

Appendix K

Overflight Area Boundary and Policy Review



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APPENDIX K

Overflight Area Boundary and Policy Review

Overflights are any distinctly visible or audible passage of aircraft through an area. Experience has shown that some people can be disturbed by overflights even when the aircraft are at relatively high altitudes and in areas well outside the Community Noise Equivalent Level (CNEL) contour representing the noise impact or noise compatibility area.¹

The 2014 Airport Land Use Compatibility Plan (ALUCP) for San Diego International Airport (SDIA or the Airport) establishes an overflight area and a policy intended to provide notice of overflights to prospective buyers and occupants of new residential development.

This appendix summarizes State of California regulations and guidance related to overflights and analyzes factors defining an overflight area, including noise complaint locations, the 60 decibel (dB) CNEL noise contour, and aircraft flight tracks. Additionally, this appendix presents a potential updated overflight area boundary and a discussion of overflight policy considerations.

K.1 STATE REGULATIONS AND GUIDANCE

The State of California has no authority to regulate or restrict aircraft overflights, which are subject to federal jurisdiction. However, the State of California does have a real estate disclosure law intended to ensure prospective buyers of residential property are notified of the presence of nearby airports and the potential for -airport related impacts. The *California Airport Land Use Planning Handbook* also has guidance relating to the delineation of overflight areas and the notification of residents of the potential effects of overflights.

K.1.1 Real Estate Disclosure Law

Within the airport influence area (AIA) established in the applicable airport land use compatibility plan (ALUCP),² the state real estate disclosure law applies to the:

- sale or lease (of one year or more) of residential properties with one to four dwellings units, including mobile homes, manufactured homes, and units in condominiums and other common interest properties;³ and
- sale or lease of “subdivided lands,” including any planned development with five or more lots, any community apartment project with five or more apartments, any condominium project with five or more condominiums, and any stock cooperative with five or more shareholders.⁴

¹ San Diego County Regional Airport Authority, *San Diego International Airport, Airport Land Use Compatibility Plan, May 2014* (amended; p. 1-7). The 2014 Airport Land Use Compatibility Plan for San Diego International Airport defines the outer boundary of the noise compatibility area as the 60 decibel CNEL contour.

² The AIA typically includes the outer boundary of the combined safety zones, noise contours, airspace protection area, and overflight area.

³ California Civil Code, Section 1102(a); California Business and Professions Code, Section 10018.08.

⁴ California Business and Professions Code, Sections 11018, 11018.1, and 11004.5.

The law requires sellers of residential property and their agents to disclose that the property is within an AIA.⁵ They must notify the purchaser that the property is in the vicinity of an airport and may be subject to airport-related effects, including overflights-. Real estate disclosure statements must use the following language:⁶

NOTICE OF AIRPORT IN VICINITY

This property is presently located in the vicinity of an airport, within what is known as an airport influence area. For that reason, the property may be subject to some of the annoyances or inconveniences associated with proximity to airport operations (for example: noise, vibration, or odors). Individual sensitivities to those annoyances can vary from person to person. You may wish to consider what airport annoyances, if any, are associated with the property before you complete your purchase and determine whether they are acceptable to you.

For residential property transfers, disclosures must be provided as soon as practicable before transfer of title or execution of the purchase contract or lease agreement.⁷ For sales of subdivided lands, copies of the public report fully describing conditions applying to the subdivision, including the airport notice, must be “posted in a conspicuous place at any office where sales or leases or offers to sell or lease lots within the subdivision are regularly made.” A copy of the public report must be “given to the prospective buyer ... prior to the execution of a binding contract or agreement for the sale or lease of any lot or parcel in a subdivision.”⁸

K.1.2 Handbook Guidance - Overflight Area Boundary

The *California Airport Land Use Planning Handbook* (the Handbook), prepared by the California Department of Transportation (Caltrans), Division of Aeronautics, characterizes the overflight factor as a subset of noise compatibility:

People’s reaction to aircraft noise varies widely with some people reacting vigorously to very low levels of aircraft noise, while other people have no reaction to very high levels of aircraft noise. The objective of compatible land use planning is to prevent people from being exposed to the most intensive and disruptive cumulative aircraft noise exposure levels ... However, aircraft noise exposure in areas beyond the outermost CNEL contours can also be annoying to some people and may be regarded as locally significant. These levels of aircraft noise exposure are generally described under the heading of overflight impacts ...⁹

As discussed in Appendix D [of the Handbook], experience at many airports has shown that noise-related concerns do not stop at the boundary of the outermost mapped CNEL contour. Instead, many people are sensitive to the frequent presence of aircraft overhead even at low noise levels. These reactions can mostly be expressed in the form of *annoyance*.

⁵ California Civil Code, Section 1102.6a(d).

⁶ California Civil Code, Section 1103.4.

⁷ California Civil Code, Section 1102.3.

⁸ California Business and Professions Code, Section 11018.1(a).

⁹ California Department of Transportation, Division of Aeronautics, *California Airport Land Use Planning Handbook*, October 2011, p. 2-4.

At many airports, particularly air carrier airports, complaints often come from locations beyond any of the defined noise contours. Indeed, heavily used flight corridors to and from metropolitan areas are known to generate noise complaints 50 miles or more from the associated airport. The basis for such complaints may be a desire and expectation that outside noise sources not be intrusive—or, in some circumstances, not even distinctly audible—above the quiet, natural background noise level.¹⁰

The Handbook advises airport land use commissions (ALUCs) to identify where overflight concerns are likely to occur and offers the following guidance:

Overflight boundaries often are established by an amalgamation of various data inputs, including noise contours, flight tracks, and even noise complaint patterns. This is because overflight boundaries extend beyond the well-defined CNEL contours. As CNEL contours are not very precise at low noise levels, especially where aircraft flight tracks are widely divergent, perhaps the most useful tool for determining the location of overflight boundaries are flight tracks. Flight track data depicts not only where aircraft typically operate, but also at what altitudes.¹¹

The Handbook notes that “major flight routes to and from busy airports, especially major airline airports and some military fields, can produce overflight impacts ...”¹² These major flight routes are reflected in radar flight track data.

K.1.3 Handbook Guidance - Overflight Area Policies

The Handbook suggests that overflight area policies should focus on informing prospective buyers of property of the potential for noise impacts and annoyance associated with overflying aircraft:

At lower noise levels, the variability in how people react becomes more of a factor. In these lower noise environments—whether the threshold is at 65, 60, or even 55 [decibel] dB CNEL—relatively few people are expected to be highly annoyed and the majority will probably not be even moderately annoyed. More important is to give people who may be annoyed by airport noise timely information with which to assess how living in the vicinity of an airport would affect them. In this respect, developing overflight compatibility policies becomes less about restricting land uses, and more focused on informing prospective property owners of the presence of an airport and making them aware of the potential for noise impacts associated with overflying aircraft.¹³

¹⁰ California Department of Transportation, Division of Aeronautics, *California Airport Land Use Planning Handbook*, October 2011, p. 3-8. Emphasis in original.

¹¹ California Department of Transportation, Division of Aeronautics, *California Airport Land Use Planning Handbook*, October 2011, p. 3-10.

¹² California Department of Transportation, Division of Aeronautics, *California Airport Land Use Planning Handbook*, October 2011, p. 3-42.

¹³ California Department of Transportation, Division of Aeronautics, *California Airport Land Use Planning Handbook*, October 2011, p. 4-13.

The Handbook explains that the most effective mechanism for addressing overflight annoyance is “to avoid establishment of noise-sensitive land uses in the portions of airport environs that are exposed to significant levels of aircraft noise.”¹⁴ The Handbook discusses three suggested overflight compatibility strategies:

- promotion of the least noise-sensitive kinds of development
- acoustical treatment of the most highly noise-sensitive land uses
- buyer awareness measures

Given the large area over which overflight concerns often exist, only the last of these measures is practical in the vicinity of most airports. Regulation of noise-sensitive land uses and requirements for acoustical treatment are most commonly applied within CNEL noise contours representing areas of significant noise exposure and are difficult to justify within a larger overflight area subject to lower noise levels.

The Handbook suggests that the purpose of overflight policies “is to help notify people about the presence of overflights near airports so that they can make more informed decisions regarding acquisition or lease of property in the affected areas. Overflight compatibility is particularly important with regard to residential land uses.”¹⁵

The Handbook describes “buyer awareness measures” as appropriate policies within overflight areas. Two broad measures are discussed:¹⁶

- recorded deed notices
- real estate disclosure statements

K.1.3.1 Recorded Deed Notices

Deed notices are legal instruments recorded with the county as part of a tentative or final subdivision map. The notice describes the location of the property within an airport overflight area, noting the potential for annoyance associated with the overflights. In developed areas where most property has already been subdivided, including the SDIA environs, deed notices have limited potential for applicability. As an alternative, requiring deed notices as a condition of zone changes, zoning permit approval, or building permit approval could be investigated. This would likely require specific authorization by ordinance.¹⁷

Deed notices and other deed restrictions or obligations are required to be identified on the California Real Estate Transfer Disclosure Form (as are any neighborhood noise problems or other nuisances).¹⁸

Because a deed notice is only a notification and does not affect property like an easement conveyance or other use restrictions, many county recorder offices in California, including the San Diego County Recorder, do

¹⁴ California Department of Transportation, Division of Aeronautics, *California Airport Land Use Planning Handbook*, October 2011, p. H-15.

¹⁵ California Department of Transportation, Division of Aeronautics, *California Airport Land Use Planning Handbook*, October 2011, p. H-24.

¹⁶ California Department of Transportation, Division of Aeronautics, *California Airport Land Use Planning Handbook*, October 2011, pp. 4-13 - 4-15.

¹⁷ Legal counsel should be consulted if this alternative is pursued.

¹⁸ California Civil Code, Section 1102.6.

not consider deed notices as suitable for recordation unless specifically required by an applicable local agency ordinance.

K.1.3.2 Real Estate Transfer Disclosure Statements

ALUCs have no authority over real estate transactions and cannot require “real estate disclosure,” as that term is typically defined and understood. The role of the ALUC in real estate disclosure is limited to its authority to establish the AIA, within which the disclosure provisions of state law apply, as discussed in Section K.1.1.

Cities and counties are authorized by the California Civil Code to adopt ordinances requiring sellers of real estate to disclose information about the neighborhood or community, such as the presence of aircraft overflights.¹⁹ The statute provides a generic disclosure form that must be used if the local government decides to adopt such a requirement.²⁰ Local governments may add specific elements to the disclosure form. For properties within airport influence areas, the local disclosure form must include the required airport influence area notification.²¹

K.2 TECHNICAL ANALYSIS

This analysis considered three overflight indicators:

- areas where noise complaints have been filed over the past several years
- areas within the 60 dB CNEL contour, based on the noise compatibility scenario described in Appendix G
- areas exposed to frequent overflights based on flight tracks

The areas of frequent overflight are expected to remain essentially the same over the 20-year planning period for the ALUCP. Aircraft flight patterns, including instrument approach and departure routes, will remain substantially the same because of the constraints imposed by the terrain, airspace, and flight procedure design criteria. Based on the 20-year aviation activity forecast, summarized in **Appendix E** of this ALUCP, most aircraft types operating at SDIA are projected to remain similar to those operating today. Thus, major changes in the pattern of frequent aircraft overflights potentially attributable to new aircraft technologies are not anticipated.

K.2.1 Noise Complaint Locations

While complaints are not a precise indicator of serious overflight problems that can be objectively measured and evaluated, the overall geographic pattern of noise complaints can be helpful in defining the boundaries of an area where overflight notification is warranted. In urbanized areas, it is common for complaints to be filed by people residing in areas outside the CNEL contours that define the area of significant noise impact (usually the 60 or 65 dB CNEL contour).²²

¹⁹ California Civil Code, Section 1102.6a.

²⁰ State of California Department of Real Estate, *Disclosures in Real Property Transactions*, 6th Edition, 2005, p. 8.

²¹ California Civil Code, Section 1102.6a(d)(2).

²² Partnership for Air Transportation Noise and Emissions Reduction (PARTNER), Report No. PARTNER COE-2008-001, *Land Use Management and Airport Controls*, December 2007.

Noise complaint locations for the 6-year period from 2017 through 2022 were mapped for this analysis, as depicted on **Exhibit K-1**,²³ together with the overflight area boundary from the 2014 ALUCP for SDIA. All locations are associated with complaints about noise or overflights from aircraft operating at SDIA. The densest concentration of complaint locations is west of the Airport in the Ocean Beach and Peninsula Community Planning Areas (CPAs), extending north into Mission Beach. The next densest concentration of complaint locations is in La Jolla. Smaller concentrations are east of the Airport beneath the final approach to Runway 27. Other complaint locations are widely scattered from north to east of the Airport.

K.2.2 Noise Contours

Exhibit K-2 depicts the noise complaint locations and the 60 dB CNEL contour for the 2050 forecast. Dense clusters of noise complaint locations are within the noise contour both west and east of the Airport. Significantly, however, many other noise complaint locations are well outside the 60 dB CNEL contour, as suggested in Section K.1.2 and Section K.2.1.

K.2.3 Flight Tracks

Areas subject to overflights can be accurately mapped using data from the SDIA Airport Noise and Operations Monitoring System (ANOMS). To aid in the definition of an overflight area boundary, different flight track analyses were undertaken. The first considered the location of individual aircraft overflights; the second considered the density of flight tracks in the study area during an average day.

SDIA operates most often in a west flow configuration, with arrivals from the east and departures to the west on Runway 27. Three other key points are as follows:

- Overflights by commercial and business jets are heavily concentrated over specific areas, reflecting the pattern of instrument departure and approach procedures. Nevertheless, jet overflights may appear in other areas because of missed approaches or vectoring instructions from Air Traffic Control.
- Propeller aircraft tend to make departure turns sooner and make sharper turns than jets. Similarly, many propeller aircraft make shorter arrivals than jet aircraft. This is consistent with established Air Traffic Control procedures. Propeller aircraft are directed to make wide turns immediately after takeoff to separate them from jets that are awaiting takeoff behind them.
- At any given time, flights can occur virtually anywhere in the study area.

Radar flight track data for jet and propeller aircraft approaches and departures were collected for selected periods during 2022 and 2023 to ensure different seasons and operating configurations were sampled.²⁴

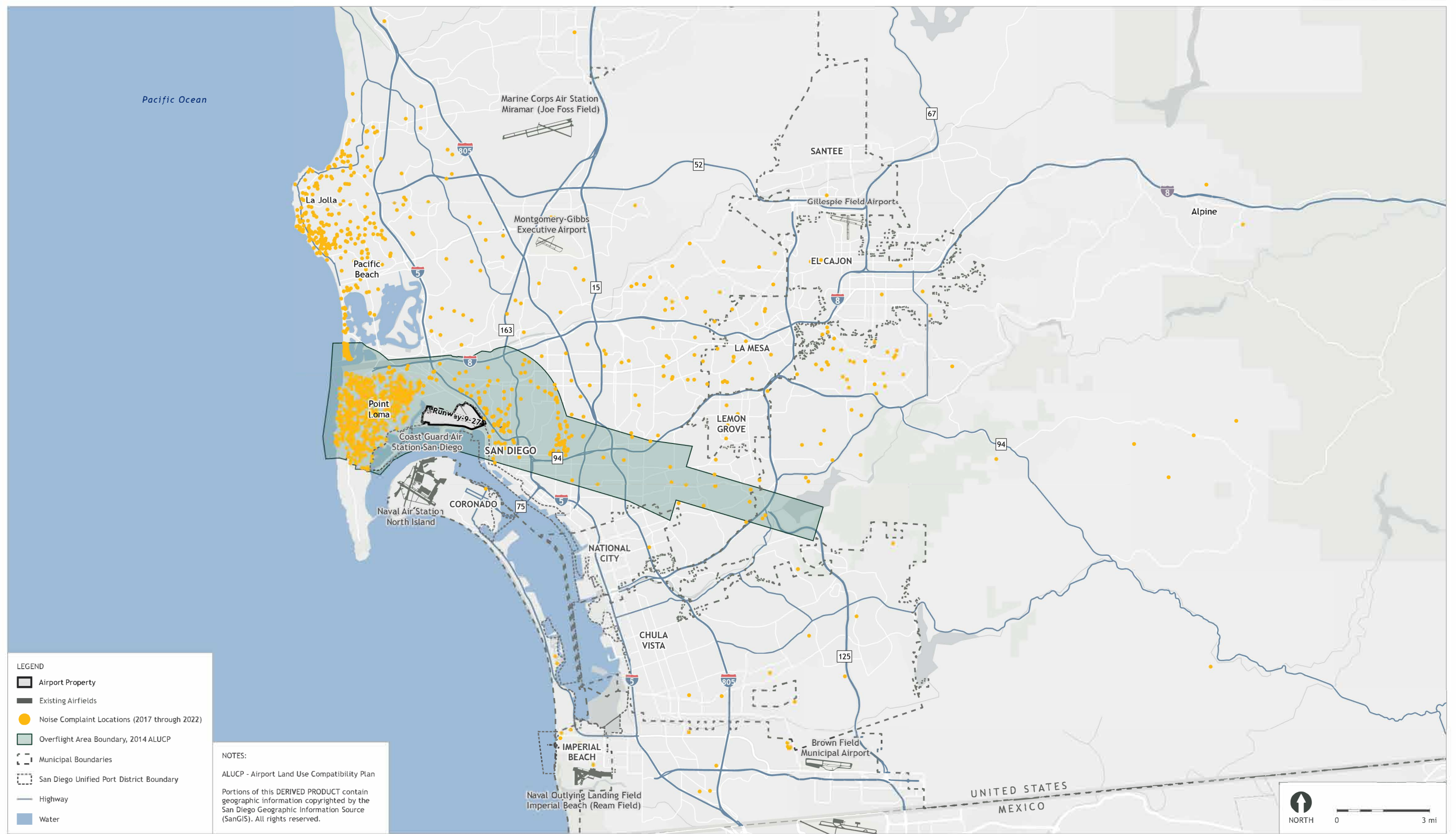
Exhibit K-3 and **Exhibit K-4** depict flight tracks at altitudes up to 5,000 feet above airport field elevation (AAFE) and up to 7,000 feet AAFE, respectively, together with noise complaint locations and the 60 dB CNEL contour.²⁵ The exhibits depict arrivals and departures on Runway 27, which account for 98 percent of all operations at the Airport.²⁶ The exhibits also distinguish between jet and propeller aircraft flight tracks.

²³ San Diego County Regional Airport Authority, noise complaint records.

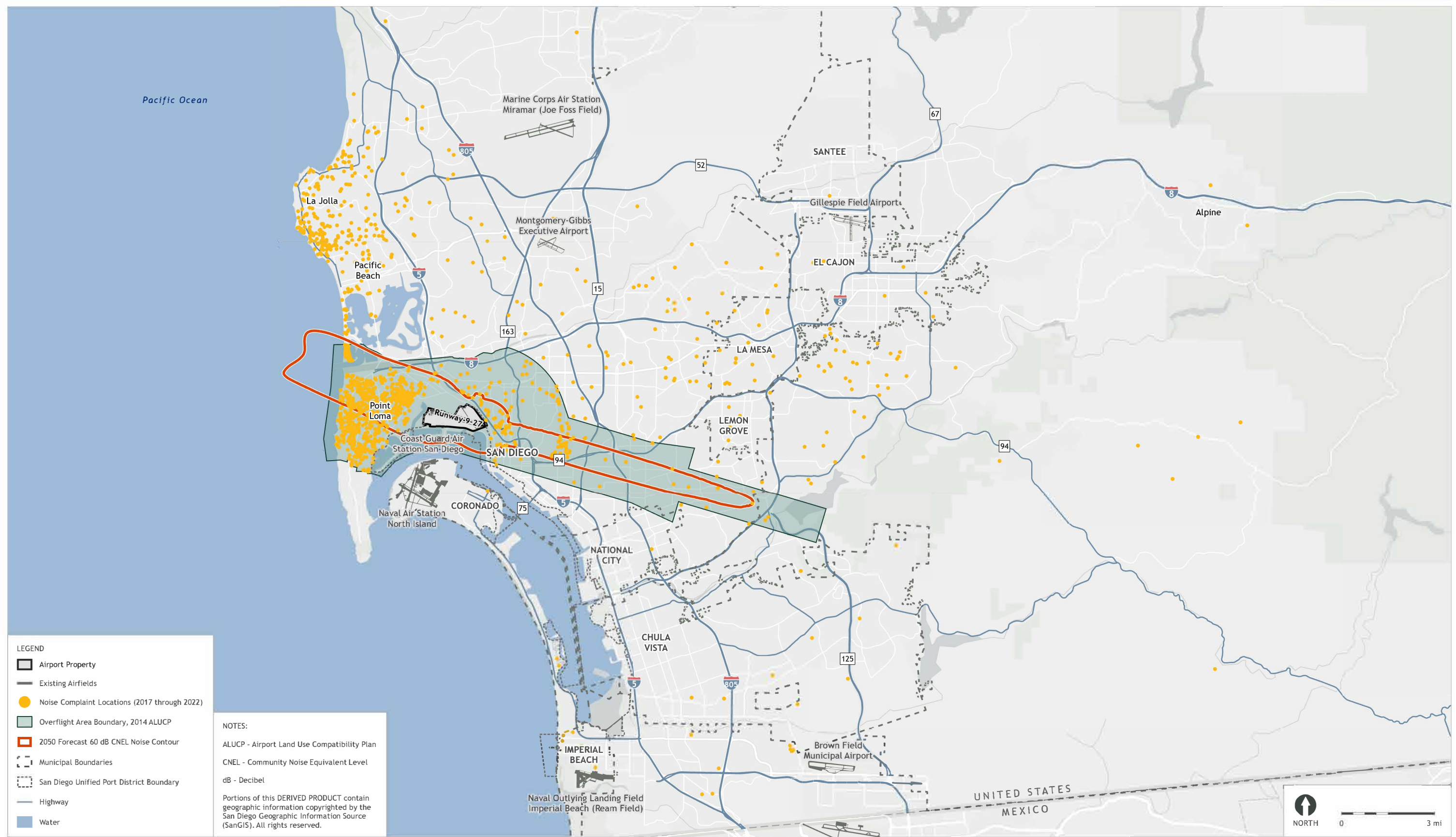
²⁴ See Appendix F, *Radar Data Analysis*.

²⁵ AirNav.com, KSAN, San Diego International Airport, <https://www.airnav.com/airport/KSAN> (accessed June 15, 2023). The Airport field elevation is 16.8 feet above mean sea level.

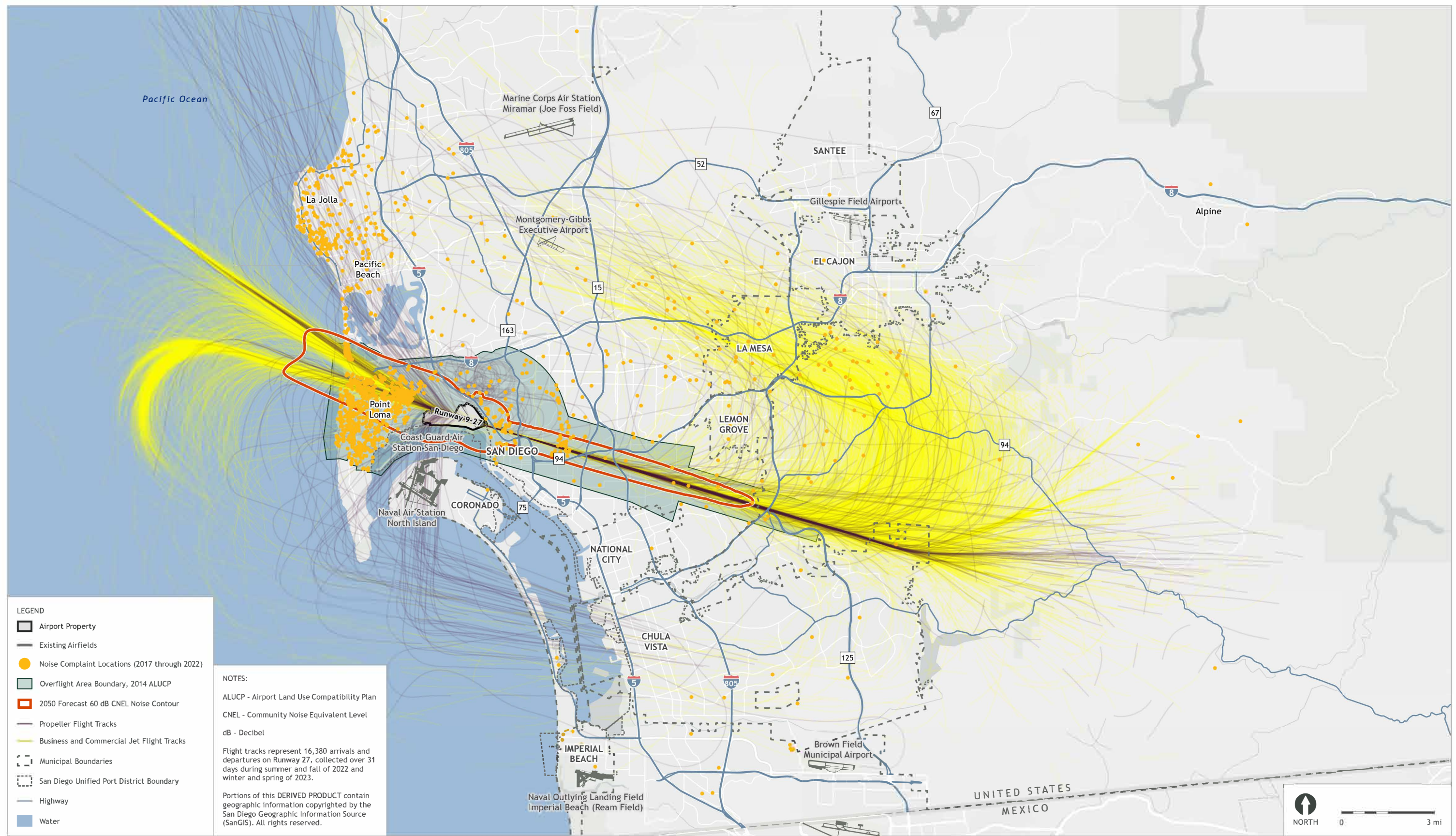
²⁶ San Diego County Regional Airport Authority, *14 CFR Part 150 Update, Noise Exposure Maps and Noise Compatibility Program, Final Report*, May 2022, p. 4.12.



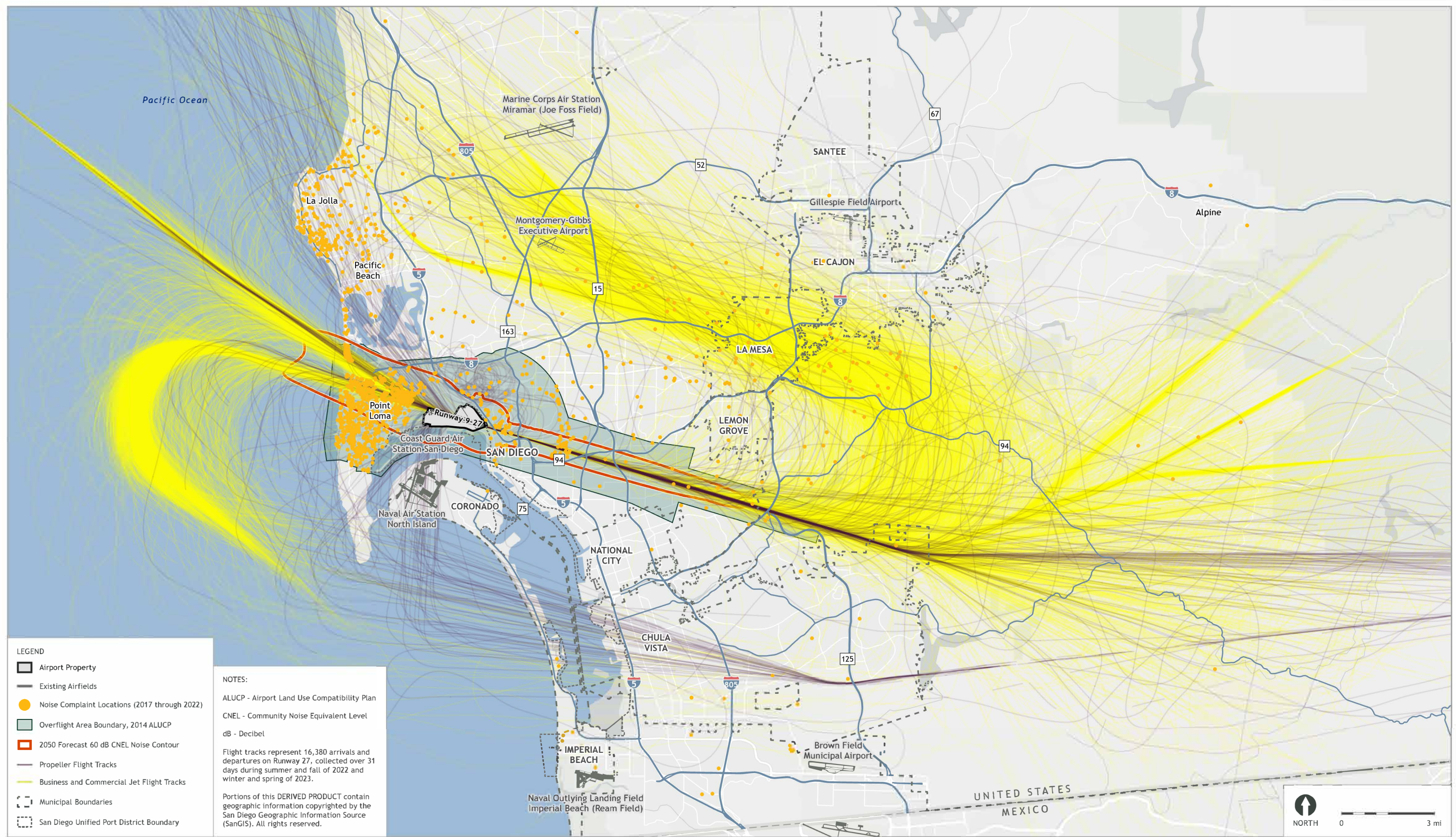
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Exhibit K-3 and Exhibit K-4 reveal that jet departures are concentrated on two routes: one straight out on runway heading and another approximately 15 degrees north of runway heading. This reflects published standard departure procedures for Runway 27 and correlates with complaint locations in the Peninsula and Ocean Beach CPAs and south Mission Beach. Aircraft approaching from the northwest enter the downwind leg of the Runway 27 traffic pattern on the north edge of La Jolla and continue east, turning south onto the base leg west of La Mesa, and then turning onto the final approach 7 to 15 miles east of the runway. The approach tracks correlate with complaint locations east of the Airport near the extended runway centerline and northeast and north of the Airport under the downwind leg.

Some jet flight tracks west of Runway 27 appear to be departures turning early over the Peninsula CPA south of the extended runway centerline. As indicated in the radar flight track analysis discussed in **Appendix F**, these are missed approaches to Runway 27; the aircraft make a climbing left turn as they prepare to head east to reenter the arrival stream.

Propeller aircraft approaches generally share the same locations as the jet approaches, although many propeller aircraft turn from the downwind leg to the base leg nearer to the Airport. Many propeller departures turn left and right much sooner and nearer the Airport than the jets. The departures making early right turns are correlated with the noise complaint locations in Mission Beach and La Jolla. The departures making early left turns are interspersed with missed approach tracks by jets and are correlated with noise complaint locations in the southern part of the Peninsula CPA.

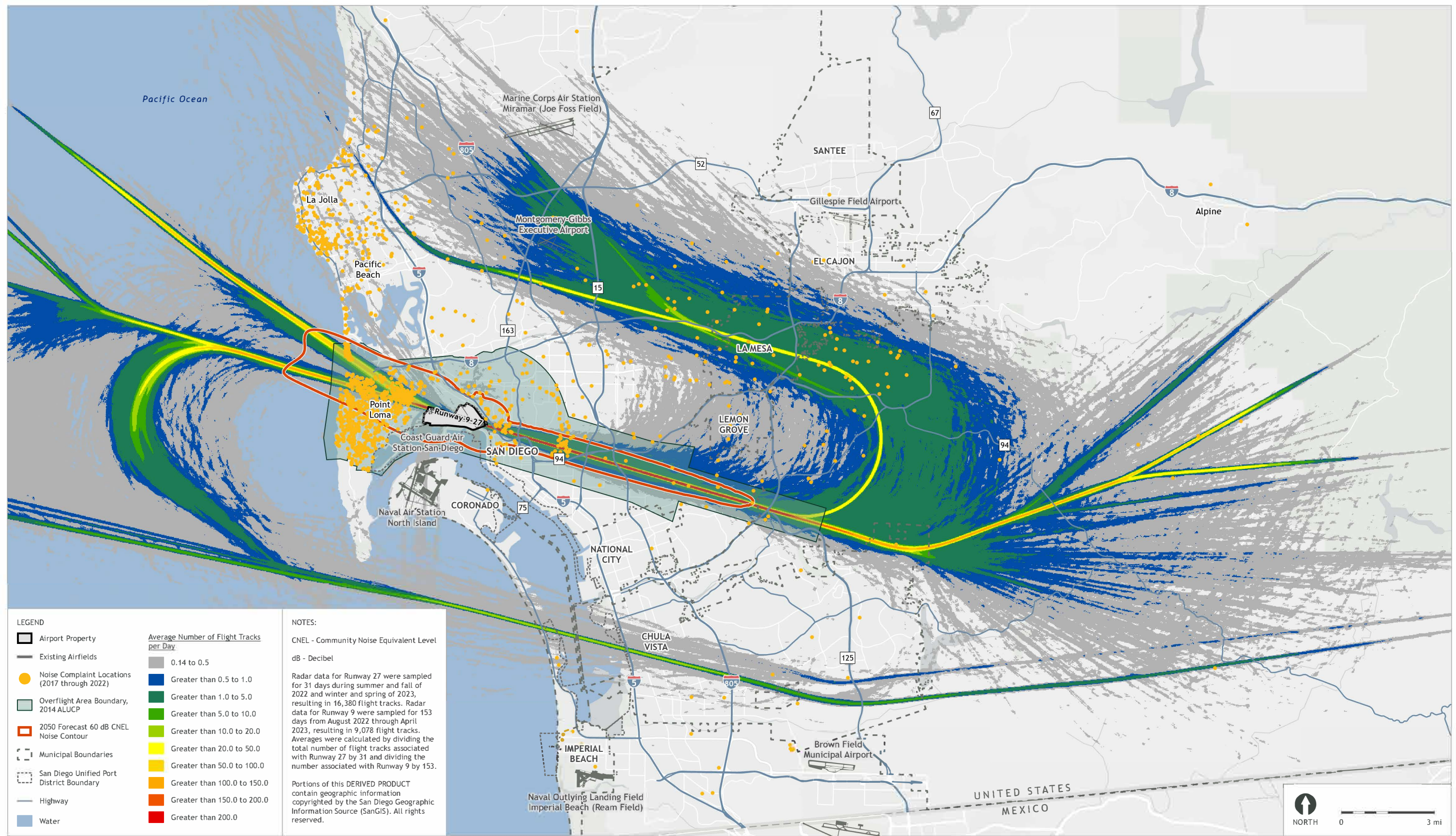
Exhibit K-5 and **Exhibit K-6** present the density of flight tracks up to 7,000 feet AAFE and 10,000 feet AAFE, respectively. The data represent the number of flight tracks, by all aircraft, over any given area on an average day during the radar data sampling period. The analysis accounts for both operations to the west on Runway 27 and operations to the east on Runway 9.²⁷ The flight track density patterns depict the most heavily used flight routes, indicated by the tightly clustered yellow, orange, and red colors, representing 20 to over 200 operations per day. These correspond to standard instrument departure and arrival routes.

Exhibits K-5 and K-6 confirm the correlation of noise complaint locations with the Runway 27 departure and final approach routes. The exhibits also indicate the correlation of noise complaint locations with the downwind leg of the Runway 27 approach, north and northeast of the Airport. Noise complaint locations in Lemon Grove and east San Diego are correlated with overflights transitioning from the crosswind and base legs to the final Runway 27 approach.

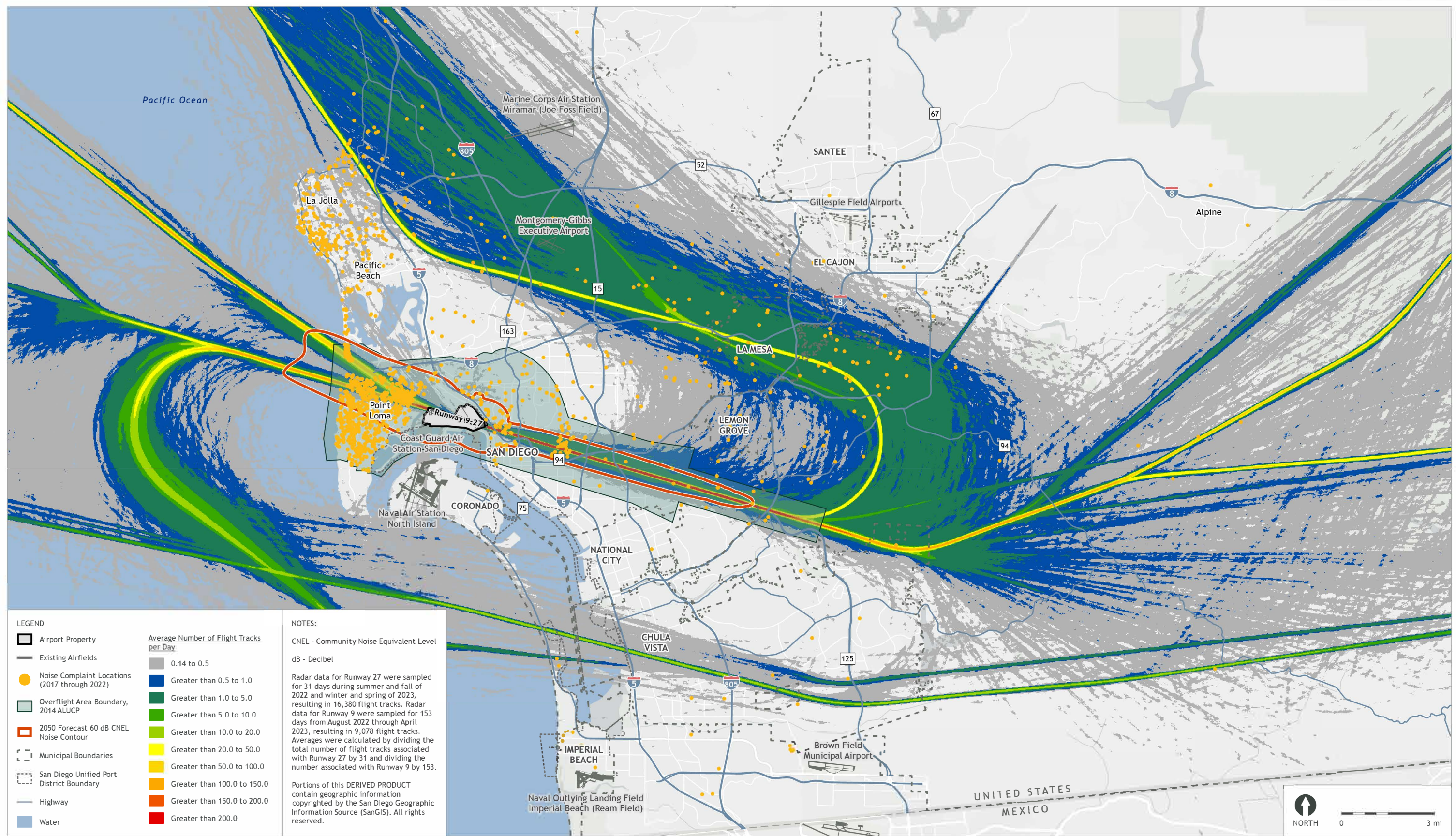
Noise complaint locations in the southern part of the Peninsula CPA, Mission Beach, Pacific Beach, La Jolla, and east of Mission Beach to east of Balboa Park are not well correlated with dense patterns of flight tracks. As indicated on Exhibits K-3 and K-4, these are subject to overflights, but with less frequency than other areas. Many of these complaints are likely to be motivated by annoyance with aircraft several miles away that are detectible at night; aircraft that are not operating along the most common flight routes; or infrequent overflights such as eastbound departures from Runway 27 that turn right over La Jolla as aircraft head east. In the southern part of the Peninsula CPA, the infrequent missed approaches by jet aircraft are quite loud compared to the prevailing ambient background noise, leading to some complaints.

²⁷ Refer to Appendix F, *Radar Data Analysis*, for more information.

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K.3 POTENTIAL UPDATED OVERFLIGHT AREA BOUNDARY

Exhibit K-7 depicts a potential overflight area boundary for SDIA along with noise complaint locations, the 60 dB CNEL contour, and flight track density. The boundary encompasses areas subject to a flight track density of one or more overflights per day and areas of relatively concentrated noise complaint locations. The southern boundary of the overflight area is coterminous with the boundary from the 2014 ALUCP. **Exhibit K-8** depicts the overflight area boundary on a base map.

Exhibit K-9 depicts the potential updated SDIA overflight area together with the AIAs for all other airports in southwest San Diego County, in or near the city of San Diego. The updated overflight area would overlap with most of the AIA for Montgomery-Gibbs Executive Airport and parts of the AIAs for Marine Corps Air Station Miramar and Naval Air Station North Island.

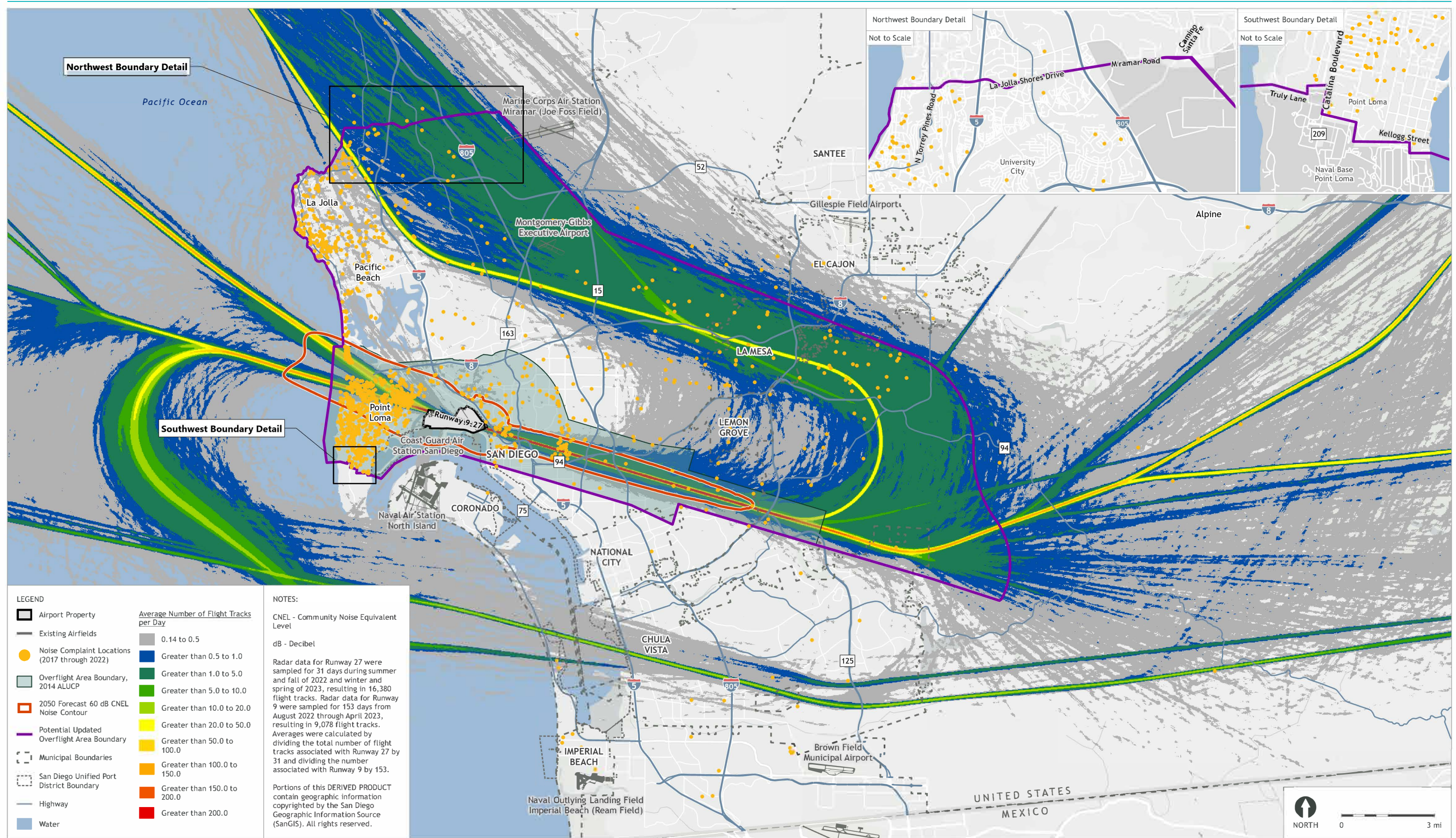
K.4 OVERFLIGHT POLICY CONSIDERATIONS

The main objective of overflight policies is to ensure people are informed about the presence of aircraft overflights near airports so they can make informed decisions regarding the purchase or lease of residential property in the affected areas. This can be achieved by owners and developers of new residential projects providing notice of the presence of aircraft overflight to prospective buyers.

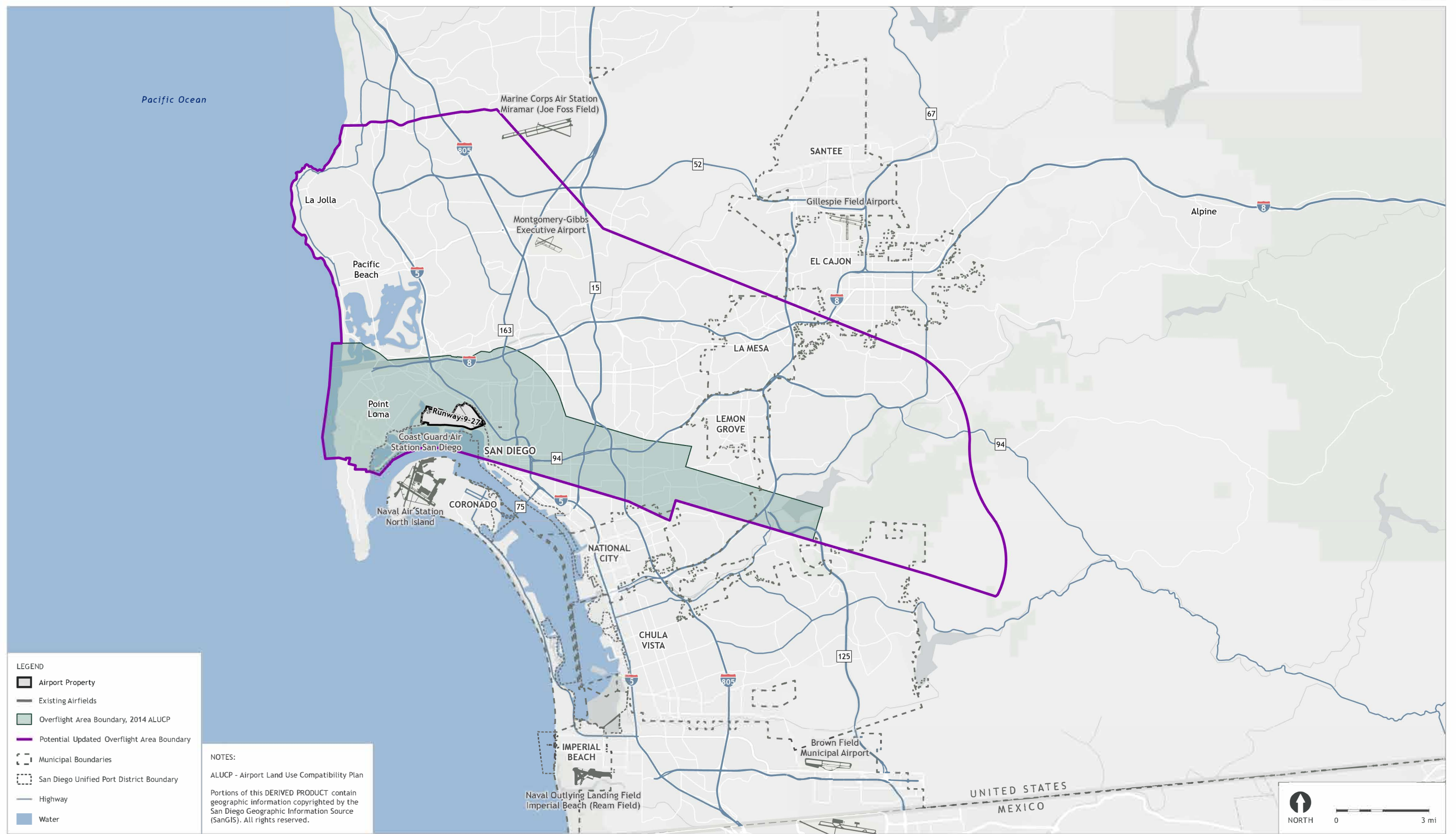
The 2014 ALUCP included two overflight policies, presented in **Table K-1**. Considerations for updating the policies are presented in the third column of the table. These considerations are based on the experience of the ALUC with the 2014 ALUCP overflight policies.

K.5 SUMMARY

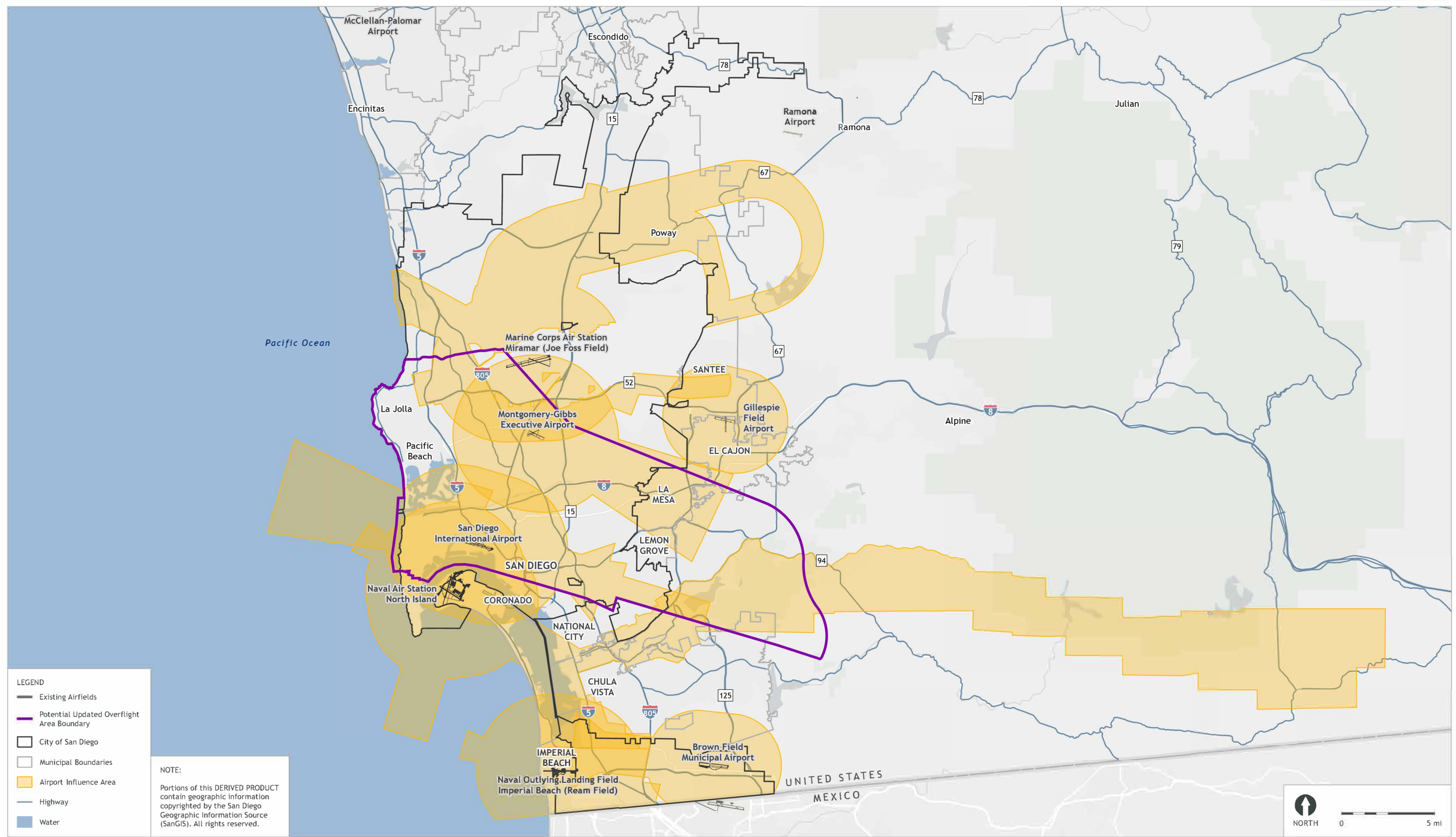
It is recommended that the ALUCP overflight area boundary be enlarged to cover areas of relatively dense noise complaint locations, areas that are frequently overflown at altitudes up to 10,000 feet AAFE, and areas that are subject to less frequent but low altitude operations. The proposed updated overflight area boundary is presented on Exhibit K-7 and Exhibit K-8. The overflight policy should be updated to acknowledge that the state real estate law facilitates overflight notification. Other methods of overflight notification should also be described, including adoption of local ordinances requiring the recordation of deed notices and adoption of local option real estate disclosure notices.



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Table K-1 2014 Airport Land Use Compatibility Plan - Overflight Policies and Considerations for Update

2014 ALUCP POLICY NUMBER	2014 ALUCP POLICY DESCRIPTION	CONSIDERATIONS FOR UPDATED POLICY
Policy O.1	Overflight Boundary The overflight boundary ... establishes the area where the policies of this chapter apply.	Update the Overflight Boundary, as depicted on Exhibits K-7 and K-8.
Policy O.2	Overflight Notification An overflight notification agreement must be recorded with the Office of the County Recorder for any new dwelling unit within the overflight area indicated on Exhibit 5-1 [in 2014 ALUCP]... The recordation of an overflight notification agreement is not necessary where the dedication of an aviation easement is required. Alternative methods of providing overflight notification are acceptable if approved by the Airport Land Use Commission.	The policy should be revised to acknowledge that overflight notification agreements, a type of “deed notice,” will not be recorded by the San Diego County Recorder unless specifically required by municipal or county ordinance (discussed in Section K.1.3.1), The updated policy should also acknowledge that In establishing an Airport Influence Area through the ALUCP, the requirements of the state real estate disclosure law would apply to the sale of residential properties, as described in Section K.1.1. This would help to achieve the notification objective described in Section K.4. The policy could also note that a local option real estate disclosure ordinance would achieve the overflight notification objective.

NOTES: ALUC - Airport Land Use Commission; ALUCP - Airport Land Use Compatibility Plan; SDIA - San Diego International Airport

SOURCES: Airport Land Use Commission, San Diego County Regional Airport Authority, *San Diego International Airport Land Use Compatibility Plan*, May 2014 (amended; table columns 1 and 2), p. 5-2; Ricondo & Associates, Inc., June 2024 (table column 3).