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COMMUNITY NOISE ORDINANCES:
THEIR EVOLUTION, PURPOSE AND IMPACT*

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In the United States most municipal noise ordinances initially regulated street related activities, however, these early provisions were generally non-quantitative and consequently unenforceable. The first ordinances containing specific permissible noise levels regulated either activities fixed to the land (industrial activity being the primary source) or automobile and trucks operating on roadways. Today more comprehensive ordinances are evolving and these regulations are the basis for expanded municipal noise control programs. Their impact has varied due to the quality, content and administration of these ordinances. Recently approved Federal noise legislation (Noise Control Act of 1972) will have a profound influence on the quality and quantity of municipal ordinances.

I. HISTORY

The regulatory control of noise, although a growing area of environmental management, has existed throughout the development of western civilization. Restrictions on the use of chariots were reportedly invoked during the Roman Empire. Later, medieval towns adopted ordinances regulating both stationary and mobile noise sources.¹ Iron-wheeled carts could not operate freely on paved market streets due to associated noise. Nighttime restrictions were also imposed on noise related commercial and industrial activities including blacksmith operations.

The earliest noise regulations within the United States were municipal ordinances dating back to 1850.² It was not however until the early 1900's that a national concern for noise control began to develop. Even by 1930 there were less than 20 American cities with laws regulating noise, and those in existence were narrowly defined and non-quantitative in nature.

There have been several historical events that have shaped the evolution of environmental or community noise ordinances since that time. These events include:

1. Publication of City Noise prepared by the Noise Abatement Commission for the New York City Department of Health in 1930.³
2. Adoption of the motor vehicle control ordinance by Memphis, Tennessee in 1938.⁴

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3. Publication of the National Institute of Municipal Law Officers (NIMLO) model ordinance prohibiting unnecessary noise in 1948.⁵
4. Adoption of the performance zoning ordinance by Chicago, Illinois in 1955, as developed by the Armour Research Foundation.⁶
5. Enactment of the Noise control sections of the Vehicle Code by the California Department of Highway Patrol in 1967.⁷
6. Adoption of the City of Inglewood, California, noise ordinance in 1969.⁸
7. Publication of the revised National Institute of Municipal Law Officials (NIMLO) model noise ordinance in 1970.⁹
8. Adoption of the revised City of Chicago noise ordinance in 1971.¹⁰

New York Mayor Jimmy Walker gave approval to the Commissioner of Health to establish a Noise abatement Commission for studying urban noise and recommending solutions. Appointed in 1929 this Commission (the first ever assembled) completed their report entitled City Noise within one calendar year. This widely circulated report represented the first definitive statement of the city noise problem and the recommended laws for controlling noise were subsequently adopted by many cities beside New York.

The primary noise provisions included muffler requirements for motor vehicles and other internal combustion engines, restrictions on building development in residential areas between 5:00 p.m. and 8:00 a.m., prohibiting the use of horns and whistles, regulation of peddlers, hawkers and vendors, and prohibiting excessive noise from mechanical or electrical sound making or reproducing equipment. Although both stationary and mobile noise sources were identified, the report did not discuss industrial related noise activities in any detail.

Memphis, Tennessee, proclaimed the quietest American city, adopted several of these provisions in their municipal noise ordinance regulating vehicles in 1938.⁴ Although it does not specify permissible sound levels in decibels this nuisance type or non-quantitative ordinance has become one of the most successful regulations due to an active enforcement program.

Recognizing there was a need to provide guidance to municipalities establishing proper legal noise ordinances the National Institute of Municipal Law Officers (NIMLO) in 1948 prepared a research report entitled 'Municipal Control of Noise - Sound Trucks - Sound Advertising Aircraft - Unnecessary Noises - Annotated Ordinances.'⁵ This report disseminated to all NIMLO members was later referred to as the 'NIMLO Model Ordinance Prohibiting Unnecessary Noises.' This model to date has been responsible for most ordinances drafted in the U. S. In a study conducted for the U. S. Environmental Protection Agency 29 out of 83 local jurisdictions (35%) had enacted this NIMLO model.¹¹ Although the NIMLO ordinance was a further refinement of existing ordinances at the time, it failed to include quantifiable noise limits.

In 1955, the most influential zoning ordinance, restricting noise related land use activity became law.⁶ Adopted by Chicago this regulation contained quantitative noise emissions expressed in decibels for various octave bands. It represented a new approach to zoning which placed restrictions not on the type of industry (i.e. light manufacturing, heavy manufacturing) but rather on its performance in terms of noise emission. For the first time industry was being regulated according to specific acoustical criteria rather than by the more vague nuisance provisions. This development now required property line measurements using sound measuring instrumentation. Although initially not enforced, other jurisdictions began to adopt similar provisions in their zoning ordinances. A few cities also started establishing vehicle noise emission requirements expressed in decibels by 1952-53 (Seattle, Washington and Cincinnati, Ohio, respectively).^{12,13}

Not until 1967 was there an effective vehicle noise control law and program established by a government agency. The California Vehicle Code represented the first with quantitative noise emission limits regulating new vehicles sold in the state as well as existing vehicles operating on highways.⁷

California again took the lead in establishing the first comprehensive community noise ordinance and program when Inglewood enacted their ordinance in 1969.⁸ Many elements of the Inglewood program have been emulated by other jurisdictions, including specific acoustical provisions.

In obvious response to the need for an enforceable noise ordinance NIMLO modified their earlier model and proposed decibel provisions as an alternative in 1970.⁹ Included now are limiting noise levels for use districts (i.e. residential, manufacturing, and commercial), as well as motor vehicles.

More recently the City of Chicago has adopted a fully revised noise ordinance, currently the most comprehensive in existence.¹⁰ This newly rejuvenated noise program has generated national attention and is becoming a yardstick by which most other jurisdictions are compared. The influence of both Chicago and to a lesser extent NIMLO are just beginning to be noticed. Numerous cities are either recommending revisions or proposing new laws fashioned after the Chicago type program.

Additionally both governmental as well as professional associations are in the midst of preparing guidelines to assist municipal and state agencies in enacting technically responsible laws and programs. The American National Standards Institute working group S3-50 (Outdoor Evaluation of Community Noise) is preparing a guideline for the preparation of a model noise ordinance¹⁴, while EPA working with the Council of State Governments is preparing state model enabling legislation for noise.¹⁵

II. CLASSIFICATION OF ORDINANCES

Constitutionally the power to regulate noise for the protection of the public's health, safety and welfare has been upheld. Municipalities through the use of police power can regulate nuisance. A nuisance refers to everything that endangers life or health, gives offense to the senses, violates the laws of decency or obstructs reasonable and comfortable use of property. The majority of municipal noise ordinances within the United States are based upon nuisance law.

The adoption of noise regulations by municipalities* although occurring in nearly every state constitute a population of approximately 47 million, or only 23% of the total U. S. population (see Appendix 1). It is evident that the majority of city governments have no noise provisions, and many of those enacted are generally non-specific and vague.

Ordinances can be generally classified as either nuisance or performance type regulations. Nearly 85% or 148 out of 175 existing regulations listed in the appendix contain nuisance type provisions.

A. NUISANCE TYPE

Nuisance type ordinances typically prohibit "unreasonably loud, disturbing or unnecessary noise". In most instances there is no attempt to acoustically define noise. With few exceptions the content of these ordinances are similar since most are based upon the 1948 NIMLO model⁵.

The following activities are usually considered in violation of the ordinance:

1. Sounding of any horns or other signalling device, unless in case of emergencies.
2. Radio, phonograph or other sound producing devices operated in such a manner as to disturb the peace, quiet and comfort of the neighboring inhabitants.
3. Construction or repairing of buildings between the hours of 7 A.M. and 6 P.M. except in cases of urgent necessity or under permit.
4. Street vendors who may disturb the peace and quiet of the neighborhood for the purposes of directing attention to his wares, trade or calling.

*Municipality refers to a city government, not a borough, township or county jurisdiction.

5. Vehicles which are so loaded, have any defect, or are not equipped with a proper muffler so as to cause unnecessary noise.

6. Animals causing frequent or long continued noise shall disturb the comfort or repose of any person in the city.

7. Operational use of construction related equipment causing loud or unusual noise between the hours of 7 A.M. and 10 P.M.

In addition, institutional land uses often are specified as quiet zones. Upon the posting of designated quiet zones no persons shall be allowed to make any unnecessary noise in the vicinity of schools, hospitals, and churches while occupied.

With very few exceptions the enforcement of ordinances containing these provisions has been ineffective. Despite the question of vagueness the Court has ruled nuisance type ordinances, or those noise ordinances containing nuisance provisions, are constitutional.

Memphis, Tennessee is the leading exponent of this legal approach to noise control. Since 1938 the Memphis Police Department has diligently enforced the anti-noise law section of their code of ordinances.⁴ Their law which prohibits "horn blowing" and "excessively noisy mufflers" without using noise criteria remains effective. This is an exception to the rule however. More commonly either a court will not uphold the use of the nuisance provision or the jurisdiction will not attempt to enforce the ordinance because of vagueness. The Chicago Department of Environmental Control is unable to utilize the nuisance provisions of their ordinance because the court in every instance has dismissed the case for lack of sufficient evidence.¹⁷

TABLE 1: MEMPHIS, TENNESSEE: NOISE VIOLATIONS ^{1, 16}

<u>YEAR</u>	<u>TYPE OF VIOLATION</u>	<u>CITATIONS</u>
1966	Improper Muffler	5,760
1971	" "	1,099
1966	Horn Blowing	360
1971	" "	150

B. PERFORMANCE TYPE

Performance type ordinances are based upon acoustical criteria, hence they are more objective in nature. Acoustical criteria generally include overall sound level measurements (i.e. decibels A-weighted sound level, dBA) and/or octave band level requirements. The predominant use of acoustical criteria are in zoning ordinances. Although fewer in number a large percentage of building, vehicle or aircraft noise requirements have specified noise levels. Performance type ordinances pertain to a variety of municipal activities.

1. Zoning

Zoning ordinances are the most popular application, and most cities have based their zoning emission limits on either the Chicago or Inglewood codes. There are 53 municipalities listed in the appendix using acoustical criteria. Maximum allowable levels usually are established for each zoning district or land use category. The degree of detail depends in part upon the number of different zoning districts or alternatively land use categories.

At the most fundamental level these ordinances establish noise criteria not to be exceeded in residential districts. In many cases the ordinance has limiting noise levels for residential, commercial or business, and manufacturing or industrial districts.

There is a wide range in the maximum noise limits among city ordinances. By converting the maximum limits in the various zoning ordinances into A-weighted sound levels expressed in dB(A) comparisons are possible.¹⁸ Figure 1 compares the fixed source noise levels allowable at residential boundaries contained in 23 city ordinances and the NIMLO model. These levels range from 60 dB(A) to 40 dB(A) with the predominant levels being either 55 dB(A) or 50 dB(A).

Most of these cities establish lower limits at night (usually defined as between 10 P.M. and 7 A.M.) than for day. Generally the permissible nighttime level is 5 decibels below the daytime level, however there are exceptions. Other cities including Chicago, Minneapolis, Columbus, Tucson, and Anaheim do not have different day-night provisions.

Several cities have variances depending upon the acoustical characteristics of the noise source. When the offending source is an impulsive type noise then a correction factor is made. Many ordinances stipulate that impulsive type noise must be 5 decibels below the general permissible noise limit. However, some cities allow the addition of 5 decibels for repeated impulse noise. Other variances include a pure tone correction factor but

again certain ordinances allow the addition of 5 decibels, while others subtract 5 decibels from the permissible noise level. Another series of corrections involve the duration of the noise source. Generally the shorter the duration the higher the permissible noise level. Table 2 presents the allowable noise duration correction factors contained in the NIMLO model.

TABLE 2: OPERATIONAL NOISE CHARACTERISTICS

<u>DURATION</u>	<u>CORRECTION FACTOR IN dB</u>
20% of any 1 hour period	5+
5% " " " " "	10+
1% " " " " "	15+

Usually these corrections are permitted for daytime periods only, but again there is no standard.

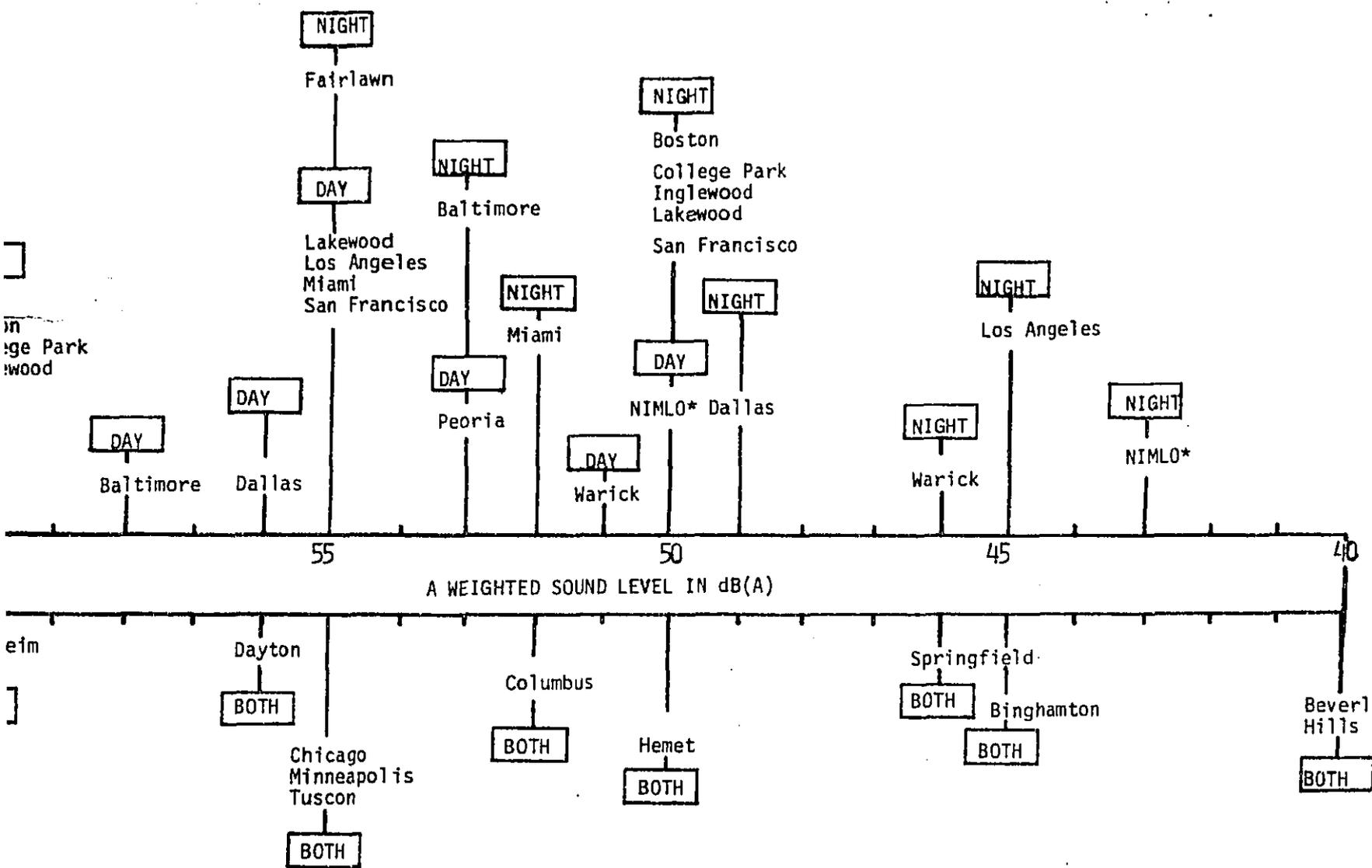
Although the majority of performance type ordinances do regulate fixed noise sources associated with commercial, industrial and residential activities there are no uniform acoustical criteria or provisions. Industry will have to remain aware of zoning laws enacted by local jurisdictions to insure compliance with the particular noise emission limits.

2. Motor Vehicle Limits

Although a few states have pre-empted local jurisdictions from establishing highway vehicle noise limits 42 cities have enacted some law (Appendix 1). Slightly over one-third (35%) of these contain acoustical requirements, and similar to the zoning ordinances the permissible levels vary widely.

Comparisons however are difficult because few ordinances use the same measurement parameters. The three most widely varying factors include:

- a. Sound Measurement Distance - The permitted distance from the centerline of the roadway to the sound measuring instrumentation ranges from 50 feet (Chicago and Minneapolis), 25 feet (Boulder) and 20 feet (Cincinnati and Seattle) to a variable distance from 50 feet to 5 feet (Peoria).
- b. Vehicle Speed - Although some cities do not specify a vehicle speed at which the noise limit applies (Boulder, Peoria, Cincinnati and Seattle) most jurisdictions specify different noise limits for vehicles operating below and above 35 miles per hour. Still others specify noise limits at operating speeds below 25 miles per hour.



*National Institute of Municipal Law Officers Model Noise Ordinance

FIGURE 1: FIXED SOURCE NOISE LEVELS ALLOWABLE AT RESIDENTIAL BOUNDARIES

c. Vehicle Weight - A distinction is usually made in the gross vehicle weight (GVW) as a method of classifying vehicle types. This is primarily used to separate heavy trucks from passenger cars and trucks. There is not agreement as to what this weight should be however. The division in gvw ranges from 10,000 lbs. (Boulder and Boston) and 8,000 lbs. (Chicago) to 6,000 lbs. (Seattle and Cincinnati). Other cities (Peoria and Anchorage) have no weight requirements.

These noise limits apply to a variety of vehicle types. Generally permissible noise levels are established for various vehicles, with a requirement that these will be lowered in subsequent time periods. The three most common vehicle classes are heavy trucks, passenger cars and light trucks, and motor cycles. A few cities have chosen to regulate recreation vehicles and construction equipment.

Although most vehicle limits apply to existing motor vehicles already operating, Chicago and Boston among others, have established noise limits on new vehicles sold within their respective cities. The Chicago noise ordinance stipulates that "No person shall sell or offer for sale a new motor vehicle that produces a maximum noise exceeding the following noise limit at a distance of 50 feet from the center line of travel" under specified test procedures.¹⁰ These limits apply to on or off-highway motor vehicles, construction and industrial machinery, agricultural tractors and related equipment, as well as powered commercial and residential equipment (i.e. chain saws, powered hand tools, lawn mowers, etc.). However, under the recently enacted provisions of the Federal Noise Control Act states as well as local governments are prohibited from establishing railroad and motor carrier noise emission limits different than the Federal government.¹⁹ There may also be pre-emptive questions in the proposed Federal noise emission standards for new products.

Though municipalities are developing quantitative noise level requirements for motor vehicles most local governments are still relying upon non-quantitative laws for enforcement purposes. Until these jurisdictions adopt noise limits the effectiveness of these regulations will be severely limited.

III. IMPACT

A. NOISE CONTROL PROGRAMS

Despite the fact there are over 174 ordinances regulating city noise a survey conducted by EPA ²⁰ and updated by the author indicates less than 20 cities have adopted budgets to operate noise control programs (See Table 3). Since 90% of the ordinances are not supported by budgets for enforcing existing noise laws, most cities have only "paper regulations". Noise is allowed to persist even though regulations, varying in quality, do exist.

In 1972 approximately \$650,000 was being expended annually by cities on non-occupational noise control programs. This is equivalent to 1.6 cents per capita for those cities having noise laws. The bulk of this amount (\$482,000) represented the combined budgets of New York City, Chicago, Illinois and Inglewood, California. Of the "big three" New York had the largest budget, but also the largest population served. On a per capita basis Inglewood leads the country with a per capita expenditure of \$1.32 compared to Chicago, the second highest, of 7.6 cents.

In terms of manpower, New York has the largest noise control staff, 43, which includes 23 directly assigned to the Bureau of Noise Abatement and 20 Inspectors which are currently assigned to the Bureau of Enforcement of the Department of Air Resources. Second is Chicago with a full-time staff numbering 23 in their engineering and enforcement divisions. Of the total, 19 are professionals while the remaining four are secretarial and clerical support personnel.

Functional program areas vary considerably among the cities. Enforcement receives the largest attention of staff in Chicago. Both New York and Inglewood devote a smaller portion to enforcement, emphasizing presently research and monitoring. Based upon Chicago's experience noise complaints associated with mobile noise sources (See Table 4) require the largest portion of staff time (60.3%). Stationary noise source complaints (39.7%) came from a variety of land use activities (See Table 5). Industrial land use (See Table 6) is the biggest source of stationary noise source complaints (34.4%) followed closely by residential (27.7%) and commercial (21.5%) activity. Factory noise in general is the primary industrial source according to the Inspector records. Air conditioning and exhaust fan systems are frequently cited as reasons for registering a complaint.

TABLE 3
MUNICIPAL NOISE ABATEMENT EXPENDITURES

<u>CITY</u>	<u>POPULATION</u> (1970)	<u>ANNUAL</u> 1970	<u>BUDGET</u> 1971	<u>(IN THOUSANDS OF DOLLARS)</u> 1972
New York, N. Y.	7,895,563	\$ 55	\$ 150	\$ 200
Chicago, Ill.	3,369,359	40	93	163
Inglewood, Ca.	89,985	...	132	119
Las Vegas, Nev.	125,787	50
Philadelphia, Pa.	1,950,098	14	26	27
Boston, Mass.	641,070	25	25	38
Atlanta, Ga.	497,421	...	25	25
Honolulu, Ha.	324,871	...	5	10
Dallas, Tex.	844,401	1	3	6
New Orleans, La.	593,471	...	4	4
Freemont, Ca.	180,869	2	2	3
Columbia, S.C.	113,542	1	2	2
Minneapolis, Minn.	434,400	2	2	2
TOTAL	16,980,837	\$140	\$469	\$568

NOISE COMPLAINTS*:
(July 1, 1972 - October 25, 1972)

TABLE 4

<u>Source</u>	TYPE OF SOURCE	
	<u>Number</u>	<u>Percent</u>
Stationary Source	1277	39.7
<u>Mobile Source</u>	<u>1935</u>	<u>60.3</u>
TOTAL	3212	100.0

TABLE 5

<u>Land Use Activity</u>	STATIONARY SOURCES	
	<u>Number</u>	<u>Percent</u>
Residential	340	27.7
Commercial	264	21.5
Industrial	423	34.4
<u>Institutional</u>	<u>201</u>	<u>16.4</u>
TOTAL	1228	100.0

TABLE 6

<u>Category</u>	INDUSTRIAL SOURCES	
	<u>Number</u>	<u>Percent</u>
Air Conditioning	23	5.4
Exhaust Fans	64	15.1
Dust Collectors	4	1.0
<u>Factory</u>	<u>332</u>	<u>78.5</u>
TOTAL	423	100.0

*Based upon data from the Department of Environmental Control
Chicago, Illinois

B. FEDERAL IMPACT

The federal government is having a major impact on the quantity and content of local noise laws and programs. Probably the greatest influence has been the National Environmental Policy Act (NEPA) which requires governments desiring federal funding to assess the impact of their proposed project on the environment.²³ Noise and its potential environmental impact is receiving considerable attention especially projects involving highways, airports, housing development and power-generating facilities.

Supporting this environmental assessment process are nationally promulgated noise standards or criteria issued by various federal activities including:

1. U. S. Department of Housing and Urban Development Circular 1390.2, Noise Abatement and Control: Departmental Policy, Implementation Responsibilities, and Standards, August 4, 1971 (amended September 1, 1971).²⁴
2. U. S. Department of Transportation, Federal Highway Administration, Policy Procedure Memorandum (PPM 90-2) Interim Noise Guidelines July 1, 1972.²⁵
3. General Services Administration, Public Building Service, Guide Specifications, Special Conditions PBS4-0110 Noise Limits, May, 1972 (amended August, 1972)²⁶

These noise related guidelines and standards are requiring cities to reevaluate their approach to urban development including the need for environmental management considerations. The Noise Control Act of 1972¹⁹ will probably have the most profound impact on local governments since this Act (see Appendix 2) will include:

1. Railroad and motor carrier noise emission standards.
2. Noise emission standards for new products distributed in commerce.

Both of these provisions restrict state or political subdivisions from adopting or enforcing noise emissions regulations that are not identical to federal standards.

These possible preemptive areas are causing some cities to reconsider either the revision of nuisance type ordinances having no quantitative requirements or adopting noise ordinances at all. This municipal inactivity will have an adverse effect on the local control of urban noise which is needed for the protection of the local population. Under the provisions of this Act however EPA through the Office of Noise Abatement and Control will provide technical assistance to local and State governments for developing and enforcing ambient noise standards, along with preparing model noise legislation guidelines.

LOCATION	1970 POPULATION	NUISANCE		ZONING		BUILDING		VEHICLE		AIRCRAFT	
		Acoustical Criteria		Acoustical Criteria		Acoustical Criteria		Acoustical Criteria		Acoustical Criteria	
		Yes	No								
CALIFORNIA											
San Jose	445,779										
San Jose - Santa Barbara	70,215		X								X
San Jose - Santa Monica	88,289										X
San Jose - Santa Monica - San Francisco	134,584			X							X
ARIZONA											
Phoenix	2,404	X		X				X			
Phoenix - Chandler	66,870		X	X							
Phoenix - Chandler - Gilbert	514,678		X	X							
Phoenix - Chandler - Gilbert - Mesa	182,927			X					X		
Phoenix - Chandler - Gilbert - Mesa - Scottsdale	92,787		X	X							
CONNECTICUT											
Stamford	158,017		X								
Stamford - West Haven	137,707		X	X							
CONNECTICUT - OTHER											
Stamford - West Haven - Middletown	756,510		X	X				X			
CONNECTICUT - OTHER											
Stamford - West Haven - Middletown - Danbury	80,386		X							X	
CONNECTICUT - OTHER											
Stamford - West Haven - Middletown - Danbury - Meriden	42,494		X	X							
Stamford - West Haven - Middletown - Danbury - Meriden - Danbury	139,590		X		X			X			
Stamford - West Haven - Middletown - Danbury - Meriden - Danbury - Danbury	4,342		X								
Stamford - West Haven - Middletown - Danbury - Meriden - Danbury - Danbury - Danbury	528,865			X							
Stamford - West Haven - Middletown - Danbury - Meriden - Danbury - Danbury - Danbury - Danbury	334,859		X		X						X
Stamford - West Haven - Middletown - Danbury - Meriden - Danbury - Danbury - Danbury - Danbury - Danbury	97,565										
CONNECTICUT - OTHER											
Stamford - West Haven - Middletown - Danbury - Meriden - Danbury - Danbury - Danbury - Danbury - Danbury - Danbury	497,421		X								
13.											

CITY	1970 POPULATION	NUISANCE		ZONING		BUILDING		VEHICLE		AIRCRAFT	
		Acoustical Criteria		Acoustical Criteria		Acoustical Criteria		Acoustical Criteria		Acoustical Criteria	
		Yes	No								
MICHIGAN											
College Park	18,203		X	X							X
Easton	122,423		X		X						
East Lansing	18,996		X								
Eastland	2,306		X								
MINNESOTA											
Coon Rapids	40,036	X		X				X			
ILLINOIS											
Chicago	3,369,359		X	X							
East St. Louis	57,239			X				X			
East St. Louis	42,466	X		X							X
East St. Louis	126,963	X						X			
East St. Louis	27,297										
East St. Louis	32,800	X		X		X					
East St. Louis	90,397		X						X		
INDIANA											
Indianapolis	745,739	X					X				
IOWA											
Des Moines	200,587		X							X	
MISSISSIPPI											
Memphis	276,534		X				X			X	
KENTUCKY											
Cincinnati	52,535	X									
Cincinnati	361,472	X		X				X			
LOUISIANA											
New Orleans	593,471		X		X						

CITY	1970 POPULATION	NUISANCE		ZONING		BUILDING		VEHICLE		AIRCRAFT	
		Acoustical Criteria		Acoustical Criteria		Acoustical Criteria		Acoustical Criteria		Acoustical Criteria	
		Yes	No								
MICHIGAN											
Ann Arbor	99,797		X	X		X		X			
Detroit	1,512,893		X								
Grand Rapids	197,649	X									
Lansing	56,560	X									
MINNESOTA											
St. Paul	81,970			X		X					
Minneapolis	434,400		X	X		X					
MISSISSIPPI											
Jackson	153,968		X								
MISSOURI											
St. Louis	111,662			X							
Kansas City	507,330		X	X				X			
St. Louis	622,236		X								
MONTANA											
Billings	61,581		X								
Helena	22,730					X			X		
Missoula	29,497								X		
15.											

MUNICIPALITY	1970 POPULATION	NUISANCE		ZONING		BUILDING		VEHICLE		AIRCRAFT	
		Acoustical Criteria		Acoustical Criteria		Acoustical Criteria		Acoustical Criteria		Acoustical Criteria	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
MASSACHUSETTS											
Andover	14,507		X						X		X
NEW JERSEY											
Asbury Park	16,533		X								
Bayonne	72,743		X								
Belleville	34,643	X		X							
Bloomfield	52,059		X								
Bonton	9,261	X		X							
Braden	4,490		X								
Camden	6,741		X								
Clark	11,991		X								
Clarks Summit	102,551		X								
Cliffside Park	4,392		X								
Closter	82,437	X		X							
Cobleskill	1,742		X								
Cochran	258		X								
Cresskill	15,039		X								
Deer Park	75,471		X								
Elizabeth	112,654		X	X							
Englewood	37,975		X	X							
Essex	14,707		X	X							
Franklin Lakes	5,754		X								
Franklin Township	11,464		X	X							
Franklin Lakes	10,700		X	X							
Franklin Lakes	11,811		X								
Franklin Lakes	9,173			X							
Franklin Lakes	45,380			X							
Franklin Lakes	59,743			X							
Franklin Lakes	260,545		X								
Franklin Lakes	31,774		X								
Franklin Lakes	10,576		X								
Franklin Lakes	17,662		X								
Franklin Lakes	382,417		X								
					16.						

LOCATION	1970 POPULATION	NUISANCE		ZONING		BUILDING		VEHICLE		AIRCRAF
		Acoustical		Acoustical		Acoustical		Acoustical		Acoustic
		Criteria	Criteria	Criteria	Criteria	Criteria	Criteria	Criteria	Criteria	Criteria
Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
NEW JERSEY										
Newton	7,297		X							
N. Wildwood	3,914		X							
Nutley	32,099		X							
Ocean City	10,575		X							
Orange City	32,566		X							
Paterson	144,824		X							
Perth Amboy	38,798		X							
Plainfield	46,862		X							
Pleasantville	13,778		X							
Princeton	12,311	X		X						
Rahway	29,114		X	X						
Ridgefield Park	14,453		X	X						
Salem	7,648		X							
Secaucus	13,228		X							
S. Amboy	9,338		X	X						
Summit	23,620		X							
Trenton	104,638		X							
Vineland	47,399		X							
Westfield	33,720		X							
W. Orange	43,715		X							
Wildwood	4,110		X							
Woodbridge	78,846	X								
NEW HAMPSHIRE										
Manchester	87,754		X						X	
NEW MEXICO										
Albuquerque	243,751		X		X				X	
NEW YORK										
Albany	115,781				X					
Binghamton	64,123	X								
Buffalo	462,768		X						X	
New York	7,895,563		X	X		X				
Rochester	296,233		X							
White Plains	50,125		X						X	

CATION	1970 POPULATION	NUISANCE		ZONING		BUILDING		VEHICLE		AIRCRAF
		Acoustical		Acoustical		Acoustical		Acoustical		Acoustic
		Criteria	Criteria	Criteria	Criteria	Criteria	Criteria	Criteria	Criteria	Criteria
Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
NEW YORK										
New Rochelle	75,385		X							X
RTH CAROLINA										
Greensboro	144,076		X							X
Raleigh	123,793		X							
RTH DAKOTA										
Bismark	34,703		X							
IO										
Akron	275,425		X							
Cincinnati	452,524		X					X		
Cleveland	750,903		X						X	
Columbus	540,025		X	X						
Dayton	243,601		X	X						
Toledo	383,818		X							
University Heights	17,055		X							
EGON										
Madison	28,454		X							
Portland	380,620		X		X					X
OHIO										
Kelley	368,856		X	X						
INSYLVANIA										
Philadelphia	1,950,098		X							
Pittsburgh	520,117		X						X	
Scranton	103,564								X	
DE ISLAND										
Wilmington	83,694			X						

LOCATION	1970 POPULATION	NUISANCE		ZONING		BUILDING		VEHICLE		AIRCRAFT
		Acoustical Criteria		Acoustical Criteria		Acoustical Criteria		Acoustical Criteria		Acoustical Criteria
		Yes	No	Yes	No	Yes	No	Yes	No	Yes
SOUTH CAROLINA										
Columbia	113,542		X							
SOUTH DAKOTA										
Sioux Falls	72,488				X				X	
TENNESSEE										
Memphis	623,530		X							
Nashville	448,003			X					X	
TEXAS										
Dallas	844,401			X						
El Paso	322,261		X						X	
Houston	1,232,802		X							
Irving	97,457			X			X			
Killeen	35,507		X						X	
San Antonio	654,153		X							
UTAH										
Ogden	69,478									X
Salt Lake City	175,885	X								
VIRGINIA										
Norfolk	307,951		X							
Richmond	249,621		X		X					
WASHINGTON										
Seattle	530,831		X						X	

CATION	1970 POPULATION	NUISANCE		ZONING		BUILDING		VEHICLE		AIRCRAFT	
		Acoustical Criteria		Acoustical Criteria		Acoustical Criteria		Acoustical Criteria		Acoustical Criteria	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
CONSIN											
Madison	173,258		X			X			X		
Milwaukee	717,372		X								
AL											
	<u>47,208,593</u>	<u>24</u>	<u>124</u>	<u>53</u>	<u>9</u>	<u>8</u>	<u>4</u>	<u>15</u>	<u>27</u>	<u>7</u>	<u>6</u>

APPENDIX 2: NOISE CONTROL ACT OF 1972 (Summary)
PUBLIC LAW 92-574 ENACTED OCTOBER 27, 1972
92nd Congress, H.R. 11021

I. FEDERAL PROGRAMS

- A. Compliance - All activities in compliance with Federal, State, interstate and local noise requirements.
- B. Coordinate - Administrator shall coordinate all Federal agency noise programs.
- C. Consult - Consult with Administrator in prescribing noise standards or regulations.

II. IDENTIFICATION OF MAJOR NOISE SOURCES

- A. Publish noise criteria identifying effects on public health and welfare.
- B. Levels of noise necessary to protect public health and welfare.

III. NOISE EMISSION STANDARDS

- A. Propose regulation for products, identified as major noise sources.
- B. New product categories include:
 - 1. Construction Equipment
 - 2. Transportation equipment
 - 3. Motor or engine
 - 4. Electrical or electronic equipment

IV. AIRCRAFT NOISE STANDARDS

- A. Study adequacy of FAA operational noise controls and emission standards.
- B. Recommendations for retro-fitting and phase out of existing aircraft.
- C. Recommendations for regulations to protect public health and welfare submitted to FAA.

V. LABELING

- A. Products capable of adversely affecting the public health or welfare.
- B. Sold on the basis of its effectiveness in reducing noise.
- C. Method and measurement unit decided by Administrator.

VI. IMPORTS

- A. Requirements applicable to new products, exported or imported.

VII. PROHIBITED ACT

- A. Manufacturer prohibited from distributing products not conforming to:
 - 1. Applicable labeling
 - 2. Noise emission regulation

VIII. ENFORCEMENT

- A. Fine: \$25,000 per day for each violation
- B. Imprisonment: Up to 1 year.
- C. Subsequent convictions: May be doubled

IX. CITIZEN SUITS

- A. Person may commence a civil action
- B. Administrator may intervene as a matter of right in costs of litigation.

X. RESEARCH

- A. Effects of noise on humans, wildlife, property.
- B. Noise measurement, monitoring, and control.

EPA - (Noise Control Act of 1972) Cont'd.

XI. TECHNICAL ASSISTANCE:

- A. To local and state governments for developing and enforcing ambient noise standards.
- B. Preparation of model noise legislation.

XII. RAILROAD AND MOTOR CARRIER NOISE EMISSION STANDARDS

- A. Carriers engaged in interstate commerce.
- B. State and local governments prohibited from establishing limits different than federal.

REFERENCES

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2. Boston, Massachusetts, Ordinance adopted September 30, 1850, Section 54.
3. Edward F. Brown, et al (Eds.) City Noise, Noise Abatement Commission, N. Y. Department of Health, New York City: Academy Press, 1930.
4. Memphis, Tennessee, Ordinance adopted May 24, 1938.
5. Charles Rhyne Municipal Control of Noise National Institute of Municipal Law Officials, Research Report Number 123, 1948 (Contained within is the Model Ordinance Prohibiting Unnecessary Noises).
6. Chicago, Illinois, Zoning Ordinance adopted March 10, 1955.
7. Department of California Highway Patrol, Vehicle Code, Sections 23130 and 27160, adopted 1967.
8. Inglewood, California, Noise Regulation, Chapter 6, Municipal Code, adopted November, 1969.
9. S. Levin, et al. Law and the Municipal Ecology, National Institute of Municipal Law Officials, Research Report Number 156, 1970 (Contained within, the Model Ordinance Prohibiting Unnecessary Noises with optional decibel provisions).
10. Chicago, Illinois, Noise Ordinance, Chapter 17, adopted July 1, 1972.
11. Laws and Regulatory Schemes for Noise Abatement, U. S. Environmental Protection Agency, Washington, D. C.: Government Printing Office, December 31, 1971. (Prepared by George Washington University).
12. Seattle, Washington, Noise Ordinance 9007, adopted May 14, 1952.
13. Cincinnati, Ohio, Noise Ordinance 430, adopted October 30, 1953.
14. Clifford R. Bragdon "Guidelines for The Preparation of a Model Noise Ordinance", INTER-NOISE 72 International Conference on Noise Control Engineering Proceedings. Edited by Malcolm Crocker, Washington, D. C., October, 1972.
15. National Symposium on State Environmental Legislation: Summary Report, Washington, D. C.: Council of State Governments, 1972.

See also "Noise Workshop of the National Symposium on State Environmental Legislation", and "How State and Local Governments Can Control Noise... some illustrative examples" Washington, D. C.: U. S. Environmental Protection Agency, Office of Noise Abatement and Control, undated.
16. Personal correspondence, Office of the Mayor, City of Memphis, Tennessee.
17. Personal conversation Cosimo Caccavari, Supervisor, Noise and Vibration Control, Department of Environmental Control, Chicago, Illinois.

18. Most of the octave band level conversions to A-weighted sound levels expressed in dB(A) are based on data from Dr. Theodore J. Schultz paper "Community Noise Ordinances", Presented at the American Academy for the Advancement of Science Meeting held in Philadelphia, Pennsylvania, December 21, 1971.
19. Noise Control Act of 1972, Public Law 92-574, Enacted October 27, 1972 (92nd Congress, H. R. 11021).
20. State and Municipal Non-Occupational Noise Programs, U. S. Environmental Protection Agency, Washington, D. C.: Government Printing Office, December, 1971; See also Environmental Quality; The Third Annual Report, U. S. Council on Environmental Quality, August, 1972, p. 210.
21. Data provided by the Bureau of Noise Abatement, Department of Air Resources, New York City.
22. Data provided by the Department of Environmental Control, Chicago, Illinois.
23. U. S. Congress, National Environmental Policy Act of 1969, Public Law 91-190, 91st Congress, January 1, 1970.
24. U. S. Department of Housing and Urban Development Circular 1390.2, Noise Abatement and Control: Departmental Policy, Implementation Responsibilities, and Standards, August 4, 1971 (amended September 1, 1971).
25. U. S. Department of Transportation, Federal Highway Administration, Policy Procedure Memorandum (PPM 90-2) Interim Noise Guidelines July 1, 1972, Noise Standards and Procedures.
26. General Services Administration, Public Building Service, Guide Specifications, Special Conditions PBS4-01100 Noise Limits May, 1972 (Amended August, 1972).