Airspace and Safety Analysis – Old Plantation Mobile Home Park

Williams Aviation Consultants, Inc. (WAC) was retained by Newport Pacific to complete an obstruction evaluation and airspace analysis of a project site located at the existing Old Plantation Mobile Home Park in Riverside, CA. An additional nine mobile homes are being added to five different locations on the existing mobile home park ***(Figure 1)***. The proposed mobile homes are 12' Above Ground Level (AGL) with ground elevations ranging from 770' to 775' Above Mean Sea Level (AMSL), resulting in an overall height of approximately 782' to 787' AMSL.

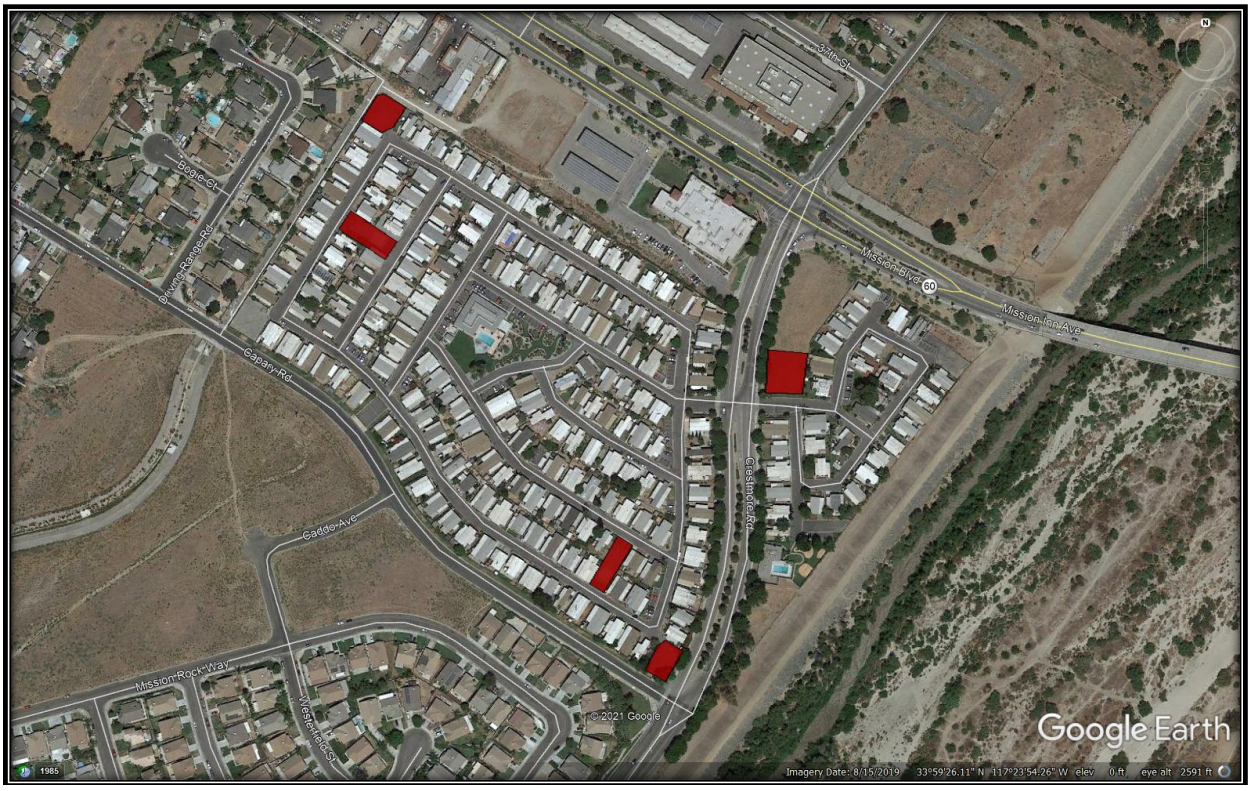

Figure 1 – Five Study Areas

The purpose of the analysis was to determine if the 12' AGL mobile homes can be erected at the project site without having an adverse effect upon the safe and efficient use of the navigable airspace surrounding Flabob Airport (RIR). The proposed project's location in relation to RIR is shown in ***Figure 2.***

Figure 2 - Study Areas in Relation to Flabob Airport (RIR)

FAA Review Process

The FAA utilizes the criteria contained in CFR Part 77 to determine reporting requirements, the impact of a proposed structure on navigable airspace, and whether the structure, if constructed, will require lighting and/or marking.

CFR Part 77 defines the criteria for determining if a structure will require reporting to the FAA, if the structure exceeds the stated criteria and requires the submittal of FAA Form 7460-1, and/or whether or not the structure has an impact on navigable airspace.

If the FAA determines that there is an impact to navigable airspace, a Notice of Presumed Hazard (NPH) will be issued and an aeronautical study will be conducted. Concurrent with the NPH the project is distributed to the FAA divisions having the responsibility for air traffic control, flight procedures, airport infrastructure and navigational aids. Each of these divisions then evaluates the project for impacts within their area of jurisdiction. These divisions submit their comments to the Air Traffic division who will issue a determination.

If the FAA determines that the proposed structure has a substantial adverse impact, they will issue a Determination of Hazard. In some cases, they will offer the project proponent options to mitigate the adverse impact, i.e., lower the structure, redesign etc.

It is not uncommon for the FAA's initial analysis to disregard factors unique to a specific airport such as existing structures or special procedures that have been developed for that airport.

Once the FAA's initial analysis is complete, additional data can be presented to the FAA for their consideration which may result in the approval of the proposed structure.

WAC Analysis

The WAC airport and airspace compatibility analysis includes a review of the following criteria to determine possible adverse impacts to aeronautical operations:

1. Public and private airports in the vicinity of the proposed structure.
2. Federal Aviation Regulation Part 77, Objects Affecting Navigable Airspace.
3. Terminal Instrument Procedures (TERPS) including instrument approach and departure procedures.
4. Visual Flight Rule (VFR) Traffic Pattern Airspace.
5. Airport Land Use Compatibility Plan (ALUCP) Safety Compatibility Zones
6. ALUCP Noise Compatibility

Public/Private Airports:

RIR is located approximately 1,422 Feet SW of the proposed site location ***(Figure 3).*** RIR is a privately-owned, public use airport located within the City of Riverside, CA. The airport currently maintains one runway; Runway 06/24 with a length of 3,190 feet.

Riverside Municipal Airport (RAL) is located approximately 3.31 Nautical Miles SW of the proposed site location, however only RIR was identified as requiring detailed analysis to determine whether or not the proposed structures would have a significant adverse impact on flight procedures.

Figure 3 - Distance to RIR

CFR Part 77 Analysis:

CFR Part 77 Notice Requirements and Obstruction Standards

An analysis of CFR Part 77 Notice Requirements was conducted and it was determined that given the proposed mobile home locations to RIR, formal submission to the FAA is requested. The project has been submitted to the FAA for review.

An analysis of CFR Part 77 Obstruction Standards was completed to determine the maximum Above Mean Sea Level (AMSL) elevation to which a structure could be erected without exceeding CFR Part 77 Civil Airport Imaginary Surfaces ***(Figures 4, 5, and 6).*** As stated in FAA Order 7400.2 Procedures for Handling Airspace Matters paragraph 6-3-9b:

"Obstruction standards are used to identify potential adverse effects and are not the basis for a determination. The criteria used in determining the extent of adverse effect are those established by the FAA to satisfy operational, procedural, and electromagnetic requirements. These criteria are contained in regulations, advisory circulars, and orders (e.g., the 8260 Order series and Order 7110.65). Obstruction evaluation personnel must apply these criteria in evaluating the extent of adverse effect to determine if the structure being studied would actually have a substantial adverse effect and would constitute a hazard to air navigation."

CFR Part 77 Obstruction Standards is not used to determine if a structure will be a hazard to air navigation, rather, structures exceeding this criterion are studied closely by the FAA to determine if the structure will require mitigation or if the structure will impact terminal instrument procedures

or visual flight rule traffic pattern airspace. Generally, a structure that exceeds CFR Part 77 Obstruction Standards will require mitigation such as lighting and/or marking in order to make it more conspicuous to airmen.

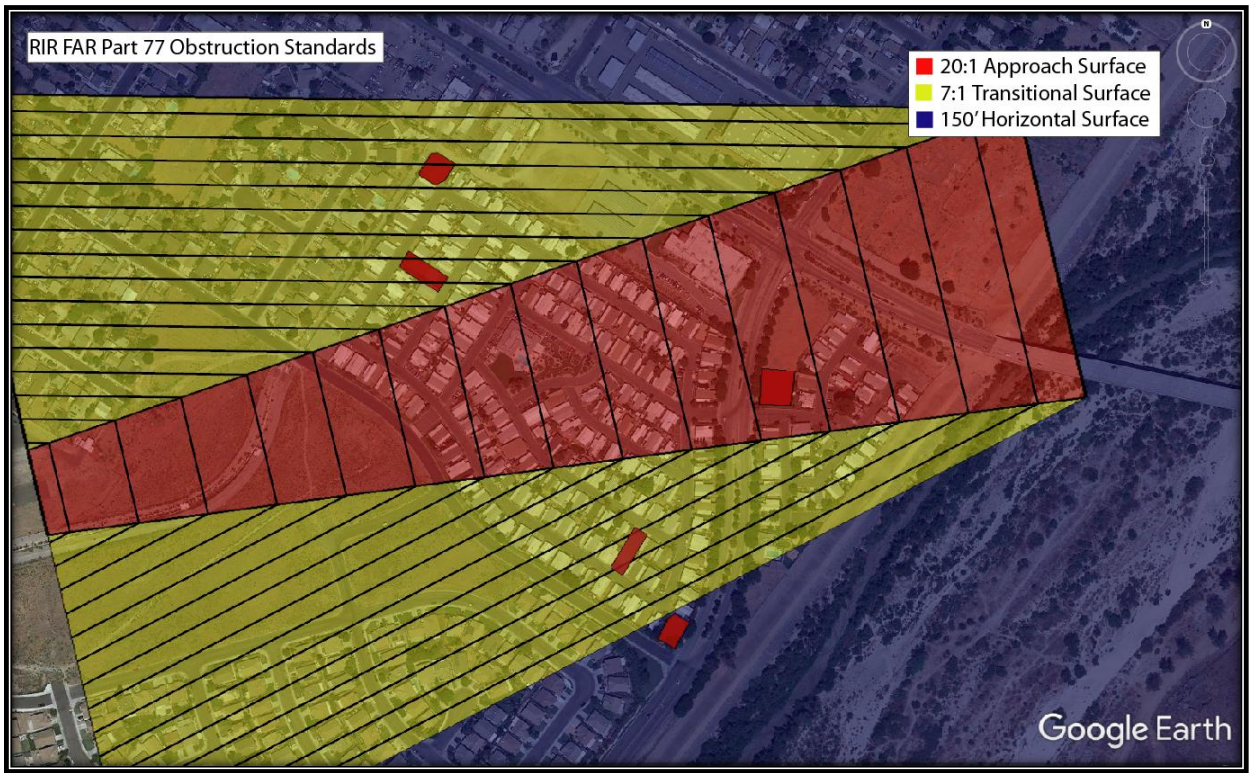

Figure 4 - Overview of Obstruction Standards for RIR

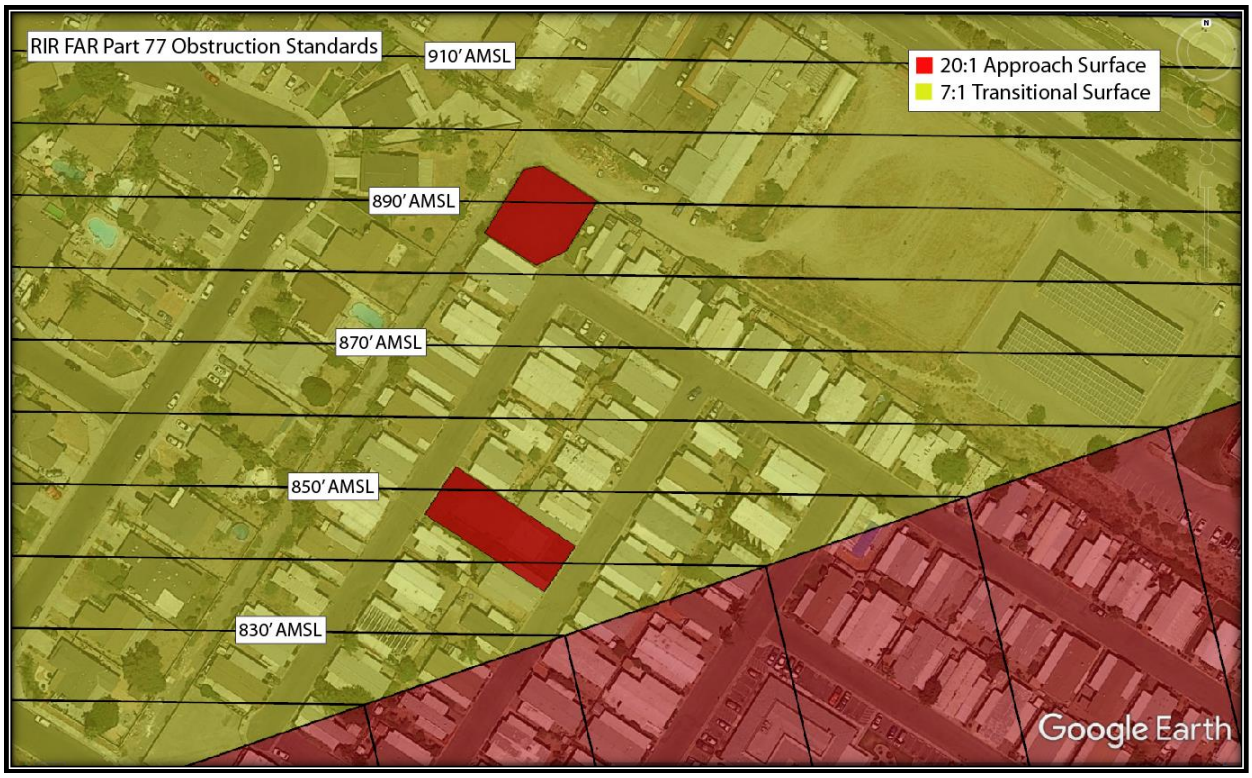

Figure 5 – RIR Obstruction Standards AMSL Elevations

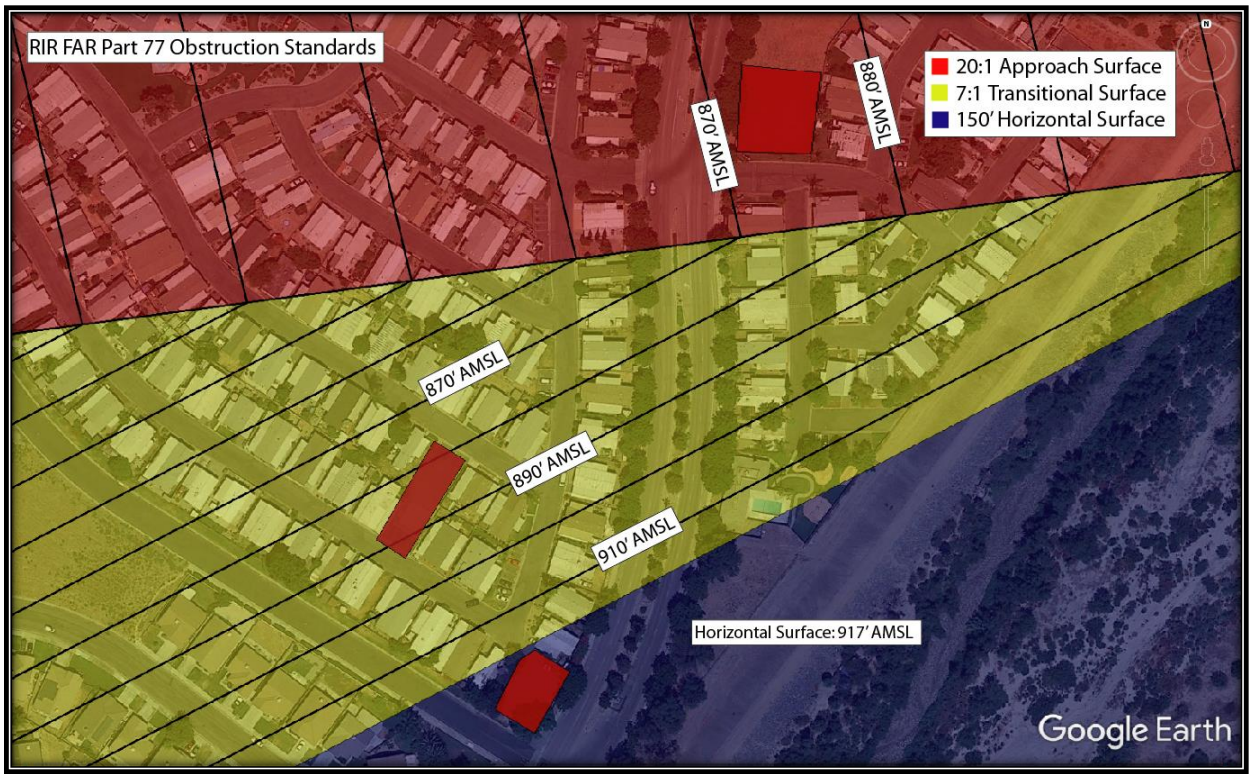

Figure 6 – RIR Obstruction Standards AMSL Elevations

Conclusion: The proposed 782' to 787' AMSL mobile homes will not exceed RIR Obstruction Criteria.

Terminal Instrument Procedures (TERPS)

An analysis of the Terminal Instrument Procedures (TERPS) criteria was completed to determine the maximum elevation to which a structure could be erected without impacting RIR instrument approach and departure procedures.

Instrument Approach Procedures

A penetration to the Obstacle Clearance Surfaces (OCS) by a proposed structure would result in the need to increase the procedure's Minimum Descent Altitude (MDA) (the lowest altitude that a pilot can descend on an approach) and would likely receive a Hazard Determination from the FAA.

RIR Instrument Arrival Procedures

A review of RIR's Instrument Approach Procedures (IAP) revealed that there is only one RNAV (GPS)-A approach to RIR.

Figure 7 displays an overview of the RIR RNAV (GPS)-A OCS.

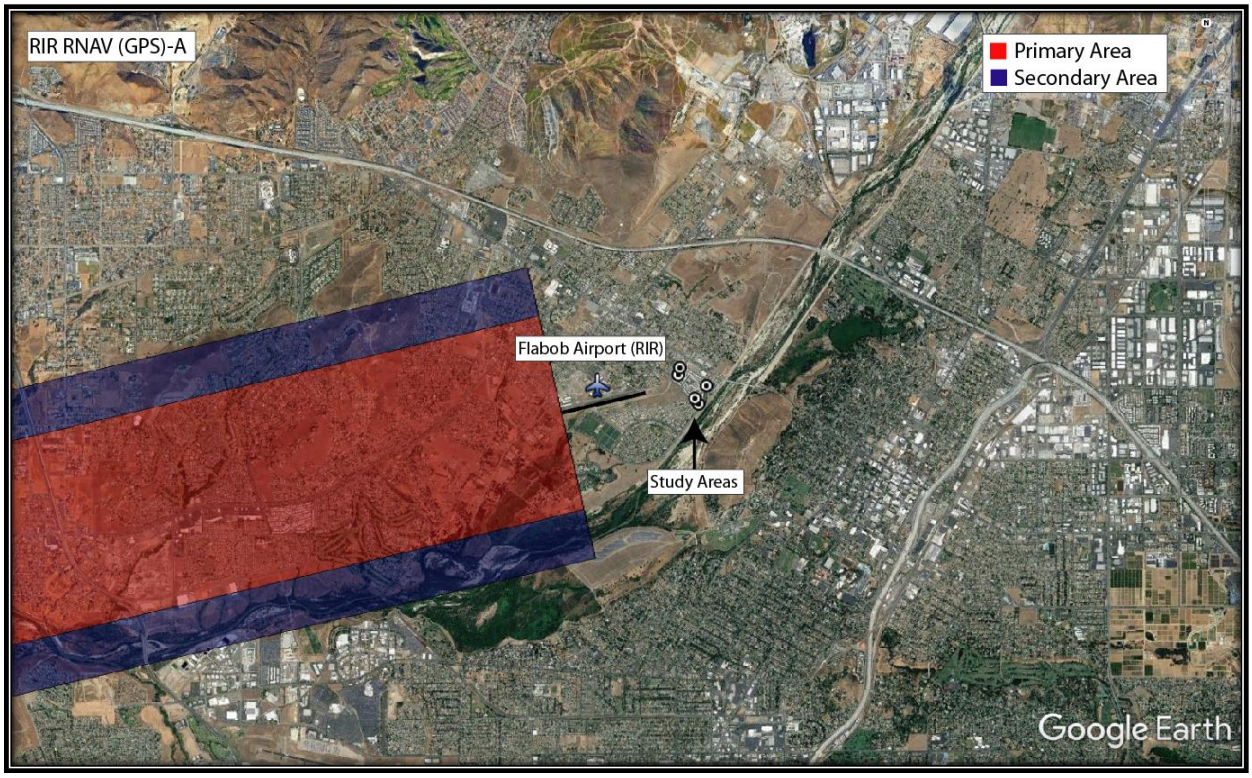

Figure 7 - RIR RNAV (GPS)-A Overview

Conclusion: The proposed project is located outside of the RIR RNAV (GPS)-A OCS.

Circle-to-Land Instrument Approach Procedure

Each instrument approach procedure to RIR contains a circle-to-land option. The circle-to-land portion of the procedure allows a pilot to approach the airport in instrument conditions then, once he has the airport environment in sight, the pilot can maneuver the aircraft to the opposite end of the runway to land. A pilot would execute this type of instrument approach procedure if the winds were not favorable for landing on the primary runway for which the procedure was designed.

The surfaces which protect the circle-to-land consist of horizontal circular surfaces which extend from the end of each runway. The radius of each circle is dependent on the category of aircraft utilizing the circle-to-land approach.

Figure 8 displays an overview of the lowest OCS associated with the Circle-to-Land Category A aircraft approaching Runway 06/24.

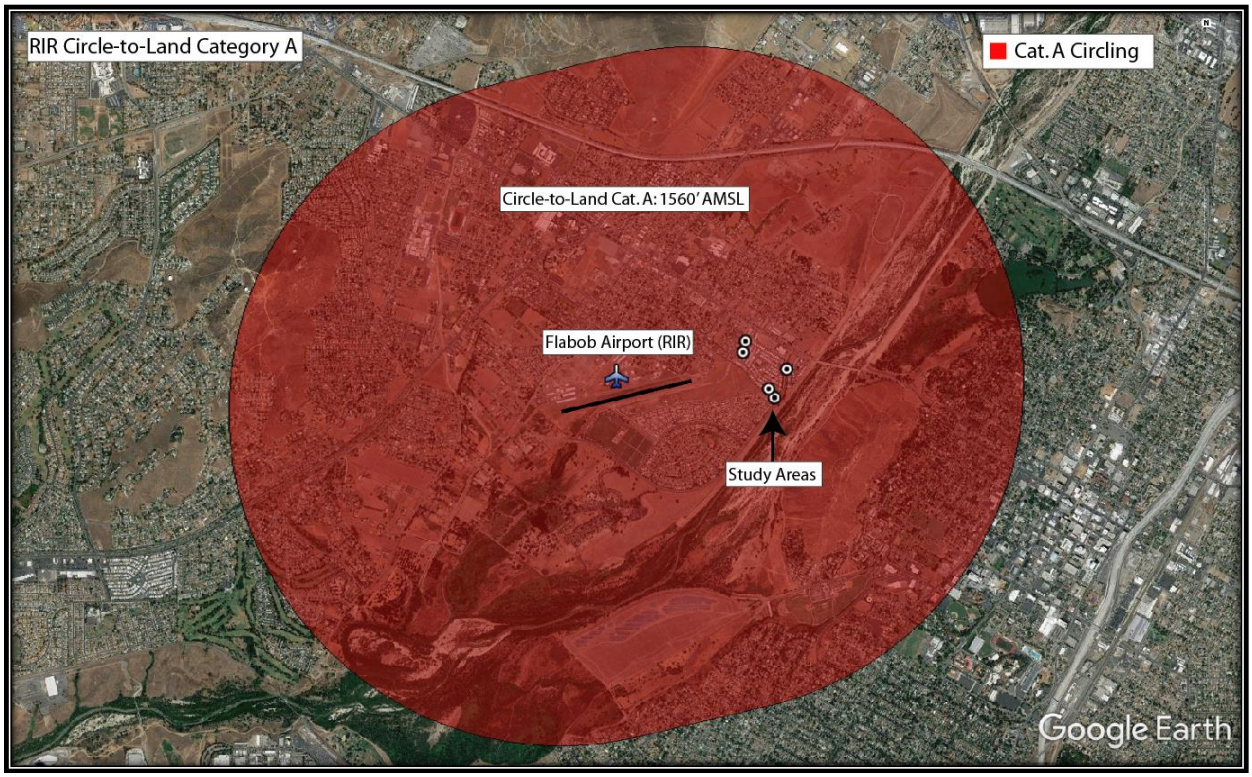

Figure 8 – Overview of Circle-to-Land OCS

Conclusion: The proposed 782' to 787' AMSL mobile homes will not exceed RIR Circle-to-Land Category A 1560' AMSL OCS.

Instrument Departure Procedures

The Initial Climb Area (ICA) associated with RIR's departure procedures were analyzed. A standard Climb Gradient of 200 ft per Nautical Mile (NM) for aircraft departing Runway 06 was

analyzed as well as RIR's minimum Climb Gradient of 480 ft per NM. A penetration to the departure procedure ICA could result in the need for the departure procedure to be modified.

Figures 9 through 12 displays the Departure ICA for Runway 06 at RIR.

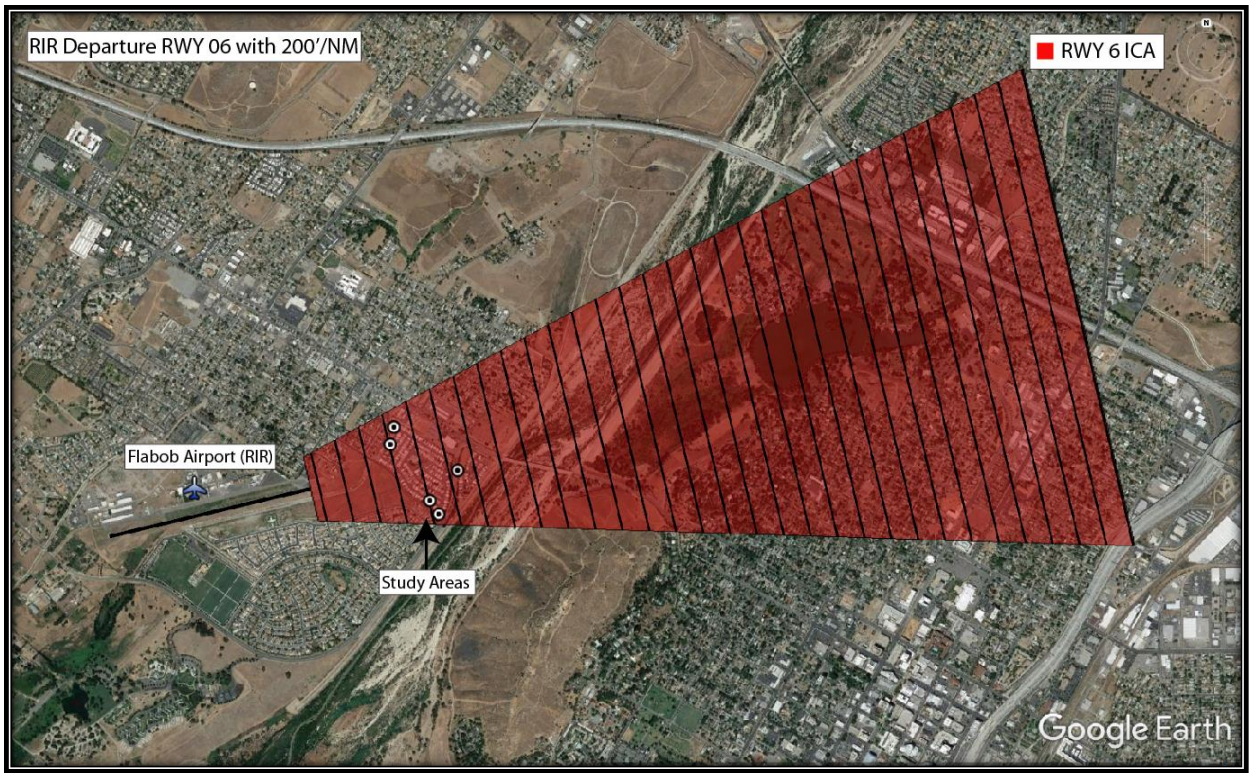

Figure 9 – Overview of Departure Runway 06 ICA with 200' per NM

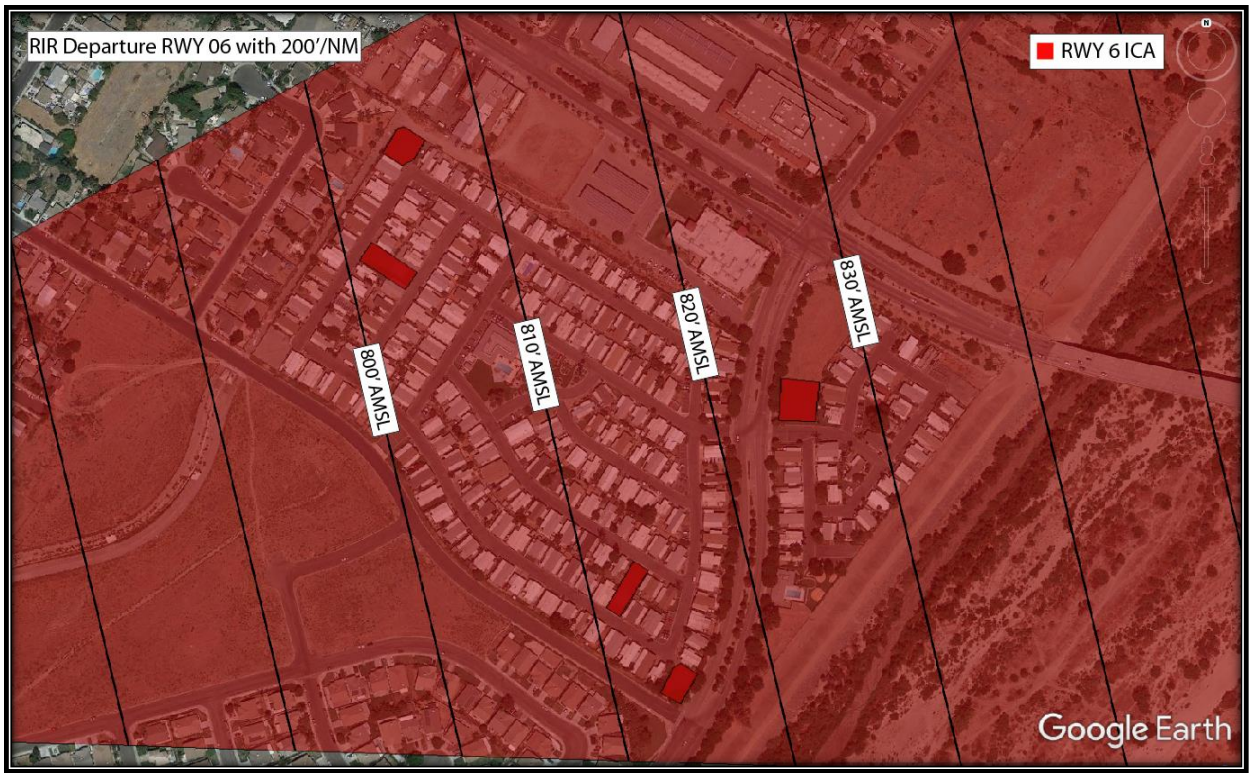

Figure 10 –Departure Runway 06 with 200' per NM AMSL Elevations

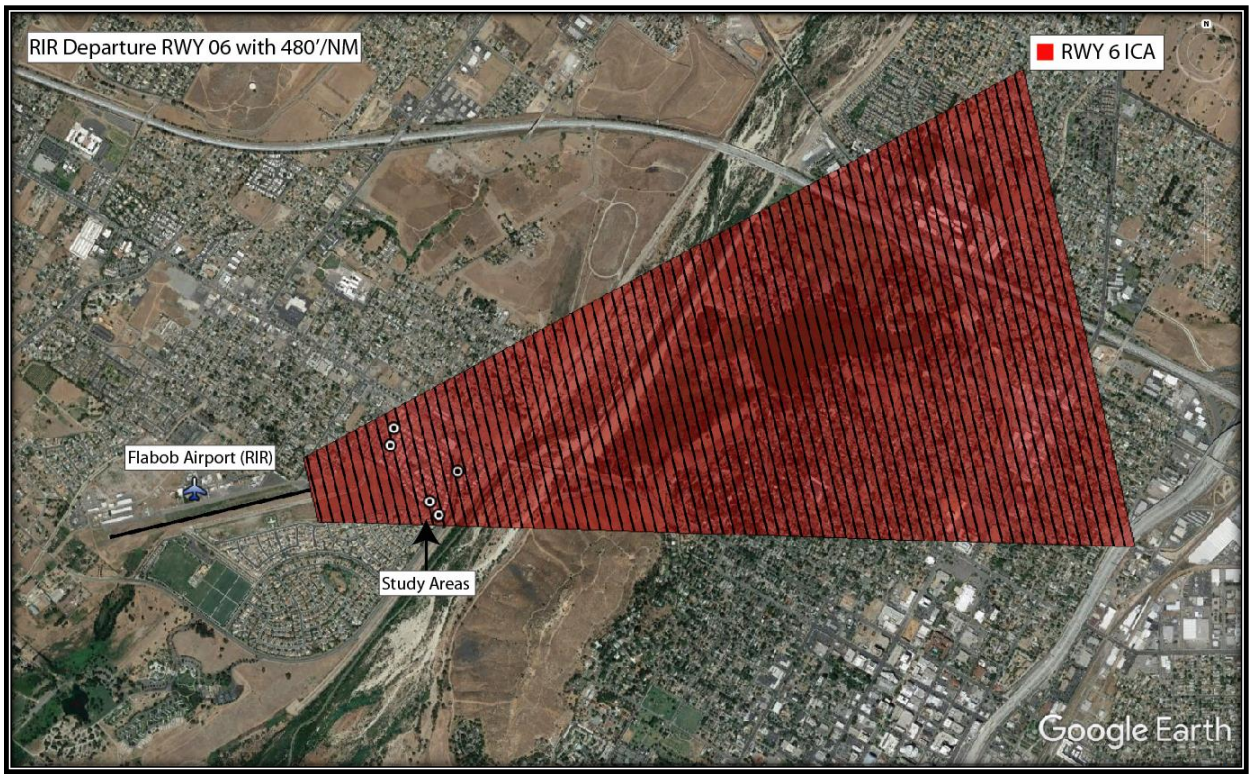

Figure 11 – Overview of Departure Runway 06 ICA with 480' per NM

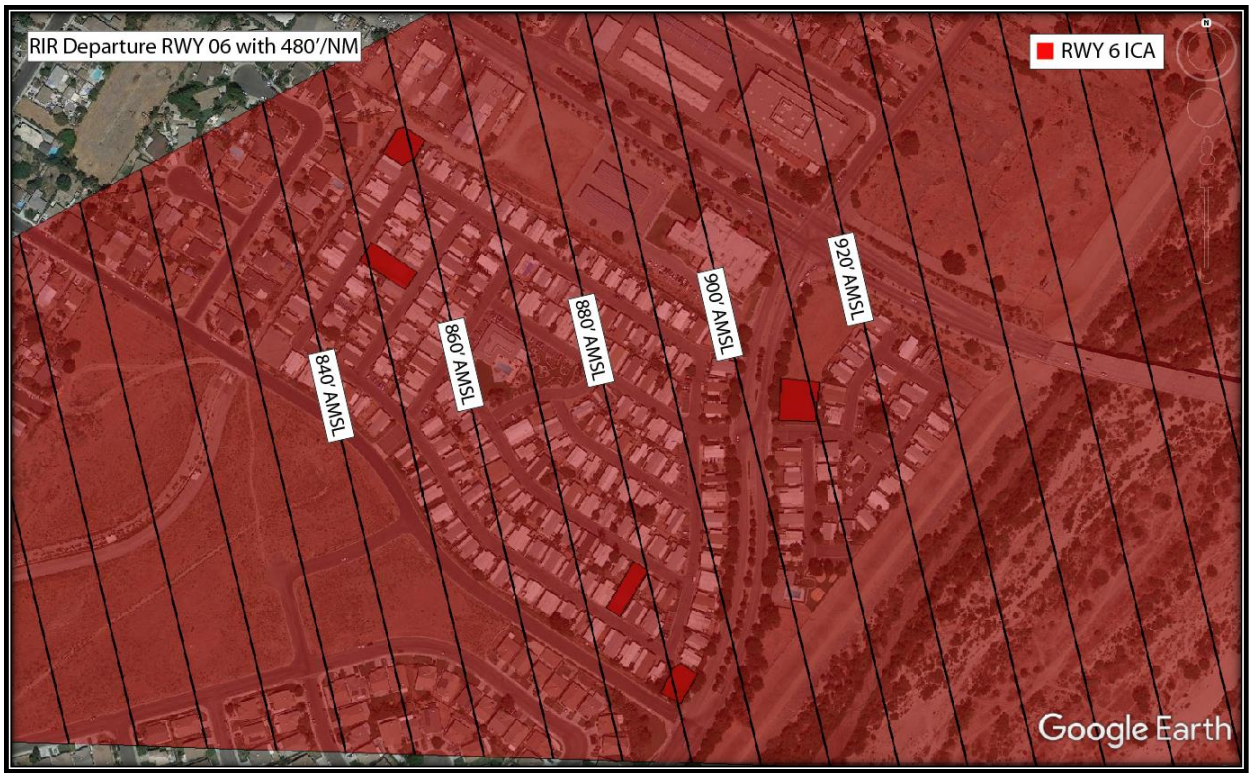

Figure 12 –Departure Runway 06 with 480' per NM AMSL Elevations

Conclusion: The proposed 782' to 787' AMSL mobile homes will not exceed RIR's Standard 200'/NM or Published 480'/NM Departure ICA.

Visual Flight Rule (VFR) Traffic Pattern Airspace

An analysis of RIR's VFR Traffic Pattern Airspace was completed to determine the maximum elevation to which a building could be erected without impacting aircraft operating in visual conditions at RIR. A building that exceeds FAR Part 77 Obstruction Criteria (as applied to visual approach runways) could have an impact on aircraft operating in an airport's VFR Traffic Pattern.

Figures 13, 14, and 15 display the elevation to which a proposed structure could be erected without penetrating the surfaces associated with obstruction standards (as applied to visual approach runways).

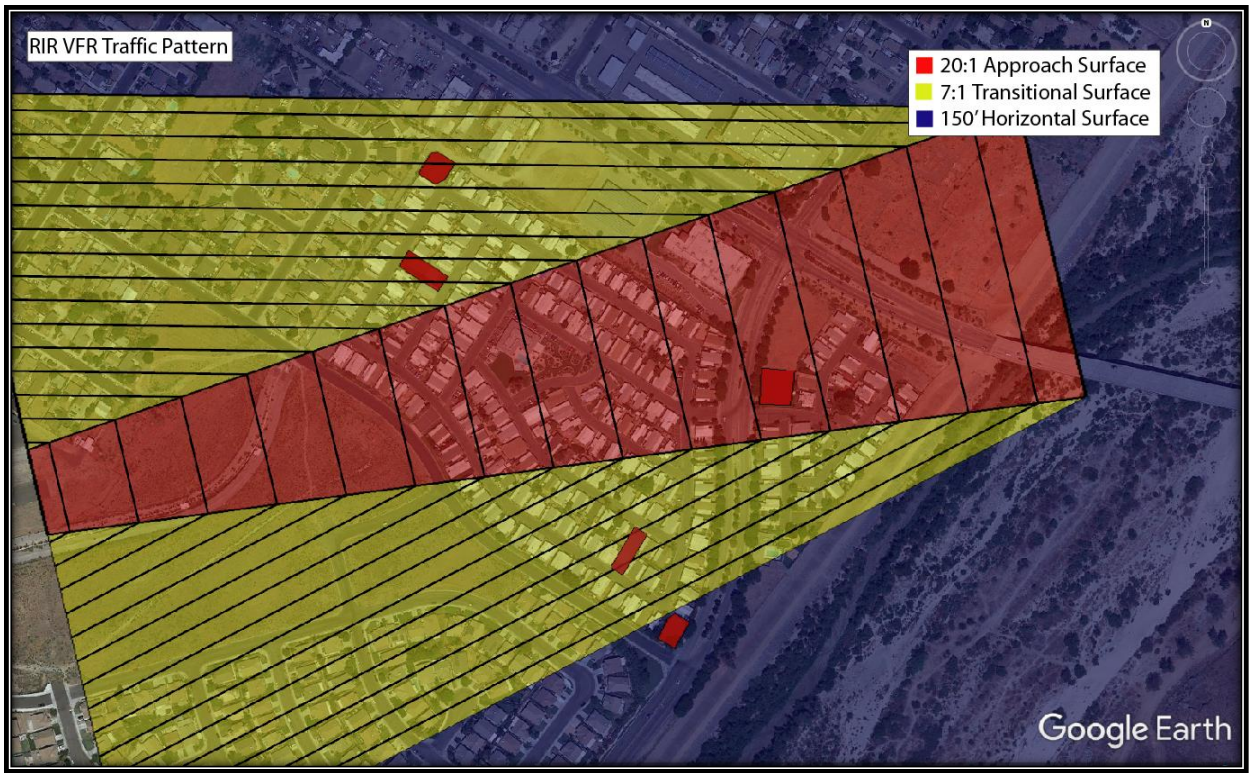

Figure 12 – RIR VFR Traffic Pattern

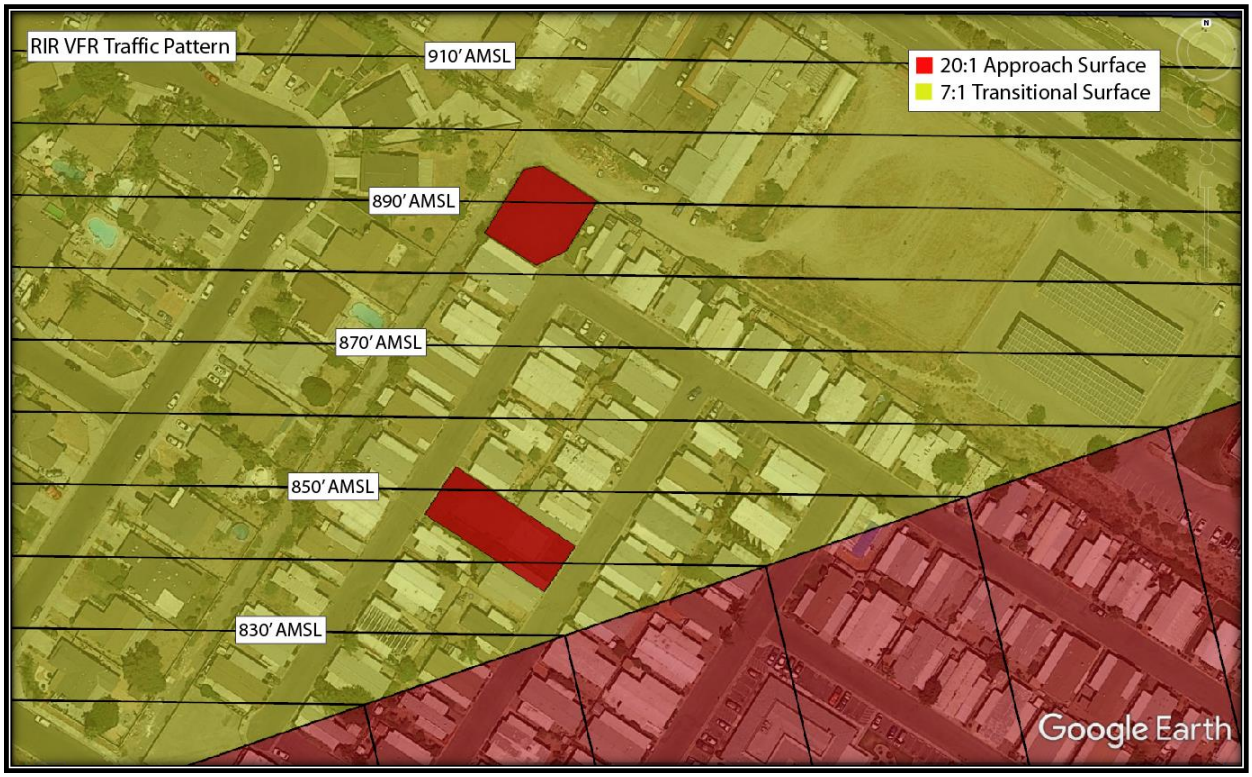

Figure 13 – RIR VFR Traffic Pattern AMSL Elevations

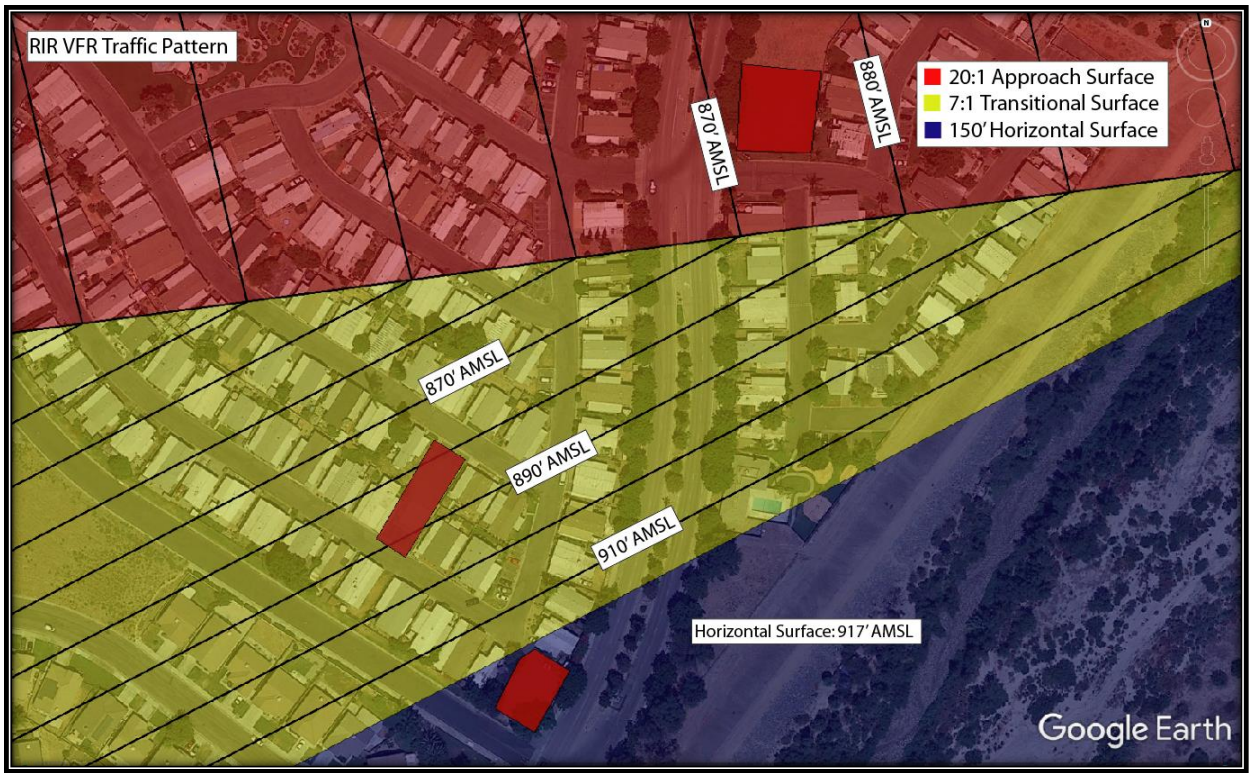

Figure 14 – RIR VFR Traffic Pattern AMSL Elevations

Conclusion: The proposed 782' to 787' AMSL mobile homes will not exceed RIR VFR Traffic Pattern OCS.

One Engine Inoperative (OEI)

All commercial airlines are required to develop OEI procedures for each airport / runway out of which they conduct flight operations. The Federal Aviation Regulations (FARs) prescribe that in the event of an engine failure on takeoff, commercial air carrier type aircraft must be loaded in such a manner that they are able to clear obstacles along their intended route of flight by either 35 feet vertically or 300 feet laterally.

An FAA response to the 2017-AWP-10108-OE Determination of No Hazard states: "Airspace determinations issued under Part 77 do not consider OEI departure splay paths. The FAA is considering the feasibility of protecting a single OEI path per runway at participating airports, but any policy changes have not been finalized at this time." The FAA proposed rule changes in the Federal register in 2014 At the end of this process, the FAA rejected making any changes that would protect any OEI procedure.

Conclusion: The nine proposed mobile homes are surrounded by existing mobile homes of equal height and will not require any increase to an OEI departure climb rate.

It is the airlines responsibility that in an event of an engine failure on takeoff, commercial air carrier type aircraft must be loaded in such a manner that they are able to clear obstacles along their intended route of flight. Also, the FAA has stated they do not consider OEI departure splay paths in their analysis. OEI Departure Splay Paths should not be used to determine the maximum achievable building heights over the property.

Noise Issues (Part 150)

NOISE CONTROL AND COMPATIBILITY PLANNING FOR AIRPORTS

The Department of Transportation's Federal Aviation Administration publishes Advisory Circular AC No: 150/5020-1 which provides guidance for Noise Control and Compatibility Planning for airports under Federal Aviation Regulation (FAR) Part 150 and the Aviation Safety and Noise Abatement Act of 1979 (ASNA) (P.L. 96-193). It is intended for use by airport operators, state/local planners and other officials, and interested citizens who may engage in noise control planning. Airport noise compatibility planning has the goals of reducing existing non-compatible land uses around airports and of preventing the introduction of additional non-compatible land uses through the cooperative efforts of all those involved. The Part 150 program is voluntary and airport operators are encouraged to participate.

FAR Part 150 implements portions of Title I of the Aviation Safety and Noise Abatement Act of 1979. It establishes a single system for the measurement of airport (and background) noise, a single system for determining the exposure of individuals to airport noise, and a standardized airport noise compatibility planning program. The planning program includes (1) provision for the development and submission to the FAA of Noise Exposure Maps and Noise Compatibility Programs by airport operators; (2) standard noise units, methods and analytical techniques for use in airport assessments; (3) identification of land uses which are normally considered compatible (or non-compatible) with various levels of noise around airports; and (4) procedures and criteria for FAA approval or disapproval of noise compatibility programs by the Administrator.

The Federal Aviation Administration's Office of Environment and Energy (AEE) issued a document titled Aircraft Noise. The document states in part that federal agencies have certain guidelines for compatible land uses and environmental sound levels. Land use is normally determined by property meaning, such as residential, industrial, or commercial. Noise levels that are unacceptable for homes may be quite acceptable for stores or factories. The Federal Aviation Administration has issued these guidelines as part of its Airport Noise Compatibility Program, found in Part 150 of the Federal Aviation Regulations. The FAA provides guidance within Title 14, Code of Federal Regulations (CFR) Parts 150 and 77. Part 150 guidance is based on aircraft noise levels near an airport. This guidance is shown in ***Figure 15***.

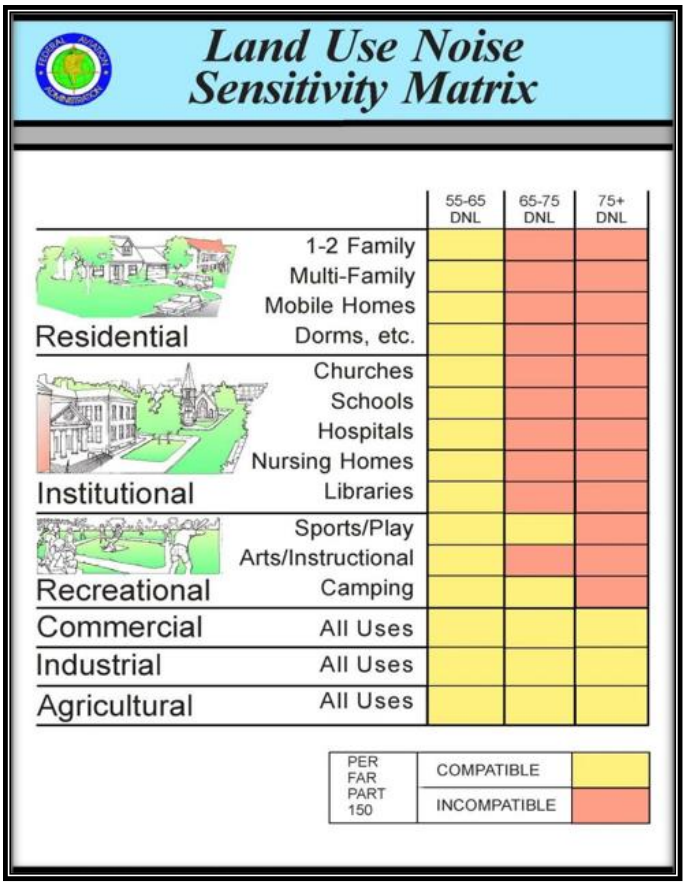

Figure 15 – Land Use Based on Airport Noise

In general, most land uses are considered to be compatible with airport noise that does not exceed 65 dB, although Part 150 declares that "acceptable" sound levels should be subject to local conditions and community decisions. Nevertheless, a 65 dB is generally identified as the threshold level of aviation noise, and other sounds of community noise, which are "significant."

Conclusion: A 2003 noise contour map for RIR (Figure 16) shows that the proposed project is located outside the 65 DNL noise contour.

If the project was located in a valid 65 DNL noise contour based on current air traffic activity, it is our experience that normal construction materials and techniques will achieve any noise reduction required for residential units in a 65 DNL contour.

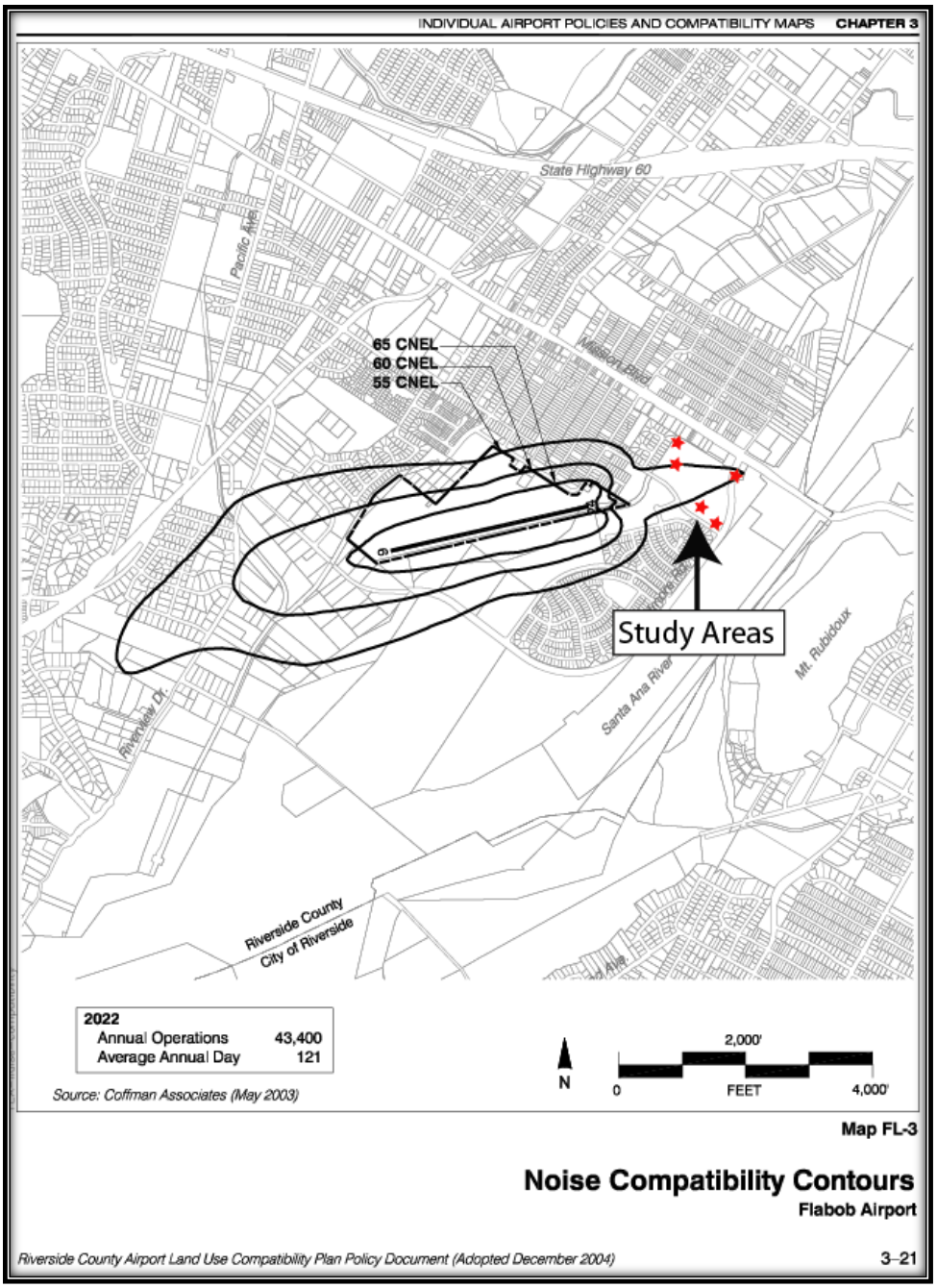

Figure 16 - RIR Noise Contours

Airport Land Use Compatibility Plan

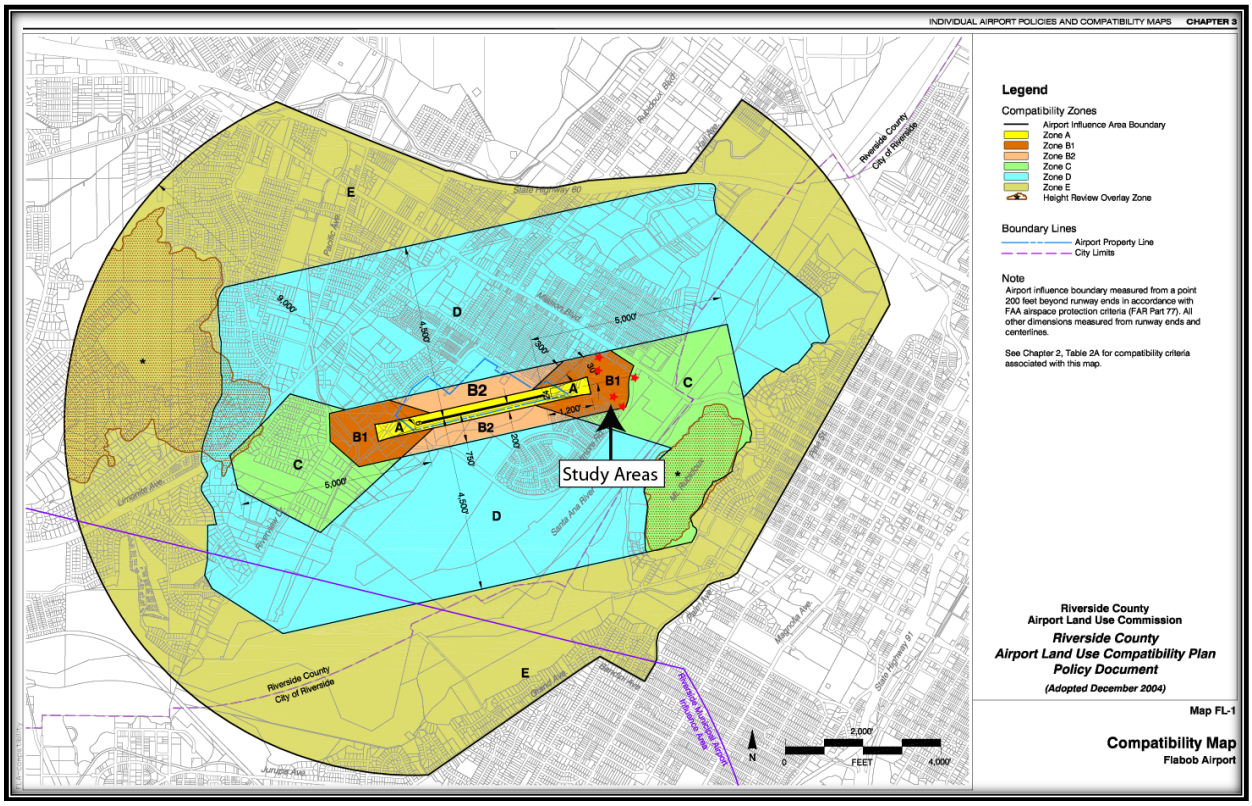

Figure 17 - RIR Airport Land Use Compatibility Map

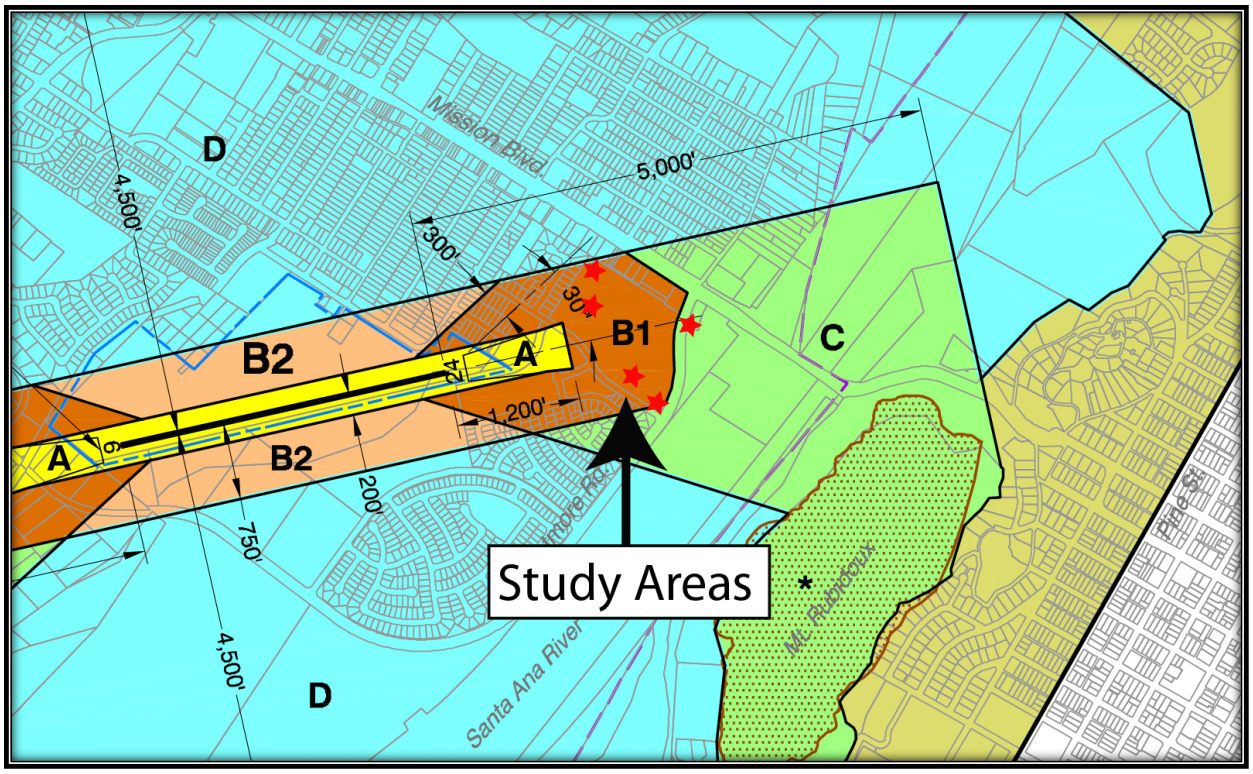

Figure 18 - RIR Airport Land Use Compatibility Map

Zone	Locations	Maximum Densities / Intensities					Additional Criteria	
		Residential (d.u./ac) [1]	Other Uses (people/ac) [2] Average [6]	Single Acre [7]	with Bonus [8]	Req'd Open Land [3]	Prohibited Uses [4]	Other Development Conditions [5]
A	Runway Protection Zone and within Building Restriction Line	0	0	0	0	All Remaining	› All structures except ones with location set by aeronautical function › Assemblages of people › Objects exceeding FAR Part 77 height limits › Storage of hazardous materials › Hazards to flight [9]	› Avigation easement dedication
B1	Inner Approach/ Departure Zone	0.05 (average parcel size ≥20.0 ac.)	25	50	65	30%	› Children's schools, day care centers, libraries › Hospitals, nursing homes › Places of worship › Bldgs with >2 aboveground habitable floors › Highly noise-sensitive outdoor nonresidential uses [10] › Aboveground bulk storage of hazardous materials [11] › Critical community infrastructure facilities [12] › Hazards to flight [9]	› Locate structures maximum distance from extended runway centerline › Minimum NLR of 25 dB in residences (including mobile homes) and office buildings [13] › Airspace review required for objects >35 feet tall [14] › Avigation easement dedication
B2	Adjacent to Runway	0.1 (average parcel size ≥10.0 ac.)	100	200	260	No Req't	Same as Zone B1	› Locate structures maximum distance from runway › Minimum NLR of 25 dB in residences (including mobile homes) and office buildings [13] › Airspace review required for objects >35 feet tall [14] › Avigation easement dedication
C	Extended Approach/ Departure Zone	0.2 (average parcel size ≥5.0 ac.)	75	150	195	20%	› Children's schools, day care centers, libraries › Hospitals, nursing homes › Bldgs with >3 aboveground habitable floors › Highly noise-sensitive outdoor nonresidential uses [10] › Hazards to flight [9]	› Minimum NLR of 20 dB in residences (including mobile homes) and office buildings [13] › Airspace review required for objects >70 feet tall [15] › Deed notice required

Figure 19 - Compatibility Zone Factors

B1 *Inner Approach/ Departure Zone*	*Noise Impact: High* ▸ Generally encompasses 60-CNEL contour (55-CNEL at outlying airports) ▸ Single-event noise sufficient to disrupt wide range of land use activities including indoors if windows open	*Risk Level: High* ▸ Encompasses areas overflown by aircraft at low altitudes—typically only 200 to 400 feet above runway ▸ Some 10% to 20% of off-runway general aviation accidents near airports take place here ▸ Object heights restricted to as little as 50 feet
B2 *Adjacent to Runway*	*Noise Impact: Moderate to High* ▸ Encompasses 55-CNEL contour lateral to runway ▸ Exposed to loud single-event noise from take-offs and jet thrust-reverse on landing; also from pre-flight run-ups	*Risk Level: Low to Moderate* ▸ Area not normally overflown by aircraft; primary risk is with aircraft (especially twins) losing directional control on takeoff ▸ About 3% of off-runway general aviation accidents near airports happen in this zone ▸ Object heights restricted to as little as 35 feet
C *Extended Approach/ Departure Zone*	*Noise Impact: Moderate* ▸ Encompasses most of 55-CNEL contour beyond runway ends ▸ Aircraft typically below 1,000 feet altitude on arrival; individual events occasionally loud enough to intrude upon indoor activities	*Risk Level: Moderate* ▸ Includes areas where aircraft: › Turn from base to final approach legs of standard traffic pattern and descend from traffic pattern altitude › On departure, normally complete transition from takeoff power and flap settings to climb mode and begin turns to en route heading › On an instrument approach procedure, have descended below about 500 feet AGL ▸ Some 10% to 15% of off-runway general aviation accidents near airports occur in this zone ▸ Object heights restricted to as little as 50 feet

Figure 20 - Zone Compatibility

Figure 21 - Land Uses Adjacent to Project Site

The area to the east of the development is open space (Figure 21). The open space near the airport, combined with the large undeveloped space along the Santa Ana River provides an unusually large area in case an aircraft suffering a catastrophic failure required an emergency landing location. The proposed addition of mobile home units to the existing mobile home park does not, in any way, diminish this opportunity.

While this report does not specifically address occupancy intensities, the proposed addition of mobile home units to the existing mobile home park, is consistent with the criteria contained in the Riverside County Airport Land Use Compatibility Plan (ALUCP) as related to RIR Airport (Figures 19 and 20). The project does not propose to contain any of the "Prohibited Uses" established by the ALUCP.

WAC Summary

The WAC technical analysis revealed:

- ***The project has been submitted to the FAA for review.***
- ***The proposed 782' to 787' AMSL mobile homes will not exceed RIR Obstruction Criteria.***
- ***The proposed project is located outside of the RIR RNAV (GPS)-A OCS.***
- ***The proposed 782' to 787' AMSL mobile homes will not exceed RIR Circle-to-Land Category A 1560' AMSL OCS.***
- ***The proposed 782' to 787' AMSL mobile homes will not exceed RIR's Standard 200'/NM or Published 480'/NM Departure ICA.***
- ***The proposed 782' to 787' AMSL mobile homes will not exceed RIR VFR Traffic Pattern OCS.***
- ***The nine proposed mobile homes are surrounded by existing mobile homes of equal height and will not require any increase to an OEI departure climb rate.***
- ***A 2003 noise contour map for RIR shows that the proposed project is located outside the 65 DNL noise contour.***
- ***The proposed development is consistent with the infrastructure currently in place. It is also consistent with the criteria established by the Riverside County ALUC.***