_\_\_\_ day of  
\_\_\_\_\_, 2016.

**CITY OF LAKE ELMO  
COUNTY OF WASHINGTON  
STATE OF MINNESOTA**

**RESOLUTION NO. 2016-\_\_**

**RESOLUTION AUTHORIZING PUBLICATION OF ORDINANCE 08-\_\_ BY TITLE  
AND SUMMARY**

**WHEREAS**, the City Council of the City of Lake Elmo has adopted Ordinance No. 08-\_\_, an ordinance to amend the City's Noise Ordinance; and

**WHEREAS**, the ordinance is lengthy; and

**WHEREAS**, Minnesota Statutes, section 412.191, subd. 4, allows publication by title and summary in the case of lengthy ordinances or those containing charts or maps; and

**WHEREAS**, the City Council believes that the following summary would clearly inform the public of the intent and effect of the ordinance.

**NOW, THEREFORE, BE IT RESOLVED** by the City Council of the City of Lake Elmo, that the City Clerk shall cause the following summary of Ordinance No. 08-\_\_ to be published in the official newspaper in lieu of the entire ordinance:

**Public Notice**

The City Council of the City of Lake Elmo has adopted Ordinance No. 08-\_\_, which amends Chapter 130: General Offenses; Section 47: Construction Equipment. The revised ordinance amends the standards as follows:

- Adopts Noise Area Classification Table set forth in Minn. Administrative Rules Ch. 7030.
- Allows the operation of heavy equipment for the purpose of construction on Saturdays from 9:00am – 3:30pm and weekdays from 7:00am to 7:00pm (not including state and federal holidays).
- A special permit may no longer be granted in the event of a determination of substantial economic loss.

The full text of Ordinance No. 08-\_\_ is available for inspection at Lake Elmo city hall during regular business hours.

**BE IT FURTHER RESOLVED** by the City Council of the City of Lake Elmo that the City Administrator keep a copy of the ordinance at City Hall for public inspection and that a full copy of the ordinance be placed in a public location within the City.

Dated: December 20, 2016



\_\_\_\_\_  
Mayor Mike Pearson

ATTEST:

\_\_\_\_\_  
Julie Johnson, City Clerk

(SEAL)

The motion for the adoption of the foregoing resolution was duly seconded by member

\_\_\_\_\_ and upon vote being taken thereon, the following voted in favor thereof:

and the following voted against same:

Whereupon said resolution was declared duly passed and adopted.

CITY OF LAKE ELMO  
COUNTY OF WASHINGTON  
STATE OF MINNESOTA

ORDINANCE NO. 08-\_\_\_\_

**SECTION 1. The City Council of the City of Lake Elmo hereby amends Chapter 130: General Offenses; Section 47: Construction Equipment of the Lake Elmo Code of Ordinances to read the following:**

(A) Except as stated, no pile driver, jackhammer, or other similar construction ~~equipment activity including but not limited to: operation, servicing and engine start-up/warm-up of heavy construction equipment; loading or unloading of heavy equipment;~~ shall be ~~operated~~ allowed between the hours of ~~6 7~~ 6:00 p.m. to 7:00 a.m. on weekdays, and during any hours on Saturdays, Sundays, and state and federal holidays. No equipment shall be operated at any time if the sound level from the operation exceeds 100 decibels measured along any property line. ~~However, if the decibel maximum sound limit is reduced to 95 decibels effective the second anniversary of the enactment of this code, and 90 decibels effective the fourth anniversary; and the operation of the equipment conforms to the maximum allowable sound levels as stated in this section; it may be operated during the above prohibited hours and days.~~ When any of the above named equipment is used for any purpose other than construction, the ambient noise levels apply.

(B) No internal combustion engine or any other power unit when operated in connection with construction or demolition equipment shall be operated at any time other than at the times as set forth in this section, and any sound emitted from any engine or power unit shall not exceed 83 decibels measured along the property line. Unnecessary idling of internal combustion engines is prohibited. All construction equipment powered by internal combustion engines shall be properly muffled and maintained.

(C) ~~If an emergency situation exists or if substantial economic loss would result to any person unless allowed additional hours of equipment operation, a special permit may be granted for extended hours of operation of the construction equipment and internal combustion engine or power unit as follows.~~ Exemption. The following activities are specifically exempted from the prohibitions under this section.

(1) ~~In the event of an emergency situation, a permit~~ Activities granted an exemption by written permission of the City Administrator for which the City Administrator finds that the activity is of urgent necessity and in the interest of public health and safety. The exemption may be granted for the operation during any hour of any day for a period not to exceed 3 days or less while the emergency continues. This ~~permit~~ written permission may be renewed for periods of 3 days or less while the emergency continues.

(2) ~~In the event of a determination of substantial economic loss to a person, a special permit may be granted for the operation~~ The City Administrator may grant a special permit allowing construction throughout the hours of 7:00 a.m. to 9:30 p.m. on weekdays and throughout the hours of 1:00 p.m. to 5:00 p.m. on Saturdays, Sundays, and state and federal holidays upon the condition that while any construction equipment, internal combustion engine, or power unit is in operation, its location shall not be less than ~~600~~ 1000 feet in any direction from any dwellings. Any person seeking such permission shall file an application with the City that states the proposed dates during which construction will be allowed at such hours, the location of the noise source, reason for requested exception, and steps that will be taken to minimize the noise level. The City shall give ten (10) days mailed notice to property owners within 1000 feet of the noise source. Any person claiming to be adversely affected by the exemption may file a statement with the City within ten (10) days of the date the notice is postmarked. Such fees for this permit shall be set by Council. If the City

Administrator finds that sufficient controversy exists regarding the proposed exemption, or if the applicant would like to appeal the denial of such a permit, the City Administrator may hold a public hearing on the proposal at which all person affected shall be given the opportunity to be heard. The City Council shall also hold such a hearing upon request of the applicant or any person claiming to be adversely affected by the exemption applied for. Within thirty (30) days of receipt of the application, the City Council shall approve or deny the application. It may be approved only if the City Council finds that full compliance with the requirements of this Chapter would constitute an unreasonable hardship on the applicant, on other persons or on the community. In determining whether to grant or deny the application, the City Council shall balance the hardship to the applicant against the adverse impact on the health, safety and welfare of the persons affected, the adverse impact on property affected and any other adverse effects of granting the variance. The exemption may be granted subject to conditions, including a time limit, which shall be clearly stated. except- that if while any construction equipment, internal combustion, or power unit is in operation, its location shall be no less than 1,200 feet in any direction from any dwelling, a permit may be granted for operation during any hour of any day.

(3) Snow removal activities.

(4) Parking lot maintenance or sweeping activity which shall adhere to restrictions set forth in the table of 130.46 (A).

(5) Work on public infrastructure projects that are carried out by federal, state, county, or city authorities, or their contractors or sub-contractors that is being performed to preserve the public health, safety or welfare including but not limited to clearing, grubbing, grading, streets, sidewalks, trails, bridges, water systems, storm and sanitary sewer systems, storm water management, which may be performed between the hours of 7:00 a.m. to 7:00 pm on weekdays, and 9:00 a.m. to 5:00 p.m. Saturdays.

**SECTION 2. Effective Date.** This ordinance shall become effective immediately upon adoption and publication in the official newspaper of the City of Lake Elmo.

**SECTION 3. Adoption Date.** This Ordinance 08-\_\_ was adopted on this \_\_ day of May, 2016, by a vote of \_\_ Ayes and \_\_ Nays.

LAKE ELMO CITY COUNCIL

\_\_\_\_\_  
Mike Pearson, Mayor

ATTEST:

\_\_\_\_\_  
Julie Johnson, City Clerk

This Ordinance 08-\_\_ was published on the \_\_\_\_ day of \_\_\_\_\_, 2016.

**Table Outlining Comparison of Lake Elmo's Noise Ordinance to Other Cities**

City	Allowable Construction Hours	Allows Construction on Saturday	Allows Construction on Sunday	Allows Construction on Federal Holidays	Allows Exceptions	Maximum Allowable Decibels	Number of Days for Permit	Code Administrator
<b>Lake Elmo</b>	7:00 a.m. – 6:00 p.m.	No	No	No	- Emergency situation: permit can be granted for operation any hour of any day. - Determination of economic loss: Permit can be granted for operation 7:00 a.m. – 9:30 p.m. on weekdays and 1:00 p.m. – 5:00 on Saturdays, Sundays, and holidays.	100 decibels	3 days, can be renewed for periods of 3 days while emergency continues.	Doesn't specify.
<b>Oakdale</b>	7:00 a.m. – 7:00 p.m.	9 a.m. – 5 p.m.	No	No	- Emergency work: exclusively to preserve public health, safety or welfare, or in the performance to restore public service or eliminate a public hazard are exempt and shall inform the City Administrator as soon as possible.	MPCA standards for receiving land use category.	Does not specify.	City Administrator
<b>Rochester</b>	7:00 a.m. – 10:00 p.m.	7:00 a.m. – 10:00 p.m.	12:00 p.m. – 10:00 p.m.	Doesn't specify or prohibit.	- Cases of urgent necessity in the interest of public health and safety: a permit may be obtained to allow work during prohibited hours. - If it is determined that the public health and safety is not impaired or that no loss or inconvenience would result to any party in interest.	Doesn't specify.	3 days, can be renewed for periods of 3 days while emergency continues.	Police Officer
<b>Eagan</b>	7:00 a.m. – 10:00 p.m.	7:00 a.m. – 10:00 p.m.	7:00 a.m. – 10:00 p.m.	7:00 a.m. – 10:00 p.m.	- Public work construction and maintenance by federal, state, county or city authorities or their contractors and sub-contractors. - Emergency public works repair/construction.	Doesn't specify.	Doesn't specify.	City engineer can make exceptions for public work.
<b>Cottage Grove</b>	7:00 a.m. – 7:00 p.m.	9:00 a.m. – 7:00 p.m.	No	No	- Residents may conduct construction on own property weekdays 7:00 a.m. – 10:00 p.m. and weekends and holidays 8:00 a.m. – 9:00 p.m.	Doesn't specify.	N/A	Doesn't specify.
<b>Blaine</b>	7:00 a.m. – 10:00 p.m.	7:00 a.m. – 10:00 p.m.	7:00 a.m. – 10:00 p.m.	7:00 a.m. – 10:00 p.m.	- Performance of city or state authorized, sponsored, or licensed work to preserve the public health, safety or welfare. - Work necessary to restore public service or eliminate a public hazard. - Activities duly authorized, sponsored or licensed by the city pursuant to conditions of an authorizing license, permit, or contract.	Doesn't specify.	Doesn't specify.	Police Officer

Development	Permission Granted	Conditions	Time Period
Savona	Saturdays - 8am - 3:30pm	Construction must be more than 600 ft away from existing residences	
Village East Trunk Sewer	Saturdays - 8am - 3:30pm	Construction must be more than 600 ft away from existing residences	2015 construction season
Pankalo	Saturdays - 7am - 4pm & M-F 7am - 7pm	Limited to availability of City's construction observer if applicable (48 hr advance notice required).	2016 construction season
Old Village - Phase 2	M-F 7am - 8pm		
Inwood 3rd	Some Saturdays 9am - 3:30pm	Construction must be more than 600 ft away from existing residences and limited to availability of City's construction observer if applicable (48 hr advance notice required).	2016 construction season
Hammes	Saturdays 9am - 3:30pm	Construction must be more than 600 ft away from existing dwellings and limited to availability of City's construction observer if applicable (48 hr advance notice required).	2016 construction season
Boulder Ponds	Saturdays 9am - 3:30pm	Construction must be more than 600 ft away from existing dwellings and limited to availability of City's construction observer if applicable (48 hr advance notice required).	2015 construction season
Wildflower	Saturdays 8am - 3:30pm	Construction must be more than 600 ft away from existing dwellings and limited to availability of City's construction observer if applicable (48 hr advance notice required).	2015 construction season

Reason
Deadlines
Rain events, deadlines
Economic impact to the City and area businesses and public safety
Backfilling trench, weather delays
Weather delays
Late season to start construction

# Noise Level Chart

A noise level chart showing examples of sounds with dB levels ranging from 0 to 180 decibels.

dBA	Example	Home & Yard Appliances	Workshop & Construction
0	healthy hearing threshold		
10	a pin dropping		
20	rustling leaves		
30	whisper		
40	babbling brook	computer	
50	light traffic	refrigerator	
60	conversational speech	air conditioner	
70	shower	dishwasher	
75	toilet flushing	vacuum cleaner	
80	alarm clock	garbage disposal	
85	passing diesel truck	snow blower	
90	squeeze toy	lawn mower	arc welder
95	inside subway car	food processor	belt sander
100	motorcycle (riding)		handheld drill
105	sporting event		table saw
110	rock band		jackhammer
115	emergency vehicle siren		riveter
120	thunderclap		oxygen torch
125	balloon popping		
130	peak stadium crowd noise		
135	air raid siren		
140	jet engine at takeoff		
145	firecracker		
150	fighter jet launch		
155	cap gun		
160	shotgun		
165	.357 magnum revolver		
170	safety airbag		
175	howitzer cannon		
180	rocket launch		
...			

# Estimating Sound Levels With the Inverse Square Law

In the real world, the [inverse square law](#) is always an idealization because it assumes exactly equal sound propagation in all directions. If there are reflective surfaces in the sound field, then reflected sounds will add to the directed sound and you will get more sound at a field location than the inverse square law predicts. If there are barriers between the source and the point of measurement, you may get less than the inverse square law predicts. Nevertheless, the inverse square law is the logical first estimate of the sound you would get at a distant point in a reasonably open area.

If you measure a sound level  $I_1 = 95$  dB  
at distance

$d_1 = 2$  m = 6.561679 ft

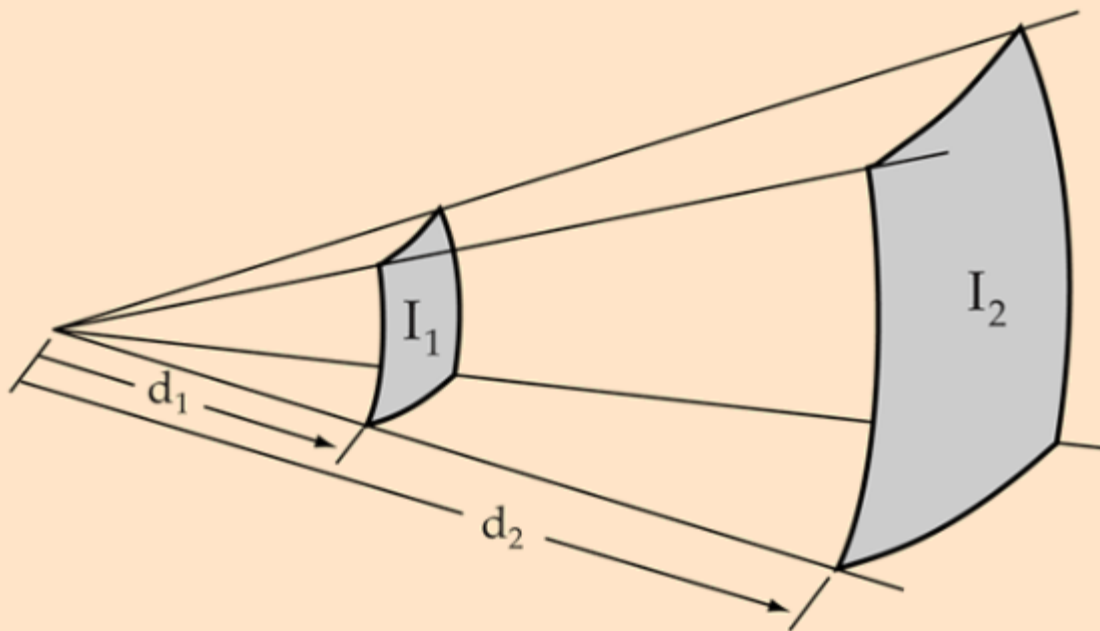
$$\frac{I_2}{I_1} = \left[ \frac{d_1}{d_2} \right]^2$$

then at distance

$d_2 = 365.76$  m = 1200 ft

the inverse square law predicts a sound level

$I_2 = 49.75667$  dB







April 29, 2016

City of Lake Elmo  
Attn: Mayor Mike Pearson  
3800 Laverne Ave N  
Lake Elmo, Minnesota 55042-9629

***Via Electronic Mail***

**Re: City Noise Ordinance Relating to Construction Activity**

Dear Mayor Pearson:

The Builders Association of the Twin Cities ("BATC") recently reviewed the City of Lake Elmo's ("City") proposed changes to its noise ordinance ("proposal") relating to construction activity. We have significant concerns with the proposal, which will adversely impact BATC members and their customers. More specifically, based on our internal review and that of our legal counsel, we believe that the City's construction noise policies in the proposal are substantially out of compliance with established state and local precedent.

BATC and its members want to be responsible participants in the development of quality housing projects in the City; in this regard we expect to comply with reasonable rules and regulations that balance the needs of current residents with the development processes creating homes for the City's new residents.

We are writing to request that the City work with BATC and its members working in the City to review and amend the proposal. Our goal in working with you directly is to address the areas of concern regarding the proposal. We offer the following specific comment on the proposal:

**The Proposal Arbitrarily Restricts Private Construction Projects and Exempts Public Projects.** The City cannot arbitrarily exempt itself and its contractors from the same restrictions placed on private contractors based on a contention of "public benefit". This is patently discriminatory and completely arbitrary.

**Evidence of a Problem:** The City cannot arbitrarily enact an ordinance to restrict the use of private property unless it has confirmed the existence of a problem and drafted an ordinance targeted at correcting the problem. Random neighborhood complaints do not constitute such evidence.

Any attempt to restrict normal construction activity must be grounded in the protection of legitimate health, safety and welfare objectives. Arbitrarily restricting construction activity without being able to tie it to an appropriate use of police power to accomplish a proper purpose is unlawful.

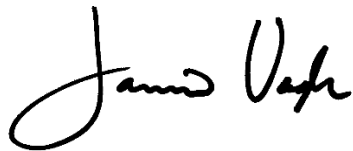
**Noise Thresholds.** The existing ordinance purports to restrict a limited category of noise-emitting equipment (piledrivers and jackhammers or similar high-impact equipment) after 6pm and on weekends/holidays; this must be narrowly read based on the examples provided. Consequently, this restriction does not restrict routine construction activity unless otherwise restricted in the building permit or development approvals.

The existing ordinance also allows a general exemption for equipment that does not generate offsite noise impacts based on the specified decibel thresholds. Even if the category of equipment is broadly construed, if we demonstrate compliance with general noise standards, builders are entitled to engage in routine construction activity.

The members of BATC consider the City's construction noise policies to be a matter of significant concern; we hope that by working together on this important policy issue we can improve on the development opportunities in the City for all residential developers and, in turn, provide the City with high-quality housing choices for your residents.

BATC urges the City to engage BATC and its members working in the City to discuss how best to proceed to respond to BATC's concerns. I look forward to speaking with you about this matter.

Sincerely,

A handwritten signature in black ink, reading "James Vagle". The signature is fluid and cursive, with the first name "James" and last name "Vagle" clearly distinguishable.

James A. Vagle  
Director of Advocacy

Cc:  
Council Member Justin Bloyer  
Council Member Julie Fliflet  
Council Member Jill Lundgren  
Council Member Anne Smith  
Kristina Handt, City Administrator  
Peter Coyle, Larkin Hoffman  
David Siegel, BATC