

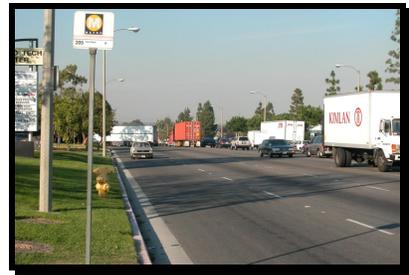
CHAPTER 7

NOISE ELEMENT



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GUIDING PRINCIPLE

The City of Carson is committed to preventing, regulating, and controlling unnecessary and excessive noise emanating from uses and activities within the City. To this end, the City will continue promoting compatible land uses, considering sensitive receptors, and implementing enforcement procedures and mitigation measures.

1.0 INTRODUCTION

The Noise Element of a general plan is a comprehensive program to limit the exposure of the community to excessive noise levels. The Element lists and maps current and projected noise levels for existing and planned uses within the City of Carson. The projected noise levels are used to guide future land decisions to limit noise and its effects on the community, including noise-sensitive land uses. Federal, State and City regulations relating to noise are outlined in this section. This Noise Element establishes goals, policies and programs to ensure that Carson residents will be protected from excessive noise. In addition, noise contours in the form of community noise equivalent level (CNEL) or day-night average level (Ldn) are provided for all referenced sources.

The adopted Noise Element serves as a guideline for compliance with the State's noise element, which serves as a guideline for compliance with the state's noise insulation standards.



2.0 STATE LAW REQUIREMENTS

The State of California 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 railroads operations and ground rapid transit systems; (4) commercial, general aviation, heliport, and military 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.”

3.0 SUMMARY OF FINDINGS

3.1 NOISE SCALES AND DEFINITIONS

Decibels (dB) 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 10 dB higher than another is judged to be twice as loud; and 20 dB higher four times as loud; and so forth. Everyday sounds normally range from 30 dBA (very quiet) to 100 dBA (very loud). The A-weighted sound pressure level is the sound pressure level, in decibels, as measured on a sound level meter using the A-weighted filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound, placing greater emphasis on those frequencies within the sensitivity range of the human ear. Examples, of various sound levels in different environments are shown in Table N-1, Sound Levels and Human Response.

Many 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.

Numerous methods have been developed to measure sound over a period of time. These methods include: 1) the community noise equivalent level (CNEL); 2) the equivalent sound level (Leq); and 3) the day/night average sound level (Ldn).



**Table N-1
Sound Levels and Human Response**

Noise Source	dB(A) Noise Level	Response
	150	
Carrier Jet Operation	140	Harmfully Loud
	130	Pain Threshold
Jet Takeoff (200 feet; thence.) Discotheque	120	
Unmuffled Motorcycle Auto Horn (3 feet; thence.) Rock'n Roll Band Riveting Machine	110	Maximum Vocal Effort Physical Discomfort
Loud Power Mower Jet Takeoff (2000 feet; thence.) Garbage Truck	100	Very Annoying Hearing Damage (Steady 8-Hour Exposure)
Heavy Truck (50 feet; thence.) Pneumatic Drill (50 feet; thence.)	90	
Alarm Clock Freight Train (50 feet; thence.) Vacuum Cleaner (10 feet; thence.)	80	Annoying
Freeway Traffic (50 feet; thence.)	70	Telephone Use Difficult
Dishwashers Air Conditioning Unit (20 feet; thence.)	60	Intrusive
Light Auto Traffic (100 feet; thence.)	50	Quiet
Living Room Bedroom	40	
Library Soft Whisper (15 feet; thence.)	30	Very Quiet
Broadcasting Studio	20	
	10	Just Audible
	0	Threshold of Hearing

Source: Melville C. Branch and R. Dale Beland, *Outdoor Noise in the Metropolitan Environment*, 1970, Page 2.



3.1.1 COMMUNITY NOISE EQUIVALENT LEVEL (CNEL)

The predominant community noise rating scale used in California for land use compatibility assessment is the community noise equivalent level (CNEL). The CNEL reading represents the average of 24 hourly readings of equivalent levels, known as Leq's, based on an A-weighted decibel with upward adjustments added to account for increased noise sensitivity in the evening and night periods. These adjustments are +5 dBA for the evening, 7:00 p.m. to 10:00 p.m., and +10 dBA for the night, 10:00 p.m. to 7:00 a.m. CNEL may be indicated by "dBA CNEL" or just "CNEL".

3.1.2 EQUIVALENT SOUND LEVEL (LEQ)

The Leq is the sound level containing the same total energy over a given sample time period. The Leq can be thought of as the steady sound level which, in a stated period of time, would contain the same acoustic energy as the time-varying sound level during the same period. Leq is typically computed over 1, 8 and 24-hour sample periods.

3.1.3 DAY NIGHT AVERAGE (LDN)

Another commonly used method is the day/night average level or 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 p.m. to 7:00 a.m.), by 10 dBA to account for the increased sensitivity of people to noises that occur at night. The maximum noise level recorded during a noise event is typically expressed as Lmax. 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 ten percent of the time, etc.

3.2 NOISE STANDARDS

3.2.1 FEDERAL NOISE STANDARDS

The United States Noise Control Act of 1972 (NCA) recognized the role of the Federal government in dealing with major commercial noise sources in order to provide for uniform treatment of such sources. As Congress has the authority to regulate interstate and foreign commerce, regulation of noise generated by such commerce also falls under congressional authority. The Federal government specifically preempts local control of noise emissions from aircraft, railroad and interstate highways.

The EPA has identified acceptable noise levels for various land uses, in order to protect public welfare, allowing for an adequate margin of safety, in addition to establishing noise emission standards for interstate commerce activities.



3.2.2 STATE NOISE STANDARDS

The Office of Noise Control in the State Department of Health Services has developed criteria and guidelines for local governments to use when setting standards for human exposure to noise and preparing noise elements for General Plans. These guidelines include noise exposure levels for both exterior and interior 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. The State indicates that locating units in areas where exterior ambient noise levels exceed 65 dBA is undesirable. Whenever such units are to be located in such areas, the developer must incorporate into building design construction features which reduce interior noise levels to 45 dBA CNEL. Tables N-2 and N-3, below, summarize standards adopted by various State and Federal agencies. Table N-2, *Noise and Land Use Compatibility Matrix*, presents criteria used to assess the compatibility of proposed land uses with the noise environment. Table N-3, *Interior and Exterior Noise Standards*, indicates standards and criteria that specify acceptable limits of noise for various land uses throughout Carson. These standards and criteria will be incorporated into the land use planning process to reduce future noise and land use incompatibilities. These tables are the primary tools that allow the City to ensure integrated planning for compatibility between land uses and outdoor noise.

3.2.3 CITY NOISE STANDARDS

Section 4100 (Unnecessary Noises) of Chapter I, Article IV in the Carson Municipal Code, controls any disturbing, excessive or offensive noise which causes discomfort or annoyance to any reasonable person of normal sensitivity residing in the community.

Noise Ordinance. In 1995, Carson adopted the “Noise Control Ordinance of the County of Los Angeles,” as amended, as the City’s Noise Control Ordinance. The adopted Noise Ordinance sets standards for noise levels citywide and provides the means to enforce the reduction of obnoxious or offensive noises. The noise sources enumerated in the Noise Ordinance include radios, phonographs, loudspeakers and amplifiers, electric motors or engines, animals, motor vehicles and construction equipment. The Noise Ordinance sets interior and exterior noise levels for all properties within designated noise zones, unless exempted, as shown in Table N-4, *Noise Ordinance Standards*. Enforcing the Noise Ordinance includes requiring proposed development projects to show compliance with the ordinance, and requiring construction activity to comply with established schedule limits. The ordinance will be reviewed periodically for adequacy and amended as needed to address community needs and development patterns.



**Table N-2
Noise and Land Use Compatibility Matrix**

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

Source: Modified from U.S. Department of Housing and Urban Development Guidelines and State of California Standards.

NOTES: **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.

NA: Not Applicable



**Table N-3
Interior and Exterior Noise Standards**

Land Use Categories		CNEL	
Categories	Uses	Interior ¹	Exterior ²
Residential	Single family Duplex, Multiple Family	45 - 55	50 – 60
	Mobile Home	45	65
Commercial Industrial Institutional	Hotel, Motel, Transient Lodging	45	--
	Commercial Retail, Bank, Restaurant	55	--
	Office Building, Research and Development, Professional Offices, City Office Building	50	--
	Amphitheater, Concert Hall, Auditorium, Meeting Hall	45	--
	Gymnasium (Multipurpose)	50	--
	Sports Club	55	--
	Manufacturing, Warehousing, Wholesale, Utilities	65	--
	Movie Theaters	45	--
Institutional	Hospital, Schools' Classrooms	45	65
	Church, Library	45	--
Open Space	Parks	--	65

NOTES:

1. Indoor environmental including: Bedrooms, living areas, bathrooms, toilets, closets, corridors.
2. Outdoor environment limited to:
 - Private yard of single family
 - Multi-family private patio or balcony which is served by a means of exit from inside the dwelling
 - Balconies 6 feet deep or less are exempt
 - Mobile home park
 - Park's picnic area
 - School's playground
3. Noise level requirement with closed windows. Mechanical ventilating system or other means of natural ventilation shall be provided as of Chapter 12, Section 1205 of UBC.
4. Exterior noise levels should be such that interior noise levels will not exceed 45 CNEL.



**Table N-4
Noise Ordinance Standards**

Noise Zone	Designated Noise Zone Land Use (Receptor Property)	Time Interval (dB)	Exterior Noise Level	Interior Noise Level
I	Noise Sensitive-Area	Anytime	45	---
II	Residential Properties	10:00 pm to 7:00 am (nighttime)	45	---
		7:00 am to 10:00 pm (daytime)	50	---
III	Commercial Properties	10:00 pm to 7:00 am (nighttime)	55	---
		7:00 am to 10:00 pm (daytime)	60	---
IV	Industrial Properties	Anytime	70	---
All Zones	Multi-family	10:00 pm – 7:00 am	---	40
	Residential	7:00 am – 10:00 pm	---	45

Source: Section 12.08.490 and 12.08.400 in County of Los Angeles County Code. Nov. 2001.

3.3 EXISTING NOISE CONDITIONS

The sources of noise in Carson fall into four basic categories. These are:

- Roadways (including major and minor arterials and freeways);
- Aircraft overflights (from the Compton Airport and Long Beach Airport);
- Stationary sources (including construction activity and industrial and commercial centers); and
- Trains (including Union Pacific Railroad (UPRR), Burlington Northern Santa Fe (BNSF) Railroad and the Metro Blue Line).

3.3.1 ROADWAY NOISE

As is typical of most urbanized areas, the most pervasive noise source in the City of Carson are motor vehicles, including automobiles, trucks, buses and motorcycles. The noise produced by these sources occurs primarily around roadways and may be of sufficient magnitude to expose various land uses to excessive noise levels. As a general observation, the speed of the vehicle is directly correlated to the noise level; an increase in speed causes an increase in noise levels. The major roadways in the City include: Figueroa Street, Main Street, Avalon Boulevard, Wilmington Avenue, Santa Fe Avenue, Lomita Boulevard, Sepulvada Boulevard, 223rd Street, Carson Street, Del Amo Boulevard, University Drive, Victoria Street, Gardena Boulevard, Alondra Boulevard and Alameda Street. Noise levels along Alameda Street, also known as the “Alameda Corridor,” are often higher than projected due to large volumes of truck traffic and rail line operations. Additionally, Interstate 405 (I-405) and State Route 91 (SR-91) generate substantial noise levels within the community.



Noise levels along roadways are determined by a number of traffic characteristics. Most important is the average daily traffic (ADT). Additional factors include the percentage of trucks, vehicle speed, the time distribution of this traffic, and gradient of the roadway. In general, most of the land uses along the major roadways are commercial, open space, and light industrial. However, single- and multi-family areas, as well as public facilities, are situated along many of the major roadways indicated above.

3.3.2 AIRCRAFT NOISE

The primary source of aircraft noise within the City of Carson is the Compton Airport located immediately north of the City. At its closest distance, the runway is located approximately 3,000 feet from the City's northern boundary. Compton Airport does not generate a significant level of noise. According to the City of Compton General Plan Existing Airport Noise Contours, the 60 and 65 CNEL contours for the Compton Airport do not extend into the City of Carson. However, there is some intrusion of noise from the airport in Long Beach.

Flyover noise is generated from air traffic into Los Angeles International Airport, Long Beach Airport, and, to a lesser extent, Torrance General Aviation Airport. Should the volume of air traffic at the Long Beach Airport increase, it could become a significant problem for residential areas on the east side of the City.

3.3.3 STATIONARY NOISE

INDUSTRIAL NOISE

Industrial land uses have the potential to exert a relatively high level of noise impact within their immediate operating environments. The scope and degree of noise impact generated by industrial uses, and hence the characterization of any given industrial use as a noise source, is dependent upon various critical factors, including type of industrial activity, hours of operation, and the location relative to other land uses.

Industrial noise sources are located in several isolated pockets throughout the City. Delivery trucks, other truck movements, air compressors, generators, outdoor loudspeakers and gas venting are common noise sources associated with industrial land uses. Industrial activities produce noises above the general level of their surroundings, though few exceed the 65 dBA norm for residential areas.

COMMERCIAL AND RESIDENTIAL RELATED NOISE

A variety of stationary noise sources associated with commercial and residential activities exist throughout the City of Carson. 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.

3.3.4 RAIL LINE NOISE

The City of Carson is served by three railroads: Union Pacific Railroad (UPRR), Burlington Northern Santa Fe (BNSF) Railroad and the Metro Blue line. The UPRR runs two lines (San Pedro and Wilmington) along the extreme western portion of the City, as it converges on the Los Angeles City container transfer facility, which borders the west side of Long Beach. Several UPRR spur lines extend westward from the San Pedro and Wilmington lines into the central portion of Carson providing rail service to many of the major petroleum production companies. A UPRR line also runs within the right-of-way of the Dominguez Channel. A BNSF rail line traverses the southern portion of the City from the Alameda Street Corridor to the Harbor Freeway (I-110). The Metro Blue line crosses the extreme eastern section of the City, running north to downtown Los Angeles and south through Long Beach; no Blue Line stations are in the City.

Three UPRR lines run within the City of Carson: San Pedro line, Wilmington line, and Dominguez Channel line. The San Pedro line carries five trains each day. The Wilmington line, which runs parallel to the Alameda Corridor line and is the preferred route out of the harbor, operates 15 trains each day. The train(s) run approximately every three hours on the Wilmington line. In approximately three years, the San Pedro line will be the only UPRR line in operation. However, the Wilmington line will remain in place and serve as an auxiliary line. The Dominguez Channel line carries five (5) trains per day in each direction. However, when the trains are used for shipping coal, the line is utilized 10 to 15 times per day each direction.¹

According to the *Alameda Corridor Environmental Impact Report*, dated January 1993, residents located immediately adjacent to the Alameda and Wilmington lines between Dominguez Street and 223rd Street are experiencing noise levels of 68 dBA CNEL, which exceeds the City exterior noise standard of 65 dBA CNEL by 3 dBA. However, this noise level includes vehicular-generated noise associated with Alameda Street.

The BNSF line is located in the southern portion of Carson and runs from Alameda Street west through light industrial and residential areas to the Harbor Freeway.² There are approximately 38 trains that utilize the BNSF rail line within the City of Carson each day. No acoustical data or additional operational information was provided by BNSF, regarding operations within the City of Carson.

¹ Mr. Mike Irvine, General Superintendent of Transportation, Union Pacific Railroad, April 7, 1999.

² Train operation data associated with the BNSF Railroad line were provided by Mr. Don Cleveland, staff with BNSF, April 14, 1999.



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

3.4 NOISE SENSITIVE RECEPTORS

The City of Carson has identified residences, public and private school/preschool classrooms, churches, hospitals and elderly care facilities as noise sensitive receptors. The maximum interior exposure for these land uses is 45 dBA CNEL (maximum exterior exposure is 65 dBA CNEL).

With the exception of residential land uses, Table N-5, *Noise Sensitive Receptors*, provides a listing of noise sensitive land uses along with their street address. Exhibit N-1, *Location of Sensitive Receptors*, illustrates the location of these land uses.

The potential exists for noise sensitive receptors located adjacent to roadways to experience excessive noise levels. Depending on the setback location of these adjacent noise sensitive receptors and nature of existing noise attenuation features (if any), the 65 CNEL contour may fall within the outdoor living areas of these land uses (i.e., playground or backyard).

Field measurements to identify ambient noise levels within the City limits were conducted on March 9, March 10, and March 11, 1999.³ Field monitoring consisted of 30 noise measurements recorded at various locations throughout the City. Each measurement was recorded for a period of between 5 and 8 minutes on the sidewalk adjacent to the roadways. The noise measurements take into account mobile noise sources (i.e., vehicular and aircraft) and stationary noise sources (i.e., playgrounds, industry, manufacturing), and are shown in Table N-6, *Existing Noise Levels*. In addition refer to Exhibit N-2, *Location of Noise Measurements*, for an approximate location of the field noise recordings.

Table N-6 indicates the general location of each noise measurement taken within the City, the recorded dBA, and the location and type of adjacent sensitive receptors (i.e., residential units, schools, health care facilities). The measured noise levels ranged from 65.9 dBA to 83.2 throughout the City. As previously indicated above, the noise measurements were taken on the sidewalk immediately adjacent to the roadway within the right-of-way. In addition, heavy truck traffic was observed on many of the roadways during the field measurements. It should be noted that the noise measurements do not take into account noise attenuation measures (i.e., soundwalls, berms) or setbacks. Therefore, it is anticipated that existing residential areas along the roadways identified in Table N-6, are experiencing noise levels below the ambient noise measurements due to existing soundwalls or physical setbacks from the existing edge of right-of-way.⁴

³ Measurements taken by RBF Consulting.

⁴ Sound/privacy walls typically provide sound attenuation on the order of 5 to 10 dBA.



**Table N-5
Noise Sensitive Receptors**

Facility	Street Address
HEALTH CARE	
Carson Senior Social Services	3 Civic Plaza
El Nido Family Center	460 East Carson Plaza Drive
Family Services	340 West 224 th Street
Department of Rehabilitation	451 East Carson Plaza Drive
CHILD CARE	
Schmitt Family Day Care	21826 Moneta Avenue
Patricia Shanklin	22821 Catskill Avenue
Voneta Day Care	1225 Bankers Drive
Sotelo Family Day Care	135 East 229 th Place
Kurious Kids	530 Moorhaven Drive
Taylor's Family Day Care	551 East 222 Street
Artie's Licensed Day Care	19303 South Scobey Avenue
Wilson & Wilson Child Care	1672 East Cyrene Drive
McCoy Family Child Care	409 E. Centerview Drive
McNeil Family Day Care	17202 South Billings Drive
Precious Gems Child Care	146 East 213 th Street
Olivia's Family Day Care	2556 East Jackson Street
Parra Family Day Care	177 West 234 th Street
Dani's Garden Day Care	19409 Reinhart Street
Peace and Joy Day Care Center	1691-1693 Del Amo Boulevard
Ruiz Family Day Care	19509 South Annalee Avenue
Little Angels' Retreat	18419 South Avalon Boulevard
Jenkins Day Care	16117 Haskins Lane
Lakeshore Kids and Co.	2695 East Dominguez Street
Manna Manor, Inc.	24825 Neptune Avenue
Ravenna Home Manna Manor, Inc.	24713 Ravenna Avenue
Carson Montessori Academy	812 East Carson Street
McClendon's Family Day Care	1242 East Cloverbrook Street
Cobb Family Day Care	19021 Kemp Avenue
Community Development Center, Inc.	23033 South Avalon Boulevard
Little Lambs Training Center	19129 Radlet Avenue
Shirley Currie	1860 East Kamm Street
Davis Family Day Care	357 Centerview Drive
Golden Wings Academy	20715 South Avalon Boulevard #100
Gonzalez Family Day Care	519 East 237 th Street
Connie M. & Jesse Jackson	17906 Lysander Drive
Jenkins Day Care	16220 Malloy Avenue
Love Christian Child Care	903 East Gladwick
Audrey Christine Andersen	628 Elsmere Drive
Andrade's Family Day Care	20927 South Margaret Street
Dotty's Day Care	1413 East 220 th Street



**Table N-5 [continued]
Noise Sensitive Receptors**

Facility	Street Address
CHILD CARE – Continued	
Beezer Family Day Care	19227 Cliveden Avenue
Tweet’s Day Care Center	921 East Dimondale Drive
Jacqueline Brown Family Day Care Center	1754 Fernrock Street
Elisia & Rofino Cardoso	337 East Double Street
Kids World	21601 South Moneta Avenue
PRE-KINDERGARTEN	
Ambler Avenue School	319 East Sherman Drive
Annalee Avenue School	19419 Annalee Avenue
Bonita Street School	21929 Bonita Street
Broadacres Avenue School	19421 South Broadacres Avenue
Catskill Avenue School	23536 Catskill Avenue
Del Amo School	21228 Water Street
Dolores Street School	22526 Dolores Street
Leapwood Avenue School	19302 Leapwood Avenue
Caroldale Avenue School	22424 Caroldale Avenue
Carson Street School	161 East Carson Street
Towne Avenue School	18924 Towne Avenue
SCHOOLS	
Federation Head Start	22504 South Avalon Boulevard
Ralph Bunche School	16223 Haskins Lane
CSU, Dominguez Hills	1000 East Victoria Street
Towne Avenue Elementary Schools	18924 Towne Avenue
Curtis Junior High School	1254 East Helmick Street
Del Amo Elementary School	21228 Walter Street
Carnegie Junior High School	21820 Bonita Street
Eagle Tree High School	22628 South Main Street
Carson High School/Carson Community Adult School	22328 South Main Street
Caroldale Learning Community	22424 Caroldale Avenue
232 nd Place School	23240 Archibald Avenue
Domiguez Elementary School	21250 Santa Fe Avenue
Stephen M. White Middle School	22102 South Figueroa Street
Peninsula Christian School	22507 South Figueroa Street
St. Philomena Catholic School	21832 South Main Street
CHURCHES	
Baptist Temple of Prayer	224 East Carson Street
Calvary Chapel of South Bay	415 West Torrance Boulevard
Carson Baptist Church	520 East 228 th Street
Carson Christian Center/Carson-Wilmington Minister’s Fellowship	19303 Annalee Avenue
Carson Christian Church	356 East 220 Street

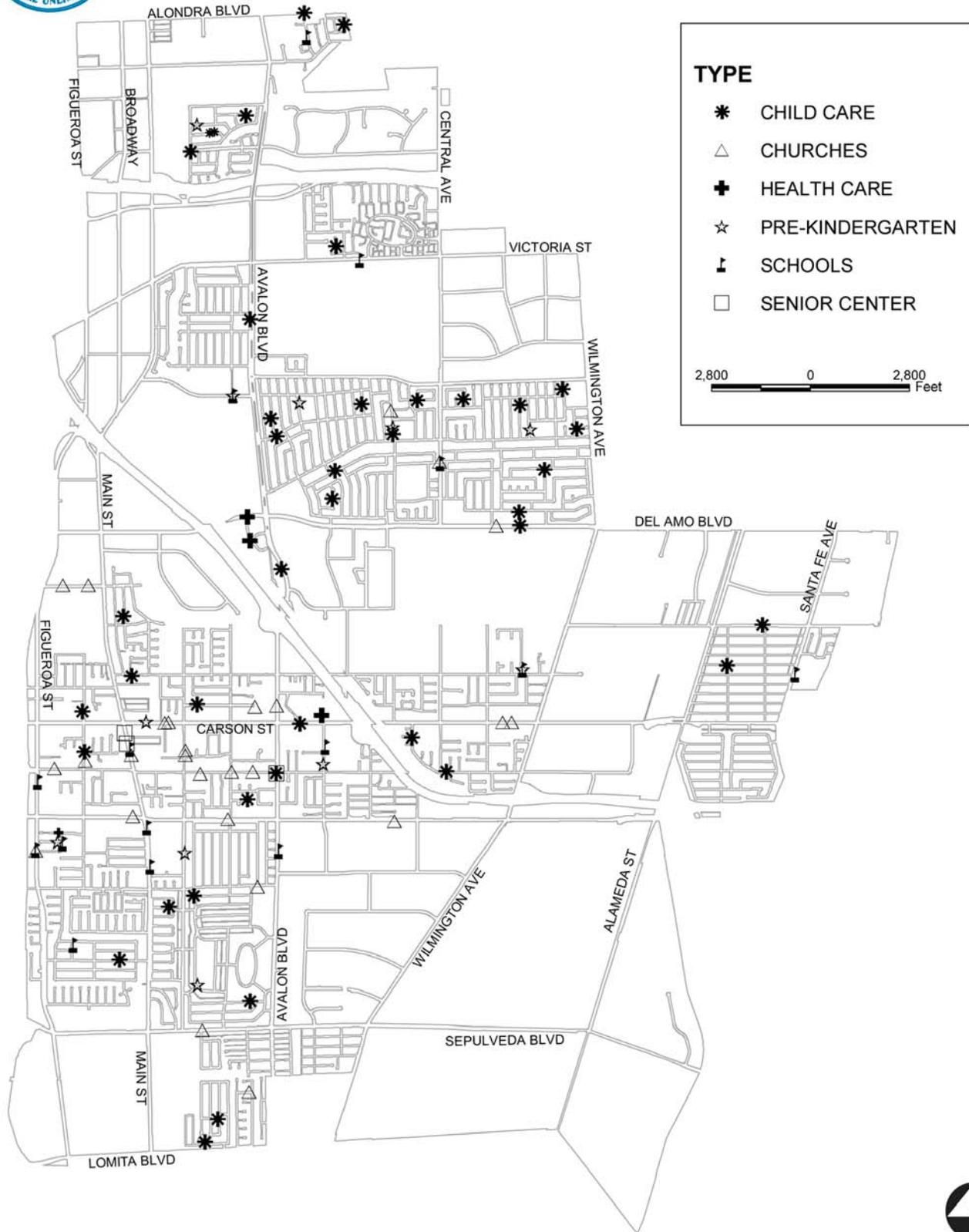


**Table N-5 [continued]
Noise Sensitive Receptors**

Facility	Street Address
CHURCHES – Continued	
Carson Church of Religious Science	220 East Carson Street
Carson Hope Chapel Foursquare	129 East 223 rd Street
Carson Pentecostal Church	555 East 220 th Street
Central Baptist Church	1641 East Carson Street
First Christian Faith United Church	1609 East Del Amo Boulevard
First Lutheran Church of Carson	19707 South Central Avenue
Grace Orthodox Presbyterian Church	22511 South Figueroa Street
Harbor Community Chapel	21521 South Avalon Boulevard
Immanuel Missionary Baptist Church	503 East 220 th Street
Judson Baptist Church	451 East 223 rd Street
Kaiser Hospital Chapel	24733 Marbella Avenue
Keystone Assembly of God	21916 Moneta Avenue
Mission Eben-Ezer Family Church	225 West Torrance Boulevard
Mountain Movers Church	519 East 245 th Street
New Life Christian Center	1210 East 223 rd Street
Pentecostal Church of God	21818 Dolores Street
Spanish Seventh Day Adventist Church	21828 Dolores Street
St. Philomena Catholic Church	21900 South Main Street
United Baptist Church	435 West 220 th Street
United Samoan Church	600 East Double Street
United Samoan Congregational Christian Church	1717 East Carson Street
SENIOR CENTERS	
Carson Gardens Retirement Apartments	21811 South Main Street
Camino Village Senior Complex	21735 South Main Street
Avalon Courtyard Retirement Center	22121 South Avalon Boulevard
Carson Retirement Center	345 East Carson Street



CARSON GENERAL PLAN



Source: GIS Data, City of Carson, October 2002
OCTOBER 22, 2002

Location of Sensitive Receptors

EXHIBIT N-1



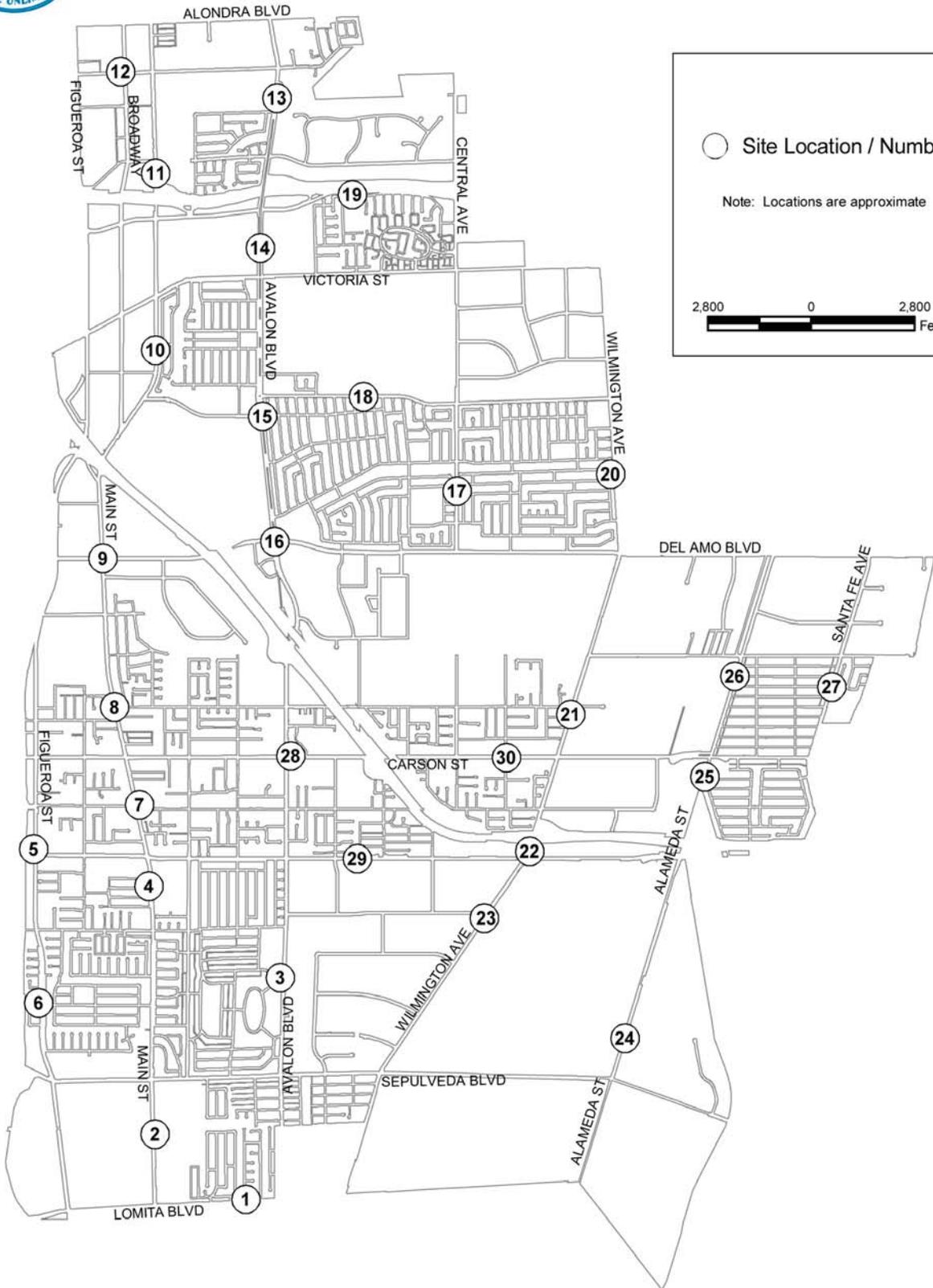
**Table N-6
Existing Noise Levels
(Based on Field Measurements)**

Site Number	General Location of Noise Measurement	Leq dBA	Orientation/ Type of Sensitive Receptor
1	Lomita Boulevard between Avalon Boulevard and Main Street (at intersection of Island and Lomita Boulevard)	68.2	Single-family units located immediately adjacent to the north.
2	Main Street between Sepulveda Boulevard and Lomita Boulevard (south of railroad trestle)	69.0	None
3	Avalon Boulevard between 223 rd Street and Sepulveda Boulevard (at Avalon Boulevard/Bayport intersection).	69.4	Multiple-family residential to the east, single-family residential and a day care to the west.
4	At Carson High School, south of the intersection of Main Street and 223 rd Street.	71.2	Carson High School immediately to the east and single-family residential to the west.
5	Figueroa Street between Carson Street and 223 rd Street adjacent to school	72.6	Multiple-family residential located to the west and a school located immediately to the east.
6	Figueroa Street between 228 th Street and Sepulveda Boulevard (at intersection of 234 th Street and Figueroa Street)	68.3	Single-family residential located to the east and west respectively.
7	Main Street between Carson Street and 223 rd Street (at intersection 22 nd Street and Main Street)	67.2	Multiple-family residential to the west; church and school to the east.
8	Intersection of Main Street and 213 th Street	67.4	Single-family residential areas to the east and west.
9	Intersection of Main Street and Del Amo Boulevard	68.2	None
10	Main Street south of Victoria Street	69.9	Single-family residential to the east.
11	Main Street Between Gardena Boulevard and SR-91 (at intersection of Walnut Street and Main Street)	74.0	None
12	Broadway between Gardena Boulevard and Alondra Boulevard	69.0	None
13	Avalon Boulevard adjacent to Hemingway Memorial Park	79.4	Church to the east; park to the west.
14	Avalon Boulevard between SR-91 and Victoria Street	74.4	Colony Cove and Carson Harbor Village Mobile Home Parks
15	Intersection of Avalon Boulevard and 192 nd Street	65.9	Single-family residential to the east; school to the west.
16	Intersection of Avalon Boulevard and Del Amo Boulevard	75.1	None
17	Central Avenue between University Drive and Del Amo Boulevard (south of Hemlick Street)	66.9	Church to the west; single-family residential to the east.
18	University Drive between Avalon Boulevard and Central Avenue	70.0	Single-family residential to the south.
19	Artesia Boulevard between Avalon Boulevard and Central Avenue (south of SR-91)	73.4	Park and single-family residential to the south.
20	Wilmington Avenue between University Drive and Del Amo Boulevard	75.5	Single-family residential to west.
21	Wilmington Avenue between 213 th Street and Carson Street	79.5	Single-family residential to the west.



**Table N-6 [continued]
Existing Noise Levels
(Based on Field Measurements)**

Site Number	General Location of Noise Measurement	Leq dBA	Orientation/ Type of Sensitive Receptor
22	Immediately south of I-405	83.2	None
23	Wilmington Avenue between 223 rd Street and Sepulveda Boulevard	75.2	None
24	Alameda Street between Sepulveda Boulevard and 223 rd Street	77.7	None
25	Alameda Street between I-405 and Carson Street (at intersection 218 th Street and Alameda Street)	76.3	Single-family residential to the east.
26	Alameda Street between Carson Street and Dominguez Street (at intersection of Alameda Street and Harrison Street)	72.7	None
27	Santa Fe Avenue between Dominguez Street and Carson Street	73.3	Single-family residential to west; school to east.
28	Carson Street between Avalon Boulevard and I-405 (at Carson City Hall)	71.7	Mobile home park and medical center to the south.
29	223 rd Street between Avalon Boulevard and Wilmington Avenue	74.4	Single-family residential to the north.
30	Carson Street between I-405 and Wilmington Avenue	70.3	Three (3) churches along north side of Carson Street.
NOTE: Noise measurements were recorded on the sidewalk within the right-of-way. Actual sound levels at receptors would have an anticipated 5-10 dBA reduction.			
Source: Noise monitoring survey conducted by RBF Consulting on March 9, March 10, and March 11, 1999.			



Source: GIS Data, City of Carson, October 2002
OCTOBER 22, 2002

Location of Noise Measurements

EXHIBIT N-2



3.5 COMMUNITY NOISE CONTOURS

The noise environment for Carson can be described using noise contours developed for the major noise sources within the City. These contours represent lines of equal noise exposure, just as the contour lines on a topographic map are lines of equal elevation. The contours shown are the 60 and 65 dB(A) CNEL (Community Noise Equivalency Level) contours. As previously stated, CNEL is a 24-hour time-weighted average noise level where noise which occurs during sensitive time periods is weighted more heavily.

Noise contours for Carson were developed based on existing and future traffic levels, and other sources of noise in the community. Carson noise contours are presented in Exhibits N-3 and N-4. Exhibit N-3 shows the noise environment as estimated in 2001 for existing land uses and traffic on major streets in the City. Exhibit N-4 shows the future noise environment as it would exist in 2020 with implementation of the General Plan.

The exhibits display the average daily traffic (ADT) volume noise levels at 100 feet from the roadway centerline and the distance from the roadway centerline to the 70, 65 and 60 dBA CNEL contours. Tables in the Circulation and Infrastructure Element indicate traffic volumes on designated street segments. Surface traffic noise has the greatest impact on the noise environment of Carson's residential and sensitive-receptor properties. Contours between 55 and 60 dBA CNEL are common along City collector streets, while 65 dBA CNEL or great contours are common along major streets.

The inclusion of an area within a 60 or 65 CNEL contour on Exhibit N-3, *Existing Noise Contours (2001)*, or Exhibit N-4, *Future Noise Contours (2020)*, indicates that noise levels are high enough to be of potential concern, but does not imply that excessive noise levels are present uniformly on all sites within the area. Buildings, walls, berms, and changes in topography affect noise levels. Some locations may be screened from noise impact by the presence of one or more of these features.

Exhibit N-4 shows projected 60 dB contours ranging between approximately 32 feet and 439 feet from the roadway centerlines. The 65 dB contour ranges between 15 feet and 204 feet along the roadways modeled. This impacts existing residential neighborhoods and school facilities located throughout the City, as identified below:

- Along Main Street north of Sepulveda Boulevard to Del Amo Boulevard;
- Along Carson Street from I-405 to Figueroa Street;
- Along Carson Street from Alameda Street to Santa Fe Avenue;
- Along Sepulveda Boulevard from Main Street to Avalon Boulevard;
- Along Figueroa Street from Carson Street to Torrance Boulevard;
- Along Central Avenue from University Drive to Del Amo Boulevard; and
- Along Wilmington Avenue from University Drive to Del Amo Boulevard.



All other noise impacts are located within commercial or industrial areas in the City, which are not identified as sensitive receptors. Future noise-sensitive uses constructed along these roadways will therefore require noise mitigation.

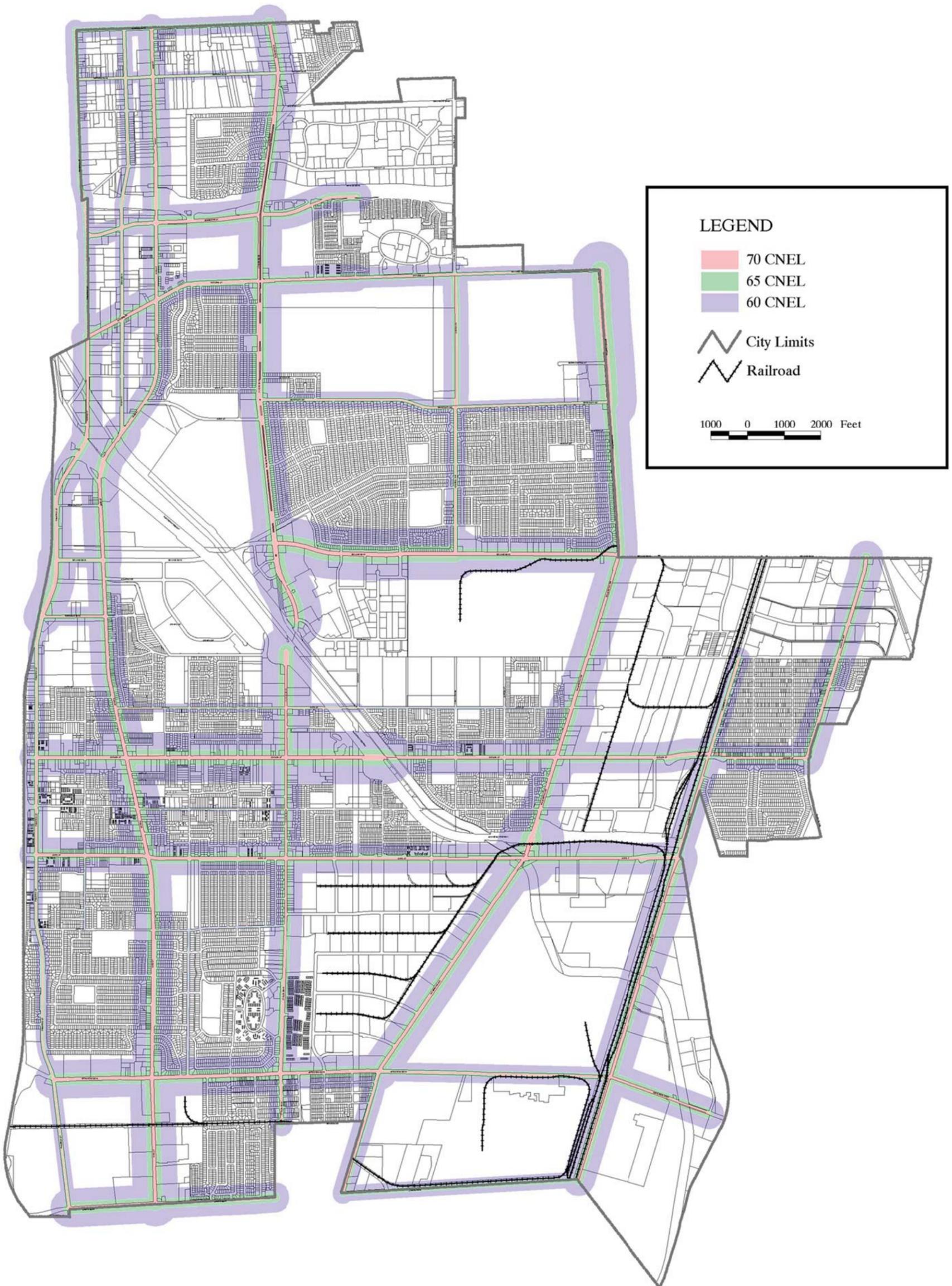
60 CNEL. The 60 CNEL contour defines the Noise Study Zone. The noise environment for any proposed noise-sensitive land use (for example, single- or multi-family residences, hospitals, schools, or churches) within this zone should be evaluated on a project specific basis. The project may require mitigation to meet City and/or State (Title 24) standards. A site- and project-specific study will be necessary to determine what kinds of mitigation will make the interior building environment acceptable for the given type of land use. Some sites may already be sufficiently protected by existing walls or berms that no further mitigation measures are required.

65 CNEL. The 65 CNEL contour defines the Noise Mitigation Zone. Within this contour, new or expanded noise-sensitive developments should be permitted only if appropriate mitigation measures, such as barriers or additional sound insulation, are included and City and/or State noise standards are achieved. In some instances it may be possible to show that existing walls, berms, or screening may exist such that required mitigation is already in place.

3.6 CARSON NOISE CONTROL PROGRAM

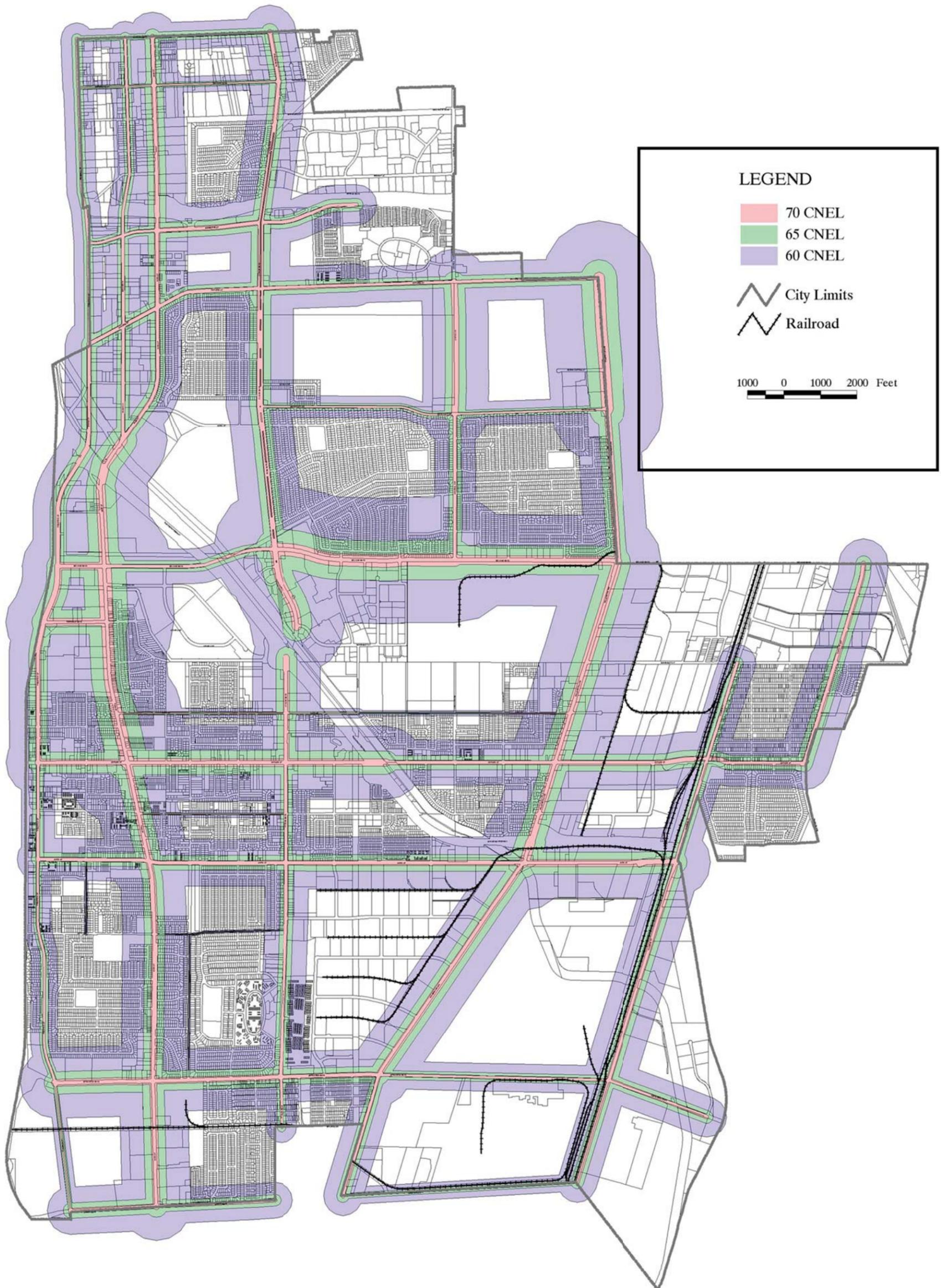
Most noise control is carried out indirectly through thoughtful land use planning. This entails separations of residential and other uses through effective zoning and provision of buffers. Site design also influences noises that infringe on surrounding areas. Monitoring noise levels and maintaining land use and building regulations to limit noise intrusion are principal mechanisms of noise control. The Community Noise Equivalent Level (CNEL), as adopted and utilized in the Noise Element, serves as the basis for other regulations. Noise control is an intergovernmental responsibility since noises readily cross over territorial boundaries. This is reflected in Carson's existing Noise Control Program. Specific activities identified in the Program include:

- The Sheriff's Department shall enforce local, state and federal noise laws for mobile sources and complaints in residential zones.
- The Building and Safety Division of the Development Services Work Group shall enforce noise related building regulations of state and local noise control ordinances and the Building Code.
- The Planning Division of the Development Services Work Group shall review potential noise impacts on new developments which require environmental assessments and/or environmental impact reports and permits/variances for new uses.
- The County of Los Angeles Department of Animal Care and Control shall continue the abatement of annoyance caused by barking dogs.





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- The Code Enforcement Division of the Public Safety Work Group shall enforce the City Noise Ordinance.

3.7 STANDARD NOISE ATTENUATION TECHNIQUES

Noise reduction can be accomplished by placement of walls, landscaped berms, or a combination of the two, between the noise source and the receiver. Generally, effective noise shielding requires a solid barrier with a mass of at least four pounds per square foot of surface area that is large enough to block the line of sight between source and receiver. Variations may be appropriate in individual cases based on distance, nature and orientation of buildings behind the barrier, and a number of other factors. Garages or other buildings may be used to shield dwelling units and outdoor living areas from traffic noise.

In addition to site design techniques, noise insulation can be accomplished through proper design of buildings. Nearby noise generators should be recognized in determining the location of doors, windows and vent openings. Sound-rated windows (extra thick or multi-paned) and wall insulation are also effective. None of these measures, however, can realize their full potential unless care is taken in actual construction: doors and windows fitted properly; openings sealed; joints caulked; plumbing adequately insulated from structural members. And, of course, sound-rated doors and windows will have little effect if left open. This may require installation of air conditioning for adequate ventilation.

Noise impacts can be reduced by insulating noise sensitive uses, such as residences, schools, libraries, hospitals, nursing and carehomes and some types of commercial activities. But perhaps a more efficient approach involves 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. Local ordinances may establish maximum levels for noise generated on-site. This usually takes the form of limiting the level of noise permitted to leave the property where it may impact other uses.

Although vehicular noise emissions standards are established at the State and Federal levels, local agencies can play a significant part in reducing traffic noise by controlling traffic volume and congestion. Traffic noise is greatest at intersections due to acceleration, deceleration and gear shifting. Measures such as signal synchronization can help to minimize this problem. Likewise, reduction of congestion aids in reduction of noise. This can be accomplished through the application of traffic engineering techniques such as channelization of turning movements, parking restrictions, separation of modes (bus, auto, bicycle, pedestrian) and restrictions on truck traffic.



4.0 PLANNING FACTORS, GOALS, POLICIES AND IMPLEMENTATION

The acronyms listed below are used for the implementation measures:

RA/D: Responsible Agency/Division
FS: Funding Source
TF: Time Frame

ISSUE: CARSON'S NOISE ORDINANCE

Enforcement of the City's noise ordinance is important in order to protect the serenity of residential neighborhoods. Education of the public may assist in the reduction of noise levels.

Goal: N-1: Maximize efficiency in noise abatement efforts through clear and effective policies, plans and ordinances.

Policies: N-1.1 Continue to implement the City's Noise Ordinance and Noise Control Program.

N-1.2 Periodically review and amend (and/or combine if appropriate) plans, ordinances and policies relating to noise control.

N-1.3 Enhance enforcement methods and/or mechanisms by exploring new enforcement options.

N-1.4 Inform the public regarding City noise regulations and programs.

N-1.5 Coordinate with the California Occupational Safety and Health Administration (Cal-OSHA) to provide information on occupational noise requirements within the City.

Implementation Measures:

N-IM-1.1 Reinforce City policies and regulations by enhancing enforcement methods and/or mechanisms.

RA/D: Code Enforcement
FS: General Fund
TF: Ongoing

N-IM-1.2 Noise ordinance review and revisions should clearly address mitigation of noise conflicts between adjacent uses, construction noise (particularly in or near residential neighborhoods), noise associated with maintenance equipment (e.g., leaf blowers, street sweepers, etc.), hours of



operation of construction or maintenance equipment, noise standards, abatement, enforcement, procedures, mitigation of impacts from short-term events (i.e., concerts, sporting events, etc.), and other like issues.

RA/D: Planning, Code Enforcement
FS: General Fund
TF: 2003-2005

N-IM-1.3 Designate one division to act as noise control coordinator. Establish and maintain coordination among appropriate divisions and agencies involved in noise abatement.

RA/D: Code Enforcement
FS: General Fund
TF: 2003-2004

N-IM-1.4 Require that new equipment purchased by the City comply with noise performance standards.

RA/D: Public Works, Engineering
FS: General Fund, Gas Tax, Grants, Props A and C
TF: Ongoing

N-IM-1.5 Support a national uniform sound certification program of published sound ratings for various types of equipment that are sources of noise.

RA/D: Public Works, Code Enforcement
FS: General Fund
TF: 2003-2004

N-IM-1.6 Examine the potential to establish a Violators Fee for persons requiring a second call/visit for violating the noise ordinances.

RA/D: Code Enforcement
FS: General Fund
TF: 2004-2005

N-IM-1.7 Create flyers, Web Site information, articles in *Carson Report*, and other methods of informing the public regarding noise issues, including health and abatement and enforcement procedures.

RA/D: Code Enforcement
FS: General Fund
TF: Ongoing





ISSUE: BUFFERING OF SENSITIVE LAND USES

Noise sensitive land uses, such as homes, schools and hospitals, should be buffered from areas where noise levels may exceed normal expectations including major thoroughfares and truck routes, industrial uses, concert venues, and other noise generating uses.

Goal: N-2: Minimize noise impacts on residential uses and noise sensitive receptors along the City’s streets, ensuring that the City’s interior and exterior noise levels are not exceeded.

Policies: N-2.1 Limit truck traffic to specific routes and designated hours of travel, where necessary, as defined in the Transportation and Infrastructure Element and by the City’s Development Services Group. Said routes and hours shall be reviewed periodically to ensure the protection of sensitive receptors and residential neighborhoods.

N-2.2 Examine the feasibility of implementing sound attenuation measures along the City’s arterial streets, particularly along designated truck routes.

N-2.3 Examine the feasibility of an ordinance which creates an overlay zone to be placed over residential properties along arterial streets and/or designated truck routes. This overlay zone would provide additional sound attenuation techniques to improve affected residential homes.

N-2.4 Minimize potential transportation noise through proper design of street circulation, coordination of routing, and other traffic control measures such as enforcing the speed limit, shifting travel lanes away from impacted units or sensitive receptors, adding bike lanes.

N-2.5 Discourage through traffic in residential neighborhoods.

N-2.6 Actively advocate noise control requirements for all motor vehicles.

N-2.7 Continue to promote the use of alternative clean fueled vehicles for personal and business use.

Implementation Measures:

N-IM-2.1 Evaluate specific sound attenuation measures, such as, retrofitting existing residences with double-glazed windows and sound insulation, construction of sound walls, use of lower walls and berms, and enclosed courtyards. Prioritize the areas in need of sound attenuation based on degree of



sensitivity of uses, excess of maximum allowable standards, length of time the noise impact has existed, and number of residential units and sensitive receptors impacted.

RA/D: Planning
FS: General Fund
TF: 2005-2006

N-IM-2.2 Develop a streamlined process to expedite and ease approval of the overlay zone techniques.

RA/D: Planning
FS: General Fund
TF: 2005-2006

N-IM-2.3 Prepare an informational booklet explaining the purpose of the overlay zone for all owners of property located in the zone.

RA/D: Planning
FS: General Fund
TF: 2005-2006

N-IM-2.4 Augment the list of eligible improvements under housing programs, such as the Community Development Block Grant (CDBG) Home Improvement Loan/Rebate Program, to include remedial improvements to homes lying within the designated improvement areas and located within the overlay zone, as described above in Policy N-2.3.

RA/D: Housing, Planning
FS: General Fund
TF: 2005-2006

N-IM-2.5 Ensure the inclusion of noise mitigation measures in the design of new roadway projects in the City.

RA/D: Planning, Engineering, Public Works
FS: Gas Tax
TF: Ongoing

N-IM-2.6 Provide for continued evaluation of truck movements and routes to provide effective separation from residential or other noise sensitive land uses.

RA/D: Engineering/Traffic
FS: General Fund
TF: Ongoing



N-IM-2.7 Encourage the enforcement of State Motor Vehicle noise standards for cars, trucks and motorcycles through coordination with the California Highway Patrol and the Sheriff's Department.

RA/D: Public Safety
FS: General Fund
TF: Ongoing

N-IM-2.8 Establish a noise monitoring and abatement program to identify sound levels in all neighborhoods significantly affected by increased traffic, and if problems, identify potential solutions.

RA/D: Code Enforcement, Engineering
FS: General Fund
TF: 2005-2006

N-IM-2.9 Study the use of electric, fuel cell or other non-polluting fuels, which are also quieter, for Carson Circuit buses and other City vehicles.

RA/D: Transportation
FS: General Fund, Grants
TF: 2003-2004

Goal: N-3: Minimize noise impacts from the Alameda Corridor.

Policies: N-3.1 Coordinate with the businesses along the Corridor to ensure that noise attenuation measures are addressed in the selection of the vehicle technology, location of truck pick-up and loading areas, locations of mechanical and electrical equipment, exterior speaker boxes, public address systems, and similar noise sources.

N-3.2 Continue to incorporate noise assessments into the environmental review process for both transportation-related and development projects along the Corridor.

N-3.3 At such a time when Alameda Street becomes a state highway:

- Encourage Caltrans to meet the City's standard for exterior noise levels of 65 dBA CNEL;
- Where appropriate and feasible, encourage Caltrans to keep interior residential noise levels below the City's standard of 45 dBA CNEL; and



- Coordinate with Caltrans to ensure the inclusion of noise mitigation measures in the design of improvements to the Corridor.

Implementation Measures:

N-IM-3.1 The environmental noise assessments should identify potential noise sources, potential noise impacts, and appropriate sound attenuation. Potential noise sources include truck pick-up and loading areas, locations of mechanical and electrical equipment, and similar noise sources. Mitigation of all significant noise impacts should be required as a condition of project approval.

RA/D: Planning
FS: Application Fee
TF: Ongoing

Goal: N-4: Minimize noise impacts from the freeway corridors which surround and bisect the City of Carson, ensuring that the City’s interior and exterior maximum noise level standards are not exceeded.

Policies: N-4.1 Encourage Caltrans to meet the City’s standard for exterior noise levels of 65 dBA CNEL.

N-4.2 Where appropriate and feasible, encourage Caltrans to keep interior residential noise levels below the City’s standard of 45 dBA CNEL.

N-4.3 Coordinate with Caltrans to ensure the inclusion of noise mitigation measures in the design of improvements to existing facilities, as well as any new highway projects.

Implementation Measures:

N-IM-4.1 Coordinate with Caltrans to ensure that sound walls are installed along residential areas abutting the freeways. Sound walls are to use landscaping and other attractive treatments.

RA/D: Engineering, Planning
FS: State Funds
TF: 2003-2006

N-IM-4.2 Encourage Caltrans to develop a range of sound attenuation alternatives. Sound walls should not be the only mitigation measure presented or available.



RA/D: Engineering, Planning
FS: State Funds
TF: 2003-2006

N-IM-4.3 Evaluate interior sound attenuation measures such as, double-glazed windows and sound insulation, additional right-of-way to provide a buffer, and land uses and developments which act as manmade noise buffers.

RA/D: Planning
FS: General Fund
TF: 2005-2006

Goal: N-5: Minimize noise impacts on residential areas from rail and/or transit operations.

Policies: N-5.1 Continue to encourage the railroad and transit operators within the City to schedule trains during the daylight hours, when possible.

N-5.2 Require noise attenuation measures for residential construction in areas affected by the 65 dBA CNEL railroad noise contour. Sound attenuation measures shall reduce interior noise to a maximum of 45 dBA CNEL. These measures shall apply to new residential construction as well as renovations, remodels, and building additions.

N-5.3 Coordinate with the railroad and transit operators to ensure that noise attenuation measures are addressed in the selection of the rail and vehicle technology for use along rail/transit lines and the design and reconstruction of existing lines, and the operators address other noise concerns.

Implementation Measures:

N-IM-5.1 Meet regularly with railroad and transit operators to discuss mutual issues. *(Implements Policies N-5.1, N-5.3)*

RA/D: Engineering, Planning
FS: General Fund
TF: Ongoing

N-IM-5.2 Require noise impact studies as part of any environmental review of new projects and establish mitigation measures as required to meet City noise standards. *(Implements Policy N-5.2)*

RA/D: Planning
FS: Application Fee
TF: Ongoing



- Goal:** N-6: Minimize noise impacts on residential areas from nearby airport operations.
- Policies:** N-6.1 Continue to monitor noise associated with airport operations at the Compton and Long Beach Airports.
- N-6.2 Coordinate with the operators of the Long Beach Airport to ensure that any increase in operations will not adversely impact the residential areas on the eastern side of the City.

Implementation Measures:

N-IM-6.1 Assign coordination of airport noise to the Code Enforcement Division.

RA/D: City Manager
FS: General Fund
TF: 2003-2004

Goal: N-7: Incorporate noise considerations into land use planning decisions.

Policies: N-7.1 Incorporate noise considerations into land use planning decisions by establishing acceptable limits of noise for various land uses throughout the community.

N-7.2 Continue to incorporate noise assessments into the environmental review process, as needed. Said assessments shall identify potential noise sources, potential noise impacts, and appropriate sound attenuation. In non-residential projects, potential noise sources shall include truck pick-up and loading areas, locations of mechanical and electrical equipment, and similar noise sources. Require mitigation of all significant noise impacts as a condition of project approval.

N-7.3 Require all new residential construction in areas with an exterior noise level greater than 65dBA CNEL to include sound attenuation measures that reduce interior noise levels to the standards shown in Table N-3. Sound attenuation measures include:

- Sound walls,
- Double glazing,
- Building location, and/or
- Facade treatment.



N-7.4 Ensure acceptable noise levels near schools, hospitals, convalescent homes, churches, and other noise sensitive areas in accordance with Table N-2. To this end, require buffers or appropriate mitigation of potential noise sources. Such sources include, but are not limited to truck pickup and loading areas, mechanical and electrical equipment, exterior speaker boxes, and public address systems.

Implementation Measures:

N-IM-7.1 Adopt the noise standards presented in Table N-2, Noise and Land Use Compatibility Matrix, which identify interior and exterior noise standards in relation to specific land uses.

RA/D: Planning
FS: General Fund
TF: 2003-2005

N-IM-7.2 Ensure that the noise standards fully integrate noise considerations into land use planning decisions to prevent new noise/land use conflicts. Use the criteria of Table N-2.

RA/D: Planning
FS: General Fund
TF: 2003-2005

N-IM-7.3 Incorporate noise reduction features during site planning.

RA/D: Planning
FS: Application Fees
TF: Ongoing

N-IM-7.4 Require a noise impact evaluation for projects through the environmental review process, if determined necessary.

RA/D: Planning
FS: Application Fees
TF: Ongoing

N-IM-7.5 Establish a noise monitoring program to identify progress in achieving noise abatement and to perform necessary updating of the Noise Element.

RA/D: Code Enforcement, Planning
FS: General Fund
TF: 2005-2006



N-IM-7.6 Require that automobile and truck access to commercial and industrial developments, when located adjacent to residential neighborhoods, be located at the maximum practical distance from the residential parcel(s).

RA/D: Planning
FS: Application Fees
TF: Ongoing

N-IM-7.7 Maintain a technical resource for builders, developers, and operators of construction equipment which discusses a variety of sound attenuation measures, the amount of noise reduction each produces and how to combine them to meet City requirements.

RA/D: Planning
FS: General Fund
TF: 2005-2006

N-IM-7.8 Require that new commercial, industrial or any redevelopment projects or proposed developments near existing residential land uses demonstrate compliance with the City Noise Ordinance prior to approval of the project.

RA/D: Planning
FS: Application Fees
TF: Ongoing

Goal: N-8: Minimize noise impacts associated with residential uses in mixed use development.

Policies: N-8.1 Require the design of mixed use structures to incorporate techniques to prevent transfer of noise and vibration from the commercial to the residential uses.

N-8.2 Encourage commercial uses in mixed use developments which are not noise intensive.

Implementation Measures:

N-IM-8.1 Orient residential units away from major noise sources in mixed use projects.

RA/D: Planning
FS: Application Fees
TF: Ongoing



N-IM-8.2 Locate balconies and operable windows of residential units in mixed use projects away from primary roadways and other major noise sources.

RA/D: Planning
FS: Application Fees
TF: Ongoing

