CHAPTER V

NOISE

Abstract

The noise element of the General Plan for the City of Scotts Valley has been prepared in compliance with California Government Code Section 5302 (f) to control and abate environmental noise and to protect citizens from excessive noise exposure.

Noise Pollution

Noise is a major factor that affects the quality of life. Local noise levels are a cumulative result of individual noise sources. Some of these sources are labor saving devices used by home owners and residents of Scotts valley. Other sources are surface vehicular traffic and occasional aircraft fly-overs. Surface vehicular traffic is the single most significant source that affects the ambient noise levels at different locations in Scotts valley.

Noise sources which exceed the ambient noise levels but are generally tolerated are police, fire, and other emergency vehicle sirens. Another major of source of tolerated excessive noise levels are lawn mowers and other labor saving devices commonly used to maintain or beautify neighborhoods. Table 1 below lists various noise levels in A-weighted decibels (dBA), which compares different noise sources.

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TABLE 1

NOISE LEVELS FOR VARIOUS SOURCES AND LOCATIONS

Noise Level (dBA)	Outdoor Noise Sources	Indoor Noise Sources	Loudness Relative to 70 dBA
140	Gunshot at source		
130	Military jet aircraft takeoff at 50' 130 dBA Threshold of discomfort 120+/- 5 dBA	Heavy duty cutting torch Auto body shop noise levels up to 120 dBA	64 times
120	Commercial jet aircraft take off at 200' 120 dBA	Some rock and roll bands 108-114 dBA	32 times
110	Commercial jet aircraft at 1,000' 103 dBA; Helicopter at 100' 100 dBA	Auto body air grinder 20' 100-108 dBA	16 times
100	Illegal motorcycle at 25' 95 dBA, Vehicle code violation, passby noise	Newspaper presses 95-100 dBA Dance floor rock music 90-97 dBA	8 times
90	Diesel truck 40-50 mph 50' 82-92 dBA; Diesel locomotive 45 mph at 100' 83 dBA	Food blender 88 dBA; Milling machine 85 dBA; Garbage disposal 80 dBA	4 times
80	Excessive urban noise 80 dBA i.e., traffic noise 50' 76+/- 6 dBA	Recorded music 76 dBA; vacuum cleaner 73-78 dBA	2 times
70	NC Air-conditioning unit at 100' 60-65 dBA; Waste water treatment plant 60-65 dBA	Dishwasher rinse at 110' 60 dBA; at 50' 67 dBA	-0-
60	Large transformers at 100' 50 dBA	Open office 55 dBA; Hotel lobby 60 dBA; PC computer 52 dBA	1/2 times
50	Quietest bird calls 44 dBA Typical quiet urban noise level is about 40 dBA	Private office without occupants 45 dBA maximum	1/4 times
40	Below outdoor noise levels (some places in Scotts Valley as low as 35 dBA)	Hospital room, no occupants 30-40 dBA	1/8 times
30	Below outdoor noise levels	Architectural design value for private bedrooms 25 dBA	1/16 times
20			1/32 times

Noise Source Identification

Vehicular traffic along Highway 17, Mt. Hermon Road and Scotts Valley Drive is the single most significant source of noise in the City of Scotts Valley. Noise levels from these roadways are shown on the noise contour map, a compilation of both noise measurements and use of the Federal Highway Administration Highway Traffic Noise model, A Guide for Traffic Engineers.

Approximately 60,000 daily auto and truck trips occur on Highway 17. Some of these vehicles may generate from 90 to 95 dBA along and adjacent to the highway. Acceleration and brake noise intensify the noise problem from highway 17.

Truck traffic, especially quarry trucks, and buses along Mt. Hermon Road and Scotts Valley Drive, contribute to the noise levels on these two major arterials. The concentration of retail centers along Mt. Hermon Road and major employers which take access from Scotts Valley Drive generate sufficient automobile traffic to further increase the ambient noise levels in the surrounding neighborhoods.

Non-surface traffic noise sources in the commercial and industrial zones include heating, ventilation and air conditioning units for the buildings, delivery and garbage trucks which service the businesses, and various industrial processes or machine operations.

Currently, the lowest ambient background noise levels in Scotts Valley is about 40 dBA, occurring between midnight and four in the morning. The highest ambient background noise level is currently 73 dBA, occurring about eleven feet from the edge of Mt. Hermon Road near Glen Canyon Road at noon during an average week day.

Noise sources in the residential neighborhoods may include noisy vehicles, pool equipment and air conditioning systems, noisy leaf blowers, lawn mowers, barking dogs and other similar one-time noise events which can disturb the residential environment. Outdoor recreation areas such as parks and playgrounds are also potential sources.

There are no railways and no regular aircraft fly-overs that fall into the category of problems with respect to noise for Scotts Valley. Intermittent aircraft fly-overs, typically single engine aircraft or CDF helicopters create short-term disturbances.

Dissimilar land use is another source of noise problems. Where residential areas are near commercial areas, the complaints have been registered against loading dock noise, trucks cleaning businesses, and garbage trucks operating in the early morning hours. The gunfire from the Sportsman Club gun range at Lodato Park is also a source of noise throughout adjacent residential areas, as well as residential areas across the highway.

Effect of Noise on Quality of Life/Acceptable Noise Levels

Excessive noise can affect the psychological and physical well being of persons and may influence the social and economic well being of a community. A-weighted sound pressure levels in decibels is used to quantify the local noise levels and correlate human response to noise.

The US Environmental Protection Agency (EPA) has completed a study that demonstrate that noise in excess of seventy A-weighted decibels (70 dBA) may be damaging to one's hearing. The US Occupational Safety and Health Administration (OSHA) has set a workplace noise level of eighty-five A-weighted decibels (85 dBA) as the level at which a person may not spend more than sixteen hours per day and at which the manager must implement a hearing conservation program at the workplace. Workplace noise levels above 90 dBA require an engineering plan to be submitted to OSHA or CAL-OSHA to reduce such excessive noise levels. Therefore, it is clear that community noise reduction to well below seventy A-weighted decibels (70 dBA) is a desirable goal.

The Uniform Building Code and the noise level codes for the interior of new residential developments with all of the windows and doors closed limits the annual average day-night noise level at forty-five A-weighted decibels (Ldn $\leq$ 45 dBA) without people present. Empty private offices where quiet concentration is necessary should also be below this level. Open offices like reception areas, computer rooms and open space engineering offices can reach levels as high as fifty-five A-weighted decibels (55 dBA).

Noise sensitive land uses are typically given special attention to achieve protection from excessive noise. Noise sensitive land uses include hospitals, churches, libraries, schools, and retirement homes. Table 2 lists some of the sensitive land uses in Scotts Valley.

Table 2

Noise Sensitive Land Uses

Location	Land Use
Scotts Valley Drive/Bean Creek Road	Middle School
Vine Hill School Road	Elementary School
Granite Creek Road	Baymonte Christian School
Lockewood Lane	Senior Congregate Care Facility

In addition to sensitive land uses, other proposed uses should be evaluated for possible noise impacts on existing adjacent uses. Table 3 lists acceptable noise increase levels typically deemed acceptable based on the existing adjacent use.

Table 3

Noise Increase Standards

Proposed New Use/Location of dBA Reading	Maximum Noise Increase in dBA adjacent to Existing: Sensitive	Residential	Commercial	Industrial
Sensitive				
at Property Line	3	5	5	5
50' from PL	3	3	--	--
Residential				
at Property Line	3	5	5	5
50' from PL	3	3	--	--
Commercial				
at Property Line	3	5	5	5
at fifty feet	3	3	--	--
Industrial				
at Property Line	3	5	5	7
at fifty feet	3	3	--	--

Mitigation of Existing and Foreseeable Noise Levels

Scotts Valley should strive to ensure a compatible noise environment for all existing and future land uses. Urban noise levels can be reduced or increases avoided if existing and projected noise level conditions are considered when assigning land uses to specific parcels.

One method to ensure compatible noise environment in a community is through a noise ordinance. An ordinance would set standards for all new uses and structures. The ordinance could also address existing uses that generate excessive noise and require corrective action by the owner or operator of the use. Acoustical analysis and engineering may be required for new uses or for modifying an existing use.

Surface traffic is the largest contributor to the local ambient noise levels in Scotts Valley and one of the most difficult noise level sources to control. Speed limits and vehicle code enforcement are the two most effective methods available for this control. A new inter-modal transportation center located on Mt. Hermon Road may reduce transportation noise levels if it significantly reduces the number of vehicle trips per day on any or all other major traffic arterials in the city.

In order to mitigate adverse noise level impacts, new proposed developments and land uses should be examined for compatibility with adjacent land uses. Redesignation of land uses under the general plan land use plan should include appropriate noise level mitigation measures.

NG-422 GOAL
TO PROVIDE AN ENVIRONMENT FREE FROM ANNOYING AND/OR HARMFUL NOISE.

Objective

NO-423 Reduce the noise impact from traffic on major streets and highways.

Policy

NP-424 Where consistent with other goals and policies, improve transportation facilities and reduce traffic volumes on streets in an effort to maintain or reduce ambient noise levels.

Actions

NA-425 The City shall promote mass transit systems and car pooling, bicycling, and walking through adoption of a trip reduction ordinance.

NA-426 The City shall support a new mid-town interchange on Highway 17 to reduce the Granite Creek and Mt. Hermon future traffic, thereby maintaining or reducing the future traffic noise levels.

Policy

NP-427 The City should work with the California Department of Transportation (CALTRANS) to mitigate the effects of existing and future highway noise.

Actions

NA-428 The City shall request that CALTRANS install noise attenuation barriers along the easterly side of Highway 17 south of Granite Creek Road parallel to South Navarra Drive and Meadow Way to protect the residential neighborhood. The noise attenuation barriers should be multiple rows of dense conifers, phasing, or other methods more aesthetically compatible with Scotts Valley than sound walls. If sound walls are required to achieve the desired attenuation, the walls should be screened with landscaping.

NA-429 Support State legislation for noise abatement design measures in all State highway projects within the Planning area.

Objective

NO-430 Reduce the noise generated by transportation of goods on city streets.

Policy

NP-431 The City shall attempt to reduce the noise levels generated by commercial vehicles along Mt. Hermon Road and Scotts Valley Drive.

Actions

NA-432 The City should develop rules regulating the use of air horns and jake-brakes on trucks to reduce the noise generated by them.

NA-433 The City should develop rules regulating diesel truck-trailer transports on Scotts Valley Drive and Mt. Hermon Road during late evening, early morning, and night time hours or on Sundays.

NA-434 The city should develop rules regulating all truck or trailer delivery times in all zone districts and to all construction sites during late evening, early morning, and night time hours or on Sundays and holidays.

Policy

NP-435 The City will use state and local legislation to attempt to reduce the traffic noise levels along Mt. Hermon Road, Scotts Valley Drive and Highway 17.

Actions

NA-436 The City will enforce existing speed limits, lowering them to reduce the noise levels where such benefits can be realized and remain consistent with other city goals and policies.

NA-437 The City will support State of California legislation governing noise emissions from vehicles.

NA-438 The City will enforce noise emission standards imposed by the State of California vehicle code.

Policy

NP-439 The City should include noise abatement design measures in all street and roadway improvement projects.

Action

NA-440 The City Public Works Department shall review all roadway improvement plans within the City limits to ensure incorporation of noise abatement measures. New street layout and redesigned street projects should be assessed for noise impacts, especially on neighboring noise sensitive land uses.

Objective

NO-441 Promote new land uses which have noise generation/sensitivity characteristics that are compatible with neighboring land uses, based on the day-night average A-weighted noise levels.

Policy

NP-442 New developments which may increase the day-night noise level by more than the levels shown in Table 3 shall be approved only when proper noise attenuation design measures have been incorporated to the City's satisfaction.

Actions

NA-443 The City shall adopt a comprehensive noise ordinance which implements the noise policies of this General Plan. The noise ordinance will contain land use compatibility noise standards and will prescribe methods for meeting those standards.

NA-444 New Developments that are considered noise sensitive shall not be located in proximity to existing noise generating uses where the existing noise level is considered incompatible with the proposed new sensitive use.

Policy

NP-445 New developments shall include measures to minimize increases in local ambient noise levels.

Actions

NA-446 New developments shall not be approved which may increase the noise levels more than those increases specified in table 3 of this General Plan Element.

NA-447 Commercial and industrial noise level performance standards shall be retained in the zoning ordinance to restrict noise level increases and hours of operation.

NA-448 Through the environmental review process, identify and require noise level mitigation of potentially significant noise impacts. Deny new developments which cannot mitigate significant adverse noise level impacts on neighboring land uses.

NA-449 The City shall strive to meet the local noise levels by careful permit review for noise increase in the case of new commercial or industrial.

NA-450 The City may require an acoustical engineering analysis to show that the new commercial or industrial planned use will not increase the local ambient noise levels by more than the values set forth in the noise element of the General Plan.

Policy

NP-451 New developments shall include noise attenuation measures to reduce the effects of existing noise to an acceptable level.

Actions

NA-452 In areas where the annual day-night noise level exceeds 60 dBA, the City shall require an acoustical engineering study for proposed new construction or renovation of structure(s). Each acoustical analysis should recommend methods to reduce the interior day-night annual average noise levels to below 45 dBA for private dwellings, motels, hotels, offices and noise sensitive uses.

NA-453 The City shall adopt a comprehensive noise ordinance which implements the noise policies of this General Plan. This noise ordinance will contain land use compatibility noise standards and will prescribe methods for meeting those standards.

NA-454 Exterior noise levels measured at the property line of proposed new residential developments shall be limited at or below an average annual day-night level of 60 dBA.

Policy

NP-455 The City planning and building department shall ensure noise attenuation techniques are constructed in new development projects.

Actions

NA-456 The City building inspector will ensure that all design specifications relevant to a project's acoustical design for noise level reduction are completed as approved prior to final approval of any project.

NA-457 New residential development should not be allowed in regions where the annual day-night noise level exceeds 75 dBA.

NA-458 Hotel, motel and professional office construction or renovation plans must include design techniques to ensure that noise is attenuated to 45 decibel or better between adjacent private rooms.

Objective

NO-459 Reduce existing noise pollution sources.

Policy

NP-460 The City shall identify and minimize or eliminate existing noise pollution source.

Actions

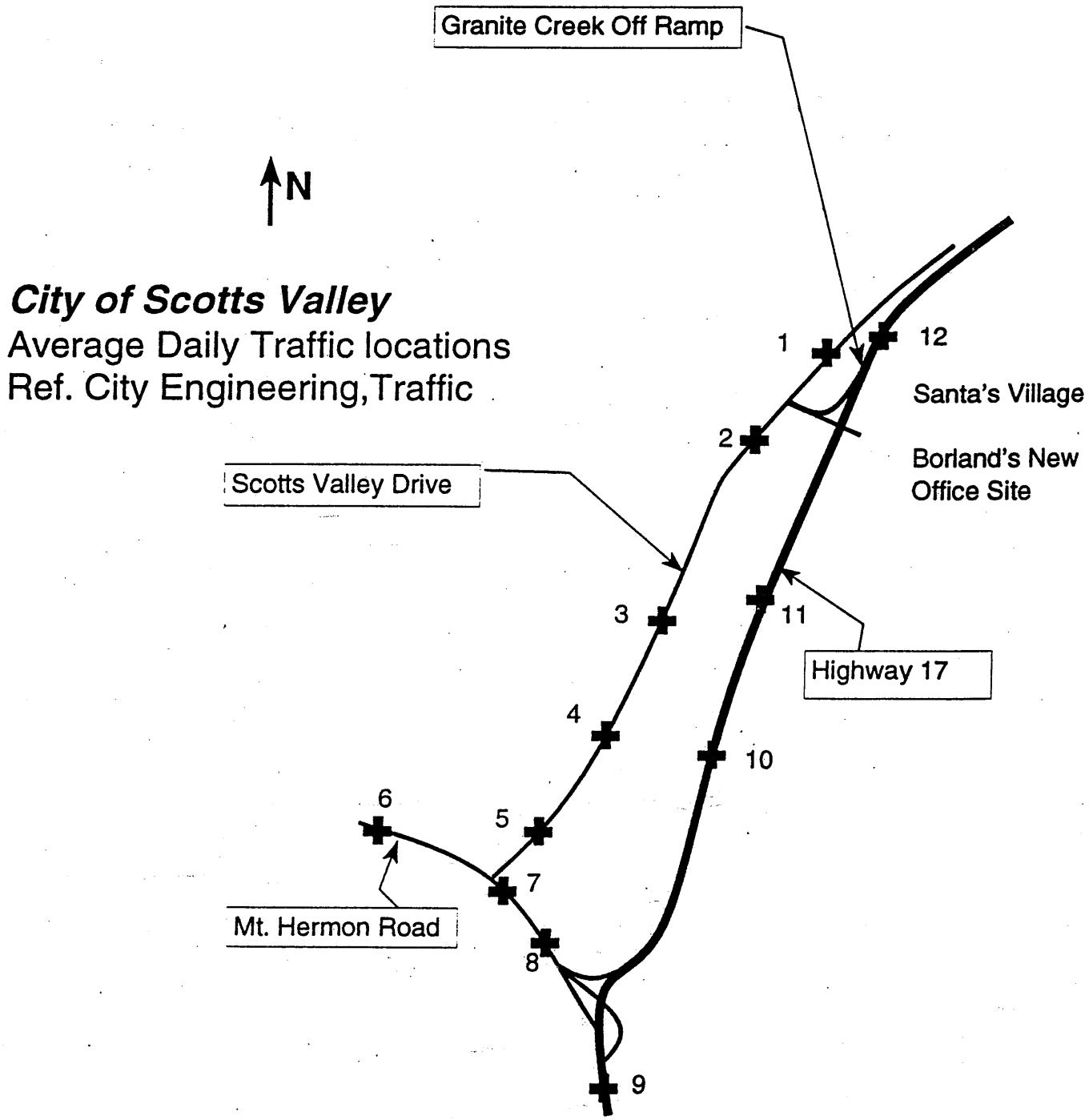
NA-461 Outdoor recreation areas, especially in residential neighborhoods, should incorporate noise attenuation barriers, such as multiple rows of dense conifers, if the day-night noise levels exceed 60 dBA.

NA-462 The City shall require the Sportsman's Club to reduce its ambient noise levels to legal limits at the property line of the gun range or abandon the firing range at Lodato Park at the end of its lease.

NOISE LEVEL READINGS & PROJECTIONS (AVERAGE CASE)
1992 - 2010

LOCATION	SITE	YEAR	ADT	Distance in Feet from Edge of Roadway 60 dBA	65 dBA	70 dBA
Mt Hermon Rd	8	1992	34,200	185	62	4
	8	2003	32,600*	195	67	6
	8	2010	32,886	188	64	8
	7	1992	34,300	195	67	9
	7	2003	32,100*	184	62	6
	7	2010	32,101	185	62	7
	6	1992	28,238	165	54	4
	6	2003	34,349	194	67	9
	6	2010	40,543	225	80	15
S.V. Drive	5	1992	20,265	164	58	17
	5	2003	31,788	233	86	30
	5	2010	41,230	286	94	39
	4	1992	20,708	167	59	18
	4	2003	35,580	251	98	34
	4	2010	47,906	318	127	45
	3	1992	10,500	92	31	4
	3	2003	15,872	134	47	12
	3	2010	19,663	158	57	16
	2	1992	12,400	107	37	7
	2	2003	15,900	151	47	7
	2	2010	18,350	149	54	15
	1	1992	4,800	45	11	--
	1	2003	5,500	51	14	--
	1	2010	5,990	55	16	--
Highway 17	9	1992	61,000	598	244	86
	9	2003	79,802	735	301	110
	9	2010	92,964	825	344	129
	10	1992	54,000	552	220	75
	10	2003	66,348	645	262	93
	10	2010	70,288	672	274	99
	11	1992	54,000	552	220	75
	11	2003	70,645	675	275	118
	11	2010	72,840	687	280	102
	12	1992	51,000	524	208	69
	12	2003	66,770	646	260	94
	12	2010	67,146	652	262	93

*decrease due to proposed midtown interchange



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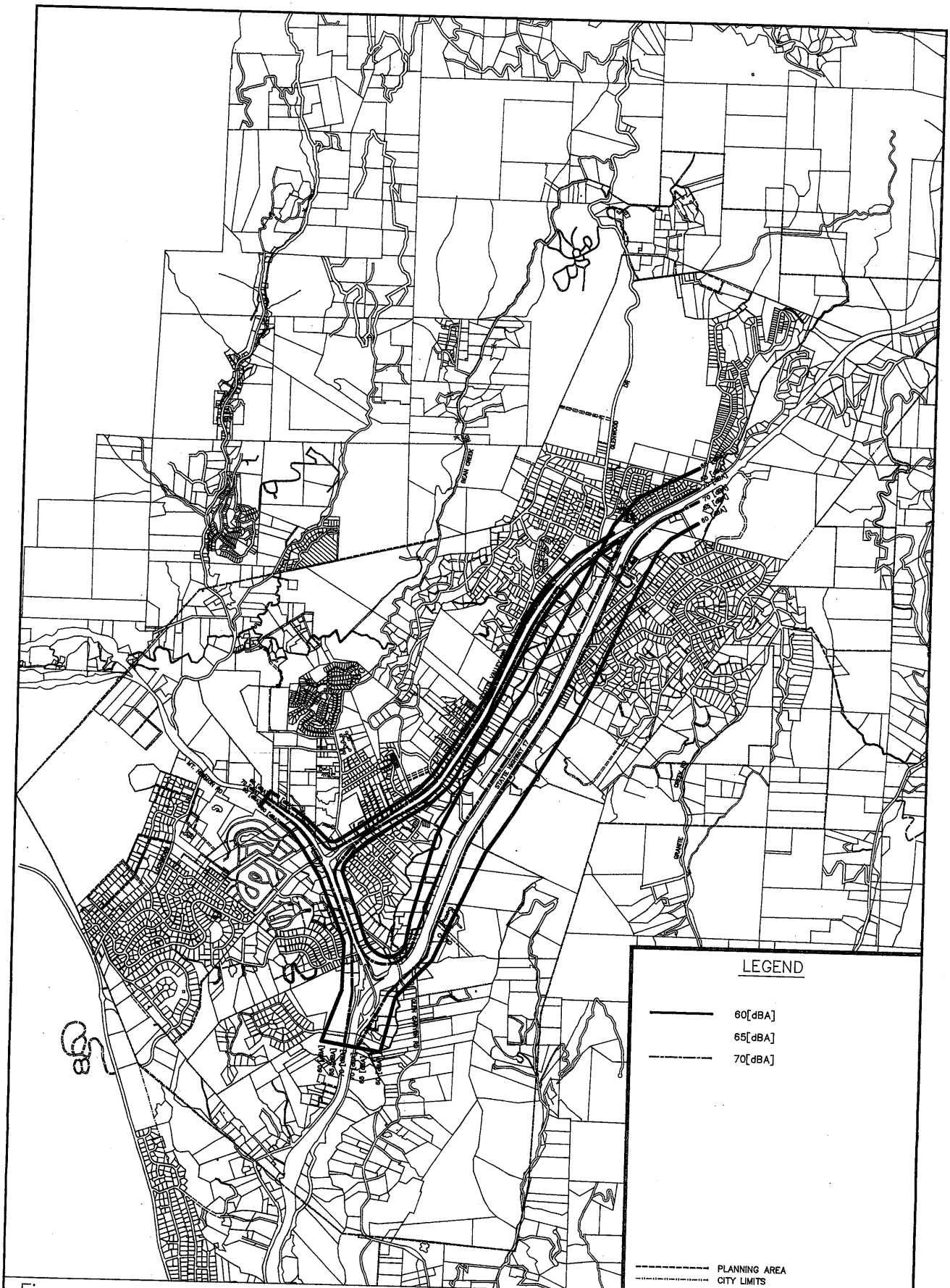

Figure:
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City of Scotts Valley

General Plan

Existing Noise Contours

DISCLAIMER

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BASE MAP: LYNX Technologies