REDDING REGIONAL AIRPORT

Chapter Five

Recommended Master Plan Concept

The airport master planning process for Redding Regional Airport (RDD) 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 two public information workshops and have been made available on a dedicated project website throughout the process.

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

AIRSIDE CONCEPT

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

AIRFIELD CAPACITY REVIEW

The capacity of an airport is a measure of the airport's ability to accommodate actual and forecast operational activity, given the existing runway and taxiway layout. The most common capacity measure is annual service volume (ASV), which is the estimated number of operations an airport can facilitate before delay becomes a significant factor. Operator delays can manifest in numerous ways, including extended aircraft hold time prior to departure, extended circling maneuvers instructed by control tower personnel, and longer intervals between departure or arrival clearance.

According to Federal Aviation Administration (FAA) Advisory Circular (AC) 160/5060-5, *Airport Capacity and Delay*, an airport should plan capacity improvement projects when its annual operations reach 60 percent of the ASV. Capacity improvement projects may include an additional runway, additional strategically located taxiways, and instrument approach improvements.

This analysis was documented in Chapter Three – Facility Requirements. Annual operations at RDD currently represent 30 percent of the ASV. The operations forecast indicates that the airport could reach 45 percent of the ASV in 20 years; therefore, capacity improvement projects are not justified for RDD.

CRITICAL AIRCRAFT AND RUNWAY DESIGN CODE REVIEW

Runway 16-34

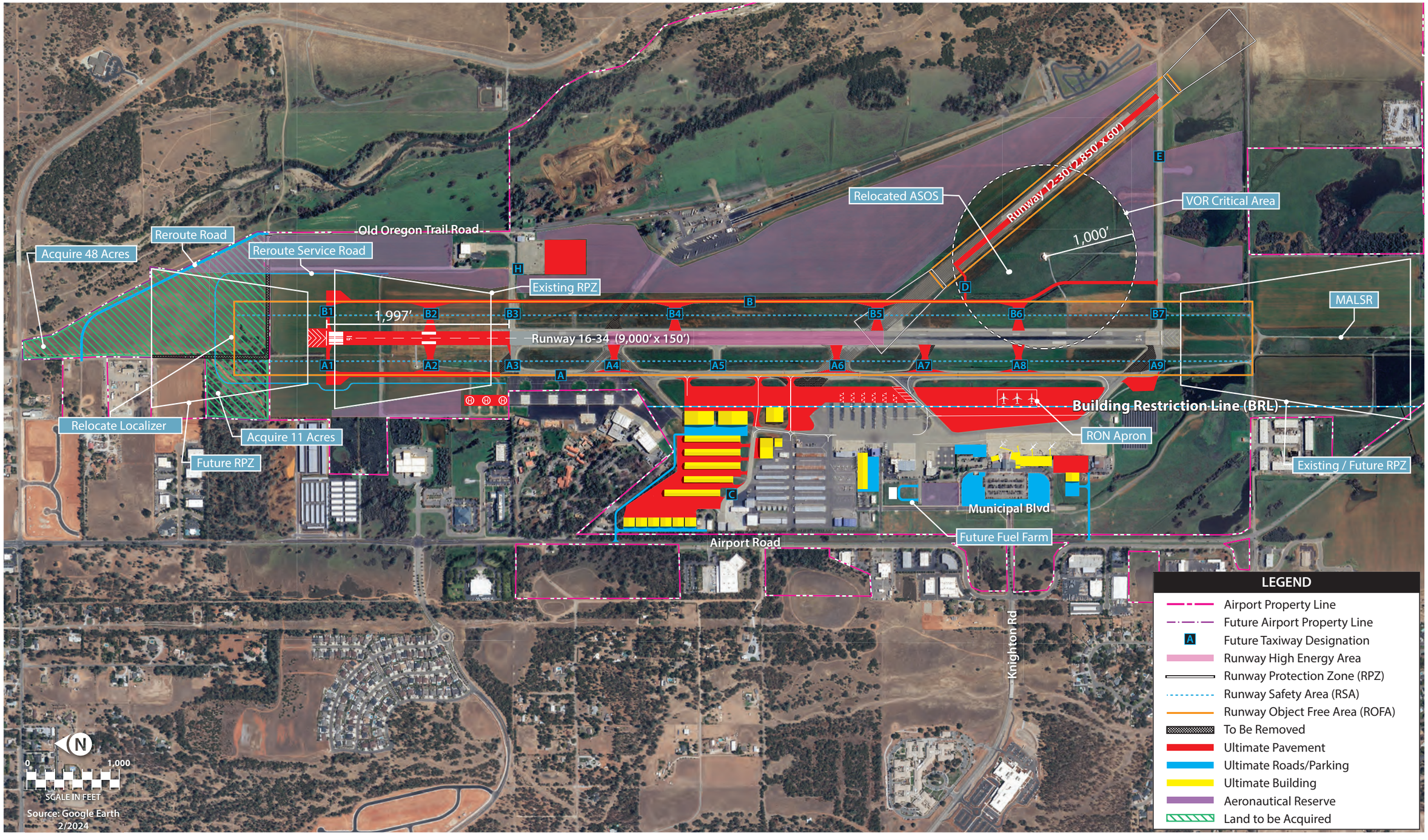
The driving factor when planning the future runway and taxiway system is the critical aircraft determination for each runway, which then identifies the appropriate runway design code (RDC) for each runway. The critical aircraft is the aircraft, or combination of aircraft with similar characteristics, that accounts for 500 or more annual operations at the airport. Table 2TT previously summarized the finding of the forecast element in this regard.

The critical aircraft for primary Runway 16-34 is best represented by the Boeing 737-700; therefore, the appropriate critical aircraft nomenclature is C-III-3. The future critical aircraft is best represented by the Boeing 737-800, which has a slightly faster approach speed on landing and an RDC of D-III-3.

The airfield design standards that apply to runways and taxiways are nearly identical between the current RDC and future RDC. The only difference is that when the airport transitions to D-III-3, the hold line positions on taxiways leading to the runway will be increased by one foot for every 100 feet above sea level; therefore, the hold positions for C-III-3 (current) should be 250 feet from the runway centerline. When the airport transitions to D-III-3, the hold positions should be set at 255 feet from the runway centerline to account for the airport elevation of 505 feet.

The RDC for a runway takes the instrument approach visibility minimums into consideration. Runway 34 has visibility minimums of ½-mile, which are planned to be maintained; therefore, the current RDC for Runway 16-34 is C-III-2400 and the future RDC is D-III-2400.

It should be noted that the current airport layout plan (ALP) shows an RDC of D-IV-2400 (e.g., DC-10). There are not currently 500 annual operations by D-IV aircraft at RDD and the FAA-approved forecast for this study does not indicate that there will be more than 500 annual operations by these very large aircraft in the future.


Old Oregon Trail Road
Reroute Road
Reroute Service Road
Acquire 48 Acres
Existing RPZ
Relocated ASOS
Runway 12-30 (2,850' x 60')
VOR Critical Area
1,000'
MALSR
1,997'
Runway 16-34 (9,000' x 150')
Building Restriction Line (BRL)
RON Apron
Relocate Localizer
Acquire 11 Acres
Future RPZ
Existing / Future RPZ
Municipal Blvd
Future Fuel Farm
Airport Road
Knighton Rd
N
0
1,000
SCALE IN FEET
Source: Google Earth 2/2024
LEGEND
Airport Property Line
Future Airport Property Line
Future Taxiway Designation
Runway High Energy Area
Runway Protection Zone (RPZ)
Runway Safety Area (RSA)
Runway Object Free Area (ROFA)
To Be Removed
Ultimate Pavement
Ultimate Roads/Parking
Ultimate Building
Aeronautical Reserve
Land to be Acquired

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Runway 12-30

Runway 12-30 is currently 5,067 feet long and 150 feet wide; it is designed to meet the design standards for C-III-3 (the same as Runway 16-34). The previous ALP planned for the ultimate closure of this runway because of the following reasons:

- Runway 12-30 does not meet the requirements to serve as a crosswind runway; the primary runway orientation provides for more than 95 percent wind coverage.
- Runway 12-30 is not necessary for capacity purposes. The primary runway can accommodate all current and projected operations.
- Runway 12-30 was not eligible for FAA funding for maintenance, rehabilitation, or reconstruction when the previous ALP was prepared.

In May 2025, the U.S. Congress passed the *FAA Reauthorization Act of 2024*, which includes language that indicates that the runway may now be eligible for FAA funding, to some degree. Final implementation guidance from the FAA was published on April 4, 2025, as Reauthorization Program Guidance Letter (R-PGL) 25-01: Runway Projects. The guidance provides a new runway classification, Legacy Crosswind Runway, which applies when a runway meets the following three requirements:

- The runway must be on the current ALP.
- The runway is only eligible for funding levels commensurate with the justified RDC.
- At some point in the past, the FAA must have funded maintenance, rehabilitation or reconstruction work on the runway.

Runway 12-30 is on the current ALP. The runway only accounts for approximately three percent of operations, the vast majority of which are by small piston-engine aircraft; therefore, the applicable RDC is A/B-I(small). The maximum runway length necessary to accommodate A/B-I(small) aircraft at RDD is 4,000 feet. Shorter runways can still accommodate most small aircraft; for example, Benton Airpark's 2,420-foot runway is designed to A/B-I(small) standards and can accommodate most small aircraft. FAA grant funds have been directed to maintenance of Runway 12-30 in the past.

Under the assumption that Runway 12-30 is eligible for FAA funding, the applicable critical aircraft is assumed to be a small aircraft (>12,500 pounds) best represented by single- and multi-engine piston aircraft (e.g., Cessna 172, Beech Baron 55, etc.); thus, the minimum RDC to be applied is A/B-I(small).

It should be noted that the airport can maintain Runway 12-30 to a higher design standard like C-III (i.e., longer and wider runway, more restrictive safety areas, etc.), if desired; however, as evidenced by the fact that the runway was planned to be closed, the city has not historically intended to maintain the runway on its own. Now that the runway may be eligible for FAA funding, consideration is given to maintaining the runway to at least A/B-I(small) standards. Because of the limited use of the runway, instrument approach procedures to Runway 12-30 are not necessary; therefore, it is planned to be maintained as a visual runway. The applicable RDC is A/B-I-VIS in the future.

Table 5A summarizes the planned critical aircraft and runway design code for both runways.

TABLE 5A | Planned Critical Aircraft and Runway Design Code

	Current	Future
RUNWAY 16-34		
Current Critical Aircraft	C-III-3	D-III-3
Example Critical Aircraft	Boeing 737-700	Boeing 737-800
Lowest Visibility	½-Mile	½-Mile
Runway Design Code	C-III-2400	D-III-2400
RUNWAY 12-30		
Current Critical Aircraft	C-III-3	A/B-I(small)
Example Critical Aircraft	Boeing 737-700	Beech Bonanza 55
Lowest Visibility	Visual	Visual
Runway Design Code	C-III-VIS	A/B-I-VIS

Sources: Current Airport Layout Plan; FAA AC 150/5300-13B, Airport Design

RUNWAY 16-34

Runway 16-34 is the primary runway serving RDD; it is 7,003 feet long and 150 feet wide. Pilots can utilize one of two instrument approaches to Runway 16. The lowest visibility minimum is ¾-mile. The instrument landing system (ILS) approach to Runway 16 provides for visibility minimums of ½-mile.

Runway Length

The analysis presented in the Facility Requirements chapter identified the potential need for a longer primary runway. While airports can extend runways via local investments, this master plan is intended to identify capital needs that are eligible for federal funding, as well as the triggers to initiate such projects. Runway extension projects are justified for federal investment if there is an actual need for a longer runway. Actual need is defined by current activity levels that exceed 500 annual operations, which means operations by aircraft that would benefit from a longer runway are currently restricted in some manner (such as weight restrictions, shorter than desired haul length, and a need for intermediate stops before ultimate destinations).

For RDD, the current (Boeing 737-700) and future (Boeing 737-800) critical aircraft are capable of nonstop flights from RDD to their farthest destination (Denver) without restrictions. Weight restrictions might occur on the hottest summer days, but only on a limited basis and not more than 500 times a year; therefore, the current and future critical aircraft are not anticipated to drive the need for a longer runway.

RDD is also a significant aerial firefighting base and serves as home to Cal Fire and the U.S. Forest Service (USFS). Certain aircraft (e.g., DC-10, C-130) these firefighting agencies would like to use at RDD are significantly weight-restricted due to the existing runway length. Representatives of these firefighting agencies indicated that an additional 1,997 feet of runway length would significantly improve their capabilities and allow them to utilize the full fleet of aerial firefighting aircraft; therefore, analysis undertaken in Chapter Four – Development Alternatives included the possibility of extending Runway 16-34 to 9,000 feet.

Justification for federal financial participation in extending the runway to accommodate firefighting activity is complicated by the fact that justification cannot be made by the activity of other governmental agencies (for example, the USFS or the military). Such agencies are free to fund airport capital projects, but the FAA's funding resources are reserved for civilian purposes. With this understanding, some firefighting operations are undertaken by private sector businesses through contracts with the USFS; these operations would contribute to the justification of FAA-funded capital projects.

For the purposes of this master plan, a 1,997-foot runway extension to the north will be shown on the airport layout plan; however, this project is not currently justified, so it will be shown as a longer-term (10+ years) project. Justification for the project (i.e., 500+ operations by civilian aircraft that need the additional length) will most likely be from commercial operations to a future farther destination east of Denver and operations by contracted firefighting aircraft. These types of activity should be continuously monitored by the airport.

Declared Distances

When examining the capability of a runway, all safety critical surfaces must be considered. The primary safety critical surfaces are the runway safety area (RSA), runway object free area (ROFA), obstacle free zone (OFZ), and runway protection zones (RPZs). These surfaces were discussed at length in Chapters Three and Four of this master plan.

The RSA and ROFA are currently penetrated by the localizer antenna, which is located 994 feet from the Runway 16 threshold. The RSA, in particular, is a safety critical imaginary surface; as a result, this master plan presents a two-step process to meet the RSA (and ROFA) standard in this location. First, the airport (with FAA concurrence) should immediately implement declared distances, which will provide the full 1,000-foot RSA length beyond the runway end. **Table 5A** shows the applicable declared distances and **Table 5B** documents the declared distances that should be implemented.

TABLE 5B | Recommended Declared Distances (Runway 16-34)

Declared Distance Parameters	Recommended Declared Distances (feet)	
	Runway 16	Runway 34
TORA: Takeoff Run Available	7,003	7,003
TODA: Takeoff Distance Available	7,003	7,003
ASDA: Accelerate-Stop Distance Available	7,003	6,997
LDA: Landing Distance Available	7,003	6,997

Source: Coffman Associates Analysis of FAA AC 150/5300-13B, Airport Design

As discussed in Chapter Four, the takeoff run available (TORA) and takeoff distance available (TODA) remain at the pavement length of 7,003 feet because these calculations do not account for the RSA that extends beyond the runway ends; however, the accelerate-stop distance available (ASDA) and landing distance available (LDA) must reflect the provision of the standard RSA beyond the runway ends. To provide a full 1,000-foot RSA behind the Runway 16 threshold, operations using Runway 34 (takeoff and landing) must calculate a runway length of 6,997 feet, rather than 7,003 feet. This calculated change to the Runway 34 ASDA and LDA meets the RSA design standard (extending 1,000 feet beyond the runway

end). Approaches to land only require 600 feet of RSA prior to the runway end; the LDA for operations using Runway 16 is the full runway length of 7,003 feet and the ASDA calculation only includes the need for 1,000 feet beyond the declared end of the runway, so the ASDA for Runway 16 is also 7,003 feet.

The airport should immediately follow FAA guidance to publish the declared distances, as presented, to meet RSA design standards. Implementation of declared distances should be considered a temporary safety improvement measure. If no changes are planned to the length of Runway 16-34, the airport should consider a standalone project to relocate the localizer antenna six feet to the north so the declared distances can be eliminated; however, this master plan includes a planned 1,997-foot extension of the runway to the north. As part of this project, the localizer antenna is to be relocated 1,000 feet beyond the new runway end, thus meeting the RSA design standards.

RUNWAY 12-30

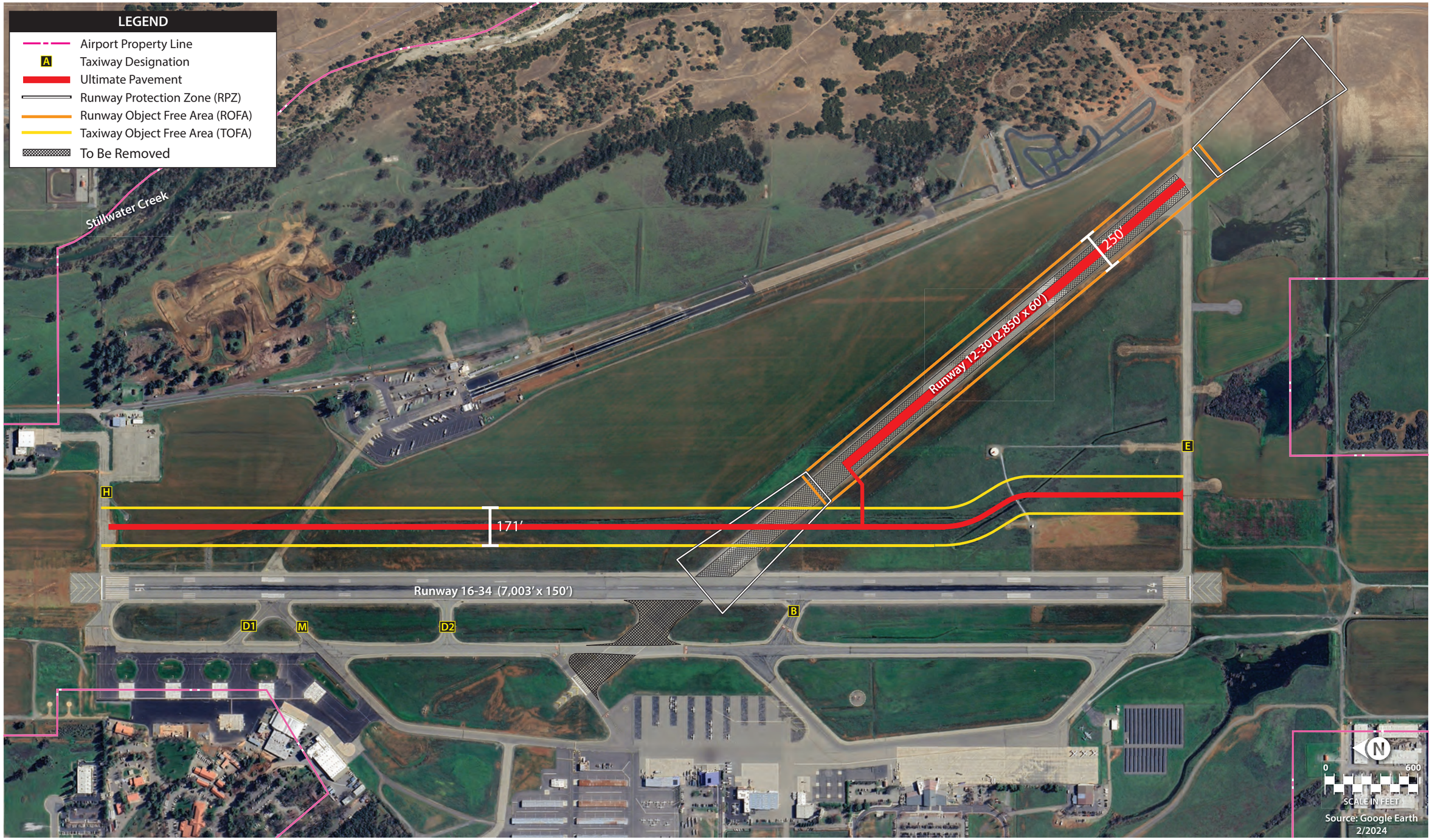
Under the assumption that Runway 12-30 is eligible for FAA funding, this runway is no longer planned to be closed. Instead, it is planned to be redesigned to meet an RDC of A/B-I(small). The redesigned runway is planned at a length of 2,850 feet and a width of 60 feet. This length was selected because it is the longest length available, using the existing pavement, at which various safety areas would not intersect. The FAA identifies runways and runway safety areas that intersect but do not cross entirely as *coupled runways*; this geometry is not supported by the FAA. Runways should either cross entirely or not intersect at all.

Maintaining Runway 12-30 as a fully crossing runway would result in a longer runway length than is eligible for FAA funding. At a length of 2,850 feet, the safety areas for Runways 12-30 and 16-34 will not intersect. Because a future east side parallel taxiway is planned to accommodate future aeronautical development, the safety areas for the reconfigured Runway 12-30 should not intersect the taxiway object free area. **Exhibit 5B** shows the reconfigured Runway 12-30, the planned future east side parallel taxiway, and the controlling safety area surfaces.

This planned reconfiguration of Runway 12-30 provides the following additional benefits:

- The runway can be maintained as an A/B-I(small) runway capable of accommodating smaller aircraft, which are more susceptible to crosswind runways.
- The current Runway 12 RPZ would become smaller and would be relocated to the new runway end; therefore, the existing incompatible land uses in the Runway 12 RPZ would no longer be in the RPZ.
- The area currently occupied by the Runway 12 RPZ would become available for aeronautical development, such as hangars and taxilanes.

Taxiway access to the reconfigured Runway 12-30 is considered. A full-length parallel taxiway is not necessary because of the low usage of this runway. At the Runway 30 end, taxiway access would continue to be provided by Taxiway E. At the Runway 12 end, a new threshold access taxiway is planned. This taxiway would enter the end of the runway at a 90-degree angle and connect to Runway 16-34. The taxiway associated with Runway 12-30 is planned at the standard width of 25 feet.


LEGEND
Airport Property Line
A
Taxiway Designation
Ultimate Pavement
Runway Protection Zone (RPZ)
Runway Object Free Area (ROFA)
Taxiway Object Free Area (TOFA)
To Be Removed
Stillwater Creek
250'
Runway 12-30 (7,850' x 60')
E
H
171'
Runway 16-34 (7,003' x 150')
16
34
B
D1
M
D2
N
0
600
SCALE IN FEET
Source: Google Earth
2/2024

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INSTRUMENT APPROACHES

As the primary runway, Runway 16-34 should have the lowest reasonable instrument approach visibility minimums applied to each runway end. The instrument approach to Runway 16 provides for ¾-mile visibility minimums. The ILS instrument approach to Runway 34 provides for ½-mile visibility minimums. The capability of these instrument approaches is excellent and is planned to be maintained in the future. Having ½-mile visibility minimums to the most active runway end is appropriate and having slightly higher visibility minimums to the opposite end is also appropriate. The current instrument approaches to Runway 16-34 are planned to be maintained.

Runway 12-30 is currently a visual runway. There is no operational justification for implementing instrument approaches to this runway. Due to the fact that the runway is being planned exclusively for small aircraft, instrument approach capability is not necessary and not planned.

RPZ LAND USE COMPATIBILITY

The RPZ land use compatibility guidelines were presented in Chapter Three – Facility Requirements. RPZs are the trapezoidal areas off the runway ends. The RPZs should be clear of obstructions and incompatible land uses. Incompatible land uses include anything that would attract people, including buildings, roads, and recreational facilities.

Exhibit 3D showed the existing RPZ-incompatible land uses at RDD and **Table 5C** below provides additional details. The airport owns 99.22 percent of the existing RPZ land and 99.57 percent of the RPZ land contains compatible land uses. In total, less than one acre of land consists of incompatible land uses.

TABLE 5C | Runway Protection Zone Detail

Runway	RPZ Dimensions (feet)	RPZ Size (acres)	Owned in Fee/ % Owned	Existing Incompatible Land Uses	Percent Incompatible
16	Inner Width: 1,000 Outer Width: 1,510 Length: 1,700	48.98	49.98 acres/100%	None	0.0%
34	Inner Width: 1,000 Outer Width: 1,750 Length: 2,500	78.91	78.90 acres/99.9%	Airport Road crosses a 0.0026-acre portion of the RPZ	0.001%
12	Inner Width: 500 Outer Width: 1,010 Length: 1,700	29.47	28.39 acres/96.34%	Several buildings and a small portion of Airport Road	0.15%
30	Inner Width: 500 Outer Width: 1,010 Length: 1,700	29.47	28.1 acres/95.35%	Venture Parkway	1.6%

Source: Coffman Associates analysis

The airport should pursue policies that protect RPZ lands and remove incompatible land uses, where possible. The preferred development concept results in the removal of some incompatible land uses. The plan for Runway 12-30 would result in the removal of all RPZ-incompatible land uses for that runway. The only remaining incompatible land use is where Airport Road crosses a small corner of the Runway 34 RPZ. If an opportunity arises to relocate this road outside the Runway 34 RPZ, the airport should be supportive. For this study, no immediate action is planned.

POTENTIAL PARALLEL RUNWAY

The airport has maintained a potential parallel runway on the ALP. The potential parallel runway has primarily been considered to serve flight training activities and further separate commercial activities from general aviation activities. Parallel runways are justified by the FAA if there is a significant capacity issue at the airport; however, there has never been a projected need for a parallel runway at RDD. Current analysis confirms that there is not a need to plan for a parallel runway, so a parallel runway is no longer planned to be included on the ALP for the airport.

TAXIWAY GEOMETRY

Exhibit 5A reflects a taxiway geometry that meets current FAA design standards. The exhibit also shows a new taxiway designation system based on the new geometry.

Space is reserved for a full-length east side parallel taxiway. This taxiway is intended to provide access to the runway for future east side aeronautical development. New connectors to the runway are planned from the east side parallel taxiway and are located based on FAA guidance. The connecting taxiways that are outside the middle third (i.e., high-energy portion) of the runway are also crossing taxiways. This configuration follows FAA guidance to avoid crossing taxiways in the middle third of the runway.

Future connecting taxiways A1/B1 and A2/B2 are connectors to the extended runway. Future taxiways A2/B2 are strategically located 1,000 feet from the current runway threshold to facilitate a phased extension of the runway. The first phase is planned to be 1,000 feet and a second, future extension is planned to be an additional 997 feet.

Several existing taxiways are planned to be reconstructed to meet current FAA design standards. Existing Taxiways D1 and M (between the runway and Taxiway D) are planned to be replaced by a single connecting taxiway at a 90-degree angle. Existing Taxiway B (between the runway and Taxiway D) is planned to be reconstructed at the standard 90-degree angle. Taxiway D at the threshold to Runway 34 is planned to be reoriented to the standard 90-degree angle.

A new connecting taxiway is planned between the runway and Taxiway D (future Taxiway A) at the location of the existing Runway 12-30. When Runway 12-30 is reconfigured, this portion of the former runway pavement is planned to be converted to a connecting taxiway.

AIRCRAFT HOLD APRONS

An aircraft hold apron is a strategically located aircraft apron on which pilots can pull off a taxiway to conduct final flight preparations prior to departure without blocking other aircraft. There are currently two hold aprons at RDD; one is located at the north end of parallel Taxiway D and one is located at the south end of this taxiway.

The hold apron at the south end of Taxiway D will be replaced when the threshold access taxiway is converted to a 90-degree angle. This hold apron is planned to be replaced on the west side of the taxiway, which is a location that meets design standards.

The north end hold apron would be removed once the runway is extended, as it would no longer be needed in its current location. A new aircraft hold apron is planned at the end of the extended taxiway associated with the planned runway extension. An additional hold apron is planned on the north end of the planned east side parallel taxiway.

NAVIGATIONAL AIDS

No additional navigational aids are needed for the airport and the airport beacon is planned to be maintained. The precision approach path indicators (PAPIs) on both ends of Runway 16-34 are planned to be maintained; however, the PAPIs on the north end would need to be relocated in conjunction with any runway extension. The runway end identifier lights (REILs) serving Runway 16 are planned to be maintained and should be relocated in conjunction with any runway extension. The medium intensity approach light system with runway alignment indicator lights (MALSR) leading to Runway 34 is also planned to be maintained.

AIRSIDE SUMMARY

The planned airfield configuration presents some significant changes from the previous airport master plan and airport layout plan. A 1,997-foot extension of Runway 16-34 is planned. While justification does not currently exist for FAA participation in this project, it may develop in the future, or the airport could fund the project locally. The airport should monitor and document usage of the runway by aircraft that could benefit from the extension; documentation of 500 annual operations by aircraft that need a longer runway is the threshold for justification.

The taxiway system is planned for several revisions to bring it up to current FAA design standards, including the replacement of connecting Taxiways D1 and M with a single 90-degree taxiway and application of new taxiway designations that meet current standards, such as designating current Taxiway D as Taxiway A.

The *FAA Reauthorization Act of 2024* appears to allow FAA financial participation for maintenance, rehabilitation, and reconstruction of existing crossing runways that do not meet the criteria for a crosswind runway. As a result, the previous plan to ultimately close Runway 12-30 has changed to maintenance of the runway exclusively for small aircraft. This runway is planned to be 2,850 feet long and 60 feet wide to meet A/B-I(small) design criteria.

LANDSIDE CONCEPT

The landside concept relates to all airport elements except the runway/taxiway/airspace elements. The landside concept includes the passenger terminal complex, aircraft aprons, taxilanes, helicopter facilities, and support services.

TERMINAL COMPLEX

Redding Regional Airport has experienced a significant increase in passenger activity in recent years. Previous analysis indicated that the current terminal building (37,550 square feet) would need to be expanded to 82,198 square feet within the next 20 years.

Several alternatives were considered for expanding the terminal building. The first alternative considers extending the terminal building south and the other two alternatives consider extending the building to the east. Extending the building to the east would also require a significant expansion of the aircraft apron serving the building. The preferred alternative is to utilize the existing landside space and aircraft apron to the south for expansion of the terminal building.

The projected passenger levels indicate a need for additional vehicle parking. The undeveloped land within the Woodrum Circle terminal loop road provides adequate space for additional surface parking. A parking structure has been considered but is not supported by the passenger projection, as approved by the FAA. A total of 440 new vehicle parking spaces are planned.

The terminal aircraft parking apron was the subject of significant analysis in Chapter Four. Taxiway A provides access to this apron; however, Taxiway A angles toward the building in a manner that restricts aircraft parking at the terminal building. The critical aircraft (Boeing 737) cannot park at the terminal gate because its tail will penetrate Taxiway A.

The entire area between Taxiway A and Taxiway D is planned to be paved for terminal apron expansion and to serve as a relocated Taxiway A. Exhibit 4H showed three alternatives for the aircraft apron and Taxiway A interface. The second option presented is the preferred alternative, which shifts Taxiway A to the east to be parallel to Taxiway D and parallel to the terminal building, thus eliminating the angular nature of Taxiway A. The space between relocated Taxiway A and Taxiway D is intended for remain overnight (RON) parking, which will replace the existing RON parking south of the terminal. This project can be phased so that Taxiway A is relocated before the remaining area is paved, as demand dictates.

GENERAL AVIATION

General aviation activity is a significant sector at the airport; thus, planning to meet the demand for additional facilities is prudent. Because most existing general aviation hangars and support services are located on the west side of the airfield, the plan includes taking advantage of undeveloped land on the west side for expansion of general aviation activities.

As shown on **Exhibit 5A**, numerous new general aviation hangars are shown in the current location of the Runway 12-30 RPZ. Once Runway 12-30 is reconfigured or closed, this entire area (approximately 37 acres) will become available for development.

The layout of these potential hangars follows the strategy of placing high-volume conventional hangars at the front, facing apron areas and the runway system. Set behind those hangars are several rows of connected box hangars and T-hangars. These individual hangars would be accessed by the existing taxilane. In total, the hangar layout shown on the exhibit represents approximately 428,700 square feet of new hangar space. This exceeds what is projected to be needed (185,900 square feet) over the next 20+ years, so the layout presented can be considered a plan that extends well beyond the 20-year scope of this analysis; nevertheless, the basic strategy of locating high-activity hangars in front and lower-activity individual hangars behind them should be preserved.

A new vehicle access road is planned from Airport Road. This access road would extend on the north side of the planned new hangars and to the back side of the larger conventional hangars located closest to the runway to provide public access to these facilities.

There is an opportunity to expand the general aviation apron areas to the east. The transient apron is shown expanded toward Taxiway D and an additional 29 tiedown positions are planned. North of the transient apron, a new aircraft movement apron is planned to front the planned new hangars.

HELICOPTER PARKING

Immediately east of the airport traffic control tower (ATCT) is the helicopter parking apron. This is an ideal location for helicopter facilities because they are appropriately separated from fixed-wing operational areas. While not currently planned, the eastern row of helicopter parking would be a good location for a heliport or vertiport designation. A designated heliport/vertiport will be necessary only when helicopter or eVTOL (electric vertical takeoff and landing) operations become significant. Heliports and vertiports require protected airspace surfaces and can constrain traditional operations by these aircraft. As a result, a formal heliport/vertiport is not currently planned.

AIRPORT TRAFFIC CONTROL TOWER

The ATCT is an old structure that is in need of replacement. In Chapter Four, several options were considered for a location for a new tower. After analysis, locating a new tower in conjunction with a new terminal building is not considered further. The current location is ideal and is the preferred site for a replacement tower. Ultimately, the FAA will determine the need for a replacement tower and the timing of such a project.

AIR CARGO

Air cargo activity is projected to grow by 117 percent over the next 20 years at RDD. The fleet mix of aircraft utilized for air cargo activity is not expected to change significantly, so the growth in this sector

is expected to be in volume. The aircraft utilized are expected to remain in the class of the Cessna Caravan, possibly transitioning to similarly sized new aircraft, such as the Cessna SkyCourier. Larger cargo aircraft, such as the Boeing 737, are not expected to the utilized.

The projected growth may drive the need for expanded air cargo facilities. The plan depicted on **Exhibit 5A** includes an additional sort building that is approximately 15,000 square feet and an apron expansion of 7,800 square yards.

Vehicle and truck access to the air cargo facility is currently provided from the terminal loop road. Ideally, cargo vehicular access would be separated from the terminal loop road; therefore, a new access road is planned directly from Airport Road.

ON-AIRPORT LAND USE

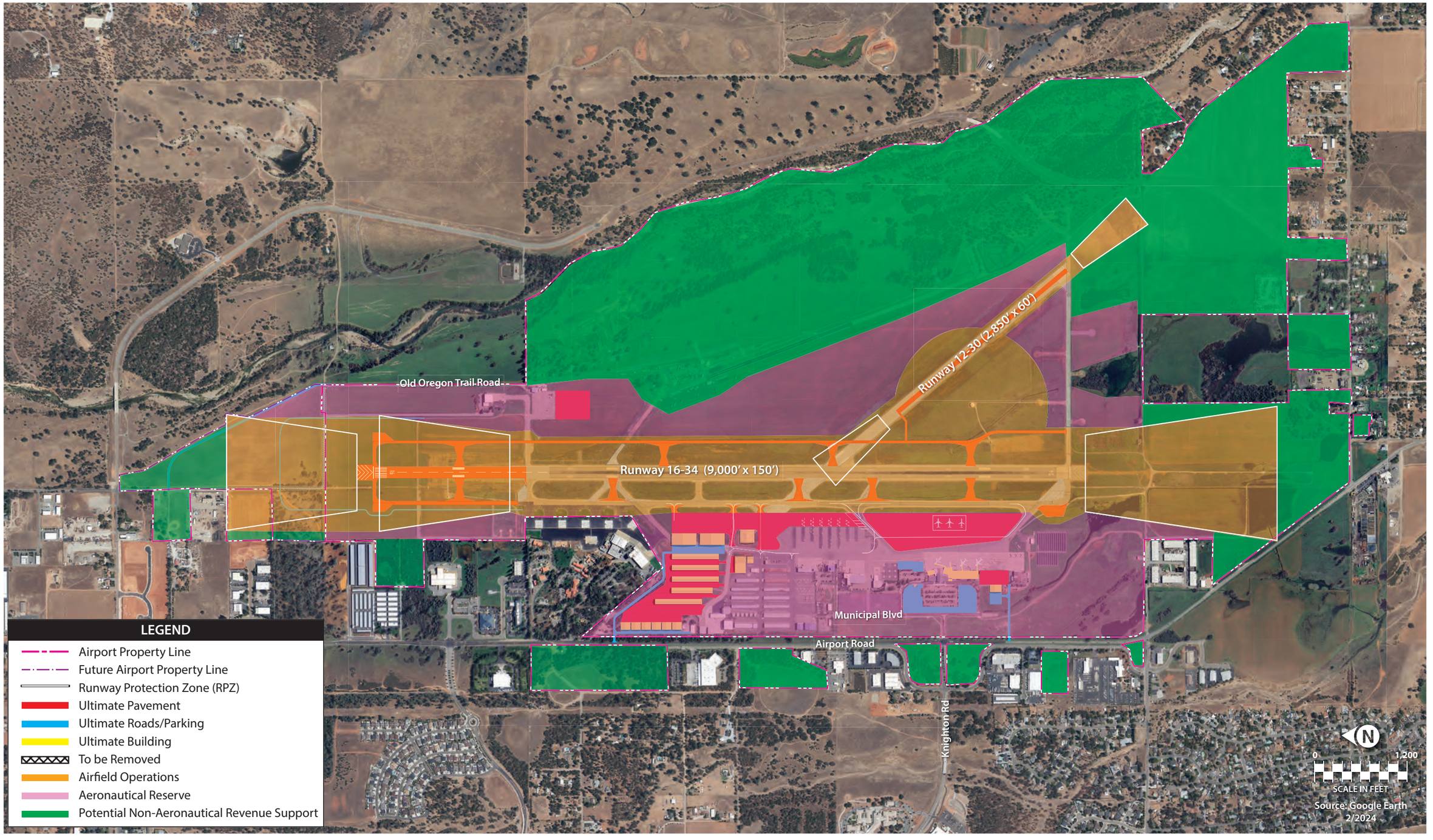
The objective of airport land use planning is to coordinate future uses of the airport property in a manner that is functional with the design of the airport and compatible with the airport environment. There are two primary considerations for on-airport land use planning. The first is to secure areas that are essential to the safe and efficient operation of the airport. The second is to determine compatible land uses for the balance of the property that would be most economically advantageous to the airport and the region it serves.

Any property, when described as part of an airport in an agreement with the United States, defined by the ALP, or listed on the Exhibit 'A' property map, is considered to be "dedicated" or "obligated" property for airport purposes. The primary purpose of airport property is for aeronautical use. In most cases, land designated for aeronautical use on the ALP may not be used for non-aeronautical purposes without FAA approval.

If it has been determined that airport obligated land is no longer needed for aeronautical use because it exceeds the forecasted need or is inaccessible by aircraft, that property may be considered for compatible non-aeronautical use. The revenue from non-aeronautical use can provide supplemental funds to the airport with the goal of making the airport as self-sustaining as possible.

By categorizing the entirety of airport property, airport management can plan and direct any development proposals to the appropriate locations. There are three primary land use categories on an airport: airfield operations, aeronautical reserve, and non-aeronautical reserve. **Exhibit 5C** presents the land use classifications for the airport based on the planned future configuration.

Airfield Operations | This land use designation applies to the portion of airport property that encompasses the major airside elements, such as the runways, taxiways, RSA, ROFA, OFZ, RPZs (on airport property), taxiway safety area, taxiway object free area (TOFA), and navigational aid critical areas. Airfield operations areas are 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.


Old Oregon Trail Road
Runway 12-30 (2,850' x 60')
Runway 16-34 (9,000' x 150')
Municipal Blvd
Airport Road
Knighton Rd
LEGEND
Airport Property Line
Future Airport Property Line
Runway Protection Zone (RPZ)
Ultimate Pavement
Ultimate Roads/Parking
Ultimate Building
To be Removed
Airfield Operations
Aeronautical Reserve
Potential Non-Aeronautical Revenue Support
N
0
1,200
SCALE IN FEET
Source: Google Earth 2/2024

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Aeronautical Reserve | The aeronautical reserve land use category includes the areas that should be reserved for types of development that require access to the airfield operations area, such as taxilanes, aircraft hangars, and aeronautical businesses. Generally, lands adjacent to the runway should be reserved for future aeronautical development to a depth that allows for future taxiways, taxilanes, aprons, hangars, and access roads. This land use category also includes airport support elements that may not require taxiway access, such as drainage infrastructure or fuel farms served by delivery trucks.

Potential Non-Aeronautical Revenue Support | With FAA approval, portions of airport property may be used for non-aeronautical revenue support purposes. It is preferable for development in these areas to complement airport activities to some degree, but not required; however, any non-aeronautical facilities are required to be compatible with airport operations. Examples of compatible uses include light industrial and commercial/retail development, research facilities, laboratories, manufacturing and processing facilities, warehouses, and other facilities that are compatible with an airport environment.

Designating airport land for non-aeronautical use is available only to airports that have enough land to accommodate future aeronautical development needs. Land that is inaccessible by aircraft is often considered for a non-aeronautical revenue-supporting role. Any airport land considered for long-term (more than five years) non-aeronautical development must be formally released from obligation by the FAA. Such property remains part of the airport, and any revenue generated from the land must go to the airport fund to be used only for airport purposes.

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 recommended development concept (**Exhibit 5A**) and associated capital program at the airport to determine whether projects identified in the airport master plan could, individually or collectively, significantly impact existing environmental resources. Information contained in this section was obtained from previous studies, official internet websites, cultural and natural resources field surveys, and analysis by the consultant.

The environmental inventory included in the first chapter of this master plan provides baseline information about the airport environs. This section provides an overview of potential impacts to existing resources that could result from the implementation of the planned improvements outlined on the recommended development 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 Order 1050.1G, *FAA National Environmental Policy Act Implementing Procedures*, compliance with NEPA is generally satisfied through the preparation of an environmental assessment (EA). In instances where significant environmental impacts are expected, an environmental impact statement (EIS) may be required.

The 2024 FAA Reauthroization 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 will be subject to coordinated and expedited environmental review requirements.

The following portion of the airport master plan is not designed to satisfy the 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 within the environmental review processes. It is important to note that the FAA is ultimately responsible for determining the level of environmental documentation required for airport actions.

Table 5D summarizes potential environmental concerns associated with the implementation of the recommended development concept for RDD. Analysis under NEPA includes effects or impacts a proposed action or alternative may have on the human environment (see 40 Code of Federal Regulations [CFR] §1508.1).

TABLE 5D | Summary of Potential Environmental Concerns

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	**No Impact.** An increase in operations could occur over the 20+ year planning horizon of the master plan that would likely result in additional emissions. However, Shasta County, which contains the airport, is currently in attainment for all federal criteria pollutants. For construction and operational emissions, project-specific qualitative or quantitative emissions inventories or the application of screening thresholds may be required under NEPA, depending on the type of environmental review needed for specific projects defined on the development plan concept. Source: U.S. EPA Greenbook – California Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants (https://www3.epa.gov/airquality/greenbook/anayo_ca.html), as of December 31, 2024

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

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.***
Potential Environmental Concerns	<u>Federally Protected Species</u> **Potential Impact.** According to the USFWS Information for Planning and Consultation (IPaC) report, there is the potential for eleven endangered, proposed endangered, threatened, proposed threatened, and experimental species and at RDD: • California condor – federal proposed experimental, non-essential • northern spotted owl – federal threatened / state threatened • northwestern pond turtle – proposed threatened • western spadefoot – proposed threatened • monarch butterfly – proposed threatened • Suckley's cuckoo bumble bee – proposed endangered • valley elderberry longhorn beetle – threatened • conservancy fairy shrimp – endangered • vernal pool fairy shrimp – endangered • vernal pool tadpole shrimp – threatened • slender Orcutt grass – threatened In addition to this, California has its own endangered species listed, and the following species have the potential to occur at the airport: • tricolored blackbird – state threatened • Swainson's hawk – state threatened • delta smelt – state endangered • Boggs Lake hedge-hyssop – state endangered • Shasta snow-wreath – state candidate

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

BIOLOGICAL RESOURCES (including fish, wildlife, and plants) (continued)	
Potential Environmental Concerns (continued)	Based on a biological resources evaluation conducted for the airport, there may be suitable habitat for several of the species listed above. Prior to the loss of any suitable habitat areas, coordination with the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife, should be undertaken to determine the appropriate mitigation measures on a project-by-project basis. Designated Critical Habitat **Potential Impact.** Critical habitat for slender Orcutt grass has been identified on the southwestern portion of the airport near Runway 34 (**Exhibit 1Q**). **Exhibit 5A** depicts proposed ultimate pavement in this area (new holding bay), and areas designated for aeronautical reserve that could result in a loss of critical habitat. Coordination with the California Department of Fish and Wildlife should be undertaken prior to the development of these areas to determine the level of impact and appropriate mitigation strategies for the loss of habitat, if necessary. Non-listed Species **Potential Impact**. Non-listed species of concern include those protected by the *Migratory Bird Treaty Act* (MBTA) and the *Bald and Golden Eagle Protection Act.* No eagles are expected to use the airport environs. Bird species protected by the MBTA could be adversely affected if construction occurs during the nesting and breeding seasons (January 1 to September 20). Pre-construction surveys of vegetated areas at the airport are recommended for projects where ground clearing would occur unless they happen outside the nesting and breeding seasons. Projects related to future land acquisitions that contain vegetation may also be areas of concern. Sources: U.S. Fish & Wildlife Service – Information for Planning and Consultation, (https://ipac.ecosphere.fws.gov/); SWCA Environmental Consultants, Biological Constraints Analysis for the Redding Regional Airport Master Plan, Redding, Shasta County, California (March 2024)
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.** The airport is not located within a coastal zone. The closest National Marine Sanctuary is the Greater Farallones National Marine Sanctuary, roughly located 127 miles west of the airport. Source: National Marine Sanctuaries, (https://sanctuaries.noaa.gov/)
***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 are no wilderness areas, public recreational facilities, or National Register of Historic Places (NRHP)-listed resources that would be impacted by proposed development at the airport. The closest Section 4(f) resource is the Tucker Oaks Golf Course located 0.50 miles southwest of the airport. Source: National Register of Historic Places, (https://www.nps.gov/maps/full.html?mapId=7ad17cc9-b808-4ff8-a2f9-a99909164466)

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

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 necessary to support farming operations.*
	  ○ *The construction/land development for national defense purposes.*

Potential Environmental Concerns	**No Impact.** According to the NRCS Web Soil Survey (WSS), the airport is comprised of soils, which are classified as prime farmland if irrigated (**Exhibit 1S**). RDD is primarily within urbanized boundaries. Therefore, the FPPA is not applicable to "urban-designated parts of the apart. However, there are small portions of the airport located on the western side of Airport Road that contain "prime farmland if mitigated." **Exhibit 5A** does not depict proposed development in this area, however, if future projects were to occur in these areas coordination with the USDA should be undertaken prior to development of these projects. Similarly, while soils on the land proposed for acquisition (**Exhibit 5A**), are classified prime farmland irrigated, this area has been designated as an urban area by the U.S. Census, and coordination with the U.S. Department of Agriculture is not anticipated during the land acquisition process. Source: USDA-Natural Resources Conservation Service – Web Soil Survey (https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx)

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

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.** The California Department of Toxic Substances Control (DTSC) EnviroStor identifies a Formerly Used Defense Site (FUDS) associated with the previous military use of the airport; however, this site is listed as inactive and is not reported on the National Priorities List (NPL). There are no identified brownfields or Superfund sites located within a one-mile buffer of the airport. Prior to any proposed land acquisition, a Phase I Site Assessment should be conducted to provide a more detailed understanding of what hazardous materials may be located on the land to be purchased. Due to existing regulatory environmental management regarding hazardous materials and waste and stormwater management, no impacts related to ultimate airport development are anticipated. The construction and occupancy of proposed terminal expansion and hangars located on the west side of the airport would increase solid waste. No long-term impacts related to solid waste disposal are expected. Source: U.S. EPA NEPAssist (https://nepassisttool.epa.gov/nepassist/nepamap.aspx)
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	**No Impact**. Based on a cultural resources records search and pedestrian survey for Redding Regional Airport, there are no historic properties or cultural resources that have been listed on the National Register of Historic Places (NRHP) or California Register of Historical Resources. The nearest tribal lands to the airport are the Redding Rancheria Reservation located five miles west of the airport, along the western border of State Route 273. Sources: SWCA Environmental Consultants, Inc., *Cultural Resources Records Search and Survey for the Redding Municipal Airport Master Plan Project*, Redding, Shasta County, California, No. 707027; U.S. EA, Map of Federally – Recognized Tribes in EPA's Pacific Southwest (Region 9) (https://www.epa.gov/tribal-pacific-sw/federally-recognized-tribes#ca)

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TABLE 5D | 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	**No Impact.** Land surrounding the airport is zoned as Industry, Open Space, and Residential as shown on **Exhibit 1P**. Proposed airport improvements include a terminal expansion, new hangars, an ultimate runway extension of Runway 16, acquisition of land to the north for future runway safety areas and obstruction removal, an aeronautical reserve, and the continued maintenance of Runway 12-30. Proposed development would remain on airport property and are not anticipated to have adverse impacts to residential areas to the south and west. In addition to this, new roads with entry points along Airport Road are proposed to act as access routes to proposed hangar development on the western portion of the airport. Near the north end of the airport, there are proposed reroutes for both the airport's service road and Old Oregon Trail, which currently serves the airport and is not anticipated to impact local traffic. **Exhibit 5A** depicts property to be acquired within Runway 16's ultimate RPZ. This is recommended to allow the airport to have control over what land uses may be permitted within the airport's RPZs. These parcels of land are currently unoccupied and would not displace or relocate any businesses or people.
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.***
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 as the proposed development would not use appreciably different demands on energy utilities and natural resources than what would traditional be consumed for its scale/size. 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; 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. Exhibits 2B** and **2C** in **Appendix E** show existing and anticipated noise contours for the airport, respectively. As shown on **Exhibit 2B** for existing conditions, the Community Noise Equivalent Level (CNEL) 65 dB noise exposure (light green) is located primarily within airport property with a small portion on the northwestern side located outside property boundaries. In the future (2042) noise contours, the CNEL 65 dB expands slightly further outside of airport property boundaries on both the northwestern and northeastern ends of the airport (**Exhibit 2C)**. There are no noise-sensitive land uses located within the CNEL 65 dB. The ultimate development at the airport is not expected to change the overall noise environment more than the 1.5 dB threshold; however, this should be confirmed prior to implementing a runway extension along proposed ultimate Runway 16.

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

SOCIOECONOMICS, ENVIRONMENTAL JUSTICE, 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:*** • ***Induce substantial economic growth in an area, either directly or indirectly (e.g., through establishing projects in an undeveloped area);*** • ***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	**No Impact.** Proposed development would not relocate or disrupt current businesses or residents. No division of existing neighborhoods or housing or businesses relocations would occur due to proposed development on the airport. Ultimate airport projects would result in temporary disruption of local traffic patterns along Airport Road during construction or once operational. While a portion of Old Oregon Trail Road is proposed to be relocated this road primarily serves airport users and is not anticipated to impact local traffic.
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, playing, or attending school near the airport because of the proposed ultimate development. The airport is an access-controlled facility, and children are not allowed within the fenced portions of the airport without adult supervision. All construction areas should be controlled to prevent unauthorized access. The closest school to the airport is 0.4 miles away.
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	**Potential Impact.** The existing lighting at the airport includes runway/taxiway lighting (medium intensity for Runway 12-30 and high intensity for Runway 16-34), and lighting used for navigation (such as a rotating beacon, 4-light precision approach path indicator light systems at the end approach of Runway 16 and Runway 34, and a 2-light PAPI system for Runway 30). These lighting systems are planned to be maintained in their existing condition except for a relocation of the PAPIs on the north end of the Runway 16-34 that would be relocated in conjunction with the proposed runway extension. Runway 16 has a proposed runway extension which may lead to construction work during evening hours. Night lighting during construction phases within the runway environment is typically directed down to the construction work area to avoid light from spilling outside the airport boundaries. Other ultimate projects are likely to include additional lighting during operation of the airport's new structures and facilities.

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

VISUAL EFFECTS (INCLUDING LIGHT EMISSIONS AND VISUAL RESOURCES/VISUAL CHARACTER) (continued)	
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.** The proposed runway extension would extend the approach end of Runway 16 by 1,997 feet. This runway extension is not anticipated to visually alter the line of sight for any land uses as the parcels of land near the runway extensions are industrial land uses.
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	**Potential Impact.** According to the two biological resources evaluations for RDD, there are several seasonal wetlands, drainage basins, human-made ditches and culverts located throughout the airport, of which some resources likely meet the definition of potentially jurisdictional features. If development were to occur in an area where wetlands may be altered, the U.S. Army Corps should be contacted, and mitigation may be required. Sources: SWCA Environmental Consultants, *Biological Constraints Analysis for the Redding Municipal Airport Proposed Runway Safety Area Improvements – Runway 16-34 NEPA Documentation*, Redding, Shasta County, California, August 2022; SWCA Environmental Consultants, *Biological Constraints Analysis for the Redding Regional Airport Master Plan, Redding, Shata County, California,* March 2024
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	**No Impact.** Based on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) panel, the airport is identified as an area of minimal flood hazard. The airport is not located in a 100-year or 500-year floodplain. The closest mapped 100-year floodplain lies to the east of airport along Stillwater Creek. Source: FEMA Flood Map Service (https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/)

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

WATER RESOURCES (INCLUDING WETLANDS, FLOODPLAINS, SURFACE WATERS, GROUNDWATER, AND WILD AND SCENIC RIVERS) (cont.)	
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.***
Potential Environmental Concerns	**Potential Impact.** The airport is located within two watersheds - Salmon Creek-Stillwater Creek and Clover Creek-Sacramento River Watersheds. There is one known impaired waterbody across both watersheds, the Sacramento River which is located south (and downstream) of RDD. Long-term impacts to water quality from the proposed airfield improvements should be assessed depending on how or if stormwater runoff is conveyed to airport stormwater infrastructure. An NPDES General Construction permit would be required for all projects involving ground disturbance over one acre. FAA's Advisory Circular (AC) 150/5370-10G, *Standards for Specifying Construction of Airports, Item P-156, Temporary Air and Water Pollution, Soil Erosion and Siltation Control* should also be implemented during construction projects at the airport. Source: How's My Waterway (https://mywaterway.epa.gov/community/redding%20municipal%20airport/overview)
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	**Potential Impact**. The airport property is not located near a sole source aquifer. Fresno County Aquifer is located 260 miles from the airport. However, groundwater could be encountered during construction and geotechnical investigations should include dewatering measures if needed. Source: U.S EPA Sole Source Aquifer (https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b)

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

WATER RESOURCES (INCLUDING WETLANDS, FLOODPLAINS, SURFACE WATERS, GROUNDWATER, AND WILD AND SCENIC RIVERS) (cont.)	
Wild and Scenic Rivers	
FAA Order 1050.1G, *Significance Threshold/Factors to Consider*	***The 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.** There are no wild and scenic rivers or rivers listed on the NRI near the airport. The closest designated wild and scenic river identified is Trinity River, located 29 miles from the airport. The nearest NRI feature is the Sacramento River, approximately one mile away from the airport. Projects delineated on the proposed development concept would not have adverse effects on these river's outstanding remarkable values (i.e., scenery, recreation, geology, fish, wildlife, and history). Sources: National Wild and Scenic Rivers System, (https://www.rivers.gov/california); National Park Service – Nationwide Rivers Inventory, (https://www.nps.gov/subjects/rivers/nationwide-rivers-inventory.htm)

SUMMARY

The preferred development plan has been developed with significant input from the PAC, the public, and airport staff. 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 preferred development plan provides the necessary development to accommodate and satisfy anticipated growth at RDD over the next 20 years and beyond.