



UNITED STATES ARMY CORPS OF ENGINEERS

Missouri River Commercial Dredging Final EIS

FEBRUARY 2011

Appendix C Noise Ordinances

PREPARED BY



Cardno ENTRIX, Inc.
200 First Avenue West, Suite 500
Seattle, WA 98119
T 206.269.0104 ▪ F 206.269.0098

This page intentionally left blank.

Table of Contents

C.1	Introduction	C-1
C.2	Missouri Counties.....	C-1
	C.2.1 Buchanan County Zoning Order.....	C-1
	C.2.2 Platte County Zoning Order.....	C-2
	C.2.3 St. Louis County Noise Ordinance	C-3
C.3	Kansas Counties	C-5
C.4	Missouri Cities.....	C-5
C.5	Kansas Cities	C-9
C.6	References.....	C-9

Tables

Table C-1	Platte County Noise Levels	C-3
Table C-5	St. Louis County Noise Levels – Heavy Industrial Land Use Category.....	C-4
Table C-4	St. Louis County Noise Levels –Industrial Land Use Category	C-4
Table C-3	St. Louis County Noise Levels – Commercial Land Use Category	C-4
Table C-2	St. Louis County Noise Levels – Residential Land Use Category.....	C-4
Table C-6	Maximum Permissible Sound Levels in Kansas City by Receiving Residential Districts.....	C-5
Table C-7	Maximum Permissible Sound Levels in Kansas City by Receiving Commercial/Light Industrial Districts	C-6
Table C-8	Maximum Sound Pressure Levels for Light Industrial Districts in St. Charles.....	C-7
Table C-9	Maximum Sound Pressure Levels for Heavy Industrial Districts in St. Charles	C-8

Abbreviations & Acronyms

dB	decibel
dBA	A-weighted decibel
Hz	hertz
L _{eq}	equivalent A-weighted sound level

This page intentionally left blank.

A P P E N D I X C

Noise Ordinances

C.1 INTRODUCTION

The U.S. Army Corps of Engineers (USACE) has received permit applications from eight companies to dredge sand and gravel from selected locations between river mile (RM) 0.0 and RM 447.7 on the lower Missouri River (LOMR) for commercial uses. As part of its review of the permit applications, the USACE has prepared an environmental impact statement (EIS). The EIS examines the potential environmental impacts of the proposed dredging activities and any related actions.

As part of the environmental analysis, the effects of the Proposed Action and alternatives on environmental noise were examined. Local jurisdictions adjacent to the LOMR have promulgated standards for noise emissions from industrial activities such as dredging.

This appendix describes noise ordinances that have been considered in the evaluation of noise emissions. It is included in the EIS in support of Section 3.13 in Chapter 3 Affected Environment that describes existing noise conditions and the analysis of noise impacts found in Chapter 4 Environmental Consequences (Section 4.11).

C.2 MISSOURI COUNTIES

In Missouri, Buchanan and Platte Counties have Zoning Orders that reference noise, and St. Louis County has a noise ordinance. Andrew, Atchison, Boone, Callaway, Carroll, Chariton, Clay, Cole, Cooper, Franklin, Gasconade, Hold, Howard, Jackson, Lafayette, Moniteau, Montgomery, Osage, Ray, St. Charles, Saline, and Warrant Counties do not have noise ordinances or regulations.

C.2.1 Buchanan County Zoning Order

Buchanan County does not have a noise ordinance, but the Buchanan County Zoning Order does have noise performance standards for various land uses, as follows:

Business districts: No land use shall emit or provide vibration, concussion, or noise that is detectable from the outside of the building.

Industrial districts: No land use shall be permitted or operated that produces a noise level greater than that level produced by the average traffic of the area discernible at the property and road boundary.

The Buchanan County Zoning Commission may approve a conditional use permit provided the property owner establishes that the requirements listed below have been met or shall be met (Buchanan County n.d.):

- Conformity to plans and drawings submitted with the application;
- Special yards, open spaces, buffer strips, walls, fences, hedges, and landscaping;
- Performance standards relative to emission of noise, vibration, or other potentially dangerous or objectionable elements;
- Limits on time of day for conducting specified activities;
- A period in which the use shall be exercised or the approval shall lapse; and
- Guarantees as to compliance with the terms of approval.

C.2.2 Platte County Zoning Order

Performance standards for all land uses in Platte County are the following:

No land or building in any district shall be used or occupied in any manner so as to create any dangerous, injurious, noxious or otherwise objectionable fire, explosive or other hazards, including possible potential hazards; noise or vibration; smoke, dust, odor or other form of air pollution; heat, cold, dampness, electrical or other substance, condition or element (referred to herein as "dangerous or objectionable elements") in such a manner or in such amount as to adversely affect the surrounding area or adjoining premises.

In addition, the following performance standards apply to Planned Industrial Districts:

- a. Sound levels shall be measured with a sound level meter and associated octave band filter manufactured according to standards prescribed by the United States Standards Institute. Impulsive type noises shall be subject to the performance standards hereinafter prescribed provided that such noise shall be capable of being accurately measured with such equipment. Noises capable of being so measured, for the purpose of this Order, shall be those noises which cause rapid fluctuations of the needle of the sound level meter with a variation of no more than plus

or minus two (2) decibels. Noises capable of being so measured shall be so muffled or otherwise controlled, as not to become objectionable, due to intermittence, beat frequency, impulsive character (such as hammering), periodic character (humming and screeching,) or shrillness. Sirens, whistles, and bells, which are maintained and utilized solely to serve a public purpose (such as fire, ambulance, Police and air raid warning sirens) shall be excluded from the above regulations.

Table C-1 Platte County Noise Levels

Octave Band (Preferred Center Frequency)	Sound Level in Decibels (RE .0002 Microbar)	
	8:01 a.m. to 9:59 p.m.	10:00 p.m. to 8:00 a.m.
31.5	79	73
63	74	68
125	68	62
250	60	54
500	55	49
1000	50	44
2000	46	40
4000	41	35
8000	36	32

Source: Platte County n.d.

- b. No industrial activity shall be responsible for the transmission of noise across any residential or business zoning district boundary line in excess of the levels established above [Table C-1].

The octave band sound levels in Table C-1 correspond to 54 dBA during the daytime hours and 59 dBA during nighttime hours.

C.2.3 St. Louis County Noise Ordinance

Noise within St. Louis County is regulated under the County Code Chapter 625 Noise Control Code. The county noise ordinance sets forth numerical limits for allowable noise levels. Table C-2 lists allowable noise levels for residential land uses, Table C-3 identifies allowable noise levels for commercial land uses, Table C-4 specifies allowable noise levels for industrial land uses, and Table C-5 delineates allowable noise levels for heavy industrial land uses.

Table C-2 St. Louis County Noise Levels – Residential Land Use Category

Tn ^a	(dBA) ^b
Daytime Hours	
60	55 or less
30	56–58
15	59–61
8	62–64
4	65–67
2	68–70
0	71 or greater
Nighttime Hours	
60	50 or less
30	51–53
15	54–56
8	57–59
4	60–62
2	63–65
0	66 or greater

Note: dBA = A-weighted decibel.

^a Total duration of time noise to be emitted from noise source during period of measurement (minutes).

^b A-weighted sound pressure level.

Table C-3 St. Louis County Noise Levels – Commercial Land Use Category

Tn ^a	(dBA) ^b
Daytime Hours	
60	65 or less
30	66–68
15	69–71
8	72–74
4	75–77
2	78–80
0	81 or greater
Nighttime Hours	
60	60 or less
30	61–63
15	64–66
8	67–69
4	70–72
2	73–75
0	76 or greater

Note: dBA = A-weighted decibel.

^a Total duration of time noise to be emitted from noise source during period of measurement (minutes).

^b A-weighted sound pressure level.

Table C-4 St. Louis County Noise Levels –Industrial Land Use Category

Tn ^a	(dBA) ^b
60	70 or less
30	71–73
15	74–76
8	77–79
4	80–82
2	83–85
0	86 or greater

Note: dBA = A-weighted decibel.

^a Total duration of time noise to be emitted from noise source during period of measurement (minutes).

^b A-weighted sound pressure level.

Table C-5 St. Louis County Noise Levels – Heavy Industrial Land Use Category

Tn ^a	(dBA) ^b
60	80 or less
30	81–83
15	84–86
8	87–89
4	90–92
2	93–95
0	96 or greater

Note: dBA = A-weighted decibel.

^a Total duration of time noise to be emitted from noise source during period of measurement (minutes).

^b A-weighted sound pressure level.

C.3 KANSAS COUNTIES

In Kansas, Atchison, Doniphan, and Leavenworth Counties do not have noise ordinances or regulations.

C.4 MISSOURI CITIES

Kansas City, Boonville, Jefferson City, St. Charles, Maryland Heights, Florissant, and St. Louis have noise ordinances. Missouri City, St. Joseph, Sibley, Napoleon, Wellington, Lexington, Waverly, Miami, Glasgow, Arrow Rock, Rocheport, Huntsdale, Lupus, Chamois, Gasconade, Hermann, New Haven, and Washington do not have noise ordinances or regulations.

C.4.1.1 Kansas City Noise Ordinance

Noise within Kansas City is regulated under the City Code Chapter 46 Noise Control. The City noise ordinance sets forth numerical limits for allowable noise levels.

According to the Kansas City Noise Ordinance, no person shall operate or cause to be operated on private property any source of sound in such a manner as to create a sound level that exceeds the equivalent A-weighted sound level (L_{eq}) limits set forth in Table C-6 when measured at or within the property boundary of the receiving residential district. A measurement period shall not be less than 2 minutes.

Table C-6 Maximum Permissible Sound Levels in Kansas City by Receiving Residential Districts

Receiving Land Use Category	Time	Equivalent A-Weighted Sound Level Limit (L_{eq})
Any residential district	7:00 a.m. – 10:00 p.m.	60 dBA
	10:00 p.m. – 7:00 a.m.	55 dBA

Notes:

- dBA = A-weighted decibel.
- L_{eq} = Equivalent sound level.

Source: Kansas City 2009.

In addition, no person shall operate or cause to be operated on private property within a commercial/light industrial district any source of sound in such a manner as to create a sound level that exceeds the L_{eq} limits set forth in Table C-7 when measured at a distance of 25 feet from the structure

wherein the source of sound is located, or at the real property boundary of the property whereon the sound is generated, whichever is greatest. A measurement period shall not be less than 10 minutes (Kansas City 2009).

Table C-7 Maximum Permissible Sound Levels in Kansas City by Receiving Commercial/Light Industrial Districts

Receiving Land Use Category	Time	Equivalent A-Weighted Sound Level Limit (L _{eq})
Any commercial/industrial district	80 dBA	Any commercial/industrial district

Notes:

- dBA = A-weighted decibel.
- L_{eq} = Equivalent sound level.

Source: Kansas City 2009.

C.4.1.2 Boonville Noise Ordinance

According to the Boonville Noise Ordinance, any uses permitted in Districts C-1, C-2, C-P, and M-1, and all City zoning districts except residential and agricultural, shall be subject to such controls as may be imposed by the City Council if such uses are or become noxious or offensive by reason of vibration, noise, odor, dust, smoke, gas, glare or heat, perceptible at the property lines, if such uses generate an amount of traffic so as to cause traffic congestion in the streets, or if covered by Subsection 2.95(b)(3)a., b., or c. With the exception of District M-1, inoperative vehicles may not be stored or repaired, other than in closed garages on the premises.

C.4.1.3 Jefferson City Code

The Jefferson City Code, Chapter 21 Nuisances states:

...It shall be unlawful for any person to make, continue, or cause to be made or continued any excessive, unnecessary, raucous, or unusually loud noise which terms shall mean any sound which, because of its volume level, duration and character, annoys, disturbs, injures or endangers the comfort, health, peace or safety of reasonable persons of ordinary sensibilities within the limits of the city. The term includes the kinds of noise generated by the activities enumerated in Section 3 of the code. The terms shall be limited to noise heard upon the public streets, in any public park, in any school or public building or upon the grounds thereof while in use, in any church or hospital or upon the grounds thereof while in use, upon any parking lot open to members of the public as invitees or licensees, or in any occupied residential unit which is not the source of the noise or upon the grounds thereof, and in any event from a location not less than 50 feet from

the source of the noise, measured in a straight line from the radio, loudspeaker, motor, horn or other noise source.

C.4.1.4 St. Charles Noise Ordinance

Noise within the city of St. Charles is regulated under the Noise Ordinance, Chapter 97 Noise Control. The city noise ordinance sets forth numerical limits for allowable noise levels.

As stated in the St. Charles Noise Ordinance, in I-1 Light Industrial zoning districts, at no point on the boundary of a residence, business, or commercial district shall the sound pressure level of any individual operation or plant, or the combined operations of any person, firm or corporation, exceed the decibel levels in the designated octave bands shown in Table C-8 for the zoning districts indicated—as measured using test equipment per ANSI Standards S1.1 1960, S1.4 1961, S1.11 1966, and S1.12 1967, and SAE J 184, and with reference to sections 10-141 and 20-142.

Table C-8 Maximum Sound Pressure Levels for Light Industrial Districts in St. Charles

Octave Band Center(dB) along District Boundaries		
Frequency (Hz)	Residence	Business-Commercial
31.5	72	79
63	71	78
125	65	72
250	57	64
500	51	58
1000	45	52
2000	39	46
4000	34	41
8000	32	39

Notes:

- dB = Decibel.
- Hz = Hertz.

In M-2 Heavy Industrial zoning districts, at no point either on the boundary of a residence, business or commercial district, or at 125 feet from the nearest property line of a plant or operation, whichever distance is greater, shall the sound pressure level of any individual operation or plant, or the combined operations of any person, firm or corporation, exceed the decibel levels in the designated octave bands shown in Table C-9 for the zoning districts included—as measured using test equipment per ANSI

Standards S1.1 1960, S1.4 1961, S1.11 1966, and S1.12 1967, and SAE J 184, and with reference to Sections 97.06 and 97.07.

Table C-9 Maximum Sound Pressure Levels for Heavy Industrial Districts in St. Charles

Octave Band Center(dB) along District Boundaries		
Frequency (Hz)	Residence	Business-Commercial
31.5	75	80
63	74	79
125	69	74
250	64	69
500	58	63
1000	52	57
2000	47	52
4000	43	48
8000	40	45

Notes:

dB = Decibel.

Hz = Hertz.

C.4.1.5 Maryland Heights Noise Ordinance

The Maryland Heights Noise Ordinance states that every use shall be so operated that the pressure level of sound or noise generated does not exceed the limitations of the county revised ordinances governing noise control. (See Tables C-2 through C-5 for the St. Louis County revised ordinances.)

C.4.1.6 Hazelwood Noise Ordinance

Article XV of the Hazelwood City Code presents environmental performance standards. It states that noise that is objectionable due to volume, frequency, or heat shall be muffled or otherwise controlled so that there is no production of sound discernible at lot lines in excess of the average intensity of street and traffic noise at the lot lines. Every use shall be so operated that the pressure level of sound or noise generated does not exceed the limitations of the Noise Control Code, Chapter 625, St. Louis County Revised Ordinance. Emergency warning sirens and related apparatus used solely for public purposes shall be exempt from this requirement. (Ord. No. 3674 §§1–3, 8-17-05) (See Tables C-2 through C-5 for the St. Louis County revised ordinances.)

C.4.1.7 St Louis Noise Ordinance

Noise within the city of St. Louis is regulated under the Noise Ordinance, Chapter 97 Noise Control. The City noise ordinance sets forth numerical limits for allowable noise levels, which are the same as those presented above in Tables C-8 and C-9 of the St. Charles Noise Ordinance.

C.5 KANSAS CITIES

The cities of Elwood and Leavenworth have noise ordinances. The cities of White Cloud, Atchison, and Kansas City do not have noise ordinances or regulations.

C.5.1.1 Elwood Noise Ordinance

The city of Elwood's noise ordinance states that noises such as stereos and loud music should not be heard from 75 feet away. The ordinance does not limit noise from construction or heavy equipment.

C.5.1.2 Leavenworth Noise Ordinance

Noise within the city of Leavenworth is regulated under the Noise Ordinance, in Sections 46-76 through 46-88. Section 46-83 (Pile drivers and hammers) states that operation between the hours of 10:00 p.m. and 7:00 a.m. of any pile driver, steam shovel, pneumatic hammer, derrick, steam or electric hoist, or other appliance, the use of which is attended by loud or unusual noise, shall be deemed a violation of this article.

C.6 REFERENCES

Buchanan County. No Date. Zoning Order, as amended. Website (http://vivid.phpwebhosting.com/~buchcomo/offices/planning_zoning/zoning.pdf) accessed on December 16, 2009.

Kansas City. 2009. Code of Ordinances, City of Kansas City, Codified through Ordinance No. 091074, enacted Dec. 17, 2009. (Supp. No. 76.) Website (http://library3.municode.com/default-test/home.htm?infobase=10156&doc_action=whatsnew) accessed on December 17, 2009.

Platte County. No Date. Chapter 400: Zoning Regulations. Website (http://www.co.platte.mo.us/docs/planning_zoning/zoning_order.pdf) accessed on December 16, 2009.

This page intentionally left blank.