NOISE ELEMENT

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Noise Element

Vision

A City that is a quiet and safe place to live, work, play or go to school.

Noise Goal:

Goal 1: A community where noise and the effects of noise are minimized.

Introduction

The quality of life in a city can be affected by the level of noise experienced by those who live, work, and recreate there. The Noise Element of the City's General Plan is intended to identify noise-sensitive land uses and noise sources, define areas of noise impacts, establish policies and programs to protect the community from excessive noise, and reduce negative impacts from those noise sources.

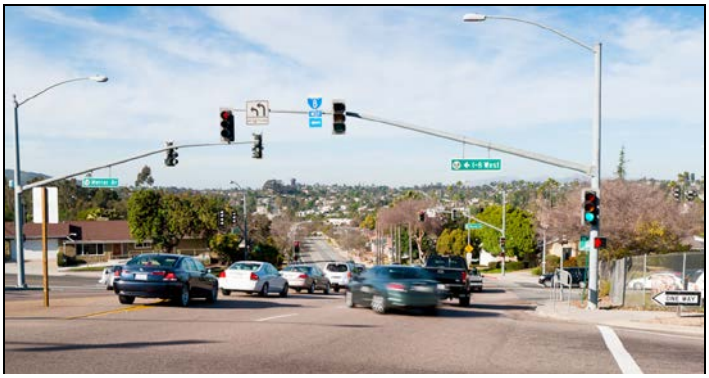
State guidelines stipulate the content of a General Plan Noise Element. Section 65302(f) of the California Government Code states that a noise element should be prepared according to guidelines established by the Department of Health Services. At a minimum, the California Government Code requires an element to analyze noise levels for the following:

- Highways and freeways;
- Primary arterial and major local streets;
- Passenger and freight railroad operations and ground transit systems;
- Commercial, general aviation, heliport, helistop, military airport operations, aircraft overflights, jet engine test stands, and all other ground facilities and maintenance functions related to airport operation;
- Local industrial plants, including, but not limited to, railroad classification yards; and
- Other ground sources identified by the local agencies as contributing to the community noise environment.

Purpose

Noise is generally defined as unwanted sound. The purpose of the Noise Element is to limit the exposure of the community to excessive noise levels. Aircraft, automobiles, trucks, railroads, construction equipment, factories and even home appliances contribute to the noise environment of modern life. Motor vehicles are typically the most pervasive contributors to urban noise. Other major noise sources common in the urban and suburban environments are power gardening equipment, amplified music, power tools and air conditioners.

The Noise Element of the General Plan provides a mechanism for including noise considerations in the planning process. The Noise Element provides goals, objectives and policies to maintain areas deemed currently acceptable in terms of noise exposure, and mitigate undesirable levels of noise on existing sensitive land uses to protect the health and well-being of people living, working and recreating in the City.



Busy Intersection in La Mesa

A primary function of the Noise Element is the quantification of the community noise environment in terms of noise exposure contours for future transportation activities. The contours serve as guidelines to ensure that new development and redevelopment are protected from unwarranted noise and do not contribute to unacceptable levels of noise within the community.

Organization and Content

The Noise Element identifies the existing and future noise environment within the City of La Mesa. It presents the regulatory setting pertaining to noise, and establishes Goals, Objectives, and [Policies to control and mitigate noise. A Noise Plan is included in this Element to outline how the City will address noise issues related to land use compatibility and how land use planning will address noise abatement.

Relationship to Other General Plan Elements

The Noise Element is directly related to other Elements of this General Plan, including the Circulation, Conservation, Health and Wellness, Housing, Land Use and Urban Design, Open Space, and Safety Elements. It covers a variety of issues such as the impact of noise from vehicular and other traffic (Circulation Element); the importance of a quiet noise environment to the health, welfare and livability of the City (Health and Wellness Element); the impact of noise on various land uses and the effect of noise on residential

areas (Housing Element); the identification of land uses that create noise which may be incompatible with other land uses, and acceptable land uses in relation to existing and projected noise contours (Land Use and Urban Design Element); the placement of recreational use areas and protection of endangered wildlife habitat (Conservation and Open Space Elements); and the noise generated by aircraft (Safety Element). Several issues dealing with noise have a direct influence on policies and programs in these other Elements of this General Plan. Table NS-1 details the issues discussed in this Noise Element and identifies the other elements for which noise issues apply.

Table NS-1. Relationship with Other General Plan Elements

Noise Issues	Circulation	Conservation	Health and Wellness	Housing	Land Use	Open Space	Safety
Site Planning	x	x	x	x	x	x	
Noise Barriers	x			x	x	x	x
Building Design	x		x	x	x		x

Regulatory Setting

The Federal Government and the State of California recognize the relationship between noise and noise-sensitive land uses, and have developed standards and regulations concerning noise and land use compatibility. The following have been adopted by Federal and State agencies and the City of La Mesa, which pertain to the Noise Element and its implementation:

Federal

Noise Control Act of 1972 (PL 92-574)

The Noise Control Act established a National policy "to promote an environment for all Americans free from noise that jeopardizes their public health and welfare." The Act provides for a division of powers between the Federal, State and local governments, in which the primary Federal responsibility is for noise source emission control, with the States and other agencies retaining the rights to control noise sources and the level of noise within their communities and jurisdiction. The Noise Control Act was supplemented by the Quiet Communities Act of 1978 (PL 95-609).

State of California

Airport Land Use Compatibility Plans (Public Utilities Code, §21670, et seq.)

The Airport Land Use Compatibility Plans (ALUCPs) promote compatibility between public-use and military airports and the land uses that surround them to the extent that these areas are not already devoted to incompatible land uses. The City is required to modify its land use plans and ordinances to be consistent with the ALUCPs or to take steps to overrule the Airport Land Use Commission.

California Environmental Quality Act (CEQA)

CEQA considers exposure to excessive noise an environmental impact. Implementation of CEQA ensures that during the decision-making stage of development, City officials and the public will be informed of any potentially excessive noise levels and available mitigation measures to reduce them to acceptable levels.

California Noise Insulation Standards (California Code of Regulations, Title 24)

Title 24 establishes an Interior Noise Standard of 45 dBA CNEL for multiple-unit and hotel/motel structures. Acoustical studies must be prepared for proposed multiple-unit residential and hotel/motel structures within the CNEL noise contours of 60 dBA or greater. The studies must demonstrate that the design of the building will reduce interior noise in habitable rooms to 45 dBA CNEL or lower.

California Airport Noise Standards (California Code of Regulations, Title 21)

Division 2.5, Chapter 6, Section 5012 of Title 21 establishes that 65 dBA CNEL is the acceptable level of aircraft noise for persons living near an airport.

Caltrans Project Development Procedures Manual (Section 2 of Chapter 30: Highway Traffic Noise Abatement) and 23 CFR 772

These documents specify the Noise Abatement Criteria (NAC) for noise-sensitive land uses. These criteria are presented in Table NS-2. The NAC are applicable to new highways and changes to the horizontal or vertical alignment of existing highways and are required for Caltrans and local agency projects that receive Federal funding or require Federal Highway Administration (FHWA) approval action.

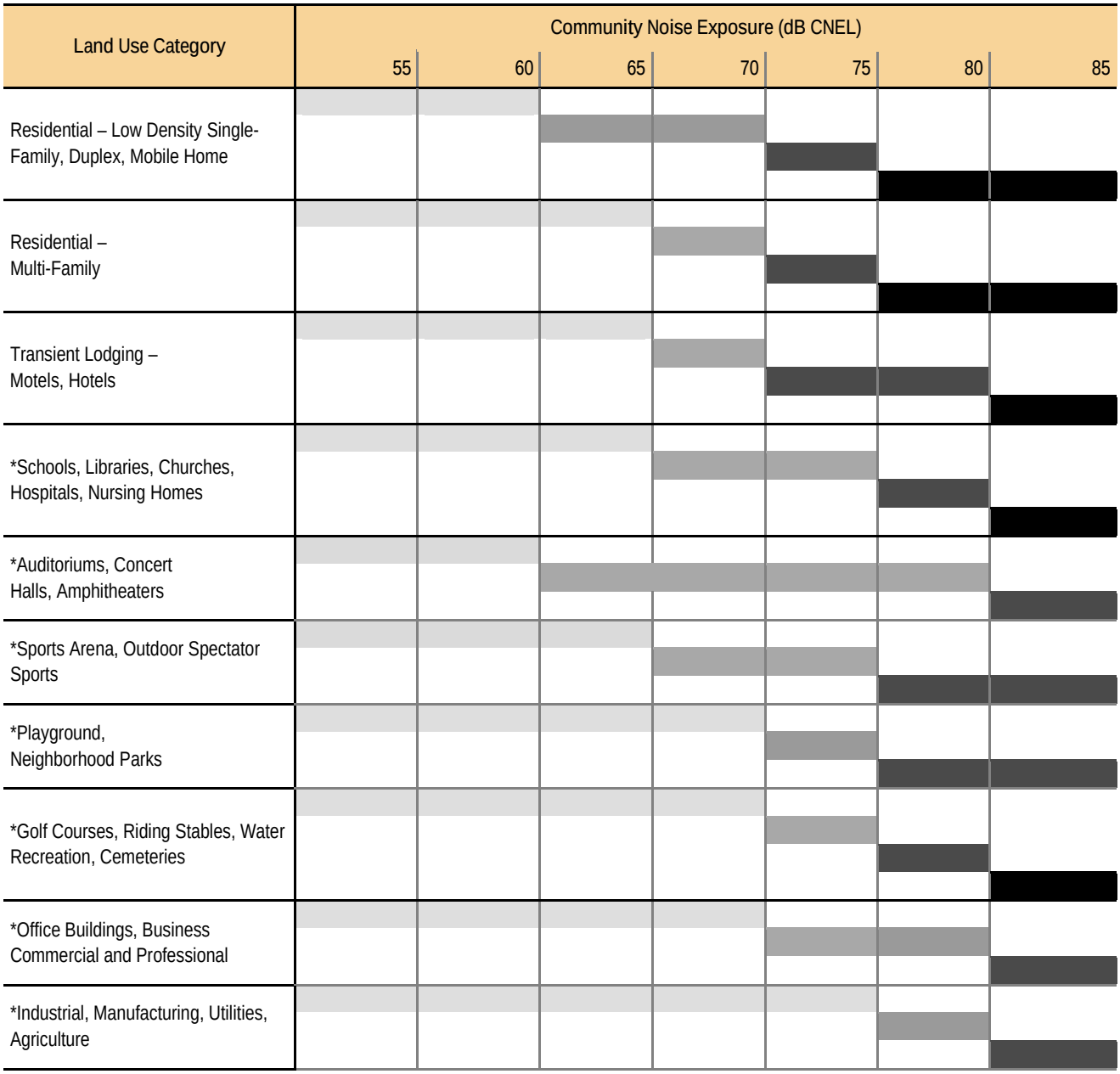
Table NS-2. Federal and California State Traffic Noise Abatement Criteria

Activity Category	Noise Abatement Criteria (Leq(h), dBA)	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	--	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: FHWA 2006

The table on the following page provides a guideline for land use compatibility at various noise levels **(Figure NS-1)**. The compatibility guidelines are used in conjunction with the future noise exposure contours to identify projects or activities which may require special treatment to minimize noise exposure. This exhibit references generic land use categories identified by the State of California and; as such, these categories should be interpreted as to their applicability to City of La Mesa land use categories identified in the General Plan.

Figure NS-1. Land Use Compatibility Guidelines



Normally Acceptable

Specified land use is satisfactory, based on the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable

New construction or development should be undertaken only after a detailed analysis of noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Normally Unacceptable

New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable

New construction or development should generally not be undertaken.

* Denotes facilities used for part of the day; therefore, an hourly standard (L_{eq}) would be used rather than CNEL.

Source: State of California General Plan Guidelines (2003)

Existing Noise Conditions

The City of La Mesa utilizes the State of California Land Use Compatibility Guidelines (Figure NS-1) to identify land uses or activities that may require special treatment to minimize noise exposure. The Guidelines are the primary tool that allows the City to ensure integrated planning compatibility between land uses and indoor and outdoor noise.

Noise Monitoring Equipment

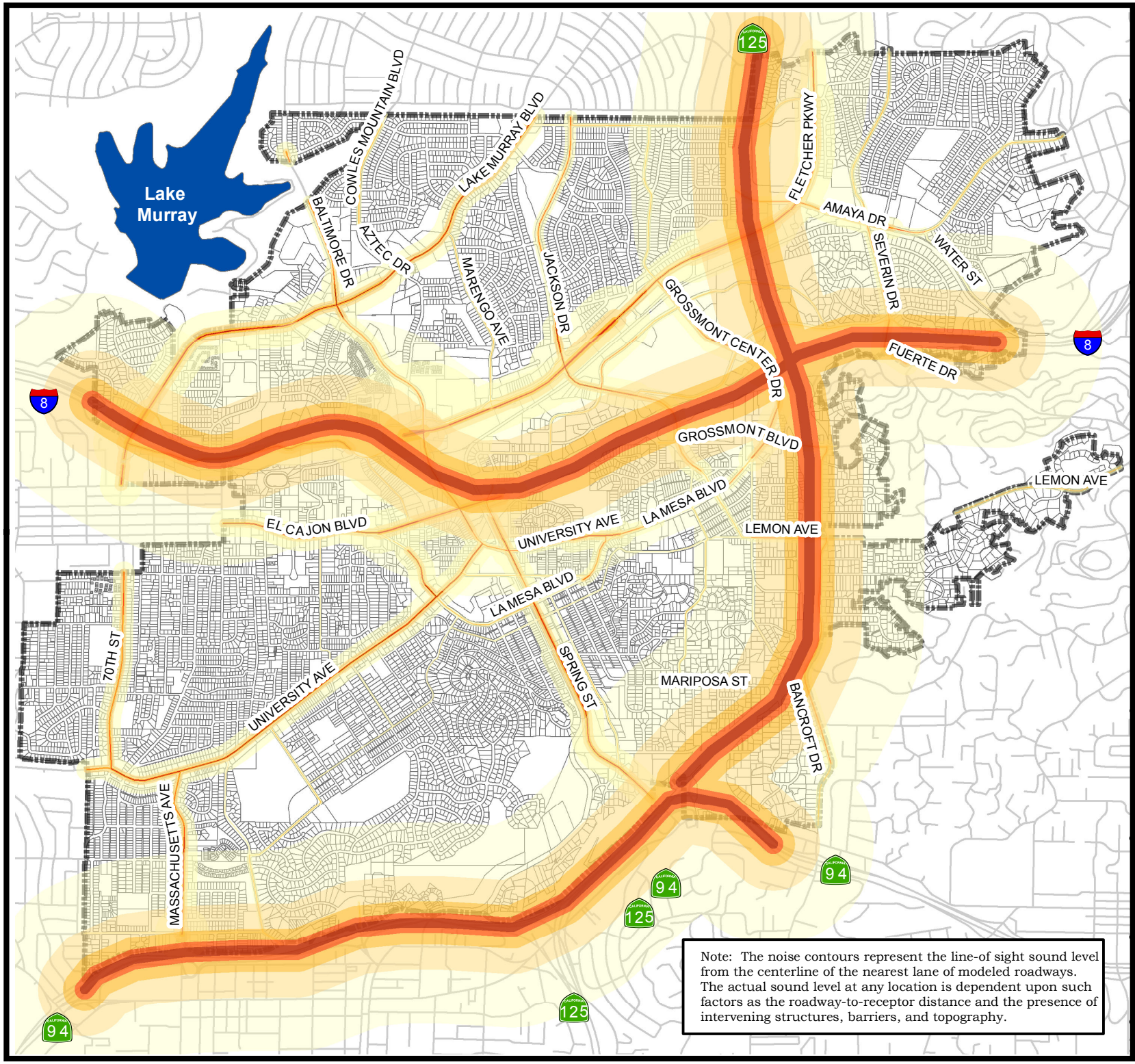
The goal for maximum outdoor noise levels in residential areas is a CNEL of 60 dBA. This level is a requirement for the design and location of future development and a goal for the reduction of noise in existing development. However, 60 dBA CNEL is a goal that cannot necessarily be reached in all residential areas within the realm of economic or aesthetic feasibility. The goal is applied where outdoor use is a major consideration (e.g., backyards in single-family housing developments, recreation areas in multi-family housing projects).

The indoor noise level, as required by the State of California Noise Insulation Standards, must not exceed 45 dBA CNEL in multi-family dwellings. This indoor standard may also be applied as the maximum acceptable indoor noise level in single-family homes.

The La Mesa Municipal Code (Chapter 10.80) identifies acceptable criteria for various noise sources. Noise levels are typically regulated across property boundaries. The noise level to be observed is based on the zone applicable to the property adjoining that on which the noise is generated. Noise sources regulated by the Municipal Code include outdoor construction or repair activity, machinery, pumps, fans, air conditioning systems, radios, musical instruments and phonographs.

Issues

The primary source of noise in the City is vehicular traffic, including automobiles, trucks, buses and motorcycles. Most of this traffic is concentrated on the freeways that cross through the City. **Figure NS-2**, the 2030 Projected Noise Contour Map, demonstrates the extent to which freeway noise affects surrounding areas. Other sources of noise include the San Diego & Imperial Valley (SDIV) Railroad freight line, the MTS San Diego Trolley light rail line, periodic aircraft overflights from Gillespie Field and the Sharp Grossmont Hospital heliport, industrial manufacturing , commercial activity, and construction.



GENERAL PLAN

2030 PROJECTED NOISE CONTOURS

Legend

- 80 dB Contour
- 75 dB Contour
- 70 dB Contour
- 65 dB Contour
- 60 dB Contour
- Roads
- Parcels
- City Boundary

Feet
0 1,300 2,600 3,900

CITY OF LA MESA
JEWEL of the HILLS

Data Sources:
SanGIS
City of La Mesa

Figure NS-2

Vehicular Traffic

Traffic is the biggest source of noise in La Mesa.

Major east-west roadways include I-8, SR-94, Fletcher Parkway, El Cajon Boulevard, University Avenue, and La Mesa Boulevard. Major north-south roadways include SR-125, Baltimore Drive, Jackson Drive, Spring Street, 70th Street and Lake Murray Boulevard. The level of vehicular traffic noise varies with many factors, including traffic volume, vehicle mix (truck percentage), traffic speed, and distance from the roadway. **Figure NS-2** shows the projected location of the 60 dBA CNEL vehicular traffic noise contour in the year 2030.

Sound barriers are commonly used to dampen traffic noise. In 1973-74 State and Federal agencies adopted formal policies and criteria for construction of sound walls. Caltrans conducts acoustical analyses and builds sound walls where necessary with new freeway and freeway widening projects. As a result, sound walls have been installed along portions of I- 8, SR 94, and SR 125 in La Mesa.

The City ensures that developers resolve significant noise impacts as a part of development review for new projects. In addition, the City pursues funding opportunities, as available, for highway sound wall projects. In 2002, La Mesa received a grant from SANDAG to erect a barrier along a stretch of State Route 94 near Massachusetts Avenue. Caltrans constructed the improvements on behalf of the City.

Railroads

San Diego Trolley at La Mesa Boulevard Station

The SDIV Railroad freight trains and the Orange Line and Green Line of the MTS Trolley currently operate in the City. For safety reasons, the freight trains blow whistles and the trolleys honk horns at each major road crossing. This may be annoying for nearby residents. A freight train whistle generates a maximum noise level (Lmax) of approximately 105 dBA at 100 feet from the engine. A trolley horn generates less noise. In addition, crossing bells that

are installed at each at-grade street crossing generate noise. The approximate noise level generated by railroad operations, at 50 feet from the center of the nearest track, is 59 dBA CNEL for freight trains and 64 dBA CNEL for trolleys. The source for these estimates is the La Mesa General Plan Update Noise Technical Report, Kimley-Horn 2010 based on the Federal Transit Administration railroad noise prediction methodology.

Aircraft

Sharp Grossmont Hospital operates the only heliport in the City of La Mesa. Five to ten flights are normally flown to the hospital every month, typically during standard business hours. This relatively low number of flights is not enough to generate noise levels above 60 dBA CNEL.

Stationary Noise Sources

Stationary noise sources are noise sources in the community at a "fixed" location. Stationary noise sources include Industrial and Commercial Land Uses such as manufacturing plants, processing plants, motorcycle parks, automobile repair, and power generators. Ancillary equipment that generates noise includes heating, ventilation and air-conditioning equipment, and emergency generators. The noise level associated with these sources varies with the type of noise source and the distance from the noise source. There are various stationary noise sources throughout the City. Industrial noise sources are located in the area west of Jackson Drive on Center Drive, Commercial Street and Hercules Street; however, there are no noise-sensitive land uses in this area to be impacted by noise from industrial activities.

Noise Sensitive Land Uses

Noise-sensitive Receptors are land uses associated with indoor and/or outdoor activities that may be subject to stress and/or significant interference from noise, such as residential dwellings, transient lodging, dormitories, hospitals, educational facilities, and libraries. Industrial and Commercial Land Uses are generally not considered sensitive to noise. Occupied habitat for threatened and endangered wildlife species is also considered noise-sensitive.


Example of "Nuisance Noise"

Noise-sensitive Receptors within the City include single- and multi-family residences, schools, parks, libraries, hospitals, churches, and open space. The Land Use Plan found in the Land Use and Urban Design Element depicts the location and distribution of various land use types in the City.

Goals, Objectives, and Policies

The following goals, objectives and policies emphasize the minimization of noise through standards, site planning, and noise mitigation.

Goal NS-1: A community where noise and the effects of noise are minimized.

Objective NS-1.1: Require new projects to meet acceptable exterior noise level standards.

Policy NS-1.1.1: Review all development proposals, public and private, for consistency with the policies of this Element.

Policy NS-1.1.2: Discourage development of noise-sensitive land uses in areas exposed to existing or future noise levels exceeding 65 dBA CNEL.

Policy NS-1.1.3: Incorporate noise reduction features during site planning to ensure that areas intended for frequent outdoor use are subjected to 60 dBA CNEL or less for single-family land uses and 65 dBA CNEL or less for multi-family residential land uses and multi-family residential land uses within mixed-use developments.

Policy NS-1.1.4: Control and abate undesirable sounds through the use of the land use compatibility criteria shown in Exhibit NS-1 and the requirements of Municipal Code Chapter 10.80.

Policy NS-1.1.5: Provide developers and builders with development noise policy guidelines. The guidelines shall provide specific design criteria, minimum standards for submittal of acoustical studies and descriptions of acceptable noise mitigation measures.

Objective NS-1.2: Ensure that interior noise levels do not exceed 45 dBA CNEL for single-family and multi-family residential land uses.

Policy NS-1.2.1: Enforce the California Noise Insulation Standards (California Code of Regulations, Title 24). Title 24 requires that an acoustical analysis be performed for all new multi-family residences in areas where the exterior sound level exceeds 60 dBA CNEL. The analysis shall ensure that the building design limits the interior noise environment to 45 dBA CNEL or below.

Policy NS-1.2.2: Ensure that an acoustical analysis be performed for all new single-family residences in areas where the exterior sound level exceeds 60 dBA CNEL. The analysis shall ensure that the building design limits the interior noise environment to 45 dBA CNEL or below.

Objective NS-1.3: Achieve noise compatibility between industrial/commercial and surrounding land uses.

Policy NS-1.3.1: Control excessive noise through the planning and regulatory process with emphasis on noise/land use compatibility planning.

Policy NS-1.3.2: Ensure that the design and construction of commercial, industrial, office, and mixed-use structures includes noise attenuation methods to comply with Exhibit NS-1 and Municipal Code Chapter 10.80.

Policy NS-1.3.3: Encourage commercial, industrial, office and mixed-use developments to locate loading areas, parking lots, driveways, trash enclosures, mechanical equipment, and other noisier components away from noise-sensitive land uses.

Policy NS-1.3.4: Limit delivery hours for businesses with loading areas or docks fronting, siding, or bordering or gaining access on driveways adjacent to noise-sensitive land uses.

Objective NS-1.4: Control undesirable or objectionable noise.

Policy NS-1.4.1: Review traffic flow systems and synchronize signals to avoid traffic stops, which produce excessive noise, wherever possible.

Policy NS-1.4.2: Limit truck traffic in noise-sensitive areas.

Policy NS-1.4.3: Where feasible, finish roadway surfaces with rubberized pavement to minimize noise levels at adjacent land uses.

Policy NS-1.4.4: Encourage the enforcement of State motor vehicle noise standards for cars, trucks, and motorcycles through cooperation with the California Highway Patrol and the La Mesa Police Department.

Policy NS-1.4.5: Encourage agencies outside of the City's jurisdiction to incorporate noise reduction methods in new and existing roads, rail projects, or other mobile or stationary noise sources.

Policy NS-1.4.6: Coordinate with State and local agencies to maintain and enforce noise control policies and standards.

Policy NS-1.4.7: Review this Noise Element, and update as necessary, when major changes in the noise environment occur.

Policy NS-1.4.8: Periodically review and update the standards found in the Noise Ordinance (Municipal Code Chapter 10.80).

Implementation

Land Use Compatibility and Noise

The Land Use Compatibility Guidelines shown in Figure NS-1 are used in conjunction with the future noise exposure contours to identify projects or activities which may require special treatment to minimize noise exposure. This exhibit references generic land use categories identified by the State of California; as such, these categories should be interpreted as to their applicability to City of La Mesa land use categories identified in the General Plan.

Land Use Planning to Address Noise

The City will take steps to ensure that future develop minimizes exposure to excessive noise, with special emphasis on protecting residential neighborhoods from intrusive noise. The land use changes expected over the life of this Plan are located in specific targeted areas, and noise associated with these changes should be abated and mitigated to the extent reasonable.

Noise generating uses are regulated by the City's Zoning Ordinance. Performance entertainment and public assembly uses require a Conditional Use Permit so that potential noise and traffic impacts can be carefully considered. Industrial and Commercial uses are generally required to be enclosed within structures. Mechanical equipment such as HVAC condensers require screening to attenuate noise. These land use policies ensure that surrounding areas are not subjected to an unreasonable amount of noise.

Effective noise abatement measures are unique for each situation. The physical techniques to mitigate noise vary in their noise reduction capabilities. Factors to consider when evaluating potential noise mitigation include: the amount of noise reduction desired, the location where physical techniques would be most effective, and aesthetics. The following measures can be used to mitigate noise impacts:

Site Planning

Proper site planning to reduce noise impacts should be considered for all noise-sensitive developments. Buildings can be oriented on a site in such a way as to exploit the site's noise attenuating features. By consideration of a site's natural topography, size and shape, it is often possible to reduce, and possibly eliminate, noise impacts from vehicular traffic and railroads. Site planning techniques include the following:

- Increasing the distance from the noise source to sensitive receptors by creation of setbacks;
- Placing non-noise sensitive uses such as parking lots and utility areas between the noise source and receiver; and
- Orienting usable outdoor living space such as balconies, patios, and child play areas away from roadways.

Barriers

Noise barriers such as walls and earthen berms are commonly used to mitigate noise from ground transportation, commercial and industrial sources. Noise barriers can be used to reduce the noise level both outdoors and indoors. The effectiveness of a barrier depends upon factors such as the relative height of the barrier relative to the line-of-sight from the source to the receiver, the distance from the barrier to the source and to the receiver, and the reflections of sound. To be effective, a barrier must block the line-of-sight from the source to the receiver. A barrier must be of solid construction (i.e., masonry) without holes or gaps and be long enough to prevent sound from passing around the ends. A properly designed noise barrier can reduce noise as much as 15 decibels. A site-specific acoustical analysis is required to determine the proper height and placement of a barrier.

A row of houses or other buildings may act as a barrier. A row of one- or two-story houses (with about 30% open gaps) provides a sound attenuation of approximately 3 to 5 decibels; two rows of houses, 6 to 10 decibels; and three or more rows of houses, 10 to 12 decibels.

Building Design

The placement of a building on its site, arrangement of rooms, and location of doors and windows all have a bearing on interior noise control. The sides of a building that face a roadway or other noise source should house those activities that can tolerate the greatest amount of noise. Noise sensitive areas include bedrooms, living rooms and dens. Less noise sensitive areas may include kitchens and bathrooms. Hallways, closets and storage rooms are generally not noise sensitive.

Indoor noise levels are controlled by the noise reduction characteristics of the building shell. Doors and windows typically allow the greatest amount of noise leakage in a building and careful consideration should be given to their placement. By limiting the number and size of these openings on the sides of the building exposed to noise, interior noise levels will be reduced.

An interior noise analysis will be required for new residential development located in areas where future noise levels would exceed 60 dBA CNEL. The interior noise analysis should evaluate the proposed building shell (exterior wall, windows, and doors) to ensure that interior noise levels will not exceed 45 dBA CNEL. The analysis should be performed prior to obtaining a building permit.

Glossary

The terms and definitions in this glossary are commonly found in environmental noise literature.

Ambient Noise: All-encompassing noise at a given place and time. This is usually a composite of sounds from all sources near and far, including any specific sources of interest.

At-grade: On the same level.

A-Weighted Level: The sound level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear and gives good correlation with subjective reactions to noise.

Community Noise Equivalent Level (CNEL): The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and after addition of 10 decibels to sound levels in the night from 10:00 p.m. to 7:00 a.m.

Day-Night Sound Level (Ldn): The average equivalent A-weighted sound level during a 24-hour day, obtained after the addition of 10 decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m. (Note: CNEL and Ldn represent daily levels of noise exposure averaged on an annual or daily basis, while Leq represents the equivalent energy noise exposure for a shorter time period, typically one hour.)

Decibel (dB): A unit of measurement describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).

Equivalent Sound Level (Leq): The energy-averaged A-weighted sound level during a measured time interval. It is equal to the level of a continuous steady sound containing the same total acoustical energy over the averaging time period as the actual time-varying sound.

Frequency: The number of oscillations per second of a periodic wave sound and of a vibrating solid, expressed in units of hertz, formerly cycles per second (cps). 1 Hz = 1 cps = 1 oscillation per second.

Heavy Truck: A vehicle type for the purpose of noise prediction modeling defined as all vehicles with three or more axles designed for transportation of cargo. Generally, the gross weight is more than 26,500 pounds.

Hertz: Unit of frequency, formerly called cycles per second. 1 Hz = 1 cps.

Maximum Sound Level (Lmax): Represents the root-mean-square (RMS) maximum noise level obtained during the measurement interval.

Medium Truck: A vehicle classification for the purpose of noise prediction modeling, defined as all vehicles with two axles and six wheels designed for transportation of cargo. Generally, the gross weight is more than 10,000 pounds and less than 26,500 pounds.

Minimum Sound level (Lmin): Represents the root-mean-square minimum noise level obtained during the measurement interval. The Lmin value obtained for a particular monitoring location is often called the "acoustic floor" for that location.

Noise Barrier: A generic term for any feature that blocks or diminishes sound in its path from the source to receiver. Although the term can technically refer to any feature, manmade or natural, the two most common features included in noise barriers are sound walls and earth berms.

Noise Contours: Lines drawn about a noise source indicating equal levels of noise exposure.

Noise Sensitive Land Use: Land uses associated with indoor and/or outdoor activities that may be subject to stress and/or significant interference from noise, such as residential dwellings, transient lodging, dormitories, hospitals, educational facilities, public assembly facilities, amphitheatres, congregate care facilities, childcare facilities, and libraries.

Percentile Noise Limit (Ln): Characterizes the time-varying character of environmental noise by identifying the noise level exceeded n% of the time. For example, the statistical noise descriptors L10, L50, and L90 are the noise levels exceeded during 10, 50, and 90 percent of a stated time, respectively. Sound levels associated with L10 typically describe transient or short-term events, whereas levels associated with L90 describe the steady-state (or most prevalent) noise conditions.

Receiver/Receptor: A stationary far-field position at which noise or vibration levels are specified.

Root Mean Square (RMS): The square root of the mean-square value of an oscillating waveform, where the mean-square value is obtained by squaring the value of amplitudes at each instant of time and then averaging these values over the sample time.

Single Event Level (SEL): The summation of the A-weighted sound energy at a particular location over the true duration of a noise event normalized to a duration of one second. The true duration is defined as the amount of time the noise event exceeds background levels. For events lasting more than one second, SEL does not directly represent the sound level heard at any given time, but rather provides a measure of the net impact of the entire acoustic event. SEL combines an event's overall sound level along with its duration. SEL provides a comprehensive way to describe noise events for use in modeling and comparing noise environments.

Sound: A physical disturbance in a medium that is capable of being detected by the human ear.