Chapter Five

Recommended Master Plan Concept

The airport master planning process for Apple Valley Airport (APV) has evolved through the development of forecasts of future demand, an assessment of future facility needs, and an evaluation of airport development alternatives to meet those future facility needs. The planning process has included three sets of draft working papers, which were presented to the planning advisory committee (PAC) and discussed at several coordination meetings. The draft materials have also been presented at three public information workshops and have been made available on a dedicated project website throughout the process.

In the previous chapter, several alternative concepts were analyzed to explore options that can accommodate growth and development of the airport. The development alternatives have been refined into a single preferred future development plan. This chapter describes the recommended direction for the future use and development of the airport. Where appropriate, the alternative is summarized and a rationale for the selected alternative is presented.

AIRSIDE CONCEPT

The airside concept generally relates to planned improvements to the runway and taxiway system. **Exhibit 5A** presents the long-term master plan development concept for APV. The following sections will discuss the preferred future development plan in more detail.

CRITICAL AIRCRAFT REVIEW

The critical aircraft is the aircraft, or family of aircraft with similar design and operational characteristics, that account for 500 or more annual operations at an airport. The critical aircraft defines the dimensions of various safety surfaces that surround runways and taxiways. In the past, the critical aircraft was defined as C-II-1B and was represented by a Challenger 600 business jet. This aircraft and others with the same design characteristics have never accounted for 500 or more annual operations. In fact, C-II type business jets have only accounted for a handful of annual operations in the last 10 years.

Because there is no historical precedent indicating 500 or more C-II annual operations, it is necessary to define a new critical aircraft (or family of aircraft) based on existing data. As documented in detail in Chapter 2 – Forecasts, a more appropriate critical aircraft is defined as B-II-2A. This is best represented by a King Air 300 type of aircraft. While the King Air 300 does not account for 500 annual operations, the family of B-II aircraft, which includes many small and medium sized business jets, is more representative of the design standards that should be applied to the runways and taxiways. Therefore, B-II-2A is the current critical aircraft.

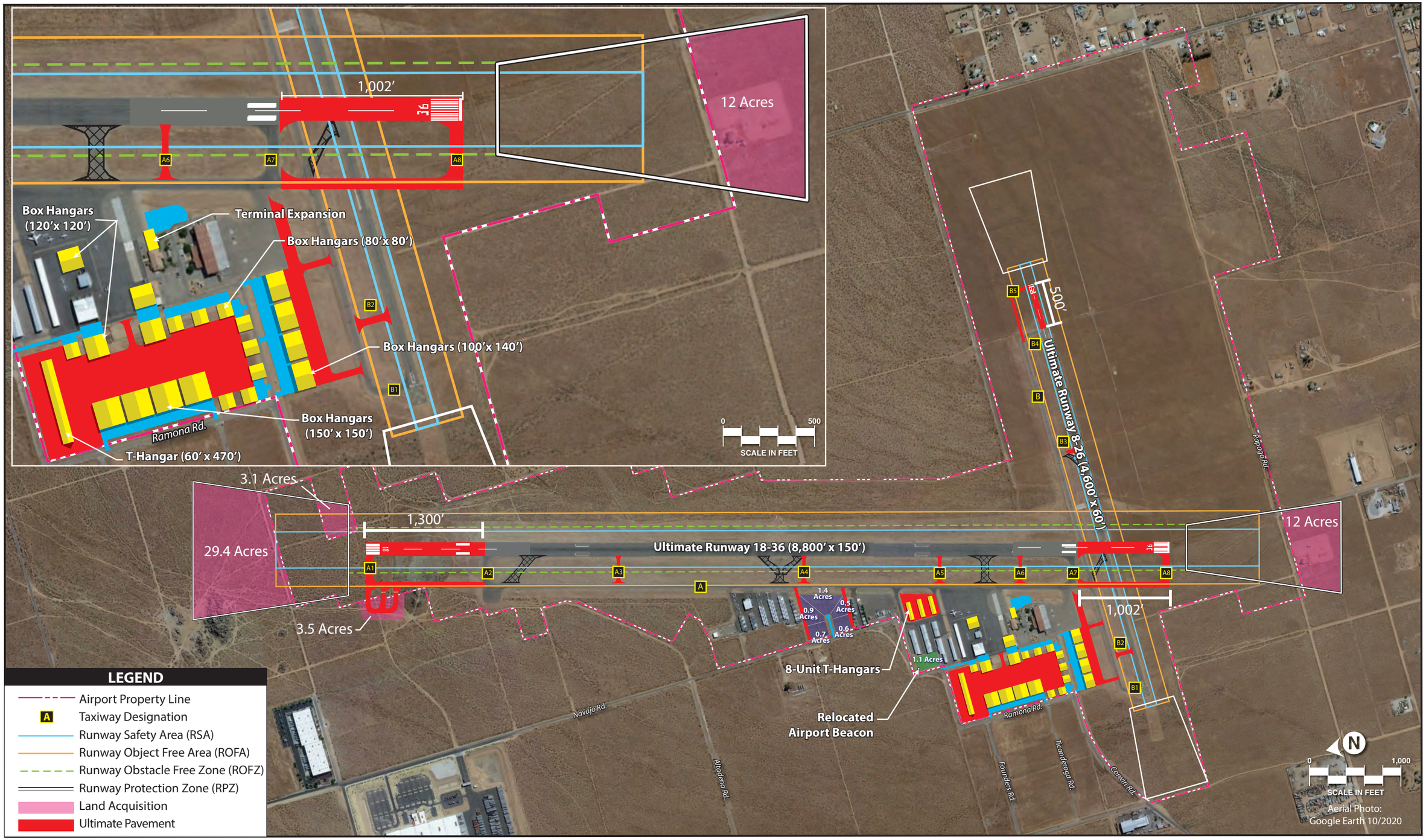
In the future, the airport could transition to a C-II facility if more C-II type business jets operate at the airport. The Apple Valley region is growing, and numerous businesses are locating facilities in the area. By the long-term planning period (within 20 years), more than 1,200 business jet operations are projected. Therefore, it is recommended that the airport has a long-term plan in place to meet the more restrictive C-II-2A design standards. The timing of a transition to C-II is unknown but it is most likely within the 10- to 20-year timeframe.

RUNWAY LENGTH

Runway 18-36 is 6,498 feet long and is of an adequate length to support existing airport users. As the airport experiences more operations by larger business jets, which typically require more runway length than is currently available, a longer runway may be justified. The runway length analysis presented in Chapter Three – Facility Requirements indicates that the maximum length that would be needed in the future is 8,800 feet. A longer runway shouldn't be required for at least 10 years in the future and will only be justified when there are 500 or more annual operations by aircraft that require the additional length.

Chapter Four – Alternatives presented two options for extending Runway 18-36 including a 2,302-foot extension to the north or splitting the extension between both the north and south ends. When the runway extension project is ripe for implementation, the airport will likely have already transitioned to a C-II airport, which requires more restrictive safety standards to be applied.

The alternative that considered an extension to the north is not carried forward because of several limitations to the north. First, there is an earthen mound located approximately 2,700 feet north of the current runway end and 600 feet to the west of the extended centerline. This mound would have to be leveled, which may be costly. Second, there are industrial buildings planned to the north of the runway centerline. Extending the runway 2,302 feet to the north would introduce these buildings as obstructions. This would mean that the instrument approach capability could be lost, or the runway might have to be shortened.


1,002′
36
12 Acres
A6
A7
A8
Box Hangars (120′x 120′)
Terminal Expansion
Box Hangars (80′x 80′)
B2
Box Hangars (100′x 140′)
B1
Box Hangars (150′ x 150′)
Ramona Rd.
T-Hangar (60′ x 470′)
0
500
SCALE IN FEET
B5
18
500′
B4
B
Ultimate Runway 8-26 (4,600′ x 60′)
B3
Poppy Rd.
3.1 Acres
1,300′
29.4 Acres
18
Ultimate Runway 18-36 (8,800′ x 150′)
36
A1
A2
A3
A4
A5
A
1.4 Acres
0.5 Acres
0.9 Acres
0.7 Acres
0.6 Acres
1,002′
12 Acres
3.5 Acres
1.1 Acres
8-Unit T-Hangars
Relocated Airport Beacon
Navajo Rd.
Altadena Rd.
Ramona Rd.
Founders Rd.
Ticonderoga Rd.
Corwin Rd.
N
0
1,000
SCALE IN FEET
Aerial Photo: Google Earth 10/2020
LEGEND
Airport Property Line
Taxiway Designation
Runway Safety Area (RSA)
Runway Object Free Area (ROFA)
Runway Obstacle Free Zone (ROFZ)
Runway Protection Zone (RPZ)
Land Acquisition
Ultimate Pavement

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The second option is to split the extension between the north and south. The north portion would be 1,300 feet and the south portion would be 1,002 feet. By having a shorter extension to the north, the industrial building and the earthen mound would not impact the airport or the instrument approach capability. The extension to the south would resolve the overlapping RSA issue and it would remain on airport property. Portions of the relocated runway protection zones would extend over non-airport land and would be recommended for acquisition.

As shown on **Exhibit 5A**, the preferred option is to plan for a total runway length of 8,800 feet, which is achieved through a 1,300-foot northerly extension and a 1,002-foot southerly extension.

Runway 8-26 is designed for small aircraft weighing less than 12,500 pounds. As analyzed in Chapter Three – Facility Requirements, the maximum runway length needed to accommodate the full fleet of these aircraft is 4,600 feet. In Chapter Four – Alternatives, it was determined that planning for a 500-foot extension to the east was the best option, which will be carried through to the airport layout plan.

RUNWAY WIDTH

Runway 18-36 is 150 feet wide currently. The B-II standard is 75 feet. The C-II standard is 100 feet. The long-term plan is to maintain the runway at its current width. Airport management is aware that FAA may not financially support a width that exceeds the standard and maintaining any additional width will be the financial responsibility of the airport sponsor.

Runway 8-26 is planned to be maintained at the current width of 60 feet, which meets the design standard.

RUNWAY LONGITUDINAL GRADE

Runways are rarely flat and often will have some undulation when viewed in profile. Runway 18-36 at APV slopes upward from south to north with a longitudinal grade of 1.47 percent. For runways with a critical aircraft in aircraft approach category A and B, the maximum longitudinal grade is 2.0 percent. For runways with a critical aircraft in AAC C or D, the maximum longitudinal grade is 1.5 percent. In addition, for C and D runways, longitudinal grades exceeding 0.8 percent are not permissible in the first or last quarter of the runway.

If the runway is extended on both ends along the existing terrain, then the first and last quarters of the runway would exceed the longitudinal standard for AAC C and D aircraft. This would likely require additional consultation with the FAA to develop an engineering solution or a modification of design standard that preserves an acceptable level of safety.

DECLARED DISTANCES

Declared distances are the effective runway distances declared by the airport operator as available for takeoff run, takeoff distance, accelerate-stop distance, and landing distance requirements. According to

FAA AC 150/5300-13B, *Airport Design*, use of declared distances is a reasonable alternative to mitigate existing runway shortcomings and better meet design standards. Use of declared distances is considered by the FAA to be an incremental step toward fully meeting runway design standards. The applicable declared distances are defined by the FAA below.

Takeoff Run Available (TORA) – The runway length declared available and suitable for ground run of an aircraft taking off.

Takeoff Distance Available (TODA) – The TORA plus the length of any remaining runway or clearway beyond the far end of the TORA. The full length of TODA may need to be reduced because of obstacles in the departure area.

Accelerate-Stop Distance Available (ASDA) – The runway plus stopway length declared available and suitable for the acceleration and deceleration of an aircraft aborting a takeoff.

Landing Distance Available (LDA) – The runway length declared available and suitable for landing an aircraft.

The ASDA and the LDA are the primary considerations in determining the runway length available, as the standard RSA must be taken into consideration. The ASDA and LDA can be figured as the usable portions of the runway minus the area required to maintain adequate RSA beyond the ends of the runway. For takeoff operations, or ASDA calculations, 300 feet of RSA must be provided at the far end of the runway in which the departure is occurring. For landing operations, or LDA calculations, 300 feet of RSA must be provided prior to the landing threshold, and 300 feet must be provided beyond the far end of the runway. The TORA and TODA are usable pavement calculations that do not take into consideration the availability of the RSA and ROFA.

Currently, the Runway 36 threshold is displaced by 597 feet, thus shortening the landing length available to Runway 36 to 5,901 feet. All other operational directions are the published 6,498 feet.

OVERLAPPING RUNWAY SAFETY AREAS (RSA)

FAA AC 150/5300-13B, *Airport Design*, provides guidance for when two or more runways converge but do not intersect, thus creating overlapping RSAs. In the current B-II configuration, the RSA surrounding Runway 18-36 overlaps Runway 8-26, the RSA, and the Taxiway B object free area (TOFA). Taxiway B has hold lines marked on the pavement at the outer limits of the future RSA, which is an operational control intended to enhance safety by notifying pilots taxiing on Taxiway B to hold if another aircraft is landing on Runway 36. In addition, the hold line on Taxiway B2 is within the future RSA. **Exhibit 5B** shows the overlapping RSA condition in both the current B-II and future C-II condition.

According to the *Airport Design* AC, "overlapping RSAs introduce safety risks and potential operational limitations. When two or more runways converge but do not intersect, thus creating overlapping RSAs, apply the standards…to establish an acceptable level of safety in this area."


LEGEND
Airport Property Line
A Taxiway Designation
Existing B-II Runway Safety Area (RSA)
Future C-II RSA
Taxiway Object Free Area (TOFA)
Runway 18-36 (6,498' x 150')
A
A6
B
B2
B3
Overlapping RSA and TOFA (Existing)
Hold line in RSA (Future)
Runway 8-26 (4,099' x 60')
Overlapping RSA (Existing)
Overlapping RSA (Future)
N
0
200
SCALE IN FEET
Aerial Photo: Google Earth 11/2025

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The AC provides the following standards:

1. Configure runway ends, taxiways, and holding positions to allow taxiing and holding aircraft to remain clear of all RSAs.
2. Configure runway ends to facilitate holding positions that allow holding aircraft to be perpendicular to the runway centerline.
3. For existing configurations not meeting standards, prioritize mitigation measures.

The AC provides the following recommended practices:

1. For multiple runways that converge but do not intersect, configure runway ends for the optimum condition of independent RSAs.
2. When the most demanding aircraft using the airport is not the critical aircraft with regular use, configure the runway ends, taxiways, and holding positions to preclude the need for operational controls, if practical.

The AC provides the following design considerations:

1. Overlapping RSAs may create conditions resulting in holding positions on taxiways not leading directly to a runway.
2. Overlapping RSAs can present elevated risk for wrong runway departures when an aligned taxiway is present.

The long-term recommended concept addresses the overlapping RSA issue by extending Runway 18-36 and Taxiway A to the south, completely through Runway 8-26 and Taxiway B. Runways that completely cross each other provide better geometry that promotes holding aircraft to be outside the RSA of the other runway. However, the plan to extend the runway may not be justified for many years.

Interim Mitigation (If Necessary)

The FAA's overlapping RSA guidance specifically says that for existing configurations, airports should prioritize mitigation measures. The guidance does not provide a timeframe for implementation of such measures. The recommended concept on **Exhibit 5A** provides those mitigation measures; however, if resolving the overlapping RSA issue became a priority for the FAA, an interim solution is presented in **Exhibit 5C**.

This interim solution assumes that the existing B-II design standards apply. Through the application of declared distances, the RSA for Runway 18-36 can be removed from crossing not only the Runway 8-26 RSA but also the Taxiway B TOFA. The method to do this is to declare the runway to be 5,901 feet long for landings and takeoffs when using Runway 18. By declaring the runway to be shorter for these operations, the RSA would then extend an additional 300 feet beyond the declared end, which is short of the Taxiway B TOFA.

This interim solution would maintain the pavement south of the Runway 36 landing threshold for takeoff operations. Takeoff operations using Runway 36 would still offer the full 6,498-foot-long runway. The 5,901 feet available is still adequate for all B-II aircraft operations.

Because the overlapping RSA condition has not led to any runway incursions or other safety concerns, it is recommended that the airport wait to resolve the issue until the long-term plan of extending Runway 18-36 is justified and can be implemented. **Table 5A** summarizes the declared distances that would apply with this interim mitigation if it became necessary.

TABLE 5A | Declared Distance for Interim Overlapping RSA Mitigation

	Existing		Interim Overlapping RSA Mitigation	
Parameters	**Runway 18**	**Runway 36**	**Runway 18**	**Runway 36**
Takeoff Run Available (TORA)[1]	6,498'	6,498'	6,498'	6,498'
Takeoff Distance Available (TODA)[2]	6,498'	6,498'	6,498'	6,498'
Accelerate Stop Distance Available (ASDA)[3]	6,498'	6,498'	5,901	6,498'
Landing Distance Available (LDA)[3]	6,498'	5,901'	5,901	5,901'

[1] Departure RPZ begins 200 feet from the end of the TORA.
[2] TORA cannot be longer than TODA. Departure surface is set on TODA. TODA can be shortened to mitigate departure surface penetrations; if so, TORA is shortened too.
[3] Available runway length plus RSA. Approach RPZ begins 200 feet from the landing threshold.

Source: FAA AC 150/5300-13B, Airport Design

RUNWAY DESIGN STANDARDS

All runways are inclusive of various imaginary safety surfaces. Primarily among these are the RSA, runway object free area (ROFA), obstacle free zone (OFZ), and runway protection zones (RPZs).

Runway Safety Area (RSA)

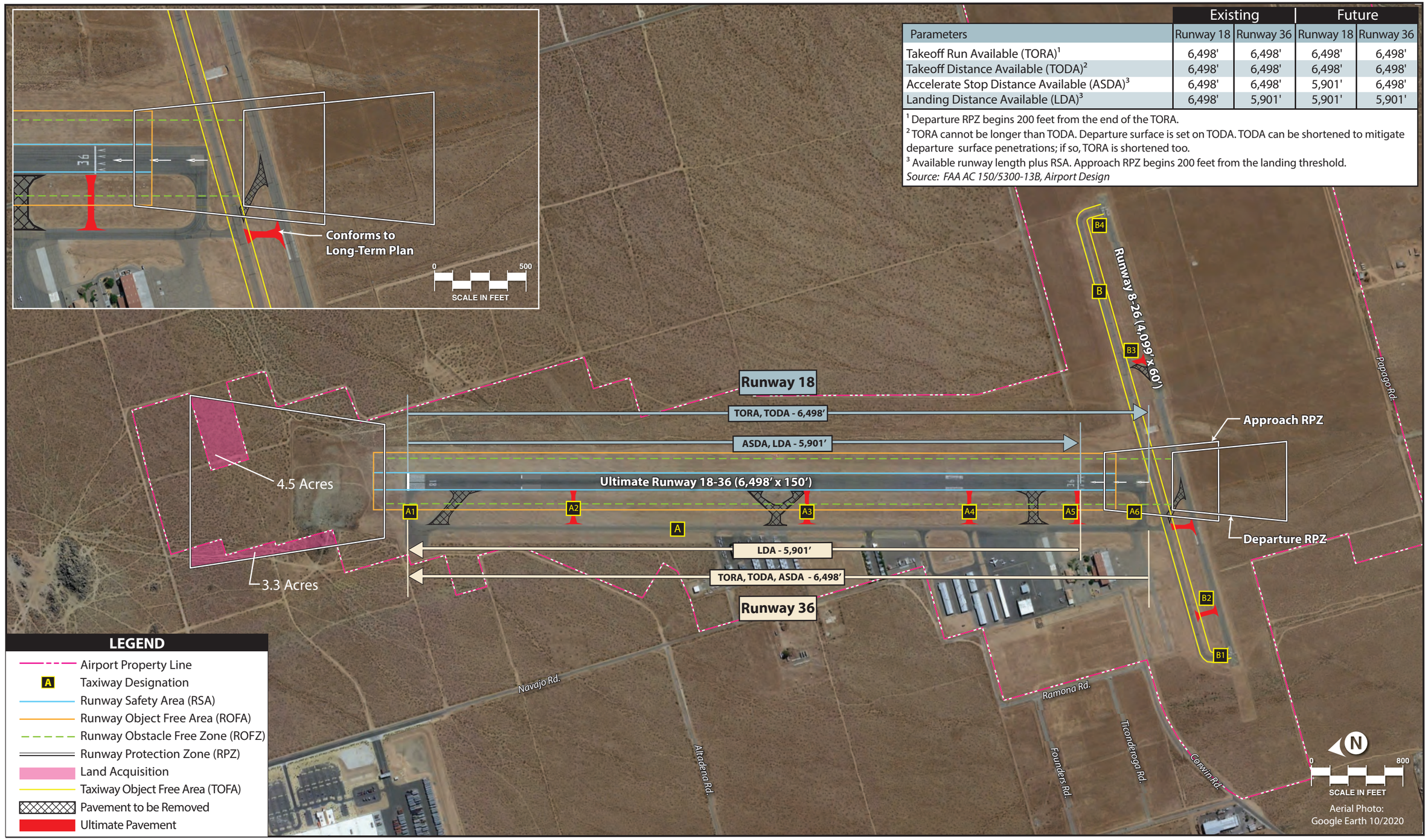
The RSA enhances the safety of aircraft that undershoot, overrun, or veer off the runway, and provides greater accessibility for the aircraft rescue and firefighting (ARFF) equipment that respond to such incidents. The RSA is to be cleared and graded, with no potential hazards, ruts, humps, depressions, or other surface variations, and drained by grading or storm sewers. The elevation of any point within the RSA is to be no higher than the perpendicular elevation of the runway centerline.

With the long term recommended concept, the RSA surrounding Runway 18-36 will be 500 feet wide and will extend 1,000 feet beyond the runway ends. A small portion of the north end RSA would extend off airport property. The airport will need to acquire this property to facilitate the runway extension project.

The RSA for Runway 8-26 is 120 feet wide, and it extends 240 feet beyond each runway end. With the planned 500-foot extension of the runway, the RSA will remain on airport property.

Parameters	Existing		Future	
	Runway 18	Runway 36	Runway 18	Runway 36
Takeoff Run Available (TORA)[1]	6,498'	6,498'	6,498'	6,498'
Takeoff Distance Available (TODA)[2]	6,498'	6,498'	6,498'	6,498'
Accelerate Stop Distance Available (ASDA)[3]	6,498'	6,498'	5,901'	6,498'
Landing Distance Available (LDA)[3]	6,498'	5,901'	5,901'	5,901'

[1] Departure RPZ begins 200 feet from the end of the TORA.
[2] TORA cannot be longer than TODA. Departure surface is set on TODA. TODA can be shortened to mitigate departure surface penetrations; if so, TORA is shortened too.
[3] Available runway length plus RSA. Approach RPZ begins 200 feet from the landing threshold.
Source: FAA AC 150/5300-13B, Airport Design



LEGEND

- Airport Property Line
- A — Taxiway Designation
- Runway Safety Area (RSA)
- Runway Object Free Area (ROFA)
- Runway Obstacle Free Zone (ROFZ)
- Runway Protection Zone (RPZ)
- Land Acquisition
- Taxiway Object Free Area (TOFA)
- Pavement to be Removed
- Ultimate Pavement

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Runway Object Free Area (ROFA)

The ROFA is a buffer zone around runways to provide wingtip clearance in the event of a runway excursion into the RSA by an aircraft. The ROFA is to be clear of terrain or objects that rise above the lateral elevation of the RSA. The end of the ROFA is typically at the same location as the end of the RSA.

The long term ROFA is 800 feet wide, and it extends 1,000 feet beyond both ends of Runway 18-36. A small portion of the ROFA at the north end of the extended runway will extend off airport property. The airport will need to acquire this land to accommodate the long-term runway length.

Runway Obstacle Free Zone (ROFZ)

The runway obstacle free zone (ROFZ) dimensions are 400 feet wide and extend 200 feet beyond the pavement end. The ROFZ is set based on the established pavement end of the runway, regardless of the operating direction. The ROFZ is a three-dimensional airspace along the runway and extended runway centerline that must be clear of obstacles for the protection of aircraft landing, taking off, or for missed approaches.

The ROFZ for both runways, now and into the future, is 400 feet wide, extending 200 feet beyond the runway pavement ends. The recommended master plan concept preserves the ROFZ standards.

Runway Protection Zone (RPZ)

The RPZs are trapezoidal land areas beyond the runway ends. The RPZs are established to protect people and property on the ground. Exhibit 3E (presented previously) showed the areas of incompatible land use, which include public roads and railroads, within the existing RPZ.

Recently published FAA guidance in AC 150/5190-4B, *Airport Land Use Compatibility Planning*, outlines the FAA's expectations regarding RPZ land use compatibility. The FAA expects airport sponsors to make every effort to provide compatible land uses within RPZs. Incremental improvements are encouraged, while allowing new incompatible land uses is discouraged. The FAA also understands that RPZ lands may be owned by others, which may limit the sponsor's ability to mitigate existing or future incompatible land uses within RPZs.

At APV, the RPZ is comprised of 100-percent compatible land uses. Approximately eight acres of the Runway 18 RPZ extends beyond airport property. This property should be acquired, if possible, to ensure the land use remains compatible with airport operations.

With the long-term plan, the RPZs for both ends of Runway 18-36 would extend off airport property. On the south end (Runway 18), approximately 12 acres of privately owned land would fall within the RPZ. A portion of this land has a house or small business on it, which would be incompatible land use. If the airport is able to acquire this future RPZ land, they should remove the incompatible land use. An alternative to fee simple acquisition of the future RPZ land would be for the airport to trade land to acquire it. The land to the south of Runway 8-26 could be available for trade as there is no future aeronautical use planned within the next 20 years.

On the Runway 18 end, approximately 36 acres of RPZ land falls outside airport property. This is airport-compatible land as it is undeveloped; however, when feasible, the airport should acquire that future RPZ land.

It should be noted that the FAA does not financially support land banking for future use. FAA funding may only be used for land acquisition when there is an immediate aeronautical need for the land.

Runway to Taxiway Separation

The standard separation distance is a function of the runway design code (RDC), which is defined by the critical aircraft for that runway and the lowest current or planned instrument approach visibility minimum. The lowest visibility minimum planned for Runway 18-36 is not lower than ¾-mile for the approach to Runway 18. The current RDC is B-II-4000 and the future RDC is C-II-4000.

The current runway to taxiway separation standard is 240 feet, and the future separation standard is 300 feet. If the airport were to ever have an instrument approach with not lower than ½-mile visibility minimums (the lowest typically possible for general aviation airports), then the B-II separation standard is 300 feet, and the future C-II separation standard is 400 feet.

Currently, parallel Taxiway A is 400 feet from Runway 18-36, centerline to centerline. To preserve the option of having ½-mile visibility minimums, Taxiway A is planned to remain in its current location. It should be noted that there is no current plan to have ½-mile visibility minimums within the next 20 years; however, the plan is to preserve this possibility, which may be identified in a subsequent master plan update.

Taxiway B is parallel to Runway 8-26 and is separated by 240 feet. The design standard for this B-I runway is 225 feet (visual only). The current separation distance is planned to be maintained to preserve the additional safety margin and to preserve the existing conduit infrastructure.

TAXIWAYS

FAA design standards and recommended practices for taxiway geometry can and do change over time. At APV, there are several existing taxiways that no longer adhere to current taxiway geometry recommendations. Ultimately, all taxiways serving Runway 18-36 should be 35 feet wide, and all taxiways serving Runway 8-26 should be 25 feet wide. The following summarizes the condition of each taxiway at APV.

Existing and Future Taxiway A

This parallel taxiway is 400 feet from Runway 18-36, centerline to centerline. For the length from Taxiway A1 to A5, it is 35 feet wide, which meets the future design standard and is planned to be maintained. That portion of Taxiway A from Taxiway A5 to A6 is 60 feet wide. When reconstruction is needed, this portion of Taxiway A is planned to be reduced to 35 feet in width, providing a uniform taxiway width. Taxiway A is planned to be extended to the north and south when Runway 18-36 is extended.

Future Taxiway A1

This future taxiway will serve as the threshold taxiway to Runway 18 when the runway is extended to the north. It is planned to be 35 feet wide.

Current Taxiway A1/Future Taxiway A2

Currently, this taxiway is 35 feet wide and serves as the Runway 18 threshold connecting taxiway. This connecting taxiway is planned to be maintained in its current location. When the runway extension happens, the fillets of this taxiway will be widened to accommodate aircraft turning onto Taxiway A or the runway in both directions.

Current Taxiway A2

This taxiway is an angled taxiway to the runway. Current taxiway geometry best practices promote connecting taxiways at 90-degree angles to the runway. When high-speed taxiway exits are justified by capacity concerns, they are typically located so that aircraft can exit the runway quickly. APV does not have capacity concerns and aircraft are not able to utilize Taxiway A2 as a high-speed exit because it terminates in close proximity to the end of Taxiway A. Essentially, landing aircraft existing the runway at Taxiway A2 are already moving at taxi speed because they are so close to the end of the runway, so the existing angled taxiway does not enhance runway exit times. Therefore, existing Taxiway A2 is planned to be removed from service once it reaches the end of its useful life.

Future Taxiway A3

The distance between current Taxiway A1 and A4 is over 3,200 feet. Taxiway A3 is a planned new taxiway to be located in between. This location will allow for timelier exits from the runway and a more uniform and familiar geometry.

Existing and Future Taxiway A4

Current Taxiway A4 is of non-standard design as it is a “Y”-shaped configuration. Configurations like this can lead to pilot confusion, and it presents a wide expanse of pavement at the connection with Taxiway A. This taxiway is planned to be replaced with a new Taxiway A4 that is shifted slightly to the south and is the standard 90-degrees to the runway.

Existing and Future Taxiway A5

Existing Taxiway A5 does not meet current geometry standards because it allows for direct access from an apron area to the runway. Current Taxiway A5 is planned to be replaced with a new Taxiway A5 that is shifted to the north approximately 500 feet. This location will fill the gap between existing Taxiway A4 and A5, and it is located such that there is no direct access.

Future Taxiway A6

A new bypass and exit taxiway is planned between the new Taxiway A5 and the existing Taxiway A6 (threshold taxiway). This taxiway is intended to improve ground movement efficiency.

Existing Taxiway A6 and Future Taxiway A7

Existing Taxiway A6 is the threshold connecting taxiway. It is planned to remain in its current location but be redesignated as Taxiway A7 in the future.

Future Taxiway A8

With the extension of the runway to the south, this new threshold taxiway is planned.

Existing and Future Taxiway B

Taxiway B is currently 35 feet wide, however the width standard now and in the future is 25 feet. At the time of the next reconstruction project, justification for the current width should be established. If 35 feet is not justified, then the airport sponsor may be responsible for any construction costs beyond the 25-foot width standard.

Taxiway B crosses the RSA for Runway 18-36. To alert pilots to this, hold lines are marked on Taxiway B. These are planned to be maintained until Runway 18-36 is extended, at which time, traditional hold lines will be marked to alert pilots that they are approaching a runway intersection.

Existing and Future Taxiway B1

This is the threshold taxiway leading to the Runway 8 threshold. It is planned to be maintained.

Existing Taxiway B2

This is an angular exit taxiway. The recommended design practice is that these taxiways are at 90-degree angles. This taxiway is planned to be removed and replaced with an extension of Taxiway A between future Taxiway A7 and Runway 8-26.

Existing Taxiway B2

When this taxiway is planned for reconstruction, it is planned at a 90-degree angle to the runway in its current location.

Existing Taxiway B4

Currently, this is the threshold taxiway that is planned to be maintained. If the runway is extended 500 feet to the east, the fillets for Taxiway B4 should be updated to allow turns in either direction on Taxiway B.

Future Taxiway B5

If the runway is extended as planned, Taxiway B will also be extended and a new threshold Taxiway B5 will be constructed.

HOLD BAYS

The recommended development plan also includes a standard hold bay design at the north end of Taxiway A. The justification for FAA funding of hold bays is typically more than 100,000 annual operations with a large portion of those being local training operations. As the planned extension of the runway to the north begins to ripen with additional study, the justification for the hold bays should be determined as well.

INSTRUMENT APPROACHES

Instrument approach procedures are a set of predetermined approach maneuvers pilots can follow to land at an airport. The procedures outline cloud ceiling minimums and visibility minimums. The lower these minimums are, the more opportunity there is to land, especially in poor weather or visibility conditions. The lowest visibility minimum typically available to general aviation airports is a ½-mile, which requires an approach lighting system and other ground-based equipment, including a localizer and glideslope antenna (referred to as an instrument landing system [ILS]); however, the FAA is not installing new ILS systems, as it is moving toward global positioning system (GPS)-based instrument approaches. Currently, without an approach lighting system, the lowest feasible visibility minimum is ¾-mile.

Runway 18-36

When assessing the need for lower visibility minimums, it is necessary to understand the benefit, which depends on the frequency of low visibility conditions in the area. In the Apple Valley area, there are more than 300 days per year that are sunny or mostly sunny, therefore low visibility minimums are not as critical at APV than they would be in a location with more mixed weather. Having an instrument approach with visibility minimums not lower than ¾-mile to the most used runway end (Runway 18) is likely all that is needed.

Currently, there is one instrument approach procedure at APV, which is an RNAV (GPS) approach to Runway 18 with 1-mile visibility minimums and a 538-foot cloud ceiling height. In the future, an instrument approach with ¾-mile visibility minimums is planned for Runway 18.

Runway 36 is planned for an instrument approach with 1-mile visibility minimums. Initial analysis of the U.S. Standard for Terminal Instrument Procedures (TERPS – FAA Order 8260.3D), indicates that Runway 36 could likely support a new vertically guided approach.

Runway 8-26

Runway 8-26 is a visual runway with no instrument approach capability. An examination of the FAR Part 77 surfaces surrounding Runway 8-26 indicates that there are no penetrations to these surfaces (primary, transitional, horizontal, and conical), which is an early indication that this runway might be able to support an instrument approach and may be able to support nighttime operations. The next step to this examination is analysis of the protective surfaces defined in FAA Order 8260.3D, *U.S. Standard for Terminal Instrument Procedures* (TERPS).

Analysis of the TERPS surfaces for Runway 8-26 showed that a straight-in GPS LP approach could be developed for Runway 8. However, there are penetrations to the TERPS 20:1 Visual Surface, which means the instrument approach would only be available in the daytime. If a daytime GPS straight-in approach were developed for Runway 8, the cloud ceiling minimum would be approximately 600 feet with 1-mile visibility minimums.

Runway 8-26 has edge lighting infrastructure in-place (i.e. conduit), but it is not lit for nighttime operations, and nighttime operations are currently prohibited. The TERPS analysis indicated that there are penetrations to the TERPS 20:1 Visual Surface by the Little Bell Mountain, which is approximately 9,000 feet to west and approximately 1,000 feet south of the extended runway centerline. Because of this penetration, nighttime operations are not permitted on Runway 8-26. **Figure 5-1** shows the penetration by Little Bell Mountain (green triangle) at the outer limit of the TERPS Visual Surface.

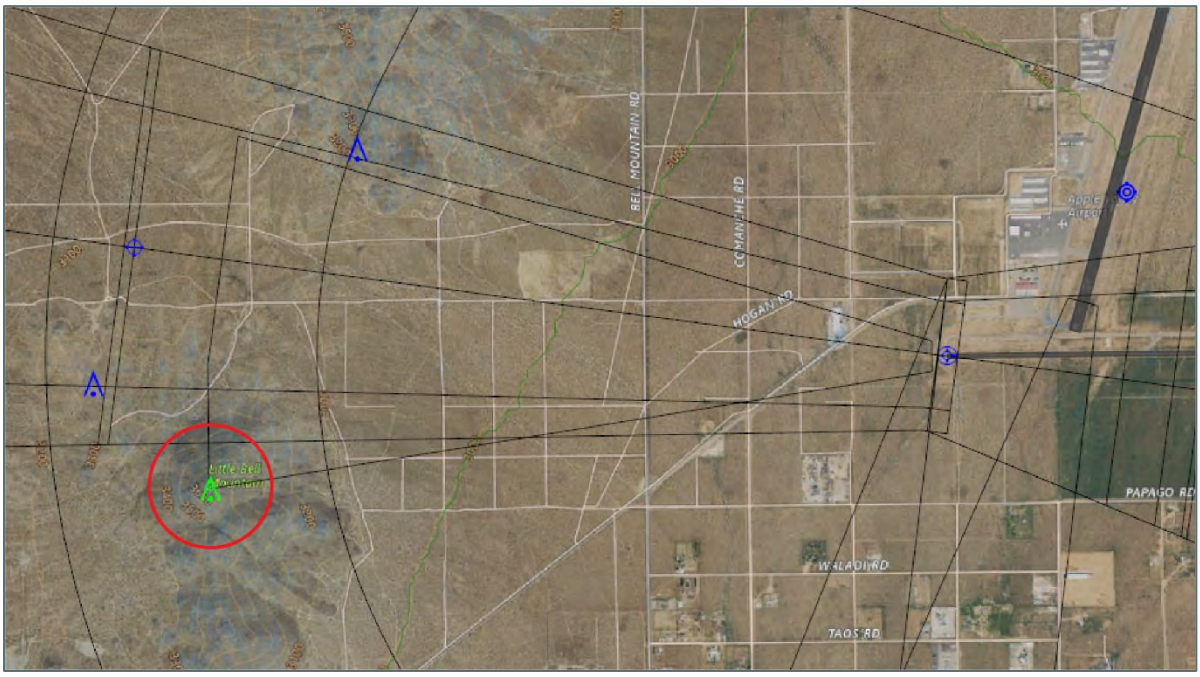


Figure 5-1: TERPS Penetration Preventing Nighttime Operations to Runway 8-26

Due to other terrain penetrations of the TERPS surfaces, an instrument approach is not feasible to Runway 26. An instrument approach to Runway 8 is not planned at this time because of the limited use of the runway. However, if operations to Runway 8 increase in the future, the airport could pursue a GPS instrument approach.

NAVIGATIONAL AIDS

Navigational aids (NAVAIDs) can enhance safety. Both ends of Runway 18-36 at APV are equipped with two-light precision approach path indicator (PAPI-2L) lighting. Busy general aviation airports with increasing business jet activity can benefit from the more informative four-light PAPI-4L system. It is recommended that the airport plan to upgrade to the PAPI-4L system. This upgrade should occur when there is a noticeable increase in business jet activity.

Runway end identifier lights (REILs) are strobe lights set to the side of the landing threshold that are visible to pilots for a distance of up to 20 miles. Primary runways serving business jet and turboprop aircraft can benefit from the installation of REILs. REILs are not currently available for Runway 18-36. The long-term plan includes the installation of REILs on both ends of Runway 18-36.

AIRSIDE SUMMARY

Apple Valley Airport has long been classified as a C-II airport and has applied those associated standards to the airfield system. During this master planning process, it was determined that APV is actually a B-II airport and has been for at least the past decade. As a result, the B-II design standards are applied to the airfield system, with a long-term plan to transition back to C-II if activity levels by the larger business jets begin to increase over time.

At 6,498 feet in length, Runway 18-36 is of an appropriate length to accommodate the current operating fleet of general aviation aircraft using the airport. In the future, as more and more large business jets use APV, a longer runway may be justified. The long-term plan includes extension of the runway to a total length of 8,800 feet.

Crosswind Runway 8-26 is designed to accommodate B-I aircraft. This is planned to remain the same though the 20-year planning period of this master plan. The runway is currently 4,100 feet long. The long-term plan includes a 500-foot extension to the east, which is the recommended length to fully accommodate B-I aircraft.

The existing taxiway configuration has been analyzed in comparison to the most current FAA design guidelines. Several connecting taxiways are planned to be reconfigured, and several new taxiways are planned to be constructed.

LANDSIDE CONCEPT

The landside concept includes planning for future hangar needs and various support facilities. As discussed in Chapter Four – Alternatives, planning for additional hangar needs should follow a philosophy of segmenting activity levels. High-activity facilities, such as large conventional hangars (typically greater than 10,000 square feet), should be co-located and central to the runway system. Medium-activity hangars, such as box or executive hangars, should be located to the sides of or behind the high-activity conventional hangars. Low-activity hangars, such as T-hangars or small individual box hangars, should be located farther to the sides.

It is critical to maximize the developable land at any airport because aviation land is a limited resource; therefore, the recommended concept provides for the reservation of all land immediately adjacent to the runway and taxiway system for aviation purposes.

FUTURE HANGAR DEVELOPMENT

The facility requirements chapter estimated that a total of 129,500 square feet of new hangar space would be needed over the next 20 years, based on the forecasts. This estimate is a function of new based aircraft growth.

Three potential hangar layouts were presented in the alternatives analysis. Following detailed reviews by the planning advisory committee, airport staff, and the public, a preferred alternative has been identified. The preferred alternative most closely aligns with Landside Alternative 1 (Exhibit 4H). **Table 5B** summarized the planned hangar space by hangar type.

TABLE 5B | Hangar Estimate

Estimated Square Feet			
T-Hangars	**Box Hangars**	**Conventional Hangars**	**Parcel Hangars[1]**
58,200	57,600	203,600	41,000
Combined Total Square Feet			**360,400**
Estimated Aircraft Storage Units[2]			
35	20	58	12
Combined Total Units			**125**

[1]Estimated as 10,000 square feet per acre.
[2]Square Feet less 15% for office and maintenance activities then:
T-Hangars - 1,400 sf per aircraft
Box Hangars - 2,500 sf per aircraft
Conventional/Parcel Hangars - 3,000 sf per aircraft

The planned future hangar layout includes more than 360,000 square feet of hangar space, which can accommodate up to 125 new based aircraft. This is more than double the projected need. Therefore, this layout represents a long-term potential.

A key feature of the layout is the extension of a taxilane to the west from the main terminal apron. This taxilane will open up approximately 30 acres for hangar development. To follow the development plan,

it is critical that the airport preserve the space needed for this taxilane. If a hangar were to be constructed in a location that blocked either the planned taxilane or taxilane object free area, then the airport would not be able to access the 30-acre parcel and would lose access to 204,600 square feet of future hangar space.

When the airport is ready to move forward with hangar development in the 30-acre parcel, Corwin Road would need to be closed where the taxilane crosses it. Vehicle traffic would then be rerouted via Ramona Road.

VERTIPORT

A vertiport is a defined helicopter and advanced air mobility (AAM) landing and departure area. Currently, there is not a dedicated vertiport at the airport. Helicopters utilize various apron areas and runways for arrivals and departures. APV experiences regular helicopter operations and does not currently need a dedicated vertiport. With the forecasted addition of more helicopters to the airfield and the possibility of the introduction of AAM aircraft, a time may come when a dedicated vertiport is needed to accommodate demand. Two possible vertiport locations were shown in the Alternatives chapter.

Currently, neither the demand nor the safety concern exists that would justify the need for a dedicated vertiport at APV. Therefore, the ALP will not include a specific location for a vertiport at this time. Ultimately, as demand dictates, the airport (or a private developer) may wish to develop a vertiport. At that time, the vertiport should be designed to meet FAA design standards for safety areas and airspace protection, and the ALP will need to be updated.

ON-AIRPORT LAND USE

Airports provide land for aeronautical uses, first and foremost. If an airport has excess land that is not on a flightline or is not needed for future aeronautical activity, that land may be used for non-aeronautical revenue support, with FAA concurrence.

The Aeronautical Use designation includes those portions of airport property that encompass the major airside elements, such as the runways, taxiways, runway safety area, runway object free area, runway obstacle free zone, runway protection zone (on airport property), taxiway safety area, taxiway object free area, and any NAVAID critical areas. Aeronautical Use is intended for the safe and efficient movement of aircraft to and from the airfield. This land use designation includes the various object clearing areas, and only elements necessary for aircraft navigation can be located here.

Land designated as Airport Use is typically adjacent to the runways that are reserved for aviation uses such as hangar development areas, terminal facilities, and access taxilanes. These areas should be reserved in perpetuity for aeronautical uses.

Non-Aviation Revenue Support land areas are more distant to the runway/taxiway infrastructure and are not envisioned to be needed for future aeronautical or airport use. As a result, the airport, with FAA concurrence, can extend long-term land leases to generate a revenue stream for the airport's unused land.

Exhibit 5D shows the on-airport land use plan. It should be noted that this map is a recommendation, and any movement toward permitting non-aviation development must be processed through the FAA.

LAND USE COMPATIBILITY – OFF AIRPORT

Land use planning around Apple Valley Airport occurs through regulatory and non-regulatory means. The primary regulatory tool for directing land use is the zoning ordinance, which limits the types, sizes, and densities of land uses in various locations. Examples of land use types include residential, commercial, industrial, and agricultural. Non-regulatory means of land use controls include the comprehensive or strategic land use plan. These documents can be adopted for a greater municipality or for specific areas. In most states, including California, zoning ordinances are required to be created in accordance with a city or county's general plan.

It is important to note the distinction between primary land use concepts used in evaluating development with the airport environs and existing land use, general plan, and zoning land use. Existing land use refers to property improvements as they *exist today*, according to city records.

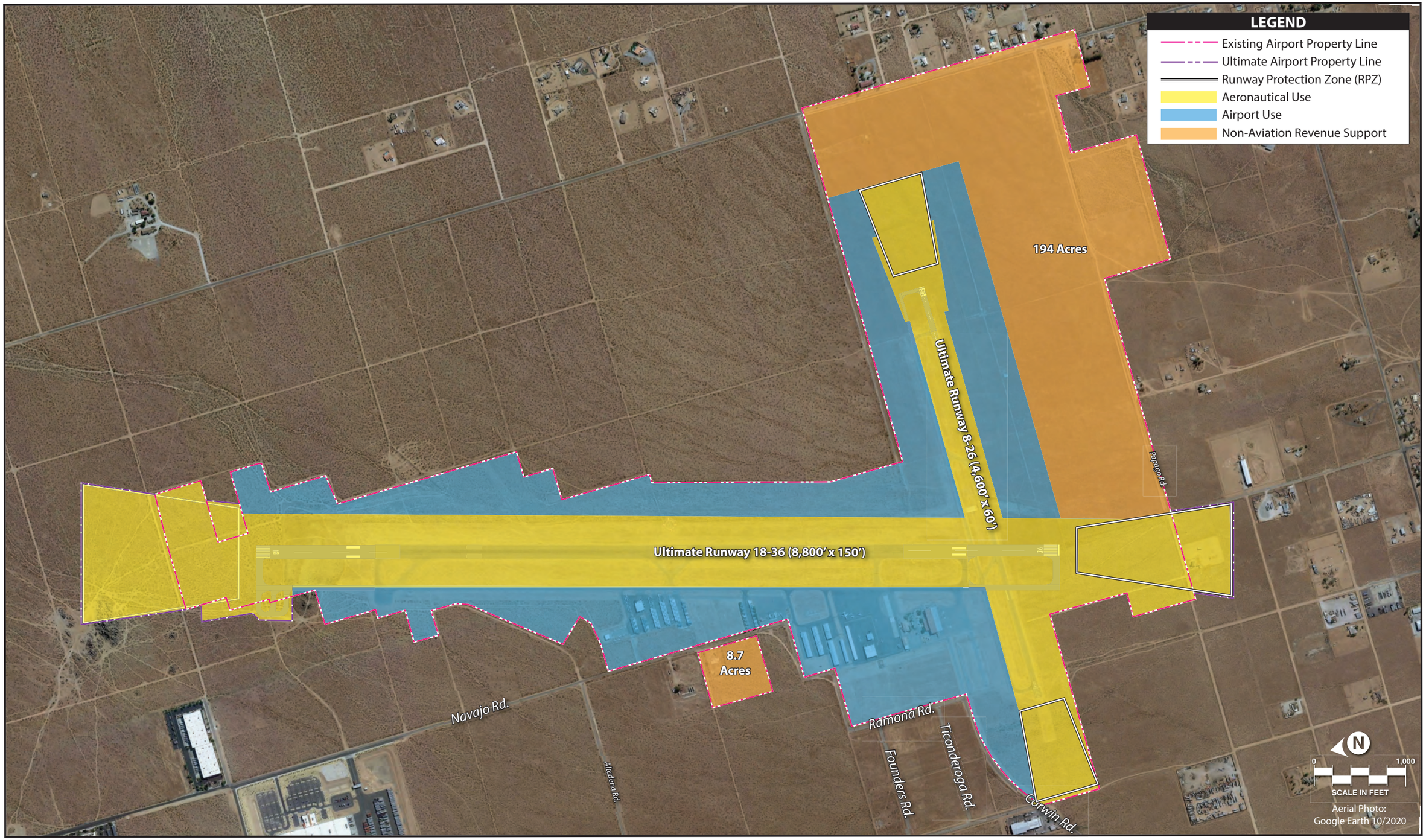
The general plan land use map identifies the *projected or future* land use, according to the goals and policies of the locally adopted general plan. This document guides future development within the city planning area and provides the basis for zoning designations.

Zoning identifies the type of land use *permitted* on a given piece of property, according to the city zoning ordinances and maps. Local governments are required to regulate the subdivision of all lands within their corporate limits. Zoning ordinances should be consistent with the general plan, where one has been prepared. In some cases, the land use prescribed in the zoning ordinance or depicted in the general plan may differ from the existing land use.

The following sections describe the applicable land use policies for the area within the vicinity of the airport. Specifically, these sections pertain to the lands within the 65-decibel (dB) community noise equivalent level metric (CNEL) contours and the FAA Title 14 Code of Federal Regulations (CFR) Part 77 approach surface within one mile of the runway ends.

EXISTING LAND USE

As discussed in Chapter One, APV is located within the municipal boundary of the Town of Apple Valley, California. **Exhibit 5E** depicts the existing land use designations within the airport approach surfaces out to one mile. As shown on the existing land use map, airport property is classified under the category of transportation, communication, and utilities. For off-airport existing land use, there are several large industrial facilities northwest of the airport near the end of Runway 18 and one private heliport, William E. Poole (10CA), to the northeast, which is classified as industrial; however, the land beneath the approach surface to Runway 18 is limited to rural residential. To the west of the airport, within the approach surface to Runway 8, are several land uses categorized as commercial and service, and the remaining land is classified as rural residential. South of the airport, within the approach to Runway 36, there are more concentrated industrial and agricultural land uses. The remaining land surrounding the airport is largely undeveloped and consists of large lots classified as rural residential.


LEGEND
Existing Airport Property Line
Ultimate Airport Property Line
Runway Protection Zone (RPZ)
Aeronautical Use
Airport Use
Non-Aviation Revenue Support
194 Acres
Ultimate Runway 8-26 (4,600' x 60')
Papago Rd.
Ultimate Runway 18-36 (8,800' x 150')
8.7 Acres
Navajo Rd.
Alcadera Rd.
Ramona Rd.
Founders Rd.
Ticonderoga Rd.
Corwin Rd.
N
0
1,000
SCALE IN FEET
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Google Earth 10/2020

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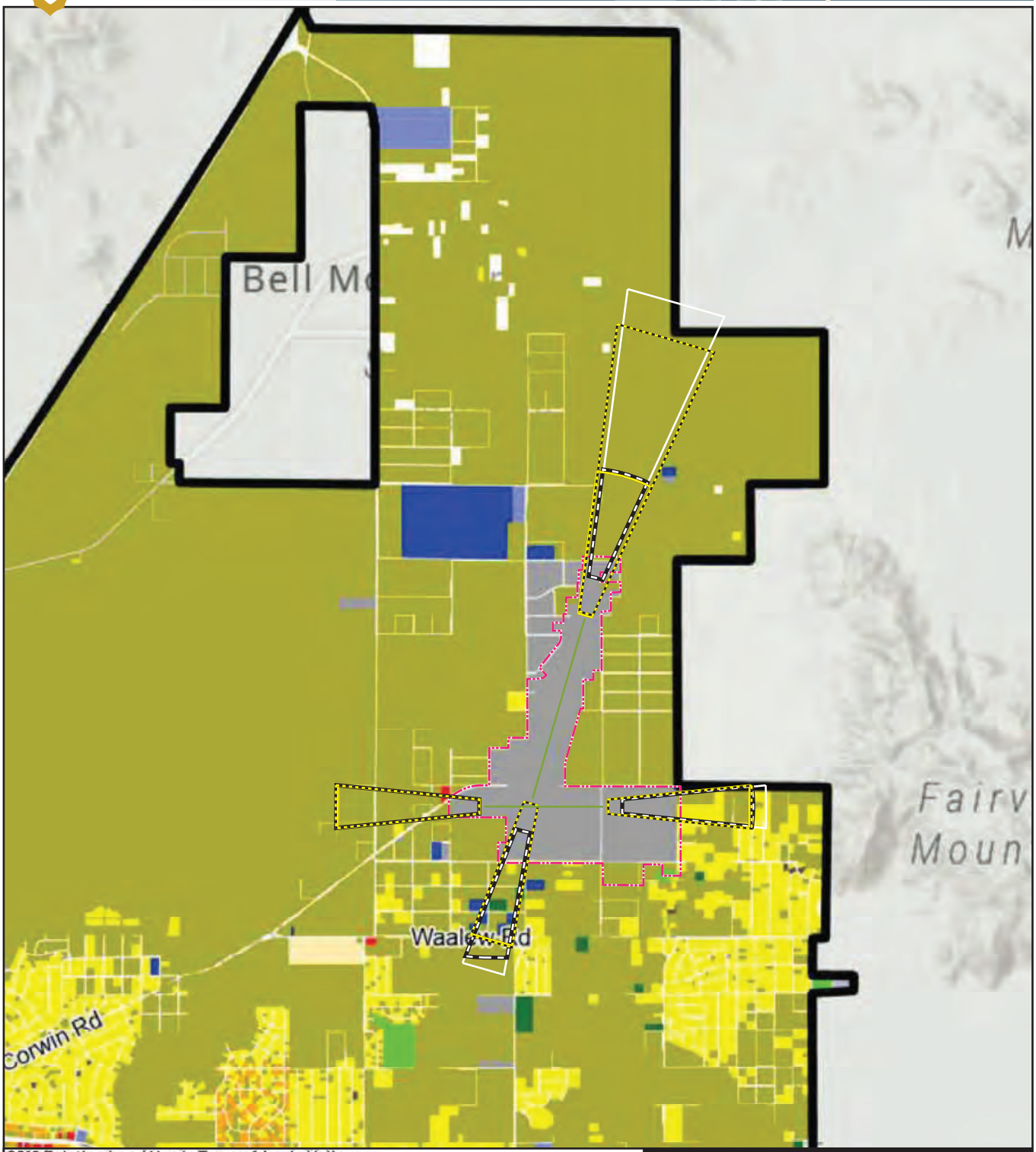


2019 Existing Land Use in Town of Apple Valley

(SCAG Land Use Codes)

- Single Family Residential
- Multi-Family Residential
- Mobile Homes and Trailer Parks
- Mixed Residential
- Rural Residential
- General Office
- Commercial and Services
- Facilities
- Education
- Military Installations
- Industrial
- Transportation, Communications, and Utilities
- Mixed Commercial and Industrial
- Mixed Residential and Commercial
- Open Space and Recreation
- Agriculture
- Vacant
- Water
- Specific Plan
- Under Construction
- Undevelopable
- Unknown

Data Source: Town of Apple Valley, SCAG | Data Updated: 2023 | Map Created: 9/6/2023

Disclaimer: This map was created as a part of SCAG Data/Map Books to solicit feedback from local jurisdictions during Connect SoCal 2024 Local Data Exchange (LDX) process. SCAG shall not be responsible for user's misuse or misrepresentation of this map. For the details regarding the data sources, methodologies and contents of this map, please refer to the SCAG Data/Map Book or contact LIST@scag.ca.gov. Please note that existing land use data shown in the map represents an approximation of local conditions as of 2019. For authoritative data on these subjects, please contact the respective local jurisdiction directly.

Approach Surfaces Legend

- Existing Part 77 Approach Surface (Clipped to 1-mile)
- Ultimate Part 77 Approach Surface (Clipped to 1-mile)
- Full Existing Part 77 Approach Surface
- Full Ultimate Part 77 Approach Surface
- Existing Runway Centerline
- Airport Property Line

Sources: Southern California Association of Governments (SCAG), Connect SoCal Data Map Book for the Town of Apple Valley (2023); Coffman Associates analysis.

FUTURE LAND USE PLAN

The future land use plan is a general policy document used by a government agency to identify and describe the community's characteristics, articulate goals and policies, and explore alternative plans for future growth, which will be used to produce zoning ordinances and subdivision regulations to carry out the plan's goals. Often, a municipality will incorporate goals and policies for its airports in the future land use plan, which is typically separate from an airport master plan. The most recent planning document of this type for the land near the airport is the *2009 General Plan*, which was adopted by the Town of Apple Valley Town Council on August 11, 2009.

The Land Use Element of the plan, found in Chapter II, "establishes the vision of Apple Valley for its long-term development" (pg. II-2). In support of community goals related to protecting the airport, Goal 7, Policy 7.C of the *2009 General Plan* states, "the long-term economic growth of the Apple Valley Airport shall be protected" (pg. II-27).

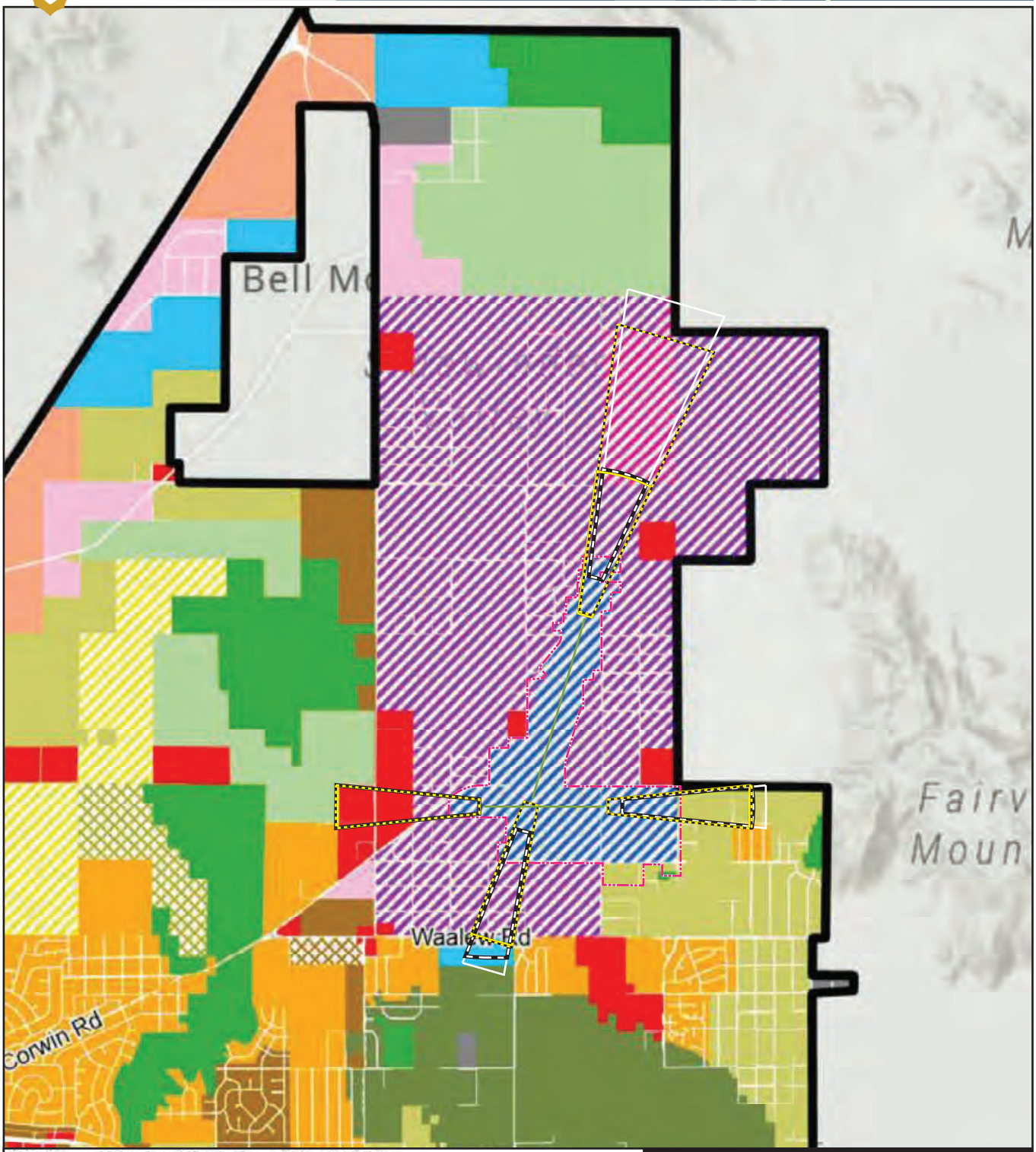
The goal is to be accomplished through the following program step:

- **Program 7.A.2:** Development proposals within the influence area of the Apple Valley Airport shall be required to comply with FAA and County Standards.
- Responsible party: Planning Division, Town Engineer, County of San Bernardino
- Schedule: Ongoing

In addition to policy guidance, the *2009 General Plan* includes the area's future Land Use Map. **Exhibit 5F** depicts the future land use designations from the Land Use Map within the airport approach surfaces out to one mile for both runways (Runway 18-36 and Runway 8-26). As indicated on the exhibit, the majority of the land beneath the one-mile approach surfaces clipped to one mile is within the Town of Apple Valley, California, *North Apple Valley Industrial Specific Plan* (NAVISP)[1] planning area. These include General Industrial (I-G), Specific Plan Industrial (I-SP), Airport Industrial (A-I), and General Commercial (C-G). The approach surface to Runway 8 extends beyond the western portion to include land designated as General Commercial. Additionally, the approach surface to Runway 26 extends beyond the eastern portion of the NAVISP planning area and includes land designated as Estate Residential.

Table 5A presents the purpose for each designation as stated in the general plan or specific plan, the recommended uses that pertain to this analysis, and the approach location where each use is planned.

[1] Town of Apple Valley, North Apple Valley Industrial Specific Plan (2017), https://applevalley.org/wp-content/uploads/2025/04/North-Apple-Valley-Specific-Plan-1.10.2017.pdf



2019 General Plan Land Use in Town of Apple Valley
(Local Jurisdiction's Land Use Designations)

- Very Low Density Residential
- Low Density Residential
- Estate Residential
- Estate Residential 3/4
- Single Family Residential
- Medium Density Residential
- Mobile Home Park
- Mixed Use
- Office Professional
- General Commercial
- Service Commercial
- Regional Commercial
- Planned Industrial
- Public Facility
- Open Space
- Mineral Resources
- Specific Plan
- Specific Plan (LDR)
- Specific Plan (MDR)
- Specific Plan (HDR)
- Specific Plan (C-G)
- Specific Plan (NC)
- Specific Plan (OC)
- Specific Plan (I-SP)
- Specific Plan (I-G)
- Specific Plan (I-A)
- Specific Plan (CR/OS)

Data Source: Town of Apple Valley, SCAG | Data Updated: 2023 | Map Created: 9/8/2023

Disclaimer: This map was created as a part of SCAG Data/Map Books to solicit feedback from local jurisdictions during Connect SoCal 2024 Local Data Exchange (LDX) process. SCAG shall not be responsible for user's misuse or misrepresentation of this map. For the details regarding the data sources, methodologies and contents of this map, please refer to the SCAG Data/Map Book or contact LIST@scag.ca.gov. Please note that data sourced from local general plan land use represents an approximation of local conditions as of 2019. For authoritative data on these subjects, please contact the respective local jurisdiction directly.

Approach Surfaces Legend

- Existing Part 77 Approach Surface (Clipped to 1-mile)
- Ultimate Part 77 Approach Surface (Clipped to 1-mile)
- Full Existing Part 77 Approach Surface
- Full Ultimate Part 77 Approach Surface
- Existing Runway Centerline
- Airport Property Line

Sources: Southern California Association of Governments (SCAG), Connect SoCal Data Map Book for the Town of Apple Valley (2023); North Apple Valley Industrial Specific Plan (2006); Coffman Associates analysis.

TABLE 5C | General and Specific Plan Classification Summaries	
General Industrial (I-G)	
Purpose	The Town Industrial Districts are established to provide locations for the development of clean, safe, and modern industrial activities.
Recommended Use	More intense industrial activities, including manufacturing, warehousing, wholesale distribution, storage, and outdoor manufacturing activities.
Location	Runway 18
Specific Plan Industrial (I-SP)	
Purpose	The Specific Plan Industrial District is intended to support the development of a broad range of clean, well-planned industrial, quasi-industrial, and commercial support uses within the North Apple Valley Industrial Specific Plan.
Recommended Use	Uses can range from manufacturing and warehousing to offices and retail facilities that support the employee population within the Specific Plan Area.
Location	Runway 18, Runway 36, Runway 8, Runway 26
Airport Industrial (A-I)	
Purpose	The Airport Industrial District has been assigned to the lands owned by Apple Valley Airport.
Recommended Use	Land uses allowed include direct airport-related activities, such as hangars and fueling operations, and support services related to airport operations, including restaurants, offices, and distribution facilities.
Location	Runway 18, Runway 36, Runway 8, Runway 26
General Commercial (C-G)	
Purpose	This designation allows a broad range of retail uses, as well as office and service land uses. Typical uses will serve the needs of the town's residents and businesses in a shopping center setting.
Recommended Use	General retail stores, including all types of consumer goods, furniture and appliance sales, and auto repair and sales are permitted in this designation. Restaurants (both sit-down and fast food), gasoline service stations, and general office uses (secondary to retail uses) are also permitted in this designation. There is no minimum size for project sites in this designation but assemblage of smaller parcels is encouraged.
Location	Runway 8
Estate Residential (RE-1)	
Purpose	This land use designation allows detached single-family homes on lots of one to 2.5 gross acres. Access on local roads in new subdivisions within this designation should be paved. Multi-use trails should be integrated into all new projects in this designation, as appropriate.
Recommended Use	In addition to private residences, animal-keeping for personal use, ranching activities, and home occupations are appropriate land uses in this designation. May be appropriate for bed and breakfast and similar uses, with approval of a conditional use permit.
Location	Runway 35, Runway 14

Sources: 2009 General Plan, Town of Apple Valley (2009); Connect SoCal, Southern California Associations of Governments Data Map Book for the Town of Apply Valley (2023). Coffman Associates analysis.

AIRPORT COMPREHENSIVE LAND USE COMPATIBILITY PLAN

In addition to the general plan and specific plan, undeveloped land within the airport influence area surrounding APV is subject to the policies contained in the Comprehensive Land Use Compatibility Plan (CLUCP) for Apply Valley Airport. State statute requires establishment of the CLUCP and Airport Land Use Commission (ALUC) for each public-use airport in California[2] with the goal of preventing new noise and safety problems. State statute also requires city and county general plans to be consistent with the CLUCP.

The *Town of Apple Valley Airport Comprehensive Land Use Compatibility Plan* was adopted in March 1995 by the Apple Valley Planning Commission. The Airport Influence Area (AIA), as defined in the plan, correlates with the town's zoning Airport Overlay Districts A-1 and A-2, which are described in more detail in the following section.

[2] California Public Utilities Code, Sections 21670 et. seq. (https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PUC&sectionNum=21670)

ZONING

Zoning regulation is an essential tool to achieve the goals and policies outlined in the general plan. Zoning regulations divide land into districts, or zones, and regulate land use activities in those districts and specify permitted uses, the intensity and density of each use, and the bulk sizes of each building. Traditional zoning ordinances separate land into four basic uses: residential, commercial (including office), industrial, and agricultural.

The Town of Apple Valley Development Code contains the town's zoning ordinance[3], which was adopted under authority granted to it by the State of California. The zoning ordinance establishes the official zoning map for the Town of Apple Valley and its surrounding sphere of influence, the boundary of which is determined by the San Bernardino County Local Agency Formation Commission (LAFCO). All of the land within the runway approach surfaces out to one mile are within zoning jurisdiction of the Town of Apple Valley and subject to the Development Code of the Town of Apple Valley, CA.

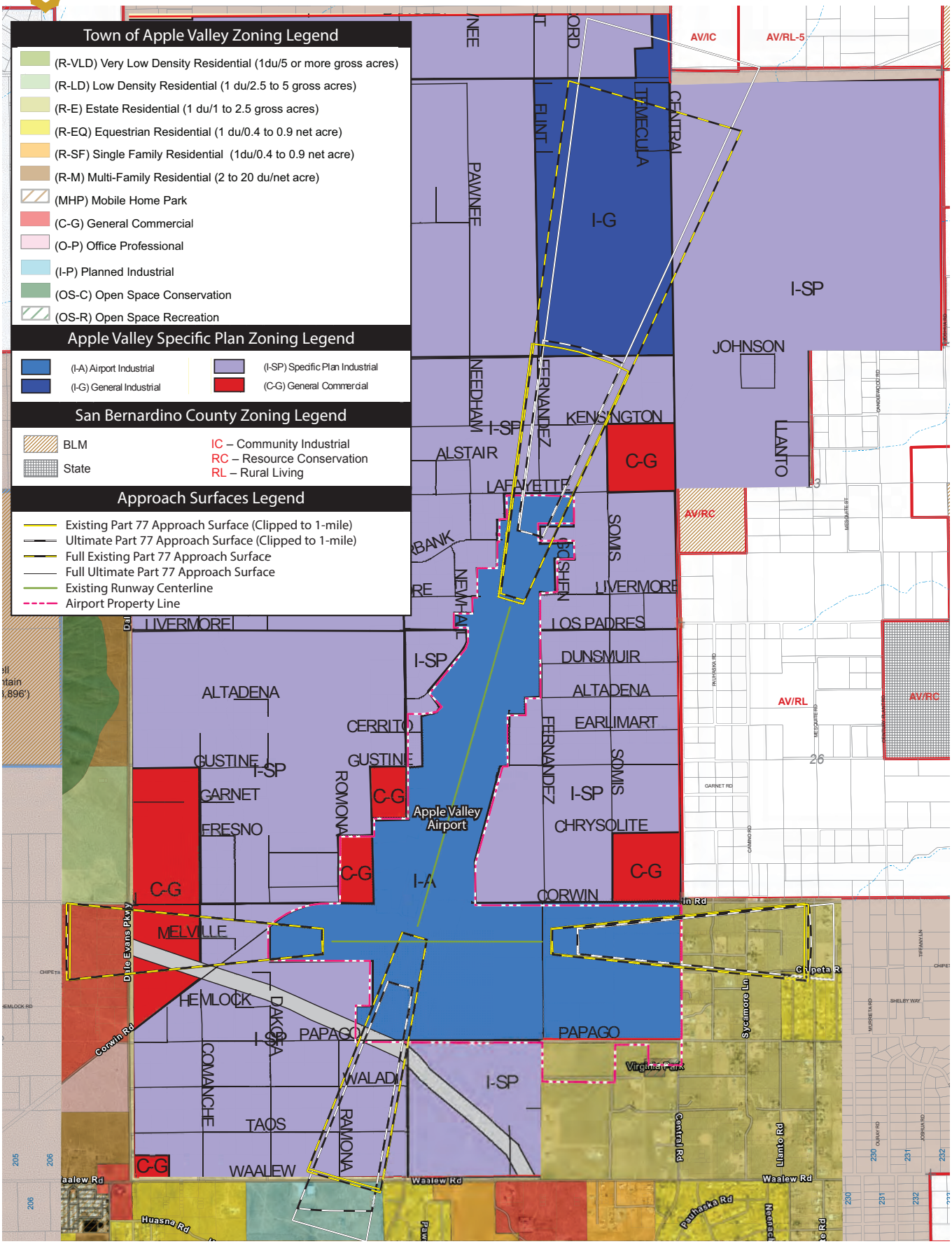
As shown on **Exhibit 5G**, the following zoning districts are found within the APV existing and future runway approach surfaces out to one mile:

- SP – Specific Plan (referring to the NAVISP planning area); includes:
  - I-A – Airport Industrial
  - I-SP – Specific Plan Industrial
  - I-G – General Industrial
  - C-G – Commercial Industrial
- C-G – General Commercial
- R-E – Estate Residential

In addition to the requirements of the above-listed standard zoning designations, the Town of Apple Valley has adopted Airport Overlay Districts based on the airport's CLUCP safety zones, as described in Chapter 9.65 – Airport Overlay Districts of the town's Development Code[4]. The Airport Overlay Districts zoning ordinance outlines special considerations for particularly hazardous land uses, land use compatibility guidelines, height restrictions, and other development standards for land within the designated overlay zones. Airport Overlay District regulations are in addition to the regulations of the underlying zoning district as listed above and shown on **Exhibit 5G**.

Table 5D summarizes the types of land uses allowed in each zoning district, maximum allowable height, and minimum lot area.

[3] Town of Apple Valley Development Code Title 9, Chapter 9.05 – Zoning (https://library.municode.com/ca/apple_valley/codes/code_of_ordinances?nodeId=TIT9DECO_CH9.05ZO)
[4] Town of Apple Valley Development Code Title 9, Chapter 9.65.040 – Airport Overlay Districts (https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PUC&sectionNum=21670)



Sources: Town of Apple Valley Data Hub – Zoning Layer (2025), San Bernardino County Land Use Services - Static Zoning Map (2007).

TABLE 5D | Zoning Designation Summaries

Zoning Classification (Underlying Zoning Districts)	Residential Allowed?	Maximum Density/Intensity		Maximum Allowable Height	Minimum Lot Area
I-A – Airport Industrial	Limited[1]	Not specified		50 feet[3]	N/A
I-SP – Specific Plan Industrial	Limited[2]	Not specified		50 feet[3]	2 ac
I-G – General Industrial	Limited[2]	Not specified		100 feet[3]	5 ac
C-G – Commercial Industrial	No	Not specified		35 feet[3]	1 ac
C-G – General Commercial	Limited[1]	Max FAR of 0.5		35 feet	10,000 sf
R-E – Estate Residential	Yes	1 to 2.5 ac/du		35 feet	1 ac
Zoning Classification (Airport Overlay Zones)	**Residential Allowed?**	**Maximum Density**	**Maximum Intensity**	**Maximum Allowable Height**	**Maximum Allowable Coverage**
Airport Master Plan Safety Area	No	None	10 persons/ac	See below[4]	0
Airport Overlay District A-1	Yes	1 du/2 ac	12 persons/ac	35 feet	25%
Airport Overlay District A-2	Yes	4 du/1 ac	150 persons/ac	50 feet	None

Key: du = dwelling unit(s) / ac = acre(s) / sf = square feet / FAR = Floor Area Ratio
[1] Caretakers residence only. Conditional Use Permit Required.
[2] Caretakers residence only. Special Use Permit Required.
[3] May reduce to 35 and 50 feet if located within Airport Influence Areas A-1 and A-2.
[4] The height of objects and structures within the Airport Master Plan Safety Area shall comply with the height limits as specified in the zoning ordinance or provided by FAA Regulations Part 77, Objects Affecting Navigable Airspace, whichever is more restrictive.

Sources: Apple Valley Municipal Code Chapters 9.05 – Zoning and 9.65 – Airport Overlay Districts; Coffman Associates analysis

Because the existing and projected 60- and 65-dB Community Noise Equivalent Level (CNEL) noise contours for APV airport remain on airport property according to the prior master plan, no additional noise-related criteria have been adopted for the Airport Overlay Zones.

SUBDIVISION REGULATIONS

Subdivision regulations are legal devices employed to administer the process of dividing land into two or more lots, parcels, or sites for the building and location, design, and installation of supporting infrastructure. The subdivision regulations are one of two instruments commonly employed to carry out the goals and policies outlined in the general plan. According to California State Statutes, the creation of any parcel of land 10 acres or less in area is considered a subdivision and is subject to local regulation. The land subdivision ordinance of the Town of Apple Valley is codified within Chapter 9.71 of the Town of Apple Valley Development Code, and in accordance with the California Subdivision Map Act.

Subdivision regulations can be used to specify requirements for airport-compatible land development by requiring developers to plat and develop land to minimize noise impacts or reduce noise exposure to new development. Subdivision regulations can also be used to protect the airport proprietor from litigation for noise impacts at a later date. The most common requirement is the dedication of a noise or avigation easement to the airport sponsor by the land developer as a condition of the development approval. Easements typically authorize overflights of property, with noise levels attendant to such operations.

BUILDING CODE

Building codes were established to provide minimum standards to safeguard life, limb, health, and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all buildings and structures. Building codes may be required to provide sound insulation in new residential, office, and institutional buildings when warranted by existing or potential high aircraft noise levels.

Jurisdictions can pass additional regulations in their building code to require additional building requirements, such as reacting to unique threats of regional natural disasters, helping to build structures properly at the beginning of construction when it matters most, as it can be expensive and difficult to change. For new construction near an airport, incorporating noise attenuation can be especially important. Noise attenuation measures can include increasing the thickness of windows or use of sound-absorbing building materials.

Relevant codes adopted by the Town of Apple Valley include the California Building Code (CBC), Volumes 1 and 2, 2022 Edition, including Appendix J; the California Residential Code, 2022 Edition; and the California Green Building Standards Code, 2022 Edition. The California codes mandate sound insulation standards and acoustical control measures for both residential and commercial buildings, including minimum sound transmission class ratings for airborne sound insulation. The codes also require that structures built within the airport's 65 dB CNEL contour be designed to limit intruding noise.

NON-COMPATIBLE DEVELOPMENT ANALYSIS

Areas with the potential for non-compatible development, when compared to the noise exposure contours and height restrictions within the Part 77 approach surfaces out to one mile, have been evaluated. Further discussion of these areas can be found in Chapter One. This was accomplished by evaluating city-adopted land use plans and zoning designations for those parcels encompassed by the noise contours to determine if noise-sensitive land uses could be developed in those areas. Both noise contours and height restrictions within the Part 77 approach surface area are addressed below.

Noise Exposure Contours

The standard methodology for analyzing noise conditions at airports involves the use of a computer simulation model. The purpose of the noise model is to produce noise exposure contours that are overlain on a map of the airport and vicinity to graphically represent aircraft noise conditions. When compared to land use, zoning, and general plan maps, the noise exposure contours may be used to identify areas that are currently, or have the potential to be, exposed to aircraft noise.

To achieve an accurate representation of an airport's noise conditions, the noise model uses a combination of industry-standard information and user-supplied inputs specific to the airport. The software provides noise characteristics, standard flight profiles, and manufacturer-supplied flight procedures for aircraft that commonly operate at APV. As each aircraft has different design and operating characteristics (number and type of engines, weight, and thrust levels), each aircraft emits different noise levels. The most common way to spatially represent the noise levels emitted by an aircraft is a noise exposure contour.

Airport-specific information, including runway configuration, flight paths, aircraft fleet mix, runway use distribution, local terrain and elevation, average temperature, and numbers of daytime and nighttime operations, are also used in modeling inputs.

Based on assumptions provided by the user, the noise model calculates the average 24-hour aircraft sound exposure within a grid covering the airport and surrounding areas. The grid values, representing the CNEL at each intersection point on the grid, signify a noise level for that geographic location. To create noise contours, an isoline similar to those on a topographic map is drawn connecting points of the same CNEL noise value. In the same way that a topographic contour represents the same elevation, the noise contour identifies areas of equal noise exposure.

CNEL is the metric currently accepted by the FAA, U.S. EPA, and Department of Housing and Urban Development (HUD) as an appropriate measure of cumulative noise exposure in California. These three agencies, as well as the State of California, have identified the 65 CNEL noise contour as the threshold of incompatibility. The guidelines indicate that all land uses are acceptable in areas below 65 CNEL. At or above the 65 CNEL threshold, residential uses (including RV parks and campgrounds), educational and religious facilities, health and childcare facilities, and outdoor sport, recreation, and park facilities are all incompatible. Educational, healthcare, and religious facilities are also generally considered to be incompatible with noise exposure above 65 CNEL. As with residential development, communities can make a policy decision that these uses are acceptable with appropriate sound attenuation measures. Hospitals and nursing homes, places of worship, auditoriums, and concert halls are structures which are generally compatible if measures to achieve noise level reduction are incorporated into the design and construction of structures. Outdoor music shells and amphitheaters are not compatible and should be prohibited within the 65 CNEL noise contour. Additionally, agricultural uses and livestock farming are generally considered compatible except for related residential components of these uses, which should incorporate sound attenuation measures.

As part of this Master Plan, noise exposure contours were prepared for APV for a baseline condition (2024) and a long-range condition (2044). The resulting contours are shown on **Exhibit 5H**. As shown on the exhibits, the existing 65 CNEL and higher noise contours remain on airport property, whereas the 65 CNEL contour in the future condition extends slightly off airport property near the proposed end of Runway 18.

Height Restrictions

To analyze the potential for non-compatible development of land off airport property, zoning within the Part 77 approach surface area out to one mile from the end of the runways were evaluated. **Table 5C** above notes the maximum height limit for zoning of the underlying permitted land uses, which range from 35 to 100 feet, and from 35 to 50 feet within the AIA for APV.

RECOMMENDATIONS

Based on the information presented above and the non-compatible development analysis, the following recommendations are provided to maintain airport land use compatibility in the vicinity of APV. The

below recommendations are in accordance with the recently published Federal Aviation Administration (FAA) Advisory Circular 150/5190-4B, which identifies compatible land use development tools, resources, and techniques to protect surrounding communities from adverse effects associated with airport operations.[5]

Update the Apple Valley Comprehensive Land Use Compatibility Plan – The current CLUCP was adopted in March 1995. The Airport Master Plan Safety Area and Airport Overlay Districts could be re-evaluated using the recommended safety zones and corresponding compatibility criteria policies contained in the most recent 2011 California Airport Land Use Planning Handbook[6]. Noise contours could be also updated based on existing and future conditions to ensure the most up-to-date compatible noise standards are implemented within the Airport Overlay District for the area within the 65 CNEL future condition noise contour that is off airport property.

Update General Plan and Airport District Overlay Zoning Regulations – Following adoption of an updated CLUCP, the Town of Apple Valley General Plan, NAVISP, and Airport Overlay District Zoning Regulations may also need to be updated to be consistent with an updated CLUCP. This could include potentially modifying the Airport Overlay District zoning regulations to match any revised safety and noise compatibility zones and criteria contained in an updated CLUCP.

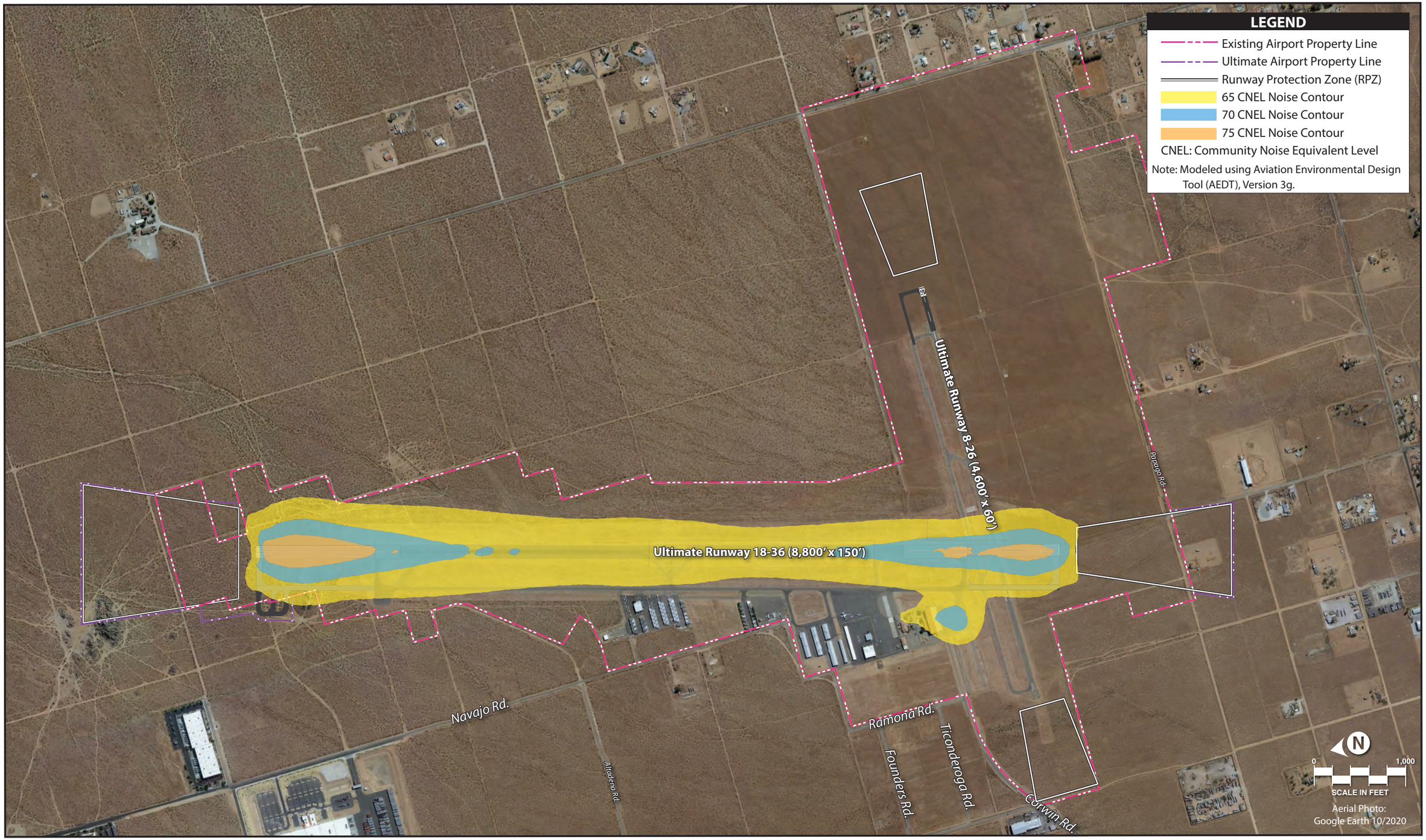
Implement Use of the FAA Obstruction Evaluation/Airport Airspace Analysis (OE/AAA) Tool – The current Airport Overlay District ordinance references 14 CFR Part 77 airspace standards in objects and structures within the city and county airport hazard zoning ordinances and/or building permit application process could be modified so that airport hazards are identified through an FAA 7460-1 airspace analysis. The FAA notice criteria tool allows users (airport sponsor, developer, and local municipality) to input location and dimensional information about a proposed development to determine if they are required to file notice with the FAA. If a notice is required, the proponent would then be required to submit FAA Form 7460-1, "Notice of Construction or Alteration," to the FAA for review as a local project review standard, pursuant to each jurisdiction's existing airport hazard ordinance.

Review of Wildlife Hazards – The Airport Overlay District zoning regulation identifies land uses that attract large numbers of birds as inappropriate for development in the airport influence area. Examples included in the ordinance are "landfills and some types of food processing plants involving outdoor storage of grant [sic] and other raw materials or food by-products." The wildlife safety portion of the ordinance and future development proposals could be reviewed against recent guidance contained in FAA Advisory Circular 15/5200-33C[7].

Clarify When Fair Disclosure is Required for Real Estate Transactions within the Vicinity of APV – Fair disclosure regulations in real estate transactions are intended to ensure that prospective buyers of property are informed that the property is, or will be, exposed to potentially disruptive aircraft noise or

[5] Federal Aviation Administration, Advisory Circular 150/5190-4B – Airport Land Use Compatibility Planning (2022) (https://www.faa.gov/documentLibrary/media/Advisory_Circular/150_5190_4b_Land_Use_Compatibility.pdf)
[6] California Department of Transportation – Division of Aeronautics, California Airport Land Use Planning Handbook (2011) (https://dot.ca.gov/programs/aeronautics/airport-land-use-planning)
[7] Federal Aviation Administration, Advisory Circular 150/5200-33C, Hazardous Wildlife Attractants on or near Airports (2020). https://www.faa.gov/documentLibrary/media/Advisory_Circular/150-5200-33C.pdf


LEGEND
Existing Airport Property Line
Runway Protection Zone (RPZ)
65 CNEL Noise Contour
70 CNEL Noise Contour
75 CNEL Noise Contour
CNEL: Community Noise Equivalent Level
Note: Modeled using Aviation Environmental Design Tool (AEDT), Version 3g.
Runway 8-26 (4,099' x 60')
Runway 18-36 (6,498' x 150')
Papago Rd.
Navajo Rd.
Altadena Rd.
Ramona Rd.
Founders Rd.
Ticonderoga Rd.
Corwin Rd.
0
1,000
SCALE IN FEET
Aerial Photo:
Google Earth 10/2020


LEGEND
Existing Airport Property Line
Ultimate Airport Property Line
Runway Protection Zone (RPZ)
65 CNEL Noise Contour
70 CNEL Noise Contour
75 CNEL Noise Contour
CNEL: Community Noise Equivalent Level
Note: Modeled using Aviation Environmental Design Tool (AEDT), Version 3g.
Ultimate Runway 8-26 (4,600' x 60')
Ultimate Runway 18-36 (8,800' x 150')
Papago Rd.
Navajo Rd.
Alfadera Rd.
Ramona Rd.
Founders Rd.
Ticonderoga Rd.
Curwin Rd.
N
0
1,000
SCALE IN FEET
Aerial Photo:
Google Earth 10/2020

overflights. It is not uncommon, around even the busiest airports, for newcomers to report having bought property without having been informed about airport noise levels. At the most formal level, fair disclosure can be implemented through ordinance requiring a deed notice for property within the vicinity based on an existing boundary, such as the AIA.

The following is the example of the fair disclosure deed notice in the Apple Valley Airport CLUCP:

This property is in the area subject to overflights by aircraft using Apple Valley Airport, and as a result occupants may experience inconvenience, annoyance, or discomfort arising from the noise of such operations. State law (Public Utilities Code Section 21670 et. seq.) establishes the importance of public use airports to protection of the public interest of the people of the State of California. Residents of property near a public use airport should therefore be prepared to accept such inconvenience, annoyance or discomfort from normal aircraft operations. Any subsequent deed conveying parcels or lots shall contain a statement in substantially this form.

ENVIRONMENTAL OVERVIEW

An analysis of potential environmental impacts associated with proposed airport projects is an essential consideration in the airport master plan process. The primary purpose of this discussion is to review the preferred master plan concept (**Exhibit 5A**) and the airport's capital program to determine whether projects identified in the airport plan could, individually or collectively, significantly impact existing environmental resources. Information contained in this section was obtained from previous studies, official internet websites, and analysis by the consultant. This section provides an overview of potential impacts to existing resources that could result from the implementation of the planned improvements outlined on the preferred master plan concept.

If the FAA retains approval authority over a project, then the project is typically subject to the *National Environmental Policy Act* (NEPA). For projects not categorically excluded under FAA 1050.1G, *FAA National Environmental Policy Act Implementing Procedures*, compliance with NEPA is generally satisfied through the preparation of environmental assessment (EA). In instances where significant environmental impacts are expected, an environmental impact statement (EIS) may be required.

The 2024 FAA Reauthorization Act has also introduced a variety of updated and new environmental guidelines. The primary environmental-related updates are outlined in two sections: Section 743 and Section 783.

- Section 743 details the FAA's authority to regulate uses of airport property for projects on land acquired without federal assistance and outlines limitations imposed on non-aeronautical review. Section 743 also states that a notice of intent for proposed projects outside FAA jurisdiction should be submitted by an airport sponsor to the FAA.
- Section 783 outlines the airport capacity enhancement projects, terminal development projects, and general aviation airport improvement projects that will be subject to coordinated and expedited environmental review requirements.

The following portion of the master plan is not designed to satisfy NEPA requirements for a specific development project, but it provides a preliminary review of environmental issues that may need to be considered in more detail with the environmental review process. It is important to note that the FAA is responsible for determining the level of environmental documentation required for airport actions.

Table 5E summarizes potential environmental concerns associated with implementation of the ultimate recommended development concept for APV. Analysis under NEPA may require Federal agencies to prepare a "detailed statement" for proposed "major federal actions significantly affecting the quality of the human environment", as amended by the Fiscal Responsibility Act of 2023 (FRA), Public Law 118-5. This statement must include the following:

(1) The reasonably foreseeable environmental effects of the proposed agency action;
(2) The reasonably foreseeable adverse environmental effects that cannot be avoided;
(3) A reasonable range of alternatives to the proposed agency action, including an analysis of any negative environmental impacts of not implementing the proposed agency action in the case of no action alternative, that are technically and economically feasible, and meet the purpose and need of the proposal;
(4) The relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity; and
(5) Any irreversible and irretrievable commitments of resources that would be involved in the proposed action.

TABLE 5E | Summary of Potential Environmental Concerns

AVIATION EMISSIONS AND AIR QUALITY	
FAA Order 1050.1G, *Significance Threshold/Factors to Consider*	***The action would cause pollutant concentrations to exceed one or more of the National Ambient Air Quality Standards (NAAQS), as established by the United States (U.S.) Environmental Protection Agency (EPA) under the Clean Air Act, for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations.***
Potential Environmental Concerns	**Potential Impact.** An increase in operations could occur over the 20+ years outlined in the aviation demand forecasts as part of this airport master plan that would likely result in additional emissions. APV is located in in the area of San Bernardino County, which is in nonattainment for 8-Hour Ozone (2008 and 2015 standards) and particulate matter (1987 standard). For construction or operational emissions, project-specific qualitative or quantitative emissions inventories under NEPA may be required, depending on the type of environmental review needed for specific projects.
BIOLOGICAL RESOURCES (including fish, wildlife, and plants)	
FAA Order 1050.1G, *Significance Threshold/Factors to Consider*	***The U.S. Fish and Wildlife Service (FWS) or the National Marine Fisheries Service (NMFS) determines that the action would be likely to jeopardize the continued existence of a federally listed threatened or endangered species or would result in the destruction or adverse modification of federally designated critical habitat.*** ***FAA has not established a significance threshold for non-listed species. However, factors to consider are if an action would have the potential for:*** - ***Long-term or permanent loss of unlisted plant or wildlife species;*** - ***Adverse impacts to special status species or their habitats;*** - ***Substantial loss, reduction, degradation, disturbance, or fragmentation of native species' habitats or their populations; or*** - ***Adverse impacts on a species' reproductive rates, non-natural mortality, or ability to sustain the minimum population levels required for population maintenance.*** *Continues…*

TABLE 5E | Summary of Potential Environmental Concerns (continued)

Potential Environmental Concerns	Federally Protected Species **Potential Impact**. According to the U.S. FWS Information for Planning and Consultation (IPaC) report, there is potential for two threatened and proposed threated species at APV: • desert tortoise (threatened) • monarch butterfly (proposed threatened) A biological resources evaluation may be needed to ensure no suitable habitat for federally protected species is located within the proposed development footprint for projects identified on **Exhibit 5A.** Designated Critical Habitat **No Impact.** There is no designated critical habitat within airport boundaries.
COASTAL RESOURCES	
FAA Order 1050.1G, *Significance Threshold/Factors to Consider*	***FAA has not established a significance threshold for Coastal Resources. Factors to consider are if an action would have the potential to:*** • ***Be inconsistent with the relevant state coastal zone management plan(s);*** • ***Impact a coastal barrier resources system unit;*** • ***Pose an impact on coral reef ecosystems;*** • ***Cause an unacceptable risk to human safety or property; or*** • ***Cause adverse impacts on the coastal environment that cannot be satisfactorily mitigated.***
Potential Environmental Concerns	**No Impact.** As mentioned in Chapter One, the airport is not located within a coastal zone and therefore, airport development depicted on **Exhibit 5A** would not impact coastal resources.
***DEPARTMENT OF TRANSPORTATION ACT*, SECTION 4(f)** (NOW CODIFIED IN 49 UNITED STATES CODE [U.S.C.] § 303)	
FAA Order 1050.1G, *Significance Threshold/Factors to Consider*	***The action involves more than a minimal physical use of a Section 4(f) resource or constitutes a "constructive use" based on an FAA determination that the aviation project would substantially impair the Section 4(f) resource. Resources that are protected by Section 4(f) are publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance; and publicly or privately owned land from an historic site of national, state, or local significance. Substantial impairment occurs when the activities, features, or attributes of the resource that contribute to its significance or enjoyment are substantially diminished.***
Potential Environmental Concerns	**No Impact**. There is one Section 4(f) resource within one mile of the airport, Virginia Park. The recommended development concept proposes new airport development within existing airport property and would not physically or constructively use this resource.
FARMLANDS	

FAA Order 1050.1G, *Significance Threshold/Factors to Consider*	***The total combined score on Form AD-1006, Farmland Conversion Impact Rating, ranges between 200 and 260. (Form AD-1006 is used by the U.S. Department of Agriculture, Natural Resources Conservation Service [NRCS] to assess impacts under the Farmland Protection Policy Act [FPPA].)***
	
	FPPA applies when airport activities meet the following conditions:
	• *Federal funds are involved;*
	• *The action involves the potential for the irreversible conversion of important farmlands to non-agricultural uses. Important farmlands include pastureland, cropland, and forest considered to be prime, unique, or statewide or locally important land; or*
	• *None of the exemptions to FPPA apply. These exemptions include:*
	  ○ *When land is not considered "farmland" under FPPA, such as land already developed or already irreversibly converted. These instances include when land is designated as an urban area by the U.S. Census Bureau or the existing footprint includes rights-of-way.*
	  ○ *When land is already committed to urban development.*
	  ○ *When land is committed to water storage.*
	  ○ *The construction of non-farm structures is necessary to support farming operations.*
	  ○ *The construction/land development for national defense purposes.*
	
	Continues…

TABLE 5E | Summary of Potential Environmental Concerns (continued)

Potential Environmental Concerns	**Potential Impact**. According to the NRCS-USDA Web Soil Survey, the majority of the airport contains soils classified as "prime farmland if irrigated", aside from an area located to the east of Runway 8-26 (**Exhibit 1S**). Furthermore, while most of the airport is identified as Urban and Built-Up Land, the area south of Runway 8-26 has been identified as prime farmland if irrigated and may be subject to the FPPA, as this area also contains farmable soils. The recommended development concept also proposes the extension of Runway 36 in areas with farmable soils that have also been identified as prime farmland – irrigated, and therefore, prior to the extension of this runway, coordination may be required with the USDA to assess potential impacts to these soils. Source: USDA-NRCS Web Soil Survey, (https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx), accessed December 2025
HAZARDOUS MATERIALS, SOLID WASTE, AND POLLUTION PREVENTION	
FAA Order 1050.1G, *Significance Threshold/Factors to Consider*	***FAA has not established a significance threshold for Hazardous Materials, Solid Waste, and Pollution Prevention. However, factors to consider are if an action would have the potential to:*** • ***Violate applicable federal, state, tribal, or local laws or regulations regarding hazardous materials and/or solid waste management;*** • ***Involve a contaminated site;*** • ***Produce an appreciably different quantity or type of hazardous waste;*** • ***Generate an appreciably different quantity or type of solid waste or use a different method of collection or disposal and/or would exceed local capacity;*** • ***Use a different method of waste collection, treatment, storage, or disposal that, as an action, would adversely impact the site, surroundings, or affected community, and/or would exceed state, Tribal, or local capacity; or*** • ***Adversely affect human health and the environment.***
Potential Environmental Concerns	**No Impact.** There are no identified brownfields or Superfund sites within a one-mile buffer of the airport. Due to existing regulatory environmental management requirements regarding hazardous materials and water and stormwater management, no impacts related to ultimate airport development are anticipated. Furthermore, no long-term impacts related to solid waste disposal based on the projects outlined on **Exhibit 5A** are expected. Solid waste such as the taxiway pavement proposed to be removed from the airfield will be properly disposed of in local landfills, such as the Victorville Landfill, which accepts a wide range of Construction and Demolition (C&D) waste.
HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES	
FAA Order 1050.1G, *Significance Threshold/Factors to Consider*	***FAA has not established a significance threshold for Historical, Architectural, Archaeological, and Cultural Resources. Factors to consider are if an action would result in a finding of "adverse effect" through the Section 106 process. However, an adverse effect finding does not automatically trigger the preparation of an EIS (i.e., a significant impact).***
Potential Environmental Concerns	**Potential Impact.** There are no listed National Register of Historic Places (NRHP) on or near APV. In the past, there have been a number of pedestrian surveys conducted throughout the airport; however, no systematic airport-wide cultural survey has been conducted on airport property, and there is still potential that intact cultural resources may be present either on the ground surface or subsurface. If previously undocumented buried cultural resources are identified during ground-disturbing activities for future airport development, all work must immediately cease within 30 meters (100 feet) until a qualified archaeologist has documented the discovery and evaluated its eligibility for the NRHP, as appropriate. Work must not resume in the area without approval of the FAA. All structures included on the airport property from the 1970s and prior should be further evaluated for historical importance before being demolished or modified. Source: National Register of Historic Places, (https://www.nps.gov/maps/full.html?mapId=7ad17cc9-b808-4ff8-a2f9-a99909164466), accessed December 2025

Continues on next page

TABLE 5E | Summary of Potential Environmental Concerns (continued)

LAND USE	
FAA Order 1050.1G, *Significance Threshold/Factors to Consider*	***FAA has not established a significance threshold for Land Use. There are also no specific independent factors to consider. The determination that significant impacts exist is normally dependent on the significance of other impacts.***
Potential Environmental Concerns	**Potential Impact. Exhibit 5A** depicts property to be acquired within Runway 18's and Runway 36's runway protection zone (RPZ). This is recommended to allow the airport to have control over what land uses may be permitted within the airport's RPZ. Runway 18's RPZ is located on an empty parcel whereas Runway 36's ultimate RPZ would be located on a parcel of land that is currently occupied by a private residence and would require the relocation of this land use. All other proposed projects shown on **Exhibit 5A** would occur within the existing airport boundaries and would not directly affect off-airport land uses.
NATURAL RESOURCES AND ENERGY SUPPLY	
FAA Order 1050.1G, *Significance Threshold/Factors to Consider*	***FAA has not established a significance threshold for Natural Resources and Energy Supply. However, factors to consider are if the action would have the potential to cause demand to exceed available or future supplies of these resources or adversely impact extant federal, Tribal, state, or local resource planning already in place.***
Potential Environmental Concerns	**No Impact.** Planned development projects at the airport could increase demands on energy utilities, water supplies and treatment, and other natural resources during construction; however, significant long-term impacts are not anticipated. Should long-term impacts be a concern, coordination with local service providers is recommended.
NOISE AND NOISE-COMPATIBLE LAND USE	
FAA Order 1050.1G, *Significance Threshold/Factors to Consider*	***The significance threshold applies to all civil aviation activities, including aircraft and airports; UAS and hubs; AAM and vertiports; and commercial space vehicles and launch and reentry sites.*** ***The action would result in noise exposure from impulsive noise sources (e.g., sonic booms) that meet or exceed 60 CDNL – equivalent to DNL 65 dBA.*** ***The action would increase noise by Day-Night Average Sound Level (DNL) 1.5 decibel (dB) or more for a noise-sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase, when compared to the no action alternative for the same timeframe.*** ***Another factor to consider is that special consideration should be given to the evaluation of the significance of noise impacts on noise-sensitive areas within Section 4(f) properties where the land use compatibility guidelines in Title 14 Code of Federal Regulations (CFR) Part 150 are not relevant to the value, significance, and enjoyment of the area in question.***
Potential Environmental Concerns	**No Impact. Exhibit 5H** shows the existing and anticipated noise contours for APV. As depicted on **Exhibit 5H** for existing conditions, the 65-decibel (dB) community noise equivalent level (CNEL) (yellow contour) remains inside of airport property boundaries. In the future condition, the 65 CNEL expands to the north and south, with a portion of the 65 CNEL located outside of APV near the northwestern boundary. However, there are no noise sensitive units within the 65 CNEL noise contour. The future development at the airport is not expected to change the overall noise environment by more than 1.5-dB threshold; however, this should be confirmed prior to implementing runway extensions on Runways 16 and 36, as depicted on **Exhibit 5A**. The closest residences are situated along Central Road adjacent to the southwestern boundary of APV, which is located outside of the 65 CNEL. There are no hospitals or live-in medical facilities within one mile of the airport. The closest school is located two miles southeast of the airport.

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TABLE 5E | Summary of Potential Environmental Concerns (continued)

SOCIOECONOMICS AND CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS	
Socioeconomics	
FAA Order 1050.1G, *Significance Threshold/Factors to Consider*	***FAA has not established a significance threshold for Socioeconomics. However, factors to consider are if an action would have the potential to:*** • ***Disrupt or divide the physical arrangement of an established community;*** • ***Cause extensive relocation when sufficient replacement housing is unavailable;*** • ***Cause extensive relocation of community businesses that would cause severe economic hardship for affected communities;*** • ***Disrupt local traffic patterns and substantially reduce the levels of service of roads serving the airport and its surrounding communities; or*** • ***Produce a substantial change in the community tax base.***
Potential Environmental Concerns	**Potential Impact**. **Exhibit 5A** depicts hangar development in the western portion of the airport. However, no long-term traffic impacts are anticipated as a result of this development, as hangars are typically low traffic generators. Additionally, the acquisition of the property within Runway 36's RPZ would result in the relocation of a single-unit residence and may be subject to the *Uniform Relocation Assistance and Real Property Acquisition Act*.
Children's Health and Safety Risks	
FAA Order 1050.1G, *Significance Threshold/Factors to Consider*	***FAA has not established a significance threshold for Children's Environmental Health and Safety Risks. However, factors to consider are if an action would have the potential to lead to a disproportionate health or safety risk to children.***
Potential Environmental Concerns	**No Impact**. No disproportionately high or adverse impacts are anticipated to affect children living near the airport because of the proposed ultimate development. The airport is in an access-controlled facility, and children will not be granted access to the airfield or landside facilities without adult supervision. All construction areas should be controlled to prevent unauthorized access as well.
VISUAL EFFECTS (INCLUDING LIGHT EMISSIONS AND VISUAL RESOURCES/VISUAL CHARACTER)	
Light Emissions	
FAA Order 1050.1G, *Significance Threshold/Factors to Consider*	***FAA has not established a significance threshold for Light Emissions. However, a factor to consider is the degree to which an action would have on the potential to:*** • ***Create annoyance or interfere with normal activities from light emissions;*** • ***Affect the nature of the visual character of the area due to light emissions, including the importance, uniqueness, and aesthetic value of the affected visual resources;***
Potential Environmental Concerns	**No Impact.** The proposed recommended development would include the relocation of the airport beacon. There are no light-sensitive resources near the proposed beacon's relocation. Construction of the proposed runway extension along both ends of Runway 18-36 may require nighttime construction. Night lighting during construction phases within the runway environment are typically directed downward to the construction work area to prevent lighting spilling outside the airport boundaries. Other ultimate projects such as the proposed hangars would include new light fixtures that would be lit during the operation of the new facilities. Building security lights would be directed downwards and would not create glare issues for users on nearby roadways.
Visual Resources/Visual Character	
FAA Order 1050.1G, *Significance Threshold/Factors to Consider*	***FAA has not established a significance threshold for Visual Resources/Visual Character. However, a factor to consider is the extent an action would have on the potential to:*** • ***Affect the nature of the visual character of the area, including the importance, uniqueness, and aesthetic value of the affected visual resources;*** • ***Contrast with the visual resources and/or visual character in the study area; and*** • ***Block or obstruct the views of the visual resources, including whether these resources would still be viewable from other locations.***
Potential Environmental Concerns	**No Impact.** There are no national scenic byways, state scenic byways, or scenic corridors near APV. While views of the airport are visible from State Route I-15, the proposed improvements outlined in **Exhibit 5A** are not expected to affect users of this roadway.

Continues on next page

TABLE 5E | Summary of Potential Environmental Concerns (continued)

WATER RESOURCES (INCLUDING WETLANDS, FLOODPLAINS, SURFACE WATERS, GROUNDWATER, AND WILD AND SCENIC RIVERS)	
Wetlands	
FAA Order 1050.1G, *Significance Threshold/Factors to Consider*	***The action would:*** ***1. Adversely affect a wetland's function to protect the quality or quantity of municipal water supplies, including surface waters and sole source and other aquifers;*** ***2. Substantially alter the hydrology needed to sustain the affected wetland system's values and functions or those of a wetland to which it is connected;*** ***3. Substantially reduce the affected wetland's ability to retain floodwaters or storm runoff, thereby threatening public health, safety or welfare (the term welfare includes cultural, recreational, and scientific resources or property important to the public);*** ***4. Adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically important timber, food, or fiber resources of the affected or surrounding wetlands.*** ***5. Promote the development of secondary activities or services that would cause the circumstances listed above to occur; or,*** 6. ***Be inconsistent with applicable state wetland strategies.***
Potential Environmental Concerns	**No Impact.** According to the National Wetlands Inventory (NWI) and other aerial based mapping, there are riverine wetlands surrounding the northwest and western boundaries of the airport. However, the on-airport drainages do not appear to convey water to waters of the U.S. (i.e., traditional navigable waters). The area generally drains southwest to the Mojave River, which empties into Silverwood Lake. Based on the location of wetlands shown on the NWI aerial photography, there are no wetlands located in areas shown for potential airport development as depicted on **Exhibit 5A**. Source: National Wetlands Inventory, (https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/), accessed December 2025
Floodplains	
FAA Order 1050.1G, *Significance Threshold/Factors to Consider*	***The action would cause notable adverse impacts on natural and beneficial floodplain values. Natural and beneficial floodplain values are defined in Paragraph 4.k of DOT Order 5650.2, Floodplain Management and Protection.***
Potential Environmental Concerns	**Potential Impact.** Based on the Federal Management Agency (FEMA) Flood Insurance Rate Map (FIRM), the airport is in Zone D, an area of undetermined flood hazard. Prior to the development of the hangars situated in the west side of APV, a site-specific flood risk analysis should be conducted to determine flood frequency and potential inundation levels. Source: FEMA Flood Map Service Center, (https://msc.fema.gov/portal/search?AddressQuery=apple%20valley%20airport), accessed December 2025
Surface Waters	
FAA Order 1050.1G, *Significance Threshold/Factors to Consider*	***The action would:*** ***1. Exceed water quality standards established by federal, state, local, and tribal regulatory agencies; or*** ***2. Contaminate public drinking water supply such that public health may be adversely affected.*** ***Factors to consider are when a project would have the potential to:*** • ***Adversely affect natural and beneficial water resource values to a degree that substantially diminishes or destroys such values;*** • ***Adversely affect surface waters such that the beneficial uses and values of such waters are appreciably diminished or can no longer be maintained and such impairment cannot be avoided or satisfactorily mitigated; or*** • ***Present difficulties based on water quality impacts when obtaining a permit or authorization.***

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TABLE 5E | Summary of Potential Environmental Concerns (continued)

Potential Environmental Concerns	**Potential Impact.** Projects depicted on **Exhibit 5A** would increase impervious surfaces at APV with the extension of Runways, 18, 36, and 26, the construction of new taxiways, apron, and holding bays, and the construction of additional hangars, and vehicular roads and parking. Proposed improvements at APV that involve ground disturbance would be subject to a MS4 Phase II Stormwater Permit issued by the State Resources Control Board. Furthermore, improvements outlined in **Exhibit 5A** will require revisions to the airport's stormwater pollution prevention plan (SWPPP) to address operational and structural sources, best management practices (BMPs), and sediment and erosion control. FAA's Advisory Circular (AC) 150/5370-10H, *Standards for Specifying Construction of Airports, Item C-102, Temporary Air and Water Pollution, Soil Erosion and Siltation Control* should also be implemented during construction projects at the airport.
Groundwater	
FAA Order 1050.1G, *Significance Threshold/Factors to Consider*	***The action would:*** ***1. Exceed groundwater quality standards established by federal, state, local, and tribal regulatory agencies: or*** ***2. Contaminate an aquifer used for public water supply such that public health may be adversely affected.*** ***Factors to consider are when a project would have the potential to:*** • ***Adversely affect natural and beneficial groundwater values to a degree that substantially diminishes or destroys such values;*** • ***Adversely affect groundwater quantities such that the beneficial uses and values of such groundwater are appreciably diminished or can no longer be maintained and such impairment cannot be avoided or satisfactorily mitigated; or*** • ***Present difficulties based on water quality impacts when obtaining a permit or authorization.***
Potential Environmental Concerns	**No Impact.** San Bernardino County is currently in an area experiencing groundwater scarcity due to prolonged drought and climate uncertainty. Based on the U.S. Geological Survey (USGS) website, there are no reported USGS Stations on airport property, and the desert environment where the airport is located is not generally an effective groundwater recharge area. Additionally, the closest sole source aquifer is the Campo/Cottonwood Creek Aquifer, approximately 120 miles south of the closest airport property boundary. Since the proposed airport development is not expected to generate unusual or excessive water demand, the projects depicted on **Exhibit 5A** are not anticipated to impact or deplete ground water resources in San Bernardino County. Sources: USGS National Water Dashboard, (https://dashboard.waterdata.usgs.gov/app/nwd/en/?region=lower48), accessed December 2025; U.S. EPA Sole Source Aquifer, (https://experience.arcgis.com/experience/1bfab371d71e4b868fc9ae7df62a16fe), accessed December 2025
Wild and Scenic Rivers	
FAA Order 1050.1G, *Significance Threshold/Factors to Consider*	***FAA has not established a significance threshold for Wild and Scenic Rivers. Factors to consider are when an action would have an adverse impact on the values for which a river was designated (or considered for designation) through:*** • ***Destroying or altering a river's free-flowing nature;*** • ***A direct and adverse effect on the values for which a river was designated (or under study for designation);*** • ***Introducing a visual, audible, or another type of intrusion that is out of character with the river or would alter outstanding features of the river's setting;*** • ***Causing the river's water quality to deteriorate;*** • ***Allowing the transfer or sale of property interests without restrictions needed to protect the river or the river corridor; or*** • ***Any of the above impacts preventing a river on the Nationwide Rivers Inventory (NRI) or a Section 5(d) river that is not included in the NRI from being included in the Wild and Scenic River System or causing a downgrade in its classification (e.g., from wild to recreational).***
Potential Environmental Concerns	**No Impact.** As discussed in Chapter One, APV is not located near a listed river on the National Wild and Scenic River and Nationwide River Inventory lists. Therefore, projects delineated on the master plan concept would not have adverse effects on these river's outstanding remarkable values (i.e., scenery, geology, fish, wildlife, and history). Sources: National Wild and Scenic Rivers System, (https://rivers.gov/california), accessed December 2025; Nationwide Rivers Inventory, (https://www.nps.gov/maps/full.html?mapId=8adbe798-0d7e-40fb-bd48-225513d64977), accessed December 2025

SUMMARY

The recommended master plan concept has been developed with significant input from the planning advisory committee (PAC), the public, the FAA, and airport management. The PAC was comprised of a wide range of airport stakeholders, including airport management, FAA personnel, airport tenants, and airport businesses. Several public information workshops were advertised and held to solicit input from the public. The recommended concept provides the necessary development to accommodate and satisfy anticipated growth over the next 20 years and beyond. This plan will be subject to continuous refinement in future years and further engineering refinement as each project ripens toward the implementation stage.

The airfield plan considers a future transition from the current runway design code of B-II-4000 to C-II-4000, which necessitates more restrictive design and safety standards for the airfield. That transition will be driven by increasing activity by larger business jets. Once the airport sustains more than 500 annual operations by these types of aircraft, a longer runway may be justified. The future planned runway length is 8,800 feet. The runway extension is split between both ends of Runway 18-36 with the south extension resolving an existing overlapping runway safety area issue.

The crosswind runway, Runway 8-26, is also planned for a future 500-foot runway extension in order to fully accommodate those smaller aircraft that use that runway. An extensive analysis of the potential nighttime capability of Runway 8-26 was also undertaken, and it was determined that the surrounding mountainous terrain would preclude nighttime operations for this runway.

A landside development plan is also presented as part of the recommended concept. This plan considers extending a taxilane to the west from the terminal area to make approximately 40 acres available for additional hangar development. The plan depicted is an effort to maximize that land development; however, the airport has flexibility to adjust the plan, as demand dictates, according to the specific size and location of future hangars. The hangar plan depicted shows approximately twice the hangar area projected to be needed.

The next chapter of this master plan will consider strategies for funding the preferred future development plan and will provide a schedule for implementing recommended capital improvements.