

NOISE STUDY
for the
EAST AREA 1 SPECIFIC PLAN
SANTA PAULA, CALIFORNIA

Prepared for:

Limoneira Company
Parkstone Companies

Prepared by:

Impact Sciences, Inc.
803 Camarillo Springs Road, Suite A
Camarillo, California 93012

November 2007

TABLE OF CONTENTS

Section	Page
Summary.....	1
Introduction.....	8
Project Description	9
Project Location	9
Project Description	9
Introduction to Noise and Vibration.....	11
Introduction to Noise.....	11
Introduction to Vibration.....	17
Sensitive Receptors.....	18
Existing Conditions	18
Overview	18
Regulatory Setting.....	18
Caltrans	24
On-Site Noise and Vibration Environment.....	25
Off-Site Noise and Vibration Environment	25
Monitored Noise Levels	26
Modeled Noise Levels	29
Adjacent Properties.....	30
Methodology	31
Thresholds of Significance.....	34
Noise	34
On-Site Thresholds	34
Off-Site Thresholds.....	35
Vibration.....	35
Impacts of the proposed project	36
Construction Impacts.....	36
Operation Impacts.....	41
Summary of Impacts.....	50
Mitigation Measures.....	50
References.....	52
Report Preparation	53

Appendices

Appendix A – Calculation Sheets and Model Outputs

LIST OF FIGURES

Figure		Page
1	Regional and Project Site Location.....	10
2	East Area 1 Land Use Plan.....	12
3	Common Noise Levels.....	15
4	Noise Attenuation by Barriers.....	16
5	Typical Levels of Ground-Borne Vibration.....	19
6	General Plan Figure N-2 – Existing Noise Contours	27
7	Noise Monitoring Locations	28
8	Surrounding Land Use Map.	32
9	Noise Levels of Typical Construction Equipment	37
10	By-Pass Route Option.....	45

LIST OF TABLES

Table		Page
1	East Area 1 Specific Plan Proposed Land Use Summary.....	13
2	Outside to Inside Noise Attenuation (dB(A)).....	14
3	Monitored Noise Levels	29
4	Modeled Existing Roadway Noise Levels	30
5	Vibration Source Levels for Construction Equipment	40
6	Future with and without Project Modeled Noise Levels (dB(A) CNEL) at 75 feet from Roadway Centerline.....	42
7	Future with and without Project and Bypass Route Modeled Roadway Noise Levels (dB(A) CNEL)	46

SUMMARY

This noise study presents information on the existing noise environment and noise sources within the East Area 1 Specific Plan area and vicinity, analyzes the significance of potential noise impacts, and recommends mitigation measures to avoid or lessen the significance of potential impacts.

The East Area 1 Specific Plan area is located immediately east of Santa Paula, California. The site is located within the planning area of the City of Santa Paula, as defined in the City's General Plan, and is identified as an urban expansion area in the General Plan. The City of Santa Paula is serving as lead agency as defined by the California Environmental Quality Act (CEQA), as the City is responsible for the review and approval of the proposed Specific Plan and related discretionary actions. The City's General Plan requires that a Specific Plan be prepared before annexation of the site can be considered. The East Area 1 Specific Plan, proposed by the Limoneira Company, would permit the development of educational, residential, commercial, and open space/park uses within the approximately 501-acre Specific Plan area.

The majority of the Specific Plan area is actively cultivated with citrus and avocado orchards and a small portion, less than 5 acres, is currently used for cultivation of row crops. In the southern and southeastern portions of the site are structures related to the long-term agricultural use of the site, consisting of houses, storage sheds, and a barn.

Analyses of the existing and future noise environments presented in this study are based on technical reports, noise monitoring, and noise prediction modeling. Traffic volumes used as data inputs to the noise prediction model were calculated based on peak-hour turning movements provided by Fehr & Peers/Kaku Associates for the 35 local intersections studied in the traffic impact analysis prepared for the project. Potential vibration impacts were determined using data from the Federal Transit Administration and California Department of Transportation (Caltrans). Calculation sheets and model outputs are provided in **Appendix A** of this study.

According to the City's Noise Element noise standards, office buildings, business commercial and professional uses are "acceptable" with exterior noise levels of up to 70 decibels as measured on an A-weighted scale (dB(A)) L_{dn} /Community Noise Equivalent Level (CNEL). The project would result in a significant noise impact if on-site exterior locations around the these types of uses would be exposed to noise levels above 70 dB(A) L_{dn} /CNEL. For industrial uses 75 dB(A) is the acceptable exterior noise level threshold. For residential uses, the noise guidelines identify 60 dB(A) L_{dn} /CNEL as the acceptable exterior noise level threshold. The project would result in a significant noise impact if a person within a usable

area (such as a yard or patio) of the proposed residential uses would be exposed to exterior noise above 60 dB(A) $L_{dn}/CNEL$.

Off-site noise thresholds consider the City Noise Compatibility Matrix, the County General Plan, community responses to changes in noise levels, and CEQA standards. Changes of less than 3 dB(A) in a noise level are not typically noticed by the human ear.¹ Some individuals who are extremely sensitive to changes in noise may notice changes from 3 to 5 dB(A). Based on this information, the following thresholds have been established for this analysis to assess traffic-related noise increases:

1. An increase of 3 dB(A) or more in traffic noise level that occurs from project-related activities would be significant if the resulting noise levels would exceed the City Noise Compatibility Matrix thresholds for “acceptable” exterior or interior noise levels. In addition, an increase of 3 dB(A) or greater in traffic noise levels that occurs from project-related activities would be significant if the resulting noise levels exceeded County exterior or interior CNEL levels. .
2. An increase of 5 dB(A) or less in traffic noise level that occurs from project-related activities would be considered not significant if the resulting noise levels remain below the exterior and interior thresholds established by the City. Increases in traffic noise greater than 5 dB(A) would be considered to be significant.

Some land uses are recognized as being more sensitive to noise levels and vibration than others. Residences, motels and hotels, schools, libraries, places of worship, hospitals, nursing homes, auditoriums, parks and outdoor recreation areas are generally more sensitive to noise and vibration than are commercial and industrial land uses. In the immediate vicinity of the Specific Plan area, existing sensitive receptors include single-family residences across Santa Paula Creek to the west of the Specific Plan area and to the south between Telegraph Road and State Route 126 (SR-126). Residential units, schools, and assisted living facilities that would be permitted by the Specific Plan would also be sensitive to noise and vibration when complete and occupied.

Existing on-site noise sources include farm equipment, motor vehicles, and activities associated with the on-site residences. Periodic winds also characterize the on-site noise environment. Currently, no significant source of vibration exists on the Specific Plan site.

Primary off-site noise sources include traffic along nearby roads and SR-126 and trains traveling along the Fillmore and Western Railway railroad tracks. Trains traveling along the Fillmore and Western Railway are also an off-site source of groundborne vibration. Currently, the Fillmore & Western Railway

¹ City of Santa Paula Noise Element, 13 April 1998, p. N-2.

Company operates tourist-oriented trains between 12:00 PM and 3:00 PM on Saturdays and Sundays. The tracks are also used by one freight train, which passes by the Specific Plan area twice, traveling once in each direction, on Mondays, Wednesdays, and Fridays between the hours of 8:00 AM and 12:00 PM. The Santa Paula Airport is located on a 38-acre site south of SR-126, approximately 1 mile southwest of the Specific Plan area. According to the Noise Element of the Santa Paula General Plan, aircraft noise is generally not a problem in the City because the general aircraft travel pattern is south of the City, over the Santa Clara River, and the required approach and departure altitude is at least 1,500 feet. The 60 dB(A) noise contours from SR-126, State Route 150 (SR-150) and the Santa Paula Airport extends approximately 1,000 feet into the southern portion of the Specific Plan area.

To characterize the existing noise environment, noise level monitoring was conducted by Impact Sciences in 2007 on April 5, 6, 10, and 15. The first measurement was taken adjacent to Santa Paula Creek from the west, within the boundary of a single-family residential property just north of the eastern terminus of Richmond Drive. The second monitoring location is near the center of the Specific Plan area, 116 feet west of Padre Drive and 23 feet north of the unpaved road that intersects with Padre Drive 0.10 mile north of Loop Lane. The third noise measurement was taken in the southeastern corner of the Specific Plan area, 355 feet east of Padre Drive and 115 feet north of SR-126. The fourth measurement was taken 50 feet from the Santa Paula Branch of the Southern Pacific Railroad tracks and east of Padre Drive. Noise levels in the residential community across Santa Paula Creek to the west of the Specific Plan area and within the center of the Specific Plan area are 54.9 and 57.2 CNEL, respectively. The noise level measured at monitoring location 3, near the southeastern corner of the Specific Plan area was 68.5 CNEL. The existing noise environment in this portion of the Specific Plan area is louder than at location 2 due to roadway noise along Telegraph Road and SR-126. The maximum sound level measured while a train passed along the Fillmore and Western Railway was 93.3 dB(A) at a distance of 50 feet.

In order to characterize the ambient roadway noise environment in the study area, noise prediction modeling was conducted for 44 roadway segments within the vicinity of the project. Noise levels were modeled using the Federal Highway Administration Highway Noise Prediction Model (FHWA-RD-77-108). Roadway noise levels along studied segments range from 55.9 to 64.2 dB(A) CNEL.

Trains traveling along the Fillmore and Western Railway railroad tracks represent an intermittent and infrequent noise source that occurs outside of peak roadway traffic periods. Roadway noise is a constant noise source. As the noise environment would be characterized by simultaneous railroad and roadway noise for two short periods five days per week. Special trains run during such times as the Christmas holidays and other holidays and special events. This analysis assumes a worst case of an average of three

trains (six pass-bys) and average speed of 10 miles per hour in along the southern boundary of the Specific Plan. Predicted noise levels at 90 feet from the railway centerline would be 63 dB(A) CNEL.²

The construction noise analysis found that based on an attenuation rate of 7.5 dB(A) per doubling of distance for noise generated by a point source at an acoustically “soft” site, the maximum noise level at the single-family residences to the west across Santa Paula Creek and to the south between Telegraph Road and SR-126 would be approximately 78 dB(A). Except for construction activities occurring between 8:00 AM and 6:00 PM, Santa Paula Municipal Code (SPMC) Section 93.21 establishes an exterior noise standard at residential uses of 65 dB(A) from 7:00 AM through 10:00 PM. Noise generated by on-site construction activities complying with the SPMC (a temporary noise permit can be obtained pursuant to SPMC Section 93.06) would be less than significant.

Groundborne vibration impacts to residences across Santa Paula Creek to the west and to the south between Telegraph Road and SR-126 during project construction would be less than significant because construction activities would be limited to daytime hours between 8:00 AM and 6:00 PM. Implementation of recommended mitigation would reduce this impact to a level of less than significant.

The City of Santa Paula Noise Element sets an interior noise standard at residential uses of 45 dB(A). Noise generated by on-site construction activities complying with the SPMC (a temporary noise permit can be obtained pursuant to SPMC Section 93.06) would be less than significant.

The following measures are proposed to mitigate the potential for significant noise impacts to occur from construction activities within the East Area 1 Specific Plan area:

- 8.1 Specific Plan construction shall be restricted to the hours of 8:00 AM to 6:00 PM Monday through Friday. A notice listing the noise standards set in Santa Paula Municipal Code Section 93.21, titled in letters at least 1 inch in height and placed at least 5 feet above ground level shall be posted at all entrances to a construction site at all times.
- 8.2 Stationary construction equipment, such as pumps, generators, or compressors, shall be placed as far from noise-sensitive uses as feasible during all phases of project construction.
- 8.3 All construction equipment shall be equipped with appropriate mufflers in good working condition.

² Advanced Engineering Acoustics, July 2006.

8.4 Notification shall be provided to all occupied residences within 200 feet of an area where construction activities are anticipated to result in groundborne vibration of more than 80 vibration decibels (VdB) at least 10 days in advance of such activities.

Increases in noise on roads and streets in the area due to traffic generated by the proposed Specific Plan would range from 0.1 to 3.7 dB(A) CNEL. Noise levels on nine roadway segments would be reduced as a result of new traffic distribution patterns that would result from the street improvements associated with the project, such as the extension of Santa Paula Street east over Santa Paula Creek to the extension of Hallock Drive. Combined roadway noise associated with SR-126 and Telegraph Road was calculated for future with and without project conditions. Based on an attenuation rate of 4.5 dB(A) per doubling distance for a line source and an acoustically soft site, the noise level due to combined roadway noise generated along SR-126 and Telegraph Road at 75 feet from the centerline of Telegraph Road is 68.9 dB(A) without the project and 64.6 dB(A) with Specific Plan implementation. Traffic volumes on Harvard Boulevard between Steckel Drive and Palm Avenue would generate a noise level of 67.2 dB(A) CNEL. As the modeled noise level along this segment under future without project conditions is 64.9 dB(A) CNEL, the proposed Specific Plan would result in an increase of 2.3 dB(A) in the ambient noise level along this roadway segment. Noise level increases up to 3 dB(A) are inaudible to the human ear. Therefore, an increase of 2.3 dB(A) along Harvard Boulevard between Steckel Drive and Palm Avenue would not be perceptible. As a noise level increase of 2.3 dB(A) would not be audible, the impact is considered less than significant. Noise level increases along roadway segments under Ventura County jurisdiction would be 0.4 and 0.5 dB(A) CNEL, respectively. Therefore, impacts along these roadway segments would be less than significant.

Traffic volumes on Santa Paula Street between 12th Street and 10th Street would generate a noise level of 61.1 dB(A) CNEL. As the modeled noise level along this segment under future without project conditions is 57.9 dB(A) CNEL, the proposed Specific Plan would result in an increase in the ambient noise level along this roadway segment of 3.2 dB(A). As discussed previously, an increase of 3 dB(A) or more in traffic noise level that occurs from project-related activities would be significant if the resulting noise levels would cause the City Noise Compatibility Matrix thresholds for “acceptable” exterior or interior noise levels to be exceeded. This noise level increase would exceed the City Noise Compatibility Matrix threshold for “acceptable” exterior noise levels and would be considered to be a significant impact. Mitigation measures are proposed to reduce this impact to less than significant.

With the exception of Santa Paula Street between 12th Street and 10th Street, no increases in roadway noise would expose sensitive receptors to a 3 dB(A) noise increase over ambient City or County interior conditions. Therefore, impacts along these roadway segments would be less than significant. Along Santa Paula Street between 12th Street and 10th Street exterior noise levels of up to 61.1 dB(A) CNEL

would be experienced due to an increase of 3.2 dB(A) in the ambient noise level along this roadway segment. Nonetheless, assuming a 25 dB(A) reduction in exterior to interior noise levels resulting from standard building construction, interior noise levels would be below the threshold level of 45 dB(A), resulting in a less than significant impact.

The option of a by-pass route through the Specific Plan area linking traffic between SR-150 and SR-126 was also analyzed in the project traffic study. Noise increases due to Specific Plan implementation with the bypass route range from 0.1 to 3.7 dB(A) CNEL. Twelve roadway segments would generate less roadway noise following the development of the site under the proposed Specific Plan as a result of new traffic distribution patterns that would result from the street improvements associated with the project, including the by-pass route. Based on an attenuation rate of 4.5 dB(A) per doubling distance for a line source and an acoustically soft site, the noise level due to combined roadway noise generated along SR-126 and Telegraph Road at 75 feet from the centerline of Telegraph Road is 64.2 dB(A) without the project and 64.6 dB(A) with Specific Plan implementation. Traffic volumes on Harvard Boulevard between Steckel Drive and Palm Avenue, would generate a noise level of 65.1 dB(A) CNEL which would exceed the City standard of 65 dB(A). As the modeled noise level along this segment under future without project conditions is 64.9 dB(A) CNEL, the proposed Specific Plan would result in an increase in the ambient noise level along this roadway segment of 0.2 dB(A). However, a noise level increase of 0.2 dB(A) would not be perceptible and this impact is considered less than significant. Additionally, noise level increases along the two roadway segments within County jurisdiction would be 0.4 and 0.5 dB(A) CNEL, respectively, and would not exceed County standards. Therefore, roadway noise impacts resulting from the by-pass route option would be less than significant.

Uses proposed along the southern Specific Plan area boundary include Specific Plan Planning Area E, East Santa Paula Railroad District, and Open Space 2. Uses proposed within Planning Area E include light industrial, office, limited retail, open space, and roads with the possibility of limited residential uses in the form of work/live units or upper floor residences over commercial space. Work/live and residential units would be a sensitive receptor to railroad noise and a significant impact could result, depending on building orientation and design.

A mitigation measure is recommended and would reduce the impact to a level of less than significant by ensuring that the interior noise level at any live/work or residential units would not exceed 45 dB(A).

The following measures are proposed to mitigate the potential for significant railroad noise impacts to occur within Specific Plan Planning Area E:

- 8.5 Where feasible and consistent with City standards, any paving or repaving of Santa Paula Street between 12th Street and 10th Street that must be conducted in conjunction with implementation of the proposed project should utilize asphalt-rubber paving material consisting of 20 percent or more recycled rubber and 80 percent paving-grade asphalt. Studies have illustrated that such paving material will reduce traffic noise by as much as 3 to 5 dB(A).
- 8.6 Where feasible and consistent with City standards, speed limits on arterials experiencing significant noise impacts, such as Santa Paula Street between 12th Street and 10th Street, should be reduced. Each 5 mile per hour reduction in speed limits can decrease the CNEL by about 1 dB(A).
- 8.7 Noise-sensitive work/live and residential units proposed within Specific Plan Planning Area E shall be designed so that interior noise levels attributable to exterior sources do not exceed City noise standards. The City of Santa Paula noise compatibility standard for acceptable exterior noise levels at residential land uses is 60 dB(A) CNEL. An acoustical analysis of the effectiveness of noise insulation of proposed construction shall be required and documented during permit review, showing that the building materials and construction specifications are adequate to meet the interior noise standard. Examples of building materials and construction specifications that may be used to meet the interior noise standard include the following:
- Exterior livable space, such as balconies, shall be oriented northward;
 - South-facing windows and sliding glass doors shall be double-paned, mounted in frames with low rates of air filtration (0.5 cubic foot per minute or less, per American National Standard Institute specifications) and a sound transmission coefficient rating of 30 or greater;
 - Solid-core exterior doors shall be constructed with perimeter weather stripping and threshold seals; and
 - South-facing roof or attic vents shall be baffled.

According to the 2002 Caltrans Transportation Related Earthborne Vibrations study, the threshold of annoyance as approximately 80 VdB at 20 meters (66 feet) from train tracks, given that vibration is constant. In this case, the vibration from the railroad track would not be constant (up to six trains per day), would be approximately 75 feet from the track, and below 80 VdB. Therefore, groundborne vibration impacts due to railroad operations would be less than significant.

The following measures are proposed to mitigate the potential for significant railroad vibration impacts to occur within Specific Plan Planning Area E:

- 8.8 Written disclosure of maximum exterior and interior noise levels expected at work/live and residential units and at light industrial, office, and retail uses within Planning Area E shall be provided to those purchasing or leasing such uses.
- 8.9 Work/live and residential units, light industrial, office, and retail uses within Planning Area E shall be located a minimum of 66 feet from the railroad tracks.

The 60 dB(A) noise contour from SR-126, SR-150, and the Santa Paula Airport extends approximately 1,000 feet onto the southern portion of the Specific Plan area. Open space is proposed within the majority of this portion of the Specific Plan area. Residential, commercial, and neighborhood center uses are proposed within the remainder of the 60 dB(A) noise contour and Specific Plan area overlap. According to City of Santa Paula thresholds, a noise level of 60 dB(A) would be acceptable for sensitive receptors and, therefore, for any uses proposed within that portion of the site. Therefore, impacts would be less than significant.

Assuming a standard construction reduction of approximately 25 dB(A), the overall noise level on the project site as a result of aircraft noise would be below 45 dB(A), and, therefore, any uses proposed within that portion of the project site would not be exposed to significant noise levels. Impacts would be considered less than significant.

Overall, during Specific Plan construction and operation, noise and vibration impacts would be less than significant.

INTRODUCTION

This noise study presents information on the existing noise environment and noise sources within the East Area 1 Specific Plan area and vicinity, analyzes the significance of potential noise impacts, and recommends mitigation measures to avoid or lessen the significance of potential impacts.

The East Area 1 Specific Plan area is located immediately east of Santa Paula, California. The site is located within the planning area of the City of Santa Paula as defined in the City's General Plan, and is identified as an urban expansion area in the General Plan. The City of Santa Paula is the lead agency as defined by CEQA, as the City is responsible for the review and approval of the proposed Specific Plan and related discretionary actions. The City's General Plan requires that a Specific Plan be prepared before annexation of the site can be considered. The East Area 1 Specific Plan would permit the

development of civic, residential, commercial/light industrial, and open space/park uses within the approximately 501-acre Specific Plan area.

PROJECT DESCRIPTION

Project Location

The East Area 1 Specific Plan area is located in Ventura County, California, and is situated at the eastern edge of the City of Santa Paula (**Figure 1, Regional and Project Site Location**). The City of Santa Paula is generally located directly north of Highway 126, west of the City of Fillmore, and east of the City of San Buenaventura. Specifically, the property is located within Section 2, Township 3 North, and Range 21 West of the U.S. Geological Survey Santa Paula 7.5-Minute Topographic Quadrangle.

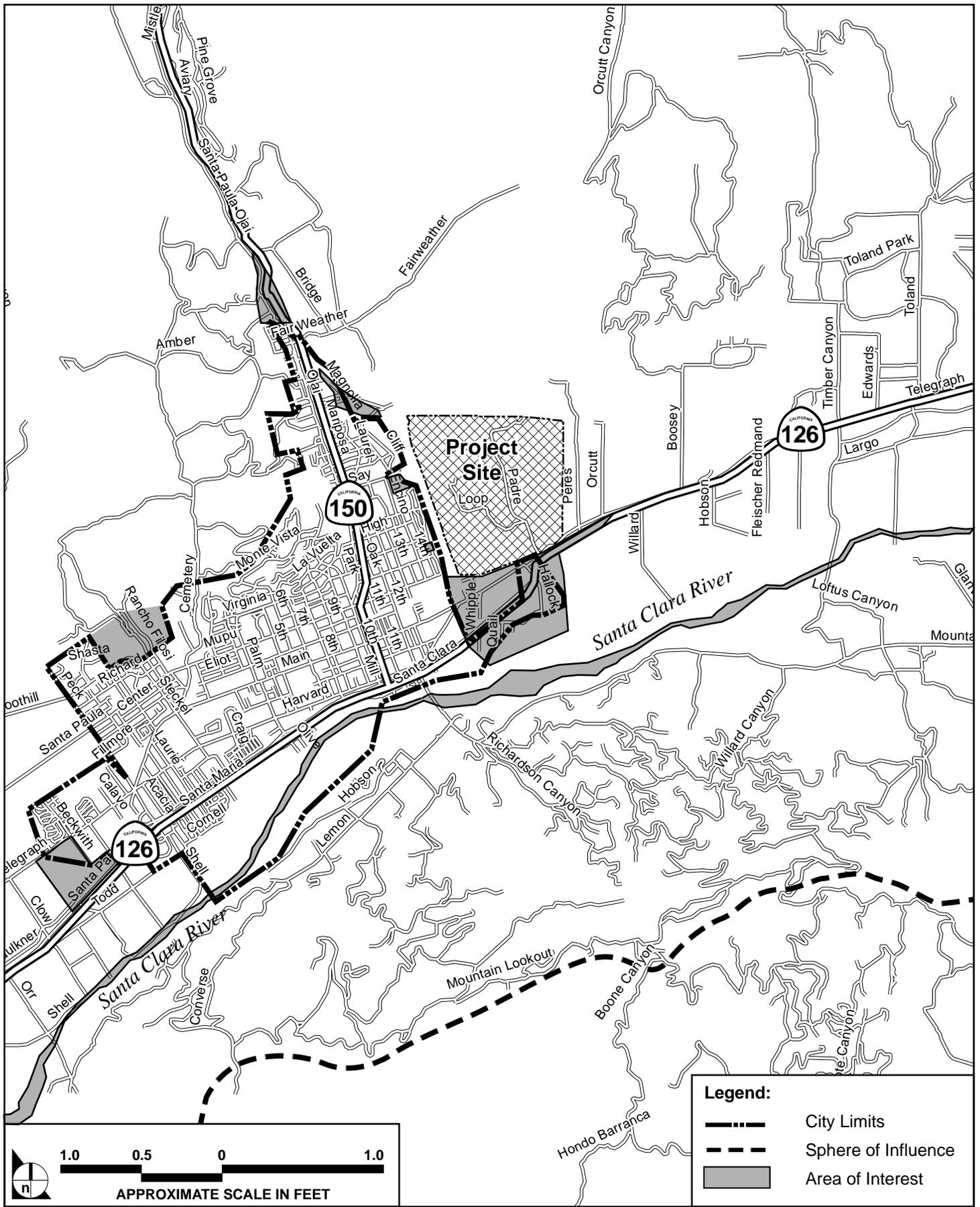
The property is bounded by hillside agricultural land to the north; Haun Creek to the east; Main Street, the Fillmore and Western Railway, and properties with frontage on Telegraph Road to the south; and Santa Paula Creek to the west. The property ranges in elevation from approximately 300 to 600 feet above mean sea level (msl) and slopes from the north to the south.

The Specific Plan Area is comprised of four contiguous parcels; the Assessor Parcel Numbers are:

- 040-0-180-435 (25.18 acres);
- 040-0-180-565 (409.27 acres);
- 107-0-200-115 (63.72 acres); and
- 107-0-045-015 (3.00 acres).

Project Description

The proposed Specific Plan would permit the development of the site as a master-planned community containing a mix of civic, park and open space, residential, and commercial/light industrial uses. At this time, the Specific Plan envisions providing sites for an elementary school and high school to the local school districts; these sites are for consideration by the respective districts for their future use. No school construction is proposed at this time. Should these sites be acceptable to the school districts, future noise analysis may be required. Additionally, the Specific Plan envisions light industrial uses along the extension of Santa Paula Street in the proposed Railroad District. These uses would provide space for combination office commercial and light industrial use (e.g., motion picture support activities, small artist studios, etc.) and would not include manufacturing or other similar industrial uses.



SOURCE: AirPhoto USA – 2005, Impact Sciences, Inc. – April 2007

FIGURE 1

Regional and Project Site Location