APPENDIX H

NOISE STUDY TECHNICAL REPORTS

County of San Diego

DEPARTMENT OF PUBLIC WORKS

RICHARD E. CROMPTON
DIRECTOR

5500 OVERLAND AVE, SUITE 310
SAN DIEGO, CALIFORNIA 92123-1295

(858) 694-2212 FAX: (858) 268-0461
Web Site: www.sdcounty.ca.gov/dpw/

July 11, 2011

Re: Evaluation of the Noise Studies for the proposed 70-Acre Redevelopment Project at Gillespie Field, El Cajon, California

In 2009, the County released for public review a Notice of Preparation for a joint Program Environmental Impact Report/Environmental Assessment (PEIR/EA) for the Redevelopment of the 70-acre Parcel and Land Acquisition/Avigation Easement Project. The County and the Federal Aviation Administration (FAA) were the Lead Agencies in the preparation of this joint environmental document. In 2011, the County decided to no longer pursue a joint PEIR/EA, but instead pursue the PEIR and EA separately in accordance with CEQA and NEPA. Moreover, only the redevelopment of the 70-acre site is being considered under CEQA and NEPA and not the acquisition of parcels and/or avigation easements. This PEIR does not analyze the potential environmental effects of the parcels considered for acquisition and avigation easement.

The revised project description and project alternatives does not present new conditions or features that would substantively alter the analysis and findings of the Noise studies prepared by AECOM and Ricondo & Associates, Inc. To this effect, the information and analysis contained herein are appropriate and valid for the consideration and discussion of environmental impacts in this PEIR.

Gillespie Field Aircraft Noise Analysis

Prepared for:
County of San Diego Department of Public Works

Prepared by:
Ricondo & Associates, Inc.

In Association with:
EDAW, Inc.

October 2008
FINAL

Table of Contents

List of Tables

List of Tables (continued)

List of Exhibits

List of Exhibits (continued)

I. Aircraft Noise Exposure Analysis

The noise analysis presented in this technical report has been completed for use in the completion of a joint Environmental Impact Report/Environmental Assessment (EIR/EA) being prepared by the San Diego County Department of Public Works in support of the proposed redevelopment of a 70-acre parcel of land at Gillespie Field with aviation related facilities (i.e. taxiways, apron, and hangars). The Gillespie Field Redevelopment Project (Project) also proposes to obtain avigation easements and/or to acquire property associated with the Runway Protection Zones (RPZs) at Gillespie Field. This project component is necessary to satisfy safety regulations and would not influence aircraft noise in areas surrounding the Airport. Accordingly, these project components are not considered as a part of this noise analysis. Aircraft noise was evaluated under five different scenarios:

- 2008 Existing Conditions
- 2019 No Action/No Project Alternative
- 2019 Proposed Action Alternative
- 2024 No Action/No Project Alternative
- 2024 Proposed Action Alternative

A full description of the Proposed Action can be found in the Alternatives section of the EIR/EA. The year 2019 represents the expected implementation year for the proposed action. This year 2019 was selected as the appropriate implementation year as the Airport Layout Plan Update and Narrative Report (P&D Aviation 2005), calling for the redevelopment of the 70-acre parcel, determined that the 2025 forecast operations would require 384 based aircraft spaces, and the revised operations forecast depicts the same forecast number by 2019 with a demand for 382 based aircraft spaces.[1] Therefore, the operations forecast and associated required aircraft facilities necessitates implementation of the 70-acre parcel redevelopment in the year 2019.

The year 2024 represents the five year mark following implementation of the proposed action as required by FAA impact analysis (NEPA only).

To satisfy the requirements of the National Environmental Policy Act (NEPA) and Federal Aviation Administration (FAA) regulations (FAA Order 1050.1E *Environmental Impacts: Policies and Procedures* and FAA Order 5050.4B *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Projects*), the noise analysis compares 2019 No Action/No Project conditions with 2019 Proposed Action Alternative conditions and 2024 No Action/No Project conditions with 2024 Proposed Action Alternative conditions. For purposes of the California Environmental Quality Act (CEQA) (Cal. Pub. Res. Code. Div. 13, §§21000 et seq.), the 2008 Existing Conditions scenario was established and is used as the environmental baseline per CEQA. The CEQA noise analysis compares both 2019 No Action/No Project Alternative and 2019 Proposed Action Alternative conditions with 2008 Existing Conditions. The results of the noise analysis can be found in Section 1.4. In summary, there are no potentially significant impacts according to FAA and CEQA thresholds of significance related to changes in aircraft noise exposure caused by the Proposed Action Alternative.

The aircraft noise analysis was conducted using the FAA required Integrated Noise Model (INM) in compliance with applicable Federal and State of California approved methodologies as discussed in Section 1.1.3. The methodology employed for the noise analysis is further discussed in Section 1.1,

[1] Ricondo & Associates, Inc., *Gillespie Field Unconstrained Aviation Activity Forecast*, September 9, 2008.

below, including a description of noise metrics and inputs required for modeling.

In addition to the noise analysis, this document evaluates the compatibility of noise contours for the 2019 alternatives to existing regional, county and local plans and policies related to land use. This analysis is in Section II.

1.1 Background and Methodology

In order to understand results from a noise analysis, a foundation in the basics of sound and the metrics used to measure it should be established first. The following two sections describe the physics of sound and the methods used to measure sound level and noise impact.

1.1.1 The Basics of Noise Analysis

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air, and are sensed by the human ear. Whether that sound is interpreted as pleasant (e.g., music) or unpleasant (e.g., jackhammers) depends largely on the listener's current activity, past experience, and attitude toward the source of that sound.

The measurement and human perception of sound involves three basic physical characteristics: intensity (loudness), frequency (high or low pitch) and duration. The loudest sounds that are detected comfortably by the human ear have intensities that are a trillion times higher than those of sounds that are barely detected. Due to this vast range, the use of a linear scale to represent the intensity of sound becomes very unwieldy. To simplify acoustical calculations, a logarithmic unit known as the decibel (abbreviated dB) is used to represent the intensity of a sound. Such a representation is called a sound level. Decibels measure the ratio of a given intensity of sound energy levels to the threshold of hearing intensity, with the threshold having the value of 0 decibels (0 dB). Sound level measurements in decibels are generally referenced to a standard threshold of hearing at 1000 Hz for the human ear, which can be stated in terms of sound intensity. This value has wide acceptance as a nominal standard threshold and corresponds to 0 decibels. The actual average threshold of hearing at 1,000 Hz is more like 2.5 x 10-12 watts/cm2 or about 4 decibels, but 0 decibels is a convenient reference. Normal speech has a sound level of approximately 60 dB. Sound levels above 120 dB may cause physical discomfort, and sounds maintaining a level above 140 dB can cause permanent hearing damage.

Sound levels cannot be arithmetically added or subtracted due to the logarithmic nature of the decibel unit. However, some simple rules are useful in understanding sound levels. First, if a sound's intensity is doubled, the sound level increases by 3 dB, regardless of the initial sound level. For example:

60 dB + 60 dB = 63 dB, and

80 dB + 80 dB = 83 dB.

Second, the total sound level produced by two sounds of different levels is slightly more than the higher of the two. For example:

60.0 dB + 70.0 dB = 70.4 dB.

Adding the noise from a relatively quiet event (60 dB) to a relatively noisy event (70 dB) results in a value of 70.4 dB. The quieter event has only one-tenth the sound energy of the noisier event. As a result, the quieter noise event is "drowned out" by the noisier one. Therefore, the human ear perceives no discernible increase in the overall noise level.

Finally, when different sounds are averaged together, the result is dominated by the highest sound level.

Average (50 dB and 100 dB) = 97 dB

Research indicates that a person can detect a change as small as 1 dB under very carefully controlled laboratory conditions. However, the minimum change in an individual event's sound level that an average human ear can detect under normal conditions is about 3 dB. In general, a person perceives a 10 dB change in sound level as a doubling (or halving) of the sound's loudness. A 10 dB decrease in sound level actually represents a 90 percent decrease in sound intensity, but only a 50 percent decrease in perceived loudness. Sound energy is linear, but perceived loudness to the human ear is nonlinear.

The difference between how people perceive fluctuations in sound levels and the relative sound energy that underlies the change in levels is key to understanding both how noise is analyzed and mitigated. For example, a doubling of aircraft operations without a change in the type of aircraft flying would result in a doubling of sound energy that, as shown above, is associated with a 3 dB increase in noise level. Furthermore, the noise exposure level near an airport is largely determined by the loudest aircraft operating, and not strongly affected by changes in operations by quieter aircraft.

Sound frequency is measured in terms of cycles per second (cps), or hertz (Hz), which is the standard unit for measuring frequency. The normal human ear can detect sounds that range in frequency from about 20 Hz to about 15,000 Hz. All sounds in this wide range of frequencies, however, are not heard equally well by the human ear. The ear is most sensitive to frequencies in the 1,000 to 4,000 Hz range. A sound tone at 2,000 Hz would seem louder than a sound at 15,000 Hz of the same intensity. Weighting curves were developed to correspond to the sensitivity and perception of the human ear to different types of sound. A-weighting accounts for frequency dependence by adjusting the high and low frequencies (below approximately 500 Hz and above approximately 10,000 Hz) to approximate the human ear's lower sensitivities to those frequencies.

Sound levels that are measured using A-weighting, called A-weighted sound levels, are often denoted by the unit dBA. When the use of A-weighting is understood, the adjective "A-weighted" is often omitted and the measurements are expressed in dBA. Some common sounds on the dBA scale are listed in **Table I-1**. As shown in the table, the relative perceived loudness of a sound doubles for each 10 dBA increase although a 10 dBA change corresponds to a tenfold increase in relative sound energy.

Exhibit I-1 illustrates the range of sound produced and the average sound level of common noise sources, such as sirens, motorcycles, and loud rock music.

1.1.2 Noise Metrics

A metric refers to the unit used to quantitatively measure the effect of noise on the environment. Due to the wide variety of purposes for which noise is analyzed, including an evaluation of the way sound is generated by an aircraft, a wide variety of metrics exist to describe noise. While only a limited number of metrics are commonly used in discussing aircraft noise, the metrics differ in significant ways.

Table I-1

Common Sounds on the A-weighted Decibel Scale

Sound	Sound Level (dBA)	Relative Loudness (approximate)	Relative Sound Energy
Rock music, with amplifier	120	64	1,000,000
Thunder, snowmobile (operator)	110	32	100,000
Boiler shop, power mower	100	16	10,000
Orchestral crescendo at 25 feet, noisy kitchen	90	8	1,000
Busy street	80	4	100
Interior of department store	70	2	10
Ordinary conversation, 3 feet away	60	1	1
Quiet automobiles at low speed	50	1/2	.1
Average office	40	1/4	.01
City residence	30	1/8	.001
Quiet country residence	20	1/16	.0001
Rustle of leaves	10	1/32	.00001
Threshold of hearing	0	1/64	.000001

Source: U.S. Department of Housing and Urban Development, Aircraft Noise Impact—Planning Guidelines for Local Agencies, 1972.
Prepared by: Ricondo & Associates, Inc., October 2004

Exhibit I-1

Average Sound Levels

dB(A)	OVER-ALL LEVEL Sound Pressure Level Reference: 0.0002 Microbars	COMMUNITY (Outdoor)	HOME OR INDUSTRY	LOUDNESS Human Judgement of Different SoundLevels
130		Military Jet Aircraft Take-Off With After-burner From Aircraft Carrier @ 50 Ft. (130)	Oxygen Torch (121)	120 dB(A) 32 Times as Loud
120 110	UNCOMFORTABLY LOUD	Concord Takeoff (113)*	Riveting Machine (110) Rock-N-Roll Band (108-114)	110 dB(A) 16 Times as Loud
100		Boeing 747-200 Takeoff (101)*		100 dB(A) 8 Times as Loud
90	VERY LOUD	Power Mower (96) DC-10-30 Takeoff (96)* Motorcycle @25 Ft. (90)	Newspaper Press (97)	90 dB(A) 4 Times as Loud
80		Car Wash @ 20 Ft. (89) Boeing 727 w/ Hushkit Takeoff (96)* Diesel Truck, 40 MPH @ 50 Ft. (84) Diesel Train, 45 MPH @ 100 Ft. (83)	Food Blender (88) Milling Machine (85) Garbage Disposal (80)	80 dB(A) 2 Times as Loud
70	MODERATELY LOUD	High Urban Ambient Sound (80) Passenger Car, 65 MPH @ 25 Ft. (77) Freeway @ 50 Ft. From Pavement) Edge, 10:00 AM (76 +or- 6) Boeing 757 Takeoff (76)*	Living Room Music (76) TV-Audio, Vacuum Cleaner	70 dB(A)
60		Propeller Airplane Takeoff (67)* Air Conditioning Unit @ 100 Ft. (60)	Cash Register @ 10 Ft. (65-70) Electric Typewriter @ 10 Ft. (64) Dishwasher (Rinse) @ 10 Ft. (60) Conversation (60)	60 dB(A) 1/2 as Loud
50	QUIET	Large Transformers @ 100 Ft. (50)		50 dB(A) 1/4 as Loud
40		Bird Calls (44) Lower Limit Urban Ambient Sound (40)		40 dB(A) 1/8 as Loud
20	JUST AUDIBLE	Desert at Night (dB[A] Scale Interrupted)		
10	THRESHOLD OF HEARING			

Numbers in Parentheses are the A-Scale Weighted Sound Levels for that Noise Event
**Aircraft takeoff noise measured 6,500 meters from beginning of takeoff roll*

Note: Aircraft Levels From FAA Advisory Circular AC-36-3G

Source: Leo L. Beranek "Noise and Vibration Control," 1971.
Prepared by: Gillespie Field Noise Assessment, Mestre Greve Associates, March 2004.

There are two very basic categories of noise metrics: single aircraft overflight noise exposure and cumulative (average) exposure related to multiple flights over a defined period of time (e.g., 24-hour day or eight hours). Single aircraft overflight noise events are quantified using the Maximum Sound Level (Lmax) or Sound Exposure Level (SEL) metric, whereas cumulative exposure to many flights over a given period is expressed in terms of the Community Noise Exposure Level (CNEL) or Equivalent Sound Level (Leq). For purposes of this analysis, noise is measured using CNEL.[2]

CNEL, expressed in dBA, is the standard metric used in California to represent cumulative noise exposure and is recognized by FAA for use in assessing aircraft noise impacts in California (FAA Order 1050.1E *Environmental Impacts: Policies and Procedure, paragraph 14.1a*). The metric provides a single-number description of the sound energy to which a person or community is exposed to over a period of 24 hours. CNEL includes penalties applied to noise events occurring after 7:00 p.m. and before 7:00 a.m., when noise is considered more intrusive. The penalized time period is further subdivided into evening (7:00 p.m. through 9:59 p.m.) and nighttime (10:00 p.m. to 6:59 a.m.). When a noise event occurs in the evening, a penalty of 4.77 dBA (frequently rounded up to 5 dBA) is added to the nominal sound level. A 10 dBA penalty is added to nighttime noise events (equivalent to a tenfold increase in aircraft operations).

The CNEL metric used for aircraft noise analyses is based on an Annual Average Day (AAD) of aircraft operations. An average annual day activity profile is computed by adding all aircraft operations occurring during the course of a year and dividing the result by 365. As such, the Annual Average Day does not reflect activities on any one specific day, but represents average conditions as they occur during the course of the year.

1.1.3 Aircraft Noise Analysis Methodology

The methodology for analyzing noise from most transportation or community noise sources, including aircraft, follows a generally accepted process that includes the application of a computer model to estimate noise levels and compare them to those for baseline conditions and future year alternatives.

1.1.3.1 Modeling Aircraft Noise

For purposes of this analysis, aircraft noise has been modeled using the FAA's Integrated Noise Model (INM). INM is a planning tool designed to compare the relative effect of one set of forecasted conditions against those of another. Therefore, the FAA requires noise exposure patterns based on modeled rather than measured data for its evaluations (FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures*, paragraph 14b). Section 1.1.3.2, below, provides an overview of the INM.

Version 7.0 of the INM was used for the aircraft noise analysis in this document. INM 7.0 is the most recent release of the model for use at the time this aircraft noise analysis was conducted. The FAA has made available detailed information related to the updates to INM 7.0 via release notes located on its website (www.faa.gov).

Modeled aircraft CNEL noise exposure maps are used as planning tools to allow the comparison of different scenarios of operations over a broad geographical area. The aircraft noise analysis scenarios

---

[2] The Day-Night Average Sound Level (DNL) is the accepted standard Federal noise metric. DNL accounts for differences in people's attitude towards noise during daytime and nighttime periods. A weighting factor equivalent to a penalty of 10 decibels is applied to operations between 10 p.m. and 7 a.m. to account for the increased sensitivity of people to nighttime noise. CNEL is the accepted standard noise metric in the State of California and has been accepted by FAA for use in measuring noise associated with projects in this state.

presented in this document include 2008 Existing Conditions, 2019, and 2024 No Action/No Project Alternative and Proposed Action Alternative scenarios. These scenarios were compared (2019 No Action/No Project Alternative conditions to 2019 Proposed Action Alternative conditions for NEPA purposes, 2008 Existing Conditions to 2019 No Action/No Project Alternative conditions and 2019 Proposed Action Alternative conditions for CEQA purposes, and 2024 No Action/No Project Alternative conditions to 2024 Proposed Action Alternative conditions for informational purposes as required by FAA) to identify potential significant impacts that may arise as a result of the proposed action.

1.1.3.2 Integrated Noise Model (INM)

The INM is the accepted, state-of-the-art tool for determining the total effect of aircraft noise exposure at and around airports. The INM has been the FAA's standard tool for determining the predicted noise impact in the vicinity of airports since 1978. Statutory requirements for INM use are defined in FAA Order 1050.1E, *Policies and Procedures for Considering Environmental Impacts*; Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Projects*, and Federal Aviation Regulations (FAR) Part 150, *Airport Noise Compatibility Planning*.

The INM uses runway and flight track information, operation levels distributed by time of day, aircraft fleet mix, and aircraft profiles as inputs. The INM produces noise exposure contours connecting points of equal noise exposure levels in a variety of metrics, including CNEL. In addition, the INM can be used to compute noise at specific points on the ground that are input into the model. (e.g., homes, schools, religious facilities, and other noise sensitive facilities).

The INM includes flight performance data for a wide variety of aircraft types. The model's aircraft database contains a representation of commercial, general aviation, and military aircraft powered by turbojet, turbofan, or propeller-driven engines. For each aircraft type in the database, INM incorporates: (1) a set of departure profiles for each applicable trip length as a surrogate for weight, (2) a set of approach parameters, and (3) noise (Single Event Level [SEL]) versus distance curves for several thrust settings.

The model computes the noise from each flight at a large number of grid points on the ground. After each operation is modeled, INM logarithmically sums all the aircraft noise values. Aircraft noise contours (areas) are then generated by connecting grid points with equal levels of noise exposure. Noise contours are then produced, typically in 5 dBA increments including, at a minimum, 65, 70, and 75 dBA.

1.1.3.3 INM Input Data and Assumptions

In order for the INM to generate CNEL aircraft noise exposure contours that would be viable to evaluate aircraft noise impacts, the following inputs to the model are required:

- A basic description of the airfield, including elevation above mean sea level (MSL), average annual temperature, and runway layout.
- Aircraft activity information, including the number of aircraft operations by time of day and aircraft type.
- Flight operational data, including use of the runways, location and use of flight tracks, departure profiles, and existing noise abatement procedures.

Neither the No Action/No Project Alternative nor the Proposed Action Alternative scenarios include a change in the runway layout from existing conditions; therefore the existing layout as defined by the Airport Layout Plan (ALP) is held constant for all scenarios. The average annual temperature is also held constant. The last two categories of data are discussed in more detail below.

1.1.3.4 Aircraft Activity Input

The INM requires the following input data regarding the character and timing of operations at an airport:

- The average number of flights each day by aircraft type, such as Cessna Citation corporate jet (CNA500), or Cessna 172 single-engine propeller aircraft (CNA172),
- Time of day the flights occurred (day: 7:00 a.m.. to 6:59 p.m.; evening: 7:00 p.m. to 9:59 p.m.; and night: 10:00 p.m. to 6:59 a.m.), and
- Distance the aircraft is traveling ("stage length" to determine the appropriate climb altitude-speed-thrust profile).

Each of these input factors is discussed below.

Operations by Aircraft Type

Different aircraft types vary dramatically in the amount of noise they generate. The noise level estimates are documented in FAA Advisory Circular 36-3H, *Estimated Airplane Noise Levels in A-Weighted Decibels* (November 2001 as amended), and are based on certificated aircraft noise levels measured at 21,325 feet (6,500 meters) from the start of the takeoff roll. Aircraft noise characteristics can be classified according to Federal noise level standards specified in FAR Part 36, Noise Standards, Aircraft Type and Airworthiness Certification, as meeting Stage 1 (noisiest), Stage 2 (quieter), or Stage 3 (quietest) standards. FAR Part 91, *General Operating and Flight Rules*, specifies that after December 31, 1999, no person may operate a Stage 2 aircraft over 75,000 pounds in the contiguous United States. However, FAR Part 36 Stage 2 general aviation (GA) jet aircraft that weigh less than 75,000 pounds are exempt from this requirement. This includes a number of small jets operated by businesses and individuals.

The INM aircraft database includes information for most, but not all, aircraft types. Therefore, substitutions are often necessary as a means to identify equivalent aircraft for those aircraft that are not included in the database. The FAA has developed a list of pre-approved aircraft substitutions for use in the INM. In this aircraft noise analysis, the FAA pre-approved list of substitutions is used.

Time of Day

As described in Section 1.1.2, above, the CNEL metric applies different weighting penalties to aircraft that operate during the evening or at night. Therefore, the number and type of aircraft operating in the evening and nighttime periods are required inputs to the INM. Due to the CNEL weighting scheme, evening and nighttime operations have a greater effect on the shape and size of the noise exposure area than their number might suggest. A single operation in the evening is equivalent to about three daytime operations, and one operation at night is equivalent to 10 daytime operations.

Stage Length and Takeoff Weight

Stage length (unrelated to "stage" classifications of aircraft for noise characteristics) refers to the nonstop distance an aircraft travels after departing from an airport. The stage length determines the gross takeoff weight assigned to each aircraft type, based upon the amount of fuel that the aircraft must have on board to safely complete the trip. The aircraft weight serves as the basis for determining the appropriate departure altitude, speed and thrust profiles used for modeling purposes. Aircraft noise characteristics vary depending on altitude and thrust. For example, a fully loaded aircraft departing on a long flight would probably weigh more than the same aircraft departing on a shorter flight due to a higher fuel load. The heavier aircraft gains altitude at a slower rate than the lighter aircraft. Thrust levels and distances from the ground are two important factors related to

noise levels heard by the noise receiver (e.g., residents near the Airport). The more power applied to the engines, the louder the noise from the source. The closer the aircraft is to the noise receiver, the shorter distance there is for attenuation and the louder the noise level. The more power applied to the engines, the louder the noise from the source. Due to the nature of Gillespie Field as a general aviation airport and the type of aircraft that operate at the Airport, no aircraft included in this analysis are characterized as operating beyond Stage 1 according to the aircraft databases provided by the FAA in INM.

Average Annual Day (AAD) Activity Levels

For CNEL aircraft noise exposure calculations, aircraft operations associated with the average annual day are used in the INM. To achieve the necessary level of detail and to provide an accurate noise assessment for the existing condition, a full year of activity level data is normally analyzed when available. The numbers of operations by each aircraft type and time of day are divided by 365 to arrive at the average annual day numbers. (Certain inputs in the INM model consider a landing and take-off as a single operation.) This representation of airport activity does not reflect any particular day, but gives an accurate picture of the timing and character of operations throughout the year.

Runway Use

In the INM, runways are defined by runway end in terms of latitude and longitude coordinates. A runway may include a displaced take-off or landing threshold. This portion of the runway is defined to be unavailable for that type of operation for safety reasons (e.g., obstruction clearance). Displaced thresholds are identified in the INM, which uses the input to determine actual start-of-take-off or touchdown points along the runway.

Runway use for departures or arrivals is typically a function of prevailing wind and weather, lengths and widths of the runways, instrumentation, and effects of other airports or air traffic facilities in the area. Runway use may also be influenced by the direction of flight of an arriving or departing aircraft, to some extent on aircraft parking position, and/or periodic closures of runways and taxiways. Finally, noise abatement practices also may influence the pattern of aircraft movements on a runway.

Aircraft Flight Tracks

Once aircraft leave a runway on departure or approach a runway on arrival, their location and altitude over surrounding communities becomes a determining factor in how much noise would be experienced on the ground. For this reason, flight track information is an important input to the INM. Most pilots fly their aircraft in predictable patterns as they follow instructions from FAA Air Traffic Control handling their movements into or away from an airport. Flight tracks are defined to represent the general paths of the large majority of aircraft located throughout the study area. When using the INM, these flight tracks are specified to capture the complexity of the actual flight patterns. Flight tracks are defined in the INM before aircraft operations can be entered. The number of operations is entered for each aircraft type, runway, and flight track.

Flight Climb and Descent Profiles

A flight profile describes the changes in altitude, thrust settings, and speed that an aircraft undergoes as it departs or approaches a runway. The INM specifies standard departure profiles for each aircraft type in the database, and for various gross weights of the larger aircraft. For arrivals, a three-degree descent that is typical for most flights is assumed in the INM. Standard profiles provided in the INM are used to calculate aircraft noise exposure for Gillespie Field.

1.1.3.5 The Reliability and Utility of the INM

The validity and accuracy of the INM CNEL calculation depend on the accuracy and completeness of the basic information used in the calculations. For 2008 Existing Conditions, the number, character, and location of flights is determined based upon a prior INM study conducted for the Airport in 2000 and validated in August 2008 through field observations after interviewing Airport and FAA ATCT staff and use of FAA ATCT data (flight strips). Use of these data yielded a reasonably accurate depiction of noise exposure within the Airport's surrounding communities for planning purposes.

A description of the operational assumptions for the existing condition and each future year scenario is provided in the following sections.

1.2 Affected Environment/Environmental Baseline

For purposes of this noise analysis, year 2008 conditions represent the baseline Existing Conditions. The last noise analysis for Gillespie Field was conducted in 2005 (*Gillespie Field Airport Layout Plan Narrative Report*, P&D Consultants, September 2005). It was necessary to update the baseline conditions to reflect changes in conditions at the Airport since the completion of the ALP Narrative Report and to satisfy CEQA, which requires a comparison of proposed action conditions with an Existing Conditions (baseline conditions), and the FAA requirement of providing a recent depiction of existing condition (no older than three years) .

FAA requires that input used to assess aircraft noise should accurately reflect current activity levels, aircraft fleet mix, runway use and flight track use at an airport.[3] To satisfy this requirement, the AAD INM input developed for the aircraft noise analysis conducted as part of the ALP Narrative Report was updated using the best available information to adequately reflect 2008 Existing Conditions.

The following sections provide a description of the data and assumptions used to develop the noise exposure map for 2008 Existing Conditions. The input parameters include the (1) average daily number of aircraft operations, (2) the aircraft fleet mix and its distribution throughout the day, (3) the current utilization of the runways, (4) the location of the flight paths leading to and from the runways, and (5) the distribution of flight operations on those flight paths.

1.2.1 Existing Conditions Aircraft Activity

Activity levels for 2008 Existing Conditions at Gillespie Field were based on the most recent 12-consecutive months of operations data collected by FAA Airport Traffic Control Tower (ATCT) staff. The data reflects the period between July 1, 2007 and June 30, 2008. During this time, there were 267,969 operations at the Airport, 110,008 of which were itinerant operations (arrivals and departures) and 157,961 of which were local operations (touch-and-go operations). To calculate AAD conditions, each group of operations was divided by 365, representing the number of days in a year. Local operations as reported by the FAA were further divided by two to account for difference in the way FAA records these operations (as separate arrival and departure operations) and the way they are calculated in INM (as single operations). The AAD number of itinerant operations is 301 operations and the AAD number of local operations is 216 operations. The combined number represents the AAD operations for 2008 Existing Conditions of 517 AAD operations. Further calculations are conducted to determine appropriate allocation of these operations by time of day and aircraft type, as discussed in Section 1.2.2, below.

---

[3] Federal Aviation Administration. Airports Desk Reference. Chapter 17, Section 6(j)(4), 2nd paragraph, page 12

1.2.2 Operations by Aircraft Type and Time of Day

Gillespie Field is a general aviation airport that generally serves single-engine and multi-engine propeller driven aircraft. While jet aircraft do operate at the Airport, there is no scheduled air carrier service. A review of the ALP Narrative Report, a 13-day sample of FAA ATCT flight strips, field observations, and the County of San Diego Department of Public Work's nighttime flight log kept at the Airport was conducted to determine whether the type of aircraft in use at Gillespie Field has changed between 2000 and 2008.[4] Based upon this review, aircraft were categorized by the following type categories:

- Single-Engine Propeller
- Multi-Engine Propeller
- Multi-Engine Turbine Propeller
- Jet
- Helicopter

Since the closure of Silver State Helicopter in February 2008, the average number of helicopter operations has decreased. The number of helicopter operations is not specifically tracked by the FAA, however, a total of about 30 total operations a day was estimated based on forecasted flight hours for 2008 provided by the FAA's *Aerospace Forecast Fiscal Years 2007-2020*. Assuming three active helipads with four separate routes for each helipad, the AAD operation level would be two and a half operations per route. According to the FAA's Environmental Desk Reference, FAA is to conduct helicopter noise analysis when helicopter operations on a specific route are forecasted to exceed 10 operations per day and hover times exceed two minutes (Section 3,b,(3)).[5]

Based on the 2008 Existing Conditions estimate and the forecasted continued decrease in helicopter operations for both the No Action/No Project Alternative and Proposed Action Alternative scenarios (refer to Ricondo & Associates' *Gillespie Field Unconstrained Aviation Activity Forecast* (September 9, 2008) for Proposed Action Alternative forecast *and Constrained Aviation Activity Forecast* (September 9, 2008) for No Action/No Project Alternative forecast), the AAD number of helicopter operations on each route is anticipated to be at or below two and a half operations. In addition, helicopter operations depart from and arrive at Gillespie Field and do not typically hover for more than two minutes. Based upon the anticipated number of operations per route and the lack of hovering, modeling helicopter noise is deemed unnecessary. Due to the limited number of helicopters operating at Gillespie Field and the assumption that helicopter noise is not a substantial issue, this aircraft category was grouped with single-engine propeller aircraft to account for the total number of operations reported by the FAA.

Overall, the percentage of single-engine, multi-engine and jet operations is similar to what was modeled for 2000. The only adjustment, based on flight strip data and field observations conducted at the Airport during three thirteen-hour periods from August 13 through 16, 2008, is the percentage of piston engine versus turbine engine multi-engine propeller aircraft. Analysis concludes that there are more piston engine multi-engine aircraft compared to turbine powered multi-engines. During 2000, there were more turbine powered multi-engine aircraft. **Table I-2** describes the AAD aircraft operations and fleet mix at Gillespie Field under 2008 Existing Conditions.

---

[4] Flight strips are rectangular green strips that include information on Instrument Flight Rule (IFR) planned flights. Information on the strip includes aircraft type, operation mode (arrival/departure) and date and time of the operation. IFR is a set of regulations and procedures for operating aircraft during periods when weather conditions do not meet Visual Flight Rule (VFR) minimum requirements. The majority of operations at Gillespie Field are not IFR flights.

[5] http://www.faa.gov/airports_airtraffic/airports/environmental/environmental_desk_ref/media/desk_ref_chap17.pdf

Table I-2

Average Annual Day Aircraft Operations and Fleet Mix: 2008 Baseline Conditions

			Arrivals				Departures				Touch-and-Go's			
Aircraft Type	INM 7.0 Designation	Group Category	Daytime	Evening	Nighttime	Total	Daytime	Evening	Nighttime	Total	Daytime	Evening	Nighttime	Total
Single-Engine Propeller														
Cessna 172	CNA172	Single-Engine	11.83	0.90	0.08	12.81	11.87	0.91	0.08	12.86	17.38	1.33	0.12	18.83
Cessna 206	CNA206	Single-Engine	5.91	0.45	0.04	6.40	5.94	0.45	0.04	6.43	8.69	0.66	0.06	9.41
Cessna 206T	CNA20T	Single-Engine	5.91	0.45	0.04	6.40	5.94	0.45	0.04	6.43	8.69	0.66	0.06	9.41
Single Engine (1985)	COMSEP	Single-Engine	11.83	0.90	0.08	12.81	11.81	0.90	0.08	12.80	17.38	1.33	0.12	18.83
Single-Engine Fixed Prop	GASEPF	Single-Engine	59.13	4.51	0.41	64.05	59.07	4.51	0.41	63.99	86.90	6.63	0.60	94.13
Single-Engine Variable Pitch Prop	GASEPV	Single-Engine	23.65	1.80	0.16	25.62	23.63	1.80	0.16	25.59	34.76	2.65	0.24	37.65
Single-Engine Propeller Total			118.26	9.02	0.82	128.09	118.26	9.01	0.82	128.09	173.80	13.25	1.20	188.25
Multi-Engine Propeller														
Beech Baron 58	BEC58P	Multi-Engine	8.47	1.12	0.36	9.95	8.40	1.16	0.39	9.95	23.37	1.78	0.16	25.32
Cessna 441	CNA441	Multi-Engine	3.85	0.51	0.16	4.52	3.82	0.53	0.18	4.52	1.30	0.10	0.01	1.41
DeHavilland Twin Otter	DHC6	Multi-Engine	2.46	0.33	0.10	2.89	2.44	0.34	0.11	2.89	1.30	0.10	0.01	1.41
Shorts 330	SD330	Multi-Engine	0.31	0.04	0.01	0.36	0.31	0.04	0.01	0.36	0.00	0.00	0.00	0.00
Saab 340	SF340	Multi-Engine	0.31	0.04	0.01	0.36	0.31	0.04	0.01	0.36	0.00	0.00	0.00	0.00
Multi-Engine Propeller Total			15.40	2.04	0.65	18.08	15.27	2.11	0.70	18.08	25.97	1.98	0.18	28.13
Jet														
Citation Jet	CIT3	Jet	0.11	0.01	0.02	0.14	0.13	0.01	0.00	0.14	0.00	0.00	0.00	0.00
Canadair Challenger Jet 600	CL600	Jet	0.29	0.03	0.04	0.36	0.33	0.02	0.00	0.35	0.00	0.00	0.00	0.00
Canadair Challenger Jet 601	CL601	Jet	0.29	0.03	0.04	0.36	0.33	0.02	0.00	0.35	0.00	0.00	0.00	0.00
Cessna 500 Citation Jet	CNA500	Jet	0.11	0.01	0.02	0.14	0.13	0.01	0.00	0.14	0.00	0.00	0.00	0.00
Cessna 550 Citation Jet	CNA55B	Jet	0.02	0.00	0.00	0.02	0.02	0.00	0.00	0.02	0.00	0.00	0.00	0.00
Cessna 750 Citation X Jet	CNA750	Jet	0.11	0.01	0.02	0.14	0.13	0.01	0.00	0.14	0.00	0.00	0.00	0.00
Business Jet (1985)	COMJET	Jet	0.31	0.03	0.04	0.39	0.36	0.03	0.00	0.38	0.00	0.00	0.00	0.00
Dassault Falcon 20	FAL20	Jet	0.11	0.01	0.02	0.14	0.13	0.01	0.00	0.14	0.00	0.00	0.00	0.00
Gulfstream IV	GIV	Jet	0.29	0.03	0.04	0.36	0.33	0.02	0.00	0.35	0.00	0.00	0.00	0.00
Gulfstream V	GV	Jet	0.29	0.03	0.04	0.36	0.33	0.02	0.00	0.35	0.00	0.00	0.00	0.00
Gulfstream Astra 1125	IA1125	Jet	0.08	0.01	0.01	0.10	0.11	0.01	0.00	0.11	0.00	0.00	0.00	0.00
Learjet 24/25	LEAR25	Jet	0.17	0.02	0.03	0.22	0.20	0.02	0.00	0.21	0.00	0.00	0.00	0.00
Learjet 35/45/55/60	LEAR35	Jet	1.07	0.12	0.16	1.35	1.28	0.09	0.01	1.38	0.00	0.00	0.00	0.00
Mitsubishi MU-300 Diamond	MU3001	Jet	0.29	0.03	0.04	0.36	0.33	0.02	0.00	0.35	0.00	0.00	0.00	0.00
North American Saberliner 80	SABR80	Jet	0.06	0.01	0.01	0.07	0.06	0.01	0.00	0.07	0.00	0.00	0.00	0.00
Jet Total			3.58	0.40	0.54	4.52	4.20	0.31	0.02	4.52	0.00	0.00	0.00	0.00
Total AAD Operations	**517.78**													

Notes: Day: 7:00 a.m. to 6:59 p.m., Evening: 7:00 p.m. to 9:59 p.m., Night: 10:00 p.m. to 6:59 a.m.
Totals may not add to 100 percent due to rounding.

Source: Ricondo & Associates, Inc., based on 2004 Gillespie Field ALP Narrative Report 2000 INM study files; County of San Diego Department of Public Works interviews, August 2008; Field observations, August 2008.
Prepared by: Ricondo & Associates, Inc., August, 2008.

1.2.3 Runway Use

Table I-3 describes the runway configuration at Gillespie Field. The Airport operates primarily in a west flow configuration due to the typical off-shore wind patterns. The predominant runways used are Runway 27L for touch-and-go operations and Runway 27R for arrival, departure and touch-and-go operations. Based on discussions with the County of San Diego Department of Public Works airport staff and FAA ATCT staff, runway use patterns have changed only slightly; therefore runway use percentages were adjusted accordingly from those utilized in 2000.

Table I-3

Runway Configuration: 2008 Existing Conditions

Runway	Length (feet)	Displaced Threshold[1] (feet)
9L-27R	5,342	706 (Runway 27R)
17-35	4,145	450 (Runway 17); 685 (Runway 35)
9R-27L	2,738	0

Note:
1/ A point on the runway representing a threshold for landing other than the designated beginning of the runway.

Source: http://www.airnav.com
Prepared by: Ricondo & Associates, Inc.

Table I-4 shows annual runway use at Gillespie Field under 2008 Existing Conditions. In general, Runway 27L is most often used for touch-and-go operations and Runway 27R for arrival, departure and touch-and-go operations.

1.2.4 Aircraft Flight Tracks

Field observations were conducted during three thirteen-hour periods between August 13 and 16, 2008 to validate data collected from interviews with Airport staff and FAA ACTC staff. Adjustments were made to flight track direction and usage, including the addition of new flight tracks as a result of the field observations. **Exhibits I-2** through **I-8** depict the arrival, departure, and touch-and-go flight tracks for each runway at the Airport. **Table I-5** shows flight tracks by runway, aircraft type, and percentage of usage.

1.2.5 Aircraft Noise Exposure Map Calculation

The following sections discuss the noise exposure map developed for 2008 Existing Conditions that represents the environmental baseline for CEQA, and describe the associated impacts.

1.2.5.1 Noise Exposure Map

Exhibit I-9 depicts the 65, 70 and 75 CNEL noise contours and **Table I-6** summarizes noise effects under 2008 Existing Conditions. Approximately 371 acres of land falls within the 65 CNEL noise exposure area, the majority of which is located within the boundaries of Gillespie Field. Approximately 69 acres, or 18 percent of the total area exposed to 65 CNEL or higher, is located off-Airport. The majority of this area is located directly north and northwest of the airfield.

The contour shape is directly influenced by the predominance of west flow operations at the Airport – 70 percent of the itinerant arrivals and departures occur on Runway 27R, as shown in **Table I-4**, above, supports more than 70 percent of the Airport's operations.

Table I-4

Annual Runway Use Percentages by Fleet Mix: 2008 Existing Conditions

Daytime	Arrivals						Departures						Touch-and-Go					
	09L	09R	17	27L	27R	35	09L	09R	17	27L	27R	35	09L	09R	17	27L	27R	35
Aircraft Category																		
Single-Engine	0.5%	0.5%	2.7%	20.0%	73.6%	2.7%	0.5%	0.5%	2.7%	20.0%	73.6%	2.7%	0.0%	0.0%	1.8%	82.0%	14.6%	1.6%
Multi-Engine	0.5%	0.2%	1.3%	7.8%	88.8%	1.5%	0.5%	0.2%	1.3%	7.8%	88.8%	1.5%	0.0%	0.0%	10.3%	17.8%	62.3%	9.6%
Jet	0.8%	0.0%	3.7%	0.0%	92.1%	3.5%	0.8%	0.0%	3.7%	0.0%	92.1%	3.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

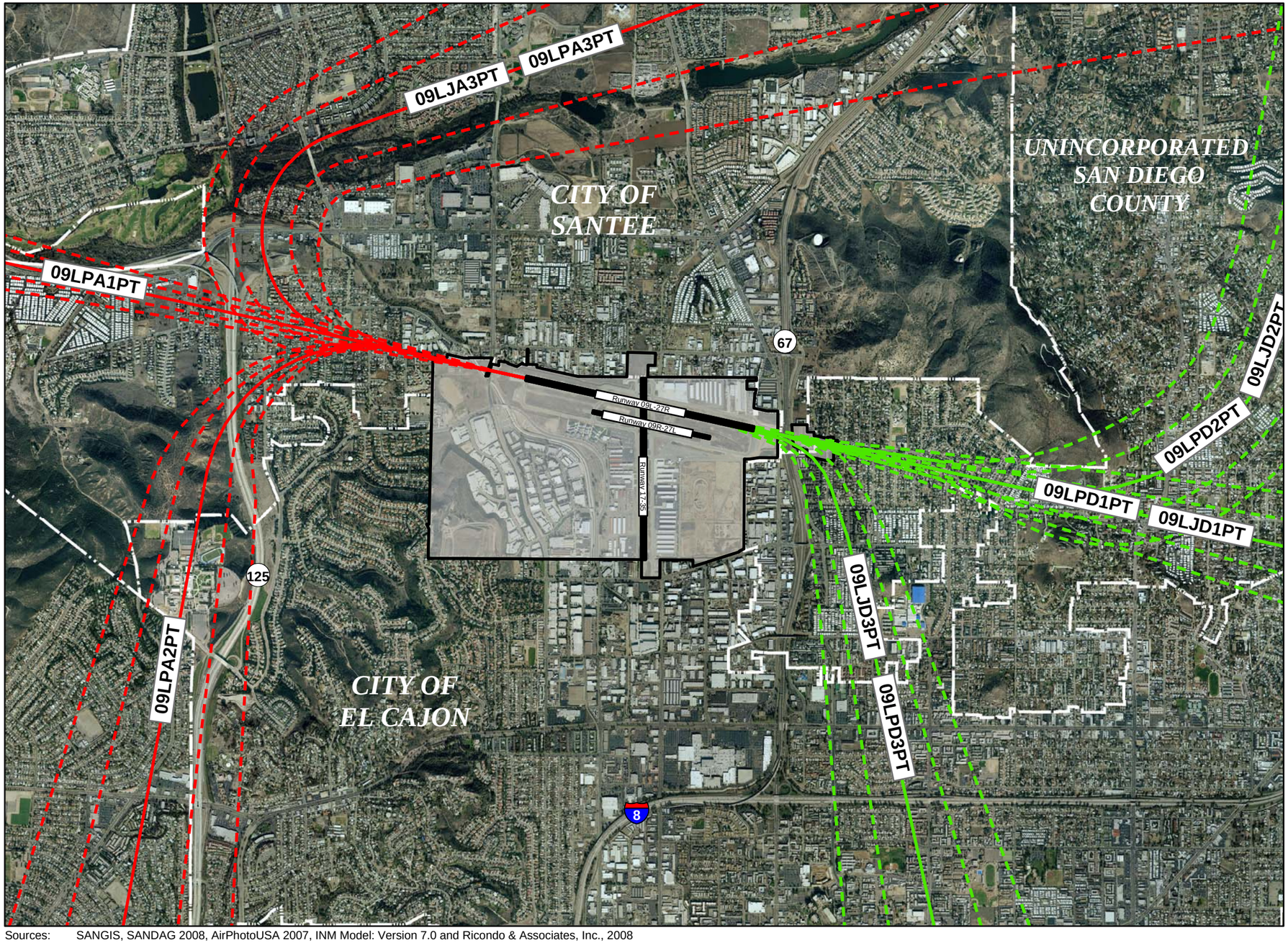
Evening	Arrivals						Departures						Touch-and-Go					
	09L	09R	17	27L	27R	35	09L	09R	17	27L	27R	35	09L	09R	17	27L	27R	35
Aircraft Category																		
Single-Engine	0.5%	0.5%	2.7%	20.0%	73.6%	2.7%	0.5%	0.5%	2.7%	20.0%	73.6%	2.7%	0.0%	0.0%	1.8%	82.0%	14.6%	1.6%
Multi-Engine	0.5%	0.2%	1.3%	7.8%	88.8%	1.5%	0.5%	0.2%	1.3%	7.8%	88.8%	1.5%	0.0%	0.0%	10.3%	17.8%	62.3%	9.6%
Jet	0.8%	0.0%	3.7%	0.0%	92.1%	3.5%	0.8%	0.0%	3.7%	0.0%	92.1%	3.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Nighttime	Arrivals						Departures						Touch-and-Go					
	09L	09R	17	27L	27R	35	09L	09R	17	27L	27R	35	09L	09R	17	27L	27R	35
Aircraft Category																		
Single-Engine	0.5%	0.5%	2.7%	20.0%	73.6%	2.7%	0.5%	0.5%	2.7%	20.0%	73.6%	2.7%	0.0%	0.0%	1.8%	82.0%	14.6%	1.6%
Multi-Engine	0.5%	0.2%	1.3%	7.8%	88.8%	1.5%	0.5%	0.2%	1.3%	7.8%	88.8%	1.5%	0.0%	0.0%	10.3%	17.8%	62.3%	9.6%
Jet	0.8%	0.0%	3.7%	0.0%	92.1%	3.5%	0.8%	0.0%	3.7%	0.0%	92.1%	3.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Notes: Day: 7:00 a.m. to 6:59 p.m., Evening: 7:00 p.m. to 9:59 p.m., Night: 10:00 p.m. to 6:59 a.m.
Totals may not add to 100 percent due to rounding.

Source: Ricondo & Associates, Inc., the number, character, and location of flights is determined based upon a prior INM study conducted for the Airport in 2000 and revalidated in August 2008 through field observations after interviews with Airport staff, FAA ATCT staff, and use of FAA ATCT data (flight strips).; Ricondo & Associates, Inc: *GILLESPIE FIELD RUNWAY OBSERVATIONS Memorandum*, August 2008. .

Prepared by: Ricondo & Associates, Inc., August 2008.



Legend

- Arrival Track
- Arrival Subtrack
- Departure Track
- Departure Subtrack
- 09LJD1PT — Jet Aircraft INM Flight Track
- 09LPD1PT — Propellor Aircraft INM Flight Track
- Airport Boundary
- Municipal Boundary

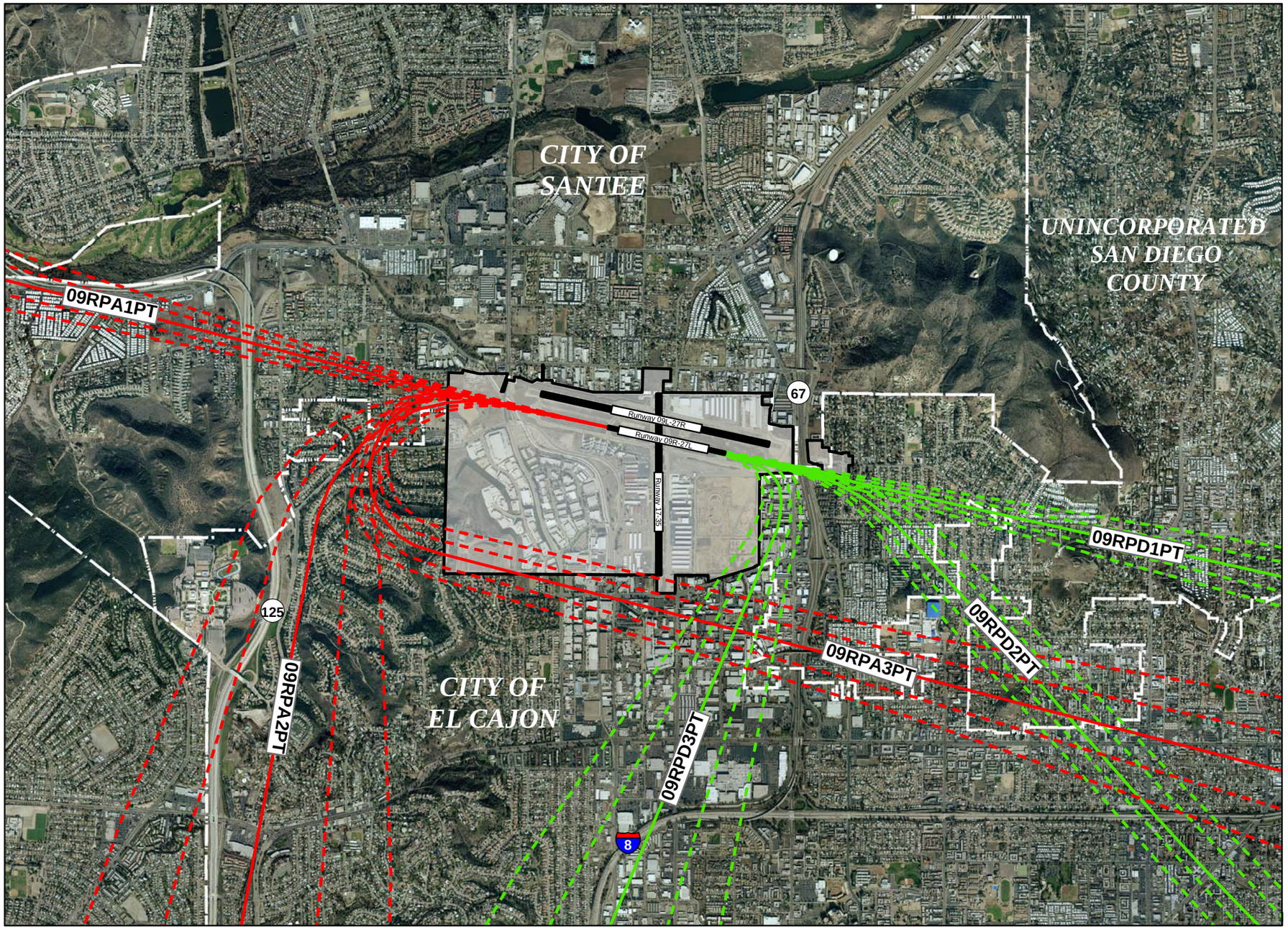
Sources: SANGIS, SANDAG 2008, AirPhotoUSA 2007, INM Model: Version 7.0 and Ricondo & Associates, Inc., 2008
Prepared by: Ricondo & Associates, Inc., October 2008

Exhibit I-2

0 2500 ft. north

Note: Flight tracks depicted not intended to represent specific aircraft flight tracks, but generalized flight tracks for noise modeling purposes.

Runway 09L Flight Tracks



Legend

- Arrival Track
- Arrival Subtrack
- Departure Track
- Departure Subtrack
- 09RPA1PT — Propellor Aircraft INM Flight Track
- Airport Boundary
- Municipal Boundary

Sources: SANGIS, SANDAG 2008, AirPhotoUSA 2007, INM Model: Version 7.0 and Ricondo & Associates, Inc., 2008
Prepared by: Ricondo & Associates, Inc., October 2008

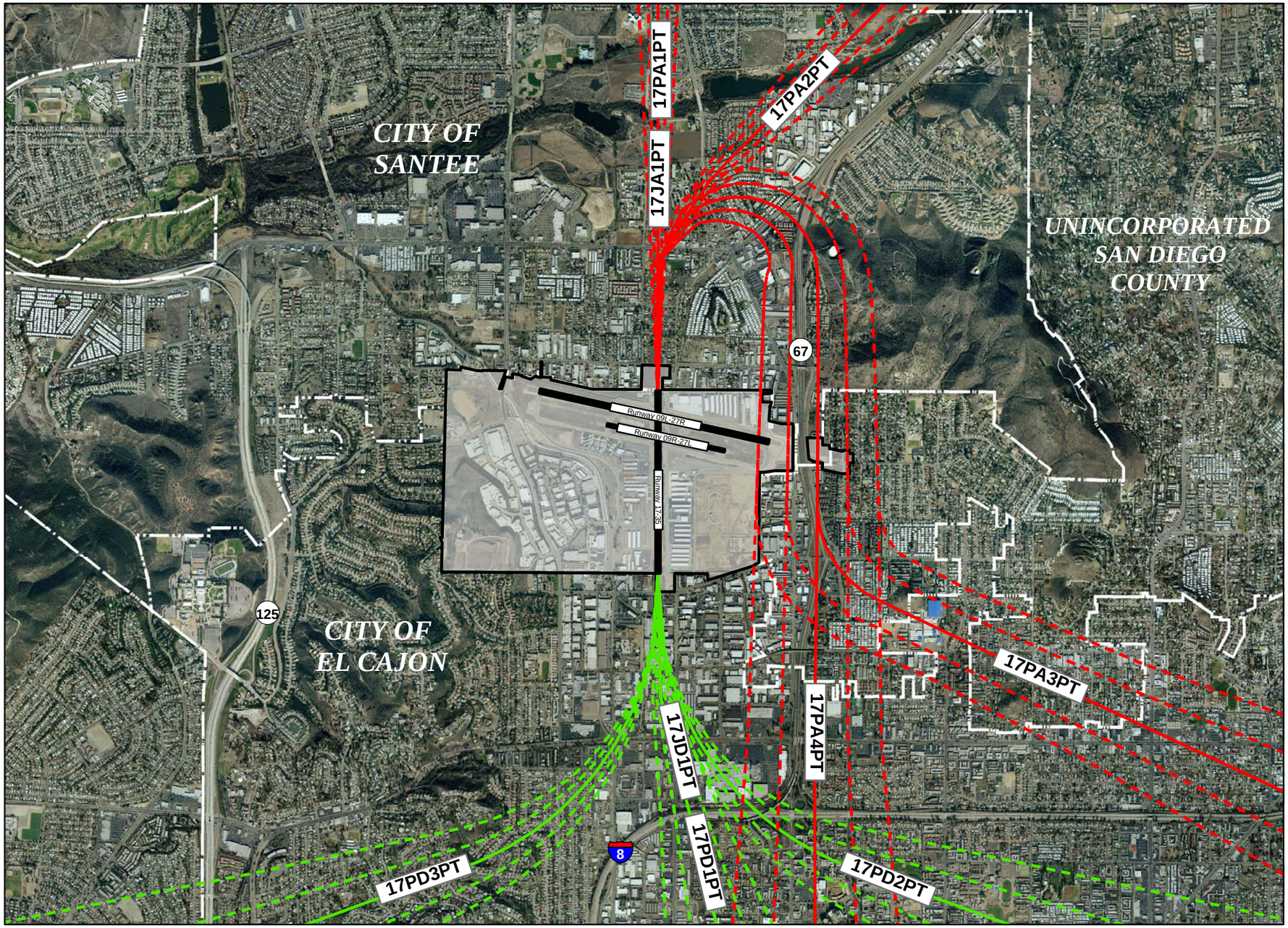
Exhibit I-3

0 2500 ft.

north

Note: Flight tracks depicted not intended to represent specific aircraft flight tracks, but generalized flight tracks for noise modeling purposes.

Runway 09R Flight Tracks



Legend

- Arrival Track
- Arrival Subtrack
- Departure Track
- Departure Subtrack
- 17JD1PT — Jet Aircraft INM Flight Track
- 17PA1PT — Propellor Aircraft INM Flight Track
- Airport Boundary
- Municipal Boundary

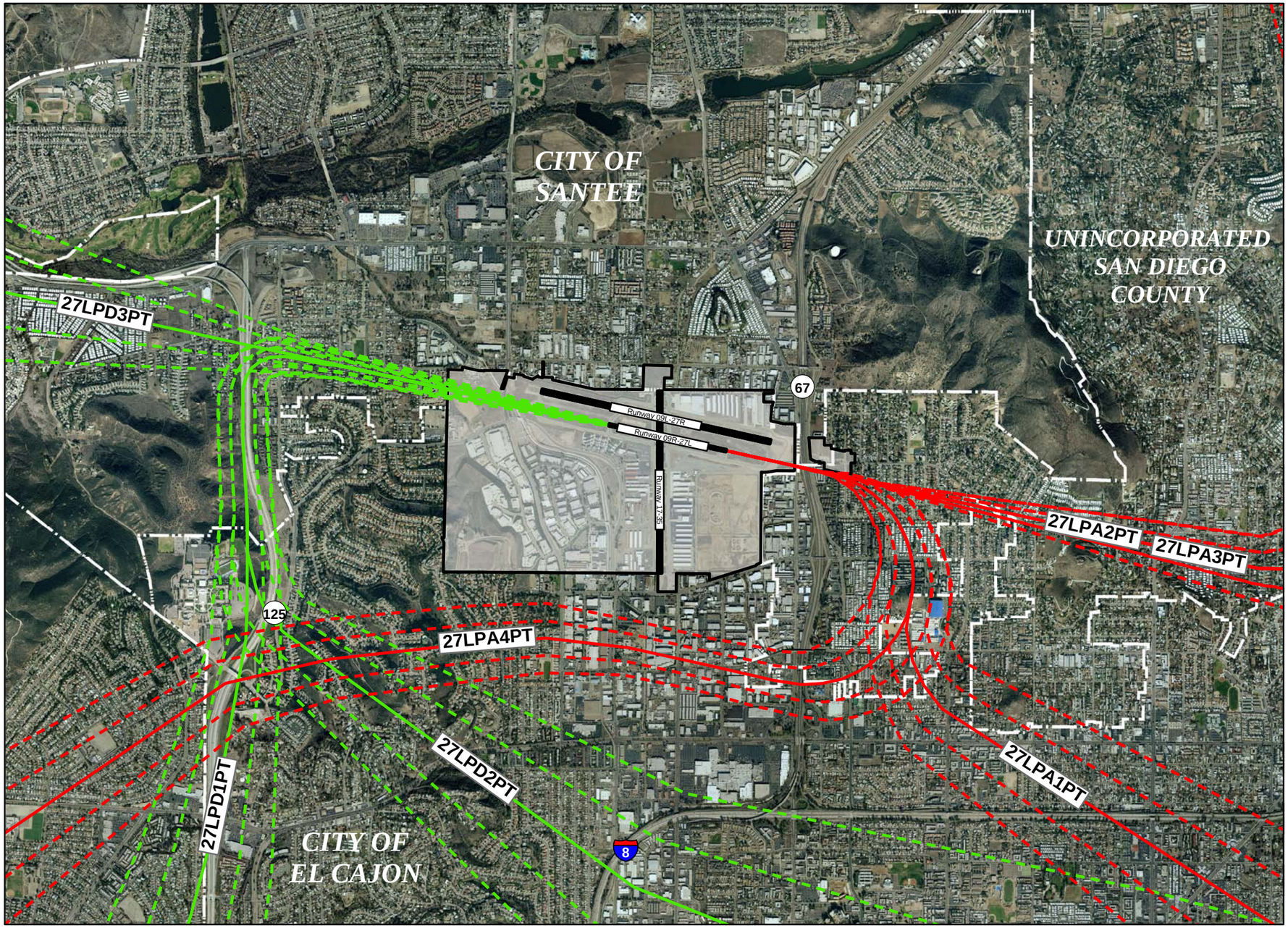
Sources: SANGIS, SANDAG 2008, AirPhotoUSA 2007, INM Model: Version 7.0 and Ricondo & Associates, Inc., 2008
Prepared by: Ricondo & Associates, Inc., October 2008

Exhibit I-4

0 2500 ft. north

Note: Flight tracks depicted not intended to represent specific aircraft flight tracks, but generalized flight tracks for noise modeling purposes.

Runway 17 Flight Tracks



Legend

- Arrival Track
- Arrival Subtrack
- Departure Track
- Departure Subtrack
- 27LPA1PT — Propellor Aircraft INM Flight Track
- Airport Boundary
- Municipal Boundary

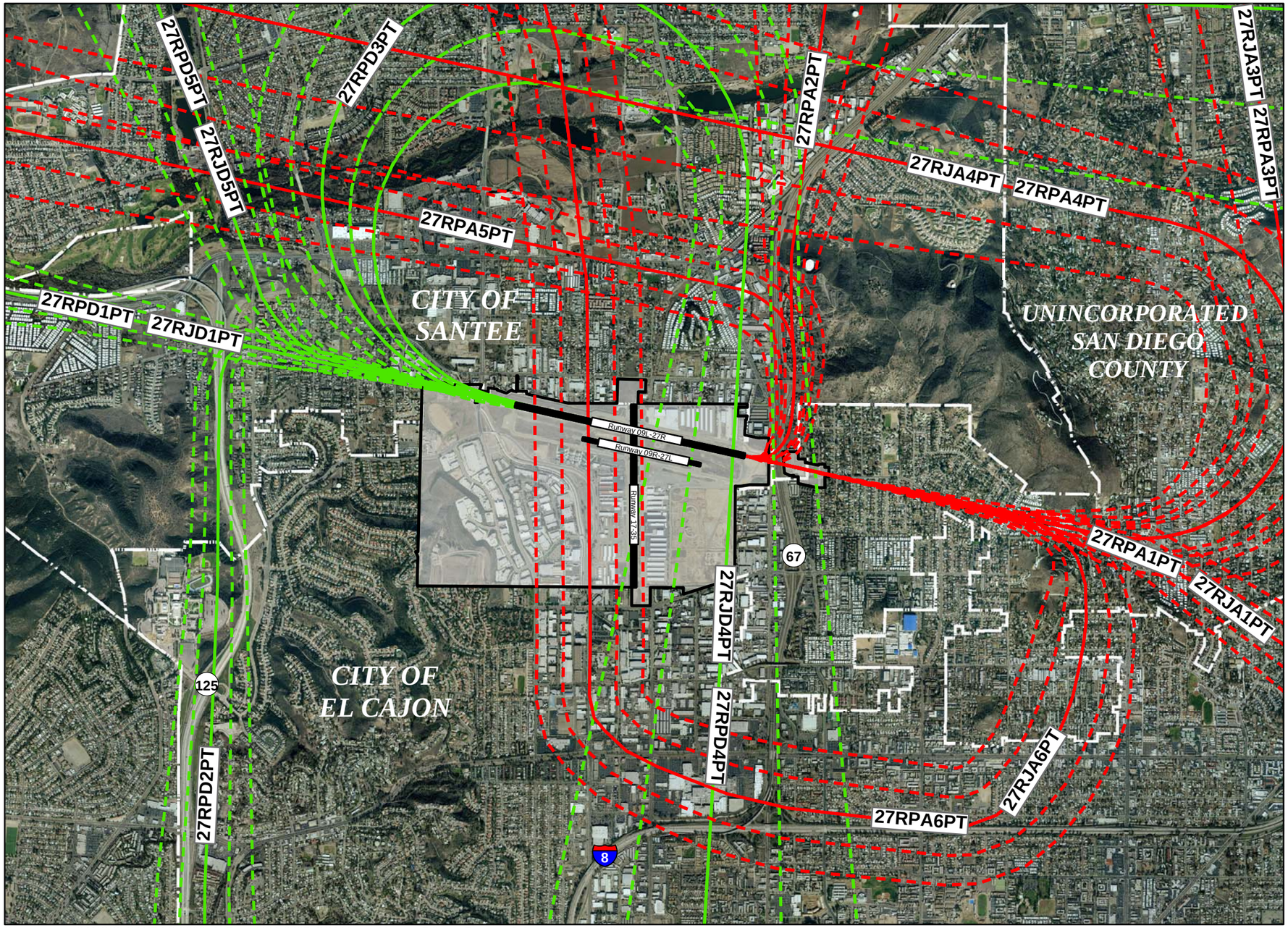
Sources: SANGIS, SANDAG 2008, AirPhotoUSA 2007, INM Model: Version 7.0 and Ricondo & Associates, Inc., 2008
Prepared by: Ricondo & Associates, Inc., October 2008

Exhibit I-5

0 2500 ft. north

Note: Flight tracks depicted not intended to represent specific aircraft flight tracks, but generalized flight tracks for noise modeling purposes.

Runway 27L Flight Tracks



Legend

- Arrival Track
- Arrival Subtrack
- Departure Track
- Departure Subtrack
- 27RPD1PT Jet Aircraft INM Flight Track
- 27RJA1PT Propellor Aircraft INM Flight Track
- Airport Boundary
- Municipal Boundary

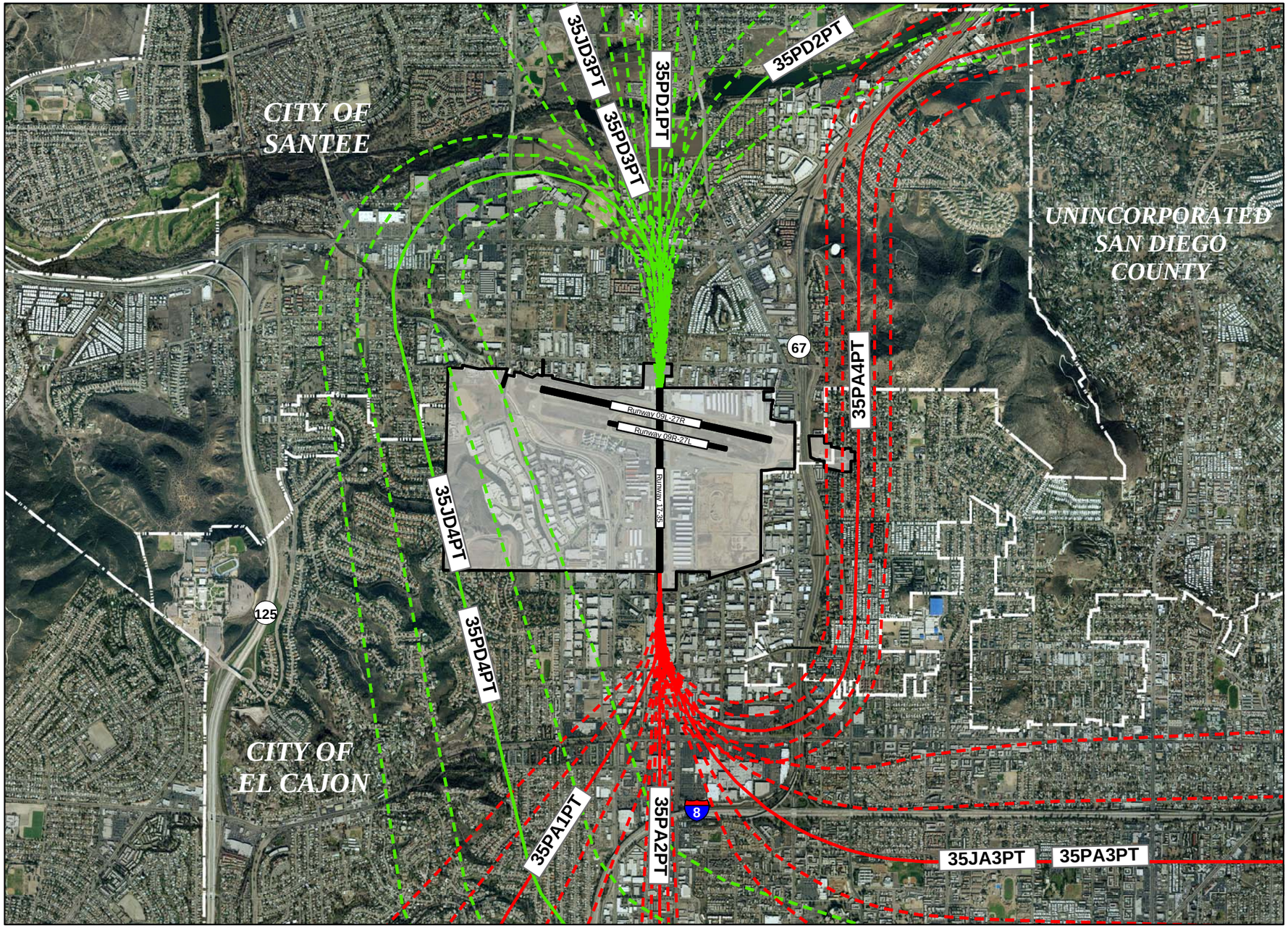
Sources: SANGIS, SANDAG 2008, AirPhotoUSA 2007, INM Model: Version 7.0 and Ricondo & Associates, Inc., 2008
Prepared by: Ricondo & Associates, Inc., October 2008

Exhibit I-6

0 2500 ft. north

Note: Flight tracks depicted not intended to represent specific aircraft flight tracks, but generalized flight tracks for noise modeling purposes.

Runway 27R Flight Tracks



Legend

- Arrival Track
- Arrival Subtrack
- Departure Track
- Departure Subtrack
- 35JD3PT — Jet Aircraft INM Flight Track
- 35PA1PT — Propellor Aircraft INM Flight Track
- Airport Boundary
- Municipal Boundary

Sources: SANGIS, SANDAG 2008, AirPhotoUSA 2007, INM Model: Version 7.0 and Ricondo & Associates, Inc., 2008
Prepared by: Ricondo & Associates, Inc., October 2008

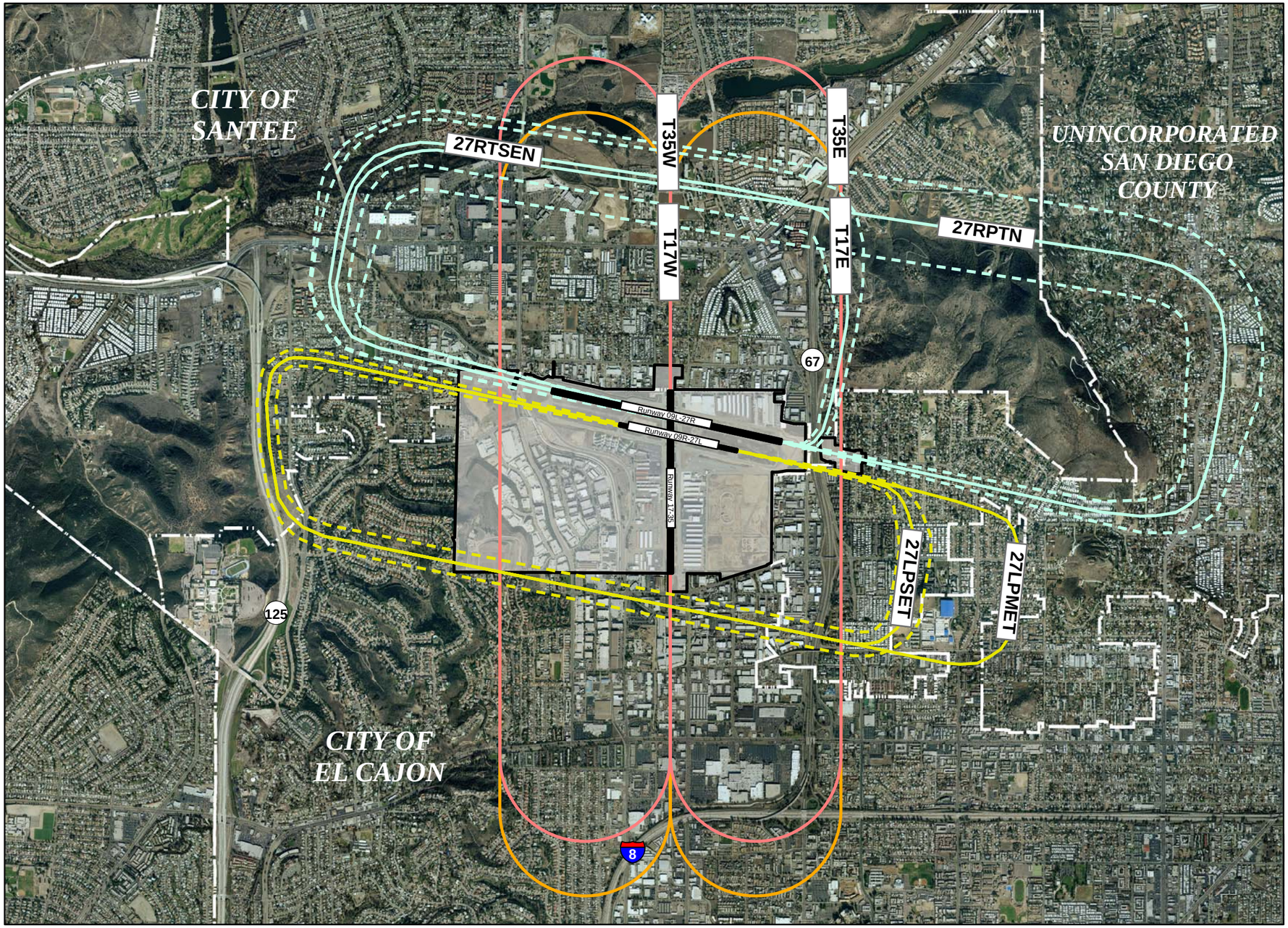
Exhibit I-7

0 2500 ft.

north

Note: Flight tracks depicted not intended to represent specific aircraft flight tracks, but generalized flight tracks for noise modeling purposes.

Runway 35 Flight Tracks



Legend

- Runway 17 Track
- Runway 35 Track
- Runway 27R Track
- Runway 27R Subtrack
- Runway 27L Track
- Runway 27L Subtrack
- 27RPTN — Propellor Touch-and-Go Track
- Airport Boundary
- Municipal Boundary

Sources: SANGIS, SANDAG 2008, AirPhotoUSA 2007, INM Model: Version 7.0 and Ricondo & Associates, Inc., 2008
Prepared by: Ricondo & Associates, Inc., October 2008

Exhibit I-8

0 2500 ft. north

Note: Flight tracks depicted not intended to represent specific aircraft flight tracks, but generalized flight tracks for noise modeling purposes.

Touch-and Go-Tracks

Table I-5

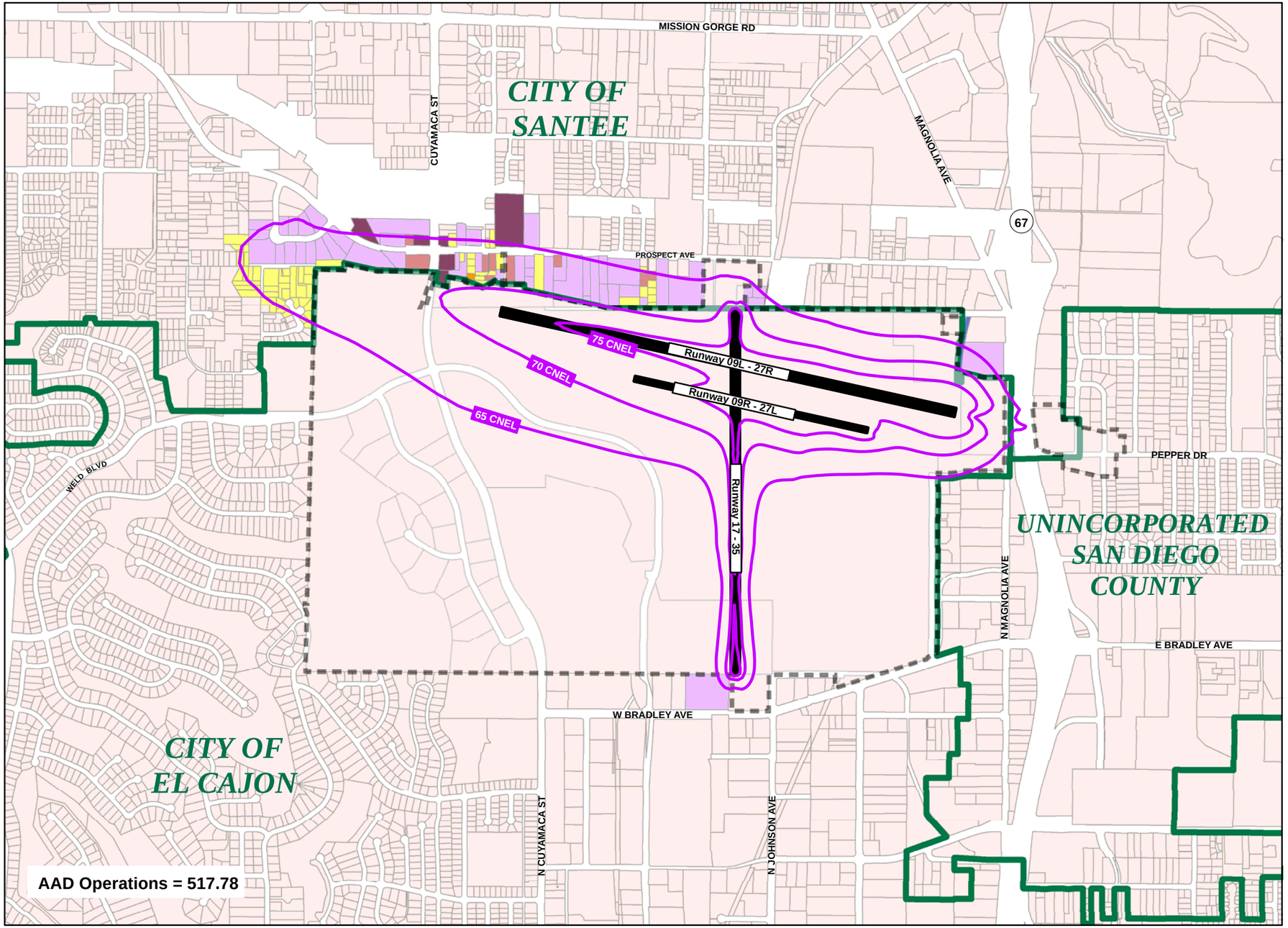
Flight Tracks as Represented in Exhibits I-2 through I-8, Utilization Percentages: 2008 Baseline Conditions

Runway	Track	Day	Evening	Night	Runway	Track	Day	Evening	Night	Runway	Track	Day	Evening	Night
09L	09LJA3PT	0.0%	0.0%	0.0%	09L	09LJD1PT	0.0%	0.0%	0.0%	27L	27LPMET	1.8%	0.1%	0.0%
09L	09LPA1PT	0.0%	0.0%	0.0%	09L	09LJD2PT	0.0%	0.0%	0.0%	27L	27LPSET	67.3%	5.1%	0.5%
09L	09LPA2PT	0.0%	0.0%	0.0%	09L	09LJD3PT	0.0%	0.0%	0.0%	27R	27RPTN	17.2%	1.3%	0.1%
09L	09LPA3PT	0.4%	0.0%	0.0%	09L	09LPD1PT	0.3%	0.0%	0.0%	27R	27RTSEN2	1.2%	0.1%	0.0%
09R	09RPA1PT	0.0%	0.0%	0.0%	09L	09LPD2PT	0.1%	0.0%	0.0%	17	T17E	1.3%	0.1%	0.0%
09R	09RPA2PT	0.1%	0.0%	0.0%	09L	09LPD3PT	0.0%	0.0%	0.0%	17	T17W	1.3%	0.1%	0.0%
09R	09RPA3PT	0.3%	0.0%	0.0%	09R	09RDP3PT	0.1%	0.0%	0.0%	35	T35E	1.1%	0.1%	0.0%
17	17JA1PT	0.1%	0.0%	0.0%	09R	09RPD1PT	0.2%	0.0%	0.0%	35	T35W	1.1%	0.1%	0.0%
17	17PA1PT	0.7%	0.1%	0.0%	09R	09RPD2PT	0.1%	0.0%	0.0%					
17	17PA2PT	0.7%	0.1%	0.0%	17	17JD1PT	0.1%	0.0%	0.0%					
17	17PA3PT	0.4%	0.0%	0.0%	17	17PD1PT	0.8%	0.1%	0.0%					
17	17PA4PT	0.4%	0.0%	0.0%	17	17PD2PT	0.7%	0.1%	0.0%					
27L	27LPA1PT	9.2%	0.7%	0.1%	17	17PD3PT	0.7%	0.1%	0.0%					
27L	27LPA2PT	0.1%	0.0%	0.0%	27L	27LPD1PT	5.5%	0.4%	0.0%					
27L	27LPA3PT	0.1%	0.0%	0.0%	27L	27LPD2PT	10.8%	0.9%	0.1%					
27L	27LPA4PT	7.3%	0.6%	0.1%	27L	27LPD3PT	0.3%	0.0%	0.0%					
27R	27RJA1PT	1.8%	0.2%	0.3%	27R	27RJD1PT	0.8%	0.1%	0.0%					
27R	27RJA3PT	0.8%	0.1%	0.1%	27R	27RJD4PT	0.2%	0.0%	0.0%					
27R	27RJA4PT	0.0%	0.0%	0.0%	27R	27RJD5PT	2.1%	0.2%	0.0%					
27R	27RJA6PT	0.0%	0.0%	0.0%	27R	27RPD1PT	3.3%	0.3%	0.0%					
27R	27RPA1PT	12.6%	1.0%	0.1%	27R	27RPD2PT	3.3%	0.3%	0.0%					
27R	27RPA2PT	10.6%	0.9%	0.1%	27R	27RPD3PT	37.1%	3.1%	0.4%					
27R	27RPA3PT	35.1%	2.9%	0.4%	27R	27RPD4PT	9.3%	0.8%	0.1%					
27R	27RPA4PT	0.7%	0.1%	0.0%	27R	27RPD5PT	13.2%	1.1%	0.1%					
27R	27RPA5PT	6.6%	0.5%	0.1%	35	35JD3PT	0.1%	0.0%	0.0%					
27R	27RPA6PT	0.7%	0.1%	0.0%	35	35JD4PT	0.1%	0.0%	0.0%					
35	35JA3PT	0.1%	0.0%	0.0%	35	35PD1PT	0.6%	0.0%	0.0%					
35	35PA1PT	0.6%	0.0%	0.0%	35	35PD2PT	0.6%	0.0%	0.0%					
35	35PA2PT	0.6%	0.0%	0.0%	35	35PD3PT	0.6%	0.0%	0.0%					
35	35PA3PT	0.6%	0.0%	0.0%	35	35PD4PT	0.6%	0.0%	0.0%					
35	35PA4PT	0.6%	0.0%	0.0%										
Total		91.2%	7.5%	1.3%			91.6%	7.5%	0.9%			92.3%	7.0%	0.6%

Notes: Day: 7:00 a.m. to 6:59 p.m., Evening: 7:00 p.m. to 9:59 p.m., Night: 10:00 p.m. to 6:59 a.m.

Source: Ricondo & Associates, Inc., the number, character, and location of flights is determined based upon a prior INM study conducted for the Airport in 2000 and revalidated in August 2008 through field observations after interviews with Airport staff, FAA ATCT staff, and use of FAA ATCT data (flight strips).; Ricondo & Associates, Inc: *GILLESPIE FIELD RUNWAY FIELD OBSERVATIONS Memorandum,* August 2008.

Prepared by: Ricondo & Associates, Inc., 2008.



Legend

- Residential Single-Family
- Residential Multi-Family
- Industrial
- Commercial
- Vacant Taxable
- Miscellaneous
- Runways
- Airport Boundary
- Parcels
- 2008 Existing Conditions
- Municipal Boundary

Sources: SANGIS, SANDAG 2008, 2008 Parcel Data (Accessed August 2008), INM Model: Version 7.0; INM Contour Layer: 08ctr3Noise-Contours and Ricondo & Associates, Inc., 2008
Prepared by: Ricondo & Associates, Inc., October 2008

Exhibit I-9

0 1250 ft. north

2008 Existing Conditions CNEL Aircraft Noise Exposure Area

Table I-6

Summary Noise Exposure Effects: 2008 Existing Conditions

Noise Level Range	Total Acreage[1/]	Off-Airport Area (Acres)[1/]	Total Dwellings	Estimated Population	Non-Residential Noise-Sensitive Parcels
2008 Existing Conditions					
65 to 70 CNEL	216.20	68.88	57.00	181.00	0.00
70 to 75 CNEL	93.27	0.27	0.00	0.00	0.00
75 CNEL and higher	61.54	0.00	0.00	0.00	0.00
65 CNEL and higher	371.00	69.15	57.00	181.00	0.00

Note:
1/ Acreage totals may not add due to rounding.

Source: Ricondo & Associates, Inc., based on SANGIS 2008 parcel data (Accessed August 2008); 2000 U.S. Census population data; INM noise contours, August 2008.
Prepared by: Ricondo & Associates, Inc., August 2008.

1.2.5.2 Population and Dwelling Unit Count

As depicted on **Exhibit I-9**, the area exposed to aircraft noise of 65 CNEL and higher includes land outside the Airport boundary directly north and northwest of the airfield. The number of people and dwelling units exposed to aircraft noise of 65 CNEL and higher was determined by overlaying the 2008 Existing Conditions noise contour on the San Diego County Tax Assessor's Office 2008 parcel map in a Geographic Information System (GIS) program as provided by the San Diego Geographic Information Source (SanGIS).[6] In addition to identifying individual parcels, including dwelling units, the parcel map includes existing land use for the Cities of Santee and El Cajon, as well as unincorporated San Diego County, as reported by the San Diego County Tax Assessor's office. Population for this area was determined using year 2000 Census data. For purposes of the aircraft noise analysis, parcel data was used as it accounts for acreage and dwelling units in residential areas and dwelling units in non-residential areas where such uses are permitted. This is the best available source of information for determining the number of dwelling units and total residential acreage exposed to aircraft noise. As summarized in **Table I-6**, approximately 57 dwelling units and 181 people are located within the 65 to 70 CNEL aircraft noise exposure area. No people or dwelling units are located within areas exposed to noise levels of 70 CNEL or higher.

1.2.5.3 Land Use Compatibility

The noise-sensitive land uses exposed to various levels of aircraft noise under the Existing Conditions were determined, as summarized in **Table I-7**, below. Of the 69 acres located off-Airport property and exposed to aircraft noise of 65 CNEL and higher, approximately 17 acres are developed in residential use. The majority of the residential uses exposed to 65 CNEL and higher are single-family residential uses, including 55 dwelling units. Multi-family residential uses located on 0.17 acre, including two dwelling units, are exposed to existing aircraft noise levels of 65 CNEL and higher under 2008 Existing Conditions. There are no non-residential noise-sensitive land uses located within the areas exposed to aircraft noise of 65 CNEL and higher.

[6] San Diego County Tax Assessor's Parcel Data last updated June 30, 2008.

Table I-7

Residential and Noise-Sensitive Properties Exposed to 65 CNEL and Higher by Jurisdiction: 2008 Existing Conditions

65 CNEL and Above	Unincorporated San Diego County	City of El Cajon	City of Santee	Total
Residential				
Single-Family				
Units	0.00	0.00	55.00	55.00
Acres	0.00	0.00	17.48	17.48
Population	0.00	0.00	175.00	175.00
Multi-Family				
Units	0.00	0.00	2.00	2.00
Acres	0.00	0.00	0.17	0.17
Population	0.00	0.00	6.00	6.00
Total Residential				
Units	**0.00**	**0.00**	**57.00**	**57.00**
Acres	**0.00**	**0.00**	**17.65**	**17.65**
Population	**0.00**	**0.00**	**181.00**	**181.00**
Non-Residential Noise-Sensitive Uses				
Schools				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Religious Facilities				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Hospitals				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Hospitals/Convalescent				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Parks				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Libraries				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Total Noise-Sensitive Facilities				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Total Noise-Sensitive Area (Acres)	**0.00**	**0.00**	**17.65**	**17.65**

Notes:
1/ Acreage totals may not add due to rounding.
2/ Population contains 2000 Census data.

Source: Ricondo & Associates, Inc., based on SANGIS 2008 parcel data (Accessed August 2008); 2000 U.S. Census population data; INM noise contours, August 2008.
Prepared by: Ricondo & Associates, Inc., August 2008.

1.3 Thresholds of Significance

The FAA has historically been the Federal agency most active in evaluating aircraft noise; however, a number of Federal agencies such as the United States Environmental Protection Agency (USEPA), Department of Housing and Urban Development (HUD), and Department of Defense (DOD) have also provided significant input to the establishment of the noise criteria discussed in this section. The State of California requires use of the CNEL noise metric, a more stringent measure of noise than the Federally recognized DNL noise metric, because the metric weights evening operation (between 7:00 p.m. and 9:59 p.m.) by five for each operation. The accepted criteria regarding significant aircraft noise impacts are reviewed in this section.

1.3.1 Noise

The following sections address both Federal and State of California standards for addressing noise.

1.3.1.1 Federal, State, and Local Noise Standards

As a result of the Noise Control Act of 1972, the EPA developed and published criteria with respect to environmental noise in a 1974 document entitled *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, EPA Report No. 550/9-74-004, commonly referred to as the Levels Document* (EPA 1974). The Levels Document prescribed that standards and regulations must account not only for the health and welfare considerations described in the criteria, but also for technical and economical feasibility. The term "health and welfare" as used in the Noise Control Act refers to the physical and mental well-being of human populations. The term also includes other indirect effects, such as annoyance, interference with communication and sleep, loss of value and utility of property, and effects on other living things (EPA 1973).

Federal guidelines have been developed to describe the potential impact of noise levels on people. The Federal standards for aircraft noise evaluation are formalized in FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures*, and FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Projects*. Supporting these standards, 65 DNL was identified as the 24-hour day-night average sound level (DNL) at which most people become highly annoyed by noise.[7] Although sensitivity to noise is highly subjective, the 65 DNL noise level has been widely adopted as a reasonable criterion for measuring noise compatibility impacts.[8] Under FAA environmental policies and procedures, the Federal impact standard is exceeded if analysis shows that the proposed action will cause noise-sensitive areas to experience an increase in aircraft noise of 1.5 DNL or more at or above 65 DNL noise exposure (when comparing the future No Action/No Project Alternative condition against the Proposed Action Alternative). It has also been observed that some people may be highly annoyed by noise levels below 65 DNL, and identified a 3 dBA increase in DNL, which represents a doubling of noise energy, as a change which may be perceptible to people exposed to aircraft noise levels between 60 and 65 DNL.

---

[7] Federal Interagency Committee On Noise, Federal Agency Review of Selected Airport Noise Analysis Issues (August 1992).

[8] California has adopted the Community Noise Equivalent Level (CNEL), which is similar to DNL but applies an additional penalty of 4.77 decibels to operations that take place between 7 p.m. and 9:59 p.m. The use of CNEL as an alternative to DNL is accepted by the federal agencies regulating noise impacts.

When 1.5 dBA increases occur within the 65 DNL and higher contour, Federal criteria call for the identification of noise-sensitive uses experiencing an increase of 3 dBA within the 60 to 65 DNL contour.[9] This information is provided to the public and decision-makers for informational purposes. The FAA uses this information during its consideration of potential mitigation such as noise abatement flight procedures for these areas. FAA has adopted regulations and guidance governing airport noise compatibility planning which incorporate the FICON criteria.[10]

The 1.5 CNEL threshold is accepted here as a CEQA threshold of significance to describe significant increases of aircraft noise exposure. When there are 1.5 CNEL increases within the area exposed to 65 CNEL and higher under a build alternative, compared to the environmental baseline, CEQA has adopted Federal standards to require the presentation of sensitive uses experiencing an increase of 3 CNEL when exposed to 60-65 CNEL under that alternative. For purposes of this study and recognized by the FAA for use in California, CNEL is used in lieu of DNL.

The County of San Diego does not designate a threshold of significance related to changes in aircraft noise levels in the County CEQA Thresholds Guidelines; therefore the Federal standard is applied. Use of the 1.5 CNEL threshold is consistent with noise analyses conducted for other Airport projects throughout both San Diego County and the State of California.

1.4 Environmental Consequences

The following sections analyze the noise impacts associated with the implementation of the 2019 Proposed Action Alternative. Refer to the Alternatives section of the EIR/EA for a description of each alternative.

The 2019 alternatives are assessed under both NEPA and CEQA significance criteria as described in Section 1.3, above. CEQA analysis considers the impact of the 2019 No Action/No Project Alternative and the 2019 Proposed Action Alternative in comparison to 2008 Existing Conditions. In addition, 2024 No Action/No Project Alternative and 2024 Proposed Action Alternative conditions are also assessed for potential impacts utilizing FAA standard significance criteria. This comparison provides a five year outlook after the alternative is implemented, and is required by FAA as part of an EA aircraft noise analysis.[11]

Under Federal standards, determination of impacts is accomplished through comparison of No Project and Proposed Action Alternative conditions in the same timeframe (i.e. 2019 No Action/No Project Alternative compared with 2019 Proposed Action Alternative. Also 2024 No Action/No Project Alternative compared with 2024 Proposed Action Alternative). The basis for determining impacts under CEQA is comparison of an "environmental baseline." Accordingly, for purposes of satisfying the CEQA requirement, this study assesses both the 2019 No Action/No Project Alternative and 2019 Proposed Action Alternative against the environmental baseline, 2008 Existing Conditions.

---

9 The FICON report noted that in practice, an increase of 3 dBA or more will not occur in the 60 to 65 DNL contour unless there is at least a 1.5 dBA increase within the 65 DNL contour.

10 U.S. Department of Transportation, Federal Aviation Administration, Land Use Compatibility Guidelines, Federal Aviation Regulation (FAR) Part 150; Federal Aviation Administration, Order 5050.4A, Airport Environmental Handbook, October 1985; Federal Aviation Administration, Order 1050.1D, Policies and Procedure for Considering Environmental Impacts, June 2001.

11 FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures*, Section 14.g, paragraph 2.

1.4.1 2019 No Action/No Project Alternative Conditions

The 2019 No Action/No Project Alternative represents conditions at Gillespie Field where the proposed development of the 70-acre parcel would not occur. The following sections describe the operational characteristics of this scenario, followed by a description of the resultant aircraft noise exposure and associated impacts.

1.4.1.1 Operational Characteristics

Table I-8, presents the AAD operations and fleet mix at the Airport under 2019 No Action/No Project conditions. The No Action/No Project Alternative condition is anticipated to result in a constraint to operations. Without the proposed aircraft storage facilities, the Airport would not be able to accommodate the unconstrained forecasted demand for aircraft basing and aircraft parking. Therefore, the number of operations would be constrained starting in year 2010, as documented in an updated forecast conducted by Ricondo & Associates.[12] Due to an anticipated deficiency of based aircraft facilities starting in 2010, the constrained operations forecast includes a lower level of operations in comparison to the unconstrained operations forecast, under which forecasted demand for aircraft basing and parking would be accommodated.

The assumed fleet mix at the Airport in 2019 remains constant with 2008 Existing Conditions. However, there is anticipated to be approximately 538 AAD operations under the 2019 No Action/No Project scenario, representing a general increase of 21 AAD operations at Gillespie Field over 2008 Existing Conditions. The increase from 2008 operations to 2019 No Action/ No Project Alternative forecast operations is attributable to "natural growth" of aircraft operations over time, and is not attributable to the Proposed Action. Approximately 88 percent of total operations at the Airport under 2019 No Action/No Project Alternative conditions are associated with single-engine propeller aircraft, with approximately 10 percent of operations associated with multi-engine propeller aircraft, and two percent associated with jet aircraft. Runway use, flight track location and flight track use is expected to be similar to 2008 Existing Conditions, because the alternative does not propose changes to the runways or air traffic procedures.

1.4.2 2019 No Action/No Project Alternative Noise Exposure

The following sections discuss the noise exposure map developed for 2019 No Action/No Project Alternative conditions and describe the associated impacts.

1.4.2.1 Noise Exposure Map Area

Exhibit I-10 depicts the 65, 70 and 75 CNEL noise exposure map under 2019 No Action/No Project Alternative conditions and **Table I-9** summarizes noise effects associated with the Alternative. Approximately 389 acres of land are anticipated to fall within the areas exposed to aircraft noise of 65 CNEL and higher, 309 acres of which is located within the boundaries of Gillespie Field. Approximately, 80 acres, or 21 percent of the total area exposed to 65 CNEL or higher, is located off-airport. The majority of this area is located directly north and northwest of the airfield.

[12] *Constrained Gillespie Field Aviation Activity Forecasts*, Ricondo & Associates, Inc., September 9, 2008

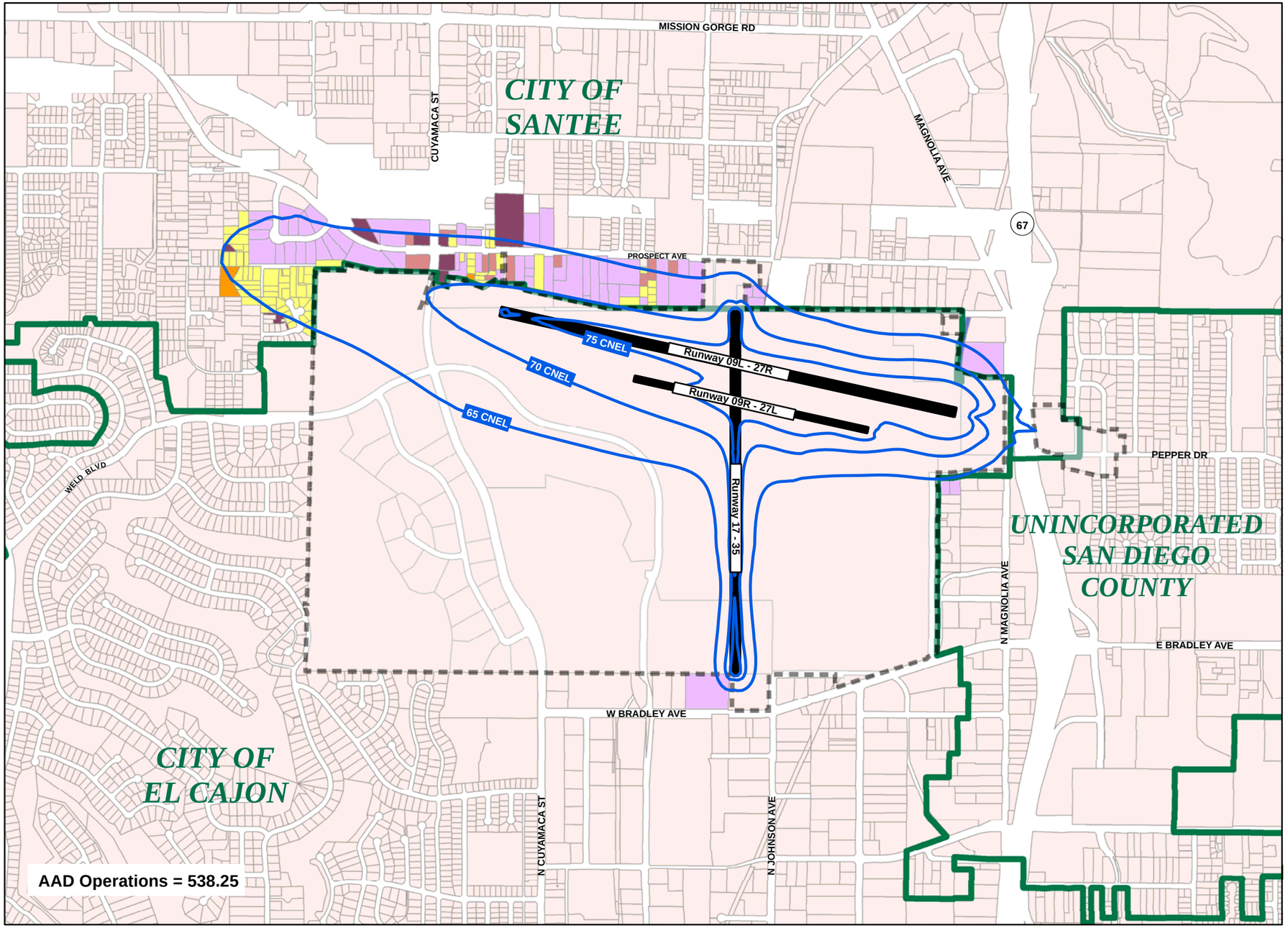
Table I-8

Forecast Annual Average Day Aircraft Operations and Fleet Mix: 2019 No Action/No Project Alternative Conditions

			Arrivals				Departures				Touch-and-Go's			
Aircraft Type	INM 7.0 Designation	Group Category	Daytime	Evening	Nighttime	Total	Daytime	Evening	Nighttime	Total	Daytime	Evening	Nighttime	Total
Single-Engine Propeller														
Cessna 172	CNA172	Single-Engine	12.48	0.95	0.09	13.52	12.53	0.96	0.09	13.57	18.56	1.42	0.13	20.11
Cessna 206	CNA206	Single-Engine	6.24	0.47	0.04	6.76	6.27	0.48	0.04	6.78	9.28	0.71	0.06	10.05
Cessna 206T	CNA20T	Single-Engine	6.24	0.47	0.04	6.76	6.27	0.48	0.04	6.78	9.28	0.71	0.06	10.05
Single Engine (1985)	COMSEP	Single-Engine	12.48	0.95	0.09	13.52	12.47	0.95	0.09	13.51	18.56	1.42	0.13	20.11
Single-Engine Fixed Prop	GASEPF	Single-Engine	62.41	4.76	0.43	67.61	62.36	4.76	0.43	67.54	92.81	7.08	0.64	100.53
Single-Engine Variable Pitch Prop	GASEPV	Single-Engine	24.97	1.90	0.17	27.04	24.94	1.90	0.17	27.02	37.12	2.83	0.26	40.21
Single-Engine Propeller Total			124.83	9.52	0.86	135.21	124.83	9.52	0.86	135.21	185.62	14.15	1.29	201.06
Multi-Engine Propeller														
Beech Baron 58	BEC58P	Multi-Engine	7.18	0.95	0.30	8.43	7.12	0.98	0.33	8.43	20.79	1.58	0.15	22.52
Cessna 441	CNA441	Multi-Engine	3.26	0.43	0.14	3.83	3.24	0.45	0.15	3.83	1.16	0.09	0.01	1.25
DeHavilland Twin Otter	DHC6	Multi-Engine	2.09	0.28	0.09	2.45	2.07	0.29	0.10	2.45	1.16	0.09	0.01	1.25
Shorts 330	SD330	Multi-Engine	0.26	0.03	0.01	0.31	0.26	0.04	0.01	0.31	0.00	0.00	0.00	0.00
Saab 340	SF340	Multi-Engine	0.26	0.03	0.01	0.31	0.26	0.04	0.01	0.31	0.00	0.00	0.00	0.00
Multi-Engine Propeller Total			13.05	1.73	0.55	15.32	12.94	1.79	0.59	15.32	23.10	1.76	0.16	25.02
Jet														
Citation Jet	CIT3	Jet	0.14	0.02	0.02	0.18	0.16	0.01	0.00	0.17	0.00	0.00	0.00	0.00
Canadair Challenger Jet 600	CL600	Jet	0.35	0.04	0.05	0.44	0.40	0.03	0.00	0.44	0.00	0.00	0.00	0.00
Canadair Challenger Jet 601	CL601	Jet	0.35	0.04	0.05	0.44	0.40	0.03	0.00	0.44	0.00	0.00	0.00	0.00
Cessna 500 Citation Jet	CNA500	Jet	0.14	0.02	0.02	0.18	0.16	0.01	0.00	0.17	0.00	0.00	0.00	0.00
Cessna 550 Citation Jet	CNA55B	Jet	0.02	0.00	0.00	0.02	0.02	0.00	0.00	0.03	0.00	0.00	0.00	0.00
Cessna 750 Citation X Jet	CNA750	Jet	0.14	0.02	0.02	0.18	0.16	0.01	0.00	0.17	0.00	0.00	0.00	0.00
Business Jet (1985)	COMJET	Jet	0.38	0.04	0.05	0.47	0.44	0.03	0.00	0.47	0.00	0.00	0.00	0.00
Dassault Falcon 20	FAL20	Jet	0.14	0.02	0.02	0.18	0.16	0.01	0.00	0.17	0.00	0.00	0.00	0.00
Gulfstream IV	GIV	Jet	0.35	0.04	0.05	0.44	0.40	0.03	0.00	0.44	0.00	0.00	0.00	0.00
Gulfstream V	GV	Jet	0.35	0.04	0.05	0.44	0.40	0.03	0.00	0.44	0.00	0.00	0.00	0.00
Gulfstream Astra 1125	IA1125	Jet	0.10	0.01	0.02	0.13	0.13	0.01	0.00	0.14	0.00	0.00	0.00	0.00
Learjet 24/25	LEAR25	Jet	0.21	0.02	0.03	0.26	0.24	0.02	0.00	0.26	0.00	0.00	0.00	0.00
Learjet 35/45/55/60	LEAR35	Jet	1.31	0.15	0.20	1.66	1.57	0.11	0.01	1.70	0.00	0.00	0.00	0.00
Mitsubishi MU-300 Diamond	MU3001	Jet	0.35	0.04	0.05	0.44	0.40	0.03	0.00	0.44	0.00	0.00	0.00	0.00
North American Saberliner 80	SABR80	Jet	0.07	0.01	0.01	0.09	0.08	0.01	0.00	0.09	0.00	0.00	0.00	0.00
Jet Total			4.40	0.49	0.66	5.55	5.16	0.38	0.02	5.55	0.00	0.00	0.00	0.00
Total AAD Operations	**538.25**													

Notes: Day: 7:00 a.m. to 6:59 p.m., Evening: 7:00 p.m. to 9:59 p.m., Night: 10:00 p.m. to 6:59 a.m.
Totals may not add to 100 percent due to rounding.

Source: Ricondo & Associates, Inc., based on 2004 Gillespie Field ALP Narrative Report 2000 INM study files; County of San Diego Department of Public Works and FAA Gillespie Field Tower interviews, August 2008; Field observations, August 2008, and *Gillespie Field Constrained Aviation Activity Forecast*,, September 2008.
Prepared by: Ricondo & Associates, Inc., August 2008.



Legend

- Residential Single-Family
- Residential Multi-Family
- Industrial
- Commercial
- Vacant Taxable
- Miscellaneous
- Runways
- Airport Boundary
- Parcels
- 2019 No Action/No Project Alternative
- Municipal Boundary

Sources: SANGIS, SANDAG 2008, 2008 Parcel Data (Accessed August 2008), INM Model: Version 7.0; INM Contour Layer: 19na3Noise-Contours and Ricondo & Associates, Inc., 2008
Prepared by: Ricondo & Associates, Inc., October 2008

Exhibit I-10

0 1250 ft. north

CNEL Aircraft Noise Exposure Area:
2019 No Action/No Project Alternative

Table I-9

Summary of Potential Noise Exposure Effects: 2019 No Action/No Project Alternative Conditions

Noise Level Range	Total Acreage[1/]	Off-Airport Area (Acres)[1/]	Total Dwellings	Estimated Population	Non-Residential Noise-Sensitive Parcels
2019 No Action/No Project					
65 to 70 CNEL	225.70	78.68	66.00	207.00	0.00
70 to 75 CNEL	96.72	1.08	3.00	10.00	0.00
75 CNEL and higher	66.64	0.00	0.00	0.00	0.00
65 CNEL and higher	389.06	79.76	69.00	217.00	0.00

Note:
1/ Acreage totals may not add due to rounding.

Source: Ricondo & Associates, Inc., based on SANGIS 2008 parcel data (Accessed August 2008); 2000 U.S. Census population data.
Prepared by: Ricondo & Associates, Inc., August 2008.

As with 2008 Existing Conditions, the 2019 No Action/No Project Alternative contour shape is directly influenced by the predominance of west flow operations at the Airport and the heavy usage by both departing and arriving aircraft of Runway 27R, which, as shown in Table I-4 in Section 1.2.3, supports more than 70 percent of the Airport's operations. This is expected because the proposed action does not involve actions that would change the runway use and flight track use to/from Gillespie Field.

1.4.2.2 Population and Dwelling Unit Count

As depicted on **Exhibit I-10**, the area exposed to aircraft noise levels of 65 CNEL and higher includes land outside the Airport boundary directly north and northwest of the airfield. As summarized in **Table I-9**, approximately 66 dwelling units and 207 people within the areas exposed to aircraft noise between 65 and 70 CNEL. Approximately three dwelling units and 10 people are located within areas exposed to aircraft noise levels of 70 CNEL and higher.

1.4.2.3 Land Use Compatibility

The noise-sensitive land uses potentially exposed to various levels of aircraft noise under 2019 No Action/No Project Alternative conditions were determined, as summarized in **Table I-10**. Of the approximately 80 acres located off-Airport exposed to aircraft noise of 65 CNEL and higher, approximately 22 acres are in residential use based on San Diego County Tax Assessor's Office parcel records. The majority of the residential uses exposed to 65 CNEL and higher are single-family, representing approximately 20 acres and including 65 dwelling units. Multi-family residential uses located on two acres, including four dwelling units, are exposed to aircraft noise of 65 CNEL and higher under 2008 Existing Conditions. There are no non-residential noise-sensitive land uses (e.g., schools, places of worship, parks, hospitals, convalescent homes, etc.) located within the areas exposed to aircraft noise of 65 CNEL and higher.

Table I-10

Potential Impacts to Residential and Non-Residential Noise-Sensitive Land Uses: 2019 No Action/No Project Alternative Conditions

	Unincorporated San Diego County	City of El Cajon	City of Santee	Total
65 CNEL and Above				
Residential				
Single-Family				
Units	0.00	0.00	65.00	65.00
Acres	0.00	0.00	20.60	20.60
Population	0.00	0.00	205.00	205.00
Multi-Family				
Units	0.00	0.00	4.00	4.00
Acres	0.00	0.00	1.68	1.68
Population	0.00	0.00	12.00	12.00
Total Residential				
Units	**0.00**	**0.00**	**69.00**	**69.00**
Acres	**0.00**	**0.00**	**22.28**	**22.28**
Population	**0.00**	**0.00**	**217.00**	**217.00**
Non-Residential Noise-Sensitive Uses				
Schools				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Religious Facilities				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Hospitals				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Hospitals/Convalescent Facilities				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Parks				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Libraries				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Total Noise-Sensitive Facilities				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Total Noise-Sensitive Area (Acres)	**0.00**	**0.00**	**22.28**	**22.28**

Notes:
1/ Acreage totals may not equal the sum of individual values due to rounding
2/ Population reflects 2000 Census data

Source: Ricondo & Associates, Inc. based on SANGIS 2008 parcel data (Accessed August 2008); 2000 U.S. Census population data; INM noise contours, August 2008.
Prepared by: Ricondo & Associates, Inc., August 2008.

1.4.3 2019 Proposed Action Alternative Conditions

The following sections discuss the aircraft noise exposure map developed for 2019 Proposed Action Alternative conditions and describe the associated potential impacts.

1.4.3.1 Operational Characteristics

Table I-11, below, describes the forecasted AAD operations and fleet mix at the Airport under 2019 Proposed Action Alternative conditions, upon implementation of the Proposed Action. The fleet mix at the Airport remains constant with 2008 Existing Conditions. However, under 2019 Proposed Action Alternative conditions, there are anticipated to be approximately 574 AAD operations, representing a general increase in the number of aircraft utilizing Gillespie Field as compared to existing conditions. The operation levels are forecasted higher compared to the 2019 No Action/No Project Alternative condition because the updated forecast concluded that with the implementation of proposed facilities, the unconstrained forecast operations demand would be met.[13]

Approximately 88 percent of operations at the Airport under 2019 Proposed Action Alternative conditions would be associated with single-engine propeller aircraft, with approximately 10 percent of operations associated with multi-engine propeller aircraft, and two percent associated with jet aircraft. Runway use, flight track location and flight track use is expected to be similar to 2008 Existing Conditions, because the Proposed Action does not propose changes to the runways or air traffic procedures.

1.4.4 2019 Proposed Action Alternative Noise Exposure

The following sections discuss the noise exposure contour developed under 2019 Proposed Action Alternative conditions and describe the associated potential impacts.

1.4.4.1 Noise Exposure Map

Exhibit I-11 depicts the 65, 70 and 75 CNEL noise exposure map and **Table I-12** summarizes noise effects under 2019 Proposed Action Alternative conditions. Approximately 411 acres of land are anticipated to fall within the 65 CNEL or higher noise exposure area, the majority of which is located within the boundaries of Gillespie Field. Approximately, 90 acres, or 22 percent of the total area exposed to 65 CNEL or higher, is located off-airport. The majority of this area is located directly north and northwest of the airfield. This is expected because the alternative does not involve actions that would change the runway use and flight track use to/from Gillespie Field.

As for 2008 Existing Conditions, the contour shape is directly influenced by the predominance of west flow operations at the Airport - 70 percent of the itinerant arrivals and departures occur on Runway 27R, which, as shown in **Table I-4** in Section 1.2.3.

[13] Ricondo & Associates, Inc. *Gillespie Field Unconstrained Aviation Activity Forecast.* September 9, 2008.

Table I-11

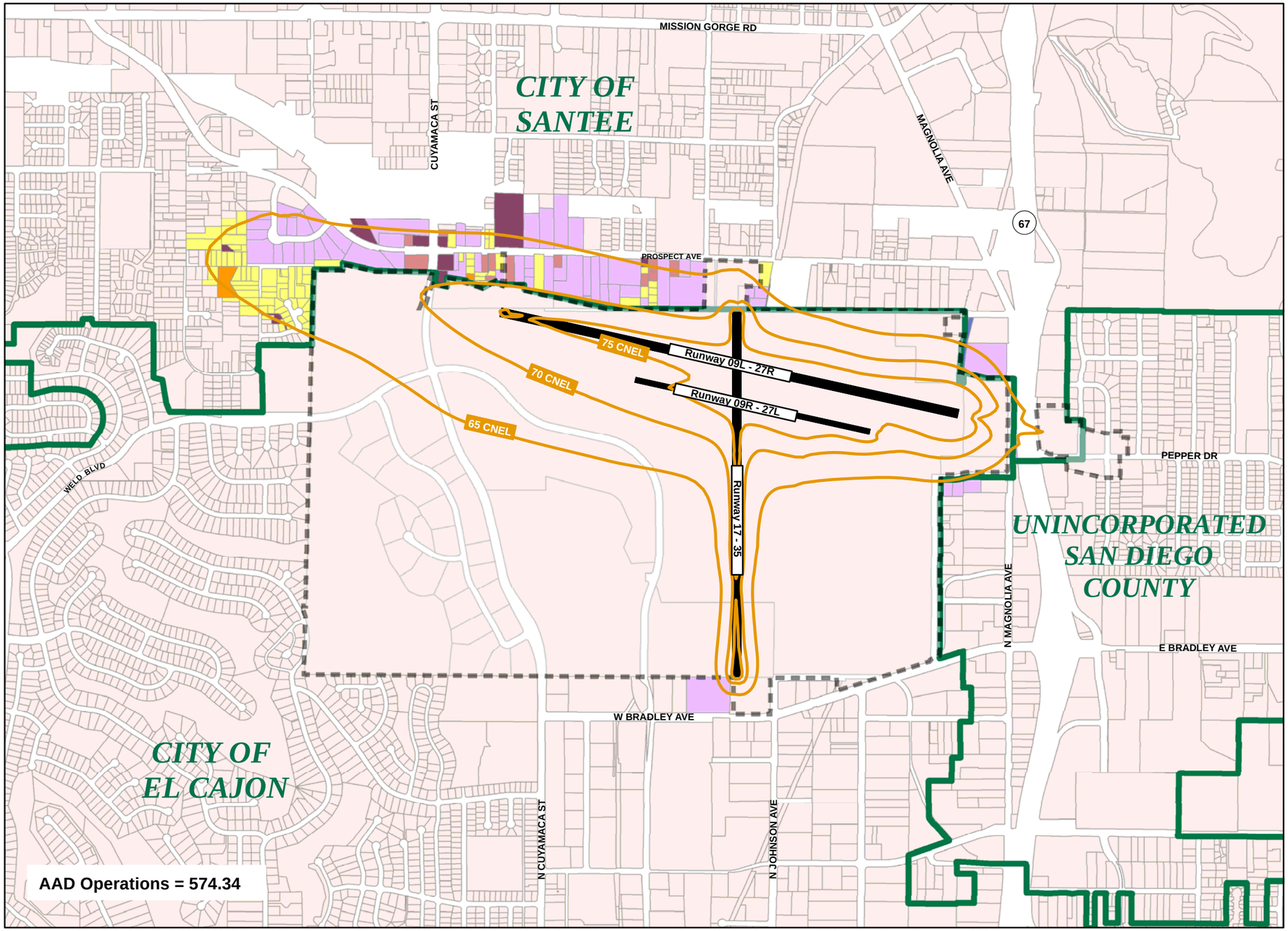
Annual Average Day Aircraft Operations and Fleet Mix: 2019 Proposed Action Alternative Forecasted Conditions

			Arrivals				Departures				Touch-and-Go's			
Aircraft Type	INM 7.0 Designation	Group Category	Daytime	Evening	Nighttime	Total	Daytime	Evening	Nighttime	Total	Daytime	Evening	Nighttime	Total
Single-Engine Propeller														
Cessna 172	CNA172	Single-Engine	12.47	0.95	0.09	13.50	12.51	0.95	0.09	13.55	21.56	1.64	0.15	23.35
Cessna 206	CNA206	Single-Engine	6.23	0.47	0.04	6.75	6.26	0.48	0.04	6.77	10.78	0.82	0.07	11.68
Cessna 206T	CNA20T	Single-Engine	6.23	0.47	0.04	6.75	6.26	0.48	0.04	6.77	10.78	0.82	0.07	11.68
Single Engine (1985)	COMSEP	Single-Engine	12.47	0.95	0.09	13.50	12.45	0.95	0.09	13.49	21.56	1.64	0.15	23.35
Single-Engine Fixed Prop	GASEPF	Single-Engine	62.33	4.75	0.43	67.52	62.27	4.75	0.43	67.45	107.79	8.22	0.75	116.76
Single-Engine Variable Pitch Prop	GASEPV	Single-Engine	24.93	1.90	0.17	27.01	24.91	1.90	0.17	26.98	43.12	3.29	0.30	46.70
Single-Engine Propeller Total			124.66	9.51	0.86	135.03	124.66	9.50	0.86	135.03	215.59	16.44	1.49	233.52
Multi-Engine Propeller														
Beech Baron 58	BEC58P	Multi-Engine	7.17	0.95	0.30	8.42	7.11	0.98	0.33	8.42	24.15	1.84	0.17	26.16
Cessna 441	CNA441	Multi-Engine	3.26	0.43	0.14	3.83	3.23	0.45	0.15	3.83	1.34	0.10	0.01	1.45
DeHavilland Twin Otter	DHC6	Multi-Engine	2.08	0.28	0.09	2.45	2.07	0.29	0.09	2.45	1.34	0.10	0.01	1.45
Shorts 330	SD330	Multi-Engine	0.26	0.03	0.01	0.31	0.26	0.04	0.01	0.31	0.00	0.00	0.00	0.00
Saab 340	SF340	Multi-Engine	0.26	0.03	0.01	0.31	0.26	0.04	0.01	0.31	0.00	0.00	0.00	0.00
Multi-Engine Propeller Total			13.03	1.72	0.55	15.30	12.92	1.78	0.59	15.30	26.83	2.05	0.19	29.07
Jet														
Citation Jet	CIT3	Jet	0.14	0.02	0.02	0.17	0.16	0.01	0.00	0.17	0.00	0.00	0.00	0.00
Canadair Challenger Jet 600	CL600	Jet	0.35	0.04	0.05	0.44	0.40	0.03	0.00	0.44	0.00	0.00	0.00	0.00
Canadair Challenger Jet 601	CL601	Jet	0.35	0.04	0.05	0.44	0.40	0.03	0.00	0.44	0.00	0.00	0.00	0.00
Cessna 500 Citation Jet	CNA500	Jet	0.14	0.02	0.02	0.17	0.16	0.01	0.00	0.17	0.00	0.00	0.00	0.00
Cessna 550 Citation Jet	CNA55B	Jet	0.02	0.00	0.00	0.02	0.02	0.00	0.00	0.03	0.00	0.00	0.00	0.00
Cessna 750 Citation X Jet	CNA750	Jet	0.14	0.02	0.02	0.17	0.16	0.01	0.00	0.17	0.00	0.00	0.00	0.00
Business Jet (1985)	COMJET	Jet	0.38	0.04	0.05	0.47	0.44	0.03	0.00	0.47	0.00	0.00	0.00	0.00
Dassault Falcon 20	FAL20	Jet	0.14	0.02	0.02	0.17	0.16	0.01	0.00	0.17	0.00	0.00	0.00	0.00
Gulfstream IV	GIV	Jet	0.35	0.04	0.05	0.44	0.40	0.03	0.00	0.44	0.00	0.00	0.00	0.00
Gulfstream V	GV	Jet	0.35	0.04	0.05	0.44	0.40	0.03	0.00	0.44	0.00	0.00	0.00	0.00
Gulfstream Astra 1125	IA1125	Jet	0.10	0.01	0.02	0.13	0.13	0.01	0.00	0.14	0.00	0.00	0.00	0.00
Learjet 24/25	LEAR25	Jet	0.21	0.02	0.03	0.26	0.24	0.02	0.00	0.26	0.00	0.00	0.00	0.00
Learjet 35/45/55/60	LEAR35	Jet	1.31	0.15	0.20	1.66	1.57	0.11	0.01	1.69	0.00	0.00	0.00	0.00
Mitsubishi MU-300 Diamond	MU3001	Jet	0.35	0.04	0.05	0.44	0.40	0.03	0.00	0.44	0.00	0.00	0.00	0.00
North American Saberliner 80	SABR80	Jet	0.07	0.01	0.01	0.09	0.08	0.01	0.00	0.09	0.00	0.00	0.00	0.00
Jet Total			4.40	0.49	0.66	5.55	5.15	0.38	0.02	5.55	0.00	0.00	0.00	0.00
Total AAD Operations	**574.34**													

Notes: Day: 7:00 a.m. to 6:59 p.m., Evening: 7:00 p.m. to 9:59 p.m., Night: 10:00 p.m. to 6:59 a.m.
Totals may not add to 100 percent due to rounding.

Source: Ricondo & Associates, Inc., based on 2004 Gillespie Field ALP Narrative Report 2000 INM study files; County of San Diego Department of Public Works and FAA Gillespie Field Tower interviews, August 2008; Field observations, August 2008, and *Gillespie Field Unconstrained Aviation Activity Forecast*,, September 2008

Prepared by: Ricondo & Associates, Inc., August 2008.



Legend

- Residential Single-Family
- Residential Multi-Family
- Industrial
- Commercial
- Vacant Taxable
- Miscellaneous
- Runways
- Airport Boundary
- Parcels
- 2019 Proposed Action Alternative
- Municipal Boundary

Sources: SANGIS, SANDAG 2008, 2008 Parcel Data (Accessed August 2008), INM Model: Version 7.0; INM Contour Layer: 19pactr3Noise-Contours and Ricondo & Associates, Inc., 2008
Prepared by: Ricondo & Associates, Inc., October 2008

Exhibit I-11

0 1250 ft. north

CNEL Aircraft Noise Exposure Area:
2019 Proposed Action Alternative

Table I-12

Summary Noise Exposure Effects: 2019 Proposed Action Alternative Conditions

Noise Level Range	Total Acreage[1/]	Off-Airport Area (Acres)[1/]	Total Dwellings	Estimated Population	Non-Residential Noise-Sensitive Parcels
2019 Project					
65 to 70 CNEL	238.70	87.82	79.00	247.00	0.00
70 to 75 CNEL	101.90	1.99	3.00	10.00	0.00
75 CNEL and higher	69.99	0.00	0.00	0.00	0.00
65 CNEL and higher	410.59	89.81	82.00	257.00	0.00

Note:
1/ Acreage totals may not add due to rounding.

Source: Ricondo & Associates, Inc., based on SANGIS 2008 parcel data (Accessed August 2008); 2000 U.S. Census population data; INM noise contours, August 2008.
Prepared by: Ricondo & Associates, Inc., August 2008.

1.4.4.2 Population and Dwelling Unit Count

As depicted on **Exhibit I-11**, the area exposed to aircraft noise levels of 65 CNEL and higher includes land outside the Airport boundary directly north and northwest of the airfield. As summarized in **Table I-12**, approximately 79 dwelling units and 247 people are exposed to aircraft noise between 65 to 70 CNEL. Approximately three dwelling units and 10 people are exposed to aircraft noise levels of 70 CNEL or higher.

1.4.4.3 Land Use Compatibility

The noise-sensitive land uses that would be potentially exposed to various levels of aircraft noise under 2019 Proposed Action Alternative conditions were determined, as summarized in **Table I-13**. Of the 90 acres located off-Airport exposed to aircraft noise of 65 CNEL and higher, approximately 28 acres are developed in residential use according to San Diego County Tax Assessor's parcel records. The majority of the residential uses exposed to 65 CNEL and higher, 26 acres, are single-family in use and include 78 dwelling units. Multi-family residential uses located on two acres, including four dwelling units, are exposed to aircraft noise of 65 CNEL and higher under 2019 Proposed Action Alternative conditions. There would be no non-residential noise-sensitive land uses located within the areas exposed to aircraft noise of 65 CNEL and higher.

1.4.5 Comparison of 2019 Proposed Action Alternative with 2019 No Action/No Project Alternative Conditions (FAA/NEPA Comparison)

The following sections compare forecasted 2019 Proposed Action Alternative conditions with 2019 No Action/No Project Alternative conditions.

Table I-13

Potential Impacts on Residential and Non-Residential Noise-Sensitive Uses: 2019 Proposed Action Alternative Conditions

	Unincorporated San Diego County	City of El Cajon	City of Santee	Total
65 CNEL and Above				
Residential				
Single-Family				
Units	0.00	0.00	78.00	78.00
Acres	0.00	0.00	26.37	26.37
Population	0.00	0.00	245.00	245.00
Multi-Family				
Units	0.00	0.00	4.00	4.00
Acres	0.00	0.00	1.68	1.68
Population	0.00	0.00	12.00	12.00
Total Residential				
Units	**0.00**	**0.00**	**82.00**	**82.00**
Acres	**0.00**	**0.00**	**28.05**	**28.05**
Population	**0.00**	**0.00**	**257.00**	**257.00**
Non-Residential Noise-Sensitive Uses				
Schools				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Religious Facilities				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Hospitals				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Hospitals/Convalescent Facilities				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Parks				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Libraries				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Total Noise-Sensitive Facilities				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Total Noise-Sensitive Area (Acres)	**0.00**	**0.00**	**28.05**	**28.05**

Notes:
1/ Acreage totals may not equal the sum of individual values due to rounding
2/ Population reflects 2000 Census data

Source: Ricondo & Associates, Inc., based on SANGIS 2008 parcel data (Accessed August 2008); 2000 U.S. Census population data; INM noise contours, August 2008.
Prepared by: Ricondo & Associates, Inc., August 2008.

1.4.5.1 Noise Exposure Map Area

Exhibit I-12 depicts a comparison of the forecasted 65 CNEL and higher noise exposure area under 2019 No Action/No Project Alternative and 2019 Proposed Action Alternative conditions. The 2019 Proposed Action Alternative size is slightly larger than the 2019 No Action/No Project Alternative, due to the Proposed Action Alternative's ability to serve the unconstrained demand forecasted at the Airport. The difference in size is primarily due to the difference in total AAD operations between 2019 No Action/No Project Alternative and 2019 Proposed Action Alternative, which is 36 AAD operations. **Table I-14**, below, provides a comparison between the 2019 Proposed Action Alternative and 2019 No Action/No Project Alternative conditions. The total area of off-airport land exposed to aircraft noise levels of 65 CNEL or higher would potentially increase by 22 acres (or five percent) under 2019 Proposed Action Alternative conditions compared to 2019 No Action/No Project Alternative conditions.

Table I-14

Summary Noise Exposure Effects: 2019 Proposed Action Alternative Compared with 2019 No Action/No Project Alternative Conditions

Noise Level Range	Total Acreage [3/]	Off-Airport Area (Acres)[3/]	Total Dwellings	Estimated Population	Non-Residential Noise-Sensitive Parcels
Project (2019)					
65 to 70 CNEL	238.70	87.82	79.00	247.00	0.00
70 to 75 CNEL	101.90	1.99	3.00	10.00	0.00
75 CNEL and higher	69.99	0.00	0.00	0.00	0.00
Total 65 CNEL and higher	410.59	89.81	82.00	257.00	0.00
No Action (2019) [1/]					
65-70 CNEL	225.70	78.68	66.00	207.00	0.00
70-75 CNEL	96.72	1.08	3.00	10.00	0.00
75 ≥ CNEL	66.64	0.00	0.00	0.00	0.00
Total 65 CNEL and higher	389.06	79.76	69.00	217.00	0.00
Difference Between Project (2019) and No Action (2019) [1/, 2/]					
65-70 CNEL	13.00	9.14	13.00	40.00	0.00
70-75 CNEL	5.18	0.91	0.00	0.00	0.00
75 ≥ CNEL	3.35	0.00	0.00	0.00	0.00
Total 65 CNEL and higher	**21.53**	**10.05**	**13.00**	**40.00**	**0.00**

Notes:

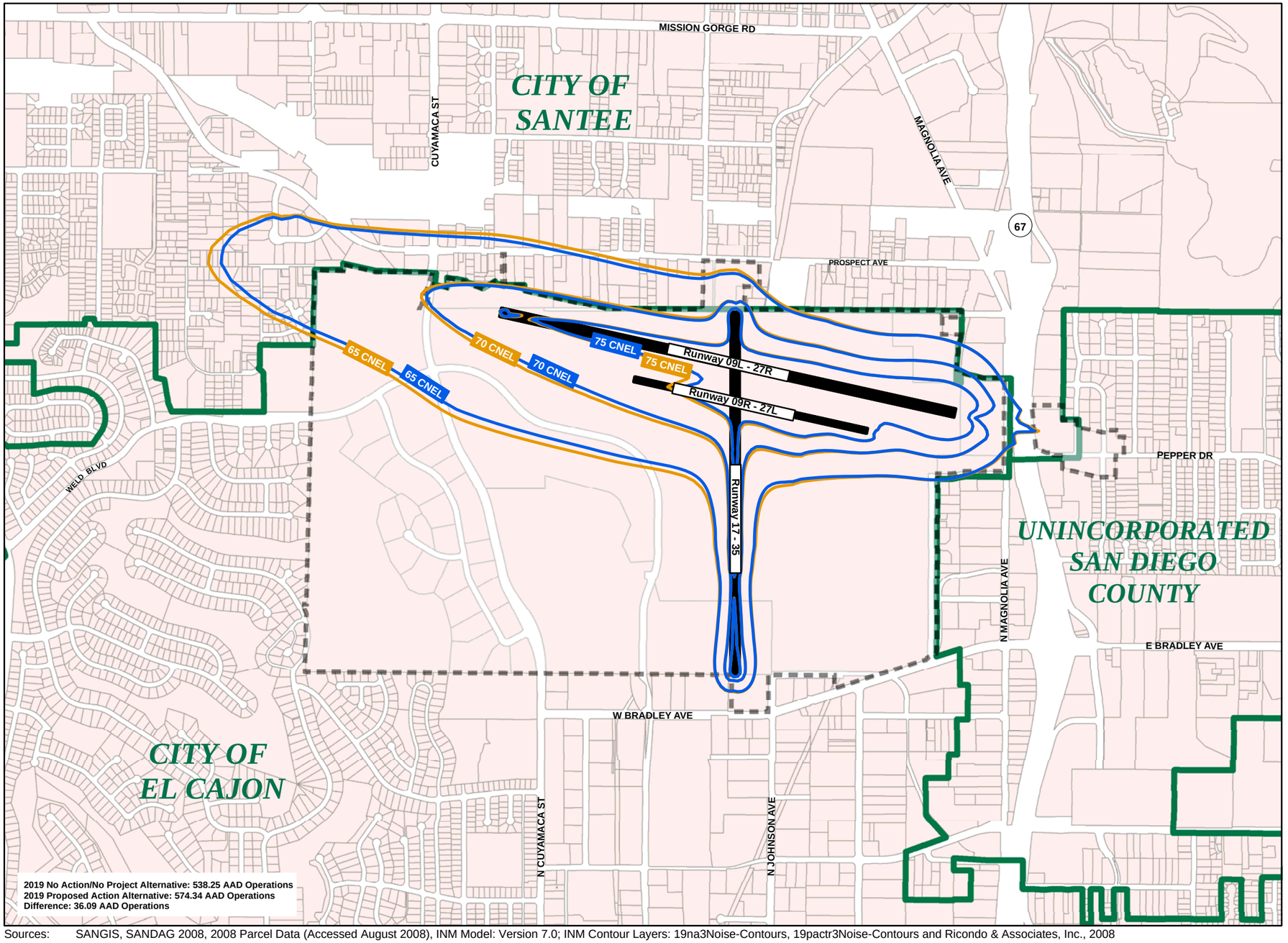
1/ A positive value indicates that 2019 Proposed Action Alternative conditions reflect numbers greater than those for 2019 No Action/No Project Alternative conditions; a negative number indicates that 2019 Proposed Action Alternative conditions reflect number less than 2019 No Action/No Project Alternative conditions. The values reported in each cell above indicate a net difference. Some jurisdictions may experience increased noise levels while other areas may experience a decrease.

2/ Population and dwelling unit information for 2019 conditions are reported using a year 2000 Census data base.

3/ Acreage totals may not equal the sum of individual values.

Source: Ricondo & Associates, Inc., based on SANGIS 2008 parcel data (Accessed August 2008); 2000 U.S. Census population data; INM noise contours, August 2008.

Prepared by: Ricondo & Associates, Inc., August 2008.



Legend

- Runways
- Airport Boundary
- Parcels
- 2019 No Action/No Project Alternative
- 2019 Proposed Action Alternative
- Municipal Boundary

Sources: SANGIS, SANDAG 2008, 2008 Parcel Data (Accessed August 2008), INM Model: Version 7.0; INM Contour Layers: 19na3Noise-Contours, 19pactr3Noise-Contours and Ricondo & Associates, Inc., 2008
Prepared by: Ricondo & Associates, Inc., October 2008

Exhibit I-12

0 1250 ft. north

CNEL Aircraft Noise Exposure Area:
Comparison between 2019 No Action/No Project Alternative and 2019 Proposed Action Alternative

1.4.5.2 Population and Dwelling Impact

Table I-14 also presents a comparison of the population and dwelling unit counts for 2019 Proposed Action Alternative and 2019 No Action/No Project Alternative conditions. Under 2019 Proposed Action Alternative conditions, the number of dwelling units anticipated to be exposed to aircraft noise of 65 CNEL and higher would be 13 more and the total population exposed to aircraft noise of 65 CNEL and higher would be 40 more than under to the 2019 No Action/No Project Alternative conditions.

1.4.5.3 Land Use Compatibility

Exhibit I-13 depicts the location and **Table I-15** shows a summary of areas by jurisdiction that are newly exposed to aircraft noise of 65 CNEL and higher for 2019 Proposed Action Alternative conditions compared to 2019 No Action/No Project Alternative conditions. As shown in **Table 1-15**, all newly exposed areas fall within the City of Santee and as seen on **Exhibit 1-13**, are located directly northwest of the Airport, just north of the City of El Cajon city limits. As stated in Section 1.4.5.2, approximately 13 dwelling units are anticipated to be newly exposed, on a total of approximately six acres. The total population newly exposed would include 40 people. No new non-residential noise-sensitive facilities would be newly exposed to aircraft noise of 65 CNEL and higher.

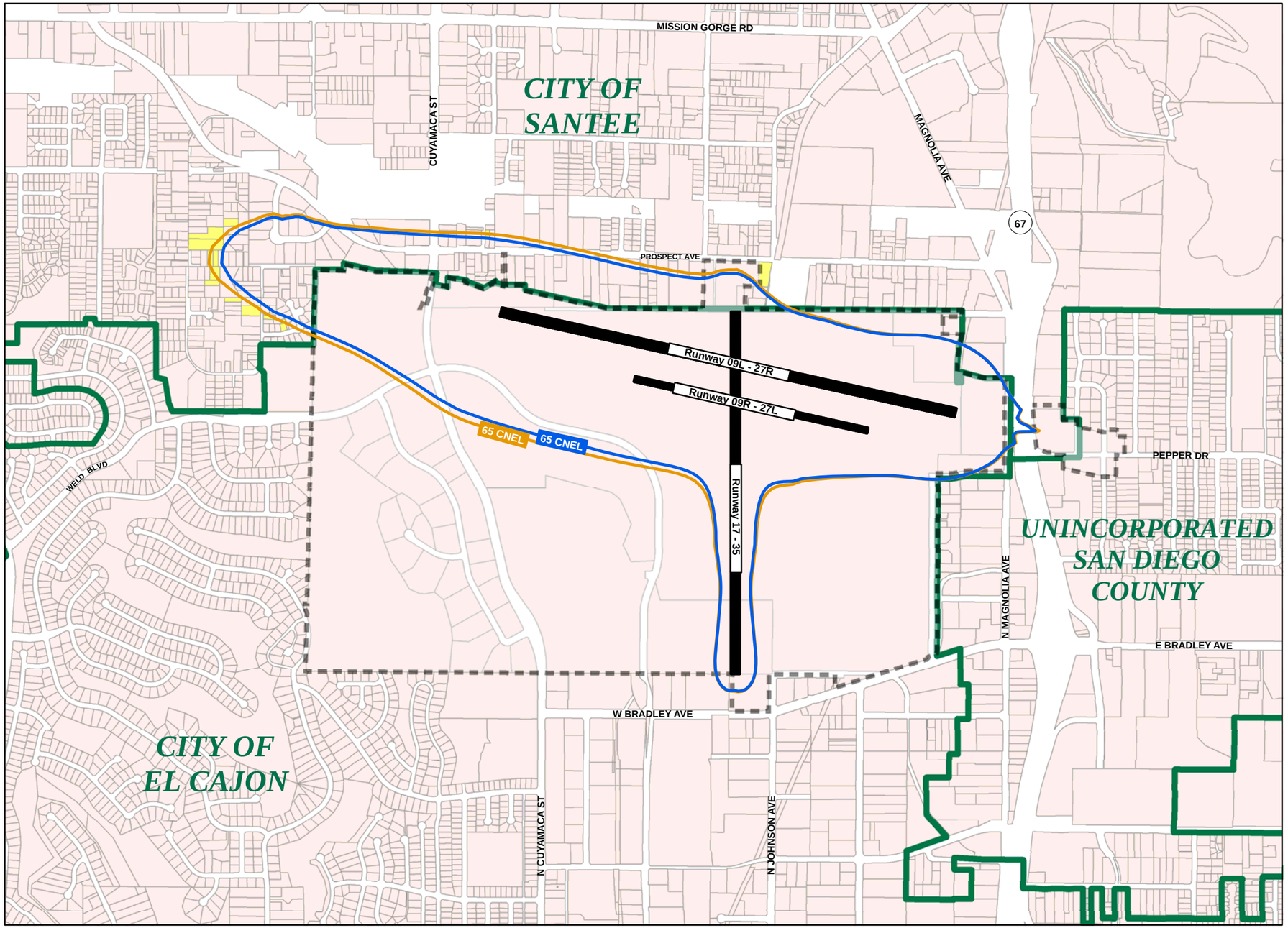
1.4.5.4 Federal Threshold of Significance Analysis

The following sections evaluate the potential for significant impacts on noise sensitive land uses as identified by San Diego County Tax Assessor's parcel records that would arise as a result of the 2019 Proposed Action Alternative compared to 2019 No Action/No Project Alternative conditions. As described in Section 1.3, an increase in aircraft noise of 1.5 CNEL or more within the area exposed to aircraft noise of 65 CNEL and higher under the 2019 Proposed Action Alternative condition compared to the 2019 No Action/No Project Alternative represents a significant noise impact for NEPA purposes.

Based on the comparative analysis, no new or existing noise-sensitive areas exposed to aircraft noise of 65 CNEL and higher under the Proposed Action Alternative would be exposed to an increase of 1.5 CNEL or higher under 2019 Proposed Action Alternative conditions compared to 2019 No Action/No Project Alternative conditions. Therefore, no potentially significant noise impacts under NEPA are anticipated.

1.4.6 Comparison of 2019 No Action/No Project Alternative with 2008 Existing Conditions (CEQA Comparison)

As described in Section 1.3, above, CEQA requires a comparison of the future year alternatives with "baseline conditions" for purposes of evaluating potential significant impacts. For purposes of this comparison the baseline represents existing conditions. The following sections compare 2019 No Action/No Project Alternative conditions with 2008 Existing Conditions.



Legend

- Residential Single-Family
- Runways
- Airport Boundary
- Parcels
- 2019 No Action/No Project Alternative
- 2019 Proposed Action Alternative
- Municipal Boundary

Sources: SANGIS, SANDAG 2008, 2008 Parcel Data (Accessed August 2008), INM Model: Version 7.0; INM Contour Layers: 19na3Noise-Contours, 19pactr3Noise-Contours and Ricondo & Associates, Inc., 2008
Prepared by: Ricondo & Associates, Inc., October 2008

0 1250 ft.

north

Exhibit I-13

CNEL Aircraft Noise Exposure Area:
Location of Newly Exposed Land Use
(Comparison between 2019 Proposed Action Alternative and 2019 No Action/No Project Alternative)

Table I-15

Newly Exposed Residential and Noise Sensitive Land Use Areas: 2019 Proposed Action Alternative Compared with 2019 No Action/No Project Alternative Conditions

	Unincorporated San Diego County	City of El Cajon	City of Santee	Total
65 CNEL and Above				
Residential				
Single-Family				
Units	0.00	0.00	13.00	13.00
Acres	0.00	0.00	5.76	5.76
Population	0.00	0.00	40.00	40.00
Multi-Family				
Units	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Population				
Total Residential				
Units	**0.00**	**0.00**	**13.00**	**13.00**
Acres	**0.00**	**0.00**	**5.76**	**5.76**
Population	**0.00**	**0.00**	**40.00**	**40.00**
Noise-Sensitive Uses				
Schools				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Religious Facilities				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Hospitals				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Hospitals/Convalescent Facilities				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Parks				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Libraries				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Total Noise-Sensitive Facilities				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Total Noise-Sensitive Area (Acres)	**0.00**	**0.00**	**5.76**	**5.76**

Source: Ricondo & Associates, Inc., based on SANGIS 2008 parcel data (Accessed August 2008); 2000 U.S. Census population data; INM noise contours, August 2008.
Prepared by: Ricondo & Associates, Inc., August 2008.

1.4.6.1 Noise Exposure Map

Exhibit I-14 depicts a comparison of the area exposed to aircraft noise of 65 CNEL and higher under the 2019 No Action/No Project Alternative compared with 2008 Existing Conditions. To the east and west, the 2008 Existing Conditions aircraft noise exposure areas are slightly smaller than the 2019 No Action/No Project Alternative contour and can be attributed to the smaller number of total forecast aircraft operations. The number of AAD operations at the Airport is forecasted to increase to 538 operations under 2019 No Action/No Project Alternative conditions, compared to 517 operations under 2008 Existing Conditions.[14] This represents about a four percent increase of based aircraft growth the Airport could accommodate with existing aircraft storage facilities (without implementation of the Proposed Action). **Table I-16**, below, provides a comparison between 2008 Existing Conditions and 2019 No Action/No Project Alternative conditions.

Table I-16

Forecasted Summary Noise Exposure Effects: 2008 Existing Conditions Compared with 2019 No Action/ No Project Alternative

Noise Level Range	Total Acreage Over Land[3/]	Off-Airport Area (Acres)[3/]	Total Dwellings	Estimated Population	Non-Residential Noise-Sensitive Parcels
2019 No Action/No Project					
65 to 70 CNEL	225.70	78.68	66.00	207.00	0.00
70 to 75 CNEL	96.72	1.08	3.00	10.00	0.00
75 CNEL and higher	66.64	0.00	0.00	0.00	0.00
Total 65 CNEL and higher	389.06	79.76	69.00	217.00	0.00
2008 Baseline Conditions [1/]					
65-70 CNEL	216.20	68.88	57.00	181.00	0.00
70-75 CNEL	93.27	0.27	0.00	0.00	0.00
75 ≥ CNEL	61.54	0.00	0.00	0.00	0.00
Total 65 CNEL and higher	371.00	69.15	57.00	181.00	0.00
Difference Between 2019 Proposed Action and 2008 baseline Conditions [1/, 2/]					
65-70 CNEL	9.50	9.80	9.00	26.00	0.00
70-75 CNEL	3.45	0.81	3.00	10.00	0.00
75 ≥ CNEL	5.10	0.00	0.00	0.00	0.00
Total 65 CNEL and higher	18.06	10.61	12.00	36.00	0.00

Notes:

1/ A positive value indicates that 2019 Proposed Action Alternative conditions reflect numbers greater than those for 2019 No Action/No Project Alternative conditions; a negative number indicates that 2019 Proposed Action Alternative conditions reflect number less than 2019 No Action/No Project Alternative conditions. The values reported in each cell above indicate a net difference. Some jurisdictions may experience increased noise levels while other areas may experience a decrease.

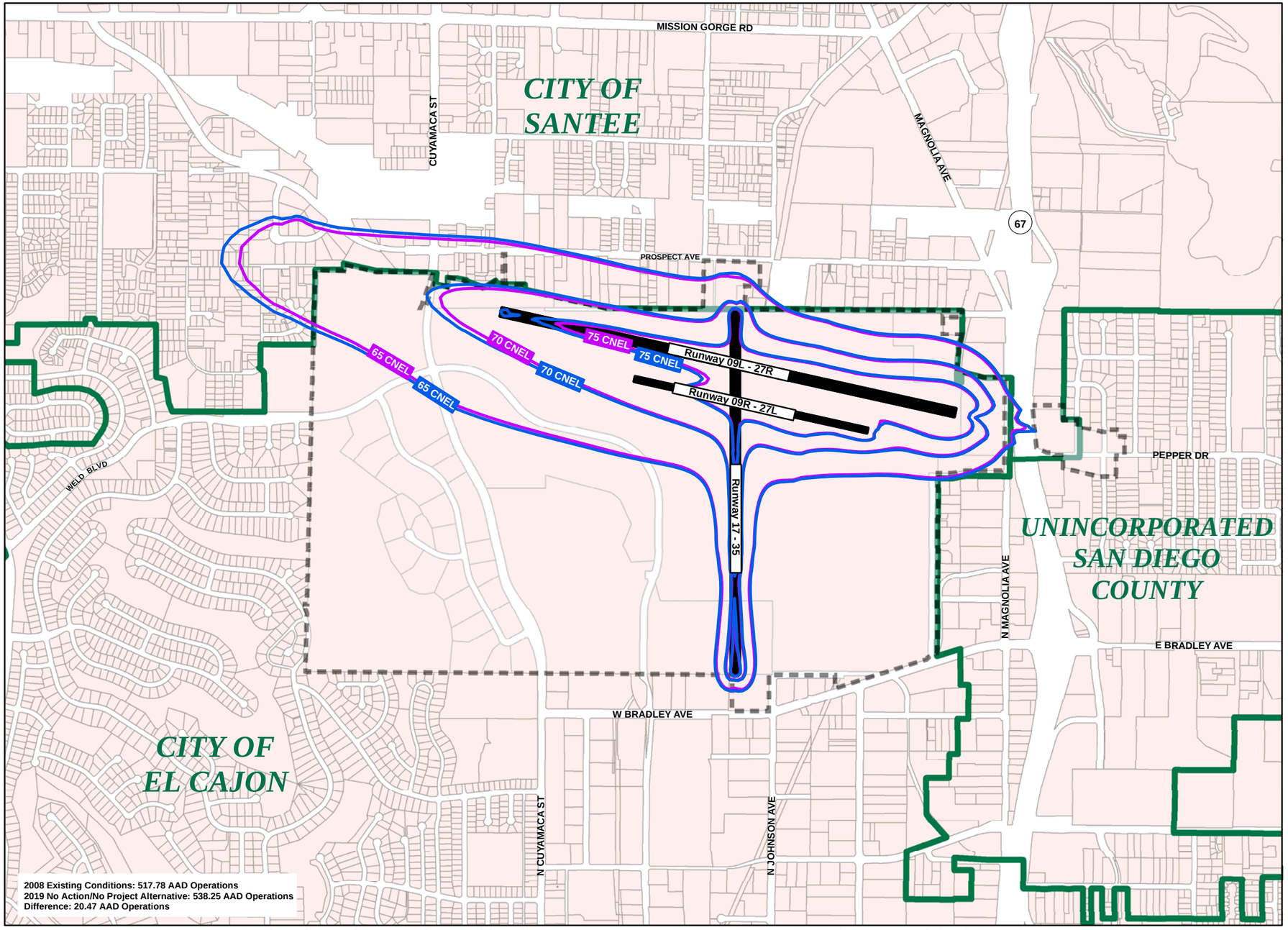
2/ Population and dwelling unit information for 2019 conditions are reported using a year 2000 Census data base.

3/ Acreage totals may not equal the sum of individual values.

Source: Ricondo & Associates, Inc., based on SANGIS 2008 parcel data (Accessed August 2008); 2000 U.S. Census population data; INM noise contours, August 2008.

Prepared by: Ricondo & Associates, Inc., 2008.

[14] Ricondo & Associates, Inc. *Gillespie Field Constrained Airport Activity Forecast*. September 9, 2008



Legend

- Runways
- Airport Boundary
- Parcels
- 2008 Existing Conditions
- 2019 No Action/No Project Alternative
- Municipal Boundary

Sources: SANGIS, SANDAG 2008, 2008 Parcel Data (Accessed August 2008), INM Model: Version 7.0; INM Contour Layers: 08ctr3Noise-Contours, 19na3Noise-Contours and Ricondo & Associates, Inc., 2008
Prepared by: Ricondo & Associates, Inc., October 2008

Exhibit I-14

0 1250 ft. north

CNEL Aircraft Noise Exposure Area:
Comparison between 2008 Existing Conditions and 2019 No Action/No Project Alternative

1.4.6.2 Population and Dwelling Unit Impact

Table I-17, below, presents a comparison of the population and dwelling unit counts for 2019 No Action/No Project Alternative and 2008 Existing Conditions. Under 2019 No Action/No Project Alternative conditions, noise-sensitive residential area are anticipated to increase by five acres, the number of dwelling units within the 65 CNEL contour would increase by 12, and the total population would increase by 36 people in comparison to 2008 Existing Conditions.

Table I-17

Newly Exposed Residential and Noise Sensitive Land Use Areas: Forecasted 2019 No Action/No Project Alternative Compared with 2008 Existing Conditions by Jurisdiction

Impact Category	Unincorporated San Diego County	City of El Cajon	City of Santee	Total
65 CNEL and Greater				
Net Change in Acres Exposed	0.00	0.00	4.63	4.63
Net Change in Units Exposed	0.00	0.00	12.00	12.00
Net Change in Population Exposed	0.00	0.00	36.00	36.00
Net Change in Non-residential Noise-Sensitive Uses Exposed	0.00	0.00	0.00	0.00
Newly Exposed Units	0.00	0.00	12.00	12.00
Newly Exposed Population	0.00	0.00	36.00	36.00
Newly Exposed Non-residential Noise-sensitive Uses	0.00	0.00	0.00	0.00
75 CNEL and Higher	0.00	0.00	0.00	0.00
Net Change in Acres Exposed	0.00	0.00	0.00	0.00
Net Change in Units Exposed	0.00	0.00	0.00	0.00
Net Change in Population Exposed	0.00	0.00	0.00	0.00
Newly Exposed Units	0.00	0.00	0.00	0.00
Newly Exposed Population	0.00	0.00	0.00	0.00
1.5 CNEL increase in areas exposed to 65 CNEL and Higher	0.00	0.00	0.00	0.00
Units Exposed	0.00	0.00	0.00	0.00
Population Exposed	0.00	0.00	0.00	0.00
Non-residential Noise-Sensitive Uses exposed	0.00	0.00	0.00	0.00

Source: Ricondo & Associates, Inc., based on SANGIS 2008 parcel data (Accessed August 2008); 2000 U.S. Census population data; INM noise contours, August 2008.
Prepared by: Ricondo & Associates, Inc., 2008.

1.4.6.3 Land Use Compatibility

Exhibit I-14 depicts the location and **Table I-17** shows a summary of areas by jurisdiction that are forecast to be newly exposed to noise levels of 65 CNEL and higher for 2019 No Action/No Project Alternative conditions compared to 2008 Existing Conditions. As shown in **Table I-17**, all newly exposed areas fall within the City of Santee and as depicted on **Exhibit I-14**, are generally located northwest of the Airport, just north of the City of El Cajon city limits. Approximately 12 dwelling units would be newly exposed, representing a total of five acres. No new non-residential noise-sensitive facilities would be newly exposed to aircraft noise of 65 CNEL and higher.

1.4.6.4 CEQA Threshold of Significance Analysis

Based on the comparative analysis, no new or existing noise-sensitive areas exposed to aircraft noise of 65 CNEL and higher would be exposed to an increase of 1.5 CNEL or higher under 2019 No Action/No Project Alternative conditions compared to 2008 Existing Conditions. Therefore, no potentially significant noise impacts are anticipated.

1.4.7 Comparison of 2019 Proposed Action Alternative with 2008 Existing Conditions (CEQA Comparison)

The following sections compare 2019 Proposed Action Alternative conditions with 2008 Existing Conditions.

1.4.7.1 Noise Exposure Map

Exhibit I-15 depicts a comparison of the area exposed to aircraft noise of 65 CNEL and higher under 2019 Proposed Action Alternative conditions compared with 2008 Existing Conditions. To the east and west, the 2008 Existing Conditions aircraft noise exposure areas are slightly smaller than the 2019 Proposed Action Alternative contour and can be attributed to the smaller number of total aircraft operations. The number of AAD operations at the Airport are forecasted to increase to 574 operations under 2019 Proposed Action Alternative conditions, compared to 517 operations under 2008 Existing Conditions.[15] This represents an 11 percent increase, but not all induced by the Proposed Action Alternative. As mentioned in Section 1.4.6, 538 of the 574 AAD operations can be accommodated if the Proposed Action Alternative is not implemented. If the Proposed Action Alternative is implemented, the Airport would be able to accommodate the forecasted unconstrained demand, which is a difference of 36 AAD operations. Therefore, approximately seven percent of the total growth in operations between 2008 Existing Conditions and 2019 Proposed Action Alternative scenario may be attributed to the project.

Table I-18, below, provides a comparison between 2008 Existing Conditions and 2019 Proposed Action Alternative conditions. The total area of off-airport land exposed to aircraft noise of 65 CNEL and higher increases by 21 acres under 2019 Proposed Action Alternative conditions compared to 2008 Existing Conditions.

1.4.7.2 Population and Dwelling Impact

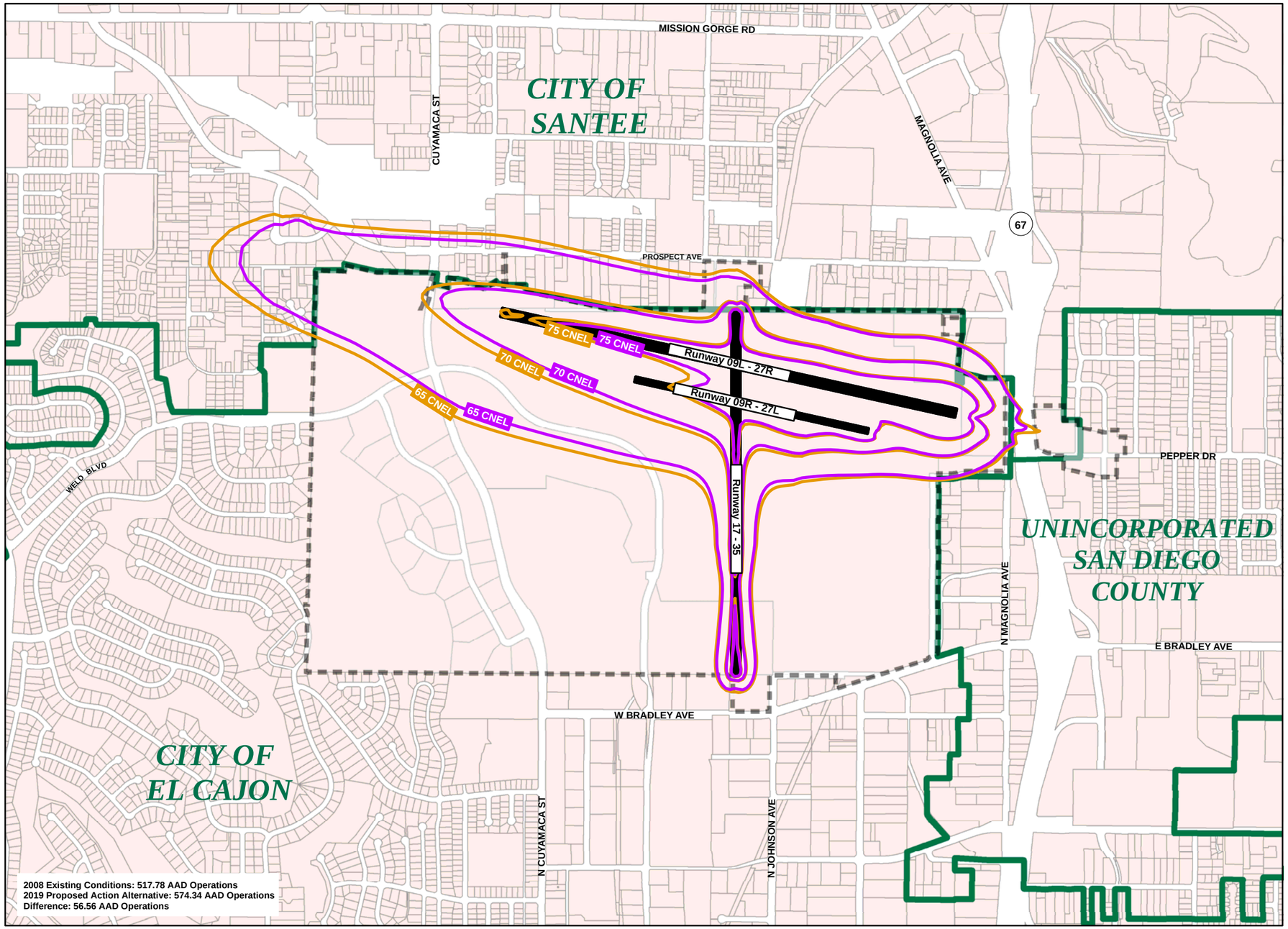
As shown in **Table I-19**, there is an increase in the number of dwelling units and total population impacted under 2019 Proposed Action Alternative conditions compared to 2008 Existing Conditions. There is a net increase of ten acres, 25 dwelling units, and 76 people exposed to noise levels in excess of 65 CNEL under 2019 Proposed Action Alternative conditions compared to 2008 Existing Conditions.

1.4.7.3 Land Use Compatibility

The noise-sensitive land uses, based on San Diego County Tax Assessor's parcel records, exposed to various levels of aircraft noise under 2019 Proposed Action Alternative conditions compared to 2008 Existing Conditions are summarized in **Table I-19**. In comparison to 2008 Existing Conditions, a total of ten acres would be newly exposed to aircraft noise of 65 CNEL and higher under 2019 Proposed Action Alternative conditions.

---

[15] *Unconstrained Gillespie Field Aviation Activity Forecasts*, Ricondo & Associates, Inc., September 9, 2008



Legend

- Runways
- Airport Boundary
- Parcels
- 2008 Existing Conditions
- 2019 Proposed Action Alternative
- Municipal Boundary

Sources: SANGIS, SANDAG 2008, 2008 Parcel Data (Accessed August 2008), INM Model: Version 7.0; INM Contour Layers: 08cntr3Noise-Contours, 19pactr3Noise-Contours and Ricondo & Associates, Inc., 2008
Prepared by: Ricondo & Associates, Inc., October 2008

Exhibit I-15

0 1250 ft.

north

CNEL Aircraft Noise Exposure Area:
Comparison between 2008 Existing Conditions and 2019 Proposed Action Alternative

Table I-18

Summary Noise Exposure Effects: Forecasted 2019 Proposed Action Alternative Compared with 2008 Existing Conditions

Noise Level Range	Total Acreage [3/]	Off-Airport Area (Acres)[3/]	Total Dwellings	Estimated Population	Non-Residential Noise-Sensitive Parcels
2019 Proposed Action Alternative					
65 to 70 CNEL	238.70	87.82	79.00	247.00	0.00
70 to 75 CNEL	101.90	1.99	3.00	10.00	0.00
75 CNEL and higher	69.99	0.00	0.00	0.00	0.00
Total 65 CNEL and higher	410.59	89.81	82.00	257.00	0.00
2008 Baseline Conditions [1/]					
65-70 CNEL	216.20	68.88	57.00	181.00	0.00
70-75 CNEL	93.27	0.27	0.00	0.00	0.00
75 ≥ CNEL	61.54	0.00	0.00	0.00	0.00
Total 65 CNEL and higher	371.00	69.15	57.00	181.00	0.00
Difference Between 2019 Proposed Action Alternative and 2008 baseline Conditions [1/, 2/]					
65-70 CNEL	22.50	18.94	22.00	66.00	0.00
70-75 CNEL	8.63	1.72	3.00	10.00	0.00
75 ≥ CNEL	8.45	0.00	0.00	0.00	0.00
Total 65 CNEL and higher	39.59	20.66	25.00	76.00	0.00

Notes:

1/ A positive value indicates that 2019 Proposed Action Alternative conditions reflect numbers greater than those for 2019 No Action/No Project Alternative conditions; a negative number indicates that 2019 Proposed Action Alternative conditions reflect number less than 2019 No Action/No Project conditions. The values reported in each cell above indicate a net difference. Some jurisdictions may experience increased noise levels while other areas may experience a decrease.

2/ Population and dwelling unit information for 2019 conditions are reported using a year 2000 Census data base.

3/ Acreage totals may not equal the sum of individual values.

Source: Ricondo & Associates, Inc., based on SANGIS 2008 parcel data (Accessed August 2008); 2000 U.S. Census population data; INM noise contours, August 2008.

Prepared by: Ricondo & Associates, Inc., August 2008.

1.4.7.4 CEQA Threshold of Significance Analysis

In comparison to 2008 Existing Conditions, under 2019 Proposed Action Alternative conditions there would be no areas exposed to an increase of 1.5 CNEL within areas that are either already or newly exposed to 65 CNEL or higher. Therefore, no potentially significant noise impacts are anticipated.

1.5 2024 Five Year Post Project Conditions

The following sections compare 2024 Proposed Action Alternative conditions with 2024 No Action/No Project Alternative conditions pursuant to FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures.* The consideration of potential impacts five years past the implementation of the project is a requirement per FAA analysis and is accordingly considered only under NEPA thresholds and impact analysis.

Table I-19

Newly Exposed Residential and Noise Sensitive Land Use Areas: Forecasted 2019 Proposed Action Alternative Compared with 2008 Existing Conditions by Jurisdiction

Impact Category	Unincorporated San Diego County	City of El Cajon	City of Santee	Total
65 CNEL and Greater				
Net Change in Acres Exposed	0.00	0.00	10.40	10.40
Net Change in Units Exposed	0.00	0.00	25.00	25.00
Net Change in Population Exposed	0.00	0.00	76.00	76.00
Net Change in Non-residential Noise-Sensitive Uses Exposed	0.00	0.00	0.00	0.00
Newly Exposed Units	0.00	0.00	25.00	25.00
Newly Exposed Population	0.00	0.00	76.00	76.00
Newly Exposed Non-residential Noise-sensitive Uses	0.00	0.00	0.00	0.00
75 CNEL and Higher	0.00	0.00	0.00	0.00
Net Change in Acres Exposed	0.00	0.00	0.00	0.00
Net Change in Units Exposed	0.00	0.00	0.00	0.00
Net Change in Population Exposed	0.00	0.00	0.00	0.00
Newly Exposed Units	0.00	0.00	0.00	0.00
Newly Exposed Population	0.00	0.00	0.00	0.00
1.5 CNEL increase in areas exposed to 65 CNEL and Higher	0.00	0.00	0.00	0.00
Units Exposed	0.00	0.00	0.00	0.00
Population Exposed	0.00	0.00	0.00	0.00
Non-residential Noise-Sensitive Uses exposed	0.00	0.00	0.00	0.00

Source: Ricondo & Associates, Inc., based on SANGIS 2008 parcel data (Accessed August 2008); 2000 U.S. Census population data; INM noise contours, August 2008.
Prepared by: Ricondo & Associates, Inc., 2008.

1.5.1 2024 No Action/No Project Alternative Conditions

The following sections discuss the aircraft noise exposure map developed for 2024 No Action/No Project Alternative conditions and describe the associated impacts.

1.5.1.1 Operational Characteristics

Table I-20 below, describes the AAD operations and fleet mix at the Airport under 2024 No Action/No Project Alternative conditions according to the updated constrained operations forecast.[16] The fleet mix at the Airport remains constant with 2008 Existing Conditions. However, as shown in Table I-20, under 2024 No Action/No Project Alternative conditions, there are approximately 620 AAD operations, representing a general increase in the number of aircraft utilizing Gillespie Field compared to 2008. Approximately 88 percent of operations at the Airport under 2024 No Action/No Project Alternative conditions are anticipated to be associated with single-engine propeller aircraft, with nine percent of operations associated with multi-engine propeller aircraft, and two percent associated with jet aircraft.

[16] Ricondo & Associates, Inc., *Gillespie Field Constrained Aviation Activity Forecast.* September 9, 2008.

Table I-20

Forecasted Annual Average Day Aircraft Operations and Fleet Mix: 2024 No Action/No Project Alternative Conditions

			Arrivals				Departures				Touch-and-Go's			
Aircraft Type	INM 7.0 Designation	Group Category	Daytime	Evening	Nighttime	Total	Daytime	Evening	Nighttime	Total	Daytime	Evening	Nighttime	Total
Single-Engine Propeller														
Cessna 172	CNA172	Single-Engine	14.95	1.14	0.10	16.19	15.00	1.14	0.11	16.25	20.67	1.58	0.14	22.39
Cessna 206	CNA206	Single-Engine	7.47	0.57	0.05	8.09	7.50	0.57	0.05	8.12	10.34	0.79	0.07	11.20
Cessna 206T	CNA20T	Single-Engine	7.47	0.57	0.05	8.09	7.50	0.57	0.05	8.12	10.34	0.79	0.07	11.20
Single Engine (1985)	COMSEP	Single-Engine	14.95	1.14	0.10	16.19	14.94	1.14	0.11	16.18	20.67	1.58	0.14	22.39
Single-Engine Fixed Prop	GASEPF	Single-Engine	74.75	5.70	0.52	80.97	74.68	5.70	0.51	80.89	103.35	7.88	0.72	111.95
Single-Engine Variable Pitch Prop	GASEPV	Single-Engine	29.90	2.28	0.21	32.39	29.87	2.28	0.21	32.35	41.34	3.15	0.29	44.78
Single-Engine Propeller Total			149.50	11.40	1.03	161.93	149.50	11.40	1.03	161.93	206.71	15.76	1.43	223.90
Multi-Engine Propeller														
Beech Baron 58	BEC58P	Multi-Engine	7.85	1.04	0.33	9.22	7.78	1.08	0.36	9.22	20.94	1.60	0.15	22.68
Cessna 441	CNA441	Multi-Engine	3.57	0.47	0.15	4.19	3.54	0.49	0.16	4.19	1.16	0.09	0.01	1.26
DeHavilland Twin Otter	DHC6	Multi-Engine	2.28	0.30	0.10	2.68	2.26	0.31	0.10	2.68	1.16	0.09	0.01	1.26
Shorts 330	SD330	Multi-Engine	0.29	0.04	0.01	0.34	0.28	0.04	0.01	0.34	0.00	0.00	0.00	0.00
Saab 340	SF340	Multi-Engine	0.29	0.04	0.01	0.34	0.28	0.04	0.01	0.34	0.00	0.00	0.00	0.00
Multi-Engine Propeller Total			14.27	1.89	0.60	16.76	14.15	1.95	0.65	16.76	23.27	1.77	0.16	25.20
Jet														
Citation Jet	CIT3	Jet	0.17	0.02	0.02	0.21	0.19	0.01	0.00	0.21	0.00	0.00	0.00	0.00
Canadair Challenger Jet 600	CL600	Jet	0.42	0.05	0.06	0.53	0.48	0.04	0.00	0.52	0.00	0.00	0.00	0.00
Canadair Challenger Jet 601	CL601	Jet	0.42	0.05	0.06	0.53	0.48	0.04	0.00	0.52	0.00	0.00	0.00	0.00
Cessna 500 Citation Jet	CNA500	Jet	0.17	0.02	0.02	0.21	0.19	0.01	0.00	0.21	0.00	0.00	0.00	0.00
Cessna 550 Citation Jet	CNA55B	Jet	0.02	0.00	0.00	0.03	0.03	0.00	0.00	0.03	0.00	0.00	0.00	0.00
Cessna 750 Citation X Jet	CNA750	Jet	0.17	0.02	0.02	0.21	0.19	0.01	0.00	0.21	0.00	0.00	0.00	0.00
Business Jet (1985)	COMJET	Jet	0.45	0.05	0.06	0.57	0.52	0.04	0.00	0.56	0.00	0.00	0.00	0.00
Dassault Falcon 20	FAL20	Jet	0.17	0.02	0.02	0.21	0.19	0.01	0.00	0.21	0.00	0.00	0.00	0.00
Gulfstream IV	GIV	Jet	0.42	0.05	0.06	0.53	0.48	0.04	0.00	0.52	0.00	0.00	0.00	0.00
Gulfstream V	GV	Jet	0.42	0.05	0.06	0.53	0.48	0.04	0.00	0.52	0.00	0.00	0.00	0.00
Gulfstream Astra 1125	IA1125	Jet	0.12	0.01	0.02	0.15	0.16	0.01	0.00	0.17	0.00	0.00	0.00	0.00
Learjet 24/25	LEAR25	Jet	0.25	0.03	0.04	0.32	0.29	0.02	0.00	0.31	0.00	0.00	0.00	0.00
Learjet 35/45/55/60	LEAR35	Jet	1.57	0.18	0.24	1.98	1.88	0.14	0.01	2.02	0.00	0.00	0.00	0.00
Mitsubishi MU-300 Diamond	MU3001	Jet	0.42	0.05	0.06	0.53	0.48	0.04	0.00	0.52	0.00	0.00	0.00	0.00
North American Saberliner 80	SABR80	Jet	0.08	0.01	0.01	0.10	0.09	0.01	0.00	0.10	0.00	0.00	0.00	0.00
Jet Total			5.25	0.59	0.79	6.63	6.15	0.45	0.03	6.63	0.00	0.00	0.00	0.00
Total AAD Operations	**619.73**													

Notes: Day: 7:00 a.m. to 6:59 p.m., Evening: 7:00 p.m. to 9:59 p.m., Night: 10:00 p.m. to 6:59 a.m.
Totals may not add to 100 percent due to rounding.

Source: Ricondo & Associates, Inc., based on 2004 Gillespie Field ALP Narrative Report 2000 INM study files; County of San Diego Department of Public Works and FAA Gillespie Field Tower interviews, August 2008; Field observations, August 2008, and *Gillespie Field Constrained Aviation Activity Forecast*,, September 2008.
Prepared by: Ricondo & Associates, Inc., August 2008.

1.5.2 2024 No Action/No Project Alternative Noise Exposure

The following sections discuss the aircraft noise exposure developed under 2024 No Action/No Project Alternative conditions and describe the associated impacts.

1.5.2.1 Noise Exposure Map

Exhibit I-16 depicts the 65, 70 and 75 CNEL noise contour and **Table I-21** summarizes noise effects under forecasted 2024 No Action/No Project Alternative conditions. Approximately 429 acres of land are anticipated to be exposed to aircraft noise of 65 CNEL and higher, the majority of which is located within the boundaries of Gillespie Field. Approximately, 103 acres or 24 percent of the total area exposed to aircraft noise of 65 CNEL and higher, is located off-airport. The majority of this area is located directly north and northwest of the airfield.

Table I-21

Summary of Potential Noise Exposure Effects: 2024 No Action/No Project Alternative Conditions

Noise Level Range	Total Acreage [1/]	Off-Airport Area (Acres)[1/]	Total Dwellings	Estimated Population	Non-Residential Noise-Sensitive Parcels
2024 Five-Year Post Project					
65 to 70 CNEL	249.20	99.45	93.00	289.00	0.00
70 to 75 CNEL	104.40	3.61	6.00	19.00	0.00
75 CNEL and higher	75.88	0.00	0.00	0.00	0.00
65 CNEL and higher	429.48	103.06	99.00	308.00	0.00

Note:
1/ Acreage totals may not add due to rounding.

Source: Ricondo & Associates, Inc., based on SANGIS 2008 parcel data (Accessed August 2008); 2000 U.S. Census population data; INM noise contours, August 2008.
Prepared by: Ricondo & Associates, Inc., August 2008.

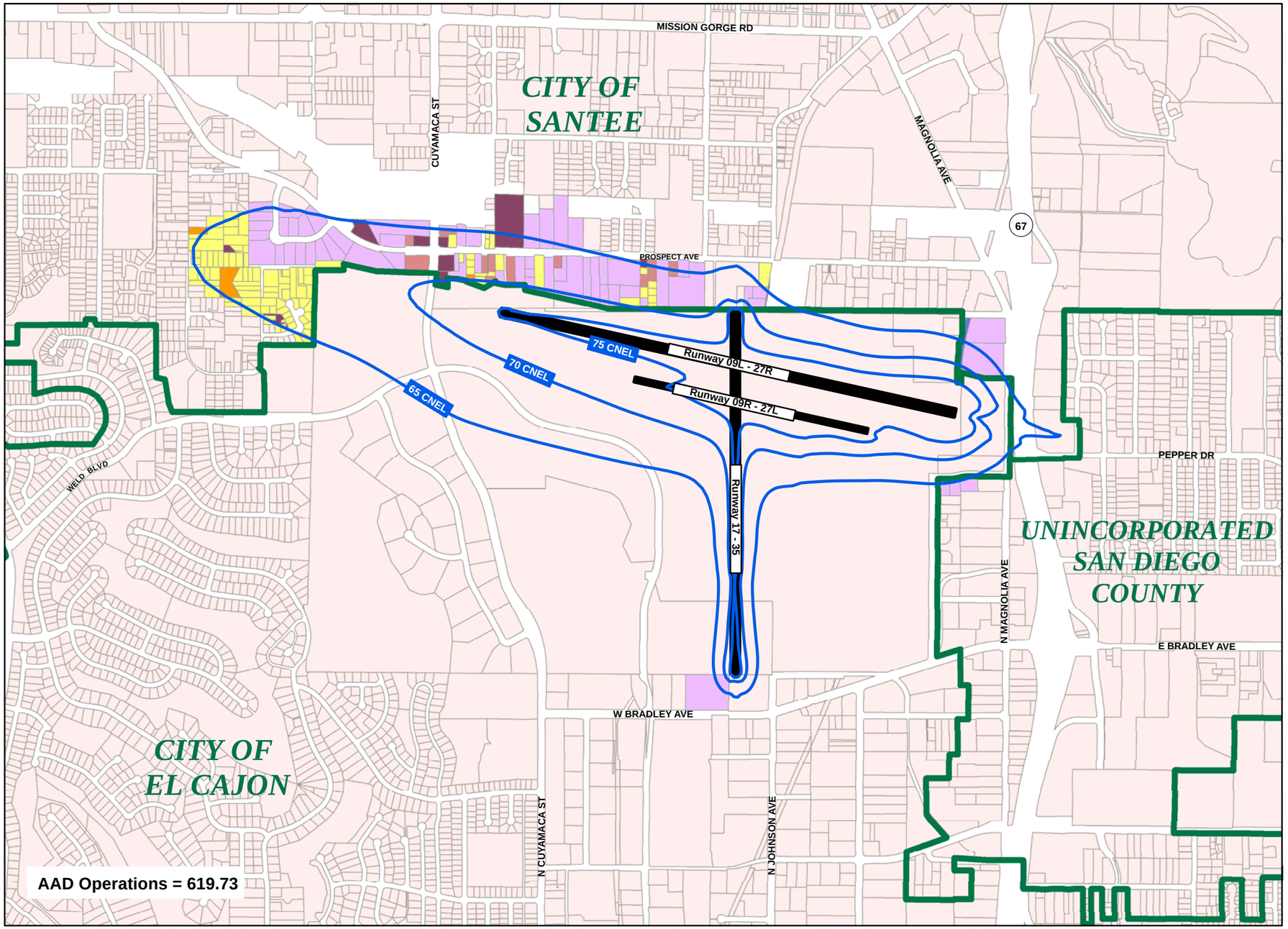
As for 2008 Existing Conditions, the contour shape is directly influenced by the predominance of west flow operations at the Airport - 70 percent of the itinerant arrivals and departures occur on Runway 27R, which, as shown in **Table I-4** in Section 1.2.3..

1.5.2.2 Population and Dwelling Unit Count

As depicted on **Exhibit I-16**, the area exposed to aircraft noise of 65 CNEL and higher includes land outside the Airport boundary directly north and northwest of the airfield. As shown in **Table I-21**, approximately 93 dwelling units and 289 people are anticipated to be located in areas exposed to aircraft noise between 65 and 70 CNEL. An additional 19 people and six dwelling unit are located within areas exposed to aircraft noise of 70 CNEL and higher.

1.5.2.3 Land Use Compatibility

The noise-sensitive land uses, as provided by San Diego County Tax Assessor's parcel records, exposed to various levels of aircraft noise under 2024 No Action/No Project Alternative conditions were determined, as summarized in **Table I-22**. Of the 103 acres located off-airport exposed to aircraft noise of 65 CNEL and higher, approximately 33 acres are identified as residential use. The majority of the residential uses exposed to 65 CNEL and higher, 31 acres, are single-family in use and include 78 dwelling units. Multi-family residential uses located on two acres, including six dwelling units, are exposed to aircraft noise of 65 CNEL and higher under 2024 No Action/No Project Alternative conditions. There are no non-residential noise-sensitive land uses located within the areas exposed to aircraft noise of 65 CNEL and higher.



Legend

- Residential Single-Family
- Residential Multi-Family
- Industrial
- Commercial
- Vacant Taxable
- Miscellaneous
- Runways
- Airport Boundary
- Parcels
- 2024 No Action/No Project Alternative
- Municipal Boundary

Sources: SANGIS, SANDAG 2008, 2008 Parcel Data (Accessed August 2008), INM Model: Version 7.0; INM Contour Layer: 24nactr3Noise-Contours and Ricondo & Associates, Inc., 2008
Prepared by: Ricondo & Associates, Inc., October 2008

Exhibit I-16

0 1250 ft.

north

CNEL Aircraft Noise Exposure Area:
2024 No Action/No Project Alternative

Table I-22

Potential Impacts on Residential and Non-Residential Noise-Sensitive Uses: 2024 No Action/No Project Alternative Conditions

	Unincorporated San Diego County	City of El Cajon	City of Santee	Total
65 CNEL and Above				
Residential				
Single-Family				
Units	0.00	0.00	93.00	93.00
Acres	0.00	0.00	30.86	30.86
Population	0.00	0.00	290.00	290.00
Multi-Family				
Units	0.00	0.00	6.00	6.00
Acres	0.00	0.00	2.05	2.05
Population	0.00	0.00	18.00	18.00
Total Residential				
Units	**0.00**	**0.00**	**99.00**	**99.00**
Acres	**0.00**	**0.00**	**32.91**	**32.91**
Population	**0.00**	**0.00**	**308.00**	**308.00**
Non-Residential Noise-Sensitive Uses				
Schools				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Religious Facilities				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Hospitals				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Hospitals/Convalescent Facilities				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Parks				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Libraries				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Total Noise-Sensitive Facilities				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Total Noise-Sensitive Area (Acres)	**0.00**	**0.00**	**32.91**	**32.91**

Notes:
1/ Acreage totals may not equal the sum of individual values due to rounding
2/ Population reflects 2000 Census data

Source: Ricondo & Associates, Inc., based on SANGIS 2008 parcel data (Accessed August 2008); 2000 U.S. Census population data; INM noise contours, August 2008.
Prepared by: Ricondo & Associates, Inc., August 2008.

1.5.3 2024 Proposed Action Alternative Conditions

The following sections discuss the aircraft noise exposure map developed for forecasted 2024 Proposed Action Alternative conditions and describe the associated potential impacts.

1.5.3.1 Operational Characteristics

Table I-23, below, describes the AAD operations and fleet mix at the Airport under 2024 Proposed Action Alternative conditions according to the updated unconstrained operations forecast.[17] The fleet mix at the Airport remains constant with 2008 Existing Conditions. However, under 2024 Proposed Action Alternative conditions, there are approximately 682 AAD operations, representing a general increase in the number of aircraft utilizing Gillespie Field. Approximately 89 percent of operations at the Airport under 2024 Proposed Action Alternative conditions are associated with single-engine propeller aircraft, with 10 percent of operations associated with multi-engine propeller aircraft, and two percent associated with jet aircraft.

1.5.4 2024 Proposed Action Alternative Noise Exposure

The following sections discuss the aircraft noise exposure developed under 2024 Proposed Action Alternative conditions and describe the associated impacts.

1.5.4.1 Noise Exposure Map

Exhibit I-17 depicts the 65, 70 and 75 CNEL noise exposure areas and **Table I-24** summarizes potential noise effects under 2024 Proposed Action Alternative conditions. Approximately 465 acres of land would be exposed to aircraft noise of 65 CNEL and higher, the majority of which is located within the boundaries of Gillespie Field. Approximately, 121 acres of the total area exposed to aircraft noise of 65 CNEL and higher, is located off-airport. The majority of this area is located directly north and northwest of the airfield.

As with 2008 Existing Conditions, the contour shape is directly influenced by the predominance of west flow operations at the Airport - 70 percent of the itinerant arrivals and departures occur on Runway 27R, which, as shown in **Table I-4** in Section 1.2.3.

1.5.4.2 Population and Dwelling Unit Count

As depicted on **Exhibit I-17**, the area exposed to aircraft noise of 65 CNEL and higher includes land outside the Airport boundary directly north and northwest of the airfield. As shown in **Table I-24**, approximately 126 dwelling units and 387 people are located in areas exposed to aircraft noise between 65 and 70 CNEL. An additional 23 people and seven dwelling units are located within areas exposed to aircraft noise of 70 CNEL and higher.

[17] Ricondo & Associates, Inc. *Gillespie Field Unconstrained Aviation Activity Forecast*. September 9, 2008.

Table I-23

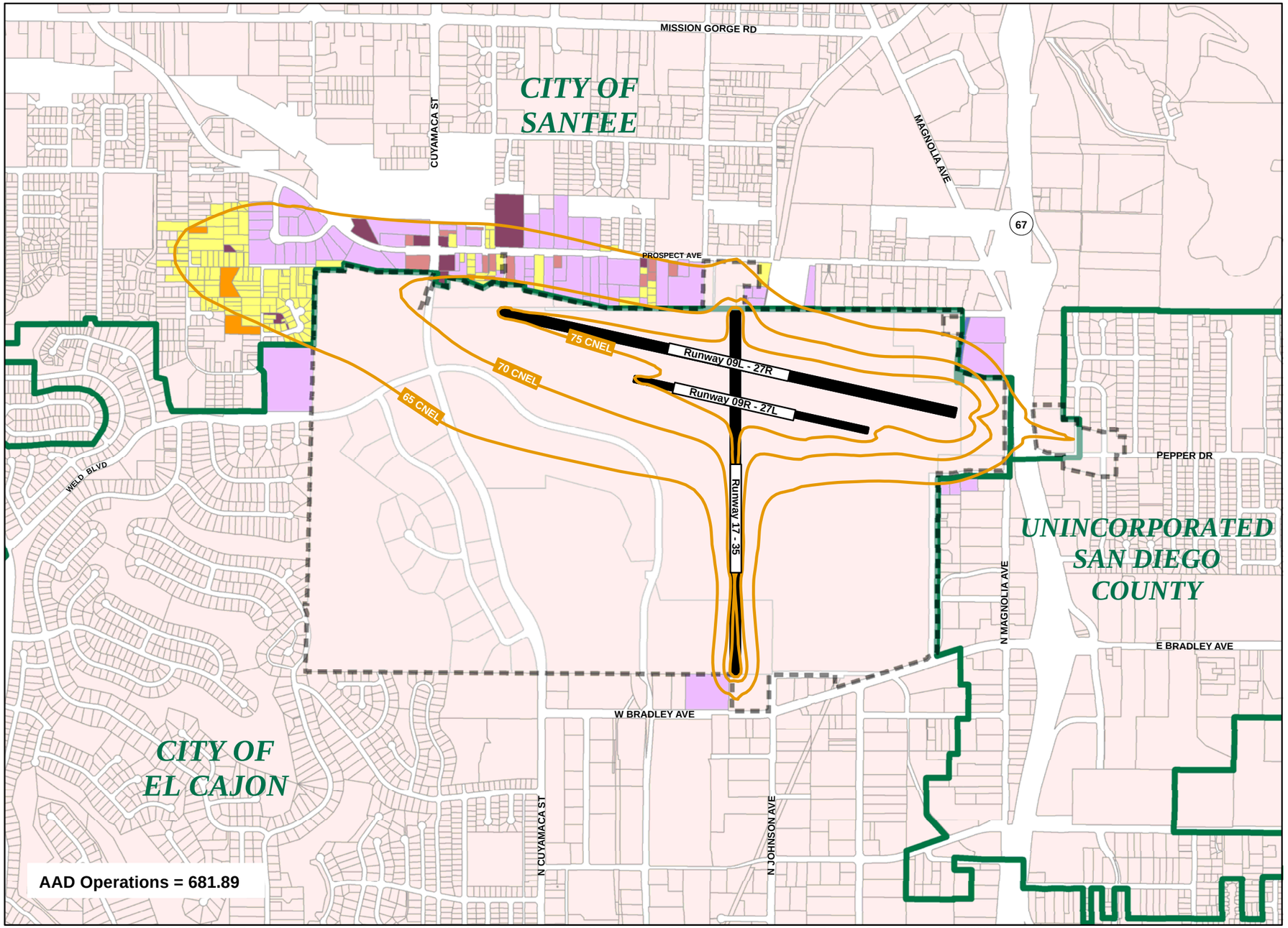
Forecasted Annual Average Day Aircraft Operations and Fleet Mix: 2024 Proposed Action Alternative Conditions

			Arrivals				Departures				Touch-and-Go's			
Aircraft Type	INM 7.0 Designation	Group Category	Daytime	Evening	Nighttime	Total	Daytime	Evening	Nighttime	Total	Daytime	Evening	Nighttime	Total
Single-Engine Propeller														
Cessna 172	CNA172	Single-Engine	14.93	1.14	0.10	16.17	14.98	1.14	0.11	16.23	25.87	1.97	0.18	28.02
Cessna 206	CNA206	Single-Engine	7.46	0.57	0.05	8.08	7.49	0.57	0.05	8.11	12.94	0.99	0.09	14.01
Cessna 206T	CNA20T	Single-Engine	7.46	0.57	0.05	8.08	7.49	0.57	0.05	8.11	12.94	0.99	0.09	14.01
Single Engine (1985)	COMSEP	Single-Engine	14.93	1.14	0.10	16.17	14.92	1.14	0.11	16.16	25.87	1.97	0.18	28.02
Single-Engine Fixed Prop	GASEPF	Single-Engine	74.65	5.69	0.52	80.86	74.58	5.69	0.51	80.78	129.35	9.86	0.90	140.10
Single-Engine Variable Pitch Prop	GASEPV	Single-Engine	29.86	2.28	0.21	32.34	29.83	2.27	0.21	32.31	51.74	3.94	0.36	56.04
Single-Engine Propeller Total			149.30	11.38	1.03	161.71	149.30	11.38	1.03	161.71	258.69	19.72	1.79	280.21
Multi-Engine Propeller														
Beech Baron 58	BEC58P	Multi-Engine	7.84	1.04	0.33	9.20	7.77	1.07	0.36	9.20	26.21	2.00	0.18	28.39
Cessna 441	CNA441	Multi-Engine	3.56	0.47	0.15	4.18	3.53	0.49	0.16	4.18	1.46	0.11	0.01	1.58
DeHavilland Twin Otter	DHC6	Multi-Engine	2.28	0.30	0.10	2.68	2.26	0.31	0.10	2.68	1.46	0.11	0.01	1.58
Shorts 330	SD330	Multi-Engine	0.28	0.04	0.01	0.33	0.28	0.04	0.01	0.33	0.00	0.00	0.00	0.00
Saab 340	SF340	Multi-Engine	0.28	0.04	0.01	0.33	0.28	0.04	0.01	0.33	0.00	0.00	0.00	0.00
Multi-Engine Propeller Total			14.25	1.88	0.60	16.74	14.14	1.95	0.65	16.74	29.12	2.22	0.20	31.54
Jet														
Citation Jet	CIT3	Jet	0.17	0.02	0.02	0.21	0.19	0.01	0.00	0.21	0.00	0.00	0.00	0.00
Canadair Challenger Jet 600	CL600	Jet	0.42	0.05	0.06	0.53	0.48	0.04	0.00	0.52	0.00	0.00	0.00	0.00
Canadair Challenger Jet 601	CL601	Jet	0.42	0.05	0.06	0.53	0.48	0.04	0.00	0.52	0.00	0.00	0.00	0.00
Cessna 500 Citation Jet	CNA500	Jet	0.17	0.02	0.02	0.21	0.19	0.01	0.00	0.21	0.00	0.00	0.00	0.00
Cessna 550 Citation Jet	CNA55B	Jet	0.02	0.00	0.00	0.03	0.03	0.00	0.00	0.03	0.00	0.00	0.00	0.00
Cessna 750 Citation X Jet	CNA750	Jet	0.17	0.02	0.02	0.21	0.19	0.01	0.00	0.21	0.00	0.00	0.00	0.00
Business Jet (1985)	COMJET	Jet	0.45	0.05	0.06	0.57	0.52	0.04	0.00	0.56	0.00	0.00	0.00	0.00
Dassault Falcon 20	FAL20	Jet	0.17	0.02	0.02	0.21	0.19	0.01	0.00	0.21	0.00	0.00	0.00	0.00
Gulfstream IV	GIV	Jet	0.42	0.05	0.06	0.53	0.48	0.04	0.00	0.52	0.00	0.00	0.00	0.00
Gulfstream V	GV	Jet	0.42	0.05	0.06	0.53	0.48	0.04	0.00	0.52	0.00	0.00	0.00	0.00
Gulfstream Astra 1125	IA1125	Jet	0.12	0.01	0.02	0.15	0.16	0.01	0.00	0.17	0.00	0.00	0.00	0.00
Learjet 24/25	LEAR25	Jet	0.25	0.03	0.04	0.32	0.29	0.02	0.00	0.31	0.00	0.00	0.00	0.00
Learjet 35/45/55/60	LEAR35	Jet	1.57	0.18	0.24	1.98	1.88	0.14	0.01	2.02	0.00	0.00	0.00	0.00
Mitsubishi MU-300 Diamond	MU3001	Jet	0.42	0.05	0.06	0.53	0.48	0.04	0.00	0.52	0.00	0.00	0.00	0.00
North American Saberliner 80	SABR80	Jet	0.08	0.01	0.01	0.10	0.09	0.01	0.00	0.10	0.00	0.00	0.00	0.00
Jet Total			5.25	0.59	0.79	6.62	6.15	0.45	0.03	6.62	0.00	0.00	0.00	0.00
Total AAD Operations	**681.89**													

Notes: Day: 7:00 a.m. to 6:59 p.m., Evening: 7:00 p.m. to 9:59 p.m., Night: 10:00 p.m. to 6:59 a.m.
Totals may not add to 100 percent due to rounding.

Source: Ricondo & Associates, Inc., based on 2004 Gillespie Field ALP Narrative Report 2000 INM study files; County of San Diego Department of Public Works and FAA Gillespie Field Tower interviews, August 2008; Field observations, August 2008, and *Gillespie Field Unconstrained Aviation Activity Forecast*,, September 2008.

Prepared by: Ricondo & Associates, Inc., August 2008.



Legend

- Residential Single-Family
- Residential Multi-Family
- Industrial
- Commercial
- Vacant Taxable
- Miscellaneous
- Runways
- Airport Boundary
- Parcels
- 2024 Proposed Action Alternative
- Municipal Boundary

Sources: SANGIS, SANDAG 2008, 2008 Parcel Data (Accessed August 2008), INM Model: Version 7.0; INM Contour Layer: 24pactr3Noise-Contours and Ricondo & Associates, Inc., 2008
Prepared by: Ricondo & Associates, Inc., October 2008

Exhibit I-17

0 1250 ft. north

CNEL Aircraft Noise Exposure Area:
2024 Proposed Action Alternative

Table I-24

Potential Population and Dwelling Counts: 2024 Proposed Action Alternative Conditions

Noise Level Range	Total Acreage Over Land[1/]	Off-Airport Area (Acres)[1/]	Total Dwellings	Estimated Population	Non-Residential Noise-Sensitive Parcels
2024 Five-Year Post Project					
65 to 70 CNEL	270.70	115.70	126.00	387.00	0.00
70 to 75 CNEL	112.70	5.67	7.00	23.00	0.00
75 CNEL and higher	81.80	0.00	0.00	0.00	0.00
65 CNEL and higher	465.20	121.37	133.00	410.00	0.00

Notes:
1/ Acreage totals may not add due to rounding.

Source: Ricondo & Associates, Inc., based on SANGIS 2008 parcel data (Accessed August 2008); 2000 U.S. Census population data; INM noise contours, August 2008.
Prepared by: Ricondo & Associates, Inc., 2008.

1.5.4.3 Land Use Compatibility

The noise-sensitive land uses, as provided by San Diego County Tax Assessor's parcel records, potentially exposed to various levels of aircraft noise under 2024 No Action/No Project Alternative conditions were determined, as summarized in **Table I-25**. Of the 121 acres located off-airport exposed to aircraft noise of 65 CNEL and higher, approximately 43 acres are identified as residential use. The majority of the residential uses exposed to 65 CNEL and higher, 40 acres, are single-family in use and include 125 dwelling units. Multi-family residential uses located on three acres, including eight dwelling units, are exposed to aircraft noise of 65 CNEL and higher under 2024 No Action/No Project Alternative conditions. There are no non-residential noise-sensitive land uses located within the areas exposed to aircraft noise of 65 CNEL and higher.

1.5.5 Comparison of 2024 Proposed Action Alternative with 2024 No Action/No Project Alternative Conditions (FAA NEPA Comparison)

The following sections compare 2024 Proposed Action Alternative conditions with 2024 No Action/No Project Alternative conditions.

1.5.5.1 Noise Exposure Map

Exhibit I-18 depicts a comparison of the 65 CNEL and higher noise exposure area under 2024 Proposed Action Alternative conditions compared with 2024 No Action/No Project Alternative conditions. To the north and west, the 2024 Proposed Action Alternative conditions noise exposure area is slightly larger than the 2024 No Action/No Project Alternative noise contour. The increase in the 2024 Proposed Action Alternative conditions size can be attributed to the larger number of aircraft operations at the Airport than in the same year without the project implementation (2024 No Action/No Project). The increase is a result of forecasted operational constrained conditions for the No Action/No Project Alternative compared to an unconstrained for the Proposed Action Alternative. The number of AAD operations at the Airport increases to 682 AAD operations under 2024 Proposed Action Alternative conditions, compared to 620 operations under 2024 No Action/No Project Alternative conditions. This represents a 10 percent increase in operations between Proposed Action Alternative and No Action/No Project Alternative conditions in the year 2024.

Table I-26, below, provides a comparison between 2024 No Action/No Project Alternative conditions and 2024 Proposed Action Alternative conditions. The total area of off-airport land exposed to aircraft noise of 65 CNEL and higher increases by 18 acres under 2024 Proposed Action Alternative conditions compared to 2024 No Action/No Project Alternative conditions.

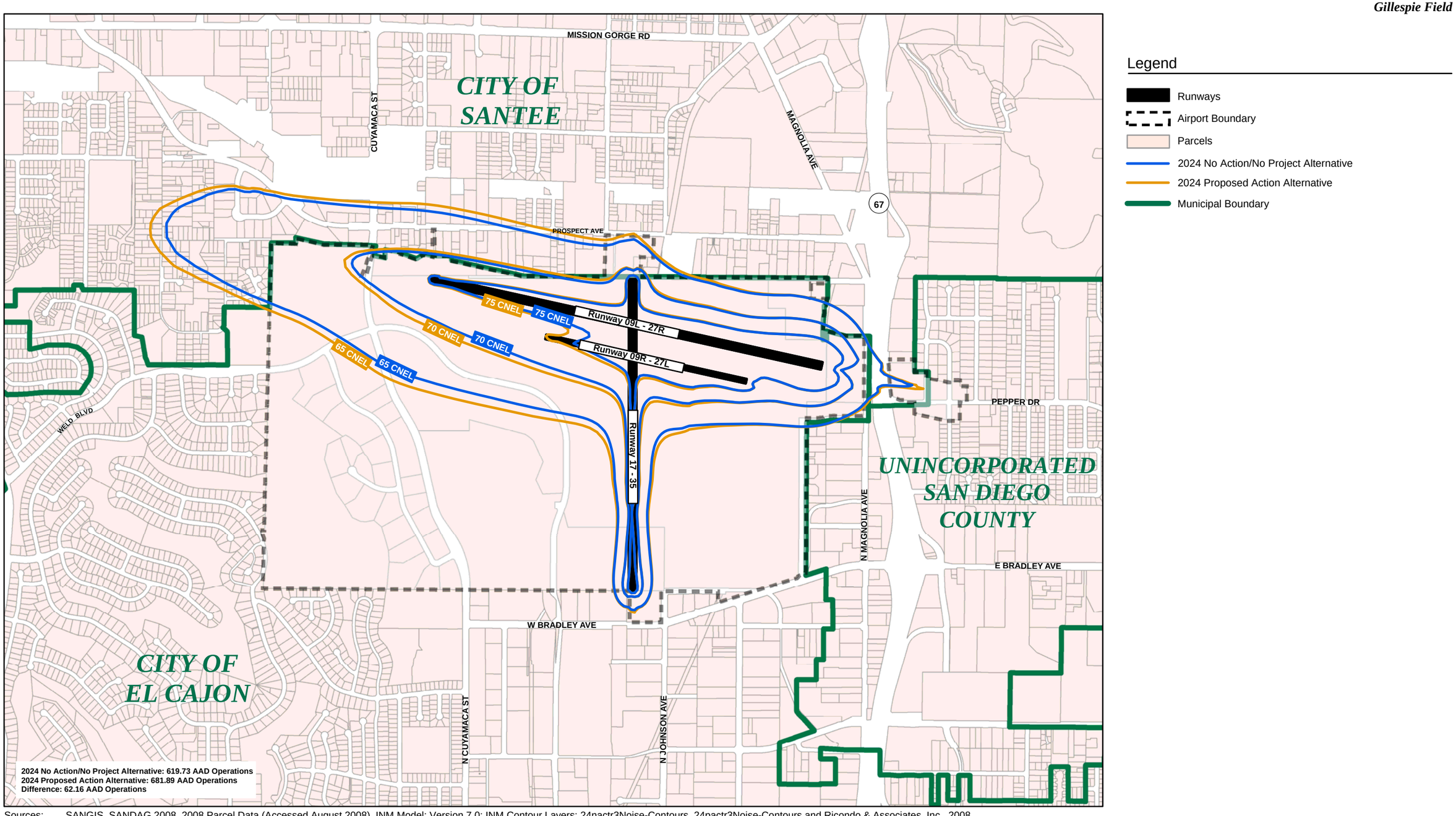
Table I-25

Potential Impacts on Residential and Non-Residential Noise-Sensitive Uses: 2024 Proposed Action Alternative Conditions

	Unincorporated San Diego County	City of El Cajon	City of Santee	Total
65 CNEL and Higher				
Residential				
Single-Family				
Units	0.00	0.00	125.00	125.00
Acres	0.00	0.00	39.89	39.89
Population	0.00	0.00	386.00	386.00
Multi-Family				
Units	0.00	0.00	8.00	8.00
Acres	0.00	0.00	3.46	3.46
Population	0.00	0.00	24.00	24.00
Total Residential				
Units	0.00	0.00	133.00	133.00
Acres	0.00	0.00	43.35	43.35
Population	0.00	0.00	410.00	410.00
Non-Residential Noise-Sensitive Uses				
Schools				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Religious Facilities				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Hospitals				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Hospitals/Convalescent Facilities				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Parks				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Libraries				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Total Noise-Sensitive Facilities				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Total Noise-Sensitive Area (Acres)	**0.00**	**0.00**	**43.35**	**43.35**

Notes:
1/ Acreage totals may not equal the sum of individual values due to rounding
2/ Population reflects 2000 Census data

Source: Ricondo & Associates, Inc., based on SANGIS 2008 parcel data (Accessed August 2008); 2000 U.S. Census population data; INM noise contours, August 2008.
Prepared by: Ricondo & Associates, Inc., August 2008.



Sources: SANGIS, SANDAG 2008, 2008 Parcel Data (Accessed August 2008), INM Model: Version 7.0; INM Contour Layers: 24nactr3Noise-Contours, 24pactr3Noise-Contours and Ricondo & Associates, Inc., 2008
Prepared by: Ricondo & Associates, Inc., October 2008

Exhibit I-18

0 1250 ft. north

CNEL Aircraft Noise Exposure Area:
Comparison between 2024 No Action/No Project Alternative and 2024 Proposed Action Alternative

Table I-26

Summary of Potential Noise Exposure Effects: 2024 Proposed Action Alternative Conditions Compared with 2024 No Action/No Project Alternative Conditions

Noise Level Range	Total Acreage Over Land[3/]	Off-Airport Area (Acres)[3/]	Total Dwellings	Estimated Population	Non-Residential Noise-Sensitive Parcels
Five-Year Post Project (2024)					
65 to 70 CNEL	270.7	115.7	126.00	387.00	0.00
70 to 75 CNEL	112.7	5.668	7.00	23.00	0.00
75 CNEL and higher	81.80	0.00	0.00	0.00	0.00
Total 65 CNEL and higher	465.2	121.368	133.00	410.00	0.00
No Action (2024) [1/]					
65-70 CNEL	249.2	99.45	93.00	289.00	0.00
70-75 CNEL	104.4	3.607	6.00	19.00	0.00
75 ≥ CNEL	75.88	0.00	0.00	0.00	0.00
Total 65 CNEL and higher	429.48	103.057	99.00	308.00	0.00
Difference Between Five-Year Post Project (2024) and No Action (2024) [1/, 2/]					
65-70 CNEL	21.5	16.25	33.00	98.00	0.00
70-75 CNEL	8.3	2.06	1.00	4.00	0.00
75 ≥ CNEL	5.92	0.00	0.00	0.00	0.00
Total 65 CNEL and higher	35.72	18.31	34.00	102.00	0.00

Notes:

1/ A positive value indicates that the Project (2024) reflects an increase in the impacts compared with No Action (2024); a negative number indicates that Project (2024) reflects a decrease in impacts. The values reported in each cell above indicate a net difference. Some jurisdictions may experience increased noise levels while other areas may experience a decrease.

2/ Population and dwelling unit information for 2019 conditions is reported using a year 2000 Census data base.

3/ Acreage totals may not equal the sum of individual values.

Source: Ricondo & Associates, Inc., based on SANGIS 2008 parcel data (Accessed August 2008); 2000 U.S. Census population data; INM noise contours, August 2008.

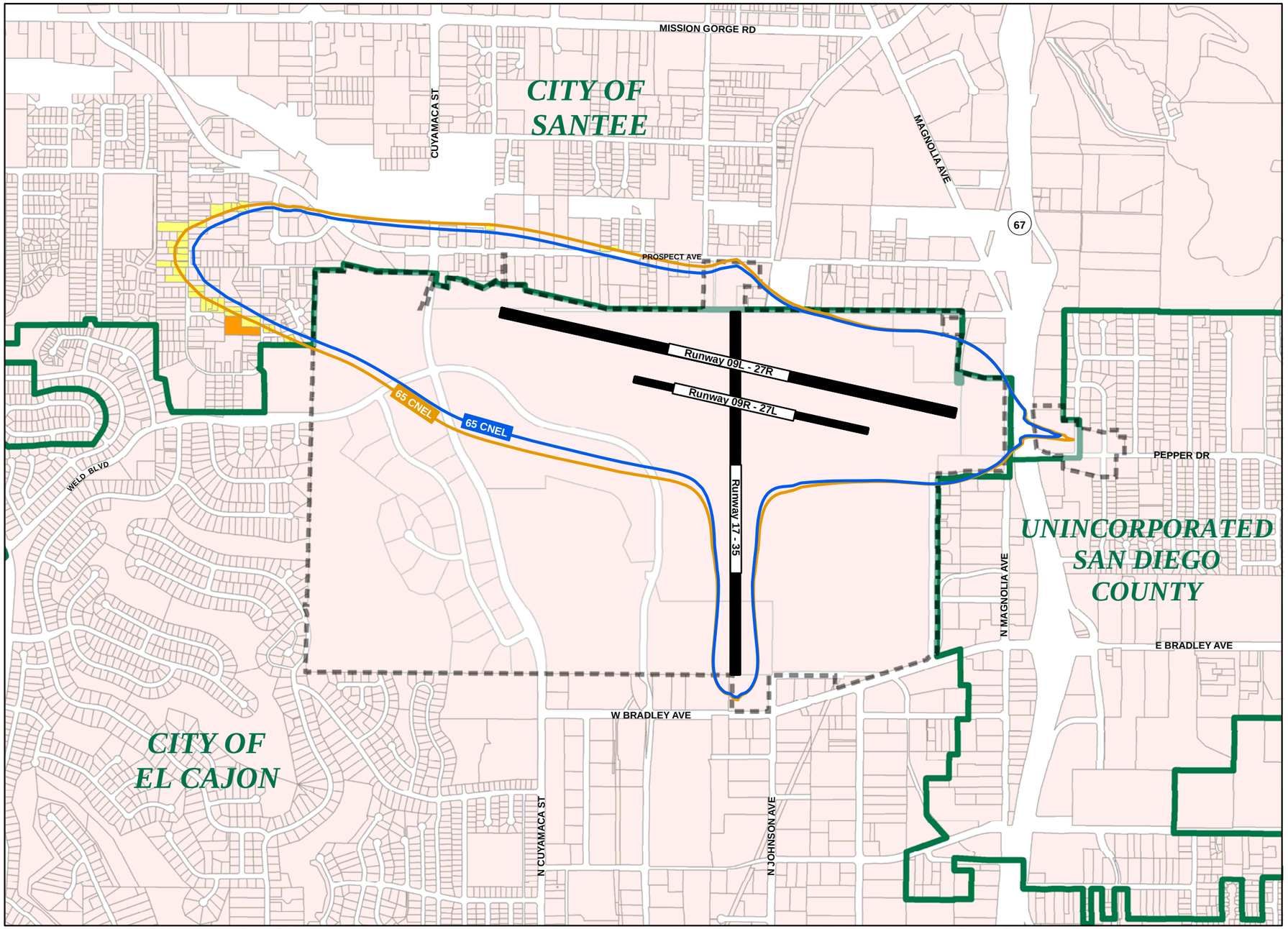
Prepared by: Ricondo & Associates, August 2008.

1.5.5.2 Population and Dwelling Impact

Table I-26 presents a comparison of the population and dwelling unit counts for 2024 No Action/No Project Alternative conditions and 2024 Proposed Action Alternative conditions. Under 2024 Proposed Action Alternative, the number of dwelling units exposed to aircraft noise of 65 CNEL and higher would increase by 34 dwelling units and the total population would increase by 98 people in comparison to 2024 No Action/No Project Alternative conditions. Approximately 33 dwelling units and 97 people would be exposed to aircraft noise of between 65 and 70 CNEL and one dwelling unit and four people would be exposed to aircraft noise between 70 and 75 CNEL.

1.5.5.3 Land Use Compatibility

Exhibit I-19 depicts the location and **Table I-27** shows a summary of areas by jurisdiction that would be newly exposed to aircraft noise of 65 CNEL and higher under 2024 Proposed Action Alternative conditions compared to 2024 No Action/No Project Alternative conditions. As shown in **Table I-27**, all newly exposed areas fall within the City of Santee and as seen on **Exhibit I-19**, are located directly northwest of the Airport, just north of the City of El Cajon city limits. Approximately nine acres of land developed with single-family residential use and one acre of land developed with multi-family residential use would be newly exposed to aircraft noise of 65 CNEL and higher under 2024 Proposed Action Alternative conditions. No new non-residential noise-sensitive facilities would be impacted.



Legend

- Residential Single-Family
- Residential Multi-Family
- Runways
- Airport Boundary
- Parcels
- 2024 No Action/No Project Alternative
- 2024 Proposed Action Alternative
- Municipal Boundary

Sources: SANGIS, SANDAG 2008, 2008 Parcel Data (Accessed August 2008), INM Model: Version 7.0; INM Contour Layers: 24nactr3Noise-Contours, 24pactr3Noise-Contours and Ricondo & Associates, Inc., 2008
Prepared by: Ricondo & Associates, Inc., October 2008

Exhibit I-19

0 1250 ft.

north

CNEL Aircraft Noise Exposure Area:
Location of Newly Exposed Land Use
(Comparison between 2024 Proposed Action Alternative and 2024 No Action/No Project Alternative)

Table I-27

Potential Residential and Noise Sensitive Land Use Areas: 2024 Proposed Action Alternative Compared with 2024 No Action/No Project Alternative Conditions

65 CNEL and Higher	Unincorporated San Diego County	City of El Cajon	City of Santee	Total
Residential				
Single-Family				
Units	0.00	0.00	32.00	32.00
Acres	0.00	0.00	9.04	9.04
Population	0.00	0.00	96.00	96.00
Multi-Family				
Units	0.00	0.00	2.00	2.00
Acres	0.00	0.00	1.41	1.41
Population	0.00	0.00	6.00	6.00
Total Residential				
Units	0.00	0.00	34.00	34.00
Acres	0.00	0.00	10.44	10.44
Population	0.00	0.00	102.00	102.00
Noise-Sensitive Uses				
Schools				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Religious Facilities				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Hospitals				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Hospitals/Convalescent Facilities				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Parks				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Libraries				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Total Noise-Sensitive Facilities				
Number	0.00	0.00	0.00	0.00
Acres	0.00	0.00	0.00	0.00
Total Noise-Sensitive Area (Acres)	**0.00**	**0.00**	**10.44**	**10.44**

Source: Ricondo & Associates, Inc., based on SANGIS 2008 parcel data (Accessed August 2008); 2000 U.S. Census population data; INM noise contours, August 2008.
Prepared by: Ricondo & Associates, Inc., August 2008.

1.5.5.4 Federal Standard Threshold of Significance Analysis

As described previously, an increase in noise of 1.5 CNEL within the 2024 Proposed Action Alternative 65 CNEL noise exposure area as compared to the 2024 No Action/No Project Alternative would represents a potentially significant noise impact according to FAA/NEPA standards.

As described in the preceding sections, no new or existing areas exposed to aircraft noise of 65 CNEL and higher levels under the 2024 Proposed Action Alternative would be exposed to changes of 1.5 CNEL and higher compared to 2024 No Action/No Project Alternative conditions. Therefore, no potentially significant noise impacts are anticipated.

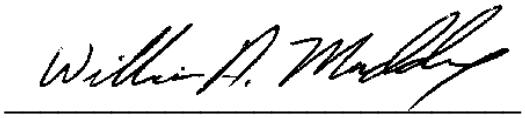
NOISE IMPACT ANALYSIS
GILLESPIE FIELD 70-ACRE REDEVELOPMENT PROJECT
SAN DIEGO COUNTY, CALIFORNIA

Prepared for:

County of San Diego
Department of Public Works
5469 Kearny Villa Road, Suite 305
San Diego, California 92123-1666

Prepared by:

AECOM
1420 Kettner Boulevard, Suite 500
San Diego, California 92101
(619) 233-1454
Fax (619) 233-0952



William Maddux, County of San Diego Approved Consultant
Signature

June 29, 2011
Updated September 6, 2011

TABLE OF CONTENTS

Section **Page**

LIST OF FIGURES

LIST OF TABLES

This page intentionally left blank.

GLOSSARY OF TERMS AND ACRONYMS

°F	degrees Fahrenheit
AAD	Annual Average Day
AMSL	above mean sea level
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CNEL	Community Noise Exposure Level
County	County of San Diego
dB	decibel(s)
dBA	a-weighted decibel(s)
DNL	day-night noise level
EA	environmental assessment
FAA	Federal Aviation Administration
FTA	Federal Transit Administration
HVAC	heating, ventilation, and air conditioning
Hz	hertz
in/sec ppv	inches per second peak particle velocity
L_{eq}	equivalent sound level
NEPA	National Environmental Policy Act
NSLU	noise sensitive land uses
PEIR	program environmental impact report
SR	State Route

This page intentionally left blank.

EXECUTIVE SUMMARY

The County of San Diego (County) is proposing to implement improvements at Gillespie Field Airport, located in the City of El Cajon, in San Diego County, California. The Proposed Action site is bounded by Airport Drive to the north, Denny Way to the south, Wing Avenue to the east, and Joe Crosson Drive to the west in the City of El Cajon. Regional access to the airport is provided by State Route 67 (SR-67), located approximately 1.5 miles east of Gillespie Field Airport.

The Proposed Action Alternative consists of the redevelopment of a 70-acre site, previously the El Cajon Speedway, from nonaviation use to aviation use. The Federal Aviation Administration (FAA) required the County to convert the use of the site to aviation purposes upon the expiration of a 50-year lease to the El Cajon Speedway. This change in land use includes the installation of a taxiway, apron, and drainage improvements (approximately 15 acres), and later aviation development by private developers (approximately 55 acres). Future improvements to be completed by private developers may include rectangular and T-hangar spaces, conventional hangar space, aircraft tie-downs, apron area, automobile parking, aircraft maintenance space, and aviation office and business space. The entire site is proposed for development, potentially including an existing area preserving the San Diego ambrosia.

This analysis identifies sensitive noise receptors potentially affected by the Proposed Action, describes existing noise levels at and in the vicinity of the receptors, and predicts the Proposed Action's construction and operational noise levels. This report was prepared in accordance with the *County of San Diego, Department of Planning and Land Use, Guidelines for Determining Significance and Report Format and Content Requirements, Noise, January 2009* (County of San Diego 2009). Additionally, FAA guidance and thresholds are used to determine air traffic noise impacts. The results of this noise study will be incorporated into separate California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) environmental documents. The program environmental impact report and environmental assessment (PEIR and EA) will be prepared by the County and FAA, respectively.

The Proposed Action site is generally flat and level with surrounding roadways and land uses. The City of El Cajon General Plan designates the 70-acre site as an Industrial Park and is zoned for manufacturing. Gillespie Field also has a Special Development Area overlay in addition to the land use designations. The 70-acre site is located in

Special Development Areas 5 and 6. The purpose of this overlay is to allow flexibility for uses within Gillespie Field, specifically for airport-related support facilities and process office uses as well as special development standards. The Proposed Action site is surrounded by industrially zoned properties. Within the industrially and commercially zoned areas, there are the three churches, Foothills Christian Church and Christians Who Care Ministries along Bradley Avenue and the Celebration of Faith Lutheran Church along Magnolia Avenue, both of which would be considered noise-sensitive uses.

Land adjacent to the airport contain existing industrial and residential uses to the north (along Prospect Avenue), and industrial and commercial uses to the east (along Magnolia Avenue) and to the south (along Bradley Avenue). Airport-related industrial and commercial uses are located to the west of the airport. Further west and southwest of airport property, residential and other noise sensitive land uses predominate. Farther east of the airport, across SR-67, are residential uses. The nearest school to the project site is Chaparral High School approximately 3,000 feet west of the project site along North Cuyamaca Street. Potential noise sensitive land uses affected by the Proposed Action include churches, a school, and residential land uses.

Operation of the proposed development would generate additional vehicle trips and aircraft operations. The traffic generated by the proposed development would increase off-site traffic noise levels by a less than significant amount. Similarly, aircraft operations associated with the Proposed Action would increase off-site aircraft noise levels by a less than significant amount. Additionally, an analysis of the near-term cumulative noise level increases associated with combined traffic and aircraft would result in a less than significant increase in off-site noise levels. Thus, there would be no adverse noise impacts associated with project traffic or aircraft operations, and no mitigation required.

With implementation of design considerations, nonaircraft activities associated with operation of the proposed development, including the proposed aviation-oriented business spaces and hangars, would not exceed the noise ordinance property line limits. Design considerations include limitations on heating, ventilation, and air conditioning (HVAC) noise levels, building orientation and façade design recommendations, and a requirement to prepare a noise assessment demonstrating compliance with the noise ordinance.

Construction noise levels from the Proposed Action would result primarily from the operation of construction vehicles and equipment for site grading and construction of

new facilities. Construction of the Proposed Action would increase short-term noise levels at adjacent industrially zoned properties but these noise levels would not exceed the County noise ordinance limits for general construction activities or impulsive noise sources; thus, construction noise impacts would be less than significant. Additionally, a review of cumulative projects in the project area indicates that other projects are at sufficient distance so that noise associated with the Proposed Action would not combine to create a cumulatively considerable impact.

This page intentionally left blank.

1.0 INTRODUCTION

The County of San Diego (County) is proposing improvements at a site at the Gillespie Field Airport, located in El Cajon, in San Diego County, California (Figure 1). The Proposed Action site is bounded by Airport Drive to the north, Denny Way to the south, Wing Avenue to the east, and Joe Crosson Drive to the west in the City of El Cajon (Figure 2). Regional access to the airport is provided by State Route (SR-67), located approximately 1.5 miles east of Gillespie Field Airport.

This noise analysis draws upon studies prepared for the Proposed Action by EIP Associates (*Noise Technical Report, Redevelopment of 70-Acre Parcel and Land Acquisition, Gillespie Field, El Cajon, San Diego County, California* [EIP Report]) and Ricondo Associates (*Gillespie Field Aircraft Noise Analysis* [Ricondo Report]). Additionally, this analysis evaluates predicted traffic volumes evaluated in the *Traffic Impact Analysis Technical Report, 70-Acre Redevelopment Project, Gillespie Field, El Cajon, California* prepared by LOS Engineering in September 2011.

The purpose of this noise analysis is to predict noise levels that would be anticipated during construction and subsequent operations and to determine if the noise levels would exceed the applicable noise standards of the County of San Diego Noise Ordinance (County of San Diego 2006) and General Plan Noise Element (County of San Diego 2011), or the Gillespie Field Airport Land Use Compatibility Plan. This analysis identifies sensitive noise receptors potentially affected by the Proposed Action, describes existing noise levels at and in the vicinity of the receptors, and predicts the Proposed Action's construction and operational noise levels. This report was prepared in accordance with the County of San Diego, Department of Planning and Land Use, Guidelines for Determining Significance and Report Format and Content Requirements, Noise, January 2009 (County of San Diego 2009). Additionally, Federal Aviation Administration (FAA) guidance and thresholds are used to determine air traffic noise impacts. The results of this noise study will be incorporated into separate CEQA and NEPA environmental documents. The PEIR and EA will be prepared by the County and FAA, respectively.

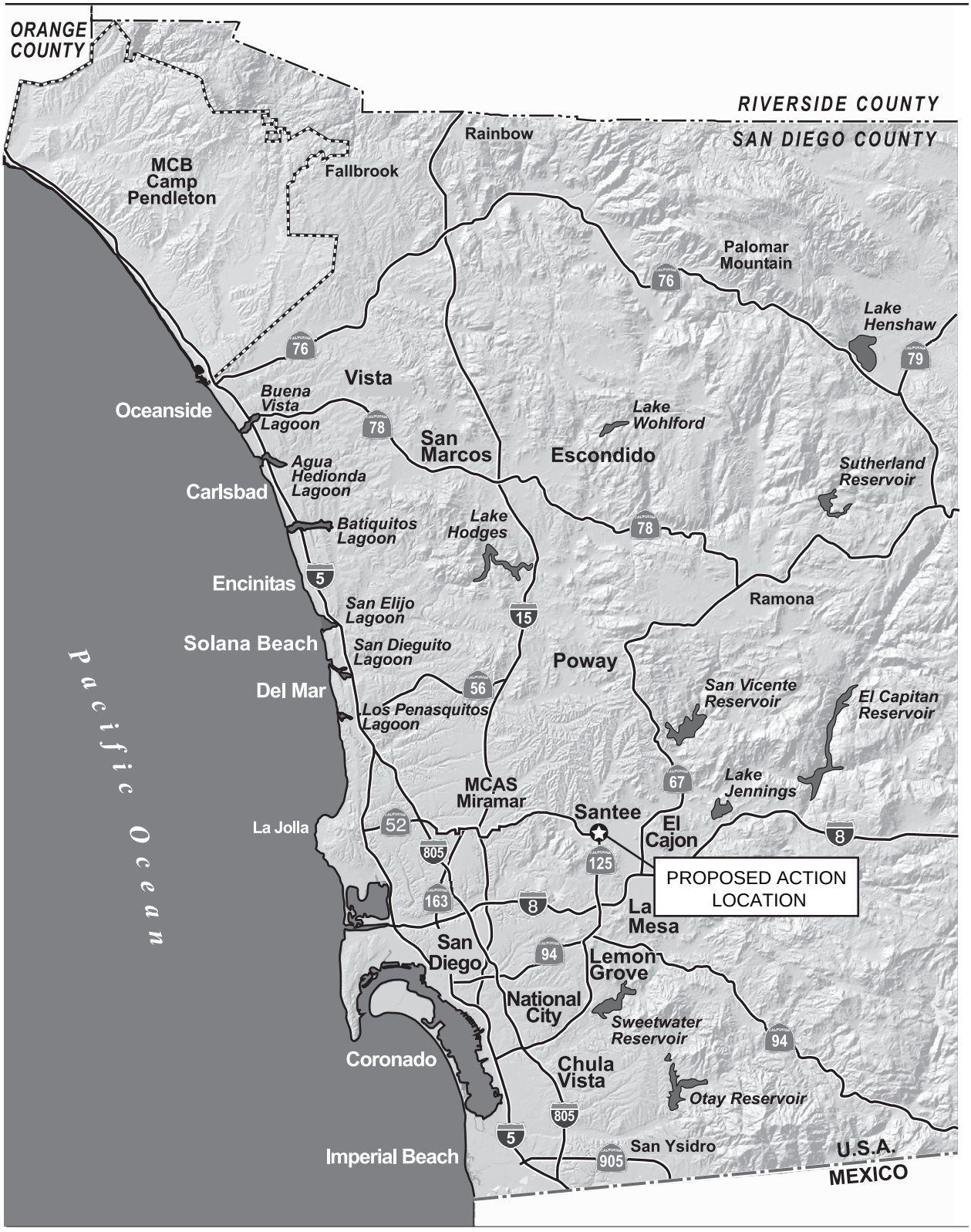


Figure 1
Regional Map

NO SCALE

Figure 2
Vicinity Map

1.1 Project Description

Proposed Action Alternative

The Proposed Action Alternative consists of the redevelopment nonaviation use to aviation use of a 70-acre site, previously the El Cajon Speedway, located to the north and west of the intersection of Bradley Avenue and Wing Avenue in El Cajon (as shown in Figure 3). The FAA required the County to convert the use of the site to aviation purposes upon the expiration of a 50-year lease to the El Cajon Speedway. This change in land use includes the installation of a taxiway, apron, and drainage improvements (approximately 15 acres), and later aviation development by private developers (approximately 55 acres). Future improvements to be completed by private developers may include rectangular and T-hangar spaces, conventional hangar space, aircraft tie-downs, apron area, automobile parking, aircraft maintenance space, and aviation office and business space. The entire site is proposed for development, potentially including an area preserving the San Diego ambrosia.

Alternative A (66.9-acre Reduced Footprint Alternative)

Alternative A (66.9-acre Reduced Footprint Alternative) consists of developing 66.9 acres (15 acres apron and taxiway, and 51.9 acres aviation development) while preserving 3.1 acres (1.1 acres of San Diego ambrosia with 100-foot softscape buffer of 2 acres). This alternative is shown in Figure 4. Alternative A would include the installation of a taxiway, apron, and drainage improvements (approximately 15 acres) and the same type of private development described in the Proposed Action Alternative.

No Action Alternative

No redevelopment activities would occur at Gillespie Field on the 70-acre site with the No Action Alternative.

Surrounding Land Uses

Although Gillespie Field Airport is owned by the County, the 70-acre site is within the jurisdictional boundaries of the City of El Cajon and is bound immediately on the west

Source: County of San Diego 2009

No Scale

Figure 3

Proposed Airfield Improvements (Proposed Action Alternative)

P:\2009\09080141 Gillespie Noise\5.0 Graphics (Non-CAD)\5.4 Proj_Graphics\Figures\Fig 3 improvements.ai (dbrady) 5/7/09

Source: County of San Diego 2009

Figure 4
Proposed Airfield Improvements (Alternative A)

by Joe Crosson Drive, on the north by Airport Drive, on the east by Wing Avenue, and on the south by Floyd Smith Drive and West Bradley Avenue. The properties west of Joe Crosson Drive and north of Airport Drive are aviation-related uses, within Gillespie Field and include aircraft hangars, tie-downs, taxiways, and runways. Properties east of Wing Avenue are located in unincorporated San Diego County and are zoned for industrial uses (M54). Properties south of Floyd Smith Drive and Bradley Avenue are located within the City of El Cajon and are zoned for industrial uses.

1.2 Environmental Settings and Existing Conditions

Noise Terminology

The unit of measurement used to describe a noise level is the decibel (dB). Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, a doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; a halving of the energy would result in a 3-dB decrease.

The human ear is not equally sensitive to all frequencies within the sound spectrum. Therefore, a method called “A-weighting” is used to filter noise frequencies that are not audible to the human ear. The A-scale approximates the frequency response of the average young ear when listening to most ordinary everyday sounds. When people make relative judgments of the loudness or annoyance of a sound, their judgments correlate well with the A-scale levels of those sounds. Therefore, the “A-weighted” noise scale is used for measurements and standards involving the human perception of noise. In this report, all noise levels are A-weighted and “dBA” is understood to identify the A-weighted decibel.

In addition to noise levels, the duration or exceedance of noise over time is also important for the assessment of potential noise disturbance. Average noise levels over a period of minutes or hours are usually expressed as dBA L_{eq}, or the equivalent noise level for that period. The period of time average may be specified; $L_{eq(3)}$ would be a 3-hour average; when no period is specified, a 1-hour average is assumed.

The timing of noise is also an important factor to consider in assessing potential noise impacts as noise levels that may be acceptable during the day may create disturbance during evening or nighttime hours. The day-night noise level (DNL) and the Community Noise Equivalent Level (CNEL) are the energy average of the A-weighted sound levels

occurring during a 24-hour period. CNEL adds 5 dBA to the sound levels occurring between 7:00 p.m. and 10:00 p.m. and 10 dBA added to the sound levels occurring between 10:00 p.m. and 7:00 a.m. DNL is similar to CNEL but does not have the evening (7:00 p.m. to 10:00 p.m.) 5 dBA penalty. DNL is typically 1 dB below CNEL.

Human perception of noise has no simple correlation with acoustical energy. The perception of noise is not linear in terms of dBA or in terms of acoustical energy. Two equivalent noise sources do not sound twice as loud as one source. It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA, increase or decrease; that a change of 5 dBA is readily perceptible; and that an increase (decrease) of 10 dBA sounds twice (half) as loud (Caltrans 1998). Table 1 provides examples of common activities and the sound levels associated with those activities.

From the source to the receiver, noise changes both in level and frequency spectrum. The most obvious change is the decrease in noise as the distance from the source increases. The manner in which noise reduces with distance depends on the following important factors: ground absorption, atmospheric effects and refraction, shielding by natural and man-made features, noise barriers, diffraction, and reflection. For a point or stationary noise source, such as construction equipment, the attenuation or drop-off in noise level would be at least -6 dBA for each doubling of unobstructed distance between source and the receiver and could increase to -7.5 dBA depending on the acoustic characteristics of the intervening ground. For a linear noise source, such as vehicles traveling on a roadway, the attenuation or drop-off in noise level would be approximately -3 dBA for each doubling of unobstructed distance between source and the receiver and could increase to -4.5 dBA depending on the acoustic characteristics of the intervening ground.

A large object in the path between a noise source and a receiver can significantly attenuate noise levels at that receiver. The amount of attenuation provided by this “shielding” depends on the size of the object and the frequencies of the noise levels. Natural terrain features, such as hills and dense woods, as well as man-made features, such as buildings and walls, can significantly alter noise levels. Walls or berms are often specifically used to reduce or attenuate noise.

Noise sensitive receptors are generally considered humans engaged in activities, or occupying land uses, that may be subject to the stress of significant interference from noise. Human activities usually associated with sensitive receptors include, but are not

Table 1
Typical A-Weighted Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	— 110 —	Rock band
Jet fly-over at 1000 feet		
	— 100 —	
Gas lawn mower at 3 feet		
	— 90 —	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	— 80 —	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	**— 70 —**	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	**— 60 —**	
		Large business office
Quiet urban daytime	**— 50 —**	Dishwasher next room
Quiet urban nighttime	**— 40 —**	Theater, large conference room (background)
Quiet suburban nighttime		
	— 30 —	Library
Quiet rural nighttime		Bedroom at night, concert
	— 20 —	
		Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	**— 0 —**	Lowest threshold of human hearing

Source: Caltrans 1998

limited to, talking, reading, and sleeping. Land uses associated with noise sensitive human receptors include residential dwellings including mobile homes, hotels/motels, hospitals, nursing homes, educational facilities, and libraries. In addition to human receptors, protected animal species and their habitat may be considered sensitive noise receptors if located in proximity to operational noise sources, especially during their breeding season.

Setting and Location

The Proposed Action site is generally flat and level with surrounding roadways and land uses. On-site elevations range from approximately 393 feet above mean sea level (AMSL) in the southwest corner near the intersection of West Bradley Avenue and Wing Avenue to approximately 380 feet AMSL in the northeast corner near the intersection of Joe Crosson Drive and Airport Drive. The City of El Cajon General Plan designates the 70-acre site as Industrial Park. The 70-acre site on Gillespie Field is zoned for manufacturing. Gillespie Field also has a Special Development Area overlay in addition to the land use designations. Special Development Areas 1, 5, and 6 provide special development possibilities on Gillespie Field. The 70-acre site is located in Special Development Areas 5 and 6. The purpose of this overlay is to allow flexibility for uses within Gillespie Field, specifically for airport-related support facilities and process office uses as well as special development standards. The Proposed Action site is currently undeveloped and is surrounded by industrially zoned properties. Within the industrially and commercially zoned areas, there are three churches, Foothills Christian Church along Bradley Avenue and the Celebration of Faith Lutheran Church and Christians Who Care Ministries, along Magnolia Avenue, all of which may be considered noise-sensitive uses (EIP 2007).

Land adjacent to the airport contain existing industrial and residential uses to the north (along Prospect Avenue), industrial and commercial uses to the east (along Magnolia Avenue) and to the south (along Bradley Avenue). Airport related industrial and commercial uses are located to the west of the airport. Further west and southwest of airport property, residential and other noise sensitive land uses predominate. Farther east of the airport, across SR-67, are residential uses. The nearest school to the Proposed Action site is Chaparral High School approximately 3,000 feet west of the Proposed Action site along North Cuyamaca Street. Potential noise sensitive land uses affected by the Proposed Action include churches, a school, and residential land uses.

Existing Noise Conditions

Noise is generally defined as unwanted or objectionable sound. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and in the extreme, hearing impairment.

The predominant source of noise in the Proposed Action area is vehicle traffic on local streets adjacent to the Proposed Action site. Exceptions are noise from short-term

aircraft activity, including engine start-ups, taxiing, pre-take-off engine run-ups, and aircraft take-off and landing events at Gillespie Field. The existing noise environment in the Proposed Action area and at nearby sensitive receptors has been characterized through observations and noise level measurements.

Noise Measurements

Five 10-minute noise level measurements were conducted near the Proposed Action site and the surrounding vicinity on April 19, 2006, between the hours of 10:35 a.m. and 1:15 p.m. Based on the field observations noted in Table 2, the dominant noise source during these measurements was traffic on local roadways. Based on a review of traffic counts conducted by LOS Engineering in 2006 and 2011, the difference in roadway traffic volumes near the measurement locations averaged approximately 16 percent, which would represent an average change of 0.6 dBA in noise levels since 2006 (LOS Engineering 2007, 2011). As this order of change in noise levels is not perceivable, these measurements are still considered representative of the current conditions. Figure 5 shows the locations of all of the noise measurements. The results of the field noise measurements are summarized in Table 2.

Noise Observations

Although other noise sources occur in the vicinity of the Proposed Action site vehicular traffic is the primary source of noise on, and near, the Proposed Action site. Aircraft operations represent a significant secondary noise source in the vicinity of the measurements. The noise measurement locations represent the noise levels experienced near the airport for the existing sensitive land uses.

The existing aviation noise environment in the vicinity of the airport is characterized by occasional, random short-term noise events from aircraft landings and take-offs. Additional noise sources in the area include operations associated with light industrial activities on surrounding properties. The aircraft operating out of Gillespie Field are predominately private, single-engine propeller aircraft. The majority of the aircraft operations occur in the east-to-west direction (Ricondo 2008).

Table 2
Noise Measurement Data

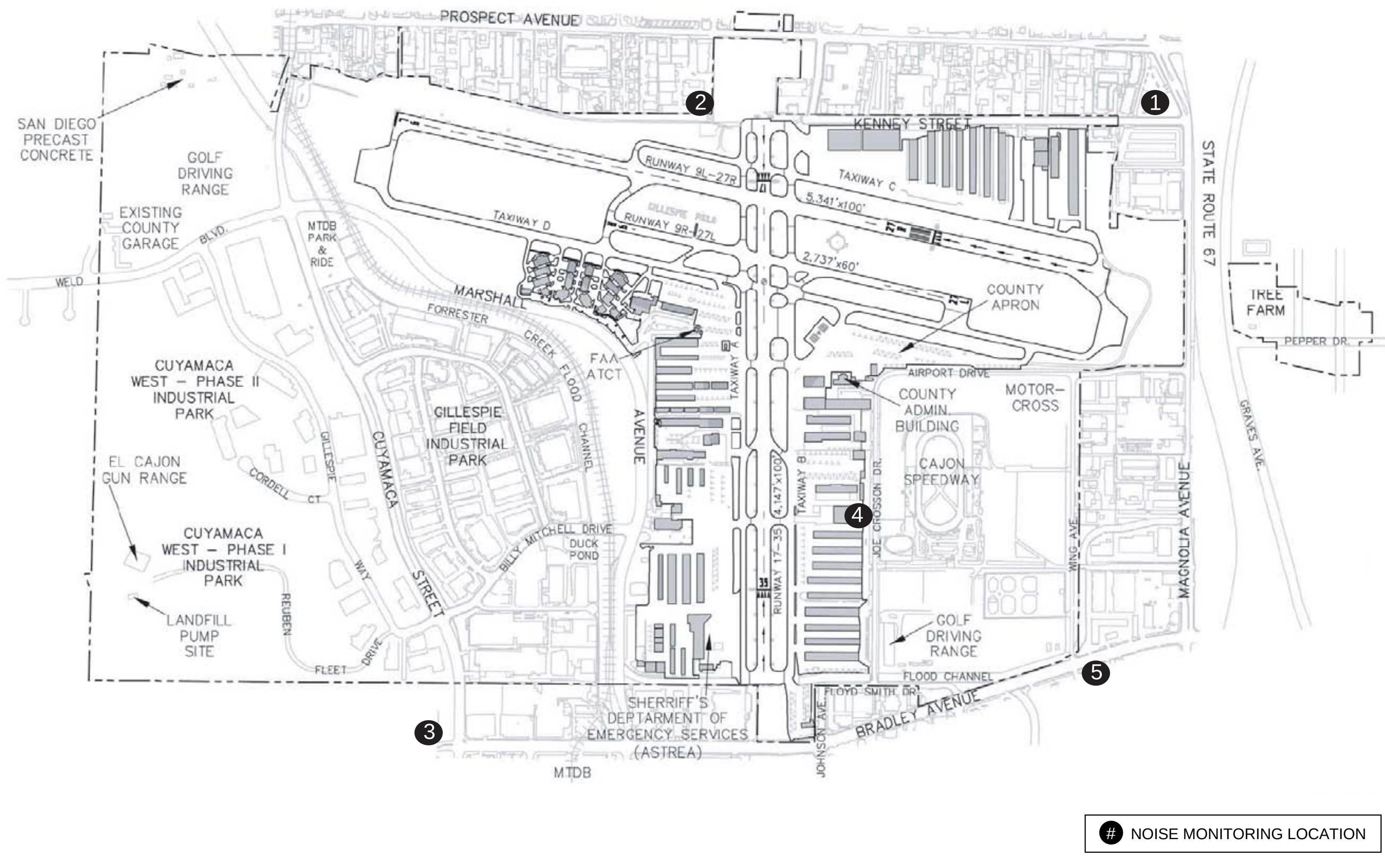
Site ID*	Location	Start Time	L_{eq} (dBA)	L_{min} (dBA)	L_{max} (dBA)	Noise Sources
1	Celebration of Faith Lutheran Church, 260 feet from Magnolia Avenue, between Kenney Street and Prospect Avenue.	10:35 a.m.	60.7	49.5	73.5	Primary: Vehicular traffic on Magnolia Avenue and in commercial parking lot. Secondary: Aircraft operations, including regular landings along the adjacent runway.
2	Town & Country Mobile Lodge, 10250 Prospect Avenue, 50 feet from Prospect Avenue near intersection with Cottonwood Avenue, near end of north-south runway.	11:15 a.m.	64.5	49.1	79.7	Primary: Vehicular traffic on Prospect Avenue. Secondary: Aircraft operations and industrial activities from adjacent uses.
3	Chaparral High School, 215 feet from Cuyamaca Street near intersection with Bradley Avenue, and Swift Lane.	12:00 p.m.	59.5	50.1	70.1	Primary: Vehicular traffic on Cuyamaca Street. Secondary: Aircraft operations and light rail operations.
4	Parking lot in front of existing aviation uses along Joe Crosson Drive, west side 15 feet from curb, across from Proposed Action site.	12:45 p.m.	56.4	46.5	76.8	Primary: Vehicular traffic on Joe Crosson Drive. Secondary: Aircraft operations, including regular take-offs and landings along the east-west runway.
5	Foothills Christian Church, 75 feet from Bradley Avenue south of intersection with Wing Avenue.	1:15 p.m.	66.8	50.8	90.5	Primary: Vehicular traffic on Bradley Avenue. Secondary: Aircraft operations and construction activities at the lot adjacent to the existing church (construction is for new church facilities).

* The Site ID corresponds to locations shown in Figure 5.

All measurements were taken on April 19, 2006, for 10 minutes.

Source: EIP 2007

P:\2009\09080141 Gillespie Noise\5.0 Graphics (Non-CAD)\5.4 Proj_Graphics\Figures\Fig 6 monitoring locs.ai (dbrady) 5/7/09



Source: EIP 2007

Figure 5
Noise Measurement Locations

Aircraft take-offs originate with aircraft taxiing to the runway, revving engines for several minutes, then running engines down to turn 180 degrees, and revving engines again, followed by accelerated movement to the opposite end of the runway until aircraft lift is achieved. Noise levels from aircraft landing flyovers (aircraft pass over the runway without start/stop on runway) were much lower than the aircraft take-offs, since engines are revved down for landings and revved up for take-offs.

Vehicular traffic on other local streets, including Bradley Avenue and Magnolia Avenue, is the predominant source of noise in the vicinity of the Proposed Action site, except for short-term, aircraft landing and take-off events at the airport. Most of the existing vehicular traffic noise is not directly attributable to operations at the Airport, but is from transient vehicles accessing local businesses or SR-67.

Existing Peak Hour Traffic

Traffic counts used in this noise assessment were taken by LOS Engineering and are reported in the *Traffic Impact Analysis, Technical Report, 70-Acre Redevelopment Project, Gillespie Field, El Cajon, California* (Proposed Action traffic report) (LOS 2011). Based on a review of the Proposed Action traffic report, the greatest traffic volumes on local roadways occur on Magnolia Avenue and Bradley Avenue. Existing, cumulative, and Proposed Action-related traffic volumes, including alternatives, are shown in Table 3.

Existing Aircraft Noise

The Ricondo Report analyzed existing and future aircraft operation for the Proposed Action. The Ricondo Report included a noise contour map, Figure 6 of this report, for the existing (2008) operations, which is based on an activity of 517.78 annual average day (AAD) operations (Ricondo 2008). The existing 65 dBA CNEL contour, shown in Figure 6, encompasses approximately 371 acres, the majority of which is located within the boundaries of Gillespie Field. Approximately 69 acres are located outside Gillespie Field, with the majority of the 69 acres located within the jurisdictional limits of the City of Santee.

Table 3
Existing and Projected Vehicular Traffic Data

Roadway	Traffic Volumes				
	Existing	Existing + Proposed Action Alternative	Existing + Alternative A	Existing + Cumulative + Proposed Action Alternative	Existing + Cumulative + Alternative A
Airport Drive					
Joe Crosson Drive to Wing Avenue	908	--[1]	--[1]	--[1]	--[1]
Wing Avenue to Magnolia Avenue	1,172	807	794	807	794
Bradley Avenue					
Cuyamaca Street to Marshall Avenue	4,526	4,864	4,844	5,313	5,293
Marshall Avenue to Johnson Avenue	7,393	7,815	7,791	8,207	8,183
Johnson Avenue to Pioneer Way	8,487	9,404	9,384	9,693	9,673
Pioneer Way to Wing Avenue	11,190	12,787	12,748	13,071	13,032
Wing Avenue to Magnolia Avenue	11,599	12,653	12,627	12,904	12,878
Magnolia Avenue to SR-67 SB Ramps	18,125	18,420	18,404	18,593	18,577
SR-67 SB Ramps to SR-67 NB Ramps	14,916	15,134	15,122	15,338	15,326
Floyd Smith Drive					
Joe Crosson Drive to Bradley Avenue	586	1,281	1,261	1,281	1,261
Joe Crosson Drive					
Floyd Smith Drive to Airport Drive	993	1,475	1,435	1,475	1,435
Johnson Avenue					
Floyd Smith Drive to Bradley Avenue	656	443	423	443	423
Bradley Avenue to Vernon Way	5,487	5,768	5,752	5,888	5,872
Magnolia Avenue					
Bradley Avenue to Denny Way	14,116	14,945	14,932	15,315	15,302
Denny Way to Airport Drive	8,410	9,239	9,226	9,609	9,596
Airport Drive to Kenney Street	9,581	9,820	9,807	15,315	10,177
Wing Avenue					
Bradley Avenue to Airport Drive	1,446	2,242	2,215	2,242	2,215
Pioneer Way					
Bradley Avenue to Cypress Lane	4,451	4,465	4,464	4,529	4,528

[1] All alternatives would result in a closure of the segment of Airport Drive.
Source: LOS Engineering 2011

1.3 Methodology and Equipment

Noise Measuring Methodology and Procedures

Noise Measurements

Noise measurements were taken as part of the EIP Report. EIP used a Larson Davis Laboratories model 720 (LD-720) sound level meter for short-term 1-hour equivalent measurements. All measured noise levels were measured on the slow response time and A-weighted.

Noise Modeling

Vehicular traffic noise levels were modeled using the Federal Highway Administration's Traffic Noise Model, version 2.5 (TNM2.5). Aircraft noise levels were modeled using the FAA's Integrated Noise Model.

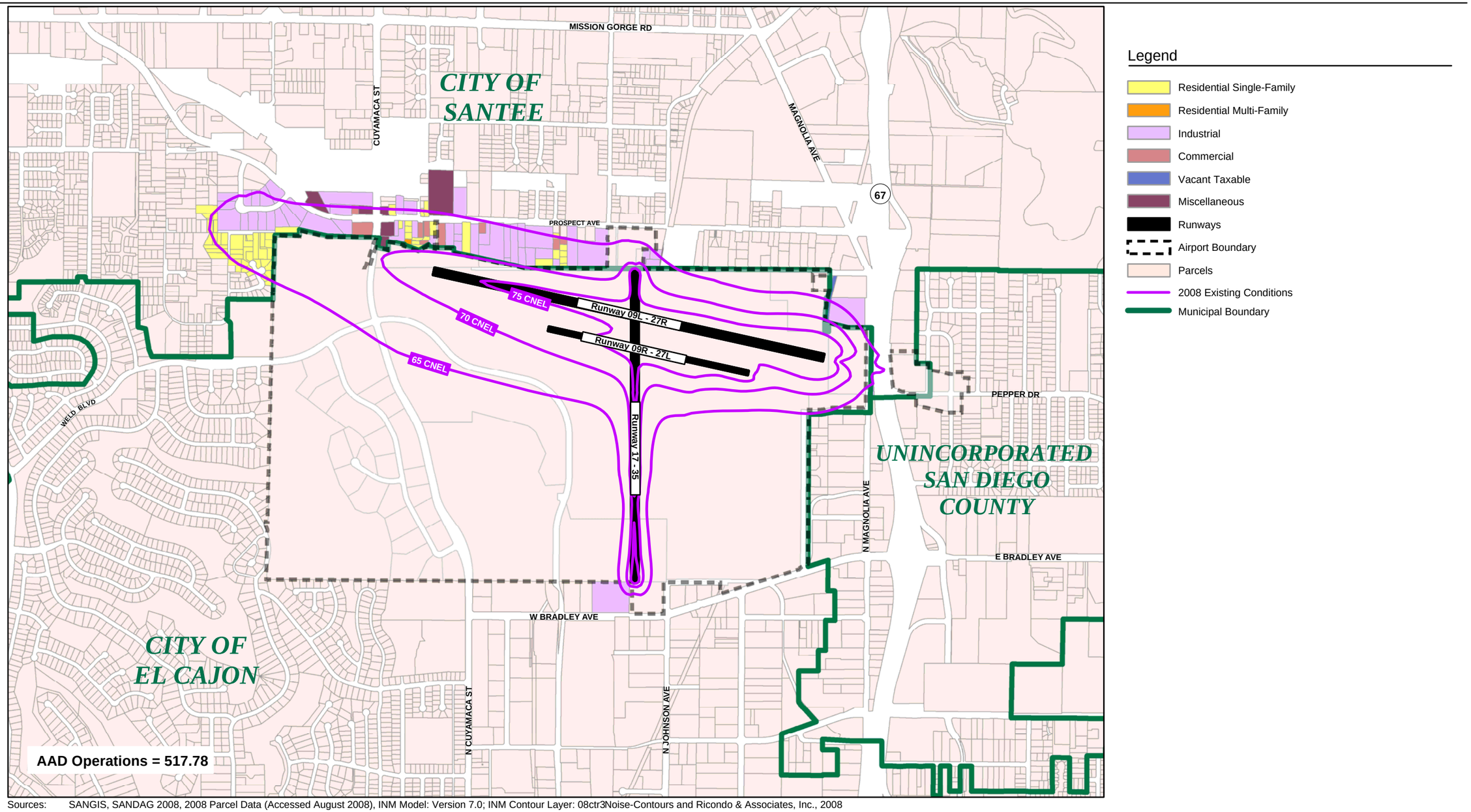
Noise Formulas and Calculations

Operational Noise

Traffic noise impacts were evaluated by review of traffic volume data in the Proposed Action traffic report, *Traffic Impact Analysis Technical Report, 70-Acre Redevelopment Project, Gillespie Field, El Cajon, California* (LOS Engineering 2011). Projected traffic noise level increases were predicted based on the traffic volume increase and standard equations for describing the relationships between traffic volumes and noise levels. Aircraft and traffic noise data were logarithmically combined for worst-case combined noise level impact assessment.

Construction Noise

Noise impacts from construction are a function of the noise generated by equipment, the distance to and sensitivity of nearby land uses, and the timing and duration of the noise-generating activities. Noise levels from construction activities are typically considered as point sources and would drop off at a rate of -6 dBA per doubling of distance over hard site surfaces, such as streets and parking lots. The drop-off rate would be approximately -7.5 dBA per doubling of distance for soft site surfaces, such as grass fields and open terrain with vegetation (FTA 2006).



Sources: SANGIS, SANDAG 2008, 2008 Parcel Data (Accessed August 2008), INM Model: Version 7.0; INM Contour Layer: 08ctr3Noise-Contours and Ricondo & Associates, Inc., 2008

Source: Ricondo & Associates, Inc. October 2008

0 1250 ft.

Figure 6
Existing Conditions (2008) Aircraft Noise Contours

This page intentionally left blank.

The magnitude of construction noise impacts depends on the type of construction activity, the noise level generated by various pieces of construction equipment, the duration of the activity, and the distance between the activity and noise sensitive receivers. As shown in Table 4, maximum noise levels from construction equipment range from approximately 70 dBA to 90 dBA at 50 feet from the source (FTA 2006). The noise levels vary for each type of equipment, as equipment may come in different sizes and with different engines. Construction equipment noise levels also vary as a function of the activity level or duty cycle. In a typical construction project, the loudest short-term noise levels are those of earth-moving equipment under full load, which are on the order of 85 to 90 dBA at a distance of 50 feet from the source.

Table 4
Noise Ranges of Typical Construction Equipment

Equipment	Maximum Noise Level (dBA) 50 ft from Source
All other equipment (5 HP or less)	85
Backhoe	80
Boring Jack Power Unit	80
Chain Saw	85
Compactor (ground)	80
Compressor (air)	80
Concrete Mixer Truck	85
Concrete Pump	82
Concrete Saw	90
Dozer	85
Dump Truck	84
Excavator	85
Flat Bed Truck	84
Front End Loader	80
Generator (25 KVA or less)	70
Generator (more than 25 KVA)	82
Grader	85
Horizontal Boring Hydraulic Jack	80
Hydra Break Ram	90
Jackhammer	85
Paver	85
Pneumatic Tools	85
Pumps	77
Scraper	85
Soil Mix Drill Rig	80

Equipment	Maximum Noise Level (dBA) 50 ft from Source
Tractor	84
Vacuum Street Sweeper	80
Vibratory Concrete Mixer	80
Welder	73

HP = horse power
KVA = kilovolt ampere
Source: FTA 2006

Typical construction projects, with equipment moving from one point to another, work breaks, and idle time, have long-term noise averages that are lower than louder short-term noise events. Additionally, due to the dynamic nature of a construction-site, noise levels are calculated from the center of the activity. For purposes of analysis of the Proposed Action, a maximum 1-hour average noise level of 75 dBA L_{eq} at a distance of 50 feet from the center of typical construction activity is assumed to occur. Noise levels of other activities, such as building erection or paving, would be less.

2.0 NOISE SENSITIVE LAND USES (NSLU) AFFECTED BY AIRBORNE NOISE

2.1 Guidelines for the Determination of Significance

Guidelines for the determination of significance of environmental noise impacts for this and other impact sections were promulgated by the County of San Diego in January 2009 in *Guidelines for Determining Significance – Noise* and *Report Format and Content Requirements – Noise* (County of San Diego 2009).

The Proposed Action would result in a significant impact if the implementation of the Proposed Action would result in the exposure of any on-site or off-site existing or reasonably foreseeable future noise sensitive land uses (NSLU) to exterior or interior noise (including noise generated from the project, together with noise from roads, railroads, airports, heliports, and all other noise sources) in excess of any of the following:

A. Exterior Locations:

   i. 60 dB (CNEL); or
   ii. An increase of 10 dB CNEL over preexisting noise.

In the case of single-family residential detached NSLU, exterior noise shall be measured at an outdoor living area that adjoins and is on the same lot as the dwelling, and that contains at least the following minimum area:

(1)	Net lot area up to 4,000 square feet:	400 square feet
(2)	Net lot area 4,000 square feet to 10 acres:	10% of net lot area
(3)	Net lot area over 10 acres:	1 acre

For all actions, exterior noise shall be measured at all exterior areas provided for group or private usable open space.

B. Interior Locations:

45 dB (CNEL) except for the following cases:

i. Rooms that are usually occupied only a part of the day (schools, libraries, or similar facilities), the interior 1-hour average sound level due to noise outside should not exceed 50 decibels (A).

ii. Corridors, hallways, stairwells, closets, bathrooms, or any room with a volume less than 490 cubic feet.

Federal Aviation Administration

Existing FAA guidance specifies that a detailed noise analysis may be required if there is a 1.5-dBA increase in DNL/CNEL in noise sensitive areas exposed to 65 dBA DNL/CNEL or greater (FICON 1992). 14 CFR Section 150.21(d)(1) indicates a 1.5 dB CNEL increase in areas exposed to noise levels of 65 dBA DNL/CNEL or greater is considered a significant increase. In practice, it has been found that unless a proposed airport project will cause at least a 1.5-dBA increase within the 65-dBA DNL/CNEL or greater area, there will not be a 3-dBA or greater increase in the 60- to 65-dBA DNL/CNEL area (FICON 1992).

2.2 Potential Noise Impacts

NSLU are defined as “any residence, hospital, school, hotel, resort, library, or similar facility where quiet is an important attribute of the environment” (County of San Diego 2009).

Potential Build-out Noise Conditions and Impacts

No NSLU currently exist on-site at the 70-acre site and none are proposed to be developed as part of the Proposed Action. Thus, no impacts would occur to on-site NSLU.

Design Considerations and Mitigation Measures

No NSLU currently exist on-site and none are proposed to be developed as part of the Proposed Action. Thus, no impacts to on-site NSLU would occur and no design or mitigation measures are proposed or required.

2.3 Off-site Direct and Cumulative Noise Impacts

Direct Noise Impacts

County guidelines indicate direct off-site noise impacts would occur if project related noise sources generate more than double the existing sound energy. The primary off-site noise sources associated with the Proposed Action would be vehicular traffic and aircraft.

According to the 2011 Proposed Action traffic report, the Proposed Action Alternative would generate approximately 1,407 average daily trips. Alternative A would generate fewer motor vehicle trips; approximately 1,327 average daily trips (LOS Engineering 2011). The Proposed Action Alternative would also result in closure of Airport Drive (a private road) between Joe Crosson Drive and Wing Avenue. The closure of Airport Drive would not generate new traffic but would cause a redistribution of existing traffic (LOS Engineering 2011).

The off-site NSLU of principal interest are the residential land uses to the west of North Cuyamaca Street, north of Prospect Avenue, and east of SR-67, which consist primarily of single-family residences. While churches, Foothills Church and Christians Who Care Ministries, are located south of the project site along Bradley Avenue, and another, Celebration of Faith Lutheran Church, is located between Kenney Street and Prospect Avenue, on Magnolia Avenue, these uses are located in industrial or general commercial zones. Additionally, the churches do not include weekday activities that would be affected by traffic associated with the Proposed Action, such as school facilities. Off-site impacts to these churches are not anticipated, because the primary off-site noise source at these locations associated with the Proposed Action would be traffic, which is greatest during weekday peak traffic periods. Thus, the nearest nonresidential off-site NSLU of concern in this analysis is Chaparral High School approximately 3,000 feet southwest of the Proposed Action site. Chaparral High School is used as the NSLU of primary concern for both and traffic and aircraft noise.

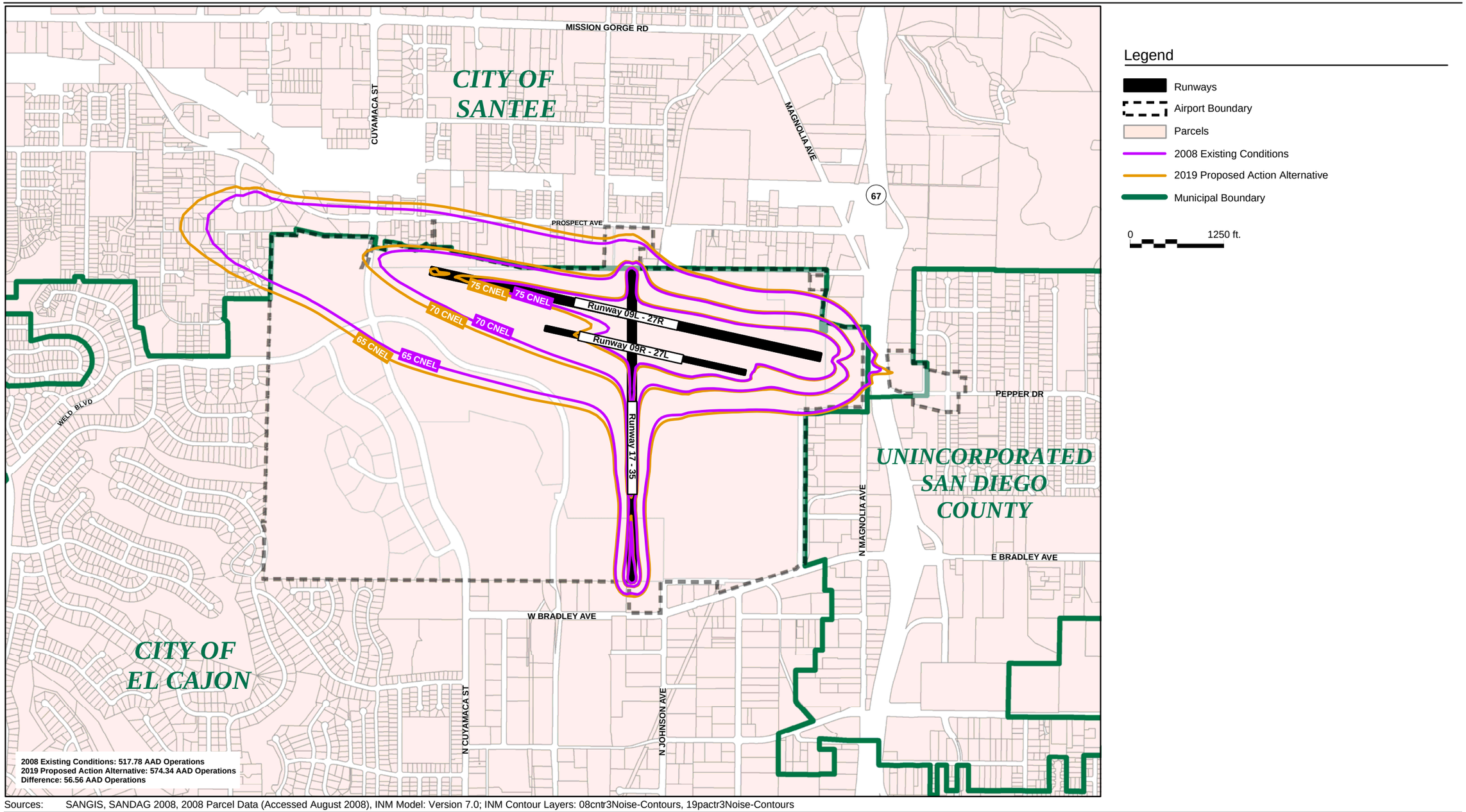
Vehicular Traffic Noise

Vehicular traffic associated with the Proposed Action Alternative would primarily use Wing Street and Joe Crosson Drive via Floyd Smith Drive to access the project site. Alternative A would have a similar distribution as the Proposed Action Alternative. Traffic volumes presented in Table 3 were used to predict noise level increases. For purposes of this analysis, it is assumed the future vehicle mix and speeds on all study roadways would be similar to existing conditions. Predicted noise level increases associated with the Proposed Action Alternative, as well as Alternative A, are presented in Table 5.

As shown in Table 5, noise level increases associated with the Proposed Action Alternative would be less than 3 dBA for all locations except along Floyd Smith Drive. Due to currently low traffic volumes along this roadway, the project would not result in a substantial increase in traffic noise levels, i.e., 3 dBA or more. However, as the primary land uses fronting these roadways are industrial in nature and no NSLU are located along Floyd Smith Drive, the increases would be less than significant. Based on the reported noise level increase along Bradley Avenue west of Johnson Avenue, traffic noise level increases at Chaparral High School would not be discernable over existing traffic noise levels. Traffic noise increases under Alternative A would also be similar to those predicted under the Proposed Action Alternative. Thus, all of the proposed alternatives would result in a less than significant traffic noise level increase at off-site NSLU.

Aircraft Noise

Existing plus Proposed Action Alternative (upon implementation in year 2019) aircraft noise level contours are compared to the existing noise (2008) level contours in Figure 7. Land uses exposed to the 65-dBA CNEL contour due to the Proposed Action Alternative are shown in Figure 8 with a comparison of the Proposed Action Alternative noise contours to the No Action condition in 2019. Alternative A would result in fewer operations and thus would generate slightly smaller noise level contours than the Proposed Action Alternative. Therefore, use of the contours for the Proposed Action Alternative in assessing impacts under Alternative A would be considered conservative. Based on the noise level contour associated with the Proposed Action Alternative, the Proposed Action Alternative would increase the total land area within the 65-dBA CNEL contour by approximately 40 acres, of which approximately 22 acres are directly attributable to the Proposed Action (Ricondo 2008). Under the No Action Alternative,



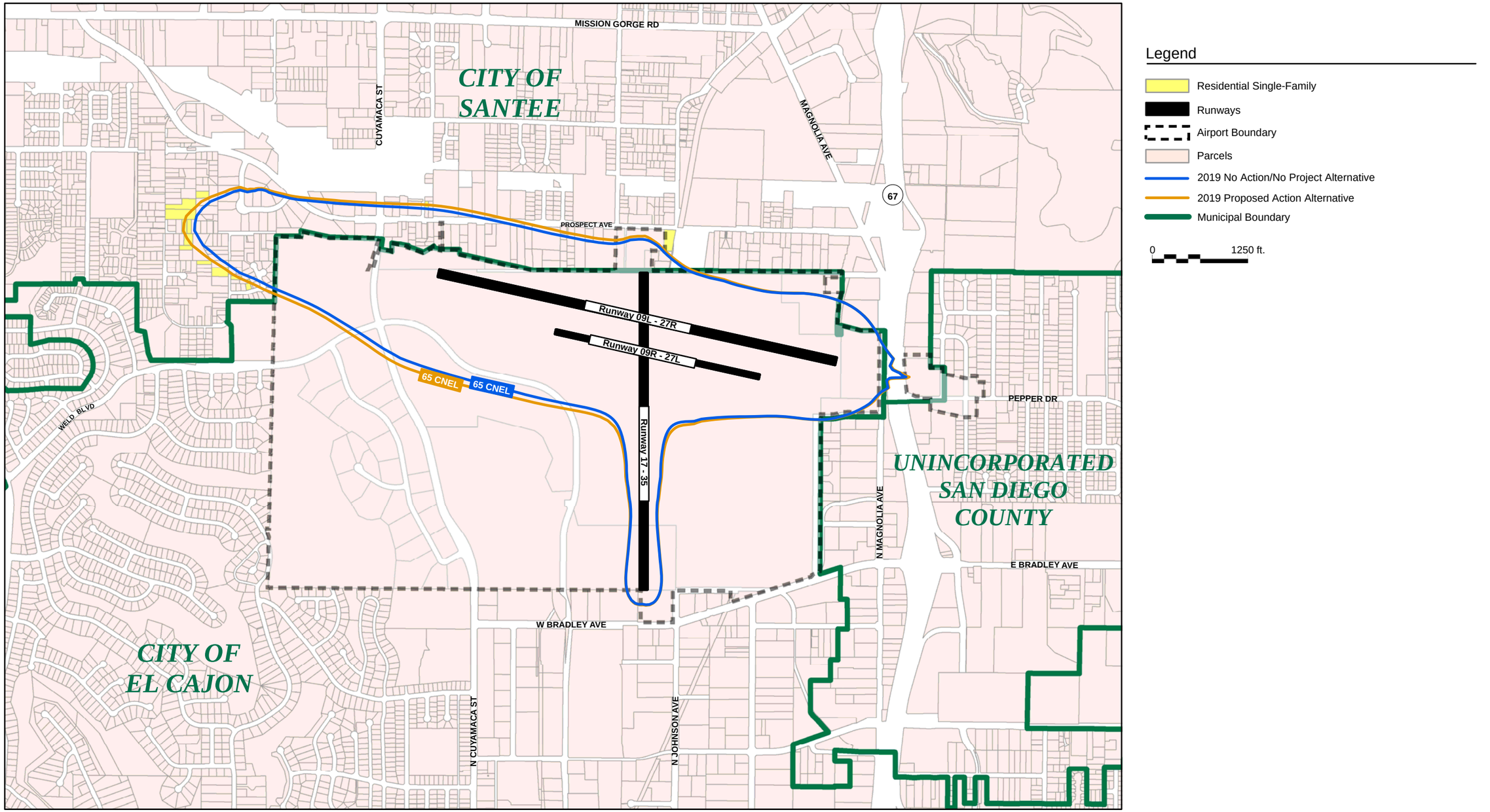
Sources: SANGIS, SANDAG 2008, 2008 Parcel Data (Accessed August 2008), INM Model: Version 7.0; INM Contour Layers: 08cntr3Noise-Contours, 19pactr3Noise-Contours

Source: Ricondo & Associates, Inc. October 2008

Figure 7

Comparison of Existing Conditions (2008) and Proposed Action Alternative Opening Year (2019) Aircraft Noise Contours

This page intentionally left blank.



Sources: SANGIS, SANDAG 2008, 2008 Parcel Data (Accessed August 2008), INM Model: Version 7.0; INM Contour Layers: 19na3Noise-Contours, 19pactr3Noise-Contours

Source: Ricondo & Associates, Inc. October 2008

Figure 8

Comparison of Year 2019 No Action and Proposed Action Alternative Aircraft Noise Contours with Locations of Newly Exposed Land Uses

This page intentionally left blank.

Table 5
Predicted Future Traffic Noise Level Increases (in dBA)

Roadway	Existing + Proposed Action Alternative	Existing + Alternative A	Existing + Cumulative + Proposed Action Alternative	Existing + Cumulative + Alternative A
Airport Drive				
Joe Crosson Drive to Wing Avenue	NA	NA	NA	NA
Wing Avenue to Magnolia Avenue	-3	-3	-3	-3
Bradley Avenue				
Cuyamaca Street to Marshall Avenue	0	0	1	1
Marshall Avenue to Johnson Avenue	0	0	0	0
Johnson Avenue to Pioneer Way	0	0	1	1
Pioneer Way to Wing Avenue	1	1	1	1
Wing Avenue to Magnolia Avenue	0	0	0	0
Magnolia Avenue to SR-67	0	0	0	0
East of SR-67	0	0	0	0
Floyd Smith Drive				
Joe Crosson Drive to Pioneer Way	3	3	3	3
Joe Crosson Drive				
Floyd Smith Drive to Airport Drive	2	2	2	2
Johnson Avenue				
Floyd Smith Drive to Bradley Avenue	-2	-2	-2	-2
South of Bradley Avenue	0	0	0	0
Magnolia Avenue				
Bradley Avenue to Denny Way	0	0	0	0
Denny Way to Airport Drive	0	0	1	1
North of Airport Drive	0	0	0	0
Wing Avenue				
Magnolia Avenue to Airport Drive	2	2	2	2
Pioneer Way				
Bradley Avenue to Cypress Lane	0	0	0	0

natural growth would still increase to total land area within the 65-dBA CNEL contour by approximately 18 acres (Ricondo 2008). However, the increase in existing noise levels to future 2019 noise levels with implementation of the Proposed Action would be less than 1.5 dBA, which would be considered a less than significant impact using FAA guidelines and thresholds of significance (Ricondo 2008) and County guidelines (County 2009).

Combined Vehicular Traffic and Aircraft Off-site Noise

While CNEL is used to determine compatibility of vehicular traffic noise and aircraft noise, the actual averaging periods are not the same. Traffic CNEL is typically based on a theoretical maximum 24-hour period, while aircraft CNEL is based on a theoretical average annual operation. Additionally, the loudest traffic noise hour does not have a counterpart in aircraft noise assessment. However, for purposes of this noise assessment, the CNEL values used in the traffic and aircraft analyses are considered to be equivalent. Another consideration is the predicted location of aircraft noise level increase as compared to distribution of vehicular traffic on local streets. As shown in Figure 7, most of the predicted aircraft noise level increases associated with the Proposed Action Alternative would occur north and northwest of the Proposed Action site, while the majority of related vehicular traffic associated with the Proposed Action would utilize roadways south and west of the project site and the greatest predicted traffic noise level increase would occur on roadways adjacent to the Proposed Action site. Thus, it is unlikely that traffic and aircraft noise levels would combine as assessed for this analysis and the following assessment is considered conservative.

Future aircraft noise level increases were calculated using the FAA's Integrated Noise Model and reported graphically as noise contour maps in the Ricondo Report. Based on these calculations noise level increases associated with aircraft operations under the Proposed Action Alternative would not exceed 1.5 dBA (Ricondo 2008). Using a conservative maximum noise level increase of 1.5 dBA CNEL due to aircraft noise and combining this increase with the predicted traffic noise levels would result in a maximum noise level increase of 2 dBA along all affected roadways with the exception of Floyd Smith Drive, Joe Crosson Drive, and Wing Avenue where noise level increases would range from 3 to 5 dBA. Table 6 presents the combined noise levels from traffic and aircraft. However, as no NSLU are located along these roadways, these increases in noise levels are not considered adverse.

Table 6
Combined Off-site Traffic and Aircraft Noise Level Increases (in dBA)

Roadway	Existing + Proposed Action Alternative	Existing + Alternative A	Existing + Cumulative + Proposed Action Alternative	Existing + Cumulative + Alternative A
Airport Drive				
Wing Avenue to Magnolia Avenue	-1	-1	-1	-1
Bradley Avenue				
Cuyamaca Street to Marshall Avenue	2	2	2	2
Marshall Avenue to Johnson Avenue	2	2	2	2
Johnson Avenue to Pioneer Way	2	2	2	2
Pioneer Way to Wing Avenue	2	2	2	2
Wing Avenue to Magnolia Avenue	2	2	2	2
Magnolia Avenue to SR-67	2	2	2	2
East of SR-67	2	2	2	2
Floyd Smith Drive				
Joe Crosson Drive to Pioneer Way	5	5	5	5
Joe Crosson Drive				
Floyd Smith Drive to Airport Drive	3	3	3	3
Johnson Avenue				
Floyd Smith Drive to Bradley Avenue	0	0	0	0
South of Bradley Avenue	2	2	2	2
Magnolia Avenue				
Bradley Avenue to Denny Way	2	2	2	2
Denny Way to Airport Drive	2	2	2	2
North of Airport Drive	2	2	2	2
Wing Avenue				
Magnolia Avenue to Airport Drive	3	3	3	3
Pioneer Way				
Bradley Avenue to Cypress Lane	2	2	2	2

Cumulatively Significant Noise Impacts

Traffic Noise

Near-Term Cumulative

Near-term cumulative projects are provided in Table 7, which includes projects identified in the Proposed Action traffic report. Existing plus near-term cumulative traffic volumes are provided in Table 3 and the resultant increase due to near-term cumulative projects is presented in Table 5. Near-term cumulative projects would result in minor noise level increases along local roadways, i.e., less than a 0.5-dBA increase along all studied roadways. Existing plus near-term cumulative traffic volumes with the Proposed Action, for all alternatives, are also provided in Table 3. Noise level increases associated with the traffic volumes are shown in Table 5. As shown in Table 5, traffic noise levels are predicted to increase less than 3 dBA due to the Proposed Action Alternative along all affected roadways except Floyd Smith Drive. As previously identified, there are no NSLU located along this roadway and thus the increase along this roadway is not considered significant.

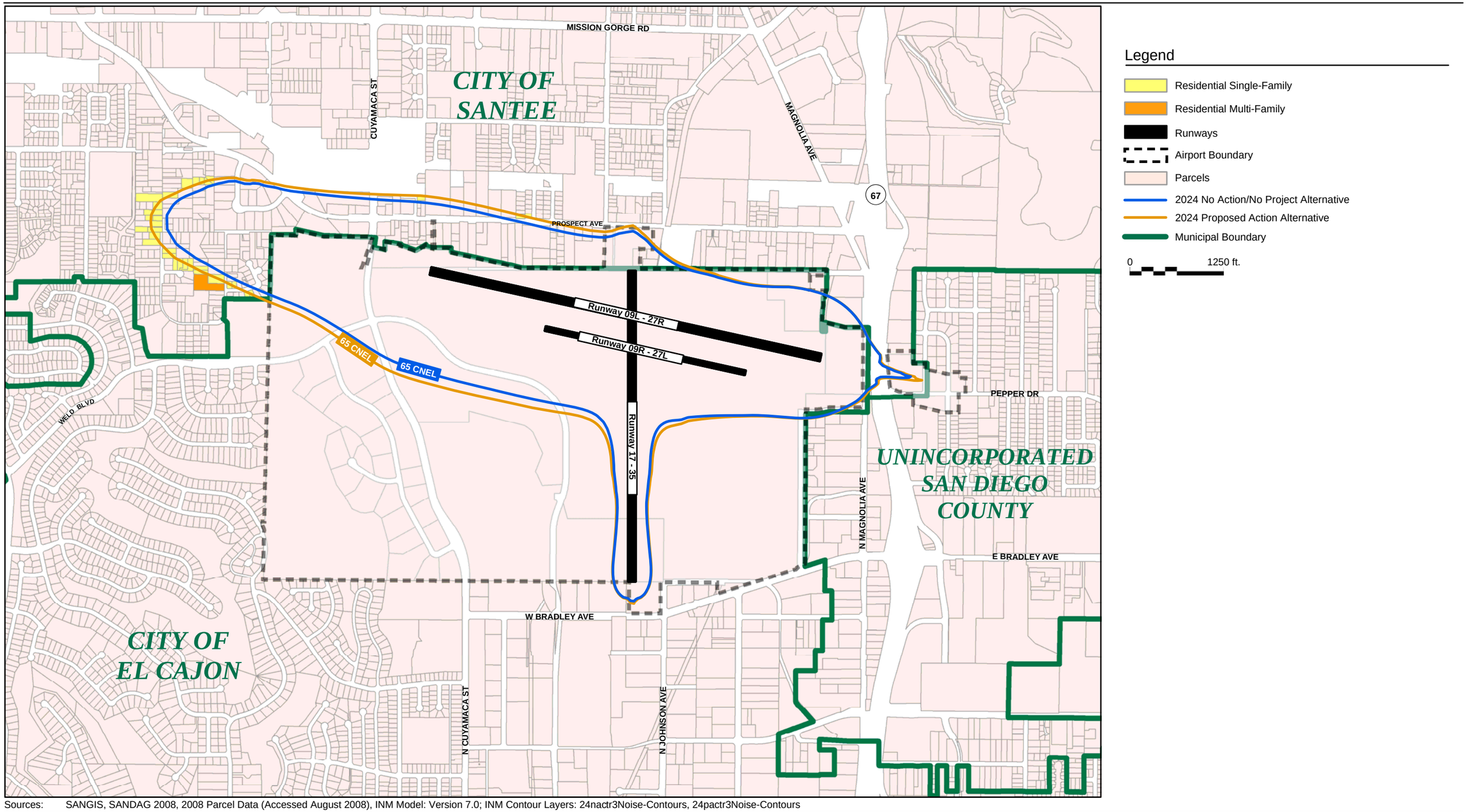
Aircraft Noise

Near-Term Cumulative

The near-term cumulative projects, Table 7 of this report, that would potentially generate additional aircraft operations have been accounted for in the Ricondo Report and are included in Figures 8 and 9 for the 2019 operations. According to the Ricondo Report, 2019 aircraft operations associated with the Proposed Action Alternative would result in a less than 1.5-dBA CNEL increase over the existing and no project conditions (Ricondo 2008). Thus, near-term cumulative impacts associated with aircraft operations would result in a less than significant impact on surrounding NSLU.

2024 FAA Required NEPA Aviation Noise Analysis

Modeled 2024 noise level contours are presented in Figure 9. Figure 9 compares the 2024 conditions with and without the Proposed Action and presents the additional properties that would be included within the 65-dBA CNEL contour. According to the Ricondo Report, 2024 aircraft operations associated with the Proposed Action would result in a less than 1.5-dBA CNEL increase over the No Action condition (Ricondo



Sources: SANGIS, SANDAG 2008, 2008 Parcel Data (Accessed August 2008), INM Model: Version 7.0; INM Contour Layers: 24nactr3Noise-Contours, 24pactr3Noise-Contours

Source: Ricondo & Associates, Inc. October 2008

Figure 9

Comparison of Year 2024 No Project and Proposed Project Aircraft Noise Contours with Locations of Newly Exposed Land Uses

This page intentionally left blank.

Table 7
Cumulative Projects

Cumulative Projects	Size	Units	ADT
TPM 20862 (Tills)	3	Single-family	36
TPM 20921 (Turtle Lane lot split)	3	Single-family	36
TPM 20931 (Pepper Dr. TPM)	3	Single-family	36
TPM 20782 (Almond Rd.)	4	Single-family	48
TPM 20895 (Topper Lane TPM)	4	Single-family	48
TPM 20988 (Poinciana Drive TPM)	4	Single-family	48
TPM 20925 (Marlinda Way TPM)	2	Single-family	24
Forrester Creek	462,973	Square Feet	3,890
TM 5396	80	Multi-family	640
Las Colinas Detention Facility	616	Beds	684
Lantern Crest Senior Residential Care Facility	360	Units	1,440
Walgreens #1	14,820	Square Feet	1,334
Walgreens #2	12,729	Square Feet	1,146
San Diego River Restoration	na	na	na
Villages at Fanita	1,380	Single-family	1,380
Riverwalk Subdivision	218	Multi-family	1,744
Sky Ranch Development	373	Single & Multi-family	3,432
Riverview Office Park	63,504	Square Feet	1,270
Marrokal Industrial Building	32,927	Square Feet	263
Cozza Industrial Building	38,961	Square Feet	312
Hofstee Storage Building	1,000	Square Feet	2
American Sheet Metal	11,619	Square Feet	93
Sampson/Sky Investments	14,954	Square Feet	120
Tower Glass Industrial	35,000	Square Feet	280
Airport Hangar	1.38	Acres	35

LOS Engineering 2011

2008). Thus, 2024 cumulative impacts associated with aircraft operations would not result in a substantial adverse impact on surrounding NSLU.

Combined Vehicular Traffic and Aircraft Cumulative Off-site Noise

Near-term Cumulative

Combined near-term cumulative off-site traffic and aircraft noise levels are presented in Table 6. As shown in Table 6, off-site combined noise levels would be less than 3 dBA with the exception of areas immediately surrounding the project site along Floyd Smith Drive, Joe Crosson Drive, and Wing Avenue where noise levels are predicted to increase by 4 to 5 dBA. However, as previously identified, there are no NSLU along these roadways; therefore, these increases are not considered adverse.

Design Considerations and Mitigation Measures

No direct or cumulative off-site noise impacts are predicted; thus, no impacts to on-site NSLU would occur and no design or mitigation measures are proposed or required.

3.0 PROJECT-GENERATED AIRBORNE NOISE

3.1 Guidelines for the Determination of Significance

The County of San Diego Noise Ordinance, Section 36.404, sets limits on the noise levels generated from one property to another, such as from mechanical equipment. Unless a variance has been applied for by an applicant and granted by the County, it is unlawful for a person to cause or allow noise generated on a particular property to exceed the 1-hour average sound level, at any point on or beyond the boundaries of the property, as shown in Table 8.

Section 36.409 states:

Except for emergency work, it shall be unlawful for any person to operate construction equipment or cause the construction equipment to be operated, exceeding an average sound level of 75 dBA for an 8-hour period, between 7 a.m. and 7 p.m., when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is being received.

Section 36.410 states:

In addition to the general limitations on sound levels in Section 36.404 and the limitations on construction equipment in Section 36.409, the following additional sound level limitations shall apply:

(a) Except for emergency work or work on a public road project, no person shall produce or cause to be produced an impulsive noise that exceeds the maximum sound level shown in Table 9, when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is received, for 25 percent of the minutes in the measurement period, as described in subsection (c) below. The maximum sound level depends on the use being made of the occupied property. The uses in Table 9 are as described in the County Zoning Ordinance.

Table 8
County of San Diego Noise Ordinance Sound Level Limits

Zone	Applicable Hours	Sound Level Limit dB L_{eq} (1 hour)
(1) R-S, R-D, R-R, R-MH, A-70, A-72, S-80, S-81, S-87, S-88, S-90, S-92, R-V and R-U; Use Regulations with a density of less than 11 dwelling units per acre.	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	50 45
(2) R-RO, R-C, R-M, S-86, V5, R-V and R-U; Use Regulations with a density of 11 or more dwelling units per acre.	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	55 50
(3) S-94, V4 and all other commercial zones.	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	60 55
(4) V1, V2 V1, V2 V1 V2	7 a.m. to 10 p.m. 7 p.m. to 10 p.m. 10 p.m. to 7 a.m. 10 p.m. to 7 a.m.	60 55 55 50
(5) M-50, M-52, M-54	Anytime	70
(6) S-88, A-72 and all other industrial zones	Anytime	75
(7) S88 (see subsection (c) below)		

Source: County of San Diego Noise Ordinance, Section 36.404

Notes: If the measured ambient level exceeds the applicable limit noted above, the allowable 1-hour average sound level shall be the ambient noise level, plus 3 decibels. The ambient noise level shall be measured when the alleged noise violation source is not operating.

The sound level limit at a location on a boundary between two (2) zoning districts is the arithmetic mean of the respective limits for the two zones; provided, however, that the 1-hour average sound level limit applicable to extractive industries, including but not limited to borrow pits and mines, shall be 75 decibels at the property line regardless of the zone where the extractive industry is actually located.

S88 zones are Specific Planning Areas which allow for different uses. The sound level limits in Table 8 above that apply in an S88 zone depend on the use being made of the property. The limits in Table 8, subsection (1) apply to property with a residential, agricultural or civic use. The limits in subsection (3) apply to property with a commercial use. The limits in subsection (5) apply to property with an industrial use that would only be allowed in an M50, M52 or M54 zone. The limits in subsection (6) apply to all property with an extractive use or a use that would only be allowed in an M56 or M58 zone.

A fixed-location public utility distribution or transmission facility located on or adjacent to a property line shall be subject to the sound level limits of this section, measured at or beyond 6 feet from the boundary of the easement upon which the facility is located.

Table 9
San Diego County Code Section 36.410,
Maximum Sound Level (Impulsive) Measured
at Occupied Property in Decibels (dBA)

Occupied Property Use	Decibels (dBA)
Residential, village zoning, or civic use	82
Agricultural, commercial, or industrial use	85

(b) Except for emergency work, no person working on a public road project shall produce or cause to be produced an impulsive noise that exceeds the maximum sound level shown in Table 10, when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is received, for 25 percent of the minutes in the measurement period, as described in subsection (c) below. The maximum sound level depends on the use being made of the occupied property. The uses in Table 10 are as described in the County Zoning Ordinance.

Table 10
San Diego County Code Section 36.410,
Maximum Sound Level (Impulsive) Measured at Occupied
Property in Decibels (dBA) for Public Road Projects

Occupied Property Use	Decibels (dBA)
Residential, village zoning, or civic use	85
Agricultural, commercial, or industrial use	90

(c) The minimum measurement period for any measurements conducted under this section shall be 1 hour. During the measurement period a measurement shall be conducted every minute from a fixed location on an occupied property. The measurements shall measure the maximum sound level during each minute of the measurement period. If the sound level caused by construction equipment or the producer of the impulsive noise exceeds the maximum sound level for any portion of any minute, it will be deemed that the maximum sound level was exceeded during that minute.

Existing zoning designations in the vicinity of the Proposed Action site include General Impact Industrial (M54) within San Diego County and General Industrial (M) within the City of El Cajon. The Proposed Action site is zoned for industrial/aviation use. The

corresponding noise level limits specified by the noise ordinance in Table 8 are 70 dBA L_{eq} any time of day. According to the ordinance (Table 8), the sound limit at a location on the boundary between two zoning districts, such as in this case, is the arithmetic mean of the respective limits for the two zoning districts. The City of El Cajon sets sound level limits between properties zoned for industrial uses at 75 dBA L_{eq} anytime of the day. The City of El Cajon borders the project site to the west and south. However, as the City of El Cajon has a less restrictive noise level limit, the County noise ordinance is used for determining impacts. Therefore, the 1-hour average noise limit for the Proposed Action at its western, southern, and eastern property lines is 70 dBA L_{eq} anytime. This limit would apply to mechanical equipment associated with building operation; on-site maintenance activities, including aircraft maintenance; and aircraft operations at hangars and on taxiways within the Proposed Action site.

The FAA standards for aircraft operational noise do not include specific guidance for stationary noise sources. Thus, the County's noise ordinance is the applicable regulation for controlling stationary noise sources associated with the Proposed Action.

3.2 Potential Operational Noise Impacts (Non-Construction Noise)

Potential Build-out Noise Conditions without Mitigation

The proposed development would generate operation noise from aircraft, facilities, and traffic on-and off-site. Noise receptors potentially affected by operational noise would include adjacent properties surrounding the Proposed Action site.

Ground Level Aircraft Activity Noise

Principal ground-based noise-generating activities associated with the operation of the Proposed Action include the arrival and departure of taxiing airplanes, airplane maintenance and operations at the hangars and tie-downs, the on-site operation of associated vehicles, and human activities associated with the use of the aircraft. Based on observation of similar activities, these activities would occur in various areas of the Proposed Action site. For purposes of noise impact assessment, these activities would occur at distances as close as 75 feet north of the southern property line of the Proposed Action site and 100 feet from the western or eastern property line of the Proposed Action site.

The analysis of aircraft activity noise compared to the County noise ordinance limit at the project site is based on observations and noise level measurements of similar activities at the Ramona Airport and Fallbrook Air Park. Based on these measurements and observations, a single-engine propeller aircraft revving engines for preflight checks and taxiing to and from the runway generate noise levels of approximately 71 dBA L_{eq} at 50 feet. A noise level of 71 dBA is considered conservative for assessing aircraft noise impacts for the Proposed Action as it is unlikely aircraft operating on-site at hangars would operate their engines at maximum levels for the duration of time required for the preflight check and take-off. The entire Proposed Action site would be paved, providing a reflective noise surface; thus, noise levels from these activities would attenuate at a rate of -6 dBA for each doubling of distance.

To quantify noise levels for analysis purposes the impact of ground level aircraft noise is based on three aircraft operating on-site at various locations. One aircraft would be located on the taxiway 75 feet from the southern property line and approximately 500 feet from the eastern and western boundaries; one aircraft located at a hangar on the east side of the Proposed Action site approximately 75 feet from the southern boundary and 100 feet from the eastern boundary; and one aircraft operating on the west side of the site approximately 75 feet from the southern boundary and 100 feet from the western boundary. These distances are considered conservative as aircraft could be as far as 650 feet from the eastern or western boundaries of the Proposed Action site and as far as 2,000 feet north of the southern property line. Based on the identified scenario, noise levels from aircraft operating at ground level would reach approximately 68 dBA L_{eq} at the nearest common point along the southern property line and 65 dBA L_{eq} at the nearest common point along the eastern and western property lines. These noise levels would be less than the noise ordinance limit of 70 dBA L_{eq} at the property line and beyond. Therefore, in conformance with the County noise ordinance, the operation of aircraft would not result in an adverse noise impact.

Facility Noise

Principal sources of noise at the aviation-oriented business space and hangars are likely to be mechanical equipment, such as heating, ventilating, and air conditioning (HVAC) units. At the hangars, mechanical equipment for performing aircraft maintenance would also likely be in use. The proposed hangars have not been designed, and a quantitative noise analysis is not feasible and would not be accurate at this time. However, the Proposed Action includes a design consideration that limits the sound level rating of any HVAC units to 87 dBA or less at 3 feet. This would result in a

noise level of approximately 63 dBA at 50 feet and a noise level of approximately 59 dBA at 75 feet.

Aircraft maintenance activity would generate similar noise level as automotive repair activities. Based on measurements taken for the Los Angeles Police Headquarters project, automotive maintenance facilities generate noise levels of approximately 64 dBA L_{eq} at 50 feet (EDAW 2005). The automotive repair facility included 10 open bays with various activities, including engine maintenance, tire repair, body repair, etc. Equipment used in these activities included compressors, air guns, impact ratchets, hand tools, and grinders. The measurements were taken approximately 100 feet from the facility doorways centered on the facility.

Based on these measured noise levels and assuming these noise sources would be at least 75 feet from the nearest property line, it is calculated the aviation-oriented businesses and hangars would generate noise levels on the order of 65 dBA at the nearest property line. This noise level is less than the noise ordinance limit at the property line of 70 dBA L_{eq}; thus, the proposed action is not anticipated to result in an adverse noise impact from facility operation. To verify compliance with noise ordinance limits, the county has included a design consideration that requires new aviation-oriented businesses and hangars, once designed, to provide a noise study that considers all ground level noise sources. With implementation of the identified design considerations, facility and ground-level aircraft operation would not result in an adverse noise impact.

Design Consideration and Mitigation Measures

Nonaircraft activities associated with redevelopment of the 70-acre site would incorporate design considerations to reduce noise levels during operations. The following design considerations will be included in the design of facilities:

DC-1 Prior to construction, the County will require all new aviation-oriented business space and hangars to prepare a noise analysis demonstrating compliance with County noise levels limits. The noise analysis will include all ground level noise generating sources within the Proposed Action site.

DC-2 HVAC shall have sound level ratings of 87 dBA at 3 feet or lower. This may be achieved by either purchasing models with this rating, using sound insulation or blankets, or constructing enclosures around the equipment.

DC-3 Orient hangar openings to the north and eliminate or minimize openings on the west, south, and east sides of the buildings to avoid or minimize transmittal of noise outside airport property.

3.3 Potential General Construction Noise Impacts

Potential Temporary Construction Noise Impacts without Mitigation

Noise impacts from construction are a function of the noise generated by equipment, the location and sensitivity of nearby land uses, and the timing and duration of the noise-generating activities. Table 4 presents a list of noise generation levels for various types of equipment typically used on construction projects. The list, compiled by the Federal Transit Administration (FTA), was used in this analysis to estimate construction noise (FTA 2006). The magnitude of construction noise impacts was assumed to depend on the type of construction activity, the noise level generated by various pieces of construction equipment, the duration of the activity, and the distance between the activity and noise sensitive receivers.

The proposed development would include a variety of construction activities in many areas of the project site. Construction activities would commence in 2013. These activities include the public development of the taxiway and the private development hangars, business space, and tie-downs. Construction would require site clearing and grubbing of vegetation; soil excavation and finish grading; placement of subgrade material, reinforcing bar, and tie-down anchors; and pouring of concrete. No building demolition, blasting, or rock breaking is anticipated. Typical construction equipment would include bulldozers, graders, front-end loaders, generators, welders, and compressors. Concrete would be brought to the site in ready-mix trucks.

The properties surrounding the 70-acre site are all zoned industrial. Typical grading activities generate approximately 86 dBA $L_{eq(1)}$ at a distance of 50 feet from the center of the activity. Additionally, grading activities would involve the largest and likely the greatest number of pieces of equipment. Grading activities would involve the entire site and the effective center would be the center of the site. Thus, the point of assessment would be 650 feet from the eastern and western site boundaries and 1,000 feet from the southern project boundary. Thus, the average noise construction noise level would be approximately 61 dBA L_{eq} at the eastern and western boundaries and 57 dBA L_{eq} at the southern boundary. These noise levels would be less than the 75-dBA $L_{eq(8\text{-hour})}$ limit of the noise ordinance.

Paving of the project site and taxiway would generate an average noise level of 80 dBA L_{eq} at a distance of 50 feet. The effective center of paving activities would be similar to grading activities. Thus, the average noise construction noise level would be approximately 58 dBA L_{eq} at the eastern and western boundaries and 54 dBA L_{eq} at the southern boundary. These noise levels would be less than the 75-dBA $L_{eq(8\text{-hour})}$ limit of the noise ordinance.

Building construction would generally be less mobile and the center of the activity would likely be closer to adjacent site boundaries. It is assumed for purposes of this analysis that buildings would be located at similar distances as the existing hangars west of Joe Crosson Drive. Thus, the nearest point of construction would be approximately 60 feet from the property line and the center of building construction would be approximately 250 from the nearest property line. Building construction would generate average noise levels of 80 dBA L_{eq}. Thus, the average noise construction noise level would be approximately 66 dBA L_{eq} at the site boundary. These noise levels would be less than the 75 dBA $L_{eq(8\text{-hour})}$ limit of the noise ordinance.

Based on the preceding analysis, construction at the 70-acre site would be in compliance with the noise ordinance, and the impact would be **less than significant**.

Design Considerations and Mitigation Measures

While no construction impacts have been identified, the following design considerations should be incorporated into construction plans and construction site management practices.

DC-4 Staging areas for the construction equipment shall be located the farthest reasonable distance from the site southern boundary.

DC-5 Electric power shall be provided to the construction site as soon as feasible to minimize the use of continuous operation of portable generators.

DC-6 Stationary noise-generating devices such as generators, compressors, welders, etc. shall be positioned as far from the Proposed Action boundary as feasible.

DC-7 All construction equipment shall have manufacturer's mufflers or better installed and in good condition.

3.4 Potential Impulsive Noise Impacts

Potential Impulsive Noise Impacts without Mitigation

Even though average noise levels for the construction at the 70-acre site would be in compliance with the noise ordinance, construction noise levels would vary, and intermittent maximum noise levels of 83 dBA would likely occur at the property boundaries when activities occur near the site boundaries. These events would be prohibited during hours specified in the noise ordinance, which are between 7:00 p.m. and 7:00 a.m., Monday through Saturday, and all day Sunday, and would not exceed the maximum noise level limits identified in Table 9. However, for persons outside and within 100 feet of construction activities, these maximum noise events may be disturbing and annoying. To minimize the disturbance and reduce the magnitude and frequency of the construction noise, design considerations are recommended, including locating construction staging areas and stationary noise-generating sources away from the site boundaries, providing electric power for construction to minimize generator use, and using equipment in good condition with manufacturer's mufflers or better.

Design Considerations and Mitigation Measures

While no construction impacts have been identified, design considerations DC-4 through DC-7 should be incorporated into construction plans and construction site management practices.

3.5 Cumulative or Combined noise Impacts

Potential Combined Noise Impacts without Mitigation

On-site Operational Noise Sources

Cumulative on-site noise impacts would occur if the combination of all on-site noise sources, including aircraft, mechanical equipment associated with the proposed buildings, and aircraft maintenance, would result in an exceedance of the noise level limits identified in Table 9, i.e., 70 dBA L_{eq}.

Analysis of aircraft activity noise at the Proposed Action site for a relatively noisy aircraft operation scenario at the southern portion of the site indicates these activities would generate a noise level of 68 dBA L_{eq} at the property line. Based on the implementation of identified design considerations, noise levels from facility operation are calculated to reach 65 dBA at the nearest property line. Based on these noise levels of separate sources, the operation of aircraft and proposed facilities would result in a combined noise level of approximately 69 dBA L_{eq} at the nearest property boundary. Thus, no adverse noise impact is anticipated due to the facility operation and ground level aircraft operation.

Construction

Substantial construction cumulative noise impacts would occur if an adjacent property would be subject to construction noise from the combination of two or more projects constructed simultaneously. Projects used for the cumulative analysis are listed in Table 7. The nearest project considered is the hangar project, which is within the airport property on the east side of North Marshal Avenue, which is approximately 1,800 feet west of the project site. At half of this distance, noise levels would be reduced by at least 25 dBA relative to the source noise level. Thus, the combined noise from these projects would result in a noise level of 53 dBA L_{eq} or less. Reductions due to distance and intervening structure would make the contribution of the more distant sources negligible and not considerable. Therefore, cumulatively considerable construction phase noise impacts would not be adverse.

4.0 GROUNDBORNE VIBRATION AND NOISE IMPACTS

4.1 Guidelines for the Determination of Significance

Project implementation will expose the uses listed in Tables 11 and 12 to groundborne vibration and noise levels equal to or in excess of the levels shown.

Table 11
Guidelines for Determining the Significance of Groundborne Vibration and Noise Impacts

Land Use Category	Groundborne Vibration Impact Levels (inches/sec rms)		Groundborne Noise[4] Impact Levels (dB re 20 micro Pascals)	
	Frequent Events[1]	Occasional or Infrequent Events[2]	Frequent Events[1]	Occasional or Infrequent Events[2]
Category 1: Buildings where low ambient vibration is essential for interior operations (research & manufacturing facilities with special vibration constraints)	0.0018[3]	0.0018[3]	Not applicable[5]	Not applicable[5]
Category 2: Residences and buildings where people normally sleep (hotels, hospitals, residences, & other sleeping facilities)[6]	0.0040	0.010	35 dBA	43 dBA
Category 3: Institutional land uses with primarily daytime use (schools, churches, libraries, other institutions, & quiet offices)[6]	0.0056	0.014	40 dBA	48 dBA

rms = root mean square

[1] "Frequent Events" is defined as more than 70 vibration events per day. Most rapid transit projects fall into this category.

[2] "Infrequent Events" is defined as fewer than 70 vibration events per day. This category includes most commuter rail systems.

[3] This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the HVAC systems and stiffened floors.

[4] Vibration-sensitive equipment is not sensitive to groundborne noise.

[5] There are some buildings, such as concert halls, TV and recording studios, and theaters that can be very sensitive to vibration and noise but do not fit into any of the three categories. Table 12 gives criteria for acceptable levels of groundborne vibration and noise for these various types of special uses.

[6] For Categories 2 and 3 with occupied facilities, isolated events such as blasting are significant when the peak particle velocity (PPV) exceeds 1 inch per second. Nontransportation vibration sources such as impact pile drivers or hydraulic breakers are significant when their PPV exceeds 0.1 inch per second. More specific criteria for structures and potential annoyance were developed by Caltrans and will be used to evaluate these continuous or transient sources in San Diego County.

Source: County of San Diego 2009

Table 12
Guidelines for Determining the Significance of Groundborne Vibration and Noise Impacts for Special Buildings

Type of Building or Room	Groundborne Vibration Impact Levels (inches/sec rms)		Groundborne Noise Impact Levels (dB re 20 micro Pascals)	
	Frequent Events[1]	Occasional or Infrequent Events[2]	Frequent Events[1]	Occasional or Infrequent Events[2]
Concert Halls, TV Studios, and Recording Studios	0.0018	0.0018	25 dBA	25 dBA
Auditoriums	0.0040	0.010	30 dBA	38 dBA
Theaters	0.0040	0.010	35 dBA	43 dBA

rms = root mean square
[1] "Frequent Events" is defined as more than 70 vibration events per day. Most rapid transit projects fall into this category.
[2] "Infrequent Events" is defined as fewer than 70 vibration events per day. This category includes most commuter rail systems.
Source: County of San Diego 2009

4.2 Potential and Mitigated Noise Impacts

Most perceptible indoor vibration is caused by sources within buildings such as operation of mechanical equipment, movement of people, or slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If the roadway is smooth, the vibration from traffic is rarely perceptible (FTA 2006).

The relationship between groundborne vibration and groundborne noise depends on the frequency content of the vibration and the acoustical absorption of the receiving room. The more acoustical absorption that is in the room, the lower the noise level will be. The A-weighted level of groundborne noise can be estimated by applying A-weighting to the vibration velocity spectrum (FTA 2006). Since the A-weighting at 31.5 hertz (Hz) is -39.4 dB, if the vibration spectrum peaks at 30 Hz, the A-weighted sound level will be approximately 40 dBA lower than the velocity level. Correspondingly, if the vibration spectrum peaks at 60 Hz, the A-weighted sound level will be about 25 dBA lower than the velocity level (FTA 2006). For purposes of this analysis construction-related groundborne noise is assumed to peak at the 60-Hz range.

The most substantial vibration source associated with this project would be construction equipment. Construction would occur within the limits stated in the County noise

ordinance. Vibrations associated with construction activity would be considered an infrequent event and the applicable vibration and groundborne thresholds would be 0.014 and 48 dBA, respectively. The maximum construction vibration is assumed to occur from a large dozer operating along the western, southern, or eastern property line. The nearest land use identified in Table 7 would be the Foothills Church, a Category 3 land use, which is located approximately 140 feet from the project site boundaries. The vibration level of a large dozer at a distance of 25 feet is 0.089 inches per second peak particle velocity (in/sec ppv) (FTA 2006). The groundborne noise level is estimated at 60 dBA. Vibration is calculated by the formula, $PPV_D=PPV_R \times (25/D)^{1.5}$, where D is the location of interest, PPV_D is the vibration at the location of interest, and PPV_R is the vibration level at 25 feet. At 140 feet, the vibration of a large dozer would result in a vibration level of 0.0067 in/sec ppv and a groundborne noise level of approximately 40 dBA. Thus, the vibration impact associated with construction would not be adverse.

This page intentionally left blank.

5.0 SUMMARY OF PROJECT IMPACTS, MITIGATIONS, AND CONCLUSIONS

5.1 Operation

Vehicular and aviation activities at the 70-acre site would represent new sources of noise to nearby land uses. Section 2.3 discusses potential direct and cumulative noise impacts associated with vehicular traffic and aircraft noise. Based on this analysis, direct and cumulative vehicular traffic and aircraft noise activities associated with the Proposed Action would increase by less than 3 dBA at all NSLU. Noise increases greater than 3 dBA would occur along roadways surrounding the Proposed Action site; however, no NSLU are located along these roadways and these increases are not considered adverse. Thus, noise impacts associated with the Proposed Action would not be considered adverse. No mitigation measures would be required and no noise abatement measures are recommended.

Operation of facilities at the 70-acre site are required to comply with the County noise ordinance. Aircraft noise at the 70-acre site is anticipated to result in noise levels at the property line of 68 dBA L_{eq} or less. The County noise ordinance requires that noise levels not exceed 70 dBA L_{eq} at the property line, and the noise contribution of facilities, with the use of design considerations, would not exceed the ordinance. Individual aviation businesses at the 70-acre site would demonstrate compliance through design considerations that would reduce noise levels. Aviation-oriented businesses and hangar operation design considerations include limitations on HVAC noise levels, building orientation and façade design recommendations, and a requirement to prepare a noise assessment demonstrating compliance with the noise ordinance. The noise analysis will include all noise sources, including aircraft operation on hangar aprons and proposed taxiways. With implementation of the design consideration, the Proposed Action would not have an adverse noise impact from on-site operation. No mitigation measures would be required and no noise abatement measures are recommended.

5.2 Construction

Based on the analysis of proposed construction activities, the Proposed Action would not exceed general construction noise levels limits identified in Section 36.409 of the County noise ordinance, i.e. 75 dBA $L_{eq(8\text{-hour})}$. Additionally, while construction of the Proposed

Action would generate short-term (impulsive) maximum noise levels of less than 85 dBA L_{max} at the nearest property line. Thus construction activities associated with the Proposed Action would result in less than significant impacts. While no significant impact would occur, peak noise levels may be considered a nuisance or disturbing to local business owners and patrons when located outside; thus, design considerations are recommended to minimize noise impacts to off-site receptors. The design considerations include locating staging areas for construction equipment, including stationary noise-generating sources (e.g., generators), the farthest reasonable distance from the project site boundaries, providing electrical power as early as feasible during construction, and maintaining construction equipment in good condition with manufacturer's mufflers or better.

Vibration that would occur due to construction activities would be located at sufficient distances such that the vibration generated during construction would not exceed the vibration guidelines at local receptors.

Design Considerations and Mitigation Measures

The following mitigation measure is recommended to minimize noise impacts to sensitive noise receptors during operation:

DC-1 Prior to construction, the County will require all new aviation-oriented business space and hangars to prepare a noise analysis demonstrating compliance with County noise levels limits. The noise analysis will include all ground level noise generating sources within the Proposed Action site.

DC-2 HVAC shall have sound level ratings of 89 dBA at 3 feet or lower. This may be achieved by either purchasing models with this rating, using sound insulation or blankets, or constructing enclosures around the equipment.

DC-3 Orient hangar openings to the north and eliminate or minimize openings on the west, south, and east sides of the buildings to avoid or minimize transmittal of noise outside airport property.

While no construction impacts have been identified, the following design considerations should be incorporated into construction plans and construction site management practices.

DC-4 Staging areas for the construction equipment shall be located the farthest reasonable distance from the site southern boundary.

DC-5 Electric power shall be provided to the construction-site as soon as feasible to minimize the use of continuous operation of portable generators.

DC-6 Stationary noise-generating devices such as generators, compressors, welders, etc. shall be positioned as far from the site boundary as feasible.

DC-7 All construction equipment shall have manufacturer's mufflers or better installed and in good condition.

This page intentionally left blank.

6.0 CERTIFICATION

The following is a list of preparers, persons, and organizations involved with the noise assessment. A signature from the approved County Consultant below has been provided as project certification.

Preparers

AECOM

Bill Maddux, Project Manager, County of San Diego Approved Noise Consultant
Jake Weirich, Noise and Air Quality Specialist
Jeff Goodson, Environmental Engineer
Dan Brady, Graphic Artist

County of San Diego, Department of Public Works, Environmental Services Unit

Nelson Olivas, LUEG Program Manager
Cynthia Curtis, Environmental Planning Manager
Jeff Kashak, Environmental Planner
Marina Som, Project Staff Support – Environmental Analyst

This page intentionally left blank.

APPENDIX A
REFERENCES

REFERENCES

California Department of Transportation (Caltrans)

1998 Traffic Noise Analysis Protocol for New Highway and Reconstruction Projects, including Technical Noise Supplement. October.

County of San Diego

2006 Noise Ordinance, Sections 36.404 and 36.410.

2009 Guidelines for Determining Significance and Report Format and Content Requirements, Noise. January 27.

2011 General Plan, Chapter 8, Noise Element, August 3.

EDAW

2005 Noise Impact Analysis, Los Angeles Police Department Headquarters Facility, Los Angeles, California, June.

EIP

2007 Noise Technical Report, Redevelopment of 70-acre Parcel and Land Acquisition, Gillespie Field, El Cajon, San Diego County, California.

Federal Interagency Committee on Noise (FICON)

1992 Federal Agency Review of Selected Airport Noise Analysis Issues.

Federal Transit Administration (FTA)

2006 Transit Noise and Vibration Impact Assessment. U.S. Department of Transportation, May.

LOS Engineering, Inc. (LOS Engineering)

2007 Traffic Impact Analysis Technical Report, Redevelopment of 70-acre Parcel and Land Acquisition Project, Gillespie Field, El Cajon, California. July.

2011 Traffic Impact Analysis Technical Report, 70-acre Redevelopment Project, Gillespie Field, El Cajon, California. September.

Ricondo Associations (Ricondo)

2008 Gillespie Field Aircraft Noise Analysis. October.

This page intentionally left blank.