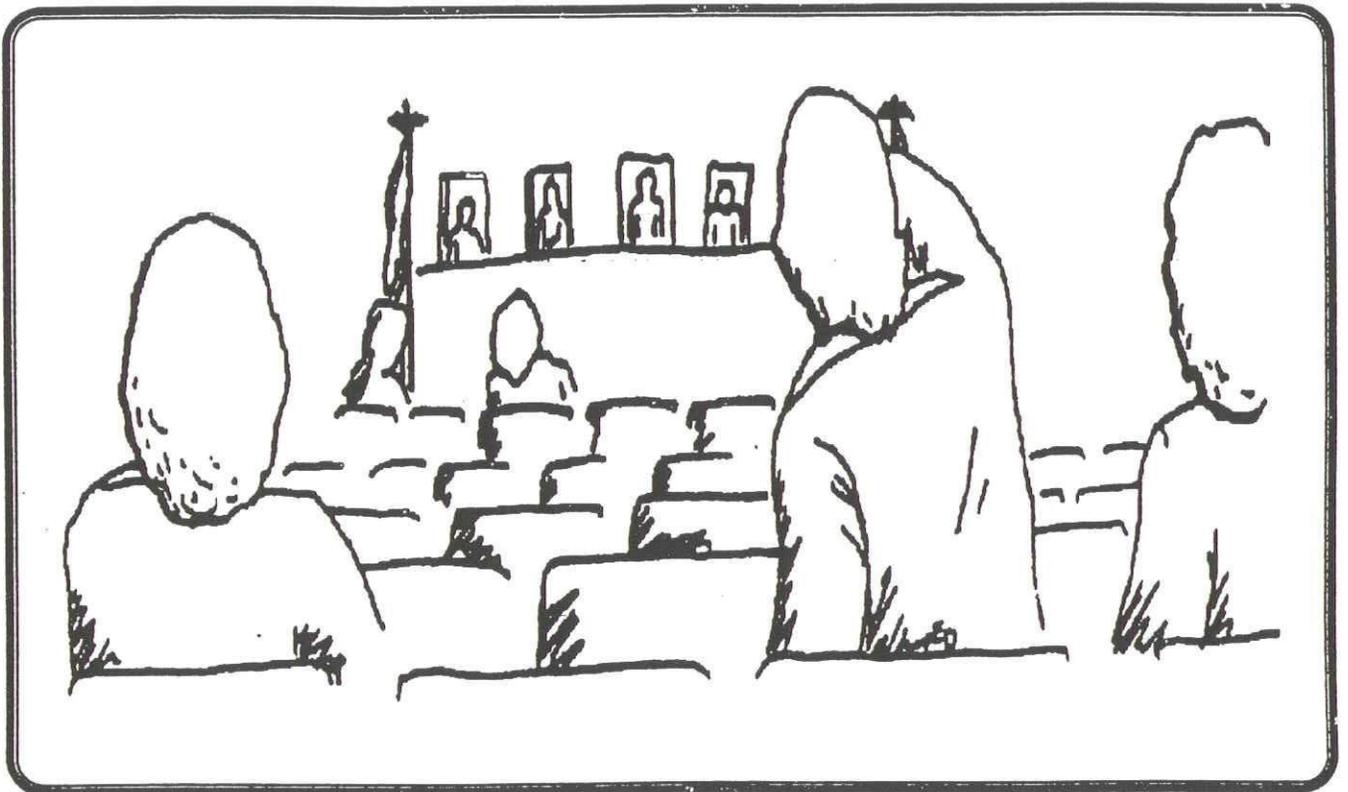


# **NOISE**



# **ELEMENT**

*The City of Morro Bay  
General Plan*



# **NOISE ELEMENT**

Adopted, August 29, 1993

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## **A. AUTHORITY AND PURPOSE**

The Noise Element of the General Plan is a planning document which provides policy framework within which potential noise impacts may be addressed during project review and long range planning. The State of California Government code requires all cities to prepare and adopt a Noise Element which "shall identify and appraise noise problems in the community. The noise element shall recognize the guidelines established by the Office of Noise Control in the State Department of Health Services and shall analyze and quantify to the extent practicable, as determined by the legislative body, current and projected noise levels for all of the following sources:

- highways and freeways,
- primary arterial and major local streets,
- railroad operations,
- aircraft and airport operations,
- local industrial facilities, and
- other stationary sources.

Noise sensitive uses that have been identified by the city are the following:

- residential development,
- schools,
- hospital, nursing homes,
- churches,
- meeting halls, auditoriums, music halls, theaters, libraries
- transient lodging - motels and hotels,
- playgrounds / parks, and
- offices.

This element has been adopted by Morro Bay in conformance with Section 65302 (f) of the California Government Code. The Noise element consists of this Policy Document, a Technical Reference Document and an Acoustical Design Manual.

The separate Technical Reference Document provides detailed information concerning methods used to define existing and future noise exposure within Morro Bay. The separate Acoustical Design Manual provides standard noise mitigation packages which may be used under some

circumstances to comply with the policies of the Noise Element. It also contains background information to assist staff and the general public in evaluating the effectiveness of proposed noise mitigation measures.

The City also has noise criteria and measures of enforcement contained within the municipal code.

The noise level standards of a noise ordinance should be consistent with the adopted policies of the Noise Element to achieve consistency in the implementation of noise control programs, and to provide industry with design criteria for future development or expansion.

The Noise Element is intended to serve as Morro Bay's general guide in public and private development matters related to outdoor noise. The basic goal of the Element is to outline a comprehensive plan to achieve and maintain a noise environment that is compatible with a variety of human activities in different land uses. To achieve this goal, the Element provides a quantitative estimate of noise exposures, land use noise standards, and recommended policies for controlling noise. This information is intended for use in conjunction with other adopted policies of the General Plan, particularly those of the Circulation, Land Use, and Housing Elements (N Modified 1.1).

The contents of the Noise Element and the methods used in its preparation have been determined by the requirements of Section 65302 (f) of the California Government Code and by the Guidelines for the Preparation and Content of Noise Elements of the General Plan prepared by the California Department of Health Services and included in the 1990 State of California General Plan Guidelines, published by the State Office of Planning and Research. The Guidelines require that major noise sources and areas containing noise-sensitive land uses be identified and quantified by preparing generalized noise exposure contours for current and project conditions. Contours may be prepared in terms of either the Community Noise Equivalent Level (CNEL) or the Day-Night Average Level (Ldn), which are descriptors of total noise exposure at a given location for an annual average day. The CNEL and Ldn are generally considered to be equivalent descriptors of the community noise environment within plus or minus 1.0 dB.

Since noise sources and levels are constantly changing, there should be periodic updates as new conditions evolve. The technical data contained in this document were obtained in 1991 so current conditions may differ due to subsequent increases in traffic and urbanization.

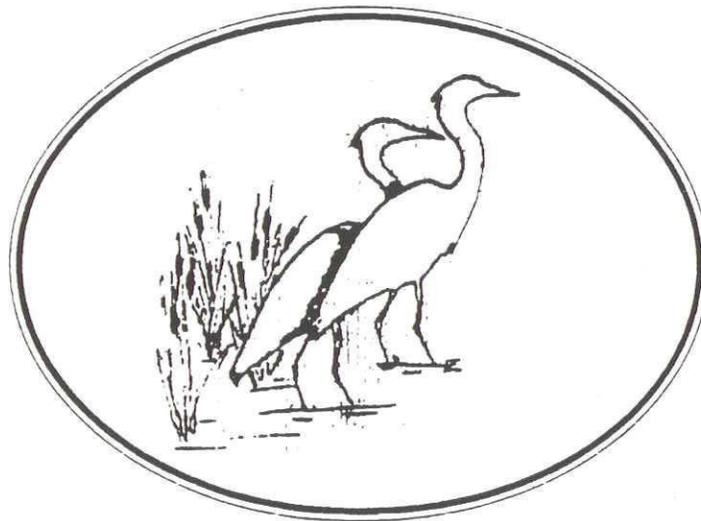
The Noise Element is related to the Land Use, Housing, Circulation and Open Space Elements of the General Plan. Recognition of the interrelationship of noise and these four mandated elements is necessary to prepare an internally consistent general plan and to initiate changes which will reduce noise exposure to acceptable levels in areas where noise presently exceeds the levels set forth by the adopted policies of the Noise Element. The relationship between these elements is briefly discussed below.

**Land Use** - An objective of the Noise Element is to provide noise exposure information for use in the Land Use Element. The noise contours in the Noise Element should be used to help determine appropriate land use patterns in the Land Use Element.

**Housing** - The Housing Element addresses sites and standards for new housing. Since residential land uses are noise sensitive, the Noise exposure information of the Noise Element must be considered when planning the locations of new housing. The State Noise Insulation Standards may influence the locations and construction costs of multi-family dwellings, which should be considered by the Housing Element.

**Circulation** - The circulation system, which is a major source of noise, must be correlated with the Land Use Element. This is especially true for roadways which carry significant numbers of trucks. Noise exposure will thus be a decisive factor in the location and design of new transportation facilities, and in the mitigation of noise produced by existing facilities upon existing and planned land uses.

**Open Space** - Excessive noise adversely affects the enjoyment of recreational pursuits in designated open space, particularly in areas where quiet is a valued part of the recreational experience. Thus, noise exposure should be considered in planning for this kind of open space use. Conversely, open space can be used to buffer noise-sensitive uses from noise sources by providing setbacks and visual screening.



## **B. EXISTING CONDITIONS AND ISSUES**

### **1. EXISTING CONDITIONS**

The existing noise environments in the City of Morro Bay are composed of sounds from many sources. Road and stationary noise sources were evaluated and mapped in 1975 and updated in 1990. Noise sensitive land uses such as parks, schools, and hospitals were also evaluated to determine if potentially incompatible noise levels impinged on them. The following are summary conclusions regarding the existing noise environment in Morro Bay.

- In general, the City of Morro Bay may be considered a relatively quiet environment.
- The most significant source of noise in Morro Bay is road traffic. The most significant stationary source of noise is the PG&E power plant.
- Of the roads evaluated in 1991 for noise exposure, Highway 1, and Morro Bay Boulevard, Main Street, Highway 41 and South Bay Blvd. were found to be associated with high noise levels.

Copies of the noise contour maps prepared in 1990 are available for review at the Community Development Department. Those maps contain contours for 1990 and projected noise contours for the year 2010.

### **2. ISSUES**

In planning for noise control, it is necessary to estimate what the future noise environment may be like. Accordingly, noise level forecasts for the year 2010 were included as part of the technical analysis. In general, the future noise environment will be affected by two factors:

- the expected increase in the number of noise sources (i.e. traffic volumes) and
- the application of noise control technology to various sources.

It is reasonable to assume that noise control technology will be applied to some noise sources, and that this may help counterbalance the increase in sources, possibly resulting in the same noise levels as currently exist or in decreased noise levels. Even with the application of technology, however, high noise levels are expected to persist in some areas of the City, particularly near major roads and highways. Thus, land use regulations are necessary components of successful noise control strategies.

#### **a. EXPLANATION OF NOISE LEVEL SCALES**

The existing and forecasted noise levels in Morro Bay are presented in the Volume 2 Technical Report, both in graphic form on the Noise Contours Maps and in tabular form. These noise levels are expressed in A-weighted decibels in terms of Day-Night Noise Levels (abbreviated Ldn). Detailed explanations of Ldn noise levels and the methods

used to compute them are presented in the Technical Report. The following brief discussion is intended to provide a basic understanding of the terms to facilitate use of the Noise Contours Maps. The Technical Report also provides a glossary with additional discussion of some of the more technical language.

Common noises experienced by each of us daily may range from a whisper to a locomotive train passing by. The range of sound energy represented by these two events is so large that it cannot be represented mathematically without using numbers in the millions and billions. To avoid this inconvenience, sound levels have been compressed in a standard logarithmic scale called the decibel (dB) scale. The reference level for the scale, 0 dB, is not the absence of sound, but the weakest sound a person with very good hearing can detect in a quiet place. The most important feature of the decibel scale is its logarithmic nature. An increase from 0 to 10 dB represents a tenfold increase in sound energy, but an increase from 10 to 20 dB represents a hundred fold increase over 0 dB, and a level of 30 dB represents a thousand fold increase over 0 dB.

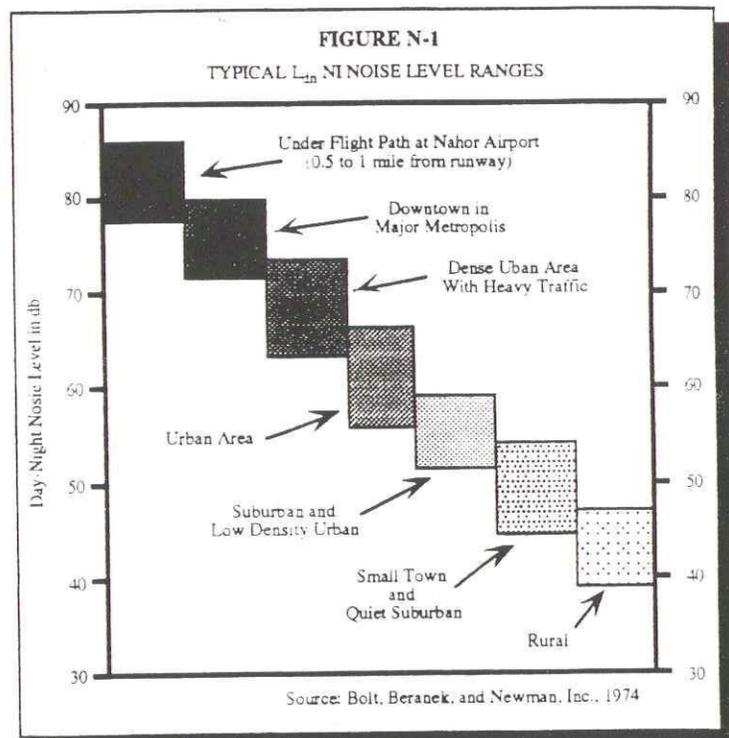
The average range of sounds that we are commonly exposed to generally fall in the 30 to 100 dB range. However, not all sound waves affect us equally. The human ear is more sensitive to high pitch sounds, such as a whistle, than it is to low pitch sounds, such as a drumbeat. As examples of typical Ldn noise level ranges, Figure N-1 gives ranges of Ldn decibel exposures ranging from quiet rural areas to an area under the flight path of a major airport.

The Technical Reference Document provides discussions of the fundamentals of noise assessment, the effects of noise on people and criteria for acceptable noise exposure. It is intended that the Technical Reference Document serve as a reference for staff during the review of documents or proposals which refer to the measurement and effects of noise.

## b. DEFINITIONS

For purposes of understanding this element of the General Plan, the following definitions are provided.

1. **A Weighted Sound Level (dB)** - The sound level obtained by using the A-weighting filter of a sound level meter, expressed in decibels (dB). All sound levels referred to in this policy document are in A-weighted decibels. A-weighting de-emphasizes the very low and very high frequencies of sound in a manner similar to the human ear. Most community noise standards utilize A-weighting, as it provides a high degree of correlation with human annoyance and health effects.



2. **Community Noise Equivalent Level (CNEL)** - The equivalent energy (or energy average) sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. with ten decibels to sound levels in the night before 7:00 a.m. and after 10:00 p.m. The CNEL is generally computed for annual average conditions.
3. **Day/Night Average Sound Level (Ldn)** - The equivalent energy (or energy average) sound level during a 24 hour day, obtained after addition of ten decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m. The Ldn is generally computed for annual average conditions.
4. **Equivalent Sound Level (Leq)** - The sound level containing the same total energy as a time varying signal over a given sample period. Thus, the Leq is a single-valued level that expresses the time-averaged total energy of a fluctuating sound level. For example, if 64 dB is measured for 10 minutes, 68 dB is measured for 20 minutes and 73 dB is measured for 30 minutes, the 1-hour Leq is about 71 dB. The Leq is typically computed over 1, 8 and 24 hour sample periods.
5. **Impulsive Noise** - Noise of short duration, usually less than one second with an abrupt onset and rapid decay.
6. **New Development:** - Projects requiring land use or building permits, but excluding remodeling or additions to existing structures.
7. **Noise Level Reduction (NLR)** - The arithmetic difference between the level of sound outside and inside a structure measured in decibels. For example, if the sound level outside a house is 70 dB and the level inside a room of the house is 45 dB, the NLR is 25 dB (70-45=25).
8. **Noise-Sensitive Land Use:**
  - a) Residences
  - b) Churches
  - c) Meeting halls, auditoriums, music halls, theaters, libraries
  - d) Transient lodging — motels and hotels
  - e) Playgrounds, parks
  - f) Offices
9. **Outdoor Activity Areas** - Patios, decks, balconies, outdoor eating areas, swimming pool areas, yards of dwelling units and other areas which have been designated for outdoor activities and recreations.
10. **Stationary Noise Source** - Any fixed or mobile source not preempted from local control by existing federal or state regulations. Examples of such sources include industrial and commercial facilities and vehicle movements or private property (e.g., parking lots, truck terminals, auto race tracks, etc.)
11. **Transportation Noise Source** - Traffic on public roadways, railroad line operations and aircraft in flight. Control of noise from these sources is preempted by existing federal or state regulations. However, the effects of noise from transportation sources may be controlled by regulating the locations and design of land uses affected by transportation noise sources.

### c. GENERAL EFFECTS OF NOISE

The effects of noise may be thought of as falling into four categories: physical, psychological, social, and economic. The lines between the categories are not established; there is much overlap. As research in acoustics and human response to sound progresses, the effects of noise may be more completely defined. This discussion is intended to be a brief summary of existing information.

1. **Physical Effects on Humans** - The most serious physical effect of noise is damage to hearing, the most tragic of which is a permanent shift in the hearing threshold (termed "permanent threshold shift" or PTS). Once the cells of the inner ear are damaged, there is no known way to repair them. The cells do not regenerate. To persons intermittently exposed to high noise levels, the hearing threshold may be shifted temporarily (termed "temporary threshold shift" or TTS).

Community noise particularly in a quiet town like Morro Bay, is usually not intense enough to affect hearing. Table N-1 is a summary of the noise level criteria, based on hearing loss, established by the Walsh-Healey Public Contracts Act of 1969 and the Occupational Safety and Health Act of 1970 (OSHA).

Table N-1

Duration Per Day Hours	Sound Level dBA
8	90
6	92
4	95
3	97
2	100
1.5	102
1	105
0.5	110
≤.25	115

Source: Walsh-Healy Public Contracts Act of 1969

2. **Physical Effects on Domestic Animals and Wildlife** - Noise affects animal behavior in ways similar to human behavior. Little research has been done in this field, especially on wild animals, but there are strong indications that unfamiliar noises can disrupt population dynamics and individual growth behavior. In the sensitive wild life habitat areas of Morro Bay, these effects can significantly alter the "natural balance" between various species and between species and their environment.
3. **Physical Effects on Structures** - Noise also affects the non-living physical environment in the City. The example of high pitched sound resonating and shattering glass is common. Structural damage by noise is usually moderate, however, even in sonic booms. Glass and plastic are generally the materials most susceptible to damage by noise. Others include base coats of paint, finish coats, stucco, wall-boards, interior tiles, brick, concrete blocks, and organic adhesives. Temporary vibrations may be induced in various kinds of structures, particularly buildings, by noise as well. Structural response to sound is highly variable, however, and most damage is usually concentrated in secondary structures such as glass or plaster.
4. **Psychological Effects on Humans** - It is difficult to distinguish between physical and psychological effects of noise. Many of the behavioral responses to noise are rooted in the involuntary physiological reactions. The two most serious psychological effects of noise are interference with sleep and speech.

5. **Social Effects on Humans** - The reactions of groups and communities to noise are similar to the reactions of individuals. It is clear that noise interferes with social processes. Its foremost effect is to disrupt the ability of people to communicate with one another. Communication by sound is vital to almost all human social behavior, and its impairment should not be underestimated.
6. **Economic Effects** - One of the more prevalent economic effects of noise of concern to Morro Bay is the possible reduction of residential property values near the source of noise. This document does not examine specific property values in Morro Bay. Therefore, the actual extent of noise on property values is unknown. Economic costs of noise are among the most difficult to calculate, however, because they are associated with the psychological states of stress discussed above. The effects of these states have yet to be adequately quantified by economists.

#### d. EFFECTS OF NOISE IN MORRO BAY

Standards for the protection of health and welfare have been published by the federal Environmental Protection Agency, and these criteria can be compared to the noise levels quantified in this Element to draw some general conclusions about the effects of noise in Morro Bay.

The basic criteria are given in Table N-2, and utilize the Sound Equivalent Level ( $L_{eq}$ ) and Day-Night Noise Level ( $L_{dn}$ ). The  $L_{eq}$  is the basis for the  $L_{dn}$  noise level, but does not include a weighting for nighttime noise.

Judging by these criteria and the noise levels quantified in the Technical Report, most of the City of Morro Bay is free of significant effects of noise. Near the major roads,

**Table N-2**

Summary of Noise Levels Identified as Requisite to Protect Public Health and Welfare With an Adequate Margin of Safety

EFFECT	LEVEL	AREA
Hearing Loss	$L_{eq}(24) \leq 70$ dB	All Areas
Outdoor activity interference and annoyance	$L_{dn} \leq 55$ dB	Outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	$L_{eq}(24) \leq 70$ dB	Outdoor area where people spend limited amounts of time, such as school yards, playgrounds, etc.
Indoor activity interference and annoyance	$L_{dn} \leq 45$ dB	Indoor residential areas.
	$L_{eq}(24) \leq 45$ dB	Other indoor areas with human activities such as schools, etc.

(Source: U.S. Environmental Protection Agency, 1974)

however, these criteria indicate that certain activities may be affected (e.g., sleep, speech) and that stress can be expected. As noted in a previous section, it is unlikely that any resident's hearing is threatened from usual noises generated in Morro Bay.

#### e. OVERVIEW OF SOURCES

Based on discussions with City staff and field studies conducted during the preparation of the Noise Element, it was determined that there are a number of potentially significant sources of community noise within Morro Bay, including traffic on state highways and other major roadways and stationary noise sources. The Technical Reference Document includes detailed discussions of the noise levels produced by these sources.

1. **Methods and Noise Exposure Maps** - The noise exposure information developed during the preparation of the Noise Element does not include all conceivable sources of industrial or commercial noise within the city, but rather is a representative sampling of typical sources. The noise exposure information developed for the sources identified for study should be used only as an indicator of potential noise impacts when other, similar sources are considered.
2. **Determining Noise Exposure and Mitigation for Specific Locations** - Note that Table N-3 should be consulted to adjust traffic noise exposure in areas with varying topography. Noise exposure information may be used to determine if a particular land use is consistent with the policies of the Noise Element, and whether or not noise mitigation should be required as a part of the project development process.

**Table N-3**

Adjustments to Traffic Noise Exposure for Topograph

Topographic Situation	Distance from Center to Roadway		
	<200'	200-400'	>400'
Hillside overlooks roadway	no change	add 1 dB	add 3 dB
Roadway is elevated (>15')	subtract 5 dB	subtract 2 dB	no change
Roadway is cut/below embankment	subtract 5 dB	subtract 5 dB	subtract 5 dB

3. **Community Noise Survey** - A community noise survey was conducted in Morro Bay during August 1990 to document background noise levels in areas where noise-sensitive land uses are located. Results of the community noise survey indicate that existing background noise levels in many areas of the city that contain noise-sensitive land uses are relatively quiet. To preserve quiet conditions, noise level standards and policies have been adopted which will prevent degradation of the existing noise environment as much as possible. A more detailed discussion of the community noise survey may be found in the Technical Reference Document

#### f. NOISE CONTROL STRATEGIES

Any action to control noise will work on either the source of the noise, its transmission path, the receiver of the noise or any combination of these. Source controls are primarily the responsibility of the federal government, and to a lesser degree, the state government. Control of the reception of noise, however, has its roots in local government's traditional authority over land use control.

The basic goal of this Element is to achieve and maintain a noise environment that is compatible with a variety of human activities. This clearly calls for cooperation among all levels of government. Source controls are the most effective means of reducing noise, but there are limits to what can be accomplished through technology alone. A need for land use controls, coupled with source controls, will probably be necessary for overall noise reduction in many cities for the foreseeable future.

The purpose of the Noise Element is to outline some of the noise reduction alternatives that are available for implementation by the City of Morro Bay. These various strategies form the basic planning framework for the recommended policies and programs in the next section. There are various approaches to attain noise control.

- The City can require buffers such as solid masonry walls and earth berms between noise sources and noise sensitive uses.
- The City can require that noise sensitive uses are separated from noise producers.
- The City can require noise attenuation in new stationary uses.
- The City can require noise attenuation in noise sensitive uses where they are exposed to noise sources (such as noise insulation).

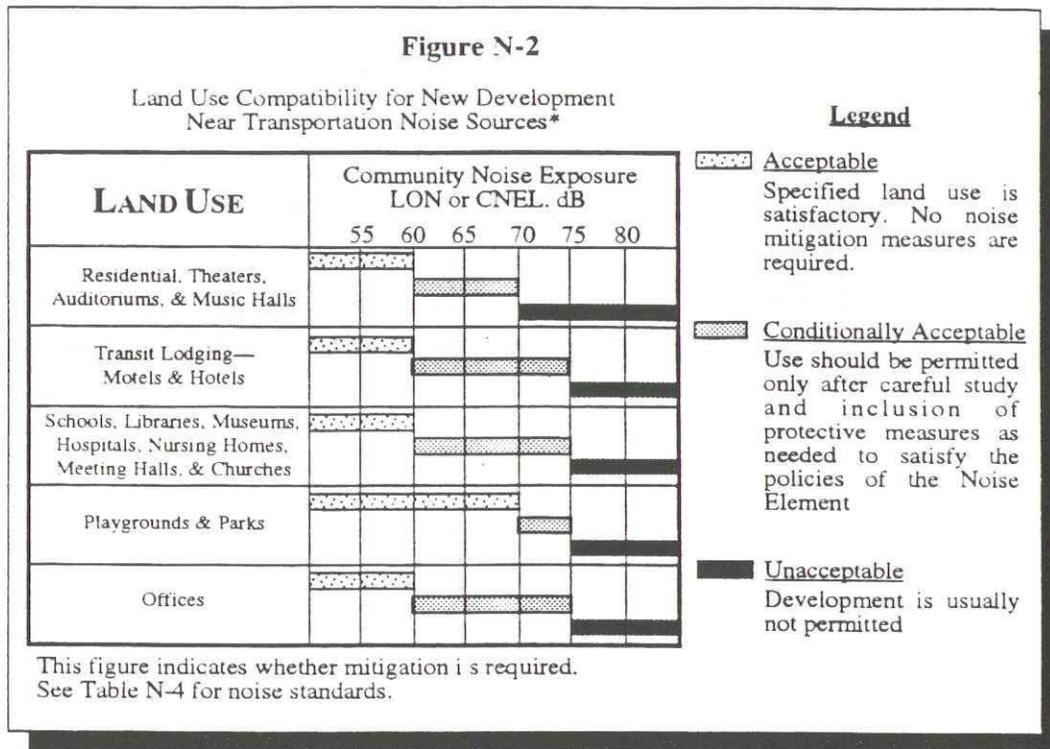
It sometimes is necessary to use the local government police powers of zoning and planning to ensure that the public is protected from excessive noise. The basic approach is the exclusion of noise sensitive land uses from areas of high noise levels. If development is permitted in noise-impacted areas, zoning performance and development standards can regulate the details of the development such as building height, buffer areas, and noise barrier construction. Building codes may be enforced under this approach as well to limit the transmission of sound into and out of buildings.

Which of these approaches is used, depends in large measure on the severity of the noise problem. The Technical Report of this Element concludes that, for the most part, the City of Morro Bay is free from excessive noise levels except in close proximity to certain major sources such as Highway 1, Main Street, Morro Bay Boulevard, Highway 41, South Bay Blvd. and the PG&E power plant. It is likely, then, that Morro Bay can rely on zoning and planning to prevent major noise problems from occurring near these sources.

These strategies deal primarily with reducing future noise problems rather than existing ones. As is true with most environmental hazards, preventing or reducing the cost of the future hazard is easier and less expensive than resolving existing problems. Special ordinances can be adopted, however, which set noise limits by land use zones, and which require compliance by existing developments.

#### **g. LAND USE COMPATIBILITY STANDARDS**

Figure N-2 shows the ranges of noise exposure from transportation noise sources which are considered to be acceptable, conditionally acceptable, or unacceptable for the development of different land uses. Table N-4 (page 12) is used to determine whether mitigation is needed for development of land uses near major transportation noise sources. In areas where the noise environment is acceptable, new development in compliance may be permitted without requiring noise mitigation. Table N-5 indicates acceptable noise levels near stationary noise sources.



For area where the noise environment is conditionally acceptable, new development should be allowed only after noise mitigation has been incorporated into the design of the project to reduce noise exposure to the levels specified by the policies listed in Section C. For areas where the noise environment is unacceptable, new development in compliance with the policies of Section C is usually not appropriate.

**Table N-5**

Maximum Allowable Noise Exposure-Stationary Noise Sources <sup>1</sup>

	<b>Daytime</b> (7 a.m. to 10 p.m.)	<b>Nighttime</b> (10 p.m. to 7 a.m.)
Hourly $L_{eq}$ , dB <sup>(2)</sup>	50	45
Maximum level, dB <sup>(2)</sup>	70	65
Maximum level, dB-Impulsive Noise <sup>(3)</sup>	65	60
<p><sup>(1)</sup> As determined at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receptor side of noise barriers or other property line noise mitigation measures.</p> <p><sup>(2)</sup> Sound level measurements shall be made with slow meter response.</p> <p><sup>(3)</sup> Sound level measurements shall be made with fast meter response.</p>		

**Table N-4**

Maximum Allowable Noise Exposure-Transportation Noise Sources

<b>Land Use</b>	<b>Outdoor Activity Areas</b> <sup>(1)</sup>	<b>Interior</b>	<b>Spaces</b>
	$L_{dn} / CNEL, dB$	$L_{dn} / CNEL, dB$	$L_{eq}, dB$ <sup>(2)</sup>
Residential	60 <sup>(3)</sup>	45	---
Transient Lodging	60 <sup>(3)</sup>	45	---
Hospitals, Nursing Homes	60 <sup>(3)</sup>	45	---
Theaters, Auditoriums, Music Halls	----	---	35
Churches, Meeting Halls, Office Buildings	60 <sup>(3)</sup>	---	45
Schools, Libraries, Museums	----	---	45
Playgrounds, Neighborhood Parks	70	---	---

(1) Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving and use.

(2) As determined for a typical worst-case hour during periods of use.

(3) Where it is not possible to reduce noise in outdoor activity areas to 60  $L_{dn} / CNEL, dB$  or less using a practical application of the best available noise reduction measures, an exterior noise level of up to 65  $L_{dn} / CNEL, dB$  may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

## C. OBJECTIVES, POLICIES AND PROGRAMS

### OBJECTIVES

1. To protect the citizens of Morro Bay from the harmful and annoying effect of exposure to excessive noise.
2. To protect the economic base of Morro Bay by preventing incompatible land uses from encroaching upon existing or planned noise producing uses.
3. To preserve the tranquillity of residential areas by preventing the encroachment of noise-producing uses.
4. To educate the residents of Morro Bay concerning the effects of exposure to excessive noise and the methods available for minimizing such exposure.
5. To avoid or reduce noise impacts through site planning and project design, giving second preference to the use of noise barriers and/or structural modifications to buildings containing noise-sensitive land uses.

**POLICY N-1** The City will establish land use noise compatibility standards for general planning and zoning purposes.

- Program N-1.1 The City shall use the noise compatibility standards provided in Figure N-2 for identifying potential noise problem areas, and in reviewing environmental impact documents.
- Program N-1.2 The City will develop an ordinance setting specific noise limits for various land uses using the standards provided in Figure N-2.
- Program N-1.3 New development of noise sensitive land uses shall not be permitted in areas exposed to existing or project future levels of noise from transportation noise sources which exceed 60 dB  $L_{dn}$  or CNEL (70  $L_{dn}$ /CNEL for playgrounds and neighborhood parks) unless the project design includes effective mitigation measures to reduce noise in outdoor activity areas and interior spaces to or below the levels specified for the given land use in Table N-4.
- Program N-1.4 New development of noise-sensitive land uses shall not be permitted where the noise level due to existing stationary noise sources will exceed the noise level standards of Table N-5 unless effective noise mitigation measures have been incorporated into the design of the development to reduce noise exposure to or below the levels specified in Table N-5.
- Program N-1.5 The noise standards in this chapter represent maximum acceptable noise levels. New development should minimize noise exposure and noise generation.

**POLICY N-2** The City will provide for the identification and evaluation of potential noise problem areas within its fiscal limitations.

Program N-2.1 Noise Contours Maps should be updated where necessary based on transportation and stationary noise sources pursuant to the requirements of government Code Section 65302(f).

Program N-2.2 Using the noise compatibility standards provided in Figure N-2, existing land uses should be reviewed to identify potential noise problems.

Program N-2.3 An on-going monitoring program should be established to identify and evaluate noise levels in the community.

**POLICY N-3** Existing and potential incompatible noise levels in problem areas should be reduced through land use planning, building and subdivision code enforcement, and other administrative means.

Program N-3.1 The City will prohibit development of noise sensitive uses near major noise sources unless mitigation measures to reduce noise to acceptable levels are implemented.

Program N-3.2 The City will enforce all existing noise control regulations.

Program N-3.3 In existing or future development in noise-impacted areas, the City will encourage that adequate site planning, building design and insulation measures are taken to reduce noise to the established acceptable levels.

**POLICY N-4** The City will reduce existing and potential incompatible noise levels in problem areas through operational or source controls where the City has responsibility for such controls and such reductions are feasible.

Program N-4.1 Routes for use by heavy trucks will be located away from noise sensitive land uses when feasible.

Program N-4.2 Noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated so as not to exceed the levels specified in Table N-4 within the outdoor activities and interior spaces of existing noise sensitive land uses.

Program N-4.3 Noise created by new proposed stationary noise sources or existing stationary noise sources which undergo modifications that may increase noise levels shall be mitigated so as not to exceed the noise level standards of Table N-5 on lands designated for noise-sensitive land use.

Program N-4.4 The City will require noise abatement by stationary sources in cases of excessive noise emissions when feasible.

Program N-4.5 The city shall consider implementing mitigation measures where existing noise levels produce significant noise impacts to noise-sensitive land uses or where new development may result in cumulative increases of noise upon noise sensitive land use.

**POLICY N-5** The City will coordinate noise control activities with those of other responsible jurisdictions.

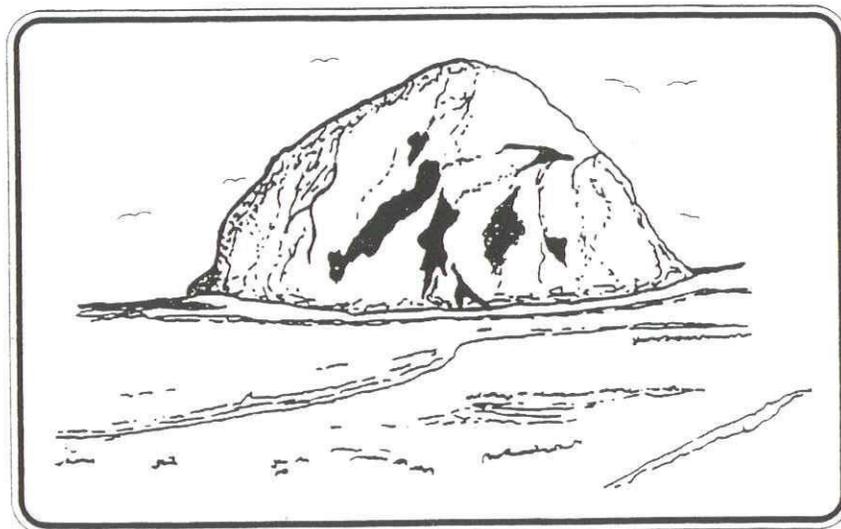
Program N-5.1 The City will encourage the State Department of Transportation (CALTRANS) and the County Engineer to incorporate noise reduction methods in the design of new and modified roads and highways.

Program N-5.2 The City will work with the Area Council in an attempt to develop a uniform noise evaluation scheme for use at all levels of government.

**POLICY N-6** The City will conduct a periodic review and update of this element within its fiscal means.

Program N-6.1 The Noise Element should be reviewed at least every five years or whenever major changes in the noise environment occur, as feasible.

Program N-6.2 The Noise Element should be reviewed when revisions to the General Plan occur especially those affecting circulation or housing.



## D. IMPLEMENTATION MEASURES

To achieve compliance with the policies of the Noise element, Morro Bay shall undertake the following implementation program. The implementation program focuses on the prevention of new noise-related land use conflicts by requiring that new development be reviewed to determine whether it complies with the adopted policies and program. If mitigation of noise impacts is necessary it shall be achieved by carrying out an acoustical analysis meeting the requirements of Table N-6 or by implementing the standard noise mitigation packages contained in the Acoustical Design Manual where conditions in the following section are met.

The noise exposure maps in this document and the information concerning the effects of noise on people and techniques available for noise control in the Technical Reference Document and Acoustical Design Manual are used in reviewing the noise affects of new development. The Acoustical Design Manual describes standard noise mitigation packages which may be used to reduce noise exposure inside buildings and within outdoor activity areas by specified amounts. The noise exposure maps are intended as a screening device to determine when a proposed development may be exposed to excessive noise levels which require mitigation and to provide guidance in the long range planning processes. Generally, the noise exposure maps provided a conservative (worst-case) assessment of noise exposure for the major noise sources identified for study. It is probable that other major sources, especially stationary sources, of noise will be identified during the project review process, since only a representative sample of such sources was evaluated during the preparation of this document.

The Technical Reference document and Acoustical Design Manual should be used to guide determinations of whether or not proposed noise mitigation measures are reasonable and effective application of the techniques available and likely to achieve the desired results. Control of noise at the source and through the thoughtful location and orientation of receiving uses should be given preference over the control of noise along the path of transmission through the use of noise barriers or the acoustical treatment of buildings.

1. The city shall review new public and private development proposals to determine conformance with the policies of this Noise Element.
2. When mitigation must be applied to satisfy the adopted policies and programs the following priorities for mitigation shall be observed where feasible:

First	Setback / open space separation
Second	Site layout / orientation / shielding of noise-sensitive uses with non-noise sensitive uses.
Third	construction of earthen berms
Fourth	Structural measures: acoustical treatment of buildings and noise barriers constructed of concrete, wood or materials other than earth.

3. Where the development of a project subject to discretionary approval may result in land uses being exposed to existing or projected future noise levels exceeding the levels specified by the policies and programs, the City shall require an acoustical analysis at the time the application is accepted for processing. For development not subject to discretionary approval and/or environmental review, the requirements for an acoustical analysis shall be implemented prior to the issuance of a building permit. The requirements for the content of an acoustical analysis are given in Table N-6. At the discretion of the city, the requirement for an acoustical analysis may be waived provided that all of the following conditions are met:

➡ Outdoor Activity Areas

- a) The development is for less than 5 single family dwellings or for office buildings, churches, or meeting halls having a total gross floor area less than 10,000 square feet.
- b) The noise source in question consists of a single roadway for which up-to-date noise exposure information is available. An acoustical analysis will be required when the noise source in question is a stationary noise source or airport, or when the noise source consists of multiple transportation noise sources.
- c) The existing or projected future noise exposure at the exterior of buildings which will contain noise-sensitive uses or within proposed outdoor activity areas (other than play-grounds and neighborhood parks) does not exceed 65 dB  $L_{dn}$  (or CNEL) prior to mitigation.
- d) The topography in the project area is flat and the noise source and receiving land use are at the same grade.

➡ Interior Spaces

- a) Required noise level reduction (NLR) is equal to or less than 30 dB and said measures are incorporated in the project design to reduce noise to required levels.
- b) The development is for less than 5 single family dwellings or for offices, churches, meeting halls with less than 10,000 sq. ft. floor area and interior noise mitigation reduction methods recommended in the Acoustical Design Manual are incorporated in this design.
- c) Noise source in question consists of a single roadway, railway or airport for which up-to-date noise exposure information is available. An acoustical analysis will be required when the noise source is a stationary noise source or consists of multiple transportation noise sources.

➤ General Exceptions

- a) Effective noise mitigation, as determined by the city, is incorporated into the project design to reduce noise exposure to the levels specified in Table N-4 or N-5. Such measures may include the use of building setbacks, building orientation, noise barriers and the standard noise mitigation packages contained within the Acoustical Design Manual. If closed windows are required for compliance with interior noise level standards, air conditioning or a mechanical ventilation system will be required.
  - b) Acoustical studies are not required for additions to single family residences. Noise reduction mitigation measures for interior space shall apply to additions of greater than 200 square feet and shall only be applicable to the space being added, not the existing residence.
4. If the Planning Director determines that a noise sensitive land use may be exposed to noise levels that exceed the adopted noise standards in the Noise Element notwithstanding the noise contour information in this Noise element, an acoustical analysis meeting the requirements in Table N-6 may be required. An example of where this policy may apply is in area not shown on the noise contour maps of this Noise Element where the combined impact of two or more noise sources may exceed the standards in Tables N-4 and N-5.
  5. The city shall develop and employ procedures to ensure that noise mitigation measures required pursuant to an acoustical analysis are implemented in the development review and building permit processes.
  6. The City shall develop and employ procedures to monitor compliance with the policies of the Noise element after completion of projects requiring noise mitigation.
  7. The city shall enforce the State Noise Insulation Standards (California Code of Regulations, Title 24) and Chapter 35 of the Uniform Building Code (UBC).
  8. The city shall request the California Highway patrol, the County Sheriff and local police departments to actively enforce the California Vehicle Code sections relating to adequate vehicle mufflers and modified exhaust systems.
  9. The city shall purchase new equipment and vehicles only if they comply with noise level performance standards based upon the best available noise reduction technology. Alternatives to the use of existing noisy equipment, such as leaf blowers, shall be pursued.
  10. The city shall periodically review and update the Noise Element to ensure that noise exposure information and specific policies are consistent with changing conditions within the city and with noise control regulations or policies enacted after the adoption of this Element.
  11. The city shall make the Acoustical Design Manual available to the public so that the public can incorporate noise reduction measures into private projects consistent with the goals and policies of this Noise Element.
  12. The City shall consider one or more of the following mitigation measures where existing noise levels significantly impact existing noise sensitive land uses or

where cumulative increase in noise levels resulting from new development significantly impact noise sensitive land uses:

- a) Rerouting traffic onto streets that have low traffic volumes or onto streets that do not adjoin noise sensitive land uses.
- b) Rerouting trucks onto streets that do not adjoin noise sensitive land uses.
- c) Construction of noise barriers.
- d) lowering speed limits
- e) Acoustical treatment of buildings
- f) Programs to pay for noise mitigation such as low cost loans to owners of noise-impacted property or establishment of developer fees.

### Table N-6

#### Requirements for an Acoustical Analysis

An acoustical analysis prepared pursuant to the Noise element shall:

- A. Be the financial responsibility of the applicant.
- B. Be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics.
- C. Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions. Where actual field measurements cannot be conducted, all sources of information used for calculation purposes shall be fully described. When the use being studied is commercial or industrial use, all noise sources related to the service and maintenance of the facility shall be considered, including but not limited to parking lot and landscape maintenance, refuse collection and truck loading/unloading activities, amplified sound, outdoor sales and activities, and all other noise sources associated with operation, maintenance and service.
- D. Estimate existing and projected (20 years) noise levels in terms of the descriptors used in Tables N-4 and N-5, and compare those levels to the adopted policies of the Noise Element. Projected future noise levels shall take into account noise from planned streets, highways and road connections.
- E. Recommend appropriate mitigation to meet or exceed the policies and standards of the Noise Element, giving preference to proper site planning and design over mitigation measures which require the construction of noise barriers or structural modifications to buildings which contain noise-sensitive land uses.
- F. Estimate noise exposure after the prescribed mitigation measures have been implemented.
- G. Describe a post-project assessment program which could be used to evaluate the effectiveness of the proposed mitigation measures.



# APPENDIX

