City of Glendale

Noise Element

of the General Plan

City of Glendale Planning Department
Mestre Greve Associates
May 2007

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Chapter 1 – INTRODUCTION

1.1 Purpose and Content

The Noise Element of a General Plan is a comprehensive program for including noise management in the planning process. It is a tool for local planners to use in achieving and maintaining land uses that are compatible with environmental noise levels. The Noise Element identifies noise sensitive land uses and noise sources, and defines areas of noise impact for the purpose of developing programs to ensure that Glendale residents will be protected from excessive noise intrusion.

The current Noise Element of the General Plan for the City of Glendale was adopted in July 1978. That Element identified roadways as the most significant source of noise in the City. While traffic noise is still the major noise source in the City, other sources have become a concern. Additionally, the method for controlling noise and incorporating noise concerns into planning decisions has become more sophisticated over the years since the first Element was adopted. Thus, the decision was made by the City to update the Noise Element to more effectively protect and plan for the residents of the City.

The Element is divided into three sections plus the Technical Appendix. Included in the Technical Appendix is more detailed background information on noise, health effects, and the noise measurement survey conducted throughout the City, and the methodology used to generate the noise contour maps. The Noise Element is organized as follows:

1. **Executive Summary** – summarizes the noise environment and the implementation programs to minimize noise and land use conflicts.
2. **Goals, Policies and Programs** – defines the goals and policies of the Noise Element, and how each will be implemented by the City to achieve these goals. Responsible departments are identified. Given the challenging budgetary environment the City faces, timing has not been specified. It is expected that departments will work on the Program items as staff and budget allow.
3. **Background Information** – groups noise problems into four broad categories and discusses related issues.

1.2 Legal Requirements

The Noise Element follows the revised State guidelines ("General Plan Guidelines," Governors Office of Planning and Research, November 1998, and Preliminary Draft of revised guidelines, Year 2002) and State Government Code Section 65302(f). The Element quantifies the community noise environment in terms of noise exposure contours for both near and long-term levels of growth and traffic activity. The information will become a guideline for the development of land use policies to achieve compatible land uses and provide baseline levels and noise source identification for local noise ordinance enforcement.

1.3 Regulatory Environment

A local government has little direct control of transportation noise at the source because of preemption by the State and Federal Government. State and Federal agencies have the responsibility to control the noise from the source, such as vehicle noise emission levels.

Cities like Glendale can best manage the noise environment through proper land use planning. By considering the potential for noise creation as part of the zoning and General Plan maintenance process, incompatible land uses can be separated and appropriate regulations adopted to address noise-generating uses. Noise generation can also be reviewed during the evaluation of environmental effects of new construction. Mitigation measures or conditions of approval, if needed, can then be incorporated into the design of the project to reduce noise impacts. Finally, having an adopted noise ordinance allows Glendale to enforce standards adopted by the City Council. Glendale employs all these techniques to manage the noise environment of the City.

Chapter 2 – EXECUTIVE SUMMARY

The City of Glendale is essentially built out, and thus experiences a set of noise problems unique to a mature city. In this update, the technical description of noise in Glendale was updated and a series of comprehensive goals, policies, and implementing actions were developed. The process of updating the Noise Element included a review of existing and future noise problems and the re-evaluation of City policies concerning environmental noise. All recommendations in this plan are made in order to have a beneficial impact on the quality of life. By use of this noise element plan and its policies, noise impacts from existing noise generators should be lessened.

2.1 Findings

The predominant noise sources in Glendale, as in many other communities, come from mobile noise sources, including motor vehicles. Approximately 55.9% of the City's population is exposed to noise levels of 60 CNEL or higher, approximately 22.3% is exposed to noise levels of 65 CNEL or higher, and 8.5% to levels 70 CNEL and above.

A number of freeways and arterial roadways expose the City to significant noise levels. The Union Pacific Railroad along the west side of the City also contributes to the overall noise environment. Aircraft operating in the area are not a major contributor of noise in the area although helipads do have some contribution to overall noise. Industrial noise in the City is minimal and isolated from noise sensitive receptors. The noise environment in Glendale varies from the busy, high density corridor along freeways and major arterials to the lower density, residential communities on the hillsides. Other sources of noise within the City are from non-transportation sources including commercial and construction activities.

Noise affects all types of land uses and activities, although some are more sensitive to high noise levels than others. Land uses identified as noise sensitive include residences of all types, hospitals, rest homes, places of worship and schools. Within the City are a number of public and private schools and day care centers (generally in-home day care centers).

The noise environment for Glendale can be represented using noise contours developed for the major noise sources within the City. The noise contours are used to identify areas of existing or potential noise impacts. The contours are developed for existing conditions and future conditions and are presented in Exhibits 1 and 2. The 60, 65, and 70 dB CNEL contour levels are shown on these maps. Land uses within these areas should be reviewed for compatibility with the criteria established in Table 1 and with the standards proposed in Table 2. Although the freeways and roads in the City are going to carry more traffic in 2030 compared to 2006, the noise contours are projected to expand only minimally when the noise contour maps for the two years are compared. The noise contours along the freeways widen a small amount and additional portions of roads, such as Kenneth Road and Honolulu Avenue, will be in the 60 db CNEL or higher contour in 2030.

2.2 Noise Mitigation Measures

Sources of noise in Glendale can be divided into transportation sources and non-transportation sources. Measures that can be used to reduce noise from transportation sources include, but are not limited to, noise barriers, land use planning, site design review, circulation improvements, and truck access restrictions. Noise from existing uses can be managed via the noise ordinance. Noise related to new projects can be mitigated during the project planning review with the implementation of conditions of approval or mitigation measures such as providing access from non-residential streets, restricting the hours of delivery, or submission of an approved truck route plan.

2.2.1 Noise Barriers

A noise barrier (such as a wall, berm, or combination wall and berm) may be the most effective way to mitigate noise from development. The effect of a noise barrier is critically dependent on the geometry between the noise source and the receiver. A noise barrier effect occurs when the "line of sight" between the source and the receiver is blocked by the barrier. Noise barriers may be one of the mitigation measures employed in new projects and recommended during the environmental review process. Noise barriers may also be used to reduce noise levels in existing development. In particular, the City will continue to work with Caltrans and the Metropolitan Transit Authority to get sound walls built along additional portions of the 2, 5, 134, and 210 Freeways.

2.2.2 Land Use Planning

Noise concerns should be incorporated into land use planning to reduce future noise and land use incompatibilities. This can be achieved by establishing standards and criteria that specify acceptable limits of noise for various land uses throughout the City. These criteria are designed to integrate noise considerations into land use planning to prevent noise/land use conflicts. Table 1 presents the recommended criteria used to assess the compatibility of proposed land uses with the noise environment. These criteria are the basis for the development of specific Noise Standards. These recommended Standards, listed in Table 2, present the recommended City policies related to land uses and acceptable noise levels. These tables are the primary tools which allow the City to ensure integrated planning for compatibility between land uses and outdoor noise. For example, residential development within the 60 CNEL contour should be carefully reviewed to ensure that no private outdoor yard or patio areas are exposed to noise levels above 65 CNEL. The Criteria in Table 1 and the Noise Standards in Table 2 will be implemented by requiring that all new residential and noise sensitive land uses within the 60 CNEL noise contour be subject to environmental review or conditions of approval to ensure that noise impacts are mitigated. Impacts on new development will be considered mitigated if the interior noise level meets the 45 CNEL noise standard and the exterior, private yard meets the 65 CNEL noise standard listed in Table 2 of the Element.

2.2.3 Site Plan Review

The Land Use/Noise Compatibility Matrix shown in Table 1 is used in the site planning stage of the development process. It is used to identify property opportunities and constraints. In conjunction with the Noise Contour Maps (Exhibits 1 and 2), this matrix may be used to determine whether a certain type of land use is appropriate in a particular CNEL zone. This

matrix is particularly helpful to assist in the layout and design of large mixed-use projects because it identifies the noise sensitivities of various land use types. Such consideration permits the location and layout of noise sensitive uses in lower noise exposure areas on the project site.

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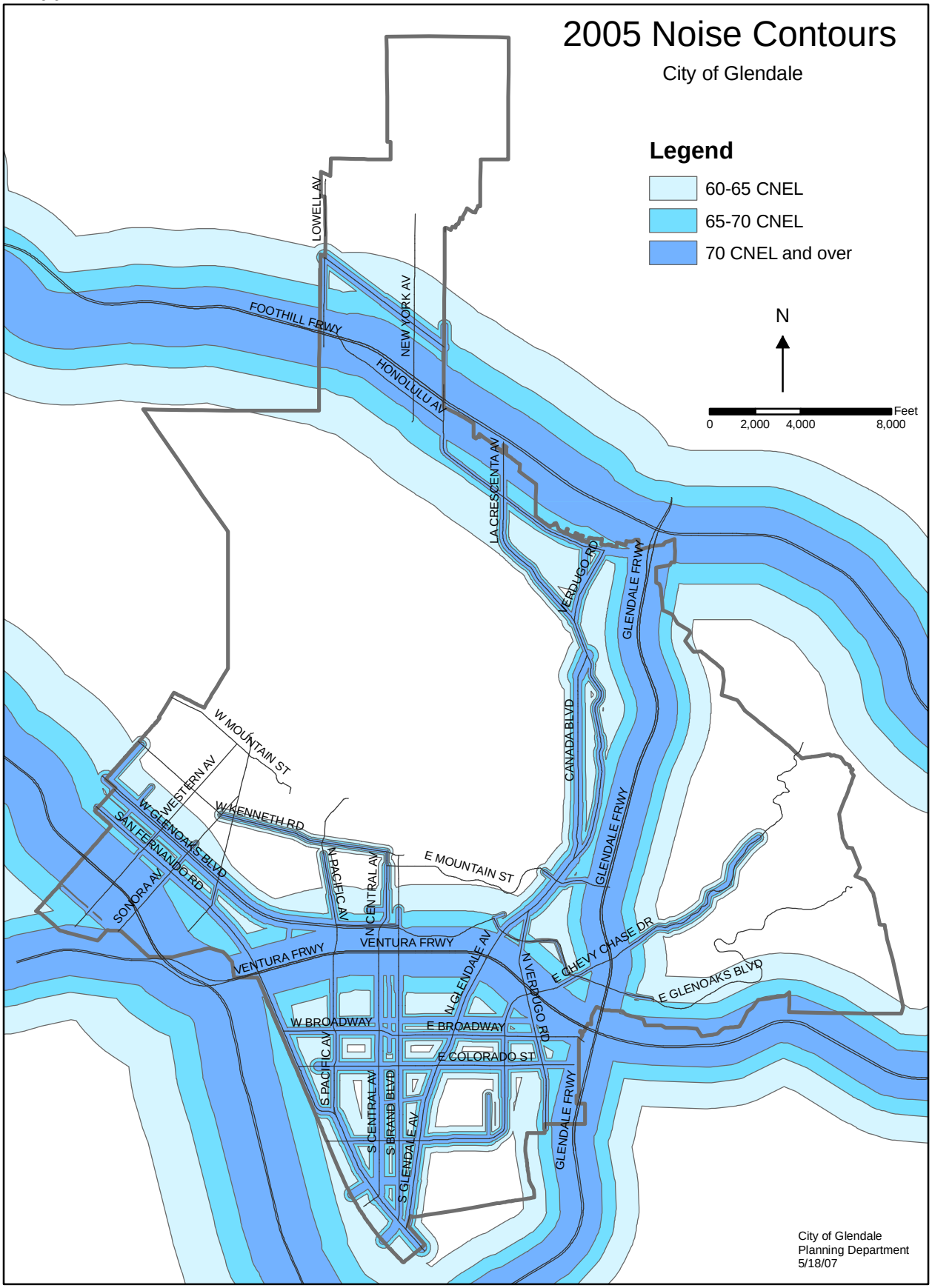
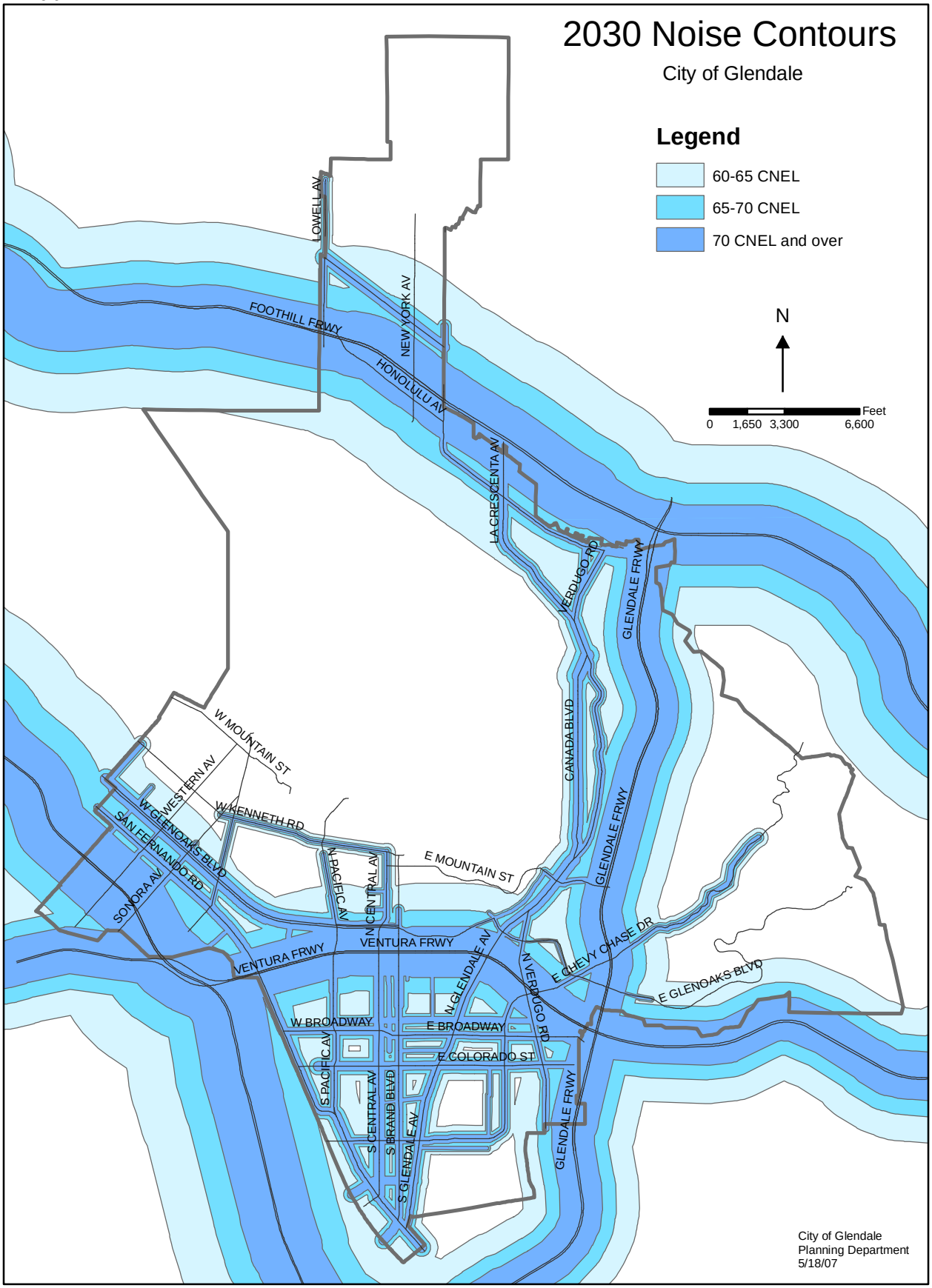
Exhbit 1


2005 Noise Contours
City of Glendale
Legend
60-65 CNEL
65-70 CNEL
70 CNEL and over
N
0
2,000
4,000
8,000
Feet
LOWELL AV
NEW YORK AV
FOOTHILL FRWY
HONOLULU AV
LA CRESCENTA AV
VERDUGO RD
GLENDALE FRWY
CANADA BLVD
W MOUNTAIN ST
W KENNETH RD
W GLENOAKS BLVD
SAN FERNANDO RD
SONORA AV
N PACIFIC AV
N CENTRAL AV
E MOUNTAIN ST
VENTURA FRWY
N GLENDALE AV
N VERDUGO RD
E CHEVY CHASE DR
E GLENOAKS BLVD
W BROADWAY
E BROADWAY
E COLORADO ST
S PACIFIC AV
S CENTRAL AV
S BRAND BLVD
S GLENDALE AV
City of Glendale
Planning Department
5/18/07

Exhbit 2


2030 Noise Contours
City of Glendale
Legend
60-65 CNEL
65-70 CNEL
70 CNEL and over
N
Feet
0 1,650 3,300 6,600
LOWELL AV
NEW YORK AV
FOOTHILL FRWY
HONOLULU AV
LA CRESCENTA AV
VERDUGO RD
GLENDALE FRWY
CANADA BLVD
W MOUNTAIN ST
W KENNETH RD
W GLENOAKS BLVD
SAN FERNANDO RD
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S CENTRAL AV
S BRAND BLVD
S GLENDALE AV
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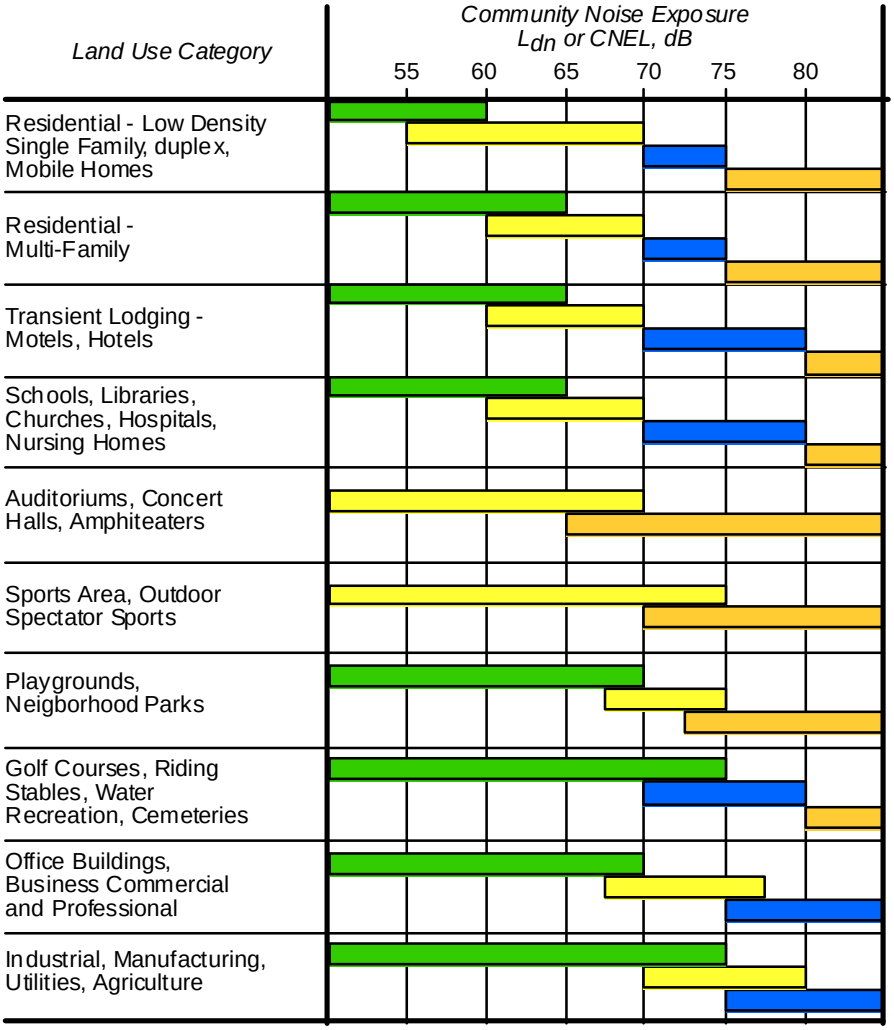
The Interior and Exterior Noise Standards shown in Table 2 are the actual design standards to be used in the project design stage. Compliance with these standards should be incorporated by conditions of approval or environmental mitigation measures and evaluated as part of City Development Review and building permit plan check.

2.2.4 Noise Ordinance

The most effective method to control community noise impacts from non-transportation noise sources is through application of the Community Noise Ordinance. The City of Glendale has a strong, enforceable Noise Ordinance. The Noise Ordinance is designed to protect quiet residential areas from stationary noise sources. The noise levels encouraged by the ordinance are typical of a quiet residential area. It should be noted that while some noise problems are resolved through measurements and code enforcement actions, there are some problems that are best addressed through some form of mediation program.

Table 1
Noise/Land Use Compatibility Table



INTERPRETATION

Normally Acceptable
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal, conventional construction, without any special noise insluation 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 generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable
New construction or development should generally not be undertaken.

Source: State of Califronia, “General Plan Guidelines,” 1998

Table 2

INTERIOR AND EXTERIOR NOISE STANDARDS

LAND USE CATEGORIES		NOISE STANDARDS	
CATEGORIES	**USES**	**INTERIOR CNEL**	**EXTERIOR CNEL**
RESIDENTIAL	Single Family	45 (1)	65 (2)
	Multi-Family	45 (1)	65 (3)
	Residential within Mixed Use	45 (1)	--
COMMERCIAL	Hotel, Motel, Transient Lodging	45 (1)	--
INSTITUTIONAL	Hospital, School Classroom, Church, Library	45	--
OPEN SPACE	Parks (4)	--	65

Notes:

1. Applies to the indoor environment excluding bathrooms, toilets, closets and corridors.
2. Applies to the outdoor environment limited to the private yard of single family residences (normally the rear yard).
3. Applies to the patio area where there is an expectation of privacy (i.e., not a patio area which also serves as, or is adjacent to, the primary entrance to the unit).
4. Only applies to parks where peace and quiet are determined to be of prime importance, such as hillside open space areas open to the public. Generally would not apply to urban parks or active-use parks.

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Chapter 3 – GOALS, POLICIES AND PROGRAMS

Goal 1: Reduce noise impacts from transportation noise sources

Policy 1.1 Coordinate with the California Department of Transportation (Caltrans) and the Metropolitan Transportation Authority (MTA) to reduce noise impacts from existing or proposed freeway projects with respect to existing noise sensitive land uses.

Program 1.1 Investigate the opportunity for Caltrans or the MTA to construct barriers to mitigate existing sound emissions where necessary and where feasible.
Responsibility: Public Works Department to coordinate with Caltrans and MTA

Program 1.2 Actively pursue with Caltrans or the MTA the potential for noise barriers for the apartments west of Paula Avenue and the residential areas along the Ventura Freeway near Isabel.
Responsibility: Public Works Department to coordinate with Caltrans and MTA

Program 1.3 Include noise mitigation measures in the design or improvement of freeways and arterial roadways consistent with funding capability and support efforts by Caltrans, the MTA and the City to provide for acoustical protection for existing noise sensitive land uses affected by these projects.
Responsibility: Public Works Department to coordinate with Caltrans and MTA

Policy 1.2 Ensure the inclusion of noise mitigation measures in the design of new roadway projects in Glendale.

Program 1.4 Attempt to reduce transportation noise through proper design and traffic calming techniques in public projects.
Responsibility: Public Works Department

Program 1.5 Encourage the use of noise-reducing paving materials for road surfacing projects.
Responsibility: Public Works Department

Policy 1.3 Reduce transportation noise through proper design and coordination of routing.

Program 1.6 Continue evaluating truck and bus movements and routes in the City to balance noise protection with transit needs.
Responsibility: Public Works Department

Program 1.7 Review desired truck routes and establishment of truck prohibitions, such as prohibiting through traffic while exempting local deliveries, on noise sensitive streets.
Responsibility: Public Works Department

Program 1.8 Regulate truck routes, access, and delivery times by conditions of approval when reviewing new land uses.
Responsibility: Planning Department

Policy 1.4 Ensure the effective enforcement of City, State and Federal noise levels by all appropriate City Departments.

Program 1.9 Encourage the enforcement of State Motor Vehicle noise standards for cars, trucks, and motorcycles through coordination with the California Highway Patrol and Glendale Police Department.
Responsibility: Police Department

Policy 1.5 Consider noise reduction measures when making revisions to the Circulation Element.
Responsibility: Planning Department

Policy 1.6 Include noise considerations in evaluating city purchases of buses and other noise generating equipment and take actions as appropriate to quiet existing City owned bus fleet.

Program 1.10 Evaluate the costs and benefits of purchasing quieter buses as new buses are needed. If appropriate, include a noise specification in the purchase of new buses.
Responsibility: Public Works Department

Program 1.11 Evaluate the costs and benefits of retrofitting existing buses with quieter mufflers. If appropriate, implement a program of replacing existing mufflers with quieter muffler on City-owned buses.
Responsibility: Public Works Department

Goal 2: Reduce noise from non-transportation sources

Policy 2.1 Improve enforcement of required noise control measures in building design.

Program 2.1 Require that all Building Permit applicants, including contractors, sign a form acknowledging requirements of the Noise Ordinance, and assume responsibility for compliance with the Noise Ordinance. This is particularly important for the non-resident contractor installing mechanical equipment.
Responsibility: Public Works Department

Program 2.2 Ensure that required noise control features are installed and that conditions of approval related to noise control are fulfilled prior to building occupancy.
Responsibility: Public Works and Planning Departments

Policy 2.2 Coordinate noise abatement efforts among city departments.

Program 2.3 Promote regular coordination among City departments involved in noise abatement efforts, such as issuing warnings or citations. Include proactive measures as abatement tools to reduce the re-occurrence of problems.
Responsibility: Public Works, Community Development and Housing, and Planning Departments

Goal 3: Continue incorporating noise considerations into land use planning decisions

Policy 3.1 Ensure that land uses comply with adopted standards.

Program 3.1 Use the criteria in Table 1 and standards in Table 2 to assess the compatibility of proposed land uses with the noise environment. New land uses, as described in the Land Uses column of Table 2, in a 60 CNEL or higher noise contour, as shown on the map of the 2030 Noise Contours, Exhibit 2, may be subject to potentially significant environmental impacts that must be addressed by a noise study. The study, prepared by a qualified consultant (to the satisfaction of the City), shall address the noise environment and propose appropriate conditions of approval or mitigation measures to comply with the interior and exterior noise standards as shown in Table 2. Interior tenant improvements, signs, and exterior remodeling will not normally be subject to review under this Program.
Responsibility: Planning Department, Development Services and/or Public Works Department

Policy 3.2 Encourage acoustical mitigation design in new construction when necessary.

Program 3.2 Continue to enforce the State of California Building Code that specifies that the indoor noise levels for residential living spaces not exceed 45 dB CNEL due to the combined effect of all noise sources.
Responsibility: Public Works Department

Goal 4: Enhance measures to control construction noise impacts

Policy 4.1 Amend the Noise Ordinance to address construction noise problems.

Program 4.1 Change the permitted hours of construction to Monday through Friday, 7 a.m. to 7 p.m. and on Saturday from 9 a.m. to 5 p.m. Maintain the ban on construction on Sundays and Holidays. Continue to allow emergency repair work, and work to correct safety hazards, at any time.
Responsibility: Public Works Department

Goal 5: Promote Noise Awareness in the Community

Policy 5.1 Inform residents of the ways that they can assist in noise abatement.

Program 5.1 Provide information via the Internet and cable television on ways residents can abate noise, such as retrofitting their homes, being "good neighbors" when attending late-night events, etc.
Responsibility: Public Works and Planning Departments

Policy 5.2 Inform the public of the provisions of the Noise Ordinance and its enforcement.

Program 5.2 Provide information via the Internet and cable television on the provisions of the Noise Ordinance.
Responsibility: Planning Department

Chapter 4 – BACKGROUND INFORMATION

4.1 Introduction

This section contains a detailed description of the current and projected noise environment within the City. This description of the noise environment includes identification of noise sources and noise sensitive land uses, a community noise measurement survey and noise contour maps.

To define the noise exposure, this section of the report defines noise terminology, describes the noise measurement results and identifies the major sources of noise in the community. The sources of noise in Glendale include: motor vehicles, trains, construction, commercial areas, and general neighborhood noises. To completely assess the noise environment in the City, noise sensitive receptors must also be identified. As mandated by the State, noise sensitive receptors include, but are not limited to, areas containing residential uses, schools, hospitals, rest homes, long-term medical or mental care facilities, or any other land use area deemed noise sensitive by the local jurisdiction.

Based upon the identification of the major noise sources and the location of sensitive receptors, a noise measurement survey was conducted. The survey has two functions. The first is to determine the existing noise levels at noise sensitive land uses and at other areas of interest. A second function is to obtain an accurate description of the ambient noise levels in various neighborhoods throughout the City.

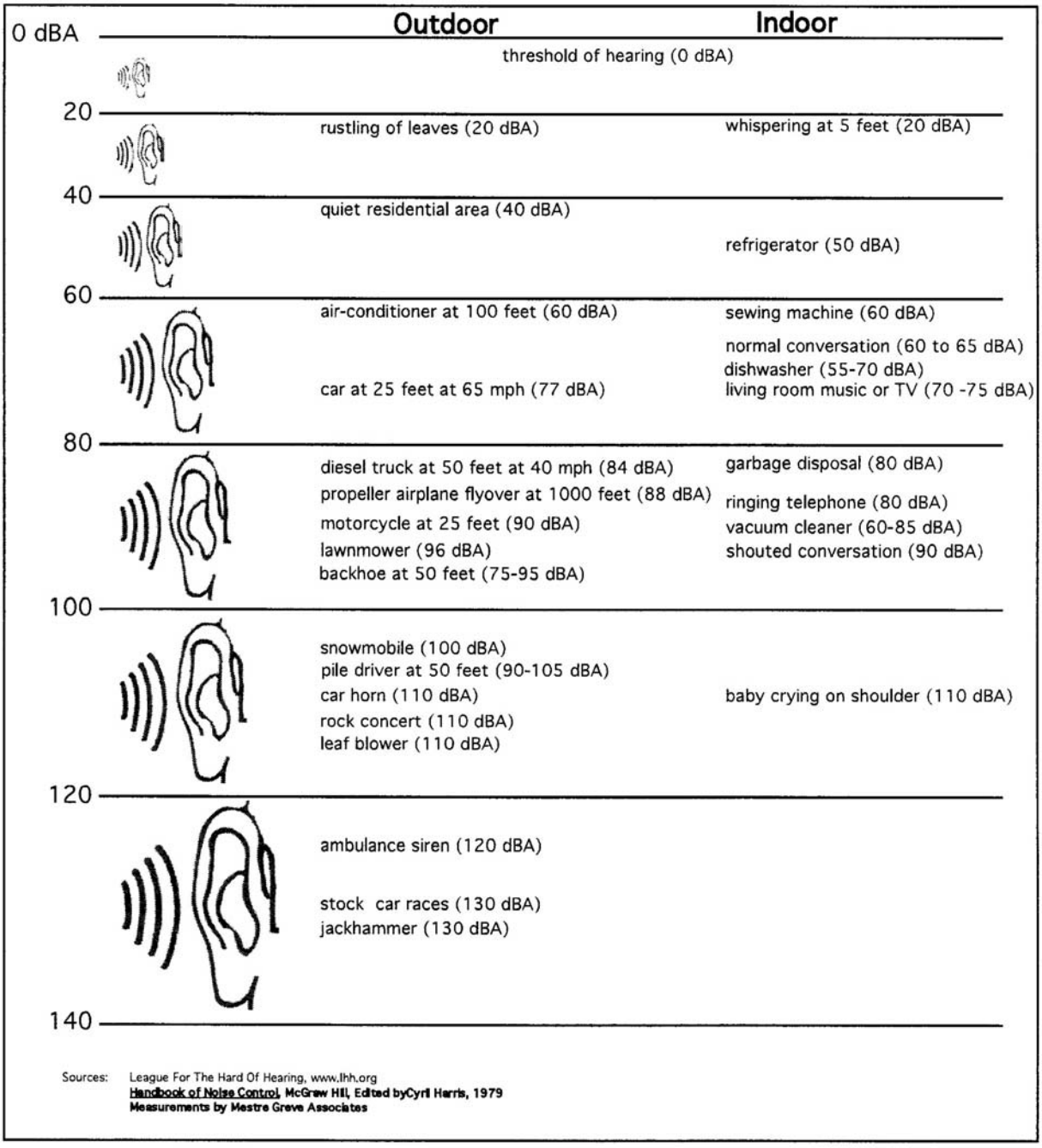
Noise contours for all of the major noise sources in Glendale were developed. These contours were based upon traffic mix, traffic levels, and vehicle speed. The contours are expressed in terms of the Community Noise Equivalent Level (CNEL) and are shown on Exhibits 1 and 2.

4.2 Definitions

Sound is technically described in terms of the loudness (amplitude) 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 discriminating against 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 way that the Richter scale is used to measure earthquakes. In terms of human response to noise, a sound 10 dBA higher than another is judged to be twice as loud; and 20 dBA higher four times as loud; and so forth. Everyday sounds normally range from 30 dB (very quiet) to 100 dB (very loud). Examples of various sound levels in different environments are shown in Exhibit 3.

Exhibit 3
Typical A-Weighted Sound



Noise has been defined as unwanted sound and it is known to have several adverse effects on people. From these known effects of noise, criteria have been established to help protect the

public health and safety and prevent disruption of certain human activities. These criteria are based on such known effects of noise on people as hearing loss (not generally a factor with community noise), communication interference, sleep interference, physiological responses and annoyance. Each of these potential noise impacts on people are briefly discussed in the narratives below.

4.2.1 Hearing Loss

Hearing loss is, in general, not a concern in community noise problems. The potential for noise-induced hearing loss is more commonly associated with occupational noise exposures in heavy industry or very noisy work environments with long-term exposure. The Occupational Safety and Health Administration (OSHA) identifies a noise exposure limit of 90 dBA for 8 hours per day to protect from hearing loss. Noise levels in neighborhoods, even in very noisy airport environments near major international airports, are not sufficiently loud to cause hearing loss. It is significant to note that in recent years hearing loss is being caused more and more by recreational exposure to noise, such as off-road vehicle riding, loud music, target and skeet shooting, etc.

4.2.2 Communication Interference

Communication interference is one of the primary concerns in environmental noise problems. Communication interference includes speech interference and activities such as watching television. Normal conversational speech is in the range of 60 to 65 dBA and any noise in this range or louder may interfere with speech. There are specific methods of describing speech interference as a function of distance between speaker and listener and voice level.

4.2.3 Sleep Interference

Sleep interference is a major noise concern in noise assessment and, of course, is most critical during nighttime hours. Sleep disturbance is one of the major causes of annoyance due to community noise. Noise can make it difficult to fall asleep, create momentary disturbances of natural sleep patterns by causing shifts from deep to lighter stages and cause awakening. Noise may even cause awakening, which a person may or may not be able to recall.

Extensive research has been conducted on the effect of noise on sleep disturbance. Recommended values for desired sound levels in residential bedroom space range from 25 to 45 dBA. The lower noise level recommendations are generally for continuous noise sources such as heating and ventilating systems and the higher part of the recommended range is for intermittent noise such as outdoor noise event intrusion into the sleeping area.

4.2.4 Physiological Responses

Physiological responses are those measurable effects of noise on people, which are realized as changes in pulse rate, blood pressure, etc. While such effects can be induced and observed, the extent is not known to which these physiological responses cause harm or are sign of harm. Generally, physiological responses are a reaction to a loud short term noise such as a rifle shot or a very loud jet over flight.

4.2.5 Annoyance

Annoyance is the most difficult of all noise responses to describe. Annoyance is a very individual characteristic and can vary widely from person to person. What one person considers tolerable can be quite unbearable to another of equal hearing capability. The level of annoyance, of course, depends on the characteristics of the noise (i.e.; loudness, frequency spectra, time, and duration), and how much activity interference (e.g. speech interference and sleep interference) results from the noise. However, the level of annoyance is also a function of the attitude of the receiver. Personal sensitivity to noise varies widely. It has been estimated that 2 to 10 percent of the population is highly susceptible to noise not of their own making, while approximately 20 percent are unaffected by noise. Attitudes are affected by the relationship between the person and the noise source--is it our dog barking or the neighbor's dog? Whether we believe that someone is trying to abate the noise will also affect our level of annoyance.

4.2.6 Scales

Community noise is generally not a steady state and varies with time. Under conditions of non-steady state noise, some type of statistical metric is necessary in order to quantify noise exposure over a long period of time. Several rating scales have been developed for describing the effects of noise on people. They are designed to account for the above known effects of noise on people. These scales are: the Equivalent Noise Level (LEQ), the Day Night Noise Level (LDN), the Community Noise Equivalent Level (CNEL), and percentile noise levels (L%).

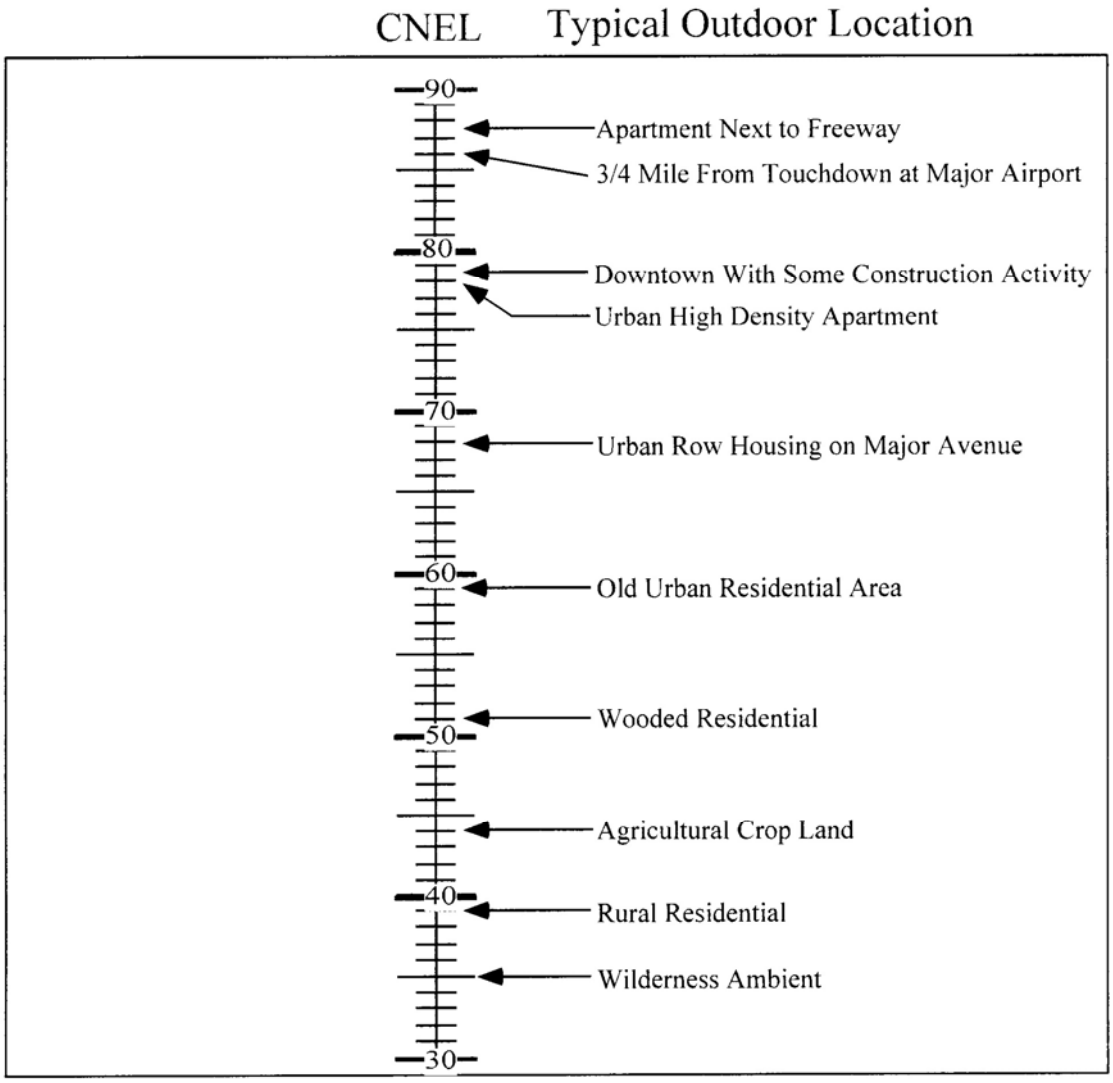
LEQ is the "energy" average noise level during the time period of the sample. It is a number that represents a decibel sound level. This constant sound level would contain an equal amount of energy as a fluctuating sound level over a given period of time. LEQ can be measured for any time period, but is typically measured for 15 minutes, 1 hour or 24 hours.

LDN is a 24 hour, time-weighted annual average noise level. Time-weighted refers to the fact that noise which occurs during certain sensitive time periods is penalized for occurring at these times. In the LDN scale, those events that take place during the night (10 pm to 7 am) are penalized by 10 dB. This penalty was selected to attempt to account for increased human sensitivity to noise during the quieter period of a day, where sleep is the most probable activity.

CNEL is similar to the LDN scale except that it includes an additional 5 dBA penalty for events that occur during the evening (7 pm to 10 pm) time period. Either LDN or CNEL may be used to identify community noise impacts within the Noise Element. Example noise environments in terms of the CNEL metric are shown in Exhibit 4.

Exhibit 4

Source: Adapted from "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare With an Adequate Margin of Safety", EPA, 1974



L(%), Lmax and Lmin are statistical methods of describing noise which accounts for variance in noise levels throughout a given measurement period. L(%) is a way of expressing the noise level exceeded for a percentage of time in a given measurement period. For example since 5 minutes is 25% of 20 minutes, L(25) is the noise level that is equal to or exceeded for five minutes in a twenty-minute measurement period. It is L(%) that is used for most Noise Ordinance standards. Lmax represents the loudest noise level that is measured. The Lmax only occurs for a fraction of a second with all the other noise less than the Lmax level. Lmin represents the quietest noise level during a noise measurement. All other noise during the measurement period is louder than the Lmin.

4.3 Noise Measurements

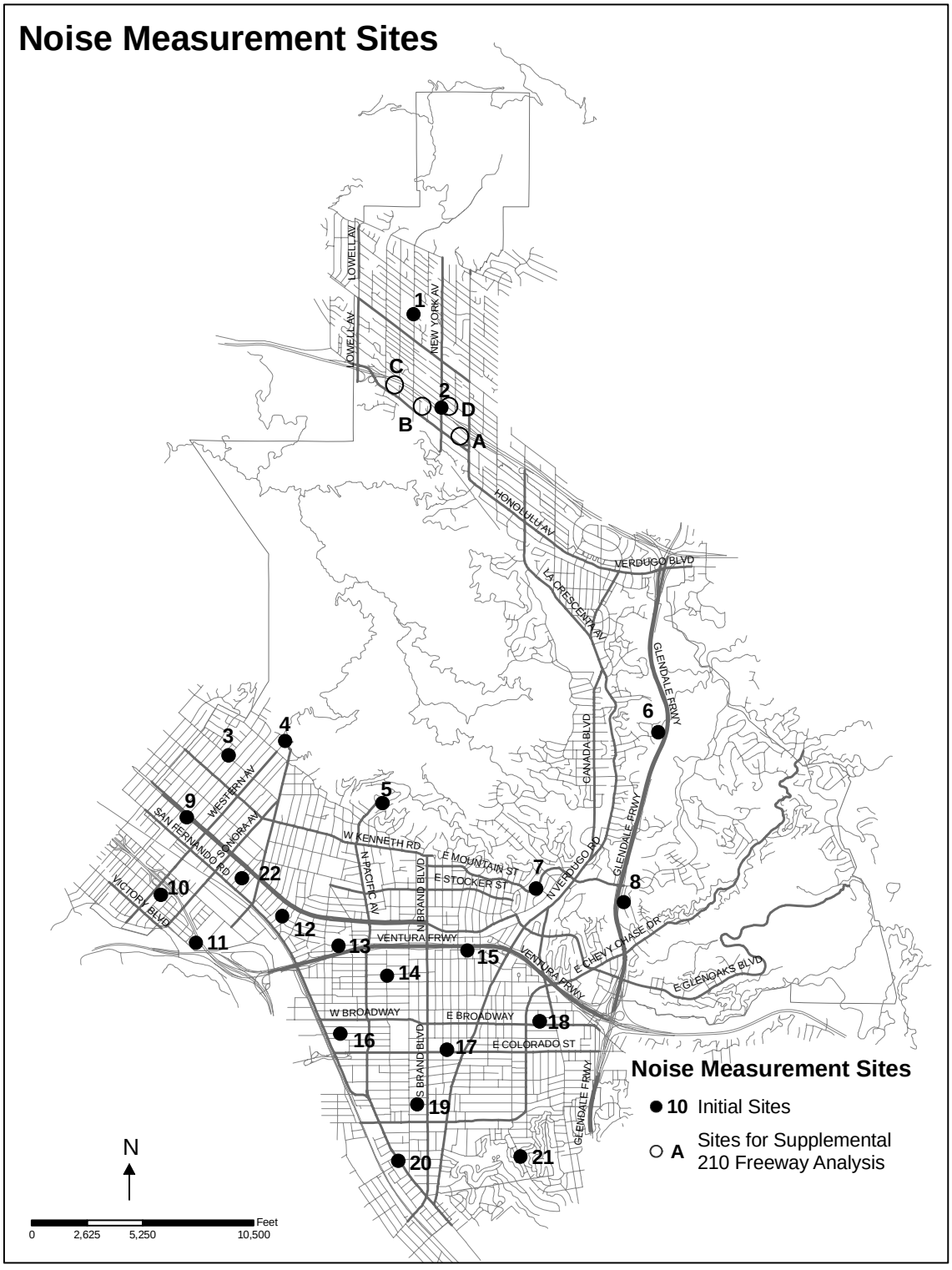
Twenty-three sites were selected for measurement of the noise environment in Glendale. A review of noise complaints, discussions with City staff, input from a community meeting and identification of major noise sources in the community provided the basis for the community noise survey. The measurement locations are depicted in Exhibit 5.

Noise measurements were made of the short-term Leq values. These measurements provide a short 'snapshot' view of the noise environment. The noise measurements were made at a normal receptor height of about 5 feet above the ground. Measurements were made on August 16 and 17, 2005. The measurements were made with a Brüel & Kjaer Type 2236 Sound Level Meter, and calibrated on a regular basis. These noise measurement systems meet the American National Standards Institute "Type 1" specifications, which is the most accurate for community noise measurements. The meter and calibrator have current certification traceable to the National Institute of Standards and Technology (NIST).

The results of the noise measurements are shown in Exhibit 6. These figures also depict the date and time of the measurement. The cause of the loudest event is identified and the most predominant noise source(s) are identified. The quantities measured were the Equivalent Noise Level (Leq), the maximum noise level (Lmax) and the minimum noise levels (Lmin).

When examining the noise data shown in Exhibit 6 it is important to note that most of these sites were at the front yards of homes. These data are intended to identify noise levels over a broad range of the City and are not an assessment of impacts at these sites. In all cases the major sources of noise are motor vehicles. The noise levels measured cover a wide range. The quietest environment was in a residential area were noise levels were often below 40 dBA. The loudest events were buses and trucks and these events would push the noise levels into the mid 80 dBA range. In general, aircraft noise, industrial noise, and commercial noise sources did not appear to contribute significantly to the noise levels measured. A detailed discussion of each of the noise measurement sites and the monitoring results is presented on a site by site basis in the Technical Appendix.

Exhibit 5



City of Glendale Planning Department 4/4/06 JH

Exhibit 6

Graphic Summary of Short-Term Ambient Noise Measurement Results

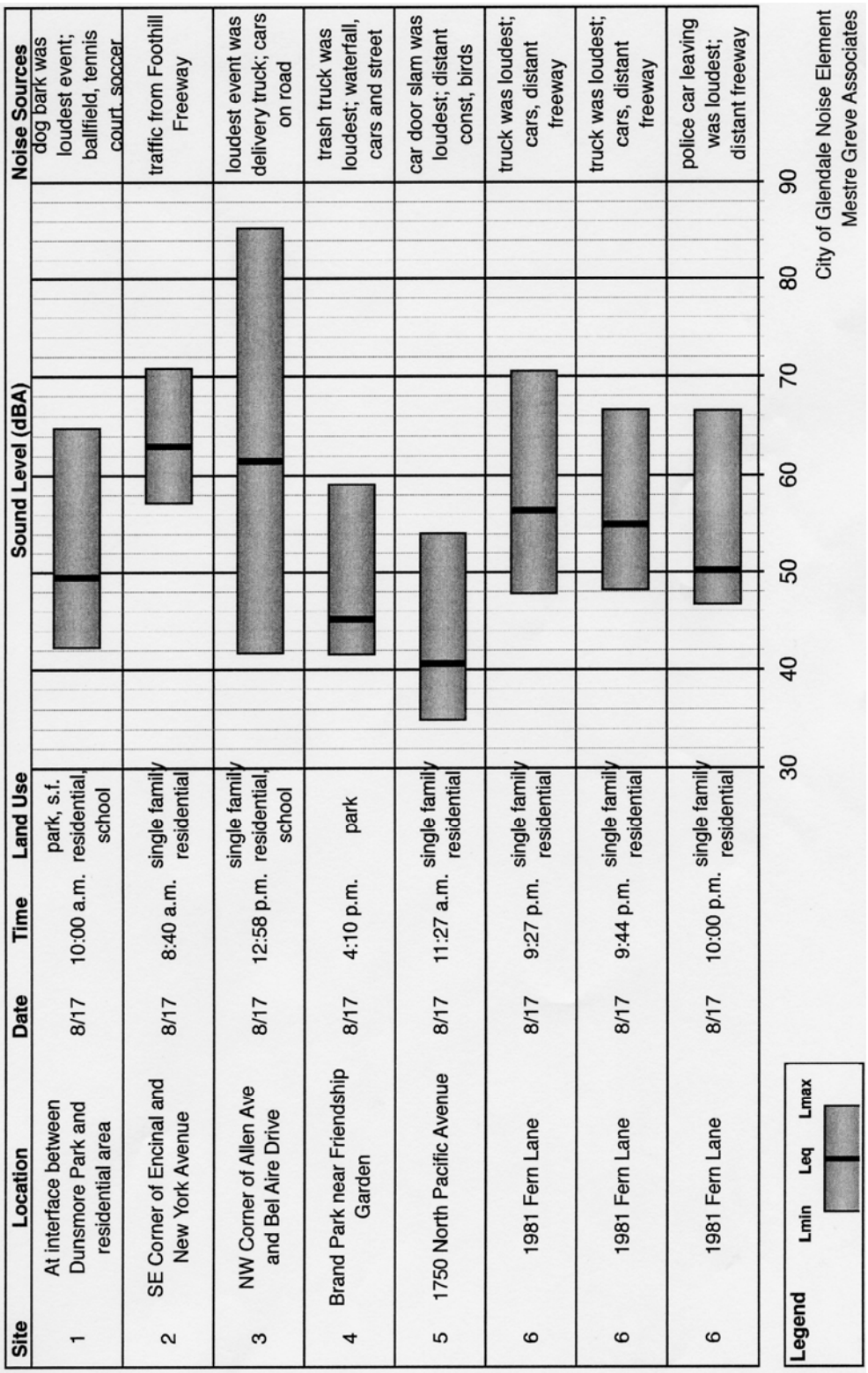


Exhibit 6 (contd.)

Graphic Summary of Short-Term Ambient Noise Measurement Results

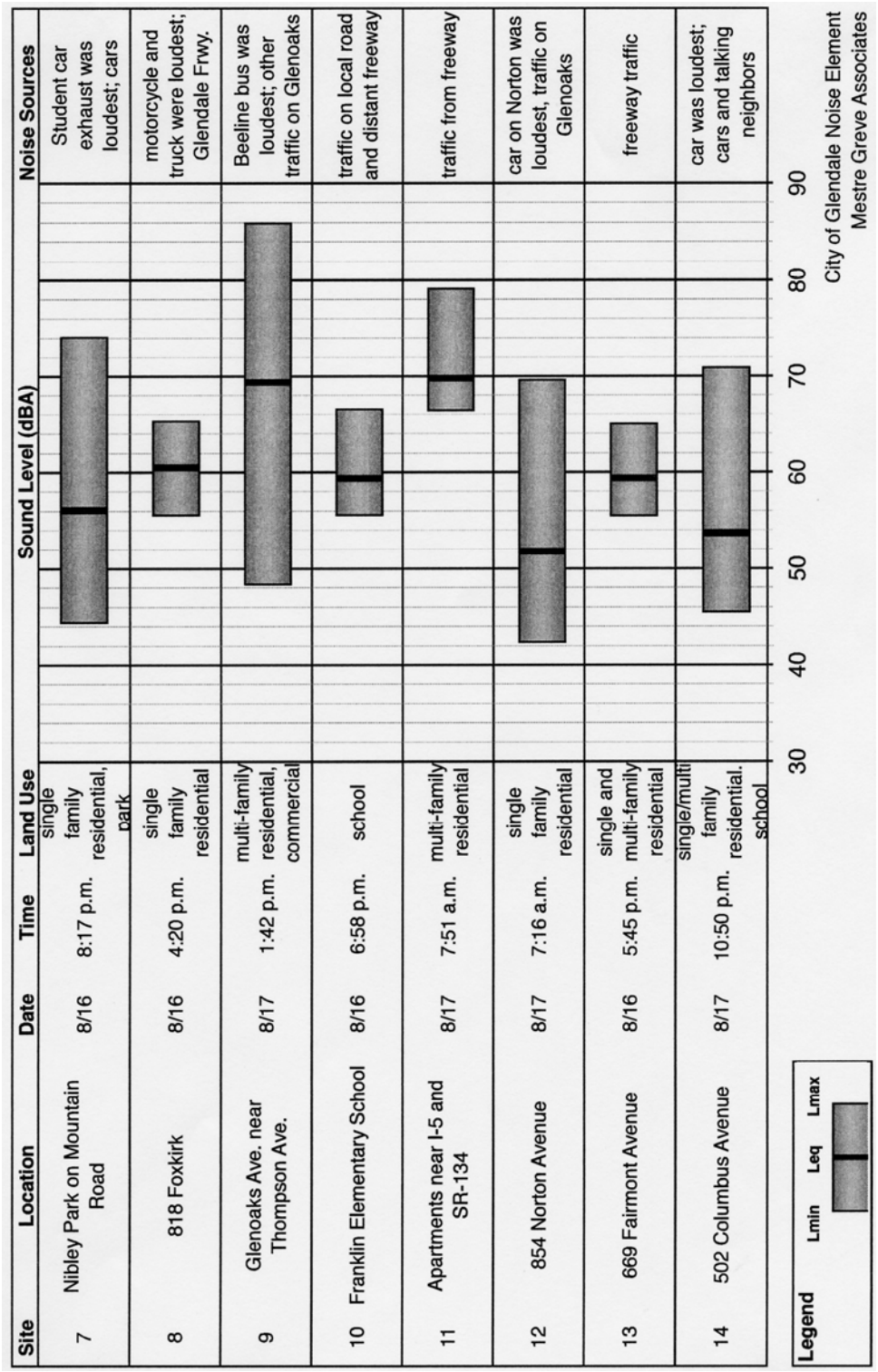


Exhibit 6 (contd.)

Graphic Summary of Short-Term Ambient Noise Measurement Results

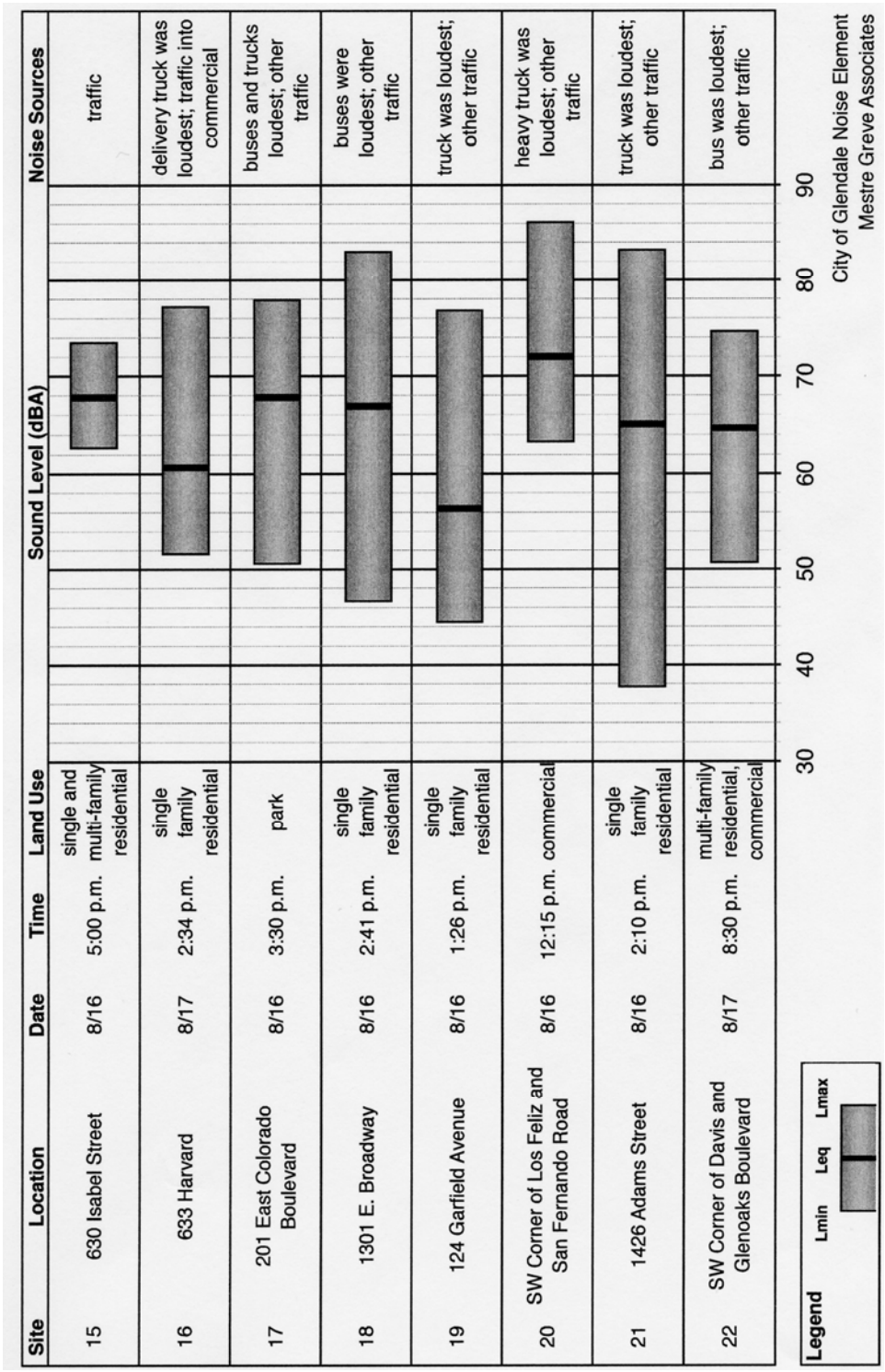
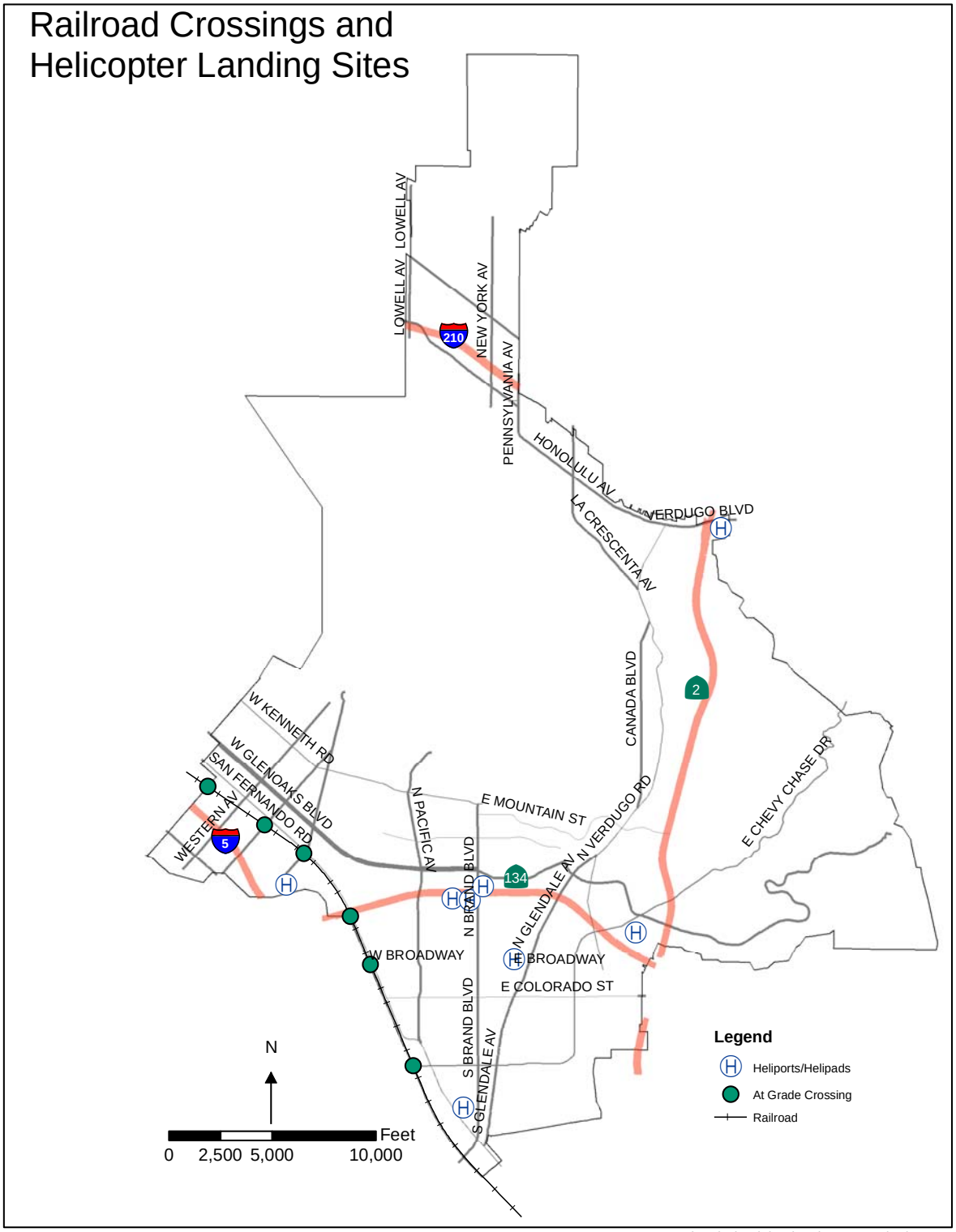


Exhibit 7



City of Glendale Planning Dept. 5/17/06 JH

4.4 Sources of Environmental Noise

The main source of noise in Glendale is motor vehicle traffic. Other sources of noise in the City that can be of concern include railroad, industrial, commercial, loud car stereos, loud car mufflers, individual buses, lawnmowers and leaf blowers, loud parties, and automotive facilities.

Noise problems were grouped into four broad categories: (1) transportation noise control, (2) noise and land use planning integration, 3) noise control for non-transportation noise sources, and (4) miscellaneous noise concerns. Within each of the categories several issues are presented and discussed.

4.4.1 Transportation Noise Control

The City of Glendale is served by four major freeways and many arterial roadways and local streets (shown on Exhibit 7). Freeways include the Glendale Freeway (SR-2), Golden State Freeway (I-5), Ventura Freeway (SR-134), and Foothill Freeway (I-210). Major roadways in the City include Foothill Boulevard, Canada Boulevard, Verdugo Road, Glendale Avenue, Glenoaks Boulevard, San Fernando Road, Broadway, Colorado Street, Chevy Chase Drive, Brand Boulevard, Central Avenue, and Los Feliz Road.

A Union Pacific Railroad line runs along the west side of the City, generally paralleling San Fernando Road. This line is a very active Metrolink route with over 50 trains per day. Amtrak and freight operations also use this railroad.

The City of Glendale contains 6 operational helipads throughout the city (shown on Exhibit 7) with many emergency helistops in the Verdugo Mountains and San Rafael Hills for firefighting purposes.

The transportation noise sources are the major contributors of noise in Glendale. Cost effective strategies to reduce their influence on the community noise environment are part of a Noise Element. However, the City of Glendale is limited in controlling certain noise sources due to preemption by Federal and State law. The California Motor Vehicle Code establishes noise limits for motor vehicles in several sections of the code. Included in the Motor Vehicle Code (MVC) are the following sections that govern vehicle noise limits: Sections 27200 (new vehicle sales), 27204 (vehicle noise limits), 27150 (adequate muffler), 27151 (muffler modification), 27150.3 (no whistle-tip muffler), 27202 (motorcycle limits), 27150.2 (exhaust systems), and 27007 (sound amplification devices). In other words, the City cannot impose their own limits on the noise emitted by motor vehicles, nor can they directly limit the amount of vehicles that drive on the roadways.

Effectiveness of Soundwalls. The California Department of Transportation (Caltrans), in coordination with the City of Glendale, has constructed soundwalls along most of the freeways adjacent to residential areas within the City. Monitoring sites 2, 8, 11 and 15 were used to test the effectiveness of these soundwalls or to check for the need of a soundwall in these locations. Soundwalls were present at Sites 2 and 8, which are along the Foothill Freeway and Glendale Freeway, respectively (see Exhibit 5). The noise levels at these sites were below the Caltrans standard of 67 dBA (Leq), and indicate that the soundwalls installed are providing adequate

mitigation of the noise. Site 11 represents an apartment site west of Paula Avenue near the Golden State and Ventura Freeways, and although soundwalls are provided for nearby residential areas, no soundwall is provided for the apartment complex. Noise levels at the apartment site were monitored at 70 dBA (Leq), which is above the Caltrans standard and is generally considered unacceptable. Similarly, measurements were made at an apartment complex at 630 Isabel along the Ventura Freeway. The freeway is depressed in elevation with respect to the surrounding community, and no soundwalls are provided. Noise levels of 74 dBA (Leq) were measured in this area, and represent an unacceptable noise level for the community.

The California Department of Transportation has essentially two procedures whereby soundwalls are added along an existing freeway. The most common approach is that when a freeway is widened or significantly modified, Caltrans will construct soundwalls for all areas exceeding their noise standards if the soundwall is feasible and cost effective. The second approach is part of the Community Noise Abatement Program, more commonly referred to as the retrofit program. Essentially sites are added to a Caltrans list and prioritized based on need. Usually the City must take the initiative to show that an area is worthy of being placed on the retrofit list. Funding is a major obstacle for these retrofit wall projects, and many areas may be on the list for a decade and more before being funded. Currently Glendale has two areas that are on the Phase II list. Both of these areas are small. One site is along both sides of the 210 Freeway between Honolulu Avenue and Boston Avenue (0.3 miles) and the second is along eastbound side of the Ventura Freeway and is listed as near San Rafael Avenue (0.1 mile). Program 1.1 (programs are presented in Chapter 3) has been developed to pursue adding additional areas to the retrofit wall program and to actively pursue with Caltrans possible additional funding mechanisms.

Residential Along Major Roadways. Residential areas along major roadways are represented by monitoring Sites 9 and 18. These sites were located in residential areas adjacent to major roadways; specifically, Glenoaks Boulevard and Broadway. Noise levels along these roadways were in the upper 60 dBA (Leq) range and the CNEL noise levels would be about 70 dBA. Existing homes in these areas may experience unacceptable indoor noise levels. Older homes, even with windows closed, have an outside to inside noise reduction of 20 to 25 dBA. This means that the indoor noise levels with windows closed would be in the 45 to 50 CNEL. New home construction is required by State building codes to be designed to meet a 45 CNEL noise standard.

The zoning on Glenoaks Boulevard and Broadway, and several other major streets, allows commercial and mixed used development. Any residential use constructed would be a multi-family development. Interior noise levels can be mitigated to meet Building Code requirements simply by adhering to the Building Code. Programs 3.1 and 3.2 are proposed to address the potential problems associated with siting residential development in areas subject to elevated noise levels. Noise studies required by Program 3.1 will ensure that new residents will not be subjected to excessive noise levels.

Soundwall Along Railroad. The Union Pacific Railroad line borders and passes through portions of the west side of Glendale. Generally the railroad parallels San Fernando Road. Metrolink is the primary user of the line, but Amtrak and freight trains also use the line. The

concern was raised at the public meeting that perhaps a soundwall could be constructed along the railroad to protect nearby residential areas to the east. Measurements and noise projections indicate that traffic on San Fernando Road is a greater source of noise than is the train traffic. Little benefit would be achieved by constructing a soundwall adjacent to the railroad, and therefore no action is recommended.

4.4.2 Noise and Land Use Planning Integration

Information relative to the existing and forecast noise environment within Glendale should be integrated into future land use planning decisions. This Element presents the noise environment in order that the City may include noise impact considerations in development programs. Land use conflicts related to noise can often be avoided by proper planning and standards.

The City of Glendale has industrial uses in the southwest corner of the City, in a small area in the southern portion of the City along the east side of San Fernando Road, and in a small portion of Montrose. These uses do not appear to create major noise problems in the City. Neither the on-site activities nor the trucks associated with this type of land use were mentioned at the public meeting. Noise measurements near these areas confirmed that the industrial uses present are not generating loud levels of noise. Noise generated by the industrial uses within their property boundaries is subject to the limitations in the Glendale Noise Ordinance.

Noise generated by parking areas, delivery trucks, and music from bars and restaurants are common sources of noise complaints. In discussions with staff and again in public meetings, noise from banquet halls was identified as the most significant commercial noise impacting residential areas. The banquet halls are in many areas of the City. Other commercial sources of noise that were identified include the public address (PA) systems at auto dealerships. Additionally, future plans for the downtown area integrate commercial uses with residential uses (i.e., mixed use development). Residences may be located above or within close proximity to dance clubs in this zone. These sources of noise are discussed in more detail below.

Downtown Residential Interface. As part of the revitalization of the downtown area many mixed-use projects may be constructed. Such projects hold the promise of reducing traffic congestion by housing people closer to jobs and entertainment. They also improve the economic viability of downtown by providing a more stable customer base. Aside from these hoped-for benefits, the increasing number of downtown residential projects are simply a response to market demand. One of the tradeoffs of living downtown, however, is exposure to elevated noise levels. The combination of traffic, the mix of residential and commercial land uses, and the close proximity of uses makes for a unique problem. Just as residents in agricultural areas must accept the odors associated with agricultural operations, downtown residents must accept a certain amount of elevated noise levels. Clubs, late-night restaurants, and banquet facilities are some examples of commercial uses that could locate in the downtown area and generate noise into nighttime hours. The proximity to such entertainment is certainly one of the attractions for at least some downtown residents. Programs 3.1 and 3.2 provide the City with the tools to ensure that excessive noise will be avoided or mitigated.

Active Park and Residential Interfaces. One question that arises in land use planning is whether an active park or playfields conflict with adjacent residential land uses. The noise measurement at Site 1 was taken at the interface between Dunsmore Park and the adjacent residential area. This site is in the Montrose area of the City. This site was selected to check on the compatibility of an active park area with residential uses. While the measurements were conducted, the ball field, soccer field and tennis courts were all active. There is a parking lot between the homes and the active fields which acts as a buffer zone. The noise levels measured at the residences ranged from 42 to 64 dBA with the average noise level (Leq) being just under 50 dBA. Most of the noise measured was due to the playfields, however, the loudest sound recorded came from a neighborhood dog that barked. The daytime Leq is often indicative of the CNEL noise level. The CNEL in this area would be expected to be around 50 dBA. Thus this area represents a quiet residential area and shows that residential and active park uses can be compatible when in close proximity if properly planned. No program was proposed since with the proper planning active parks adjacent to residential do not appear to be a noise conflict.

Noise Standards for Various Park Uses. The park uses in Glendale can be divided into three types: urban parks, active parks, and quiet parks. The Glendale Central Park located along Colorado Street is an example of an urban park. Noise levels at this park (i.e., Monitoring Site 17) range up to 68 dBA (Leq). However, the park appeared to be busy and people did not appear to be bothered by the noise levels. Active parks, such as Dunsmore Park, are usually generators of noise and are not very sensitive to noise from outside sources. Brand Park (Site 4) is an example of a quiet park. The noise level at Brand Park was 45 dBA (Leq). In this type of park, peace and quiet are expected and high noise levels would ruin the park experience. Noise standards, including standard for "quiet parks," are being proposed as part of Program 3.1. More background and discussion is provided in the following item in regards to City noise standards.

City Noise Standards. Noise standards are designed to ensure that new sensitive land uses are designed and constructed so that the noise environment will be acceptable for that land use. For example, most cities have an outdoor noise standard for rear yards of single-family residential uses of 65 CNEL. This requires that when new residences are constructed that soundwalls, berms, setbacks or other features be used that will result in the rear yards meeting a 65 CNEL noise level now and for future traffic projections. Currently, the City does not have any noise standards, which are normally contained in the Noise Element of the General Plan. (Noise standards should not be confused with the Noise Ordinance, which is discussed in the Section 4.4.3.) The City enforces the State building code (Chapter 12, Section 1208A) which requires that "new hotels, motels, dormitories, apartment houses and dwellings other than detached single-family dwellings" be designed and constructed so as to achieve an indoor noise level of 45 CNEL or less when constructed and at least 10 years into the future. The standard protects these dwellings from exterior noise sources such as highways, county roads, city streets, railroads, rapid transit lines, airports and industrial areas. Cities are allowed to develop noise standards for other uses as they see fit.

In addition to protecting new construction from obtrusive noise levels, city noise standards also provide a criterion by which to evaluate the impact of new projects on existing residential areas

and other noise sensitive areas. For example, assume that the City adopts a 65 CNEL for residential land uses. If a new project is proposed which will generate significant traffic, it can be determined if the 65 CNEL level will or will not be exceeded at existing residential areas. If exceeded, then the project would be determined to have a significant impact without further mitigation.

Program 3.1 utilizes the standards in Table 2 for residential and quiet park uses. These standards ensure that new development will be adequately protected from noise, and provide a consistent criterion with which to assess impacts generated by new projects.

San Fernando Corridor Development. San Fernando Road represents one of the major noise corridors through the City. Noise levels monitored at Sites 16 and 20 show noise levels near and on this roadway to range from 60 to 72 dBA (Leq). High peak noise levels are also experienced along this roadway due to the large amount of trucks traveling the roadway and the nearby railroad. Mixed use is planned for some parts of the San Fernando Corridor. This type of use would be acceptable from a noise standpoint, as long as the residential units are properly soundproofed. Adoption of specific City noise standards as proposed in Program 3.1 would insure that new residences in this area are properly designed.

Noise Compatibility Guidelines. The City currently has a set of Noise Compatibility Guidelines (Table 1). The guidelines identify the general acceptability of noise exposures for various land use categories in the City. The guidelines are based on the State of California recommendations for Noise Elements made in 1976. The State in their "General Plan Guidelines," has modified slightly the noise compatibility guidelines and Program 3.1 presents for adoption these updated guidelines. It should be noted that the compatibility guidelines are simply guidelines, and do not represent standards. The guidelines provide an initial evaluation of the compatibility between a land use and noise environment.

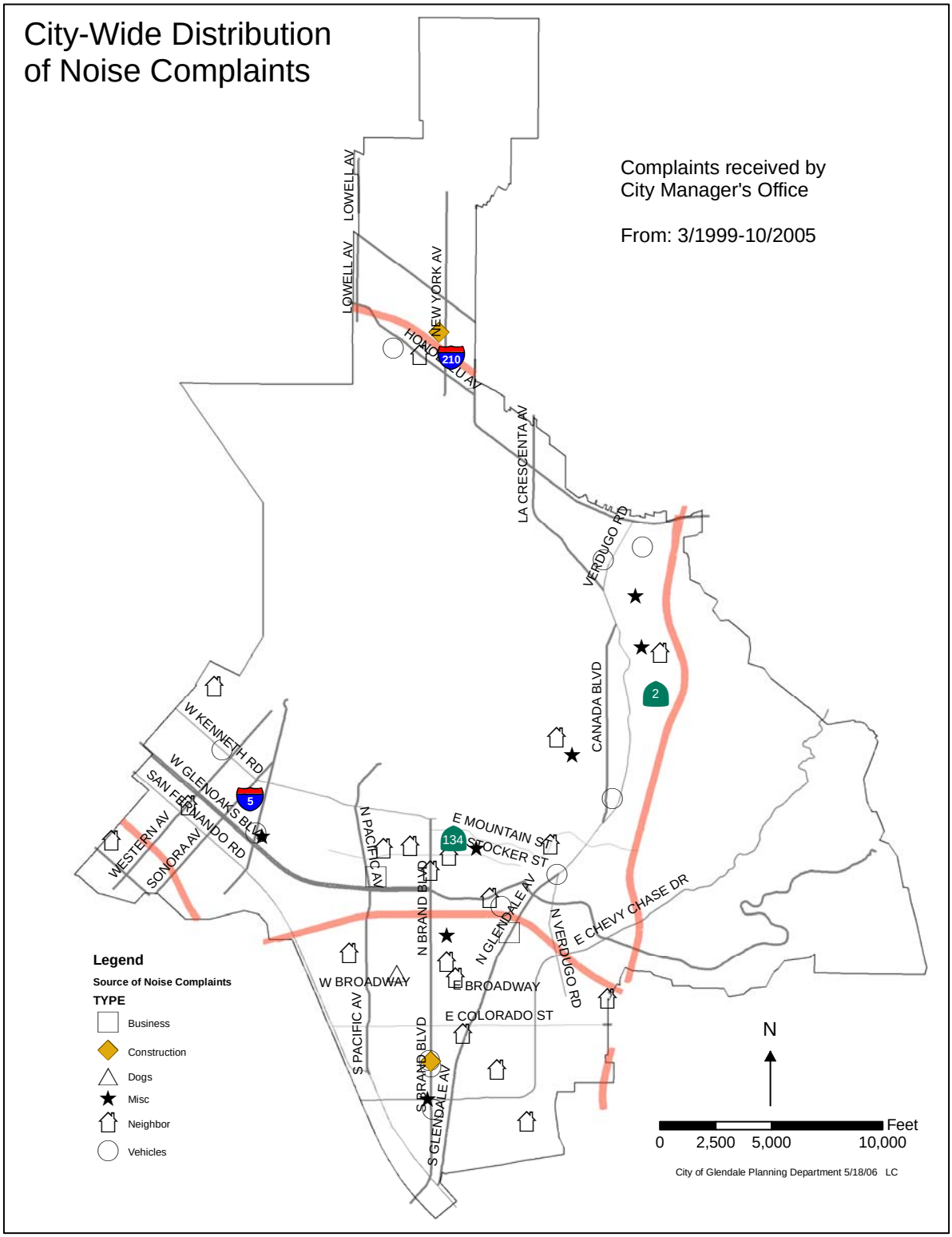
4.4.3 Non-Transportation Noise Sources—The Noise Ordinance

Exhibit 8 illustrates the spatial locations of noise complaints filed through the City Managers Office from 3/4/99 to 10/11/05. The significance of the locations is that no specific area is impacted by localized sources.

Residential land uses and areas identified as noise sensitive must be protected from excessive noise from non-transportation sources including commercial activities, construction noise, late-night entertainment, spa and pool equipment and air-conditioner noise to name a few. These impacts are most effectively controlled through the enforcement of an effective City Noise Ordinance. A noise ordinance is designed to control noise generated on private property and impacting another parcel of property. A noise ordinance is not designed to control traffic on public streets, aircraft noise, train noise and other public transportation noise. The noise ordinance is part of the City code, and is not contained in the Noise Element of the General Plan. However, as part of a Noise Element update the noise ordinance is often reviewed and recommendations made for changes if needed. The key noise ordinance related issues are discussed below.

Review of Noise Ordinance. The Noise Ordinance is contained in the Glendale Municipal Code, Title 8, Chapter 36 – Noise Control. The ordinance was updated in 1991. To be enforceable the courts have ruled that a noise ordinance must have specific noise limits and protocols for noise measurements. The Glendale Noise Ordinance contains these requirements and the protocols for measurement of potentially offending noise sources are clear. In general, the City's Noise Ordinance is an excellent tool for controlling noise generated on private property throughout the City. Because of concerns expressed by residents about disturbing noise from construction activities on the weekends, the Element proposes to revise the allowable hours for construction. Currently construction is allowed from 7 a.m. to 7 p.m. Monday through Saturday with construction prohibited on Sundays. The proposed change is to restrict the hours of construction on Saturday to 9 a.m. to 5 p.m. with other days remaining unchanged. This change would not affect the authority of the Director of Public Works and the Building Official to authorize other hours.

Exhibit 8


City-Wide Distribution
of Noise Complaints
Complaints received by
City Manager's Office
From: 3/1999-10/2005
LOWELL AV
NEW YORK AV
HONOLULU AV
LA CRESCENTA AV
VERDUGO RD
CANADA BLVD
W KENNETH RD
W GLENOAKS BLVD
SAN FERNANDO RD
WESTERN AV
SONORA AV
N PACIFIC AV
E MOUNTAIN ST
STOCKER ST
N BRAND BLVD
N GLENDALE AV
E CHEVY CHASE DR
N VERDUGO RD
W BROADWAY
E BROADWAY
E COLORADO ST
S PACIFIC AV
S BRAND BLVD
S GLENDALE AV
210
5
134
2
Legend
Source of Noise Complaints
TYPE
Business
Construction
Dogs
Misc
Neighbor
Vehicles
N
Feet
0
2,500
5,000
10,000
City of Glendale Planning Department 5/18/06 LC

Automotive Interface with Residences. Automotive uses along Brand Boulevard abut the residential neighborhood in many locations. Noise is generated by automotive repair, public address (PA) systems, parking of cars, and unloading new cars from transport trucks. This interface between automotive uses and residences has been a major point of conflict in other cities. Our measurements (e.g., Site 19) indicate that the noise generated by the automotive facilities is minimal. This finding was also supported by the fact that this was not brought up as an issue in the public meeting for the Noise Element Update. In some cases the City has limited hours of operations for some automotive activities, prohibited PA systems and imposed other restrictions on the automotive facilities. Additionally, the City has an enforceable Noise Ordinance that can and has been used to ensure that the residential areas are not unduly impacted. In summary, the automotive/residential interface does not appear to be generating impacts on a regular basis, and therefore, no actions items or changes to policy are recommended.

Banquet Facilities Interface with Residences. Banquet facilities have several sources of noise. Generally, the parking lots associated with the facilities are the most significant source of noise. Cars driving into and out of the lots, groups of people talking and shouting, and inadvertent car alarms can all occur in the parking lot and can occur late at night when the banquet ends. Music is often played at the banquet facilities and has the potential for being a problem in the surrounding area when doors and windows are left open. The City does not allow banquet facilities within 200 feet of a residential zone. Limiting hours and requiring onsite parking away from residential areas are other planning restrictions that can be used. Banquet facilities that are currently operating can be controlled via the Noise Ordinance. The Noise Ordinance has very specific noise level limits that are measured at the nearby residential property line. The Noise Ordinance limitations apply to all noise generated at the banquet facilities including parking lot noise. The Noise Ordinance limitations are more stringent after 10 p.m., so nighttime noise is controlled to a greater extent that noise generated during the evening. Since the Noise Ordinance is in place and can be used to effectively control banquet facility noise, no action items or changes to policy are recommended.

Construction Noise. Construction noise is addressed in the Noise Ordinance in Section 8.36.080. The noise ordinance exempts construction activities from compliance with the noise ordinance limits under certain circumstances. If construction occurs within 500 feet of a residential zone, then construction is prohibited from 7 p.m. to 7 a.m. every night and from 7 p.m. on Saturday to 7 a.m. on Monday (i.e., no Sunday construction). Construction on certain holidays is also prohibited. To respond to complaints about noise from construction on the weekend, Program 4.1 proposes to change the Noise Ordinance by restricting construction on Saturday to the hours of 9 a.m. to 5 p.m. This level of control is consistent with the approach used by most other jurisdictions, with the exception that other jurisdictions usually prohibit construction on Saturday as well as Sunday. Some jurisdictions do not have a distance limit in their ordinance and essentially prohibit construction anywhere in their city at night and on weekends and holidays.

4.4.4 Miscellaneous Noise Issues

Several issues came up as part of the public input process. Not all of the issues raised are strictly issues that are normally dealt with in the Noise Element. But since they were of concern to the residents all issues were investigated and usually noise measurements were made to determine the significance of the issue.

Loud Car Mufflers. Several residents commented on the extensive use of loud mufflers on vehicles in the City. The type of mufflers and the legal noise levels for with cars is regulated by the State of California, and the City has no regulatory power in this area. The California Motor Vehicle Code establishes noise limits for motor vehicles in several sections of the code. Included in the Motor Vehicle Code (MVC) are the following sections that govern vehicle noise limits: Sections 27204 (vehicle noise limits), 27150 (adequate muffler), 27151 (muffler modification), 27150.3 (no whistle-tip muffler), and 27150.2 (exhaust systems).

Site 7 is along Mountain Road at Nibley Park. At the community meeting some residents complained about the exhaust noise from student vehicles during the evening hours. Because there are speed bumps on this road, travel speeds are generally low. This measurement was intended as a check on the situation. Measurements were initiated 8:17 p.m. It is impossible to positively identify student traffic as opposed to residents, but it was clear that a significant portion of the traffic was associated with the college. During the measurement period about 15 cars passed by whose noise level was between 65 and 70 dBA. Only one car exceeded 70 dBA, and that car was responsible for the maximum sound level measured during the period (i.e., 74.1 dBA). The exhaust on the car was the loudest source of noise. The exhaust on this car, while perhaps annoying to residents is not illegal, and is consistent with noise levels typically measured on other small streets throughout the City. The Leq noise level for the measurement was 56 dBA, which is representative of a quiet urban area. When no cars were present the area was very quiet, with the Lmin noise level measured at 44 dBA. Measurements at other locations throughout the City also did not see an abnormally high use of modified or very loud muffler systems. Program 1.9 supports efforts by the City to encourage enforcement and regulation of motor vehicle exhaust systems in order to keep this noise source under control.

College Traffic on Mountain Road. Site 7 was measured during the evening to determine if unacceptable noise levels were generated by traffic associated with college traffic. As indicated in the item above, it was impossible to positively determine what proportion of traffic on Mountain Road is due to the college. Clearly some traffic on this road is due to the college. The City has installed speed bumps on this roadway and this has acted to keep speeds low and the noise is also correspondingly low. The noise levels measured when college traffic was present was still typical for a quiet urban area. Therefore, the noise levels are acceptable for this area, and while it may be desirable to further reduce traffic on this roadway, it can not be justified from a noise standpoint.

Beeline Bus Noise. At the public meeting, one resident raised the concern about bus noise. He indicated that he thought the Beeline buses were too loud. His observation was, in fact, confirmed by our observations. Beeline buses accounted for a disproportionate share of the maximum sound levels at many of the measurement sites. In fact, a Beeline bus was the loudest

event monitored at Sites 9, 17, 18, and 22. While this study was not intended to quantify bus noise, it is estimated that the Beeline buses are 5 to 10 dBA louder than buses operating in other cities. It should be noted that the levels generated by the buses are not illegal, simply louder than the typical bus. The noise level emitted by a bus is largely dependent on the type and quality of muffler installed on the bus. Quieter mufflers can restrict the exhaust flow and cause a slight loss in power compared to louder mufflers. Program 1.11 has been recommended which would have the City investigate the use of quieter buses, and if appropriate, incorporate a noise standard into their buying program for new buses and/or replace existing mufflers with quieter mufflers.

Sports Complex Related Traffic Noise. The Glendale Sports Complex was constructed at the east end of Fern Lane. Residents continue to complain about the traffic noise associated with the Sports Complex. Site 6 is along Fern Lane; specifically measurements were made at 1981 Fern Lane. Three 15-minute measurements were made at this site. During the first two measurements, which lasted from 9:27 p.m. to 9:59 p.m. cars were regularly traveling in a westbound direction from the Sports Complex. From 10:00 p.m. to 10:15 p.m. only one car passed the measurement site. Two factors may have tainted our noise measurements. First, the police were present on the street and this may have caused people to drive slower than if the police had not been present. Second, one resident told us that about half of the playfields were not being used because it was not soccer season. We were unable to independently confirm this. The measurements during the first two periods averaged 56 and 55 dBA. The noise level during the third period was 50 dBA (Leq). The traffic on the distant freeway kept the noise levels in the 48 to 52 dBA range.

Based on our limited measurements, the Sports Complex traffic does appear to increase average noise levels by about 5 dBA during the 30-minute period when the cars are leaving the Sports Complex. (A similar increase might be expected when the cars are arriving at the complex.) This increase in noise would be noticeable to the local residents. However, the noise levels remain low during this time that the time that the cars are leaving. With noise levels in the mid-50 dBA range, this neighborhood is very typical of many neighborhoods that were measured. The residents also have complained about the maximum sound levels due to cars passing by with loud exhausts. In the first measurement period, the loudest event was a pickup truck and the noise was generated by the vehicle's tires. In the second period, the loudest event was caused by the exhaust system on a pickup truck and reached a noise level of 66.6 dBA. Even though this level may be annoying to residents, it is at a legal level and is consistent with what was measured in other neighborhoods. The City has instituted measures to slow traffic on Fern Lane and this does appear to be working.

While the noise levels are significantly higher during the period that cars are arriving and departing the Sports Complex, the noise levels are still well below those experienced in many neighborhoods in Glendale. The curfew of 10 p.m. at the Sports Complex seems to be effective in eliminating car traffic after 10 p.m. From a noise standpoint, no further action is needed on Fern Lane since levels are not excessively loud.

Truck Traffic on Norton Avenue. At the community meeting, residents complained that trucks in the early morning cut through on Norton Avenue and cause unacceptable noise levels.

Noise measurements were made early in the morning at 854 Norton Avenue. We counted trucks while we conducted our noise measurements and did not see a single truck (including 2 axle delivery trucks). The site was visited a second time without measurements and again no trucks were observed. Noise levels were fairly low during the measurement with the Leq at 52 dBA. Therefore, no additional action is recommended at this time. Program 1.8 promotes review by the City of proposed truck routes, access and delivery times to manage this issue.

Police Training and Enforcement. The issue of police training and enforcement was brought up at the public meeting and in discussions with residents of Fern Lane. In general, the residents stated concerns that more police enforcement of loud mufflers and loud car radios is needed in the City. The Police Department trains its officers on the enforcement of the Noise Ordinance and the Vehicle Code as it relates to noise.

Apartment/Single Family Homes Interface. Residents raised the concern about noise generated at apartment sites impacting adjacent single-family homes. In general, they thought that higher noise levels are associated with apartments and single-family homes should not be located directly adjacent to single-family homes. This issue is both a land use planning issue and an enforcement issue. Many newer communities will in fact not plan apartments directly adjacent to single family homes. They feel that there is a higher level of noise associated with apartment buildings. There are more people and traffic within an apartment complex, and higher noise levels than in single-family areas would be expected. On the other hand, there are many apartment complexes that are located directly adjacent to single family homes where no conflict exists. For older communities, such as Glendale, there may be parts of the city where gradual replacement of single-family homes with condominiums or apartments is desirable. Factors that can mitigate the impact of apartment complexes on adjacent residences include keeping the density of the complex to the lower end of the range for apartment buildings. Keeping major traffic ingress and egress points, pool areas, and other outdoor gathering areas away from single family homes can also help. Providing reasonable setbacks between the apartment buildings and property line is also beneficial. Noise conflicts between single and multi-family residences were one of the issues that prompted a review of the single/multi-family interfaces throughout the city and which led to the rezoning of certain parts of the city under the Multi-Family Transition Zoning program.

When conflicts arise between existing single-family residents and apartment residents it is often an enforcement issue. Loud stereos, parties, and other intermittent events usually are handled by the police. Chronic problems, such as pool pump noise, regular crowd noise around the pool area, and other equipment noise problems, can be corrected via the Noise Ordinance process. The loud events can be measured and the apartment owner cited. Corrective action can also be ordered if the problem is severe.