SAN BERNARDINO COUNTY

Apple Valley Airport

Airport Master Plan

AGENDA

- Welcome and Introductions
- Master Plan and Public Involvement
- Master Plan Process
- Inventory Review
- Forecast Review and Update
- Facility Requirements
- Alternatives
- Additional Discussion
- Next Steps

PURPOSE OF THE AIRPORT MASTER PLAN STUDY

- Provide a **visioning document** to guide airport management and other decision makers regarding future development of the airport over the next 20 years.
- **Address local and national changes** in the aviation industry that could impact priorities at Apple Valley Airport.
- Identify and **plan for potential capital projects** in advance so that coordination, approvals, financing, design and construction can take place in a timely manner.
- Identify locations for appropriate **on-airport land uses** (aeronautical and non-aeronautical)
- Develop a prioritized list of capital projects that addresses **FAA and Airport priorities** (i.e. safety, design standards, land use compatibility, compliance, etc.).
- **Obtain FAA approval of new Aviation Demand Forecasts and updated Airport Layout Plan (ALP).**
- Have a current and **approved ALP** on file with FAA so that future grant funding can continue uninterrupted. Current ALP approved in 2006.
- Increase **stakeholder/public awareness** of the airports' goals and objectives.
- Maintain **communications** and capital project discussions with FAA and airport stakeholders.

PUBLIC INVOLVEMENT PLAN

Planning Advisory Committee (PAC)

4 Scheduled

Public Information Workshop

3 Scheduled

Project Website

www.applevalley.airportstudy.net

ROLE OF PLANNING ADVISORY COMMITTEE

- The **purpose** of the Planning Advisory Committee (PAC) is to provide the Apple Valley Airport and the planning consultant (Coffman Associates) with input into the Airport Master Plan.
- The **members** of the PAC are intended to represent a variety of organizations and individuals with interest in the use and development of the Airport.
- The **role** of the PAC is to review elements of the Airport Master Plan while they are in draft form and comment on the accuracy of the assumptions and relevance of the information used to develop the report. The PAC is non-voting advisory body. While all comments made by the PAC members will be considered by the consultant in developing the draft and final version of the report, the PAC will not vote to approve or disapprove elements of the study.
- **PAC meetings** will be held periodically throughout the preparation of the Airport Master Plan. There are four (4) meetings planned at this time. Because of the advisory nature of the committee, a quorum will not be required.
- Three (3) **Public Information Workshop** will be held during the study. The primary purpose of the workshop is to allow the public to obtain information regarding the Airport Master Plan, ask questions, and provide input. Each PAC member is invited to attend this meeting and to encourage members of their organization to attend.

Master Plan Project Work-Flow

July 18, 2023

Feb 1, 2024

Aug 28, 2025

PAC #1

INITIATION

INVENTORY

FORECASTS

FACILITY REQUIREMENTS

PAC #2

PIW #1

AIRPORT ALTERNATIVES

PAC #3

PIW #2

RECOMMENDED MASTER PLAN CONCEPT AND CAPITAL FINANCIAL PLAN

ENVIRONMENTAL CONSIDERATIONS

PAC #4

PIW #3

AIRPORT LAYOUT PLANS

KEY:
PAC = Master Plan Advisory Committee
PIW = Public Information Workshop

FAA Forecast Approval 11.29.23

Revised Forecasts Submitted to FAA on 8.8.25 and Acceptance

Working Papers PDF

Working Papers PDF

Working Papers PDF

FAA Approval of the ALP - TBD

National Airport System

There are **383** airports that handle the majority of airline traffic.

There are **2,904** airports that handle the rest of the system's activity.

Large Hub (LAX, SFO)	30
Medium Hub (BUR, ONT)	35
Small Hub (SBA, LGB)	80
Nonhub (SBP, MRY)	238

NPIAS Airports **3,287**

Total of all US airports: **19,853**

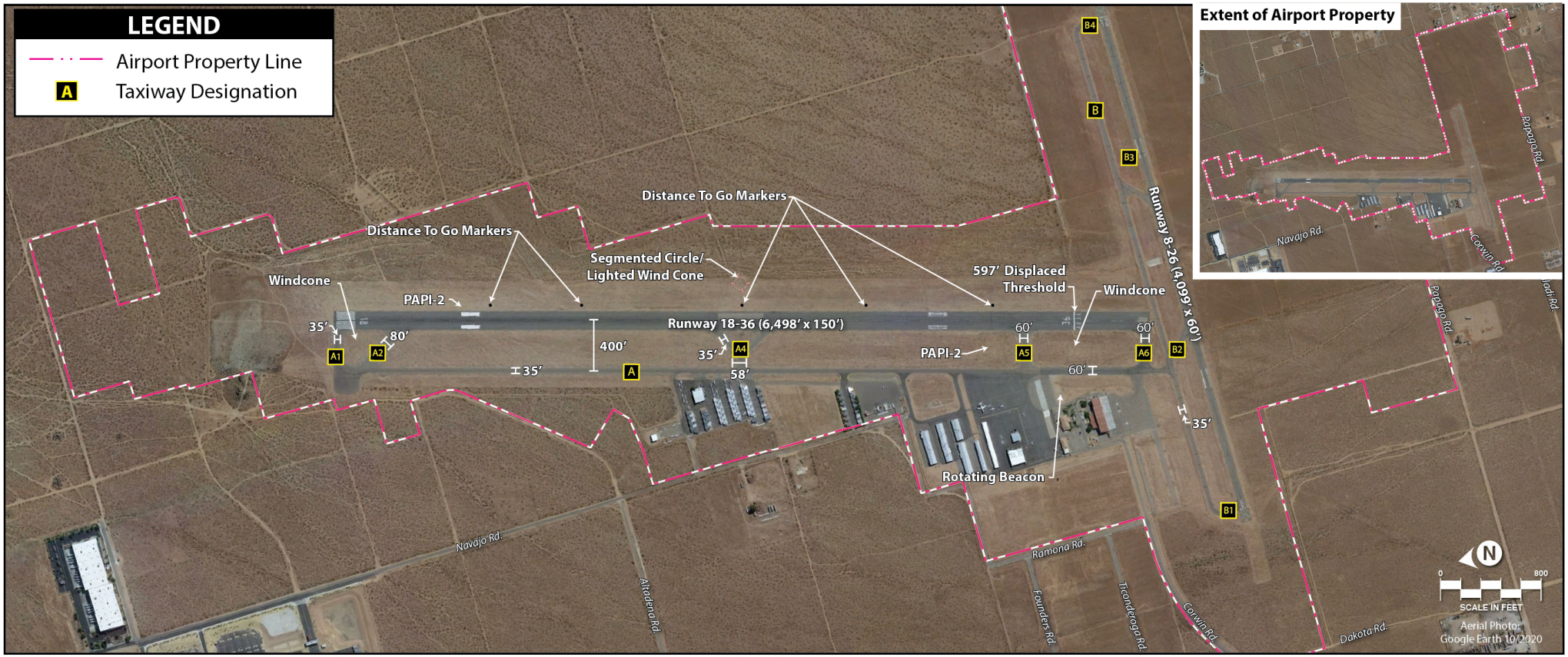
National GA (CNO, CMA)	107
Regional GA (APV, VCV)	501
Local GA (REI, BNG)	1,179
Basic/Unclassified GA (DAG, EED)	1,117

Source: National Plan of Integrated Airport Systems (NPIAS) 2023-2027

SAN BERNARDINO COUNTY

APV Airport Master Plan

Exhibit 1C – Airside Facilities



SAN BERNARDINO COUNTY

APV Airport Master Plan

Exhibit 1E – Landside Facilities

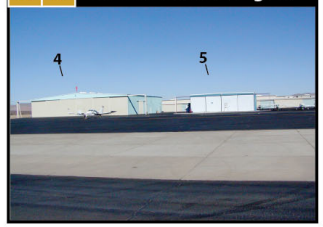
Building ID	Building Type	Total Square Footage	Square Footage for Aircraft	Maintenance/ Office	Aircraft Parking Spaces
1	Conv.-CHP Hangar	18,600	18,600	0	6
1A	CHP Office	5,900	-	5,900	-
2	Terminal	5,300	-	5,300	-
3	Airport Maintenance	5,800	-	5,800	-
4	Conventional/ Maint Hangar	14,100	1,400	12,700	1
5	Box	3,000	2,500	500	2
6	T-Hangar	14,600	14,600	0	12
7	Box	8,500	7,800	700	4
8	T-Hangar	15,600	15,600	0	12
9	T-Hangar	9,800	9,800	0	6
10	T-Hangar	17,100	17,100	0	14
11	T-Hangar	15,400	15,400	0	12
12	T-Hangar	8,800	8,800	0	7
13	T-Hangar	7,900	7,900	0	7
14	T-Hangar	8,100	8,100	0	6
15	T-Hangar	16,500	16,500	0	13
16	T-Hangar	14,500	14,500	0	12
17	T-Hangar	12,200	12,200	0	10
18	T-Hangar	8,500	8,500	0	7
19	T-Hangar	10,000	10,000	0	8
20	Conventional	7,100	6,500	600	4
20A	Office	2,200	-	2,200	-
21	Box	2,300	2,300	0	2
	TOTALS	231,800	198,100	33,700	145

1 Cal. Highway Patrol / San Bernardino County Sheriff's Hangar

2 Terminal

3 Airport Maintenance

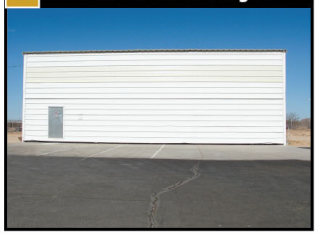
4 5 Conventional Hangars



8 9 10 11 T-Hangars

20 20A Midfield Aviation

21 Conventional Hangar



LEGEND

- Airport Property Line
- A — Taxiway Designation
- 1 — Building Identification

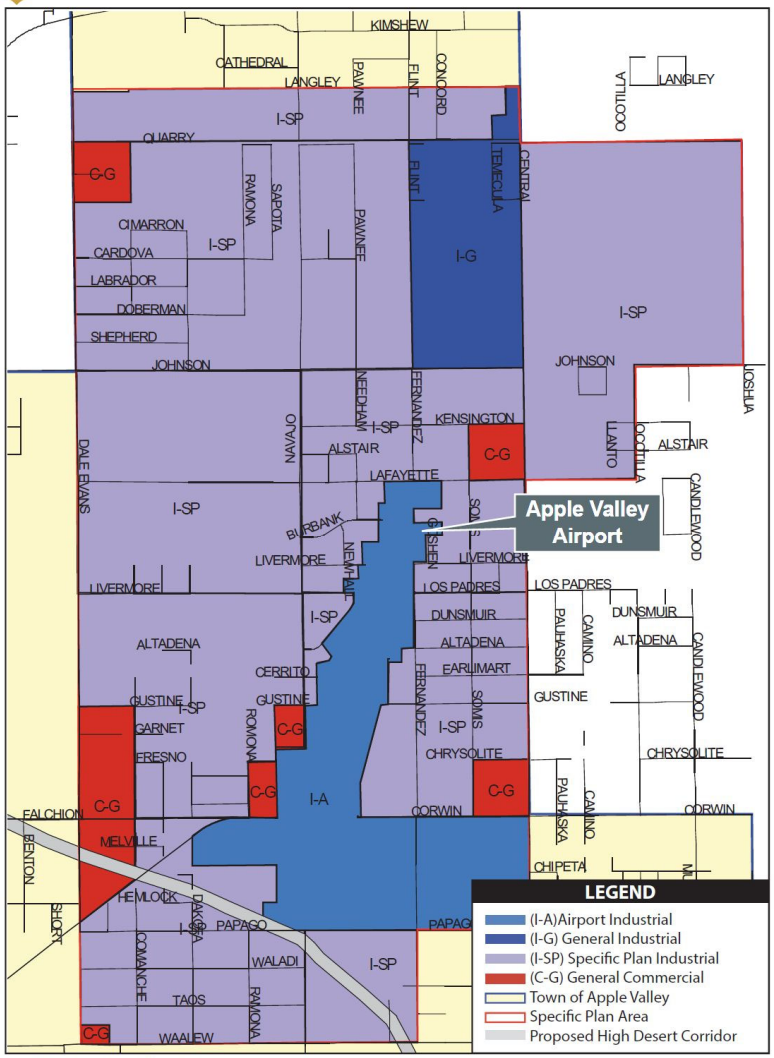
N

0 300

SCALE IN FEET

Aerial Photo: Google Earth 10/2020

Exhibit 1Q – North Apple Valley Industrial Specific Plan



Source: North Appley Valley Industrial Specific Plan.

Exhibit 1R – Airport Overlay Districts

- **A-1 Airport Overlay District: Vegetation and Structures limited to 35’ in height.**
- **A-2 Airport Overlay District: Vegetation and Structures limited to 50’ in height.**
- **Restrictions for both overlay districts:**
  - Any use that would direct light toward an aircraft.
  - Any use to cause glint/glare.
  - Any use to cause smoke/water vapor.
  - Any use that would generate electrical interference.
  - Any use of explosives/flammable materials.

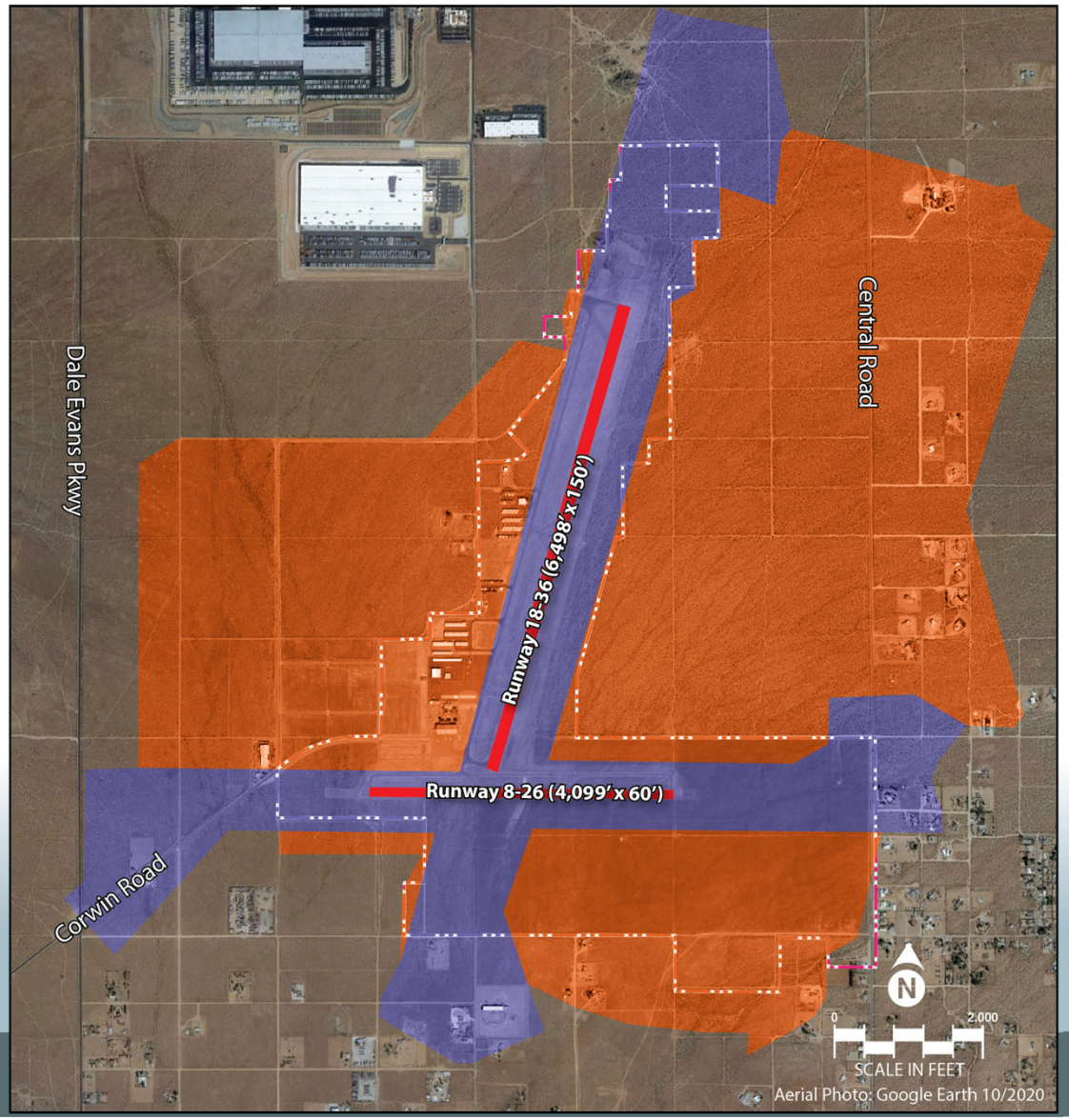
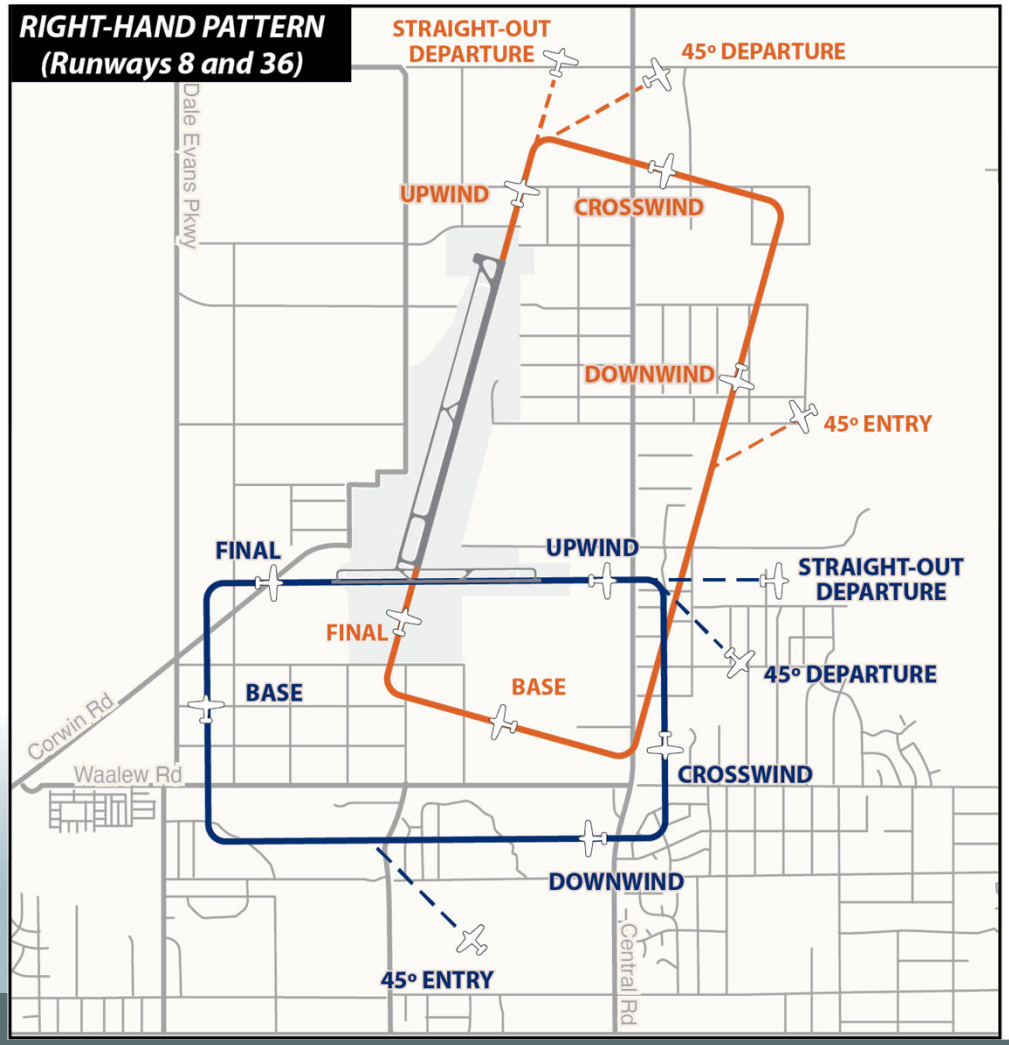


Exhibit 1D – Traffic Pattern Airspace



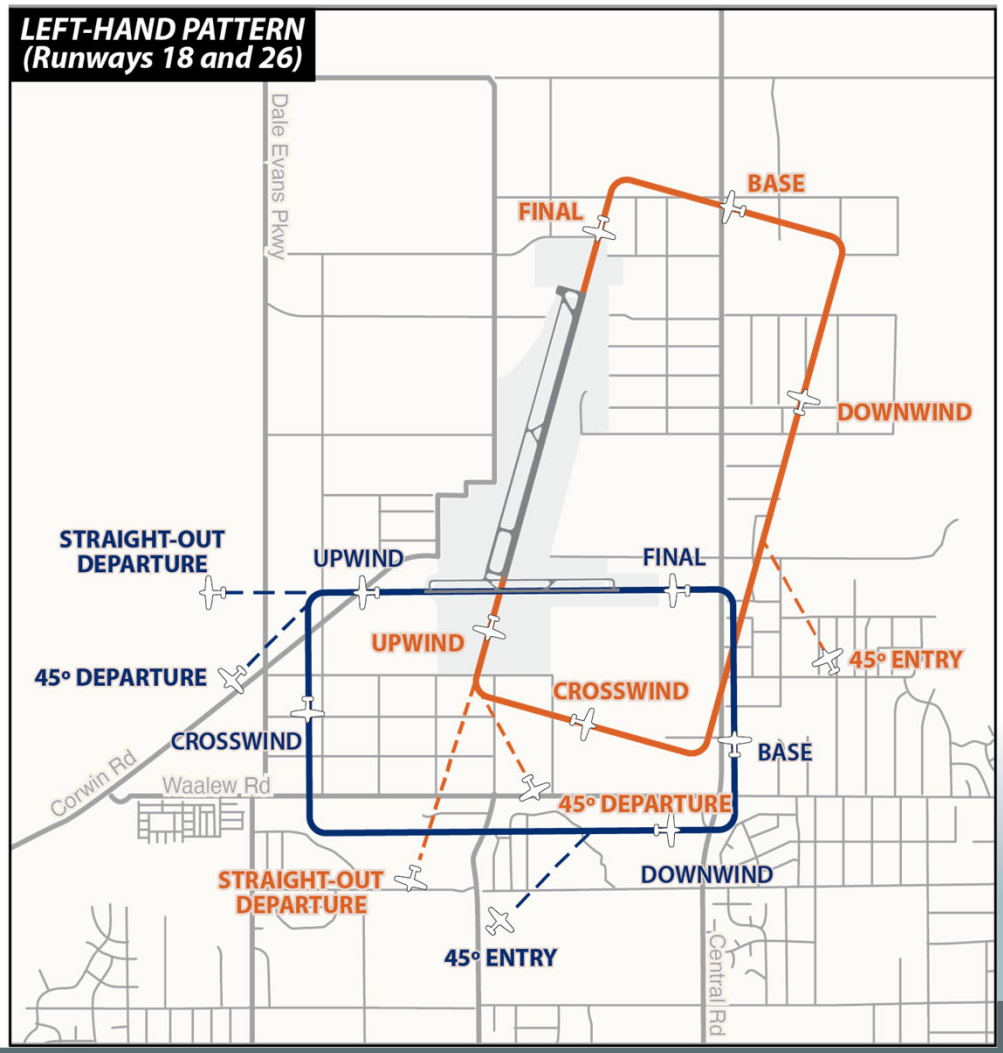


Exhibit 1E – Pavement Conditions (2022 Inspection)

Chapter Two

FORECASTS

SAN BERNARDINO COUNTY

Forecast Elements

The FAA approves two elements of an ALP Update: The forecast (20-years) and the Airport Layout Plan set of drawings.

To receive FAA forecast approval for a general aviation airport, an ALP Update must furnish projections, supported with FAA approved methodology, for these three elements:

Based Aircraft

This forecast element provides a projection for how many aircraft will call APV their home base, classified by type.

Helps anticipate future hangar and parking apron needs, plus reserves for future demand.

Operations

This is how many takeoffs and landings are expected by each type of airplane.

Helps define airfield capacity, and various environmental considerations including noise analysis used in Part 150 studies.

Critical Aircraft

This is the most demanding airplane type that accounts for at least 500 takeoffs and landings in a given year.

Helps define the standard dimensions and strength for the various airfield and navigation components, including safety margins.

Aviation Demand Forecasts

Forecasting Process

- Determine activity measures: Based aircraft and operations for GA airports.
- Review previous airport forecasts: TAF, 2012 Draft Master Plan.
- Gather data: Socioeconomic data, FAA national forecasts, TAF (local and statewide), etc.
- Employ forecasting methods: Regression, Market Share, Ratio Analysis, etc.
- Select a single forecast for each activity measure.
- Summarize and document results.

Analysis Considerations

- Historical trends
- Reasonableness
- Not based on hypotheticals
- Not based on “if you build it, they will come”
- Any known major influences that would be outside normal (reasonable) growth such as the closure of a nearby airport.
- Ultimately the forecast analyst must apply knowledge of the market and judgement when selecting a single forecast.

Exhibit 2D – Forecast Summary

2022 ORIGINAL FORECAST	Base Year	Forecast			
	2022	2027	2033	2042	CAGR* 2022-2042
BASED AIRCRAFT					
Single-engine piston	111	117	119	121	
Multi-engine piston	4	4	4	4	
Turboprop	0	2	3	6	
Jet	0	1	2	4	
Helicopter	2	3	4	6	
Total Based Aircraft	**117**	**127**	**132**	**141**	**0.94%**
ANNUAL OPERATIONS					
Air Taxi Itinerant	40	400	900	1,500	19.87%
General Aviation Itinerant	14,325	14,732	15,032	16,132	0.60%
General Aviation Local	28,735	30,268	31,868	35,268	1.03%
TOTAL OPERATIONS	**43,100**	**45,400**	**47,800**	**52,900**	**1.03%**
PEAKING CHARACTERISTICS					
Peak Month (12%)	5,172	5,448	5,736	6,348	1.03%
Design Day (30)	172	182	191	212	1.03%
Design Hour (11%)	19	20	21	23	1.03%

*CAGR: Compound annual growth rate

Exhibit 2D – Forecast Summary

2024 REVISED AND VALIDATED FORMAT

	Base Year	Forecast			
	2024	2029	2034	2044	CAGR* 2024-2044
BASED AIRCRAFT					
Single-engine piston	127	129	133	139	
Multi-engine piston	5	4	4	5	
Turboprop	0	2	3	7	
Jet	0	1	2	5	
Helicopter	2	3	4	7	
Total Based Aircraft	**134**	**140**	**147**	**162**	**0.94%**
ANNUAL OPERATIONS					
Air Taxi Itinerant	40	400	900	1,500	19.87%
General Aviation Itinerant	14,325	14,732	15,032	16,132	0.60%
General Aviation Local	28,735	30,268	31,868	35,268	1.03%
TOTAL OPERATIONS	**43,100**	**45,400**	**47,800**	**52,900**	**1.03%**
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Peak Month (12%)	5,172	5,448	5,736	6,348	1.03%
Design Day (30)	172	182	191	212	1.03%
Design Hour (11%)	19	20	21	23	1.03%

*CAGR: Compound annual growth rate

Table 2Ua – Forecast Revision and Validation – Comparison to the 2024 TAF

	BASE YEAR	FORECAST			
	2024	2029	2034	2044	CAGR 2024-2044
Based Aircraft					
Master Plan Forecast	134	140	147	162	0.94%
2024 FAA TAF[1]	115	115	115	115	0.00%
% Difference	15.3%	19.6%	24.4%	33.9%	
Total Operations					
Master Plan Forecast	43,100	45,400	47,800	52,900	1.03%
2024 FAA TAF[1]	37,500	37,500	37,500	37,500	0.00%
% Difference	13.9%	19.1%	24.2%	34.1%	

Per FAA: The only requirement for Master Plan and ALP Updates for non-towered/low activity airports (<90,000 operations) is to develop a Critical Aircraft Analysis for each runway at the airport.

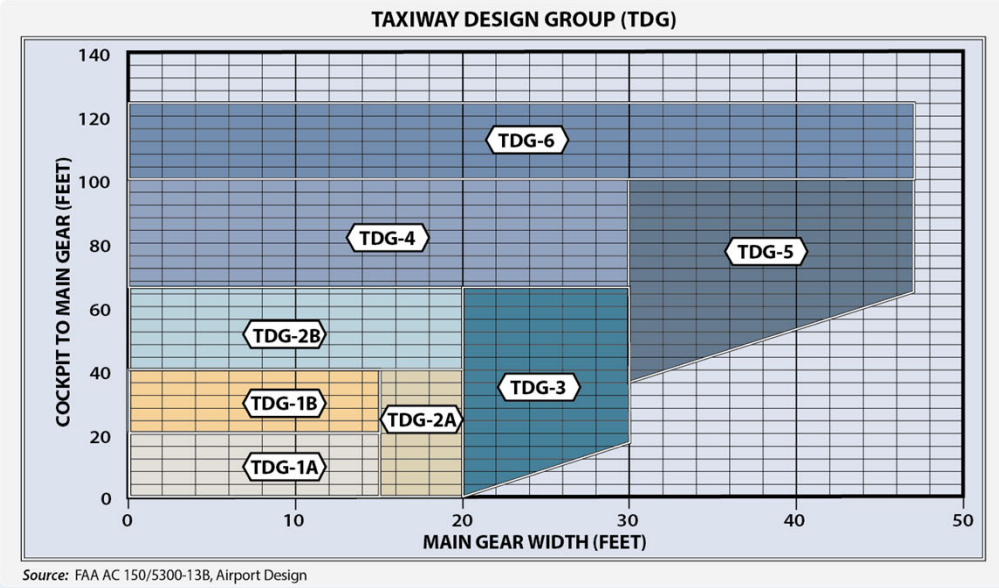
Exhibit 2E – Aircraft Classification Parameters

AIRCRAFT APPROACH CATEGORY (AAC)	
Category	**Approach Speed**
A	less than 91 knots
B	91 knots or more but less than 121 knots
C	121 knots or more but less than 141 knots
D	141 knots or more but less than 166 knots
E	166 knots or more

AIRPLANE DESIGN GROUP (ADG)		
Group #	**Tail Height (ft)**	**Wingspan (ft)**
I	<20	<49
II	20≤30	49≤79
III	30≤45	79≤118
IV	45≤60	118≤171
V	60≤66	171≤214
VI	66≤80	214≤262

VISIBILITY MINIMUMS	
RVR* (ft)	**Flight Visibility Category (statute miles)**
VIS	3-mile or greater visibility minimums
5,000	Not lower than 1-mile
4,000	Lower than 1-mile but not lower than ¾-mile
2,400	Lower than ¾-mile but not lower than ½-mile
1,600	Lower than ½-mile but not lower than ¼-mile
1,200	Lower than ¼-mile

***RVR**: Runway Visual Range



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

Exhibit 2F – Aircraft Reference Codes

A-I

Aircraft	TDG
• Beech Baron 55	1A
• **Beech Bonanza**	**1A**
• Cessna 150, 172	1A
• Eclipse 500	1A
• Piper Archer, Seneca	1A

B-I

Aircraft	TDG
• **Beech Baron 58**	**1A**
• Beech King Air 90	1A
• Cessna 421	1A
• Cessna Citation CJ1 (525)	1A
• Cessna Citation 1(500)	2A
• Embraer Phenom 100	1B

A/B-II *12,500 lbs. or less*

Aircraft	TDG
• **Beech Super King Air 200**	**2A**
• Cessna 441 Conquest	1A
• Cessna Citation CJ2 (525A)	2A
• Pilatus PC-12	1A

B-II *over 12,500 lbs.*

Aircraft	TDG
• Beech Super King Air 350	2A
• Cessna Citation CJ3(525B), V (560)	2A
• Cessna Citation Bravo (550)	1A
• **Cessna Citation CJ4 (525C)**	**1B**
• Cessna Citation Latitude/Longitude	1B
• Embraer Phenom 300	1B
• Falcon 10, 20, 50	1B
• Falcon 900, 2000	2A
• Hawker 800, 800XP, 850XP, 4000	1B
• Pilatus PC-24	1B

A/B-III

Aircraft	TDG
• Bombardier Dash 8	3
• **Bombardier Global 5000**, 6000, 7000, 8000	2B
• Falcon 6X, 7X, 8X	2B

C/D-I

Aircraft	TDG
• **Lear** 25, 31, 45, 55, **60**	**1B**
• Learjet 35, 36 (D-I)	1B

Note: Aircraft pictured is identified in bold type.

C/D-II

Aircraft	TDG
• Challenger 600/604/ 800/850	1B
• Cessna Citation VII, X+	1B
• Embraer Legacy 450/500	1B
• **Gulfstream IV**, 350, 450 (D-II)	**2A**
• Gulfstream G200/G280	1B
• Lear 70, 75	1B

C/D-III *less than 150,000 lbs.*

Aircraft	TDG
• Gulfstream V	2A
• **Gulfstream** G500, 550, 600, **650 (D-III)**	**2B**

C/D-III *over 150,000 lbs.*

Aircraft	TDG
• Airbus A319-100, 200	3
• Boeing 737 -800, 900, BBJ2 (D-III)	3
• MD-83, 88 (D-III)	4

C/D-IV

Aircraft	TDG
• Airbus A300-100, 200, 600	5
• Boeing 757-200	4
• Boeing 767-300, 400	5
• MD-11	6

D-V

Aircraft	TDG
• Airbus A330-200, 300	5
• Airbus A340-500, 600	6
• Boeing 747-100 - 400	5
• Boeing 777-300	6
• Boeing 787-8, 9	5

Table 2V – Airport and Runway Classification

	Current	Future
Airport Reference Code (ARC)	B-II	C-II
Airport Design Aircraft	B-II-2A	C-II-2A
Composite Aircraft	King Air 300	Cessna 680/King Air 200
Runway Design Code (RDC)		
Runway 18-36	B-II-4000	C-II-2400
Runway 8-26	B-I-VIS	Same
Approach Reference Code (APRC)		
Runway 18-36	D-IV-4000/ D-V-4000	D-IV-2400
Runway 8-26	B-II-VIS	Same
Departure Reference Code (DPRC)		
Runway 18-36	D-IV/D-V	Same
Runway 8-26	B-II	Same

Chapter Three

Facility Requirements

SAN BERNARDINO COUNTY

Exhibit 3A – All Weather Wind Rose

ALL WEATHER WIND COVERAGE				
Runways	10.5 Knots	13 Knots	16 Knots	20 Knots
Runway 18-36	91.03%	94.35%	97.48%	99.28%
Runway 8-26	90.38%	93.38%	96.65%	98.79%
All Runways	98.99%	99.64%	99.90%	99.99%

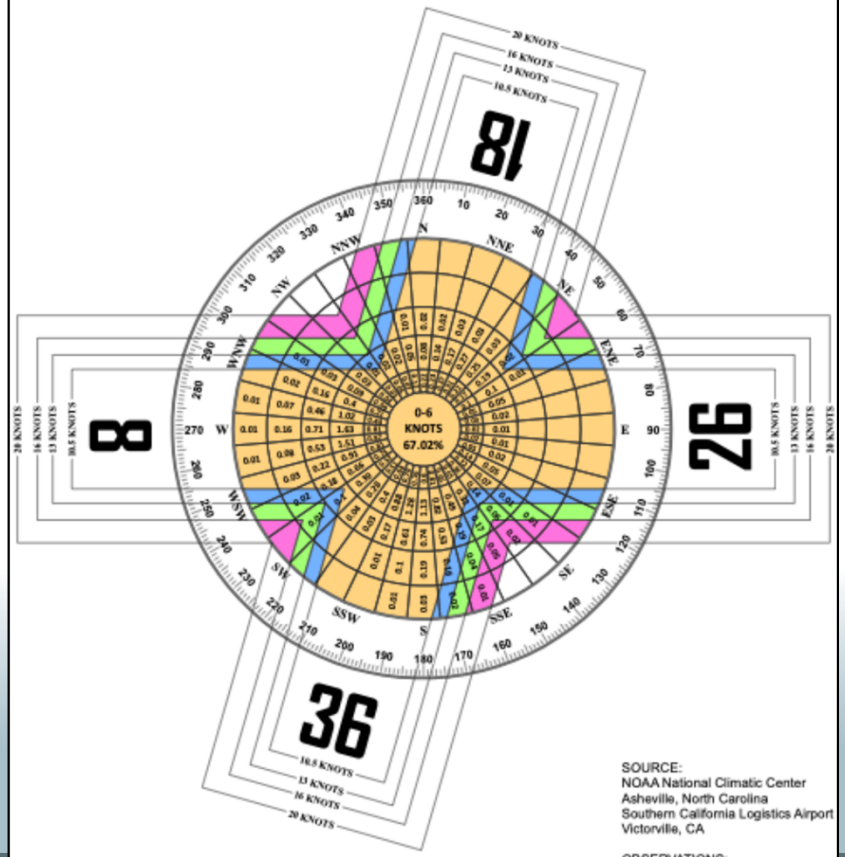


Exhibit 3C – Safety Areas

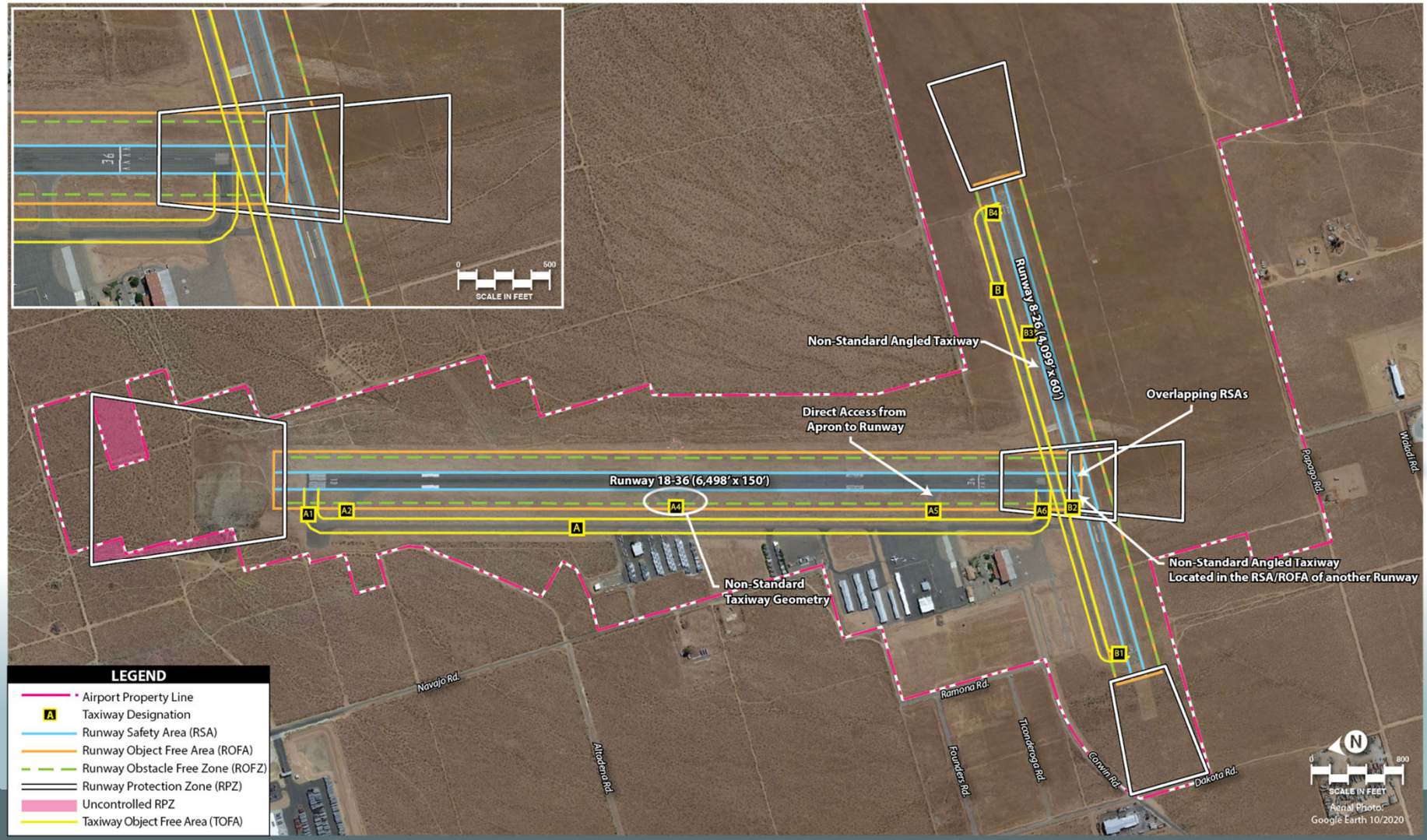


Exhibit 3G – Runway Length Requirements

Airport Elevation	3,061.7' feet above mean sea level			
Average High Monthly Temp.	97.5 degrees F (July)			
Runway Gradient	1.47% Runway 18-36 (96')			
Fleet Mix Category	**Raw Runway Length from FAA AC**	**Runway Length with Gradient Adjustment**	**Wet Surface Landing Length for Jets (+15%)***	**Final Runway Length**
75% of fleet at 60% useful load	5,825'	6,785'	5,500'	6,800'
100% of fleet at 60% useful load	7,788'	8,748'	5,500'	8,800'
75% of fleet at 90% useful load	8,675'	9,635'	7,000'	9,700'
100% of fleet at 90% useful load	10,286'	11,246'	7,000'	11,300'
*Max 5,500' for 60% useful load and max 7,000' for 90% useful load in wet conditions				

Exhibit 3H – Runway Length Requirements for Business Jets

AIRFIELD PARAMETERS	Elevation: 3,061.7' MSL									
	Temp: 97.5°F/36.4°C									
	1.47% Runway 18-36 (96' difference)									
RUNWAY PARAMETERS	Takeoff Length Required at MTOW		% Useful Load for Takeoff on 6,498' Runway		LANDING LENGTH REQUIREMENTS					
					C.F.R. Part 25 (Unfactored)		C.F.R. Part 135 (60% factored)		C.F.R. Part 91k (80% factored)	
RUNWAY CONDITION	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
Lear 60	B/L	B/L	61%	55%	3,940	5,318	6,567	8,863	4,925	6,648
Gulfstream V	9,787	O/L	72%	64%	2,983	3,431	4,972	5,718	3,729	4,289
Citation X	O/L	O/L	77%	64%	3,676	5,180	6,127	8,633	4,595	6,475
Falcon 50EX	O/L	O/L	77%	74%	3,116	3,583	5,193	5,972	3,895	4,479
Gulfstream IV	O/L	O/L	74%	63%	3,633	6,964	6,055	11,607	4,541	8,705
Challenger 300	7,828	8,309	79%	72%	2,779	5,326	4,632	8,877	3,474	6,658
Lear 45XR	6,827	6,820	95%	95%	3,105	3,985	5,175	6,642	3,881	4,981
Citation (525) CJ1	O/L	O/L	82%	82%	3,122	4,233	5,203	7,055	3,903	5,291
Beechjet 400A	O/L	O/L	84%	71%	N/A	N/A	N/A	N/A	N/A	N/A
Citation Bravo	5,684	6,354	100%	100%	4,043	6,370	6,738	10,617	5,054	7,963
Citation 560 XLS	O/L	O/L	98%	94%	3,665	5,830	6,108	9,717	4,581	7,288
Citation Encore	5,846	6,224	100%	100%	3,285	4,946	5,475	8,243	4,106	6,183
Citation (525A) CJ2	O/L	O/L	95%	95%	3,391	4,888	5,652	8,147	4,239	6,110
Citation Sovereign	4,963	5,206	100%	100%	3,018	3,875	5,030	6,458	3,773	4,844
Citation CJ3	5,016	5,314	100%	100%	3,223	4,379	5,372	7,298	4,029	5,474
Citation I/SP	O/L	O/L	80%	N/A	2,574	2,961	4,290	4,935	3,218	3,701

KEY:

MSL - Mean Sea Level
MTOW - Maximum takeoff weight
CFR - Code of Federal Regulations.
CFR Part 25: Standard unfactored landing lengths.
CFR Part 135: 60% factored landing length as required by commuter/on-demand operators.
CFR Part 91k: 80% factored as required by fractional operators.
BL: Brake Limited
O/L: Weight limited due to climb performance
N/A: No data available
Figures in red exceed the available runway length.

Exhibit 3D – Airside Facility Requirements

RUNWAYS	AVAILABLE	POTENTIAL IMPROVEMENT/CHANGE
RUNWAY 18-36		
	RDC: B-II-4000	C-II-4000 or C-II-2400
	Visibility minimum: 7/8-mile	Examine 3/4- and 1/2-mile visibility minimums
	Runway length/width: 6,498' x 150'	Consider extension to 8,800'/Maintain 150' width for crosswind coverage
	Pavement strength: 70(S)/90(D)/150(DD)	Maintain
	RSA: 150' wide x 300' beyond runway ends	RSA: 500' wide x 1,000' beyond runway ends
	Overlapping RSAs	Reconfigure to remove overlapping RSAs
	ROFA: 500' wide x 300' beyond runway ends	ROFA: 800' wide x 1,000' beyond runway ends
	Overlapping ROFA	Reconfigure to remove overlapping ROFAs
	OFZ: 400' wide x 200' beyond runway ends	Meets standard - maintain
	RPZ ownership: partial ownership	Acquire if feasible
	RPZ Incompatibilities: None	Maintain compatible RPZ land use
	Nonprecision markings	Meets standard - Maintain
	Precision markings: Currently NA	Add precision markings for ½-mile visibility minimums
	Medium intensity runway lighting (MIRL)	Meets standard - Maintain
RUNWAY 8-26		
	RDC: B-I-VIS	Same/Maintain
	Pavement strength: 40(S)/60(D)/100(DD)	Same/Maintain
	RSA: 120' wide x 240' beyond runway ends	Same/Maintain
	Overlapping RSAs	Reconfigure to remove overlapping RSAs
	ROFA: 400' wide x 240' beyond runway ends	Same/Maintain
	Overlapping ROFA	Reconfigure to remove overlapping ROFAs
	RPZ ownership: Airport owned	Same/Maintain
	RPZ Incompatibilities: None	Maintain compatible RPZ land use
	Markings: Basic	Same/Maintain
	Edge Lighting: NA	Add MIRL

KEY

AWOS - Automated Weather Observation System
MIRL/HIRL - Medium/High Intensity Runway Lighting
MITL - Medium Intensity Taxiway Lighting
OFZ - Obstacle Free Zone
PAPI - Precision Approach Path Indicator
RDC - Runway Design Code
REIL - Runway End Identification Lights
RSA - Runway Safety Area
RPZ - Runway Protection Zone
ROFA - Runway Object Free Area
SWL - Single Wheel Loading
TDG - Taxiway Design Group

Exhibit 3D – Airside Facility Requirements

	AVAILABLE	POTENTIAL IMPROVEMENT/CHANGE
TAXIWAYS		
	Taxiway A and connectors: TDG - 2A	Same/Maintain
	Taxiway B and connectors: TDG - 1B	Same/Maintain
	Taxiway A and connectors width: 35'-80'	Implement uniform 35' taxiway width
	Taxiway B and connectors width: 35'	Maintain until reconstruction, then consider 25' width
	Taxiway A and connectors: MITL	Same/Maintain
	Taxiway B and connectors: No edge lighting	Add MITL
	Centerline markings	Same/Maintain
	Taxiway layout/geometry deficiencies	Redesign taxiway layout/geometry deficiencies
INSTRUMENT NAVIGATION AND WEATHER AIDS		
	Weather Reporting system: NA	Add AWOS
	Beacon	Replace aging beacon
	3 Windsocks	Maintain
	Segmented circle	Maintain
	7/8-mile non-precision instrument approach (Runway 18)	Consider 1/2-mile minimums
	Visual approaches to Runway 8-26	Maintain
VISUAL AIDS		
	PAPI-2L	Upgrade to PAPI-4L
	REILs: NA	Add REILs to both ends of Runway 18-36

KEY

AWOS - Automated Weather Observation System
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Chapter Four

Alternatives

SAN BERNARDINO COUNTY

Exhibit 4A – Key Planning Considerations

Airfield Considerations

- Plan for a transition from B-II design standards to C-II design standards for Runway 18-36.
- Decouple the RSAs for the runways.
- Examine runway extension options for Runway 18-36 to bring the total length to 8,800 feet.
- Examine runway extension options for Runway 8-26 to bring the total length to 4,600 feet.
- Redesign connecting taxiways to meet current FAA standards (90-degree intersections).
- Protection of runway approaches.
- Examine the feasibility of opening Runway 8-26 to nighttime operations.

Exhibit 4A – Key Planning Considerations

Landside Considerations

- Identify future hangar development areas and identify the proper mix of hangar types needed.
- Consider a route for a perimeter service road.
- Consider apron expansion.
- Vehicle parking lot expansion.
- Location for a new rotating beacon.
- Additional fuel storage capacity.

Exhibit 4B – Approved ALP - 2006

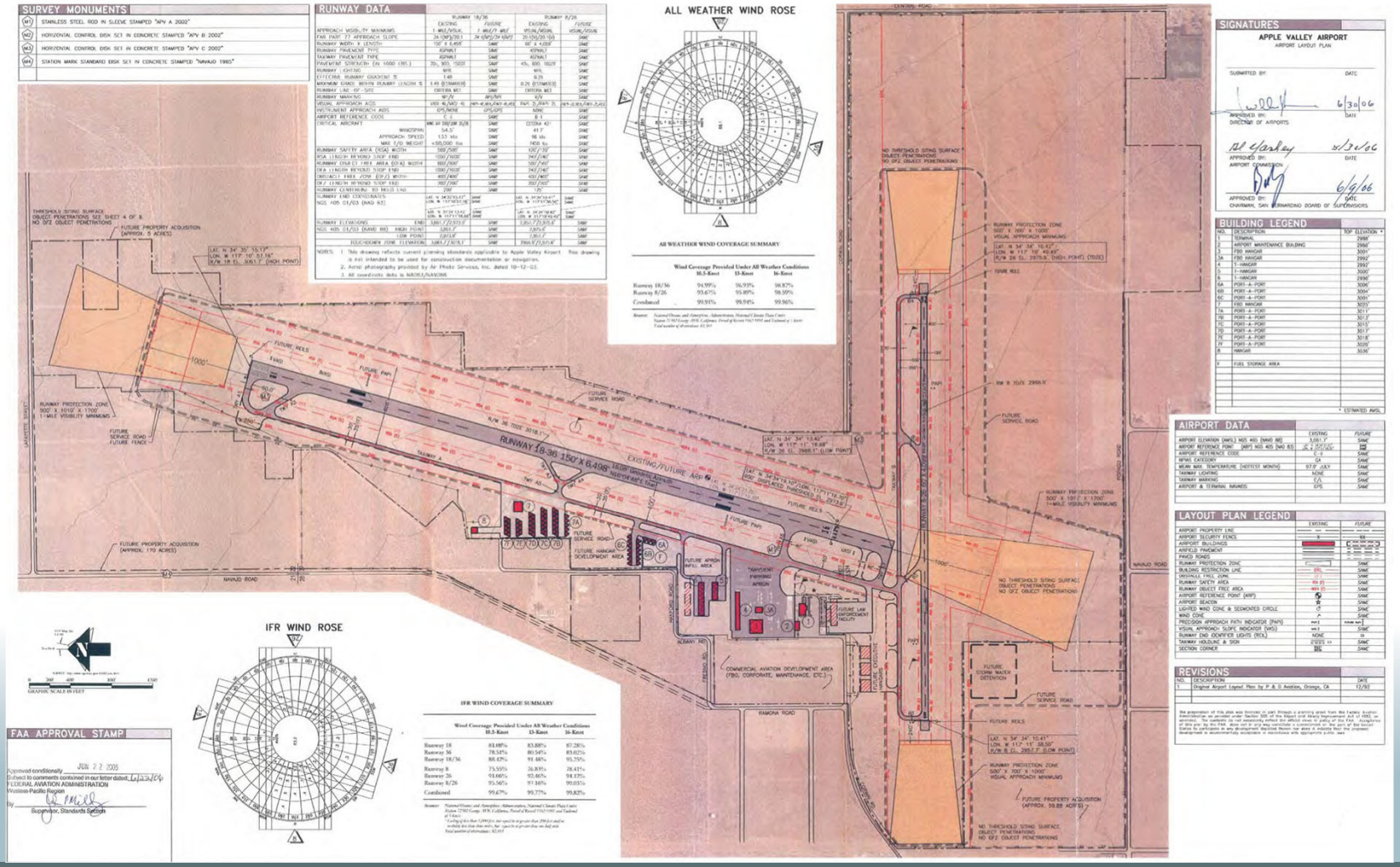


Exhibit 4B – 2012 Draft MP Concept

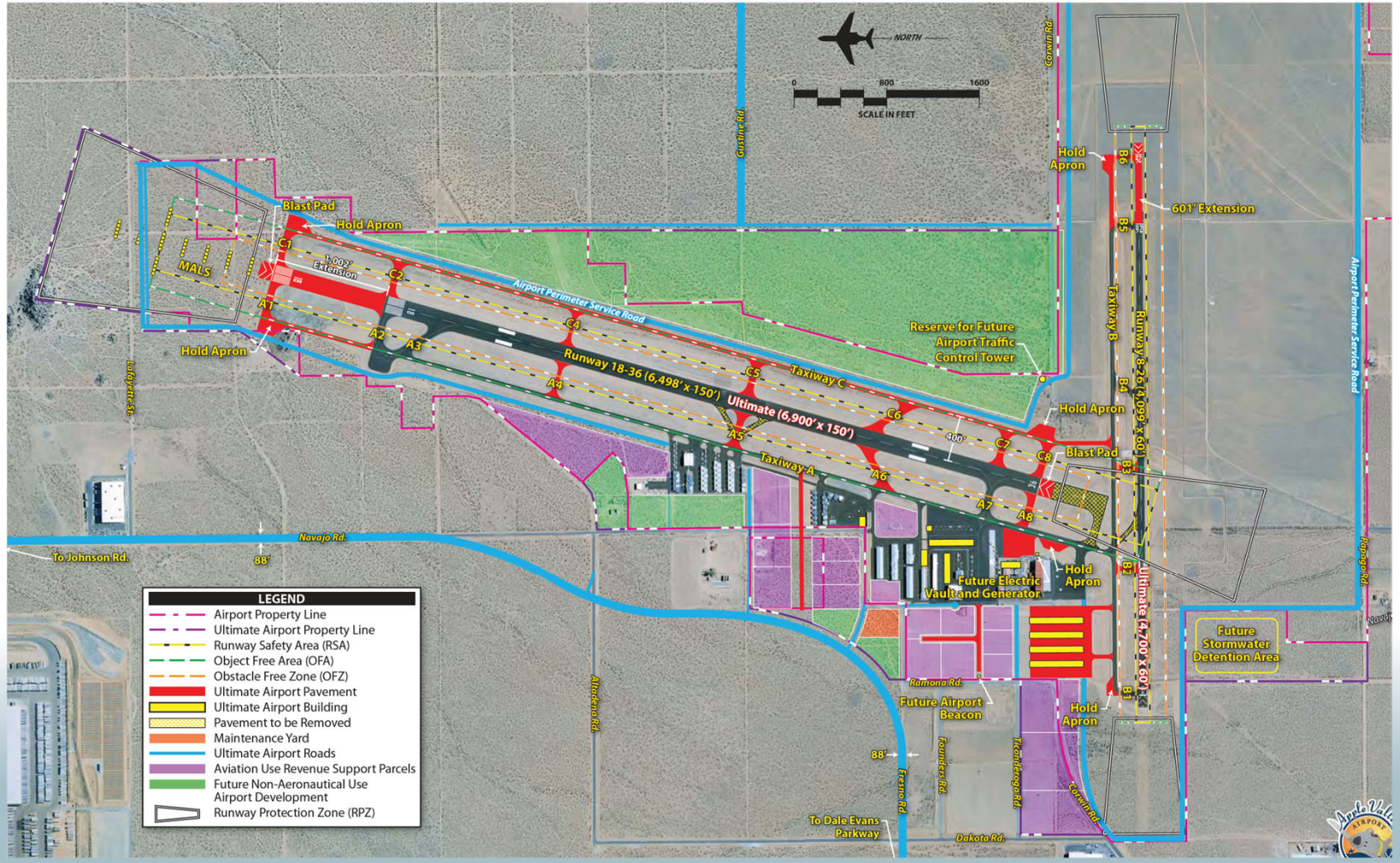


Exhibit 3C – Safety Areas

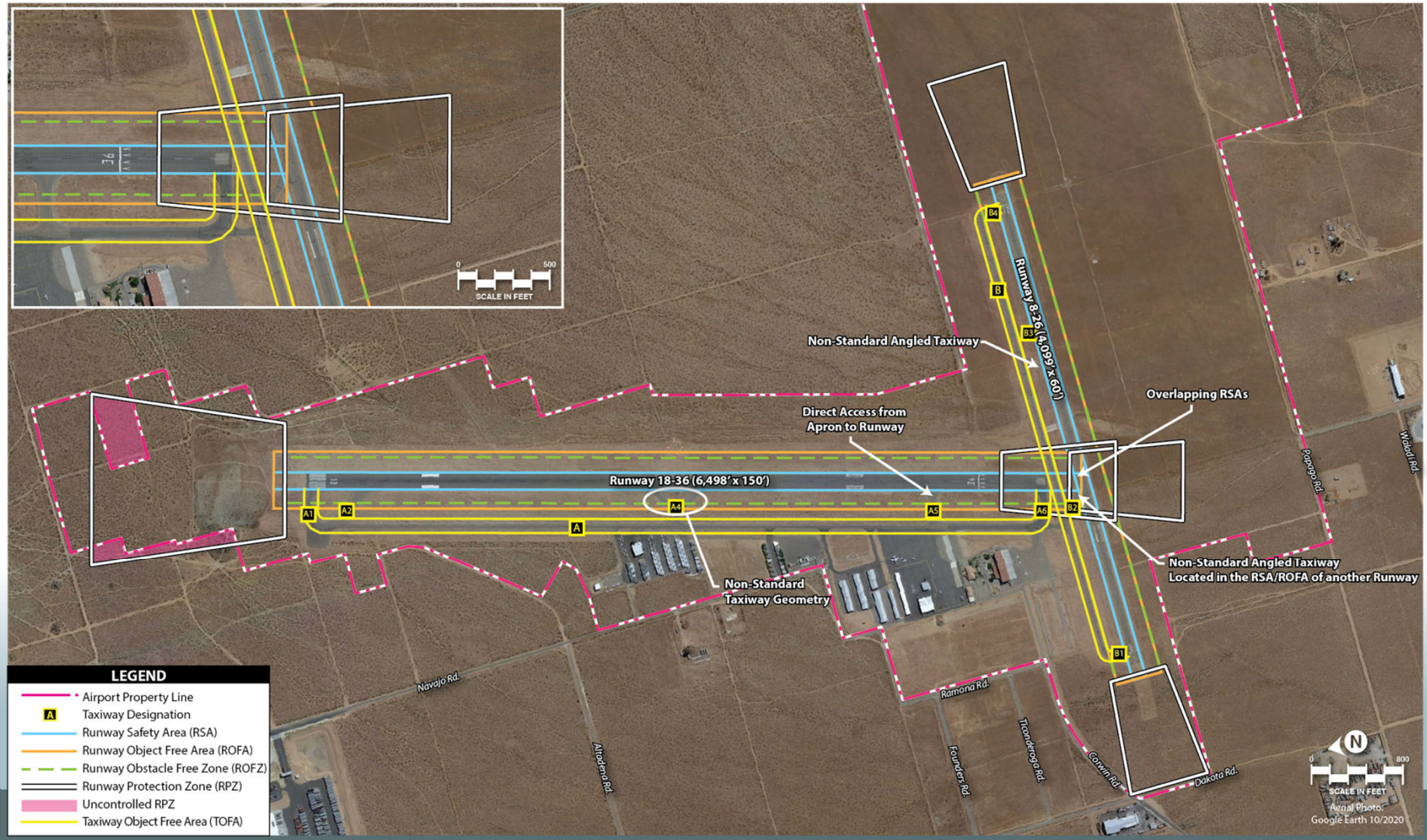


Table 4A – Runway Design Standards

AIRPORT DATA	Runway 18-36 (Existing)	Runway 18-36 (Future)	Runway 8-26 (Existing/Future)
Critical Aircraft	B-II-2A	C-II-2A	B-I-1B
Runway Design Code	B-II-4000	C-II-4000	B-I-VIS
Visibility Minimums	⅞-Mile (Rwy 18)	¾-Mile (Rwy 18)	Visual
Runway Width	75 **(150)**	100 **(150)**	60
RUNWAY DESIGN STANDARDS			
Runway Safety Area (RSA)			
Width x Length Beyond End	150 x 300	500 x 1,000	120 x 240
Runway Object Free Area (ROFA)			
Width x Length Beyond End	500 x 300	800 x 1,000	400 x 240
Runway Protection Zone (RPZ)			
Length x Inner Width x Outer Width	1,700 x 1,000 x 1,510 (18) 1,000 x 500 x 700 (36)	1,700 x 1,000 x 1,510 (18) 1,700 x 500 x 1,010 (36)	1,000 x 500 x 700
RPZ Area (Acres)	48.978 (18)/ 13.77 (36)	48.978 (18)/ 29.465 (36)	13.77

Note: All dimensions in feet unless otherwise noted.
BOLD = current width on Runway 18-36

Figure 4-1: 500’ Extension of Runway 8-26

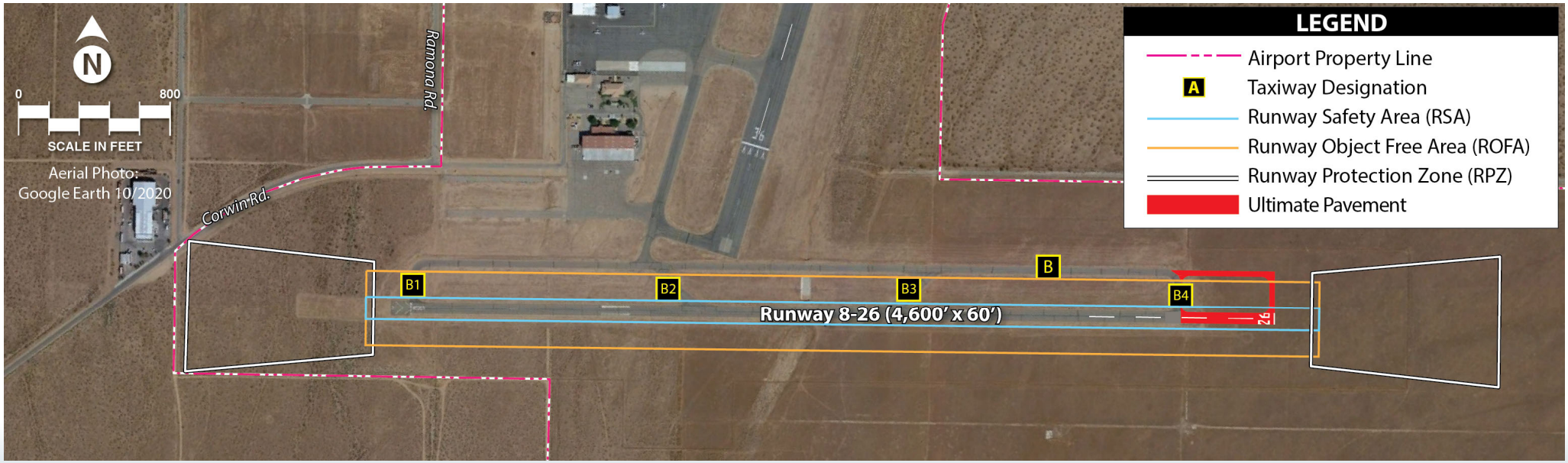


Exhibit 4.2 – Runway 8-26 Part 77 Surfaces

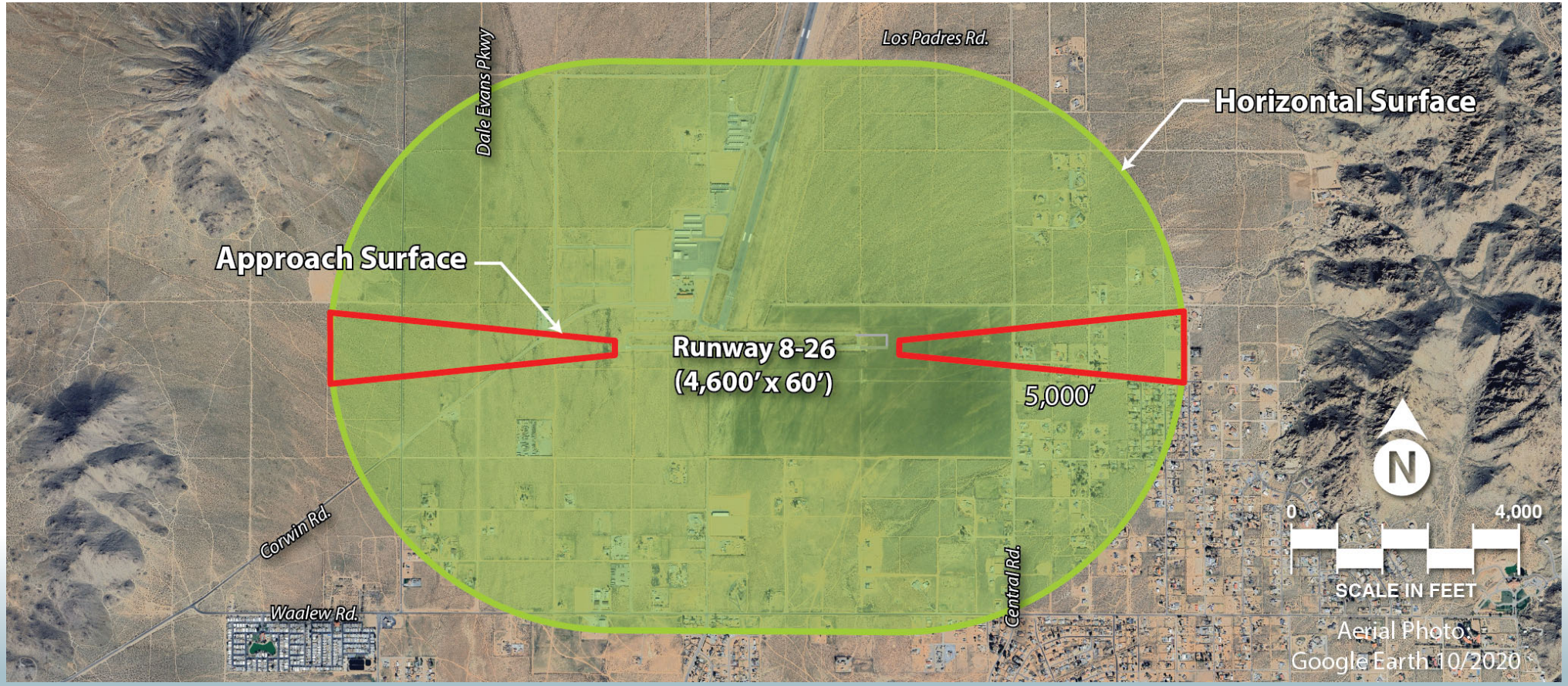


Exhibit 4C – Alternative 1: ARC B-II 360' Runway Shift

Exhibit 4D – Alternative 2: ARC B-II 6,800' Runway

Exhibit 4E – Alternative 3: ARC C-II 8,800’ Runway

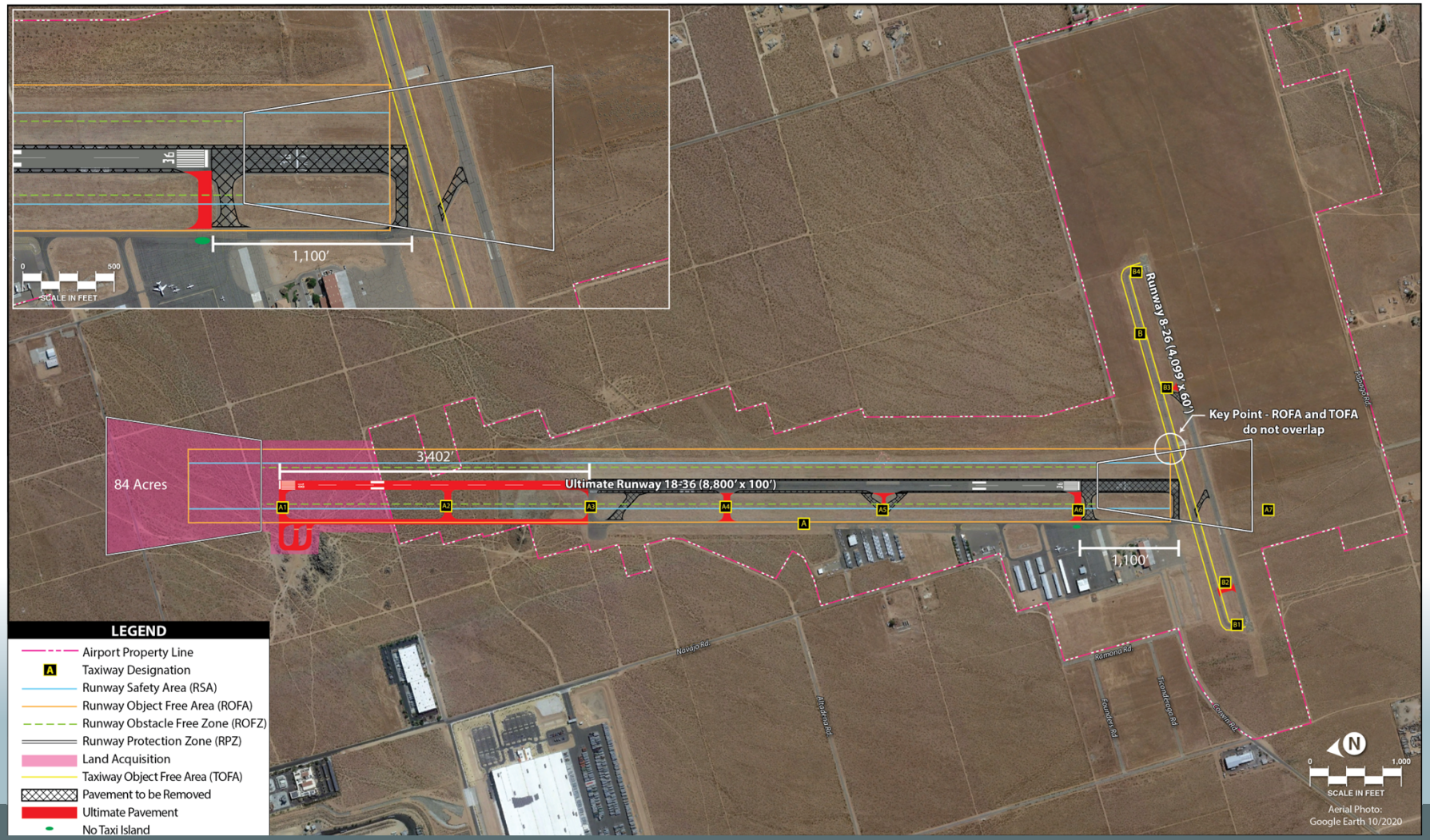


Exhibit 4F – Alternative 4: ARC C-II 8,800' Runway

Exhibit 4G – Preliminary Land Use

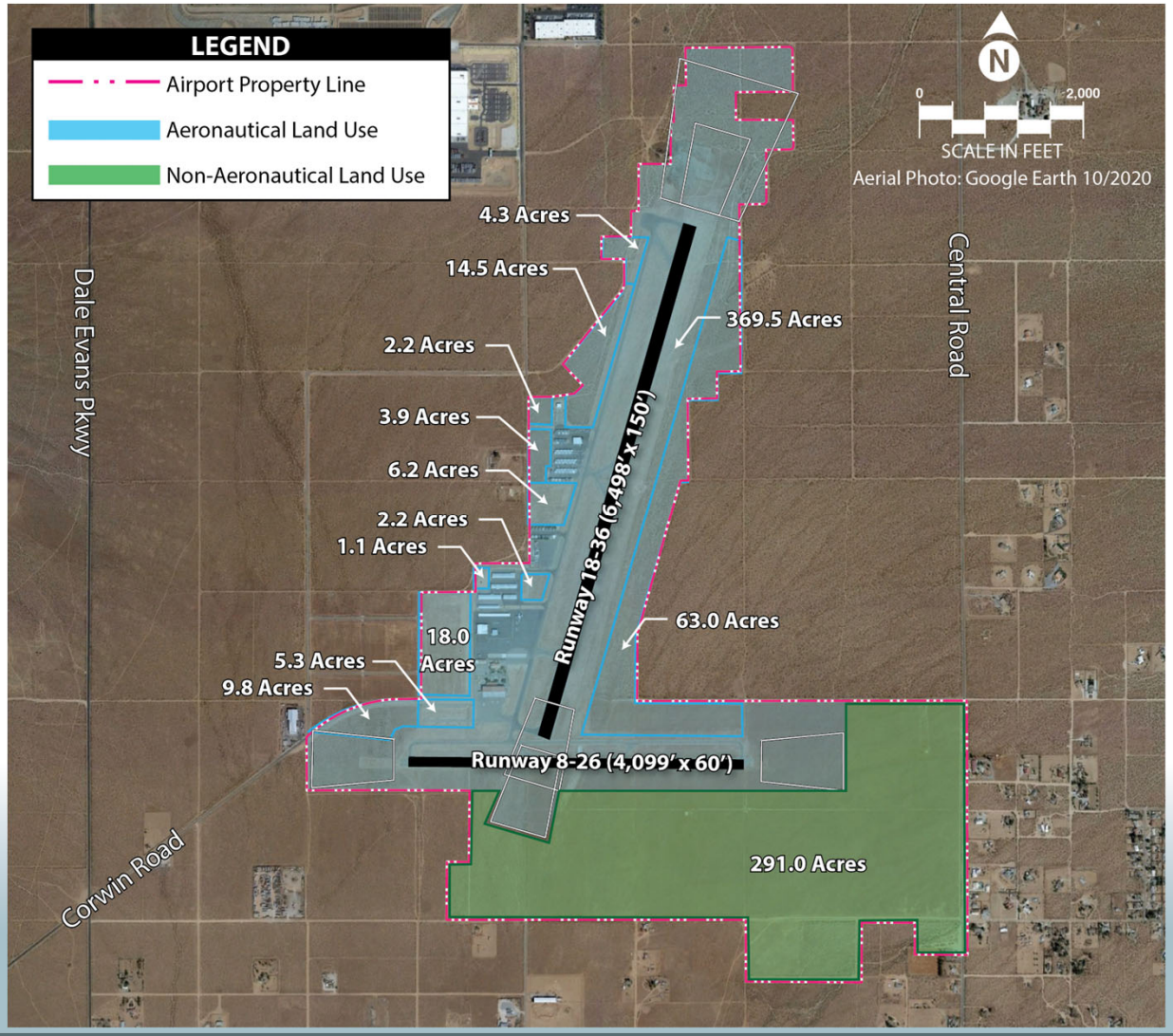
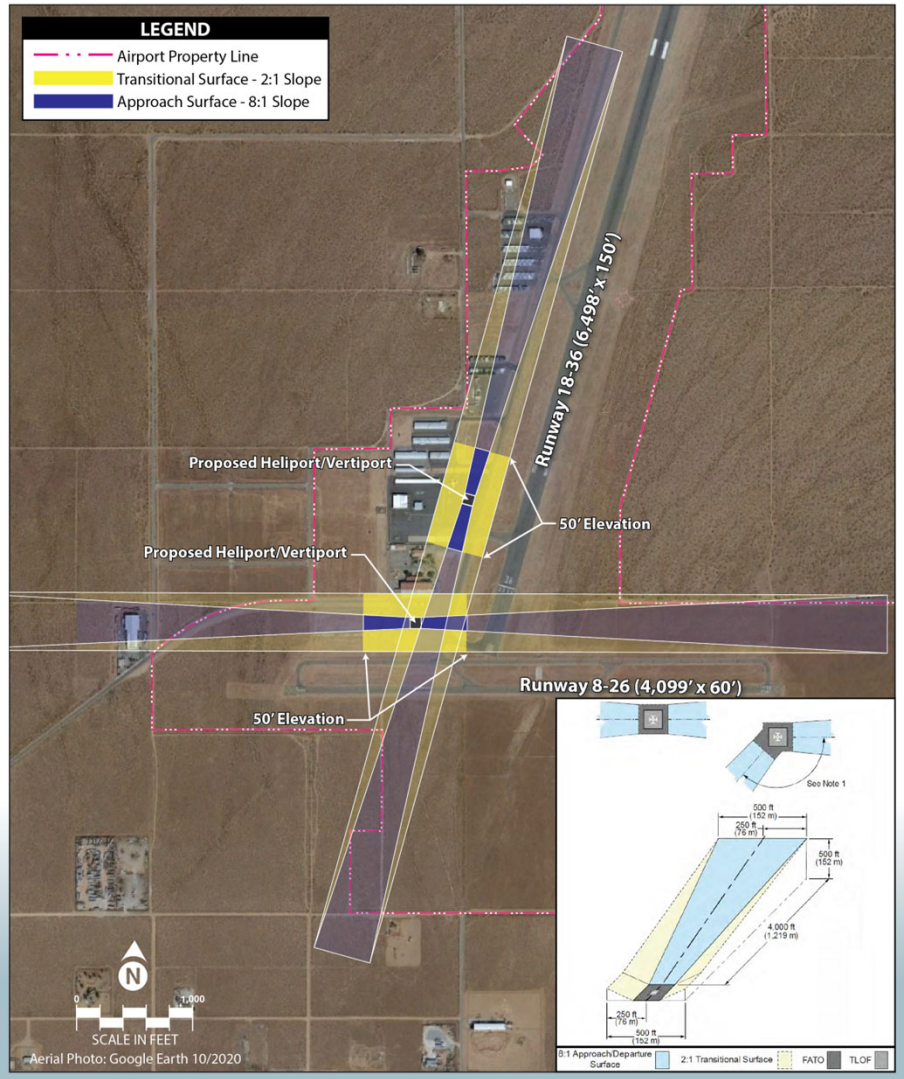


Exhibit 4H – Landside Alternative 1

Exhibit 4J – Landside Alternative 2

Exhibit 4K – Landside Alternative 3

Exhibit 4L –
Heliport/Vertiport Alternatives



NEXT STEPS

- Recommended Concept and ACIP
- PAC Meeting
- Public Information Workshop