

Noise Element



June 25, 1990

NOISE ELEMENT
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NOISE ELEMENT

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NOISE ELEMENT

INTRODUCTION

The Noise Element of a General Plan is a comprehensive program for including noise control in the planning process. It is a tool for local planners to use in achieving and maintaining compatible land use 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 Rolling Hills residents will be protected from excessive noise intrusion.

The Noise Element follows the revised State guidelines in the State Government Code Section 65302(f) and Section 46050.1 of the Health and Safety Code. 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.

Purpose of the Element

The purpose of the Noise Element is to outline methods to reduce and control noise, in order to maintain and enhance Rolling Hills as a quiet residential community. Although the primary emphasis is on transportation noise, this element will also consider noise generated from non-transportation sources, including construction and various domestic origins.

This element embodies three major considerations:

- To provide a guide for the development of the Land Use Element by determining noise compatible land uses.
- To identify noise problems and noise sources in the community.
- To mitigate, regulate and propose alternatives to noise problems within the City.

Relationship to Other Elements

The Noise Element is closely related to the Circulation, Land Use and Housing Elements. The primary noise sources in the City are roadway corridors, with noise levels varying depending on the number of vehicles in operation. Roadway location and classification, as defined by the Circulation Element, will determine the intensity and location of noise in the City. Inseparable from circulation considerations are the locations and types of land uses throughout the City. The location of circulation routes in relation to different land uses is a major determining factor of noise exposure. The high quality residential environment that the Housing Element seeks to maintain could be significantly impacted by noise, requiring close coordination between these elements.

INVENTORY OF CURRENT AND FORECAST CONDITIONS

This section of the Noise Element contains a detailed description of the current and projected noise environment within Rolling Hills. This description of the noise environment is based on an identification of noise sources and noise sensitive land uses, a community noise measurement survey and noise contour maps.

To define noise exposure, the major sources of noise in the community must be identified. The sources of noise in Rolling Hills include: roadways, aircraft overflights, and stationary equipment. 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 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 function of the survey is threefold. The first is to determine the existing noise levels at noise sensitive land uses. The second function is to provide empirical data for the correlation and calibration of the computer modeled noise environment. A third important aspect of the survey is to obtain an accurate description of the ambient noise levels in various areas throughout the City.

Noise contours for all of the major noise sources in Rolling Hills were developed based upon current and future traffic conditions. These contours were determined from the traffic levels for these sources. The contours are expressed in terms of the day-night noise level (Ldn). The existing conditions scenario is derived from 1987 traffic levels and environmental conditions. The future conditions scenario is based upon future traffic levels.

Sources of Noise

The most common sources of noise in urban areas are transportation related noise sources. These include automobiles, trucks, motorcycles, and aircraft. Motor vehicle noise is of concern because it is characterized by a high number of individual events which often create a sustained noise level and its proximity to areas sensitive to noise exposure. Aircraft operations, though less frequent, may generate high noise levels that can be disruptive to human activity.

The City of Rolling Hills has a very quiet sound environment with very few sources of noise. Noise sources in Rolling Hills fall into three basic categories. These are: minor arterial and collector roadways; aircraft overflights; and stationary sources. Each of these sources and their impacts on the noise environment of Rolling Hills are summarized in the following paragraphs.

Palos Verdes Drive is located on the northern boundary of the City of Rolling Hills. The collector roadways in the city include: Portuguese Bend Road, Crest Road, Eastfield Drive and Southfield Drive. These roadways are the major transportation noise sources within the City. Traffic noise on surface streets is a source of noise within the community. Residences exist along all of these roadways although, pursuant to zoning, most are setback a minimum of 50 feet from the front easement line.

Torrance Airport is a General Aviation Airport located to the north of the City. Operations from this airport occasionally overfly the City and consist primarily of small piston aircraft. While the number of overflights within the City is not significant, these aircraft do result in some occasional single-event disturbance.

Numerous other noises related to human and animal activity can disrupt the quietness of an area. Stationary noise sources in Rolling Hills include pool equipment, air conditioners, music, leaf blowers, tennis courts, paddle tennis courts and various other types of private recreational and athletic facilities. Noise generated by these facilities, e.g., bouncing balls, tennis ball machines and motor noises, have a more pronounced effect on the audible atmosphere in a City like Rolling Hills with a low ambient noise environment. Another source of nuisance noise in the community stems from the outdoor keeping of animals, such as dogs and horses. Such activities can usually be controlled through municipal noise standards.

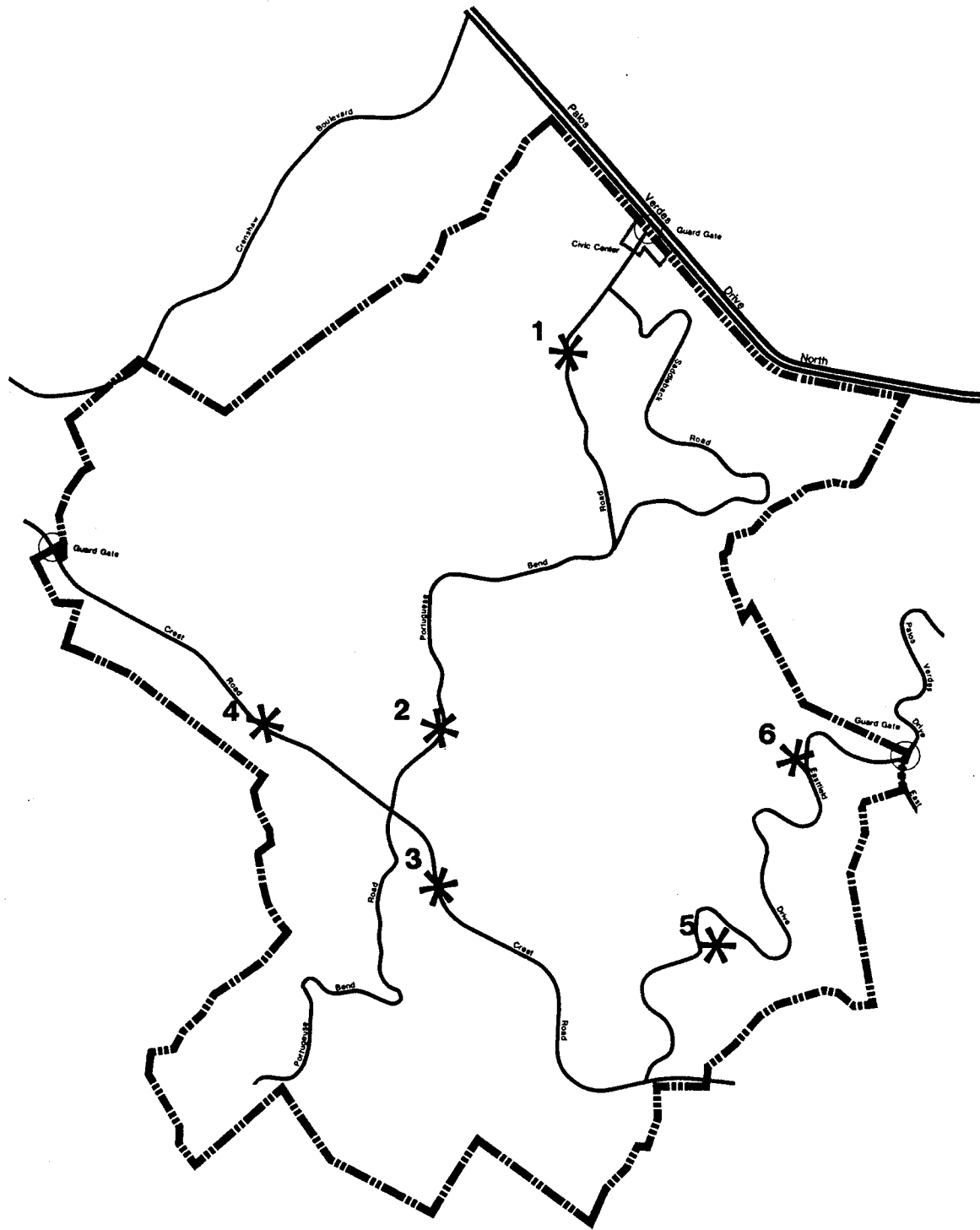
The Noise Element calls for the creation of a municipal noise ordinance to regulate isolated peak noise events. The noise ordinance should include standards for location and screening of noise-generating uses, as well as maximum acceptable noise levels. Hours of operation and permitted activity should also be considered, and sliding scales developed for noise levels which vary by time of day. Noise generating uses should generally be sited at the maximum practical distance from adjacent residences. Screening should be considered in appropriate locations and designs for noise generating uses.

Noise Sensitive Receptors

The City of Rolling Hills has a number of noise sensitive land uses. Within the city is a public school, as illustrated on the Existing Land Use Map (Figure LU-1). In addition, as an entirely residential community, all of Rolling Hills can be considered noise sensitive.

Community Noise Measurement Survey

An assessment of the natural quiet and the noise sources in the City were determined through a community noise survey. The noise measurement survey was conducted at five noise sensitive locations which reflect the noise levels within the City. The locations of noise measurement are illustrated in Figure N-1. The results of the survey are found in Table N-1.



cba ↑ North 0 2000
scale in feet

SOURCE: Mestre-Greve Associates



Figure N-1
Noise Measurement Locations

JUNE 25, 1990

**TABLE N-1
NOISE MEASUREMENT RESULTS
AUGUST 1, 1989**

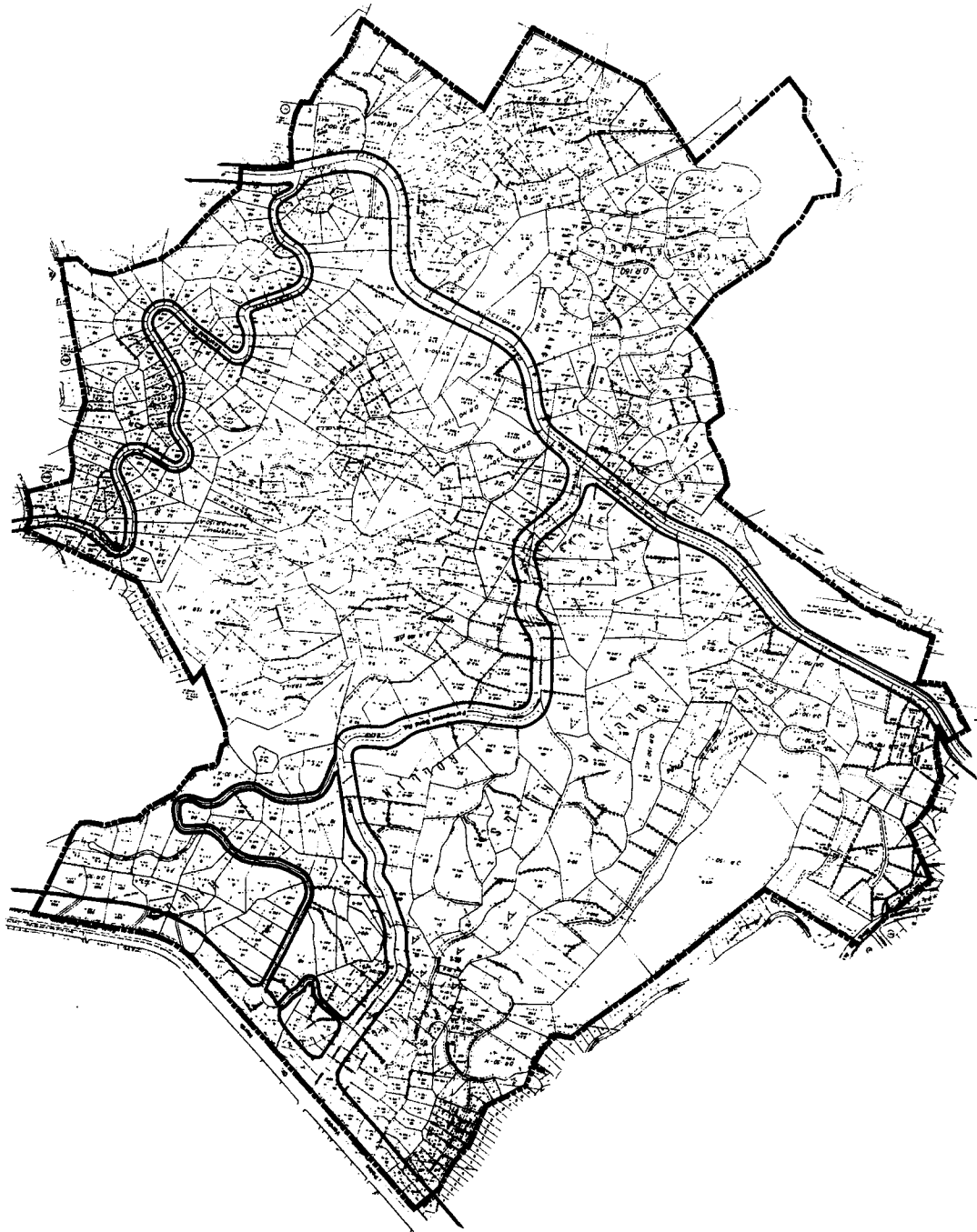
Site	Predominant Land Use	LEQ	Lmax	L1	L10	L50	L90	L99	Major Source of Noise
1. Portuguese Bend Road (S. of Saddle Back)	Residential	56	70	66	61	45	39	38	Local Traffic
2. Portuguese Bend Road (N. of Crest Road)	Residential	53	70	65	56	41	38	37	Local Traffic
3. Crest Road (E. of Portuguese Bend Road)	Residential	59	75	70	63	43	37	36	Local Traffic
4. Crest Road (E. of Portuguese Bend Road)	Residential	59	73	69	63	43	38	37	Local Traffic
5. Eastfield Drive (S. of Chuckwagon Rd.)	Residential	60	78	73	62	38	36	35	Local Traffic
6. Eastfield Drive (N. of Roundup Rd.)	Residential	58	74	70	61	44	40	38	Local Traffic

Community Noise Contours



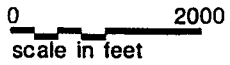
The day-night sound level (Ldn) is the measurement of noise exposure preferred by government agencies responsible for establishing noise standards and criteria. The Ldn represents an average of the A-weighted noise levels occurring in a 24-hour period, weighting noise that occurs at night (10 p.m. to 7 a.m.) to account for the greater sensitivity that people have to noise at night.

The noise environment for Rolling Hills can be described using noise contours developed for the major noise sources in the City. The contours are developed for existing (1987) traffic conditions as presented in Figure C-1, as well as projected conditions under General Plan buildout, and are depicted in Figures N-2 and N-3. The contours are based on the existing and future conditions of traffic volumes. Noise contours represent lines of equal noise exposure, just as the contour lines on a topographic map are lines of equal elevation. The contours shown on the map are the 55 Ldn noise level. The noise contours presented should be used as guide for land use planning. The 55 Ldn contour defines the Noise Referral Zone. This is the noise level for which noise considerations should be included when making land use policy decisions.

The contours presented in this report are a graphic representation of the noise environment. These distances to contour values are also shown in tabularized format in Table N-2. Topography and intervening buildings or barriers have a very complex effect on the propagation of noise. To present a worst case estimate, the topographic effect is not included in these contours.



 55 Ldn Noise Contour

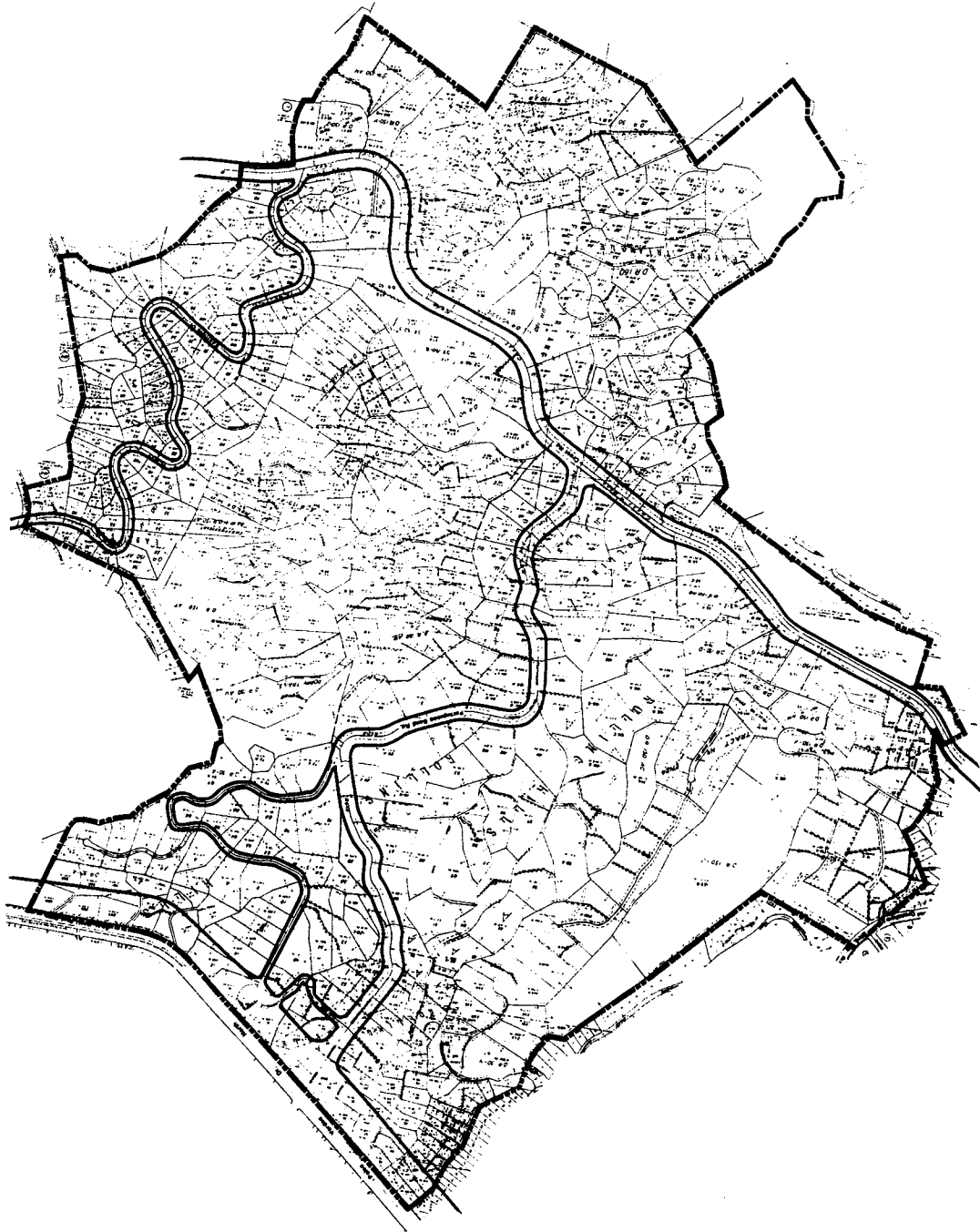
  North  scale in feet

SOURCE: Mestre-Greve Associates






Figure N-2
Existing Noise Contours

JUNE 25, 1990



 55 Ldn Noise Contour

  North  scale in feet

SOURCE: Mestre-Greve Associates



Figure N-3
 Projected Noise Contours
 Under General Plan Buildout

JUNE 25, 1990

**TABLE N-2
DISTANCE TO TRAFFIC NOISE CONTOURS**

EXISTING CONDITIONS

Roadway Name	Index	ADT (,000)	Speed	LDN@ 100 ft.	Distance to Contour (feet)		
					50 LDN	55 LDN	60 LDN
CREST ROAD							
East Gate - Buggy Whip Dr.	1	2.3	35	53.3	167	77	36
Buggy Whip Dr. - Portuguese Rd.	1	1.1	35	50.1	102	47	22
Portuguese Rd. - Southfield Dr.	1	2.6	35	53.9	181	84	39
EASTFIELD							
Southfield Dr. - Chuckwagon Rd.	1	1.4	35	51.2	120	56	26
Chuckwagon Rd. - P.V. Drive East	1	2.0	35	52.7	152	70	33
PORTUGUESE BEND ROAD							
P.V. Drive N - Saddleback	1	4.0	35	55.7	241	112	52
Saddleback - Saddleback	1	4.0	35	55.7	241	112	52
Saddleback - Crest Rd.	1	2.5	35	55.7	176	82	38
SADDLEBACK ROAD							
Portuguese Rd. - Portuguese Rd.	1	0.4	35	45.7	52	24	11
PALOS VERDES DRIVE SOUTH							
West - Rolling Hills Rd.	1	28.0	35	64.2	882	410	190
Rolling Hills Rd. - East	1	35.0	35	65.1	1024	475	221

**TABLE N-2
DISTANCE TO TRAFFIC NOISE CONTOURS
(continued)**

FUTURE CONDITIONS

Roadway Name	Index	ADT (,000)	Speed	LDN@ 100 ft.	Distance to Contour (feet)		
					50 LDN	55 LDN	60 LDN
CREST ROAD							
East Gate - Buggy Whip Dr.	1	2.48	35	53.6	175	81	38
Buggy Whip Dr. - Portuguese Rd.	1	1.21	35	50.5	108	50	23
Portuguese Rd. - Southfield Dr.	1	2.73	35	54.1	187	87	40
EASTFIELD							
Southfield Dr. - Chuckwagon Rd.	1	1.52	35	51.5	126	59	27
Chuckwagon Rd. - P.V. Drive East	1	2.13	35	53.0	158	73	34
PORTUGUESE BEND ROAD							
P.V. Drive N - Saddleback	1	4.30	35	56.0	253	117	54
Saddleback - Saddleback	1	4.06	35	55.8	244	113	52
Saddleback - Crest Rd.	1	3.40	35	55.0	216	100	47
SADDLEBACK ROAD							
Portuguese Rd. - Portuguese Rd.	1	0.42	35	45.9	54	25	12
PALOS VERDES DRIVE SOUTH							
West - Rolling Hills Rd.	1	34.00	35	65.0	1004	446	216
Rolling Hills Rd. - East	1	42.70	35	65.0	1169	543	252

SUMMARY OF FINDINGS

The sound levels in Rolling Hills are generally low and indicative of a rural environment. In most areas around the City, there are no significant noise sources. Where there are noise sources, the predominate sources of noise in Rolling Hills, as in most other communities, come from mobile noise sources including motor vehicles. Minor arterial roadways adjacent to the City and collector roadways within the City expose portions of the City to traffic noise levels. General aviation aircraft operations from Torrance Municipal Airport also contribute to the noise environment. The noise impact due to aircraft are considered minimal but do result in occasional single event disturbance. Other sources of noise within the City are from non-transportation sources including mechanical equipment or construction noise. The primary source of equipment noise is from pool pumps/filters, air conditioners, music and leaf blowers. The noise environment in Rolling Hills is typical of a rural setting, except at locations directly affected by these transportation and non-transportation noise sources. In most locations around the City, noise is limited to the sounds of nature.

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, convalescent hospitals, places of worship and schools. As an entirely residential community, all of Rolling Hills can be considered noise sensitive.

Based on a net potential increase in 59 residential dwellings under General Plan buildout, the quiet noise environment in Rolling Hills will likely remain intact. Nonetheless, the Noise Contour Maps (Figures N-2 and N-3) do illustrate slight increases in traffic noise levels generated by increases in traffic volumes. The 55 Ldn contour illustrated on these maps represents the Noise Referral Zone for which any proposed noise sensitive land use within this zone should be evaluated on a project specific basis. For the City of Rolling Hills, 55 Ldn represents zones where residential development should be discouraged without proper mitigation as part of the project. This is designed to ensure continued quiet living environments within the City.

The sources of noise in Rolling Hills can be divided into two basic categories, transportation sources and non-transportation sources. A local government has little direct control of transportation noise

at the source. State and Federal agencies have the responsibility to control the noise from the source, such as vehicle noise emission levels. The most effective method the City has to mitigate transportation noise is through reducing the impact of the noise onto the community (i.e., noise barriers and site design review) or reducing the level of traffic or speeds.

The most effective method to control community noise impacts from non-transportation noise sources is through application of a Community Noise Ordinance. The Noise Element calls for the development of Community Noise Ordinance to help ensure that City residents are not exposed to excessive noise levels from non-transportation noise sources. The Noise Ordinance should be designed to protect quiet residential areas from stationary noise sources. The noise levels encouraged by the ordinance would be typical of a quiet residential area.

ISSUES SUMMARY

Rolling Hills does not currently experience significant noise conflicts. However, as development and related traffic volumes and noise-generating activities increase, so will potential noise. The following issues have been identified as part of the General Plan Update and will be addressed in the Noise Element goals and policies.

Transportation Noise Control - The noise environment in Rolling Hills is indicative of a quiet residential environment without any significant noise sources. Within and adjacent to the City of Rolling Hills are some transportation related noise sources including a minor arterial roadway adjacent to the City, collector roadways within the City, and occasional aircraft overflights. These sources are contributors of noise in Rolling Hills. Strategies to reduce their influence on the community noise environment are part of the Noise Element.

Noise and Land Use Planning Integration - Information relative to the existing and forecast noise environment within Rolling Hills should be integrated into future land use planning decisions. The Element presents the noise environment in order that the City may include noise considerations in development programs.

Community Noise Control for Non-Transportation Noise Sources - Residential land uses and areas identified as noise sensitive must be protected from excessive noise from non-transportation sources including mechanical equipment and construction. These impacts are most effectively controlled through the application of a City Noise Ordinance.

GOALS AND POLICIES

The following goals and policies were developed as part of the General Plan Update and reflect input received from the General Plan Advisory Committee. They have been prepared to ensure noise compatible land use planning in Rolling Hills.

GOAL 1: Preserve and enhance Rolling Hills' quiet rural atmosphere.

Policy 1.1: Develop and implement a comprehensive community Noise Ordinance to provide mitigation of noise-generating uses.

Policy 1.2: Require the location of public and private recreational activities to limit the noise impact on adjacent residences.

Policy 1.3: Require the location of animal holding areas to minimize noise spillover onto surrounding properties.

Policy 1.4: Promote the use of landscaping to obscure noise production from roadways and adjacent properties.

Policy 1.5: Reduce transportation noise through strict enforcement of speed limits in the City.

Policy 1.6: Evaluate noise generated by construction activities, and appropriately regulate through a Community Noise Ordinance.