

APPENDIX I

NOISE TECHNICAL REPORT FOR THE FORRESTER CREEK INDUSTRIAL PARK, PBS&J, January 23, 2009

Noise Technical Report
for the Proposed
Forrester Creek Industrial Park Project

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Table of Contents

Section	Page
1.0 Introduction.....	1
2.0 Project Description	1
3.0 Noise Background.....	1
4.0 Applicable Noise Standards.....	6
4.1 Federal	6
4.2 State	6
4.3 Regional.....	7
4.4 Local	8
5.0 Existing Noise Conditions	13
5.1 Transportation Noise Sources	13
5.2 Operational Noise Sources.....	14
5.3 Noise Sensitive Land Uses	14
5.4 Existing Noise Levels	14
6.0 Significance Criteria	16
7.0 Impacts and Mitigation	16
7.1 Transportation Noise.....	16
7.2 Operational Noise Sources.....	19
7.3 Construction Noise	21
8.0 Conclusion	22
9.0 Sources.....	22

Appendix A. Noise Data

Figures

Figure 1	Project Site Vicinity Map	2
Figure 2	Conceptual Site Plan.....	3
Figure 3	Gillespie Field Airport Influence Area and Noise Contours.....	9
Figure 4	Gillespie Field ALUCP Land Use Compatibility Matrix	11
Figure 5	Noise Measurement Locations.....	15

Tables

Table 1	Significance of Changes in Operational Noise Exposure	6
Table 2	City of El Cajon Sound Level Limits	8
Table 3	City of Santee Sound Level Limits.....	13
Table 4	Noise Monitoring Results	16
Table 5	Near Term Future Traffic Noise Levels.....	18
Table 6	Horizon Year Traffic Noise Levels (dBA CNEL)	18

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1.0 INTRODUCTION

This report analyses potential noise impacts associated with the implementation of the Forrester Creek Industrial Park Project located within the City of El Cajon, California. It describes the existing noise environment, regulatory requirements, and provides an assessment of the potential noise impacts of the proposed project. The changes in estimated noise levels due to the project are compared to applicable guidelines contained in local and state planning documents to determine significance. Potential project-related noise sources from transportation sources, operational sources, and construction activity are discussed.

2.0 PROJECT DESCRIPTION

The Forrester Creek Industrial Park is part of the Gillespie Field Airport, which consists of approximately 750 acres. The site is designated for commercial/industrial use by the Gillespie Field Special Development Area plan. Existing industrial development at Gillespie Field includes approximately 160 acres. The City of El Cajon General Plan designates the site for open space uses. The proposed project will require a General Plan Amendment and a rezone to the M zone, which allows manufacturing uses.

The project is located on the northwest corner of Weld Boulevard and Cuyamaca Street in the City of El Cajon, as shown in Figure 1. The Forrester Creek Industrial Park consists of approximately 31.5 acres and is part of the Gillespie Field Airport, which consists of approximately 750 acres. Gillespie Field Airport is owned and operated by the County of San Diego. The Forrester Creek Industrial Park Project consists of the development of 462,955 square feet Industrial Park. The project is planned to be built in three phases:

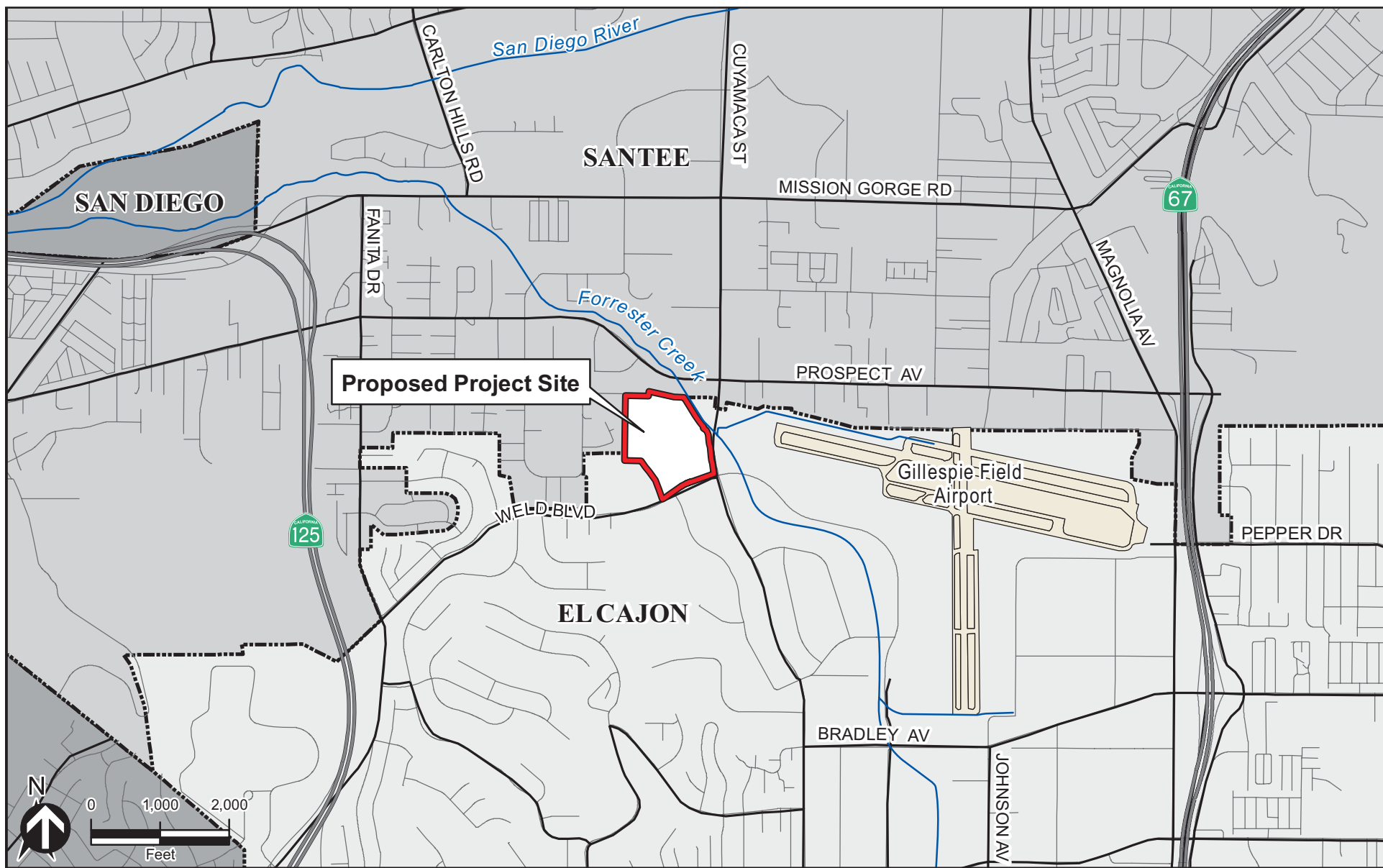
- Phase 1 – 198,482 square feet industrial park
- Phase 2 – 191,473 square feet industrial park
- Phase 3 – 75,000 square feet industrial park

Phase I will include the construction of a new project driveway opposite Gillespie Way and construction of three buildings on the southeast corner of the site. Phase I is expected to be completed by mid-2010 and will include Buildings A, B and C. Phase II will include construction of Buildings D & E in the northwestern section of the property and should be completed by mid-2011. Phase III will include construction of the final Building F in the western section of the property and the overall project should be completed by 2012. Figure 2 shows the conceptual site plan.

3.0 NOISE BACKGROUND

The human response to environmental noise is subjective and varies considerably from individual to individual. The effects of noise can range from interference with sleep, concentration, and communication, to hearing loss with exposure at the highest levels. Although uncertain, the human health effects caused by increased environmental noise are suspected to be substantial.

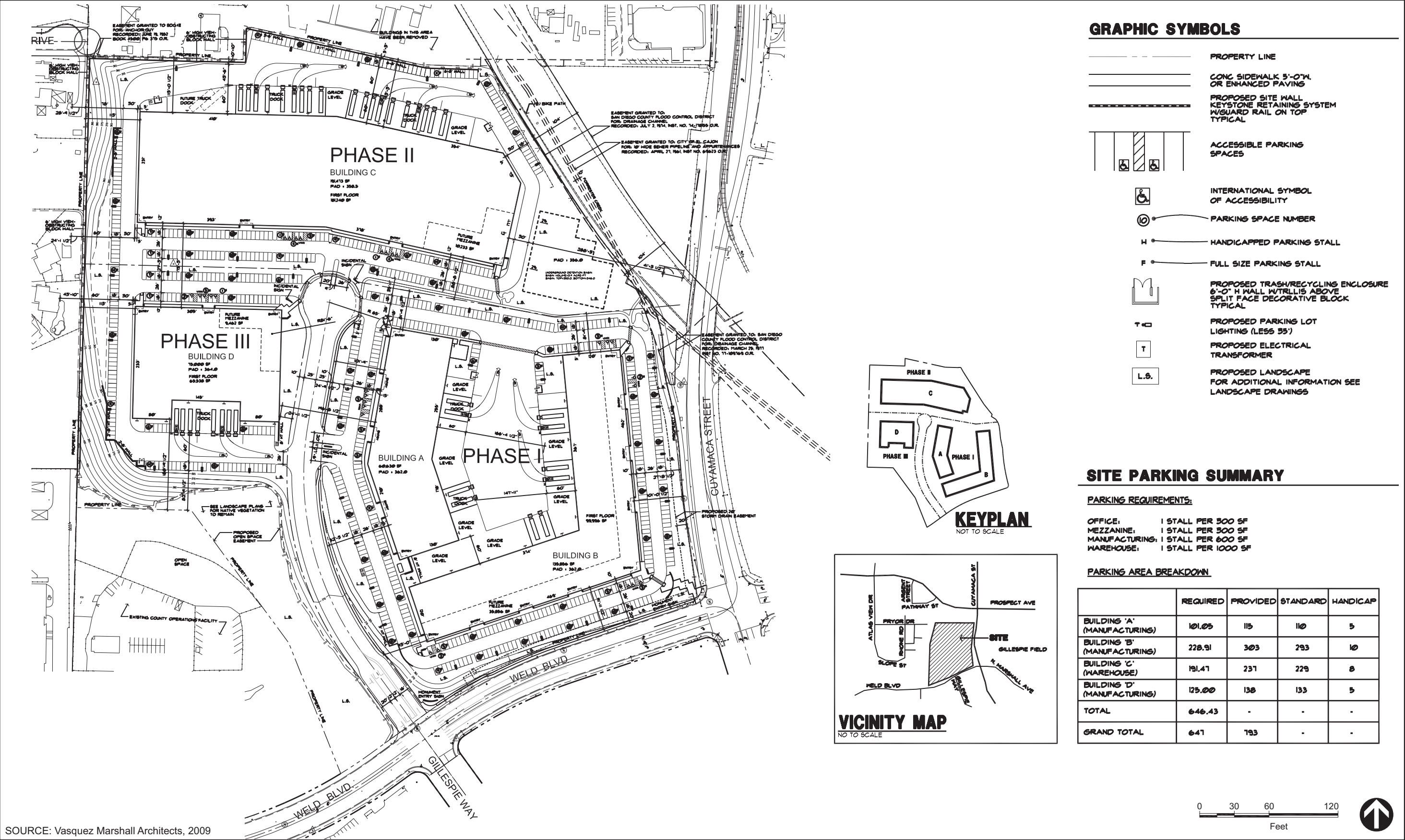
Sound is technically described in terms of amplitude (loudness) and frequency (pitch). At undesirable levels, pitch is generally an annoyance, while loudness can affect the ability to hear. The quality, referred to as pitch, is a function of the number of complete vibrations, or individual sound waves, striking our ears per unit of time. As this number (measured in cycles per second) increases, a rising pitch is heard and



SOURCE: 2004 ESRI Streetmap Dataset

PROJECT SITE VICINITY MAP

FIGURE 1



CONCEPTUAL SITE PLAN

FIGURE 2

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a deepening pitch is heard with a decrease. Loudness is a function of the amount of energy in a sound wave. This energy is, in turn, a function of sound pressure. The human ear is tuned to receive sound that is within a specific intensity range. Sound below that range is inaudible, while sound above that range can become painful and damaging to the ear.

The standard unit of sound amplitude measurement is the decibel (dB). Because 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 decibel scale adjusted for A-weighting (dBA) provides this compensation by organizing frequencies in a manner approximating the sensitivity of the human ear. Over the audible range of pitch, the human ear is less sensitive to low frequencies and very high-pitched sound and is more sensitive to mid-frequency sounds. However, the human ear does not typically notice changes in noise level of less than 3 dBA. Some individuals who are extremely sensitive to changes in noise may notice changes from 3 to 5 dBA. A 5 dBA increase is readily noticeable and is the typical threshold that would cause a change in community reaction. An increase of 10 dBA would be perceived by people as a doubling of loudness. A doubling of traffic flow on any given roadway would cause a noise increase of approximately 3 dBA. Quiet suburban areas typically have noise levels in the range of 40-50 dBA, while those along arterial streets are in the 50-60 dBA range. Normal conversational levels are in the 60-65 dBA range, and ambient noise levels greater than 65 dBA can interrupt conversations.

The decibel level of a sound decreases (or attenuates) exponentially as the distance from the source of that sound increases. For a single point source such as a piece of mechanical equipment, the sound level normally decreases by about 6 dBA for each doubling of distance from the source. Sound that originates from a linear, or “line” source such as a heavily traveled traffic corridor, attenuates by approximately 3 dBA per doubling of distance, provided that the surrounding environment is “hard” (i.e., streets, concrete areas, etc.). Noise from less heavily traveled roadways in “soft” environments (i.e., vegetation) attenuates more rapidly, at about 4.5 dBA for each doubling of distance. Other factors that typically affect sound propagation in an outdoor environment are structural barriers and atmospheric conditions.

Several different metrics are used to evaluate noise levels. One of the most frequently used noise metrics that considers both duration and sound power level is the equivalent noise level (Leq). The Leq is defined as the steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual time-varying levels over a period of time. Typically, Leq is summed over shorter durations, such as 15-minute or one-hour periods.

The actual time period in which noise occurs is also important since noise that occurs at night tends to be more disturbing than that which occurs during the day. The day-night average noise level (Ldn) and the Community Noise Equivalent Level (CNEL) are two indexes that recognize this characteristic. The Ldn is equivalent to the weighted average of the hourly Leqs over a 24-hour period. The weighting includes an addition of 10 dB to nighttime (10:00 p.m. to 7:00 a.m.) noise levels to account for the greater disturbance associated with noise during this time period. The CNEL is similar, except that it also provides a weighting of 5 dB to the evening hours (7:00 p.m. to 10:00 p.m.) and so this index is also known as the day-evening-night noise level (Lden). In general, these two indexes are typically within 1 dBA of each other.

4.0 APPLICABLE NOISE STANDARDS

4.1 Federal

The Noise Control Act of 1972 directed the EPA to develop noise level guidelines that would protect the population from the adverse effects of environmental noise. The EPA published a guideline (EPA Levels Document 1974) containing recommendations of 55 dBA Ldn outdoors and 45 dBA Ldn indoors as a goal for residential land uses. The agency is careful to stress that the recommendations contain a factor of safety and do not consider technical or economic feasibility issues and, therefore, should not be construed as standards or regulations.

The Federal Interagency Committee on Noise (FICON) consists of representatives of governmental agencies that have responsibilities for airport noise, including the FAA and military services. It reviews policies that govern the assessment of airport noise impacts. FICON recommendations are often used to determine whether or not increases in roadway noise would be considered significant. The FICON recommendations were developed as a result of studies that relate aircraft noise levels to the percentage of people highly annoyed by various noise levels. Although these recommendations were developed specifically for aircraft noise impacts, they are considered applicable to all noise sources that use noise exposure metrics such as CNEL. The level of significance changes with increasing noise exposure, such that smaller changes in ambient noise levels result in significant impacts at higher existing noise levels, as shown in Table 1.

Table 1. Significance of Changes in Operational Noise Exposure

Ambient Noise Level Without Project (CNEL)	Significant Impact
< 60 dB	+ 5.0 dB or more
60 – 65 dB	+ 3.0 dB or more
> 65 dB	+ 1.5 dB or more

Source: Federal Interagency Committee on Noise (FICON), August 1992.

The Federal Aviation Administration (FAA) regulates noise emissions for private and commercial aircraft. The FAA and the Caltrans Division of Aeronautics (Title 21, Subchapter 6) have adopted general standards that define compatible uses within the 65 dBA CNEL around civil airports. Compatibility associated for land uses surrounding the Gillespie Field Airport are discussed under Section 4.3.

4.2 State

Noise standards are contained in the State of California Code of Regulations (CCR), Title 24, Section 1208, “Sound Transmission Control” which establish the acceptable interior environmental noise level (45 dBA CNEL) for multi-family dwellings. This interior noise level standard is typically used for indoor uses of other noise sensitive uses. The State of California additionally regulates the noise emission levels

of licensed motor vehicles traveling on public thoroughfares, sets noise emission limits for certain off-road vehicles and watercraft, and sets required sound levels for light-rail transit vehicle warning signals. The extensive state regulations pertaining to worker noise exposure are for the most part applicable only to the construction phase of any project (for example, California Occupational Safety and Health Administration Occupational Noise Exposure Regulations [8 CCR, General Industrial Safety Orders, Article 105, Control of Noise Exposure, Section 5095, et seq.]), or for workers in a central plant and/or a maintenance facility, or involved in the use of landscape maintenance equipment or heavy machinery.

4.3 Regional

Gillespie Field Airport Land Use Compatibility Plan

In 1970, the State of California enacted a law requiring the formation of an Airport Land Use Commission (ALUC) in each county containing a public airport. As part of this requirement, each airport develops a land use compatibility plan to account for growth of the airport and the area surrounding the airport within the jurisdiction of the commission, which reflects the anticipated growth of the airport for the next 20 years. The San Diego County Board of Supervisors recommended that the San Diego Association of Governments (SANDAG) be designated to assume the responsibilities of an ALUC. SANDAG approved and adopted Comprehensive Land Use Plans, also known as Airport Land Use Compatibility Plans for nine public use airports in San Diego County, including Gillespie Field. In 2003, the San Diego County Regional Airport Authority was designated as the Airport Land Use Commission for the public airports in San Diego County.

The Gillespie Field Airport Land Use Compatibility Plan (ALUCP), mandated by Section 21675 of the Public Utilities Code, was originally adopted by SANDAG in 1974 and was amended in 1989. The San Diego County Regional Airport Authority amended the ALUCP again in 2004, acting in its capacity as the San Diego County ALUC.

The purpose of the ALUCP was to identify areas likely to be impacted by noise and flight activity created by aircraft operations at the airport. The ALUCP provides a discussion of the Plan's assumptions, defines the Airport Influence Area (AIA) for the airport, and includes projected noise contours and flight activity zones. The AIA is generally the area in which current and future airport-related noise, overflight, safety and airspace protection factors may affect land uses or necessitate restrictions on the uses. The AIA encompasses those areas adjacent to airports which could be impacted by noise levels exceeding the California State Noise Standards or where height restrictions are necessary to prevent obstructions to flight operations. The AIA represent the boundary of the ALUCs planning and review authority. According to the AIA shown in the 2004 ALUCP, the project site is within the AIA for Gillespie Field, and is also within the 65 dBA CNEL noise contour, as shown in Figure 3.

As a means to implement the Aviation Safety and Noise Abatement Act of 1979, the FAA adopted Regulations on Airport Noise Compatibility Planning, which are defined in FAR Part 150. As part of the FAR, the FAA published guidelines to local authorities for determining acceptability and permissibility of land uses. In addition, the Caltrans Division of Aeronautics administers the California Airport Noise Regulations, which were adopted in 1971. The local jurisdiction is responsible for enforcing these regulations. Figure 4 displays the airport noise/land use compatibility matrix provided in the ALUCP. The matrix identifies a range of land uses associated with various projected exterior CNEL values that are either identified as "Compatible," "Conditionally Compatible," or "Incompatible." The matrix is used to determine whether a proposed land use is consistent with the ALCUP policies and guidelines.

4.4 Local

City of El Cajon General Plan

The project site is within the City of El Cajon. The City of El Cajon adopted noise policies in its Noise Element as part of the 2000 General Plan. These policies use the Gillespie Field ALCUP (described above) to establish both exterior and interior noise limits for noise compatibility for areas within the AIA.

City of El Cajon Noise Ordinance

The City of El Cajon has developed a Noise Ordinance (Section 17.60 of the Municipal Code) that regulates noise by zone and time of day, with residential zones and nighttime hours having stricter requirements and industrial zones and daytime hours having more tolerant requirements. The City Noise Ordinance includes the maximum one-hour average sound levels for various land uses as shown in Table 2.

Table 2. City of El Cajon Sound Level Limits

Zone	Applicable Limit One-Hour Average Sound Level (dB)		
	7:00 a.m. - 7:00 p.m.	7:00 p.m. - 10:00 p.m.	10:00 p.m. - 7:00 a.m.
All Single-Family Zoned Properties	60	55	50
All Multiple-Family Zoned Properties	60	55	50
All Commercially Zoned Properties	65	60	55
All Industrially Zoned Properties	75	75	75
⁽¹⁾ Conditionally	80	80	80

⁽¹⁾ Where outdoor noise levels are higher, additional noise attenuation measures, i.e., ear phones for workers, increased insulation, double-pane glass, etc., may make noise levels acceptable.

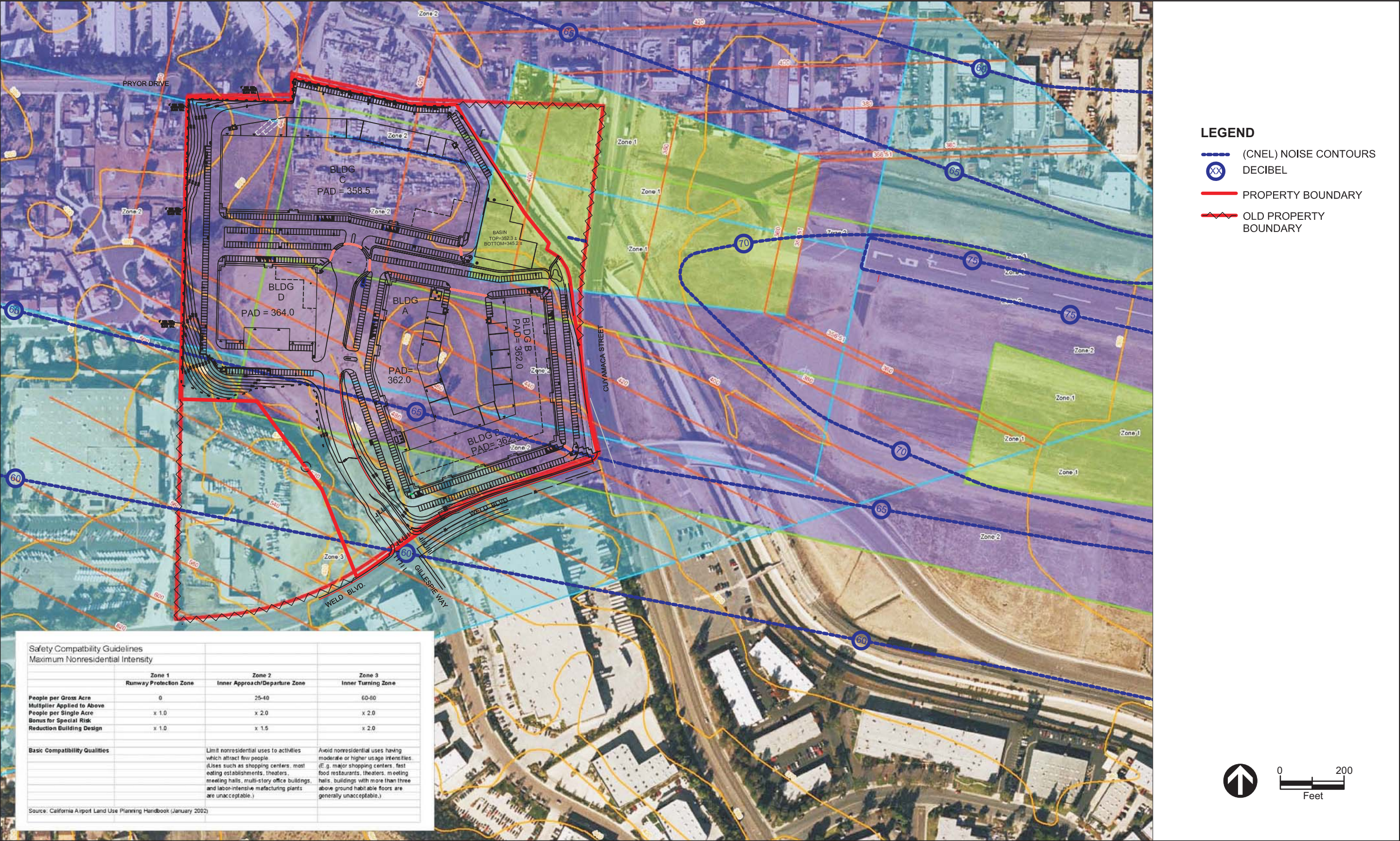
Note: The sound level limit at a location on a boundary between two adjoining zoning districts shall be that of the more restrictive zone.

Source: City of El Cajon Municipal Code, Section 17.60.090, <http://qcode.us/codes/elcajon/>

The Noise Ordinance also restricts construction, repair work, or the operation of any pile driver, power shovel, pneumatic hammer, power hoist or any other construction-type device on buildings, structures, or projects to operate between the hours of 7:00 a.m. and 7:00 p.m. either within a residential zone or within 500 feet of a residential zone. This restriction does not apply to emergency work done to protect persons or property from imminent danger. [City of El Cajon Municipal Code, Section 17.60.0909(b)].

City of Santee General Plan

The proposed project is not located within the City of Santee, and is not subject to its municipal policies. However, the residential uses located directly to the west and north of the project site, which may be affected by the proposed project, are located within the City of Santee. Therefore, the City of Santee's policies may be relevant to the analysis of impacts resulting from construction of the proposed project.



SOURCE: Burkett and Wong Engineers, 2009

GILLESPIE FIELD AIRPORT INFLUENCE AREA AND NOISE CONTOURS

FIGURE 3

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Annual Community Noise Equivalent Level (CNEL) in Decibels						
Land Use	55-60	60-65	65-70	70-75	75-80	80-85
1. Outdoor Amphitheaters						
2. Nature Preserves, Wildlife Preserves, Livestock Farming, Neighborhood Parks, and Playgrounds						
3. Schools, Preschools, Libraries		45				
4. Residential-Single Family, Multiple Family, Mobile Homes, Residential Hotels, Retirement Homes, Intermediate Care Facilities, Hospitals, Nursing Homes		45				
5. Hotels and Motels, Other Transient Lodging, Auditoriums, Concert Halls, Indoor Arenas, Churches		45	45			
6. Office Buildings-Business, Educational Professional and Personal Services; R&D Offices and Laboratories			50			
7. Riding Stables, Water Recreation Facilities, Regional Parks and Athletic Fields, Cemeteries, and Outdoor Spectator Sports, Golf Courses						
8. Commercial-Retail; Shopping Centers, Restaurants, Movie Theaters			50	50		
9. Commercial-Wholesale; Industrial; Manufacturing						
10. Agriculture (except Residences and Livestock), Extractive Industry, Fishing, Utilities, Public R-O-W						



COMPATIBLE

The outdoor community noise equivalent level ("NCEL") is sufficiently attenuated by conventional construction that the indoor noise level is acceptable, and both indoor and outdoor activities associated with the land use may be carried out with essentially no interference from aircraft noise.



45 CONDITIONALLY COMPATIBLE

The outdoor CNEL will be attenuated to the indoor noise level shown, and the outdoor noise level is acceptable for associated outdoor activities.



INCOMPATIBLE

The CNEL is severe. Although extensive mitigation techniques could make the indoor environment acceptable for performance of activities, the outdoor environment would be intolerable for outdoor activities associated with the land use.

SOURCE: San Diego County Regional Airport Authority, 2004

GILLESPIE FIELD ALUCP LAND USE COMPATIBILITY MATRIX

FIGURE 4

The City of Santee General Plan 2020 includes a Noise Element that provides information for programs to control and abate environmental noise, and to protect the citizens of Santee from excessive exposure to noise. The Santee Noise Element discusses the ALUCP and recognizes that some residential uses in the Atlas View Drive/Pryor Drive neighborhood are within the 65 dBA CNEL noise contour and are considered incompatible uses by the ALUCP. Although the ALUCP recommends that the City of Santee redesignate these areas to industrial to correct this incompatibility; the City of Santee has overridden the ALUCP recommendations, stating that the residential uses are consistent with the CLUP.

The Noise Element establishes local thresholds for determining whether a particular impact is significant. Impacts exceeding these thresholds would require that measures be identified to avoid or reduce the severity of the impact. Noise impacts within the City of Santee are considered significant if any of the following occur as a result of a proposed development:

- If the noise levels for any existing or planned development exceed the noise levels considered compatible for that use as identified in Figure 7-3, Noise/Land Use Compatibility Guide, or
- If, as a direct result of the proposed development, noise levels which already exceed the levels considered compatible for that use are increased by three or more decibels.

The exterior noise level limit for residential uses as specified in Figure 7-3, Noise/Land Use Compatibility of the City of Santee Noise Element is 65 dbA Ldn. It is noted that for residential uses, noise sensitive areas include rear yard areas on single family residences and ground floor common areas and private patio areas for multiple family residences. If it is not feasible to reduce the exterior noise levels to 65 dBA Ldn or less, then modifications to the development will need to be made to reduce the exterior noise level to the maximum extent feasible and the interior noise level to 45 dBA or less.

City of Santee Noise Ordinance

The City of Santee's Noise Abatement and Control Ordinance (Chapter 8.12 of the Santee Municipal Code) regulates stationary noise sources, as well as noise from construction activities and other operational noise sources. The allowable noise limit varies by time of day and land use type, as shown in Table 3 below. The Noise Ordinance also includes specifications and exceptions for specific sources of noise such as construction.

Within the City of Santee, it is unlawful to operate any construction equipment except between the hours of 7:00 a.m. and 7:00 p.m., Monday through Saturday, excluding legal holidays. Also, construction equipment may not cause noise at a level in excess of 75 dBs for more than 8 hours during any 24-hour period when measured at or within the property lines of any residential property.

Table 3. City of Santee Sound Level Limits

Zone	Applicable Limit One-Hour Average Sound Level (dB)		
	7:00 a.m. - 7:00 p.m.	7:00 p.m. - 10:00 p.m.	10:00 p.m. - 7:00 a.m.
A-70, A-72, R-S, R-V, R-R, R-MH, S-87, S-88, S90	50	45	40
R-U, R-C, and C-31	55	50	45
All other commercial zones	60	55	50
M-50, M-52	70	70	70
All other industrial zones	75	75	75
The sound level limit at the location on a boundary between an industrial zone and residential zone	60	55	50

- (1) For all other zones the sound level limit on a boundary between two zoning districts is the arithmetic mean of the respective limits for the two districts; provided, however, that the noise level limit applicable to extractive industries, including but not limited to borrow pits and mines, shall be the noise level limit applicable to the M-52 zone, or other standard as required for industrial uses adjacent to a residential zone.
- (2) Fixed-location public utility distribution or transmission facilities located on or adjacent to a property line shall be subject to the noise level limits of this section, measured at or beyond 6 feet from the boundary of the easement upon which the equipment is located.
- (3) If the measured ambient noise level exceeds the applicable limit noted above, the allowable one-hour average noise level shall be the ambient noise level.

Source: City of Santee Municipal Code, Section 8.12.040.

5.0 EXISTING NOISE CONDITIONS

The Forrester Creek Industrial Park project site is exposed to noise from aviation, traffic, and industrial operations, as described below.

5.1 Transportation Noise Sources

Aviation

The project site is located within the Airport Influence Area of the Gillespie Field Airport, which is owned and operated by the County of San Diego. The runway to the airport is located directly east of the project site, across Cuyamaca Street. The Gillespie Field Airport is a general aviation airport, which consists of approximately 750 acres. General aircraft and helicopters periodically fly over the site while approaching or departing from the airport. According to the 2004 Airport Land Use Compatibility Plan for Gillespie Field, the project site is within the existing 65 dBA CNEL noise contour for the airport.

Roadways

Vehicular traffic noise is the second predominant noise source (after aviation) for the project. Major roadways that border the site include Cuyamaca Street to the east, Prospect Avenue to the north, and Weld Boulevard to the south. State Route (SR) 125 is located approximately one mile west of the project site, but noise from that roadway is generally not heard at the project site.

Trolley

An additional source of transportation noise is the Metropolitan Transit Service (MTS) trolley. The MTS trolley, which runs in a north-south direction to the east of Forrester Creek, can be heard periodically when the warning bells sound for the North Marshall Avenue crossing.

5.2 Operational Noise Sources

The primary operational noise sources near the project site are industrial operations to the north. Existing operational noise sources on the site itself include concrete and gravel stockpiling operations in the north area of the site. Noise-generating equipment for the stockpiling operations include a rock crusher, front end loaders, backhoes, dump trucks and miscellaneous water pumps, which produce varying noise levels. Directly southwest of the site is the San Diego County Operations Facility, which primarily generates noise associated with truck deliveries.

5.3 Noise Sensitive Land Uses

Noise sensitive receptors are land uses that may be subject to stress and/or significant interference from noise. They include residences, hotels, hospitals, schools, and libraries. Industrial and commercial land uses are generally not considered to be sensitive to noise.

The nearest noise sensitive land uses to the project site are the residences located west of the project site, which face Paseo de Los Castillos off of Rhone Road. The nearest of these residences is approximately 44 feet away from the western site boundary, and about 157 feet from the nearest proposed building. There is also a residence directly north of the site, which is about 17 feet from the northern site boundary, and about 141 feet from the nearest proposed building. These residences are located within the City of Santee.

Residential uses are also located southeast of the site, near the intersection of Weld Boulevard and Cumbre Place. These residences are approximately 900 feet from the southwest corner of the site at the intersection of Weld Boulevard and Gillespie Way, and are located within the City of El Cajon.

5.4 Existing Noise Levels

Existing noise conditions on and surrounding the project site were monitored using an ANSI Type II integrating sound level meter. Three short-term measurements and one 24-hour measurement were taken on June 12, 2008 to record ambient noise levels (see Figure 5 for noise measurement locations). These measurements represent a sample of the local noise environment. Daily noise levels at the site may fluctuate, but these levels are considered representative given local activity.

Table 4 shows the resulting noise levels for each measurement location. The lowest noise level (56 dBA Leq) was detected at Site 2, which was taken near the residences along Weld Boulevard. Existing conditions near the southern area of the project site are represented by Site 1 which was taken near the intersection of Cumbre Place and Weld Boulevard, showed a result of 59 dBA Leq. The highest noise measurement (Site 3), taken at the industrial park north of the site near the intersection of Argent Street and Pathway Street, resulted in an Leq of 68 dBA. The 24-hour noise measurement (Site 4) taken at the residences near the northeastern corner of the site resulted in a CNEL of 64 dBA. Additional detail for ambient sound level measurements can be found in the Appendix to this report.



SOURCE: City of El Cajon, 2008; Landis, 2003; Noise measurements were taken by PBS&J on June 12, 2008

NOISE MEASUREMENT LOCATIONS

FIGURE 5

Table 4. Noise Monitoring Results

Site	Location	Time	Duration	Noise Sources	Noise Level
1	On-site northwest of the intersection of Cuyamaca St/ Weld Blvd.	8:39 a.m.	1 hr	Roadway traffic (approximately 200 feet away), aircraft from Gillespie Field, warning bells from trolley crossing at N. Marshall Avenue (approximately 700 feet away).	59 dBA Leq
2	Off-site residences near intersection of Cumbre Pl/ Weld Blvd.	9:57 a.m.	1 hr	Roadway traffic (approximately 250 feet away), aircraft from Gillespie Field.	56 dBA Leq
3	Off-site industrial park near the intersection of Argent St/ Pathway St.	11:26 a.m.	15 min	Delivery trucks in parking lot and Pathway St (approximately 50 feet away), parking lot noise, and mechanical equipment.	68 dBA Leq
4	On-site near the residences along northwestern site boundary.	12:30 a.m.	24 hr	Concrete stockpiling on northeast area of project site (approximately 400 feet away), aircraft from Gillespie Field.	64 dBA CNEL

Source: PBS&J, June 12, 2008.

6.0 SIGNIFICANCE CRITERIA

Based on Appendix G of the CEQA Guidelines, implementation of the Forester Creek Industrial Park Project would have a significant adverse impact if it would result in exposure of persons to or generation of noise levels in excess of standards established in applicable plans or noise ordinance, or applicable standards of other agencies, or otherwise result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

For traffic-related noise, impacts are considered significant if project-generated traffic results in increases in noise that exceed the FICON significance thresholds listed in Table 1.

Impacts relating to operational noise are considered significant when project-related activities create noise exceeding the standards identified by the applicable jurisdictions where either the project or the affected land uses are located.

7.0 IMPACTS AND MITIGATION

7.1 Transportation Noise

The proposed Forrester Creek Industrial Park Project could result in permanent noise impacts by increasing noise at existing sensitive receptors. Permanent noise sources are divided into transportation and operational noise sources, the effects of which are discussed in this section.

Aviation Noise

As mentioned previously, the project site is located within the AIA for the Gillespie Field Airport. The Gillespie Field ALUCP identifies areas likely to be affected by noise and flight activity created by aircraft

operations at the airport. According to the AIA shown in the 2004 ALUCP, the project site is also within the 65 dBA CNEL noise contour.

The Gillespie Field ALUCP airport noise/land use compatibility matrix identifies a range of land uses associated with various projected exterior CNEL values that are either identified as “Compatible,” “Conditionally Compatible,” or “Incompatible.” The matrix is used to determine whether a proposed land use is consistent with the ALCUP policies and guidelines. The proposed Forrester Creek Industrial Park project is considered an industrial land use, and for this use, exterior noise levels up to 70-75 dBA CNEL are considered “Compatible.” At this level the outdoor CNEL is sufficiently attenuated by conventional construction that the indoor noise level is acceptable, and activities associated with the land use may be carried out with essentially no interference from aircraft noise. As shown in Figure 5, the onsite noise measurements taken at the project site resulted in a noise level of 59 dBA Leq (Site 1) near the southwest area of the site and a noise level of 64 dBA CNEL at the northwest area of the site. Noise from traffic along Weld Boulevard is expected to reach about 66 dBA CNEL at 50 feet from the roadway centerline, and then decrease with increasing distance. Therefore, the proposed land use is consistent with the Gillespie Field ALUCP, and no impact with respect to excessive aircraft noise would occur.

Roadway Noise

Development of the project would increase the amount of vehicle trips to and from the site, which would increase traffic noise on area roadways. The project could therefore increase noise at the site and at neighboring uses.

Acoustical calculations were performed for existing, Near Term future, and Horizon Year traffic volumes along roadway segments most affected by the project using the Caltrans California Vehicle Noise Emission Levels (CALVENO) and standard noise modeling equations adapted from the Federal Highway Administration noise prediction model. The Near Term Future Scenario is based upon data from the traffic study prepared for the project by Linscott, Law, and Greenspan (2009) that includes projects in the site vicinity that would be constructed at project buildout. The Horizon Year Scenario assumes buildout of development included in the project vicinity in the year 2030

The modeling calculations considered the posted vehicle speed, average daily traffic volume, and the estimated vehicle mix. The model assumed “pavement” site propagation conditions.

Near Term Future Conditions. Estimated average daily traffic (ADT) values from the traffic study were used to model the change in noise levels resulting from increased traffic on roadway segments. Table 5 provides the calculated existing and Near Term Future project levels, both with and without the project. Noise levels for the project were based on full buildout of all phases. Noise levels are indicated at 50 feet from the centerline of each roadway segment. Noise levels at distances greater than 50 feet from the centerline would be lower due to attenuation provided by increased distance from the noise source. Generally, noise from heavily traveled roadways would experience a decrease of approximately 3 dBA for every doubling of distance. The actual sound level at any receptor location is dependent upon such factors as the source-to-receptor distance and the presence of intervening structures, barriers, vegetation, and topography; therefore, the result of the calculations is the worst-case scenario.

The highest noise level increase due to the project would be about 2 decibels along Weld Boulevard between Gillespie Way to Cuyamaca Street. This project-related increase would generally not be audible, since differences of less than 3 decibels in noise levels are generally not detected by the human ear. In addition, the change in noise levels does not exceed the thresholds established by FICON as shown in

Table 1. Therefore, project-generated traffic would not result in a significant impact at the site or at neighboring uses, such as the residences located on the south side of Weld Boulevard.

Table 5. Near Term Future⁽¹⁾ Traffic Noise Levels

Roadway Segment	Existing	Existing+ Future Projects	Change in Existing Noise Level Due to Future Projects	Existing + Future + Project (all phases)	Change in Future Noise Level Due to Project
Weld Blvd, Gillespie Way to Cuyamaca St	65	65	0	67	+2
Weld Blvd, Fanita Dr to Gillespie Way	65	66	+1	66	0
Cuyamaca St, Prospect Ave to Weld Blvd.	69	69	0	70	+1
Cuyamaca St, Weld Blvd. to Bradley Ave	70	70	0	71	+1

⁽¹⁾ Near Term Future conditions include projects that would be constructed at project buildout (all phases). Noise levels are given at 50 feet from roadway centerline. Noise levels are based upon traffic data provided by Linscott, Law, and Greenspan (2009). See Appendix A for data sheets.

Horizon Year Conditions. Traffic noise increases associated with Horizon Year (2030) Buildout are shown on Table 6, and are based upon traffic data provided by Linscott, Law, and Greenspan (2009). Model results indicate that the largest increase in noise due to Horizon Year traffic increases would be an increase of 2 dBA CNEL along Cuyamaca Street (between Prospect Avenue and Weld Boulevard), assuming buildout of development included in the traffic study as Horizon Year 2030. According to FICON thresholds, for roadways that have an existing ambient noise level greater than 65 dBA CNEL, an increase of over 1.5 dBA is considered a significant impact. Therefore, the noise increase along Cuyamaca Street, between Prospect Avenue to Weld Boulevard, would be a potentially significant cumulative impact.

Table 6. Horizon Year⁽¹⁾ Traffic Noise Levels (dBA CNEL)

Roadway Segment	Existing	Horizon Year	Change in Existing Noise Level Due to Future Growth	Horizon Year + Project	Change in Horizon Year Noise Level Due to Project
Weld Blvd, Gillespie Way to Cuyamaca St	65	66	+1	67	+1
Weld Blvd, Fanita Dr to Gillespie Way	65	66	+1	66	0
Cuyamaca St, Prospect Ave to Weld Blvd.	69	71	+2	72	+1
Cuyamaca St, Weld Blvd. to Bradley Ave	70	71	+1	71	0

⁽¹⁾ Horizon Year conditions include development that would be constructed in the year 2030. Noise levels are given at 50 feet from roadway centerline. Noise levels are based upon traffic data provided by Linscott, Law, and Greenspan (2009). See Appendix A for data sheets.

The proposed project would contribute to the noise increase along this roadway, but as shown in Table 6, the project's contribution would only account for 1 decibel of the increase, and thus would not be significant. Therefore, the project's contribution would not be cumulatively considerable.

Cumulative development would be required to comply with the City of El Cajon's Noise Ordinance, which restricts the level of noise that can be generated on a property according to the designated zone.

Compliance with the Noise Ordinance would ensure an acceptable noise environment for City residents. In addition, development surrounding Gillespie Field could conform to the Gillespie Field Land Use Plan, which would minimize potential future noise impacts.

Trolley Noise

In addition to traffic noise, the project site is subject to occasional noise from the MTS trolley. The trolley runs in a north-south direction to the east of Forrester Creek, and can be heard when the warning bells sound for the North Marshall Avenue crossing. One of the noise sources from the noise measurement taken near the southeast area of the project site included warning bells from the MTS trolley crossing. The measurement resulted in a noise level of 59 dBA Leq, which is acceptable for industrial land uses. In addition, trolley noise would be only heard occasionally throughout the day. Therefore, impacts associated with trolley noise would be less than significant.

7.2 Operational Noise Sources

Existing uses near the project site may periodically be exposed to noise associated with operation of the proposed project, including noise that is typical of industrial developments such as truck deliveries; heating, ventilation and air-conditioning (HVAC) equipment; inventory loading; mechanical noise; and general parking lot noise.

Noise sources from parking lots include car alarms, door slams, radios, tire squeals. These sources typically range from about 54-69 dBA at a distance of 50 feet. New major mechanical HVAC equipment located on the ground or on rooftops of new buildings generate noise levels which average 69-73 dBA CNEL at a distance of 50 feet, running continuously.

Land uses along Prospect Avenue include light industrial uses similar to the proposed project. As part of the noise technical study, a noise monitoring site (Site 3) sampled typical noise levels from an industrial park located off of Prospect Avenue. The noise sample included noise from delivery trucks, general parking lot noise, and mechanical equipment. The measured noise level was 68 dBA at approximately 50 feet from the primary source of noise (delivery trucks loading and unloading).

Operational noise from these sources would range between 54-73 dBA at the project site. These levels do not exceed the limit of 75 dBA during daytime hours established in the City of El Cajon Noise Ordinance for properties zoned as Industrial. Thus, no onsite operational noise impact would occur.

Operational noise from the project has the potential to be heard at the residences to the west and north of the project site, which are considered noise sensitive. The primary project operational noise source that the residences west of the site may be exposed to is general noise from the central parking lot between Buildings C and D. The western edge of the parking lot is about 157 feet from the nearest residence. At this distance, noise levels from the parking lot would range between 44-59 dBA, assuming flat topography. According to the topographic map prepared for the site, the western residence is actually located at a ground elevation of at least 25 feet above the ground elevation of the proposed parking lot. Due to the difference in elevation between the parking lot and the residence, some attenuation of the noise levels would occur due to ground absorption. The project also would include a six-foot high noise wall along the western and northern property boundary. However, due to the change in elevation between the parking lot and the residence (25 feet), and the ground elevation at the location of the wall (about 16 feet above the parking lot), the six-foot noise wall is not likely to provide any sound attenuation.

Periodic and temporary noise sources from the parking lot would be different from each other in kind, duration, and location, so that the overall effects would be separate and in most cases would not affect the receptors at the same time; therefore, parking lot noise is considered a nuisance noise that would result in a less than significant impact. Noise from HVAC systems installed on the building rooftops, however, would have a straight line-of-site to the residences, and would run continuously. HVAC noise levels could range between 59-63 dBA (assuming a distance of 157 feet from the edge of the nearest building).

The primary project operational noise source that the residence north of the site may be exposed to is truck delivery noise from the loading docks located on the north side of Building C. The nearest edge of the loading dock is located approximately 51 feet from the residential property line. The residence is located at a ground elevation essentially the same as the level of the loading dock. The project would include a six-foot high noise wall along the northern property boundary. Taking into consideration the noise attenuation that would be provided by the noise wall, noise levels from delivery trucks could reach a level of 59 dBA at the northern residence. Considering the type of use proposed at the project site, delivery truck noise has the potential to be generated fairly continuously throughout daytime hours. Noise from HVAC systems at the top of the buildings could range between 61-65 dBA (assuming a distance of 131 feet from the edge Building C). Due to the building height (35 feet), the noise wall would not provide any attenuation from HVAC noise.

The residences near the project site are located within the City of Santee. The City of Santee Noise Ordinance establishes a sound level limit of 50 dBA for residential land uses during daytime hours. However, the ordinance also states that if the measured ambient noise level exceeds the applicable limit, the allowable one-hour average noise level shall be the ambient level. The 24-hour noise measurement taken at Site 4 resulted in a noise level of 64 dBA CNEL, which is consistent with the designation of the site within the 65 dBA CNEL contour of the Gillespie Field Airport. The Santee Noise Element states that noise increases are considered significant if a proposed development results in increases in ambient noise levels of three or more decibels in areas where the noise levels already exceed compatibility standards. It should be noted that, according to the City of Santee General Plan map and zoning map, the residences to the west of the project site are designated Residential, but the residence north of the project site is within an area designated and zoned for General Industrial use. The compatibility standard for Residential use is 65 dBA CNEL, and the standard for Industrial use is 75 dBA CNEL.

The noise measurement near the residences reflects an ambient noise level of 64 dBA CNEL. For the residences west of the project site, this level exceeds the compatibility standard for residential uses. When the noise from the proposed HVAC system is added to this ambient level, the future noise level could reach as high as 67 dBA CNEL, which is an increase of three decibels. Therefore, operational noise impacts to the residences west of the project site are potentially significant.

For the residence north of the project site, the addition of noise from both the rooftop HVAC systems and truck deliveries, when added to ambient levels, could result in ambient noise levels as high as 68 dBA CNEL. The resulting level would therefore be more than three decibels over ambient noise levels. According to the City of Santee Noise Element, noise levels as high as 75 dBA for Industrial land uses are considered compatible. However, since a residence is located on the property, the more conservative compatibility standard of 65 dBA CNEL has been used to determine significance. Therefore, operational noise impacts to the residences north of the project site are considered potentially significant.

Mitigation Measures

The following mitigation measures would reduce noise levels associated with proposed HVAC equipment to 65 dBA CNEL or below.

- N-1 HVAC Equipment Shielding.** Noise from HVAC equipment shall be reduced by either the installation of acoustical shielding around all new rooftop HVAC equipment (which would reduce noise by up to 15 dBA), or by placing the HVAC equipment below grade in basement space. The acoustical shielding shall include a parapet wall of sufficient height to fully shield the equipment or acoustical shielding which complements the proposed building elevations and also fully shields the equipment. .

7.3 Construction Noise

Construction of the project buildings and facilities would generate temporary noise that could expose nearby receptors to elevated noise levels that may disrupt communication and routine activities. Elevated noise levels would be primarily experienced close to the noise source. The magnitude of the impact would depend on the type of construction activity, noise level generated by various pieces of construction equipment, duration of the construction phase, distance between the noise source and receiver, and intervening structures.

Project construction will utilize standard equipment, such as scrapers, graders, backhoes, loaders, tractors, cranes, and miscellaneous trucks. No blasting activity is anticipated. Sound levels of typical construction equipment range from 60-90 dBA at 50 feet from the source (US EPA, 1971). As mentioned earlier, the nearest existing residences to the site are 44 feet from the western site boundary and 16 feet from the northern site boundary.

As described in Section 4.4, the City of El Cajon restricts construction activity to daytime hours (between 7:00 a.m. and 7:00 p.m.). The City of Santee specifies that construction noise shall not exceed 75 decibels for more than 8 hours when measured at or within residential uses. Since construction noise could reach 90 dBA at the nearest residences north and west of the project site, impacts are considered potentially significant.

Mitigation Measure

Implementation of the mitigation measure below would reduce temporary noise impacts from construction activities to below a level of significance.

- N-2 Construction Noise Reduction.** The project applicant shall implement the following measures to minimize short-term noise levels caused by construction activities. Measures to reduce construction/demolition noise to the maximum extent feasible shall be included in contractor specifications and shall include, but not be limited to, the following:

- Construction equipment shall be properly outfitted and maintained with manufacturer-recommended noise-reduction devices to minimize construction-generated noise.
- Stationary construction noise sources such as generators or pumps shall be located at least 100 feet from noise-sensitive land uses, to the extent feasible.

- Lay-down and construction vehicle staging areas shall be located as far from noise-sensitive land uses as feasible.
- Construction activity shall be restricted to occur between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday, excluding holidays, and 8:00 a.m. and 5:00 p.m. on Saturday.

8.0 CONCLUSION

The Forrester Creek Industrial Park project would not result in significant permanent noise impacts associated with aviation, roadway, or trolley noise. However, increases associated with project-related operational noise such as rooftop HVAC systems and truck deliveries may expose neighboring noise sensitive uses to levels that exceed local standards. Impacts would therefore be potentially significant. Implementation of Mitigation Measures N-1 would reduce ambient noise levels to acceptable levels.

Construction of the proposed project may result in temporary increases in ambient noise levels that would affect neighboring land uses. Impacts would be potentially significant, but implementation of Mitigation Measure N-2 would reduce construction-related noise impacts to a less than significant level.

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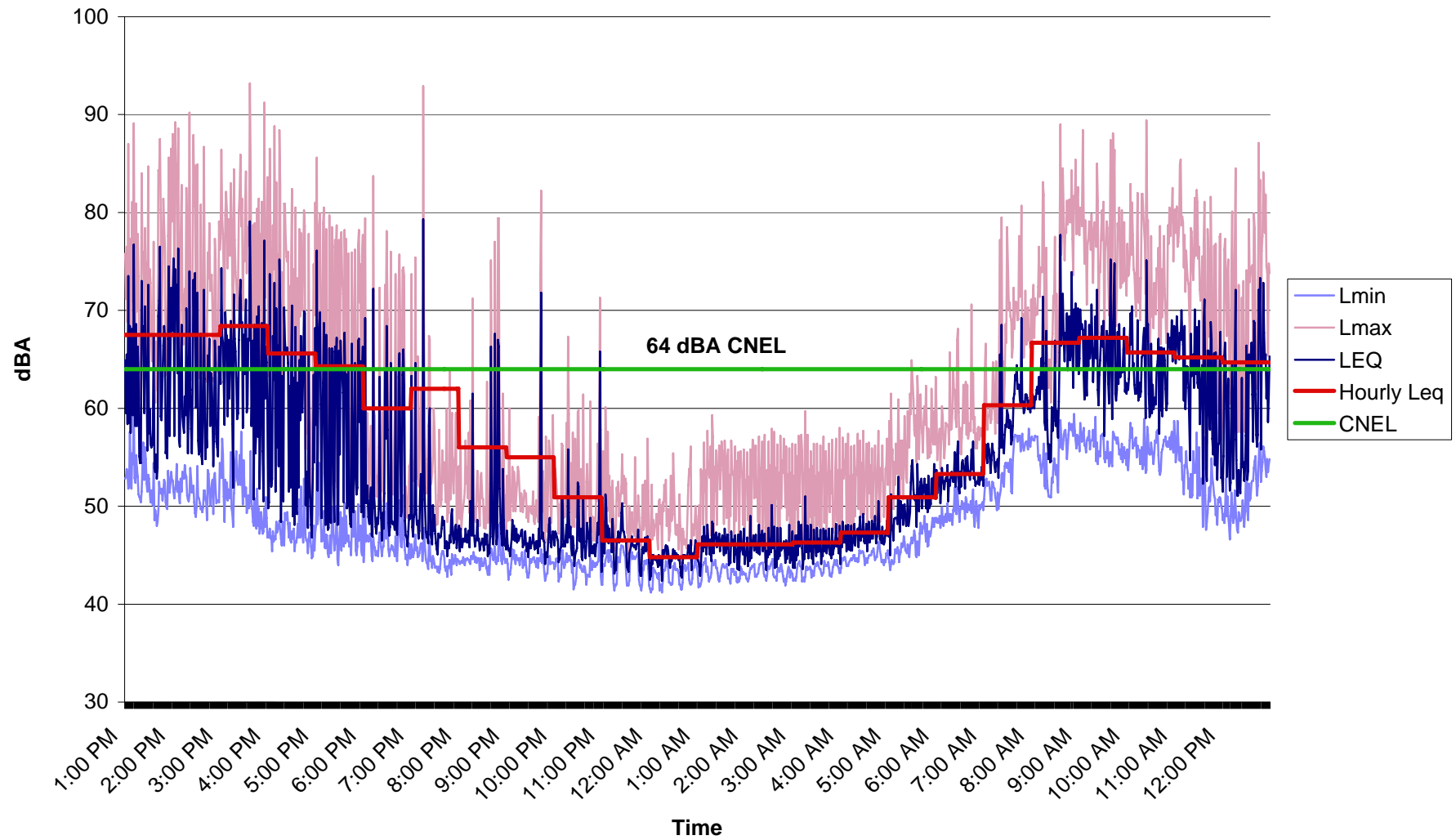
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Appendix A

Noise Data

Noise Measurement Results
Traffic Noise Modeling Data

Forrester Creek Industrial Park Project 24-hour Measurement



**Forrester Creek Industrial Park Project
Noise Monitoring Data**

Interval Data

Meas Site	Date	Time	Duration	Leq	SEL	Lmax	Lmin	Peak	Uwpk	L(10)	L(33)	L(50)	L(90)
1	12Jun 08	8:39:26	3600	59.4	95	80.2	47.5	98.3	0	62.2	54.6	52.9	50.2
2	12Jun 08	9:57:52	3600	56.4	92	75.3	40.2	93.4	0	60	53.4	50	44.1
3	12Jun 08	11:16:01	900	68.3	97.8	86.1	47.4	106.4	110.4	72.4	64.6	61.1	52.6

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 100001720
Project Name: Forrester Creek Industrial Park Project

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: Linscott, Law, and Greenspan, July 2008
Community Noise Descriptor: L_{dn}: _____ CNEL: X

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

"-" = contour is located within the roadway right-of-way.

¹ Distance is from the centerline of the roadway segment to the receptor

Analysis Condition Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix		Distance from Centerline of Roadway				
						Medium Trucks	Heavy Trucks	CNEL at 50 Feet	70 CNEL	Distance to Contour 65 CNEL	60 CNEL	55 CNEL
Analysis Condition												
Weld Blvd, Gillespie Wy to Cuyamaca St - existing	4	0	7,400	40	0.5	2.0%	2.0%	64.9	-	49	106	228
Weld Blvd, Gillespie Wy to Cuyamaca St - existing+cum	4	0	8,050	40	0.5	2.0%	2.0%	65.2	-	52	112	241
Weld Blvd, Gillespie Wy to Cuyamaca St - existing+Cum+proj	4	0	11,200	40	0.5	2.0%	2.0%	66.7	-	65	139	300
Weld Blvd, Gillespie Wy to Cuyamaca St - 2030	4	0	9,000	40	0.5	2.0%	2.0%	65.7	-	56	121	260
Weld Blvd, Gillespie Wy to Cuyamaca St -2030 + proj	4	0	12,150	40	0.5	2.0%	2.0%	67.0	-	68	147	317
Weld Blvd, Fanita Dr to Gillespie Wy - existing	4	0	6,160	40	0.5	2.0%	2.0%	64.1	-	-	94	202
Weld Blvd, Fanita Dr to Gillespie Wy - existing + cum	4	0	6,410	40	0.5	2.0%	2.0%	64.3	-	45	96	207
Weld Blvd, Fanita Dr to Gillespie Wy - existing + cum+proj	4	0	6,950	40	0.5	2.0%	2.0%	64.6	-	47	101	219
Weld Blvd, Fanita Dr to Gillespie Wy - 2030	4	0	9,000	40	0.5	2.0%	2.0%	65.7	-	56	121	260
Weld Blvd, Fanita Dr to Gillespie Wy - 2030 + proj	4	0	9,540	40	0.5	2.0%	2.0%	66.0	-	58	125	270
Cuyamaca St, Prospect Ave to Weld Blvd - existing	4	0	14,600	45	0.5	2.0%	2.0%	68.9	-	91	196	421
Cuyamaca St, Prospect Ave to Weld Blvd - existing+cum	4	0	16,500	45	0.5	2.0%	2.0%	69.4	46	98	212	457
Cuyamaca St, Prospect Ave to Weld Blvd - existing+cum+proj	4	0	17,800	45	0.5	2.0%	2.0%	69.7	48	104	223	481
Cuyamaca St, Prospect Ave to Weld Blvd - 2030	4	0	24,000	45	0.5	2.0%	2.0%	71.0	59	126	272	587
Cuyamaca St, Prospect Ave to Weld Blvd - 2030+proj	4	0	25,250	45	0.5	3.0%	3.0%	72.2	70	151	325	701
Cuyamaca St, Weld Blvd to Bradley Ave - existing	4	0	19,900	45	0.5	2.0%	2.0%	70.2	52	112	240	518
Cuyamaca St, Weld Blvd to Bradley Ave - existing+cum	4	0	20,960	45	0.5	2.0%	2.0%	70.5	54	115	249	536
Cuyamaca St, Weld Blvd to Bradley Ave - existing+cum+proj	4	0	22,710	45	0.5	2.0%	2.0%	70.8	57	122	262	565
Cuyamaca St, Weld Blvd to Bradley Ave - 2030	4	0	25,000	45	0.5	2.0%	2.0%	71.2	60	130	280	603
Cuyamaca St, Weld Blvd to Bradley Ave - 2030+proj	4	0	26,750	45	0.5	2.0%	2.0%	71.5	63	136	293	631

