9 Noise Element

INTRODUCTION

The Noise Element examines noise sources in the City with a view toward indentifying and appraising the potential for noise conflicts and problems and identifies ways to reduce existing and potential noise impacts. The Element addresses noise that affects the community at large, rather than noise associated with site-specific conditions. It contains policies and actions to achieve and maintain noise levels compatible with various types of land uses. The actions in this Element do address effective strategies to reduce and limit community exposure to loud noise sources. The City's Noise Ordinance (Municipal Code Chapter 11.29) prohibits such noise generated within the City and attempts to minimize noise levels and mitigate the effects of noise to provide a safe and healthy living environment.

This Element includes the following sections:

- Introduction
- Statutory Requirements
- Understanding Noise and How It Affects Us
- Health Effects of Noise
- Noise Definitions
- Noise Regulations
- Existing Noise Conditions
- Future Noise Conditions
- Key Issues and Challenges
- Key Concepts of the Noise Element
- Goals, Objectives and Policies
- Implementation Actions

The State of California and the City of South Gate have adopted legislation and plans intended to minimize exposure of people to loud noise sources. These include:

- California Noise Insulation Standards (Title 24 of the Health and Safety Code)
- California Multi-Family Residential Insulation Standards (Title 25, Section 1092 of the California Code of Regulations)
- City of South Gate Noise Ordinance (Municipal Code Chapter 11.29, Noise Emissions)

STATUTORY REQUIREMENTS

The State of California, in recognition of the relationship between noise and noise-sensitive uses and the public health concerns associated with noise, has adopted very specific guidelines for Noise Elements in both the Government Code (Section 65302[f]) and the Health and Safety Code (Section 46050.1). These guidelines include a requirement for defining projected future noise conditions in the form of noise exposure contours, which present information in a manner similar to topographic map contours. This noise information serves as the basis for developing guidelines for identifying compatible land uses, identifying the proper distribution of land uses in the General Plan Community Design Element, and establishing appropriate development standards.

Specifically, Government Code Section 65302(f) requires that a General Plan include:

> "... 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…current and projected noise levels for all of the following sources: (1) highways and freeways; (2) primary arterials and major local streets; (3) passenger and freight on-line railroad operations and ground rapid transit systems; (4) commercial, general aviation, heliport, and military airport operations, aircraft overflights, jet engine test stands, and all other ground facilities and maintenance functions related to airport operation; (5) local industrial plants, including but not limited to, railroad classification yards; (6) other ground stationary noise sources identified by local agencies as contributing to the community noise environment."

UNDERSTANDING NOISE AND HOW IT AFFECTS US

Noise often is defined as annoying or unwanted sound. Health studies have shown that excessive noise can cause adverse psychological or physiological effects on human beings.

Defining noise problems and establishing a regulatory scheme to deal with noise that is both fair and effective requires an understanding of some of the basic characteristics of sound and how it affects people and their activities. Some of the most important characteristics are outlined in Table N-1, which also provides general comments about how these characteristics affect people. Table N-2 describes common noise sources for indoor and outdoor peak noise levels.

While sound levels can be easily measured, the variability in subjective and physical responses to sound complicates the analysis of its impact on people. Sound is created when an object vibrates and radiates part of its energy as acoustic pressure waves through a medium such as air, water or a solid. The ear, the hearing mechanism of humans and most animals, receives these sound pressure waves and converts them to neurological impulses which are transmitted to the brain for interpretation. The interpretation by the auditory system and the brain depends on the characteristics of the sound and on the characteristics of the person hearing it. Scientists and engineers use two parameters to technically describe the sound environment at any instant in time: amplitude (or sound power) and frequency (or pitch). These two characteristics affect the way people respond to sound.

Amplitude of a sound is a measure of the pressure or force that a sound can exert. Subjectively, we say a sound is louder if it has a greater amplitude than another sound. Thus, the amplitude of sounds can be described either in measurable magnitude or in relative terms of loudness. Physically, sound pressure is measured in units of decibels (dB). The sound pressure scale is based on the ratio of the sound energy to a reference pressure which is approximately the least sound pressure that people can perceive. Zero dB means the lowest level normally audible, but does not mean zero sound pressure.

Frequency of a sound is expressed in units of cycles per second or Hertz (Hz), referring to the number of times per second the acoustic pressure wave peaks. Subjectively, a sound that has more cycles per second than another is higher pitched. The human hearing system is not equally sensitive to sound at all frequencies and is most sensitive to sounds in the frequency range of human speech, from four hundred to two thousand cycles per second. The most sensitive people can hear sounds ranging from a little below twenty Hz to somewhat above twenty thousand Hz. As people age, their sensitivity to high frequencies tends to fall. Acoustical energy at frequencies above the range of human hearing is referred to as ultrasonic, or ultrasound. At frequencies below the range of human hearing, acoustical energy is referred to as infrasonic, or infrasound and is experienced as vibration.

Noise-Sensitive Land Uses. The term "noise-sensitive land uses" refers to land uses that are particularly sensitive to noise at levels commonly found in the urban environment. This category includes residential uses, schools, hospitals, churches, outdoor speculative sports facilities, performing arts facilities and hotels and motels.

TABLE N-1: CHARACTERISTICS OF NOISE

Noise Characteristic	What Is Measured and Units of Measurements	Effects on People and Human Activities
Loudness or Sound Pressure	Energy content of sound waves in the air. Unweighted sound pressure level in decibels (dB).	Noise distracts attention from tasks, interferes with verbal communication and prevents or disturbs sleep. At high levels or for long periods, noise causes temporary or permanent hearing loss. At very high levels, noise causes pain. Louder sounds have greater effects, subject to the further considerations below.
Frequency of Pitch	Frequency (cycles per second, or Hertz (Hz) of pressure waves. Frequency distribution by octave or 1/3 octave band. Overall sound pressure level weighted by frequency, such as A-weighting (dB(A)).	The human ear is most sensitive to sounds in the range of human speech, less sensitive to high or low frequencies at the same sound energy.
Tonal content	Pure tones or energy distribution by octave or 1/3 octave frequency band. Special weightings such as Effective Perceived Noise Level in decibels (EPNDB), or simple penalty weightings for pure tones.	High tonal content means identifiable whines or hums, which can be particularly annoying com-pared to random noise of the same sound energy.
Information content (music, voice, sirens, etc.)	Judgment that sound includes voice, music, etc. No standard measurement scheme or weighting.	Information content draws attention to sounds compared to more random noise of the same sound energy.
Impact noise	Rapid increase in sound pressure or repetitive impacts. Fast response on sound meters used to measure impact noise.	Impact noise (helicopter rotor blade noise, jackhammers, etc.) can be more annoying than other noises of the same sound energy.
Duration of noise events as percentage of 24-hour or other period.	Hourly or other time-averaged energy level (Leq) or statistical sound levels identifying the level exceeded a given percentage of the time (L10, L50).	A noise which lasts longer or is constant has more impact than one of the same sound energy that occurs only occasionally or for a short period of time.
Degree of intrusion of noise events over background noise levels	Difference between peak and ambient noise levels. Statistical sound levels, peak noise levels compared to average or ambient.	Individual distinct noise events such as aircraft overflights or loud vehicle pass-by events of a given noise level are more intrusive if they occur in a quiet environment.
Time of day	24-hour or annual average level with weightings for evening and night noise such as CNEL or Ldn.	People and their activities are generally more sensitive to noise during the nighttime hours because (1) background noise is generally lower, making noise of a given noise level more intrusive and (2) sleep is easily interrupted by noise.
Importance of noise source	Judgment of social value of noise source.	People are generally willing to accept more disturbance from noise they consider necessary, such as from trash collection, emergency vehicle sirens, police helicopters, etc.

Peak Noise Level (dB(A))	Common Indoor Noise Sources	Common Outdoor Noise Sources
Greater than 110	Rock Band	
105-110		
100-105		Military jet flyover at 1,000 feet
95-100	Inside subway train	Gas lawn mower at 3 feet
90-95		Diesel truck at 50 feet
85-90	Food blender at 3 feet	Trash truck load/compact cycle at 50 feet
80-85	Garbage disposal at 3 feet	Noisy urban daytime
75-80	Shouting at 3 feet	
70-75	Vacuum cleaner at 10 feet Inside automobile on freeway	Gas lawn mower at 100 feet Car accelerating at 50 feet
65-70	Normal speech at 3 feet	Commercial area
60-65		Heavy traffic at 300 feet
55-60	Large business office	Dogs barking at 150 feet
50-55	Dishwasher in next room	Birds singing at 150 feet
45-50	Small theater, conference room (background noise level)	Quiet urban daytime
40-45	Small theater, conference room (background noise level)	
35-40		Quiet urban nighttime
30-35	Library	
25-30	Bedroom at night, ventilation off Concert hall (background noise level)	Quiet rural nighttime
20-25		
15-20	Broadcast and recording studio (background noise level)	
10-15		
5-10		
0-5	Threshold of hearing	

Source: Caltrans Noise Manual, March, 1980, pg. 1-1-4

HEALTH EFFECTS OF NOISE

Human response to sound is highly individualized. Annoyance is the most common issue regarding community noise. The percentage of people claiming to be annoyed by noise generally increases with the environmental sound level. However, many factors also influence people's response to noise. The factors can include the noise character, variability of the sound level, presence of tones or impulses, and time of day of the occurrence. Additionally, non-acoustical factors, such as a person's opinion of the noise source, ability to adapt to the noise, attitude towards the source and those associated with it, and predictability of the noise, all influence a person's response. As such, response to noise varies widely from one person to another and with any particular noise, individual responses range from "not annoyed" to "highly annoyed."

When the noise level of an activity rises above 70 dBA, the chance of receiving a complaint is possible, and as the noise level rises, dissatisfaction among the public steadily increases. The effects of noise are often only transitory, but adverse effects can be cumulative with prolonged or repeated exposure. The effects of noise on the community can be organized into six broad categories:

- Noise-induced hearing loss
- Interference with communication
- Effects of noise on sleep
- Effects on performance and behavior
- Extra-auditory health effects
- Annoyance

Although it often causes discomfort and sometimes pain, noise-induced hearing loss usually takes years to develop. Noise-induced hearing loss can impair the quality of life through a reduction in the ability to hear important sounds and to communicate with family and friends. Hearing loss is one of the most obvious and easily quantified effects of excessive exposure to noise. While the loss may be temporary at first, it could become permanent after continued exposure. When combined with hearing loss associated with aging, the amount of hearing loss directly caused by the environment is difficult to quantify. Al-

though the major cause of noise-induced hearing loss is occupational, substantial damage can be caused by non-occupational sources.

According to the United States Public Health Service, nearly ten million of the estimated 21 million Americans with hearing impairments owe their losses to noise exposure. Noise can mask important sounds and disrupt communication between individuals in a variety of settings. This process can cause anything from a slight irritation to a serious safety hazard, depending on the circumstance. Noise can disrupt face-to-face communication and telephone communication, and the enjoyment of music and television in the home. It can also disrupt effective communication between teachers and pupils in schools, and can cause fatigue and vocal strain in those who need to communicate in spite of the noise.

Interference with communication has proved to be one of the most important components of noise-related annoyance. Noise-induced sleep interference is one of the critical components of community annoyance. Sound level, frequency distribution, duration, repetition, and variability can make it difficult to fall asleep and may cause momentary shifts in the natural sleep pattern, or level of sleep. It can produce short-term adverse effects on mood changes and job performance, with the possibility of more serious effects on health if it continues over long periods. Noise can cause adverse effects on task performance and behavior at work, and non-occupational and social settings. These effects are the subject of some controversy, since the presence and degree of effects depends on a variety of intervening variables. Most research in this area has focused mainly on occupational settings, where noise levels must be sufficiently high, and the task sufficiently complex for effects on performance to occur.

Recent research indicates that more moderate noise levels can produce disruptive after-effects, commonly manifested as a reduced tolerance for frustration, increased anxiety, decreased incidence of "helping" behavior and increased incidence of "hostile" behavior. Noise has been implicated in the development or exacerbation of a variety of health problems, ranging from hypertension to psychosis. As with other categories, quantifying these effects is difficult due to the amount of variables that need to be considered in each situation. As a biological stressor, noise can influence the entire physiological system. Most effects seem to be transitory, but with continued exposure some effects have been shown to be chronic in laboratory animals.

Annoyance can be viewed as the expression of negative feelings resulting from interference with activities, as well as the disruption of one's peace of mind and the enjoyment of one's environment. Field evaluations of community annoyance are useful for predicting the consequences of planned actions involving highways, airports, road traffic, railroads, or other noise sources. The consequences of noise-induced annoyance are privately held dissatisfaction, publicly expressed complaints to authorities, and potential adverse health effects, as discussed above. In a study conducted by the United States Department of Transportation, the effects of annoyance to the community were quantified. In areas where noise levels were consistently above 60 dBA CNEL, approximately nine percent of the community was highly annoyed. When levels exceeded 65 dBA CNEL, the percentage rose to 15 percent. Although evidence for the various effects of noise have differing levels of certainty, it is evident that noise can affect human health. Most of the effects are, to a varying degree, stress related.

NOISE DEFINITIONS

Noise often is defined as annoying or unwanted sound. Health studies have shown that excessive noise can cause adverse psychological or physiological effects on human beings.

Defining noise problems and establishing a regulatory scheme to deal with noise that is both fair and effective requires an understanding of some of the basic characteristics of sound and how it affects people and their activities. While sound levels can be easily measured, the variability in subjective and physical responses to sound complicates the analysis of its impact on people. Sound is created when an object vibrates and radiates part of its energy as acoustic pressure waves through a medium such as air, water, or a solid. The ear, the hearing mechanism of humans and most animals, receives these sound pressure waves and converts them to neurological impulses which are transmitted to the brain for interpretation. The interpretation by the auditory system and the brain depends on the characteristics of the sound and on the characteristics of the person hearing it.

Standard Unit of Measurement

Sound is described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by differentiating among frequencies in a manner approximating the sensitivity of the human ear.

Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquakes. In terms of human response to noise, a sound ten dBA higher than another is perceived to be twice as loud, and 20 dBA higher is perceived to be four times as loud, and so forth. Everyday sounds normally range from 30 dBA (very quiet) to 100 dBA (very loud). Examples of various sound levels in different environments are illustrated on Figure N-1.

Various methods have been developed for evaluating community noise to account for, among other things:

- The variation of noise levels over time;
- The influence of periodic individual loud events; and
- The community response to changes in the community noise environment.

Table N-3 lists various methods to measure sound over a period of time.

Table N-3: Noise Descriptors

Term	Definition
Decibel (dB)	The unit for measuring the volume of sound equal to 10 times the logarithm (base 10) of the ratio of the pressure of a measured sound to a reference pressure (20 micropascals).
A-Weighted Decibel (dBA)	A sound measurement scale that adjusts the pressure of individual frequencies according to human sensitivities. The scale accounts for the fact that the region of highest sensitivity for the human ear is between 2,000 and 4,000 cycles per second (hertz).
Equivalent Sound Level (Leq)	The sound level containing the same total energy as a time varying signal over a given time period. The Leq is the value that expresses the time averaged total energy of a fluctuating sound level.
Maximum Sound Level (Lmax)	The highest individual sound level (dBA) occurring over a given time period.
Minimum Sound Level (Lmin)	The lowest individual sound level (dBA) occurring over a given time period.
Community Noise Equivalent Level (CNEL)	A rating of community noise exposure to all sources of sound that differentiates between daytime, evening, and nighttime noise exposure. These adjustments are +5 dBA for the evening, 7:00 PM to 10:00 PM, and +10 dBA for the night, 10:00 PM to 7:00 AM
Day/Night Average (Ldn)	The Ldn is a measure of the 24-hour average noise level at a given location. It was adopted by the U.S. Environmental Protection Agency (EPA) for developing criteria for the evaluation of community noise exposure. It is based on a measure of the average noise level over a given time period called the Leq. The Ldn is calculated by averaging the Leq's for each hour of the day at a given location after penalizing the "sleeping hours" (defined as 10:00 PM to 7:00 AM), by 10 dBA to account for the increased sensitivity of people to noises that occur at night.
L01, L10, L50, L90	The fast A-weighted noise levels equaled or exceeded by a fluctuating sound level for 1 percent, 10 percent, 50 percent and 90 percent of a stated time period.

Source: Cyril M. Harris, Handbook of Noise Control, 1979.

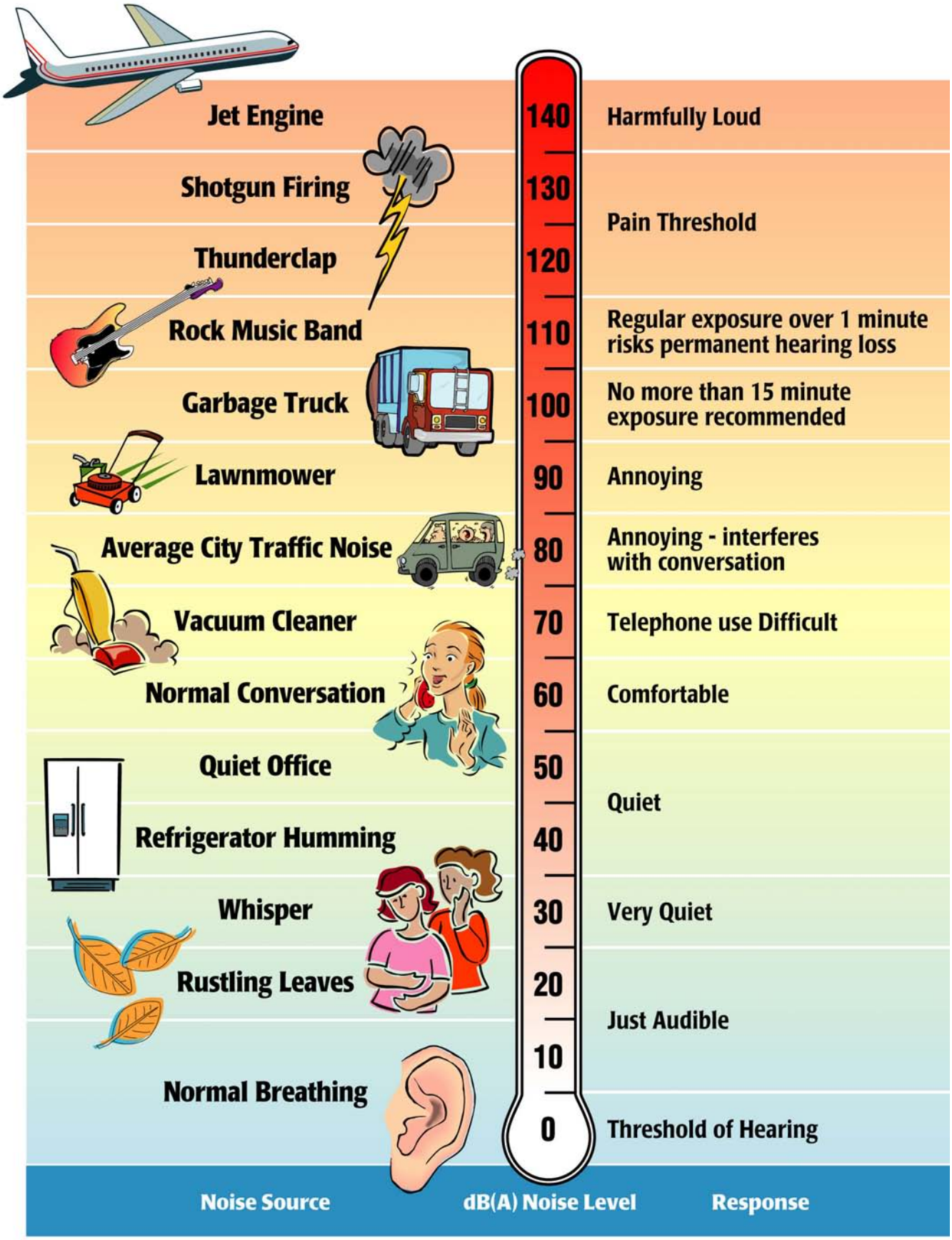

Figure N-1: Examples of various sound levels in different environments

Noise Scales and Definitions

Sound pressure level is a measure of the sound pressure of a given noise source relative to a standard reference value. The reference pressure is typical of the quietest sound that a young person with good hearing is able to detect. Sound pressure levels are measured in decibels (dB). Decibels are logarithmic quantities, relating the sound pressure level of a noise source to the reference pressure level.

An important characteristic of sound is frequency. This is the rate of repetition of sound pressure oscillations (waves) as they reach our ears; frequency is expressed in hertz (Hz). When analyzing the total noise of any source, the frequency components are sometimes analyzed to determine the relative amounts of low-frequency, middle-frequency, and high-frequency noise. This breakdown is important for two reasons:

- Our ear is better equipped to hear mid- and high-range frequencies than lower frequencies. Thus, we find mid- and high-frequency noise to be more annoying. High-frequency noise is also more capable of producing hearing loss.
- Engineering solutions to a noise problem are different for different frequency ranges. Low-frequency noise is generally harder to control.

The normal frequency range of hearing for most people extends from a low frequency of about 20 Hz to a high frequency of about 10,000 to 15,000 Hz. People respond to sound most readily when the predominant frequency is in the range of normal conversation, typically around 1,000 to 2,000 Hz. Several filters have been developed that match the sensitivity of our ear and thus help us to judge the relative loudness of various sounds made up of many different frequencies. The so-called "A" filter is the best measure for most environmental noise sources. Sound pressure levels measured through this filter are referred to as A-weighted levels, and are measured in A-weighted decibels or (dBA).

The A-weighted filter significantly de-emphasizes those parts of the total noise that occur at lower frequencies (those below about 500 Hz) and also those at very high frequencies (above 10,000 Hz) the frequencies that we do not hear as well. The filter has very little effect, or is nearly "flat," in the middle range of frequencies (between 500 and 10,000 Hz), where our ears are most sensitive. Because this filter generally matches our ears' sensitivity, sounds having a higher A-weighted sound level are usually judged to be louder than those with lower A-weighted sound levels, a relationship that otherwise might not be true.

Community Noise Equivalent Level (CNEL)

Cumulative noise metrics were developed to assess community response to noise. They are useful because they attempt to take into account the loudness and duration of the noise, the total number of noise events, and the time of day these events occur in one single-number rating scale. They are designed to account for the known health effects of noise on people. The community noise equivalent level (CNEL) is a 24-hour, time-weighted energy-average noise level based on dBA that measures the overall noise during an entire day. Noise that occurs during certain sensitive time periods is penalized for occurring at these times (by adding decibels to its Leq measurement). On the CNEL scale, noise between 7:00 AM and 10:00 PM is penalized by approximately five dB, to account for the greater potential for noise to interfere during these hours, as well as the typically lower ambient (background) noise levels during these hours. Noise during the night (from 10:00 PM to 7:00 AM) is penalized by 10 dB to attempt to account for our higher sensitivity to noise in the nighttime and the expected further decrease in ambient noise levels that typically occur in the night.

Equivalent Noise Level (LEQ)

The equivalent sound level, abbreviated Leq, is a measure of the exposure resulting from the accumulation of A-weighted sound levels over a particular time period (e.g., 1 hour, 8 hour, a school day, nighttime, or a full 24-hour day). However, because the length of the period can be different depending on the time frame of interest, the applicable period should always be identified or clearly understood when discussing the metric. Such durations are often identified through a subscript, for example, "Leq (24)".

Conceptually, Leq may be thought of as a constant sound level over the period of interest that contains as much sound energy as the actual time-varying sound level with its normal peaks and valleys. It is important to realize, however, that the two signals (the constant one and the time-varying one) would sound very different from each other if compared in real life. Variations in the "average" sound level suggested by Leq is not an arithmetic value, but a logarithmic ("energy-averaged") sound level. Thus, loud events clearly dominate any noise environment described by the metric.

Day Night Average (Ldn)

Another commonly used noise metric is the day/night average noise level (Ldn). The Ldn is a measure of the 24-hour average noise level at a given location. It was adopted by the EPA for developing criteria to evaluate community noise exposure. Ldn is based on a measure of the average noise level over a given time period. The Ldn is calculated by averaging the Leq for each hour of the day at a given location after penalizing the sleeping hours (from 10:00 PM to 7:00 AM) by 10 dBA to take into account the increased sensitivity of people to noises that occur at night.

The sound level exceeded over a specified time frame can be expressed as Ln (i.e., L90, L50, L10, etc.). L50 equals the level exceeded 50 percent of the time; L10, 10 percent of the time; etc.

Other Noise Matrices

As previously mentioned, people tend to respond to changes in sound pressure in a logarithmic manner. In general, a 1 dBA change in the sound pressure levels of a given sound is detectable only under laboratory conditions. A 3 dBA change in sound pressure level is considered a detectable difference in most situations. A 5 dBA change is readily noticeable and a 10 dBA change is considered a doubling (or halving) of the subjective loudness. It should be noted that a 3 dBA increase or decrease in the average traffic noise level is realized by a doubling or halving of the traffic volume; or by about a 7 mile per hour (mph) increase or decrease in speed.

For each doubling of distance from a point noise source, the sound level will decrease by 6 dBA. In other words, if a person is 100 feet from a machine, and moves to 200 feet from that source, sound levels will drop approximately 6 dBA. For each doubling of distance from a line source, like a roadway, noise levels are reduced by 3 to 5 decibels, depending on the ground cover between the source and the receiver.

Noise barriers can provide approximately a 5 dBA CNEL noise reduction (additional reduction may be provided with a barrier of appropriate height, material, location, and length). A row of buildings provides up to 5 dBA CNEL noise reduction with a 1.5 dBA CNEL reduction for each additional row up to a maximum reduction of approximately 10 dBA. The exact degree of noise attenuation depends on the nature and orientation of the structure and intervening barriers.

NOISE REGULATIONS

Noise and Land Use Compatibility Matrix

The State of California Office of Planning and Research (OPR) Noise Element Guidelines include recommended interior and exterior level standards for local jurisdictions to identify and prevent the creation of incompatible land uses due to noise. The OPR Guidelines describe the compatibility of various land uses with a range of environmental noise levels in terms of dBA CNEL (Community Noise Equivalent Level).

A noise environment of 50 dBA CNEL to 60 dBA CNEL is considered to be "normally acceptable" for residential uses. The State indicates that locating residential units, parks, and institutions (such as churches, schools, libraries, and hospitals) in areas where exterior ambient noise levels exceed 65 dBA CNEL is undesirable. The OPR recommendations also note that, under certain conditions, more restrictive standards than the maximum levels cited may be appropriate. As an example, the standards for quiet suburban and rural communities may be reduced by 5 to 10 dB to reflect their lower existing outdoor noise levels in comparison with urban environments.

In addition, *Title 25*, Section 1092 of the *California Code of Regulations,* sets forth requirements for the insulation of multiple-family residential dwelling units from excessive and potentially harmful noise. Whenever multiple-family residential dwelling units are proposed in areas with excessive noise exposure, the developer must incorporate construction features into the building's design that reduce interior noise levels to 45 dBA CNEL.

Table N-4 illustrates the State guidelines established by the State Department of Health Services for acceptable noise levels for each county and city. These standards and criteria are incorporated into the land use planning process to reduce future noise and land use incompatibilities. This table is the primary tool that allows the City to ensure integrated planning for compatibility between land uses and outdoor noise.

Table N-4: Noise and Land Use Compatibility Matrix

Land Use Category	Community Noise Exposure (Ldn or CNEL, dBA)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential - Low Density, Single-Family, Duplex, Mobile Homes	50 - 60	55 - 70	70-75	75-85
Residential - Multiple Family	50 - 65	60 - 70	70 - 75	70 – 85
Transient Lodging - Motel, Hotels	50 - 65	60 - 70	70 - 80	80 – 85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 - 70	60 - 70	70 - 80	80 – 85
Auditoriums, Concert Halls, Amphitheaters	NA	50 - 70	NA	65 – 85
Sports Arenas, Outdoor Spectator Sports	NA	50 - 75	NA	70 – 85
Playgrounds, Neighborhood Parks	50 - 70	NA	67.5 - 75	72.5 – 85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 - 70	NA	70 - 80	80 – 85
Office Buildings, Business Commercial and Professional	50 - 70	67.5 - 77.5	75 - 85	NA
Industrial, Manufacturing, Utilities, Agriculture	50 - 75	70 - 80	75 - 85	NA

NA: Not Applicable

Source: Office of Planning and Research, California, General Plan Guidelines, October 2003.

Normally Acceptable *– Specified land use is satisfactory, based upon 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 the 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 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.*

City of South Gate Noise Standards

The City of South Gate maintains a comprehensive Noise Ordinance within its *Municipal Code* that establishes citywide interior and exterior noise level standards. The City has adopted a number of policies that are directed at controlling or mitigating environmental noise effects. The City's Noise Ordinance *(Municipal Code* Chapter 11.29, Noise Emissions) establishes daytime and nighttime noise standards; refer to Table N-5 for a summary of the City's standards. The ordinance is designed to control unnecessary, excessive and annoying sounds generated from a stationary source impacting an adjacent property. It differentiates between environmental and nuisance noise. Environmental noise is measured under a time average period while nuisance noise cannot exceed the established Noise Ordinance levels at any time. *Chapter 11.29.160, Maximum permissible sound levels by receiving land use,* prohibits any person within the City to make, cause, or allow noise that is in excess of the specified levels presented in Table N-5, except as expressly provided otherwise. At the boundary line between a residential property and a commercial and manufacturing property, the noise level of the quieter zone is required to be used.

Table N-5: South Gate Noise Ordinance Standards

Noise Zone	Noise Standards	
	Noise Level	Time Period
1 – Noise Sensitive Area	45 dBA	Anytime
2 – Residential Properties	50 dBA	7:00 AM – 10:00 PM
	40 dBA	10:00 PM – 7:00 AM
3 – Commercial Properties	55 dBA	Anytime
4 – Industrial Properties	65 dBA	Anytime

Enforcing the Noise Ordinance includes requiring proposed development projects to demonstrate compliance regarding site planning and construction activities. The Ordinance is reviewed periodically for adequacy and amended as needed to address community needs and development patterns.

EXISTING NOISE CONDITIONS

This section provides a synopsis of the current sources of noise in South Gate. It addresses transportation-related, stationary source and construction noise sources.

Transportation-Related Noise

Transportation activity represents the principal ambient noise source in South Gate. Transportation noise arises from vehicle traffic on major and primary arterial roadways within the City and from traffic on the I-710 freeway. Train movement on the railroad lines is another source of transportation related noise as is flight activity associated with Los Angeles International Airport.

Local Roadway Traffic Noise

During peak travel hours, heavy traffic on South Gate's streets cause higher noise levels compared to noise levels during non-peak hours. The most heavily traveled roadways include:

- Santa Ana Avenue
- Firestone Boulevard
- Southern Avenue
- Tweedy Boulevard
- Century Boulevard
- Imperial Boulevard
- Alameda Street
- Long Beach Boulevard
- California Avenue
- Otis Street
- Atlantic Avenue
- Rayo Avenue
- Garfield Avenue

These roadways have been designed to specifically carry large volumes, although long-established land use patterns have placed residential uses along some portions of these streets.

Freeway Noise

Freeways are a major noise source in many jurisdictions. South Gate is traversed by the I-710 Freeway. Figure N-2 shows the existing noise contours in South Gate.

More modern design and construction projects integrate sound walls and depressed configuration, such as the I-210 through eastern Los Angeles and western San Bernardino Counties and the I-5 widening through Orange County. To address freeway noise along long-established routes, the California Department of Transportation (Caltrans) has a priority program and a policy to put sound walls adjacent to residential properties. If a jurisdiction wishes to mitigate freeway noise before scheduled and funded Caltrans improvements are planned, the jurisdiction can fund sound walls or other mitigating elements, with Caltrans later providing reimbursement in accordance with its priority plan.

While sound walls would reduce noise impacts, freeway noise will remain an issue for noise-sensitive land uses, particularly residential uses.

Railroad Noise

The Union Pacific Railroad (UPRR) currently operates two railroad lines through the City. The line that runs in the northwest to southeast direction in the eastern portion of the City is the San Pedro Sub-division. A second line (Spur Line) runs in an east-west direction, north of Firestone Boulevard (and in the west half of the City between Independence Avenue and Ardmore Avenue). Both lines provide local switching service, with each line typically handling about 4 to 6 trains per day. There are no grade separated crossings in the City of South Gate, except for the grade separation of the railroad line and the I-710 Freeway.

The City has no control over railroad noise, which is preempted by the Federal Government.

Aircraft Noise

There are no commercial or general aviation airports located within South Gate that contribute to the noise environment. However, flyover noise is generated from air traffic into Los Angeles International Airport (LAX), which is located to the west of the City. As with most municipalities located in an urban area, the community is subject to occasional noise intrusion from high flying aircraft. South Gate is directly under the primary approach pattern for LAX so these events occur on an average of every two to three minutes. While the peak noise levels from these events are high, the frequency of occurrence increases the potential for disturbance. The aircraft noise levels from these events are estimated to be less than 55 dBA. And to a lesser degree, South Gate is also exposed to noise emanating from helicopter operations.

Stationary Source Noise

Industrial Noise

Industrial uses are located throughout the City of South Gate with the most concentrated industrial uses in the eastern portion of the City between Atlantic Avenue and the Rio Hondo River Channel. There are industrial uses along Firestone Boulevard (between Alameda Street and Santa Fe Avenue and between San Miguel Avenue and Atlantic Avenue), Alameda Street (between Tweedy Boulevard and the southern City limits), Imperial Highway (between Rio Hondo River Channel and the eastern City limits), and adjacent to the UPRR (between Gardendale Street and the southern City limits).

Industrial businesses can have a varying degree of impact on adjacent uses. Industrial operations often involve use of mechanical equipment, generators, and vehicles that contribute to noise levels at industrial sites, particularly for outdoor activities. Many of South Gate's neighborhoods have homes in close proximity to industrial uses.

Municipal Code Chapter 11.29 establishes noise performance criteria to guard against exposure of residential and other noise-sensitive uses to loud industrial-related noise. The noise/land use compatibility criteria in Table N-4 will be used in assessing siting of new industrial uses.

Commercial and Residential Related Noise

South Gate's commercial corridors are located along Long Beach Boulevard (Santa Ana Avenue to Southern Avenue), Firestone Boulevard (Alameda Street to Atlantic Avenue), Tweedy Boulevard (State Street to Hunt Avenue) and segments along Atlantic Avenue, Garfield Avenue, and Paramount Boulevard.

A variety of stationary noise sources associated with commercial and residential activities exist throughout the City of South Gate. Commercial noise sources may include mechanical equipment and engines in non-moving motors such as power tools (i.e., automobile repair shops). Stationary noise sources associated with residential areas are primarily due to air conditioners and pool/spa equipment. Additional stationary noise sources include animals, stereos, musical instruments, sporting events, and horns. These noise sources have the potential to temporarily disrupt the quietness of an area. Effective control of these noise sources cannot be accomplished through decibel standards, but instead may be accomplished through provisions in the Noise Ordinance.

Mechanical Equipment Noise

The motors, pumps, and fans that cool and heat our buildings produce point-source noise that most directly affects adjacent land uses. Frequently, this equipment includes components of pure tone noise from the rotational frequency of motors. Although noise levels are generally low from these sources, the fact that such sources may operate continuously and may include pure tones that make them audible at a substantial distance creates potential for conflict. The City's Zoning Code and Municipal Code provisions generally address these conflicts.

Portable Power Equipment

Leaf blowers, lawn mowers, portable generators, electric saws and drills and other similar equipment that people use to maintain their properties create frequent noise during daylight hours. Such disruptions to the ambient sound environment are ubiquitous in the modern city and can produce very high noise levels at the location of the work.

Amplified Sound

Amplified sound includes noise from personal or home audio equipment, automotive audio equipment, outdoor loudspeakers such as those used for paging and amplified sound at music or theatrical performances. Because this sound typically includes music or speech, it is potentially more detectable and more annoying than other sounds of the same noise level. Municipal Code Chapter 11.29 establishes limitations on time and magnitude of noise for these sources.

Construction Noise

Construction noise typically involves the loudest common urban noise events associated with building demolition, grading, construction, large diesel engines and truck deliveries and hauling. Construction activity, although temporary at any given location, can be substantially disruptive to adjacent uses during the construction period.

FUTURE NOISE CONDITIONS

The most significant noise sources in South Gate – roadways, freeways, and railways – will continue generating noise in the future. Figure N-3 identifies the projected noise contours for year 2035 largely attributable to roadway and freeway noise based on projected land uses and traffic volumes identified in the EIR. Noise levels from these surface sources are expected to increase with increased traffic levels anticipated within the City by 2035.

The noise contours in Figure N-3 assist in setting policies for establishing new land use and appropriate mitigation for properties that will continue to be exposed to higher noise levels.

KEY ISSUES AND CHALLENGES

This section describes the key issues and challenges facing South Gate regarding the noise environment.

Health Impacts of Noise

Excessive noise can result in undesirable impacts to individuals and a community. The effects of noise are often transitory but adverse effects can be cumulative with prolonged and repeated exposure. The effects of noise fall into six broad categories: noise-induced hearing loss, interference with communication, effects of noise on sleep, effects on performance and behavior, extra-auditory health effects, and annoyance.

Noise and Land Use Planning Integration

Land use planning decisions have significant impacts on the noise environment. The City has adopted a comprehensive Noise Ordinance within its Municipal Code along with several polices that are directed at controlling and mitigating environmental noise effects. This ordinance must be reviewed periodically to ensure that is adequate for meeting the community's needs and changing land use patterns.

Noise Sensitive Receptors

Human response to noise varies widely depending on the type of noise, time of day, and sensitivity of the receptor. The effects of noise on humans can range from temporary or permanent hearing loss to mild stress and annoyance due to such things as speech interference and sleep deprivation. Prolonged stress, regardless of the cause, is known to contribute to a variety of health disorders. Refer to Section 5.6, Noise, of the General Plan EIR for a listing of some of the sensitive receptors within the City than can be affected by excess noise levels.

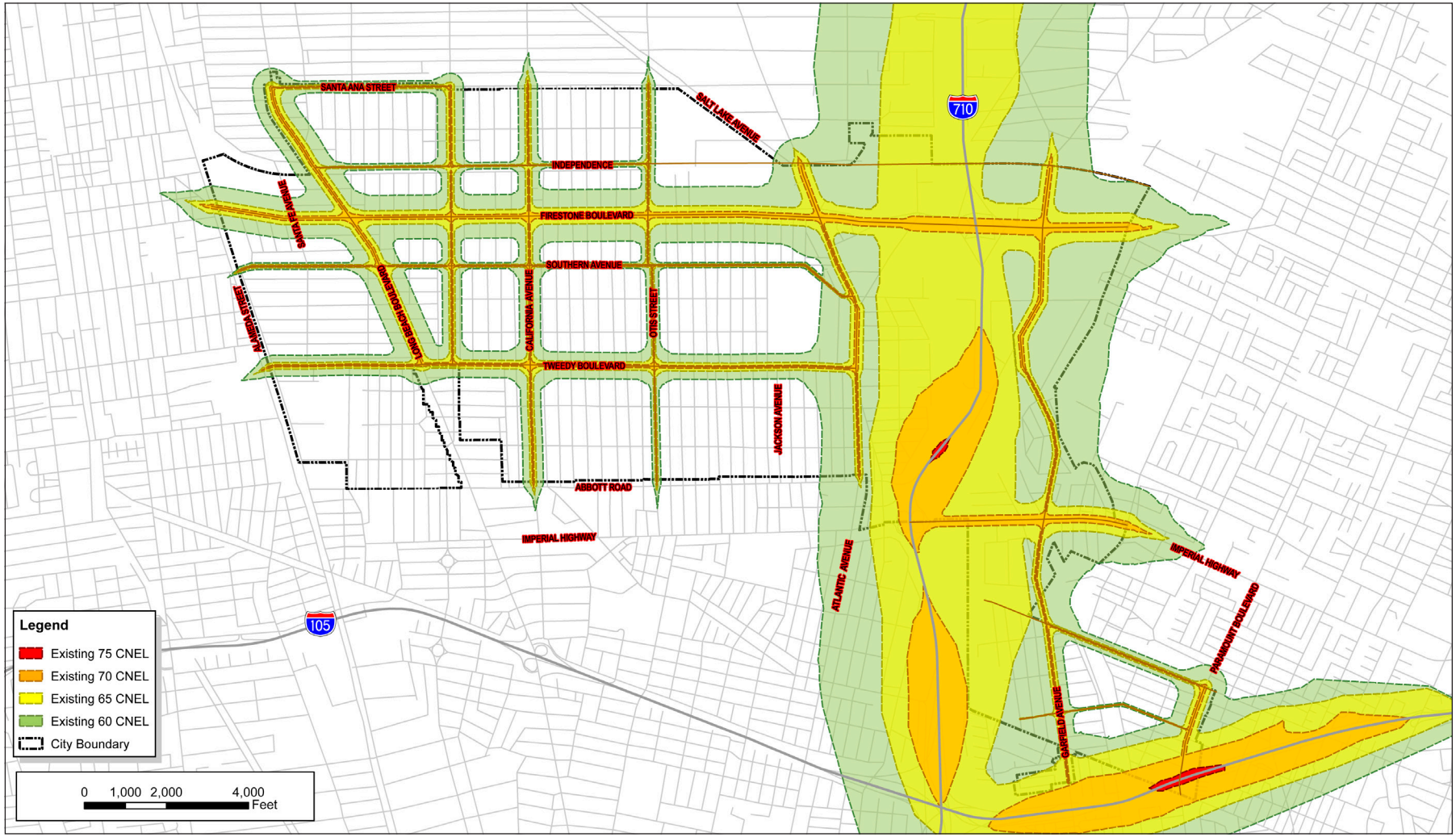

Figure N-2: Existing noise contours

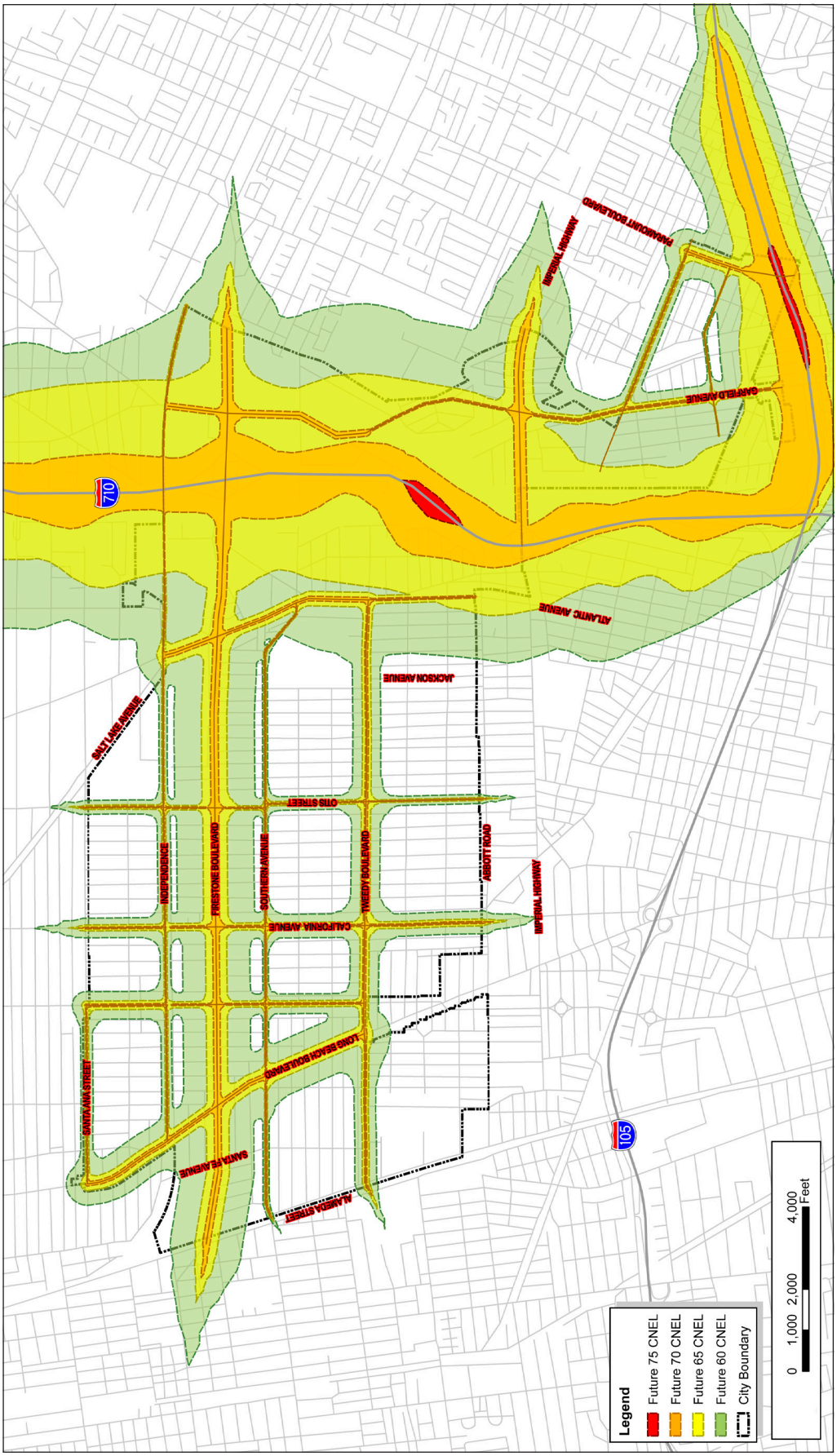

Figure N-3: Project noise contours for the year 2035

Transportation Noise

Transportation routes – arising from vehicles on primary arterials and freeways as well as from railroad and aircraft – is a major source of noise in South Gate. The most efficient and effective means of controlling noise from transportation systems is to reduce noise at the source. However, the City has little direct control over source noise levels because of State and Federal preemption rules (for example, State motor vehicle noise standards and Federal air regulations). In the absence of direct control on noise sources, the City can focus on reducing the impact of the noise on the community.

Non-Transportation Noise

Noise from non-transportation sources can contribute to an environment of excessive noise. In South Gate, the major sources of non-transportation noise include: commercial and industrial centers, mechanical noise, portable power equipment and amplified sound. These impacts are most effectively controlled through the application of the City's Noise Ordinance.

KEY CONCEPTS OF THE NOISE ELEMENT

The following are key concepts for addressing the noise challenges and issues in the Noise Element. The Goals, Objectives, Policies and Implementation Actions in this Element provide a foundation for implementing these noise mitigating measures.

Attenuation of Noise

Noise impacts can be mitigated in three basic ways: by reducing the sound level of noise generators, by increasing the distance between noise sources and receivers, and by insulating receivers. Policies in the Noise Element address all of these topics.

Reducing the Sound Level of Noise Generators

Perhaps the most efficient approach to controlling noise in a community is limiting the level of noise generation at the source. State and Federal statutes have largely preempted local control over vehicular noise emissions but commercial and industrial operations and certain residential activities provide opportunities for local government to assist in noise abatement. The City of South Gate will use local ordinances to establish maximum levels for noise generated on-site to the extent possible.

Increasing the distance between noise sources and receivers

Noise impacts can be reduced by insulating noise sensitive uses, such as residences, schools, libraries, hospitals, nursing, and care homes and some types of commercial activities. South Gate will use the policies of the Community Design Element and the Noise Element to separate noise generators from sensitive receptors.

Insulating Receivers

Noise insulation can be accomplished through site design techniques such as the placement of walls, landscaped berms, or a combination of the two, between noise sources and noise receivers. In addition to site design techniques, noise insulation can be accomplished through proper design of buildings and the application of care in the actual construction of buildings. The Noise Ordinance and policies in this Element address sufficient insulation of receivers from sources of noise.

Minimize Community Exposure to Noise

The primary goal with regard to community noise is to minimize the exposure of new residential development, schools, hospitals, and similar noise-sensitive uses to excessive or unhealthy noise levels to the greatest extent possible. Toward this end, this Element establishes the noise/land use compatibility guidelines set forth in Table N-4 for outdoor noise. The compatibility guidelines recognize and respond to the many different noise environments in South Gate. These compatibility guidelines show a range of noise standards for various land use categories. Depending on the ambient environment of a particular community, these basic guidelines may be tailored to reflect existing noise and land use characteristics. Additionally, the City provides levels of acceptable noise exposure based on the sensitivity of specific land uses (Municipal Code Chapter 11.29). The City will pursue proactive measures to limit additional exposure of sensitive uses and to address longstanding noise issues.

Residential Development

The City supports new residential development in areas where ambient noise levels may be higher than those experienced in existing single family neighborhoods. Interior noise levels for new residential development, regardless of location within the City will be required to comply with standards set forth in Title 24 of the Health and Safety Code. New construction may need to incorporate special insulation, windows, and sealants in order to ensure that interior noise levels meet Title 24 standards.

City Noise Control Ordinance

Application and enforcement of the City Noise Control Ordinance will continue to be the primary means of regulating and controlling so-called point-source noise. During the preliminary stages of the development process, potential noise impacts and appropriate mitigation will be identified.

Similarly, enforcement of the Noise Control Ordinance will address nuisance noise such as loud animals or birds, loud audio equipment, domestic power tools, vehicle repair and testing, powered motor vehicles and construction activities.

Addressing Transportation Noise

The most efficient and effective means of controlling noise from transportation systems is to reduce noise at the source. However, the City has no direct control over noise produced by trucks, cars and trains because State and Federal regulations preempt local laws. Vehicular noise emissions standards are established at the State and Federal levels. However, local agencies can play a significant part in reducing traffic noise by controlling traffic volume and congestion. Given that the City cannot control this noise at the source, City noise programs focus on reducing the impact of transportation noise along freeways, arterial roadways and rail corridors and on site planning, landscaping, topography and the design and construction of noise barriers to alleviate vehicular traffic and train noise impacts. Noise-attenuating barriers can and will be incorporated into new development projects to reduce noise exposure.

I-710

Freeway noise associated with I-710 has largely been addressed to greatest extent practicable with recent improvements. The I-710 improvement project includes elements to shield freeway noise, particularly along areas of the freeways adjoining residential areas. The City will continue to pursue mitigation with Caltrans for any remaining areas not addressed by freeway enhancement projects.

Existing Railways

Eliminating at-grade crossings for existing railways would significantly reduce noise impacts and solve road/rail traffic conflicts, but this solution involves costs beyond the collective resources of the City, Federal agencies, and railroad owners/operators. Thus, City efforts will focus on minimizing noise associated with train horns and implementing noise reduction programs.

Goals, Objectives and Policies

Goal N 1:
A reduction in noise levels created by construction and maintenance activities

Objective N1.1:
Minimize noise levels from construction and maintenance equipment, vehicles, and activities.

Policies

P.1 Construction activities will be prohibited between the hours of 7:00 PM to 8: 00 AM Monday through Saturday and on Sundays and Federal holidays.

P.2 Construction noise reduction methods will be employed to the maximum extent feasible. These measures may include, but not limited to, shutting off idling equipment, installing temporary acoustic barriers around stationary construction noise sources, maximizing the distance between construction equipment staging areas and occupied sensitive receptor areas, and use of electric air compressors and similar power tools, rather than diesel equipment.

P.3 Prior to approval of project plans and specifications by the City, project applicants and/or construction contractors will identify construction equipment and noise reducing measures, and the anticipated noise reduction.

P.4 The City will require municipal vehicles and noise-generating mechanical equipment purchased or used by the City to comply with noise standards specified in the City's Municipal Code, or other applicable codes.

P.5 The City may exceed the noise standards on a case-by-case basis for special circumstances including emergency situations, special events and expedited development projects.

Goal N 2:
An effective land use planning and development review process to ensure noise impacts are addressed

Objective N 2.1:
Ensure noise impacts are considered in land use planning decisions.

Policies

P.1 The City will adhere to the noise standards identified in Table N-4.

P.2 The City will incorporate noise considerations into land use planning decisions and future City land use plans by establishing acceptable limits of noise for various land uses throughout the community.

P.3 The City should fully integrate noise considerations into land use planning decisions to prevent new noise/land use conflicts.

P.4 The City will require that acoustical analysis be incorporated into the environmental review process for the purposes of identifying potential noise impacts and noise abatement procedures.

P.5 The City will require that all new residential construction in areas with an exterior noise level greater than 55 dBA CNEL will include sound attenuation measures, as well as to incorporate design measures to reduce interior noise levels to 45 dBA CNEL.

P.6 The City will require that all new non-residential development will demonstrate that ambient noise levels will not exceed an exterior noise level of 65 dBA CNEL.

P.7 New development projects will provide buffers and/or appropriate mitigation measures to reduce potential noise sources on noise-sensitive land uses.

P.8 The City should avoid locating noise-sensitive land uses in existing and future noise-impacted areas.

P.9 The City will work to ensure acceptable noise levels are maintained near residential areas, schools, hospitals, convalescent homes, churches, and other noise sensitive areas.

P.10 The City will consider land use compatible issues when developing and/or amending land use plans.

P.11 The City should work with adjacent jurisdictions to minimize noise impacts to South Gate from projects that occur outside the City.

Objective N 2.2:
Incorporate a review of noise impacts into the development review process.

Policies

P.1 The City Community Development Department and/or City Council will consider noise impacts of proposed developments.

P.2 The City should establish a Development Review process, which considers noise impacts and applies to, but is not limited to, the following:

- Specific Plans
- Tentative Tract Maps
- Parcel Maps
- Precise Plans
- Conceptual Development Plans
- Design Review
- Non-residential development
- Significant remodels and redevelopment

P.3 The City will require that project applicants for the above actions submit relevant plans and analysis that facilitate the review of the proposal for conformance with the General Plan and applicable codes and regulations related to noise impacts.

P.4 All new development, significant remodels, and redevelopment adjacent to noise sensitive land uses will be required to prepare an acoustical analysis that evaluates potential noise impacts and recommends noise abatement mitigation to ensure compliance with the City's General Plan and Noise Ordinance.

P.5 The City will require findings of consistency with the City of South Gate's General Plan's goals, objectives, policies, and implementation actions; Zoning Ordinance; Municipal Code; and Building Code, and other local, Federal, State, and regional regulations applicable to noise impacts as a condition of project approval and entitlement.

P.6 The City will require noise mitigation as conditions of approval (COA) on major development projects, including a clear description of mitigation on subdivision maps, site plans, and building plans for inspection purposes.

P.7 The City will review development plans for the identification of sound attenuation measures, including but not limited to, double-glazed windows, sound insulation, sound walls, landscaping, use of low walls and landscaped slopes, enclose courtyards, rubberized asphalt, or relocation of driveways.

Goal N 3:
A reduction of noise spillover or encroachment from commercial/ office/retail, research and development, manufacturing and distribution, and industrial uses on adjoining residential areas and other noise sensitive land uses

Objective N 3.1:
Improve ambient noise conditions in sensitive land use areas.

Policies

P.1 The City will identify and work with property owners to reduce or eliminate excessive or loud noise near noise sensitive areas to meet the noise standards in the City's Municipal Code.

P.2 The City should encourage the retrofitting of existing homes to reduce interior noise impacts.

P.3 The City should encourage the use of noise absorbing materials in existing and future development to reduce interior noise impacts to sensitive land uses.

Objective N 3.2:
Minimize noise impacts to residential dwelling units located above ground floor commercial/office/retail or civic/institutional uses in mixed-use development projects.

Policies

P.1 New mixed-use structures with commercial/office/retail or civic/institutional and residential uses will incorporate techniques that prevent the transfer of noise and vibration through design and construction technology.

P.2 The City should encourage commercial uses in mixed-use developments that are not noise intrusive to on-site or surrounding noise sensitive land uses.

P.3 The City will prohibit the development of new nightclubs and other high noise-generating entertainment uses directly adjacent to existing and/or planned residential uses, schools, health care facilities, or other noise-sensitive land uses. Such uses may be permitted, at the direction of the City Council, if a noise analysis prepared by an acoustical expert recommends effective mitigation that can ensure compliance with the City's Municipal Code and that the project will incorporate all identified recommendations.

P.4 New mixed-use development projects should locate residential units be away from significant noise generating sources, such as mechanical equipment, entertainment uses, restaurant patios, gathering places, loading and delivery areas, parking lots, and trash enclosures.

P.5 New mixed-use developments with residential components will be required to install signs requesting patrons to be mindful of noise levels in outdoor commercial areas during nighttime hours.

Objective N 3.3:
Minimize noise impacts on residential or other noise-sensitive land uses located adjacent to non-residential uses.

Policies

P.1 Truck deliveries to non-residential uses abutting residential or noise sensitive uses will be limited to the hours between 7:00 AM and 10:00 PM.

P.2 New non-residential projects adjacent to residential uses will be required to incorporate noise reducing features into the project design to minimize impacts to nearby residential uses and other noise sensitive land uses.

P.3 The City will prohibit the location of uses characterized by excessive noise, such as industrial uses and fast food restaurants with drive-through speakers, directly adjacent or in close proximity to existing or planned residential uses.

P.4 The City will prohibit the siting of loading and shipping facilities for commercial and industrial operations adjacent to existing or planned residential uses.

P.5 New buildings being developed adjacent to existing and/or planned residential uses or other noise-sensitive land uses will be required to site and operate heating, ventilating, and air conditioning generators in a manner that limits adverse noise impacts to the greatest extent feasible.

P.6 Wherever feasible, parking areas for new or redeveloped non-residential uses should be buffered and shielded by, but not limited to, walls, fences, and/or adequate landscaping.

P.7 The City should encourage existing noise sensitive uses, including schools, libraries, health care facilities, and residential uses in areas where existing or future noise levels exceed 65 dBA CNEL to incorporate fences, walls, landscaping, and/or other noise buffers and barriers, where appropriate and feasible.

P.8 The City should encourage school districts or other educational facilities to locate outdoor activity areas, such as play grounds and sport fields, away from residential areas.

Goal N 4:
Minimize transportation noise impacts from motor vehicles and trains adjacent to residential and other noise sensitive land uses

Objective N 4.1:
Work towards the reduction of transportation noise.

Policies

P.1 The City should minimize transportation noise through the proper design of street circulation, coordination of routing, and other traffic control measures (e.g., shifting travel lanes away from impacted units, adding bike ways, etc. to relieve traffic congestion).

P.2 Businesses in industrial areas will be required to manage heavy truck and vehicle access to minimize noise and vibration impacts on adjoining uses.

P.3 The City should discourage through traffic on residential local streets to reduce noise impacts.

P.4 The City will coordinate and work with California Department of Transportation (Caltrans) to minimize freeway noise levels from Interstate 710 (I-710) on nearby noise-sensitive land uses to a level below the State standard of 65 dBA CNEL for exterior noise levels and 45 dBA CNEL for interior residential noise levels.

Objective N 4.2:
Minimize noise levels created by the Union Pacific, Southern Pacific, and any future rail systems located in close proximity to residential and other noise-sensitive land uses.

Policies

P.1 The City will work with rail operators to install and maintain noise mitigation features where operations adversely impact existing or planned residential and other noise-sensitive land uses.

P.2 The City will work with rail operators to ensure noise impacts are considered and mitigated through proper design, siting, and construction.

P.3 Future rail projects under the City's control will be required to analyze noise impacts and to identify and incorporate noise reducing features into the project design.

P.4 The City should encourage the construction of noise barriers for residential uses near active rail corridors.

P.5 The City should encourage rail operators to schedule rail train activity during daytime hours.

P.6 The City will require that noise attenuation measures be incorporated into all new development, renovations, and remodels of residential, health care facilities, schools, libraries, senior facilities, and churches in close proximity to existing or known planned rail lines. Sound attenuation measures will reduce interior noise to a maximum of 45 dBA CNEL.

Goal N 5:
Maximize efficiencies in noise abatement through clear and effective policies and ordinances

Objective N 5.1:
Continuously review and modify City Plans, Codes, and Ordinances, as appropriate, to ensure noise generating uses are adequately addressed.

Policies

P.1 The City will modify and update the City's Noise Ordinance, land use plans, guidelines, and other regulations regularly and as needed in response to new Federal, State, and County standards and guidelines, as needed.

P.2 The City should review and update the City's policies and regulations affecting noise, as needed.

Goal N 6:
Enforce all City noise standards

Objective N 6.1:
Ensure residents, businesses, and visitors know and comply with the City's noise standards.

Policies

P.1 The City should make information available to the public regarding the City's noise regulations, the health effects of high noise levels, means of mitigating such levels, as well as abatement and enforcement procedures.

P.2 The City will enforce all City, State, and Federal noise standards.

P.3 The City should enforce established speed limits to control noise levels.

Implementation Actions

Action N 1:
Review City Plan, Codes, and Ordinances Relevant to Noise Impacts

Following adoption of the General Plan, the Community Development Department and other relevant departments will review the City's existing codes and ordinances (including the Municipal Code, Zoning Ordinance, and Building Code) and make recommendations on how they should be modified to comprehensively address various noise sources, land use types and compatibility issues. Topics to be addressed include, but are not limited to:

- Ambient noise levels
- Mixed-use developments
- Light Industrial/Flex land uses
- Transportation (such as freeways and railroads) and stationary noise standards
- Interior and exterior noise standards
- Change in ambient noise levels
- Cumulative noise impacts
- Construction noise
- Construction hours of operation
- Vibration noise standards
- Consistency with the City's adopted General Plan goals, objectives, and policies

The City should periodically review and update the City's noise standards to address any significant changes in noise contours, new technologies, effectiveness of mitigation, or other pertinent areas.

Action N 2: Monitor and Inventory Existing Noise Complaints.

The City will create and maintain an inventory of existing noise levels and noise complaints in the South Gate. This information can be obtained from site-specific information contained in project environmental documentation (such Environmental Impacts Reports and [Mitigated] Negative Declarations), public meetings, and noise complaints. The City should regularly update the list of noise complaints received by the City. The information should be used to monitor changes in noise in the City and to monitor the effectiveness of noise mitigation. The inventory should be updated regularly (i.e., once each two years) to reflect current conditions.

The City should consider establishing a Noise Reduction Plan to address noise complaints received. The Plan should identify areas with heavy noise complaints and recommend potential noise attenuation measures to ensure compliance with the City's General Plan and Noise Ordinance. The City should consider also establishing a Noise Violation Fee ordinance to charge noise violators fees for multiple violations after an initial warning is provided for each alleged incident.

Action N 3: Inform the Public of Noise Standards and Reduction Measures.

The City should develop and maintain a Noise Mitigation Guide of effective noise attuning equipment, techniques, materials, design features, and/or preferred siting as a guiding tool for the City Community Development staff, residents, business owners, developers, builders, and construction equipment operators. Technical resources should discuss a variety of sound attenuation measures (e.g., temporary noise attenuation fences, preferential location of equipment, use of current technology and types of noise suppression equipment), the amount of noise reduction each produces, and how to combine them to meet City requirements.

The City should work to ensure that residents and businesses are aware of the City's Noise Ordinance and enforcement procedures. Information could be transmitted through the City's website, City Hall, City Department(s), public library, and/or utility bills.

Action N 4: Examine the Feasibility of Implementing Sound Attenuation Measures along the City's Arterial Streets.

The City should examine the feasibility of implementing sound attenuation measures along the City's arterial streets. Areas in need of sound attenuation should be prioritized based on the degree of sensitivity, how far in excess of maximum allowable standards they are, the length of time the noise impact has existed, and the number of residential uses or noise-sensitive land uses impacted.