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NOISE CONTROL ORDINANCE DEVELOPMENT:  
A GUIDEBOOK FOR LOCAL OFFICIALS



**National  
League of Cities**



NOISE CONTROL ORDINANCE DEVELOPMENT HANDBOOK:  
A Guidebook for Local Elected Officials



National League of Cities  
Office of Membership Services

NOISE ORDINANCE DEVELOPMENT HANDBOOK by Edwin G. Brush

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The National League of Cities (NLC) was established in 1924 by and for reform-minded state municipal leagues. It now represents 48 leagues and over 1,000 cities directly, and through the membership of the state municipal leagues, almost 15,000 cities indirectly.

The League is an advocate for its members in Washington in the legislative, administrative and judicial processes that affect them; develops and pursues a national urban policy that meets the present and future needs of our nation's cities and of the people who live in them; and offers training, technical assistance and information to municipal officials to help them improve the quality of local government in our urban nation.

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Additional copies of this publication are available from the Publications Center of the National League of Cities, at the address above.

#### PREFACE

The future of America's cities depends on how effectively they can compete as desirable places in which to live and work. Much of their attractiveness is determined by the quality of their environment. Noise is adversely affecting the quality of urban life and is a threat to the public health, safety, and welfare of our cities' residents. NLC is committed to assisting communities throughout the United States in resolving their various noise problems through the Community and Airport ECHO Programs, by promoting the "Buy Quiet" program, and by preparing this publication to emphasize the important steps that a community should take in developing a noise control ordinance. This publication is a step-by-step guide that local officials can use as they undertake the ordinance development process.

Despite significant progress, direct Federal assistance to cities has ended and noise control is the sole problem of state and local governments. Our public officials will need to become innovative in their approach to controlling noise and enhancing the quality of life in their communities. This guidebook will help municipalities in their endeavor to abate and control noise in our nation's cities.



Executive Director  
National League of Cities

## INTRODUCTION

Noise is an environmental problem that can best be solved at the local level by developing, implementing, and enforcing a local noise control ordinance. This manual is designed for local government officials who are interested in controlling noise in their communities. The manual is intended to provide guidelines for action, rather than a blueprint for noise ordinance development. To be most useful, this manual should be used with the help and guidance, where possible, of your State's Noise Program Director. If you are working in a state where there is no Noise Program Director, you should contact a neighboring community of comparable size and demography that has already established an effective noise control program (for a list of States and communities with noise control programs see the National League of Cities' publication State and Local Environmental Noise Control: 1980 Survey Report).

To successfully solve your community's noise problem, you must work through four stages divided into twenty-five steps. This guide will help you with each step. In the first step you must identify a city official to serve as a focal point for developing your noise ordinance. Then assemble a group of citizens representing various community interests to advise and help you work through the remaining steps. In the second stage you must determine the needs for noise control in your community. This means becoming aware of the number, variety, and significance of noise complaints in the community; accurately identifying community noise sources; and checking community attitudes about noise control.

In the third stage you establish procedures for selecting noise control measures in your community. This guide will help you become acquainted with the advantages and disadvantages of various types of legislative controls; will suggest steps in developing an ordinance for your needs; and will help you prepare for adoption of the ordinance.

The last stage deals with the adoption and implementation of an ordinance once it has been developed. Here, this guide will recommend training plans, assistance from other communities, a public education/awareness program, and continued use of your citizen's advisory council.

At the end of the manual you will find a Model Noise Control Ordinance designed to be used in developing a local noise control program. This Model Noise Ordinance is referred to throughout the text, and you should find it very helpful as a guide for drafting your own ordinance.

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At the end of the manual you will find a Model Noise Control Ordinance designed to be used in developing a local noise control program. This Model Noise Ordinance is referred to throughout the text, and you should find it very helpful as a guide for drafting your own ordinance.

CHECKLIST OF STEPS IN THE NOISE  
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STAGE ONE

PLANNING FOR LOCAL NOISE CONTROL ORDINANCE DEVELOPMENT

STEP 1

*Appoint a community official to be in charge of developing a noise control program.*

Read completely through this manual to become familiar with all of the steps required to develop a local noise control ordinance. Identify and contact your State Noise Program Director. Inform the Director of your intention and request advice and assistance in developing your local ordinance.

STEP 2

*Organize a group of concerned citizens to serve as a local Noise Control Advisory Council.* The purpose of this group is to give a broad base of support which is essential for the success of your ordinance development plans. An effective advisory council includes community constituencies (such as representatives of business and industry, senior citizens, environmentalists, educators), as well as technical experts (audiologists, acoustical engineers, enforcement/legal specialists).

STEP 3

*Meet with the advisory council to plan your approach to developing, adopting and implementing a noise control ordinance for your community. Review the required steps and delegate responsibility where appropriate. Plan to meet with the advisory council on a regular basis.*

STAGE TWO

DETERMINING THE COMMUNITY'S NEED FOR NOISE CONTROL

STEP 4

*Gather data. Include information on the number and kinds of complaints received during the previous year by the police, health, environment, and animal control departments in your community. If possible, use volunteers such as older Americans to help you gather data.*

STEP 5

*Prepare the data for analysis. Do this by making a chart that shows the number and kinds of complaints received in one year by*

each department. \* Use the sample chart on p. 6 as a guide.

STEP 6

*Analyse the noise complaint data.* Determine which kind of complaint (*e.g.* motorcycle) is most numerous. Determine which department (*e.g.*, Police) receives the largest number of complaints. This analysis will provide you with information on the variety and significance of noise problems in your community, differences in the numbers and activities of the noise sources, and established patterns of citizen/government involvement in dealing with community noise.

STEP 7

*Classify the sources of noise in your community.* Use the following categories: Stationary, Aircraft, Rail, Traffic Vehicle, Other Vehicle, Domestic. Use the chart on p. 7 to classify your noise sources.

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\* If the volume of complaints for a year is too great for easy compilation, select a single summer month.

SAMPLE CHART

Number of Complaints Received by Department					
Kind of Complaint	Police	Health	Environment	Animal Control	TOTAL
Trucks					
Buses					
Motorcycle					
Loud Muffler					
Construction					
Industrial Activity					
Loud Party					
Fair Grounds					
Music					
Barking Dog					
TOTAL					

TYPICAL NOISE SOURCE CLASSIFICATION

Category	Source	Examples
Stationary	Commercial/ Industrial	Power Plant, Railroad Yard, Foundry
	Construction	Highway, Utility, or Building Construction
	Entertainment Center	Race Track, Music Clubs, Outdoor Theaters, Bars
Aircraft	Jet	Commercial, Military, Private
	Small Plane	Single-engine Propeller
	Helicopter	Police, Military, Commercial
Rail	Trains	Freight, Passenger, Subway, Streetcar, Monorail
Traffic Vehicle	Traffic	Major & Minor Arterials, Collectors and Boulevards
	Motorcycle	Mo-Ped, Street Cycle, Police Cycle
	Truck	Dump, 18-Wheeler, Refrigeration
	Bus	Transit, School, Intercity
	Auto	Sedan, Sports Car, Van, Pickup Truck
	Highway	Freeway, Major High-speed Throughway
Other Vehicle	Service	Garbage Truck, Street Sweeper, Snowplow
	Emergency	Police, Fire, Ambulance, Sirens
Domestic	Pets/Animals	Dogs
	Neighbors' Homes	Stereo Music from within Neighbors' Homes
	Air Conditioners	Air Conditioners, Heat Exchangers and Fans
	Garden Equipment	Lawnmowers, Edgers, Trimmers

Your community's ability to control noise is greatest in the areas of personal noise (e.g. musical instruments, yard equipment, pets, power tools, etc.) and decreases as the noise sources become more mechanical and more mobile (e.g. trains and aircraft).

STEP 8  
(Optional)

*Obtain acoustical data on significant noise problems identified in STEP 6. Contact your State Noise Program Director to request advice, assistance and/or equipment (sound level meter) loan.*

STEP 9

*Collect citizen's opinions on community noise problems. Contact elected and appointed officials, newspaper and broadcast correspondents, neighborhood advisory councils, town meetings, citizens' committees, fraternal and business clubs, and similar sources. Request information on community attitudes about excessive noise and what should be done to solve local noise problems.*



STEP 10

*Identify the most important noise problem(s) in the community. Use information collected in Steps 4-9 to determine which problem(s) should be the focus of a noise ordinance. Carefully note the situations in which there are two or more noise sources that produce approximately equally loud levels. If you have this situation, you must consider countermeasures directed at more than one noise source. Examine areas that may become candidates for quiet zones, and list all noise sources that will cause the noise level to be above the chosen or recommended levels for such zones.*

STAGE THREE

SELECTING AN EFFECTIVE NOISE CONTROL ORDINANCE

STEP 11

*Become familiar with the Model Noise Ordinance found at the end of this manual. Read carefully pp. 1-7, and note the following points:*

- Definitive (quantitative) noise standards are an improvement over general (nuisance) noise ordinances. Important examples of quantitative standards are property-line standards that prohibit sound at a certain level (specified in decibels) from crossing a property or zoning boundary; and use controls that limit the noise level in decibels from motor vehicles at a specified distance.
  
- Multiple coverage is an advantage in enforcement. For example, time restrictions and property-line standards may be used together to control a noise source.
  
- Federal or State regulations may preempt local regulation for railroads, trucks, construction equipment (air compressors) and motorcycles (see your State Noise Official or the U.S. EPA for interpretation of pre-emption clauses).

- The established Noise Control Advisory Council should be used for continuous review.
- The distinction between "sound" and "noise" is important.
- Different municipalities have adopted various sound level limits.
- Many enforcement options are available.

STEP 12

*Become familiar with different approaches to noise control used in the Model*

*Ordinance.* In the Model Ordinance, review the list of Provisions (pp. 8 and 9), and read Article VI-X (pp. 14-22) that include specific noise control approaches. There are two primary kinds of countermeasures: operational restrictions (prohibitions) and land use control. Operational restrictions are usually more effective in a short time frame, while land use controls usually provide benefits over a long time frame and help

prevent future noise problems and environmental degradation. Each kind of countermeasure has a variety of specific approaches. Operational restrictions include nuisance controls, property-line standards, source-distance limits, time limitations, area limitations, permit requirements, and use controls. Land use approaches include building codes and planning/zoning ordinances. In addition, there are some secondary countermeasures available to local communities such as barriers, building insulation requirements, and population relocation. Also, new product standards, although usually not cost effective, may be used if the products are not regulated by pre-emptive State or Federal regulations. Become familiar with each approach used in the Model Ordinance and described on the following pages.

### OPERATIONAL RESTRICTIONS

Nuisance Provisions. Prohibit loud or raucous behavior, disturbing the peace, and/or making unnecessary noise. This approach is not recommended, except in some cases, because it is very difficult to enforce. It may be considered for use in controlling noise from animals, radios, televisions, and musical instruments if it is employed in conjunction with another approach such as property-line restriction.

Property-Line Noise Limits. Effective in controlling noise from stationary sources. Place a numerical limit (decibel) on noise at the boundary of the receiving or (less commonly) of the emitting property. Frequently the noise limits are stated in receiving land use (*e.g.*, residential, commercial, etc.), and time of day (*e.g.*, day, night).

Source-Distance Noise Limit. Restricts operation of a device that creates a noise disturbance at a certain distance (*e.g.*, 50 feet) from the source. May be used to control noise from radios, televisions, stereos, motor boats, refuse collection vehicles, and recreational vehicles. May be difficult to enforce unless the restricted noise level is specified in decibels.

Time Limitations. Effective in controlling both stationary and mobile noise sources. Specify hours during which noise is prohibited.

Area Limitations. Specify areas such as noise sensitive zones and places of public entertainment where noise is controlled.

Permit Requirements. Allow certain noise sources, such as fire-arms, explosions, construction, and recreational vehicles to be operated if a permit is obtained from the proper authority.

Use Controls. Restrict the operation of the noise sources such as motor vehicle horns, motor vehicles and motorcycles, and places of public entertainment. Also prohibit tampering with noise control devices, such as mufflers. They may require noise reduction by the addition of approved noise control devices, and/or by equipment maintenance and inspection.

#### LAND USE CONTROLS

Planning and Zoning Requirements. Specify that no new building be allowed in areas with noise above a certain level.

Building Codes. Require that residential (multi-family) buildings include sound attenuation measures (e.g., insulation) to reduce interior noise levels.

STEP 13

*Identify noise countermeasures that may be effective in solving your community's noise problems identified in STEP 10.*

Use the chart on p. 16 to identify effective noise control approaches for noise problems you may have.

STEP 14

*Identify the operational restrictions (prohibitions) in the Model Ordinance that you wish to include in your local noise ordinance. Review carefully Articles VI, IX, and X. Consult with your State Noise Program Director or the U.S. EPA about specific operational restrictions you intend to include and, where necessary, about specific standards, such as time and decibel limits that should be included in your noise ordinance.*

EFFECTIVE NOISE CONTROL APPROACHES FOR LOCAL GOVERNMENTS

NOISE			OPERATIONAL RESTRICTIONS							LAND USE CONTROLS	
<u>Category</u>	<u>Source</u>		Nuisance	Property-Line	Source Distance	Time	Area	Permit	Operational	Building Code	Planning/Zoning
<u>Stationary</u>	Commercial/Industrial		X	X	X			X	X	X	X
	Construction		X	X	X			X	X	X	X
	Entertainment		X		X	X		X	X	X	X
<u>Rail</u>	Railroad									X	X
	Rapid Transit									X	X
<u>Traffic Vehicle</u>	Motorcycle			X	X			X	X	X	X
	Truck			X	X	X			X	X	
	Bus			X	X				X	X	
	Automobile			X	X				X	X	
<u>Other Vehicle</u>	Service				X				X	X	
	Recreation		X	X	X	X		X	X	X	X
	Boat			X					X	X	
	Emergency								X	X	
<u>Domestic</u>	Equipment		X		X				X	X	
	Personal		X		X					X	
	Animal	X	X							X	



STEP 15

*Identify the land use controls in the Model Ordinance that you wish to include in your local noise ordinance. Review carefully Articles VIII and X. Again, consult with the State Noise Program Director or the U.S. EPA about the land use controls, including time and decibel limits, that you intend to implement. With the help of the State Noise Program Director, prepare a draft of your local noise ordinance that includes operational restrictions and land use controls.*

STEP 16

*Include an Article of Exemptions and Variances in your local noise ordinances. Review carefully Article VII (pp. 17 and 18) in the Model Ordinance. Select those sections in Article VII which are appropriate for your local conditions.*

STEP 17

*Carefully review your enforcement options. Read again p. 7 in the Introduction to the Model Ordinance. The major point to consider*

is: should violations of the ordinance be infractions or misdemeanors? Since noise is not a major crime, do not select a penalty disproportionate to the offense. Review Article XI (pp. 23 and 24) in the Model Ordinance and, if possible, Dames and Moore's Code of Recommended Practices (See References). Select appropriate enforcement procedures for your local noise ordinance. Consult with your community's Legal Counsel (City Attorney) for assistance in choosing effective enforcement provisions. Select the penalties for noise ordinance violation you intend to include in your local ordinance.

STEP 18

*Identify local government duties and powers required to implement and enforce the noise ordinance.* Review again pp. 4 and 5 of the Introduction of the Model Ordinance. Then, carefully review Article IV (pp. 12-14) concerning the duties and powers required of an official to implement the local ordinance you have developed in Steps 14-18.

STEP 19

*Clear the ordinance you have developed with your community's Legal Counsel. Be sure to include a severability clause to protect each separate provision of the noise ordinance. See p. 24 of the Model Ordinance.*

STEP 20

*Consult with other local government departments and agencies and your community's Legal Counsel regarding the ordinance you have developed to assure that there is no potential for inter-departmental conflict over the duties, responsibilities and compliance levels in STEP 18. See p. 4 in the Model Ordinance regarding methods of resolving inter-departmental conflicts that may arise. Review Article V (p. 14) in the Model Ordinance and select those sections appropriate for your local conditions. At this point it may be necessary to rewrite the ordinance to include the concerns of other community departments and agencies. If it is rewritten, submit it again to your community's Legal Counsel for clearance.*

STAGE FOUR

ADOPTING AND IMPLEMENTING A NOISE CONTROL PROGRAM

STEP 21

*Estimate the cost of the noise ordinance enforcement provisions you have selected.*

The City/County will want to know the cost for enforcement before adopting the ordinance. The principal cost of most noise countermeasures is the cost of the personnel and equipment needed to administer and enforce a noise control program.

The number of people necessary to conduct, administer, and enforce a noise control program depends on the scope and nature of the program. Keep in mind that existing community personnel, such as police officers, may be used to enforce a noise ordinance as a regular part of their duties. Most active and successful local noise programs set up a center to receive and to respond to noise complaints. Many programs also include public education/awareness activities equal in importance to actual ordinance enforcement.

One study (Hagan, 1978) concluded that communities with complete noise enforcement and education programs would ideally be staffed with the following number of person years:

City Population	Required Person Years for Successful Noise Program Activities
0 - 50,000	2.5
50,000 - 100,000	3.35
100,000 - 500,000	3.75
Over - 500,000	8.75

You may consult a neighboring community with a noise control program about their staff requirements. Decide what kind of an enforcement and education program your community requires and advise City/County officials.

STEP 22

*Develop a public awareness program to introduce citizens in your community to the proposed noise ordinance. This program should become a permanent feature of your noise*

control effort once the ordinance is in place. The public awareness campaign should aim at gaining the public's understanding and support of your community's need for a noise control program, and their cooperation in implementing and complying with the noise ordinance. Plan to include civic organizations, schools, and the media in your public awareness program (see U.S. EPA, Public Education and Information Manual for Noise, 1980).

STEP 23

*Develop a plan for adopting the ordinance.* Become familiar with the standard practices your community employs and prepare the plan accordingly. If there are public hearings (readings) of the ordinance prior to adoption, include ways to invite all interested and relevant parties in your community to attend the hearing(s).

STEP 24

*Following ordinance adoption, implement your noise program.* Consult with other communities and your State Noise Program

Director about available public education/  
awareness materials, training programs, and  
assistance during your implementation  
phase.

STEP 25

*Plan for continued involvement with your  
Noise Control Advisory Council and for  
periodic evaluation, modification, and up-  
dating of your noise program. Keep the pub-  
lic and the media informed about develop-  
ments in the noise control program. For  
more information obtain materials from the  
following Reference Section.*

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