SAN BERNARDINO COUNTY

Apple Valley Airport

Airport Master Plan

AGENDA

- Welcome and Introductions
- Master Plan Process
- Master Plan Review
- Recommended Development Concept
- Capital Improvement Program
- Additional Discussion
- Next/Last Steps

Master Plan Project Work-Flow

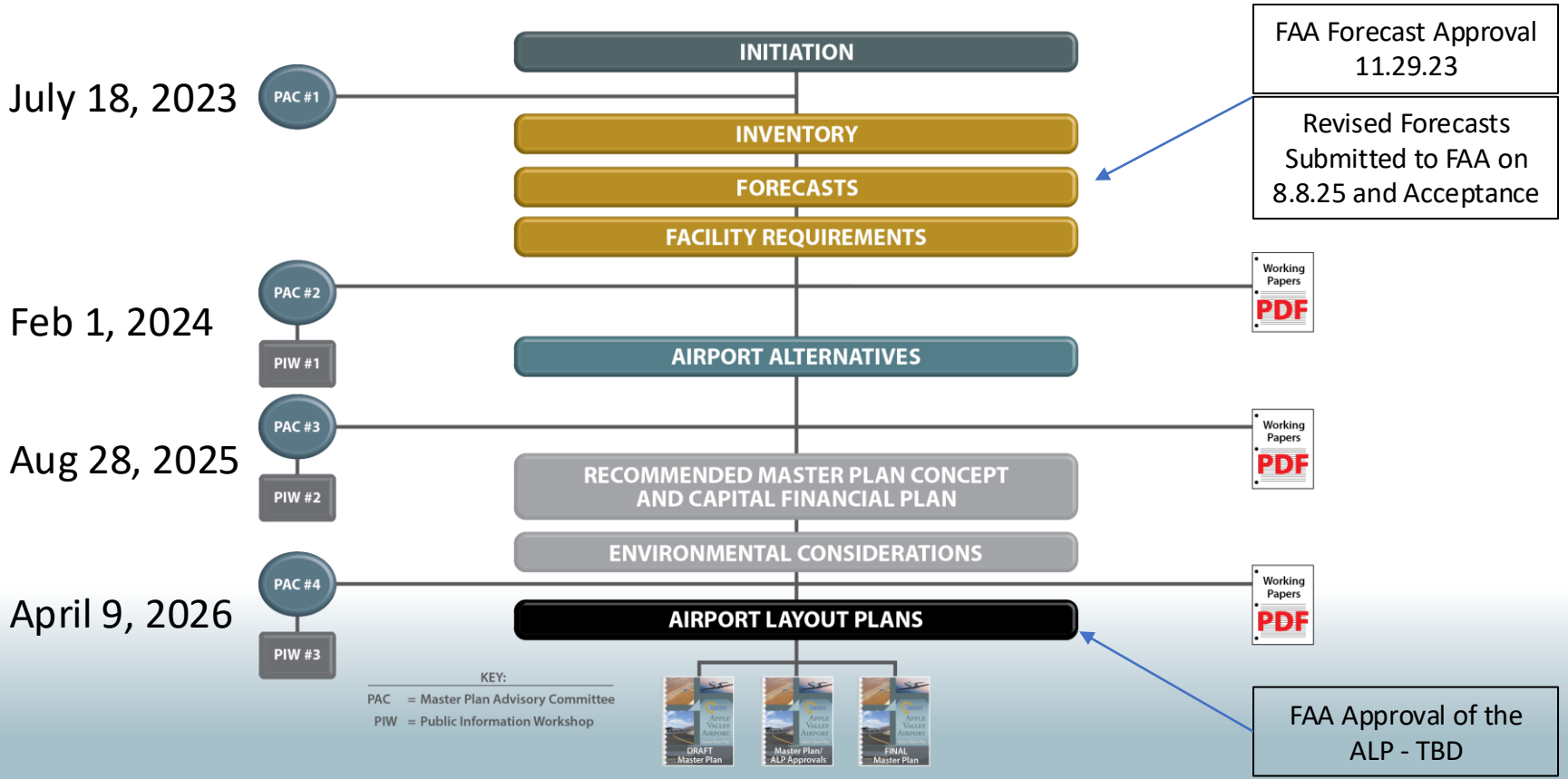
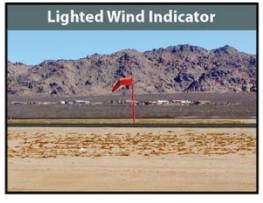


Exhibit 1C – Airside Facilities



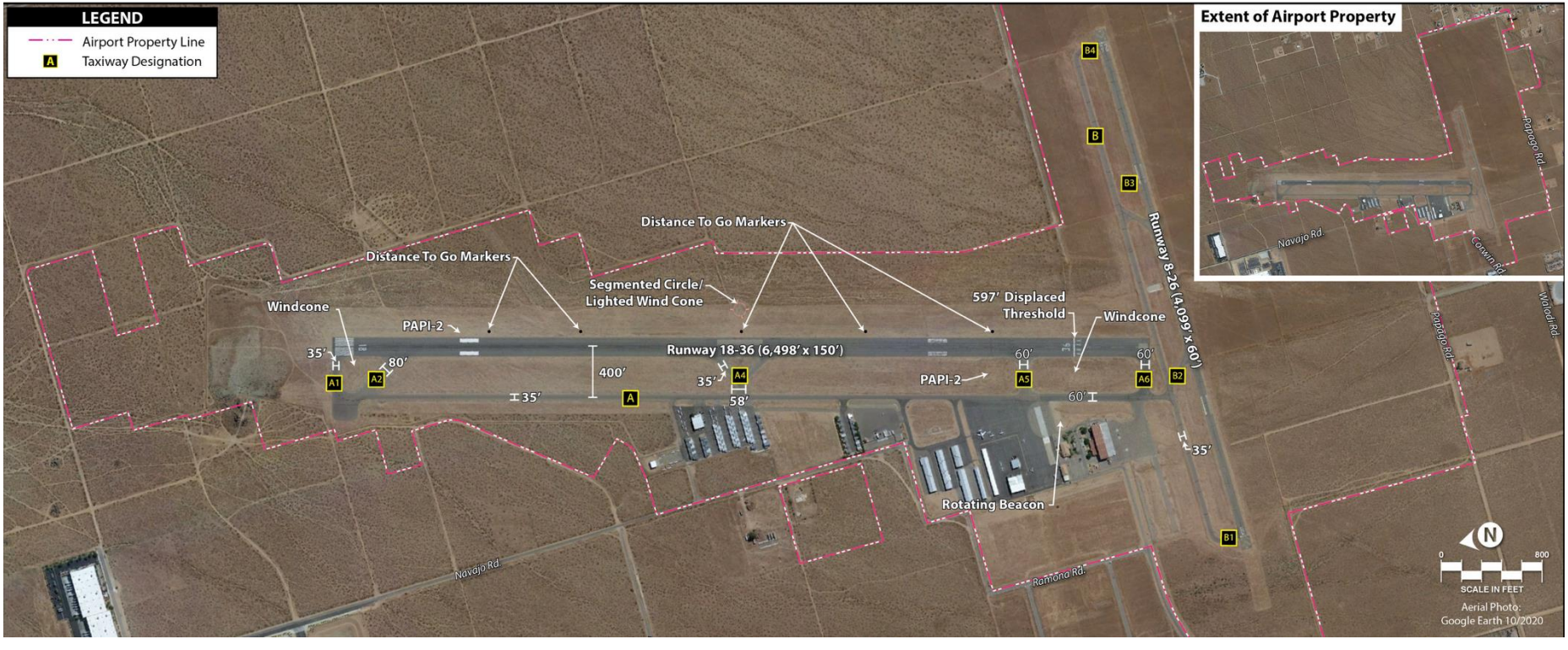
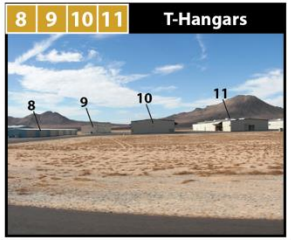


Exhibit 1E – Landside Facilities

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



LEGEND

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

N

0 300

SCALE IN FEET

Aerial Photo: Google Earth 10/2020

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%**
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

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 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

★ Current Critical Aircraft

★ Future Critical Aircraft

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

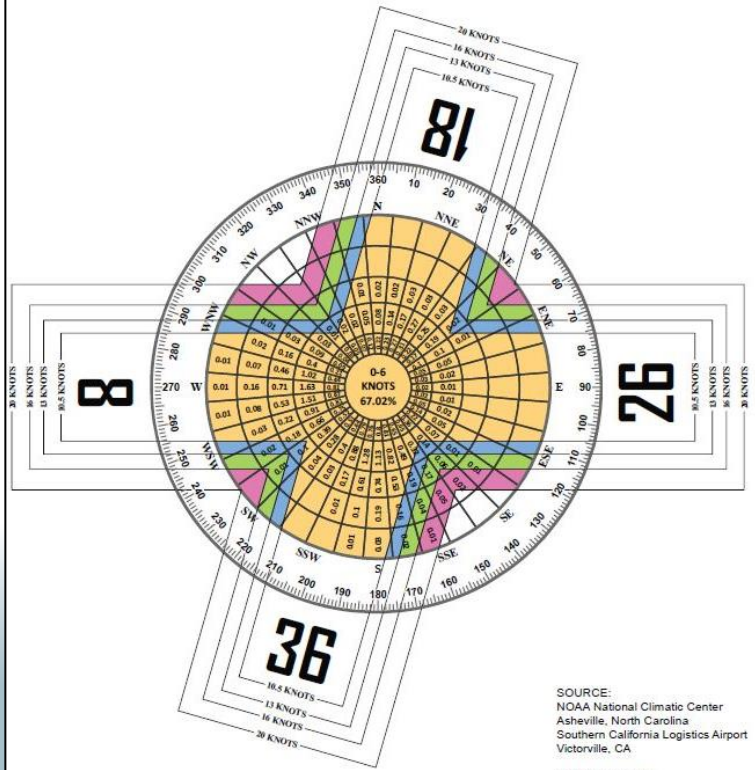
Chapter Three

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%



SOURCE:
NOAA National Climatic Center
Asheville, North Carolina
Southern California Logistics Airport
Victorville, CA

OBSERVATIONS:
197,713 All Weather Observations
Jan. 1, 2011 - Dec, 31 2020

Exhibit 3C – Safety Areas

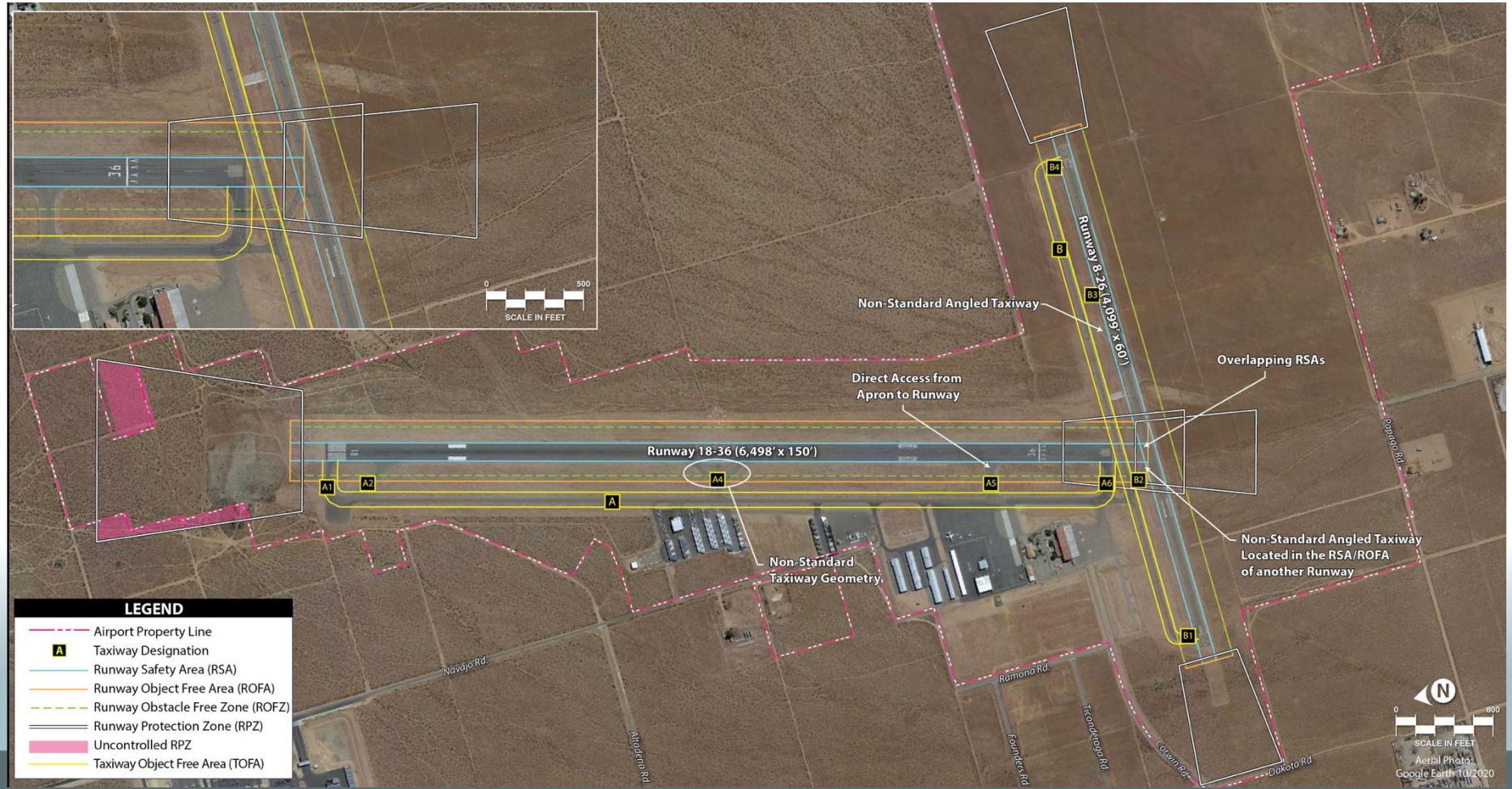


Exhibit 5B – Overlapping Runway Safety Areas

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				

Table 5B – Hangar Estimate

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

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

Chapter Four

Alternatives

SAN BERNARDINO COUNTY

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

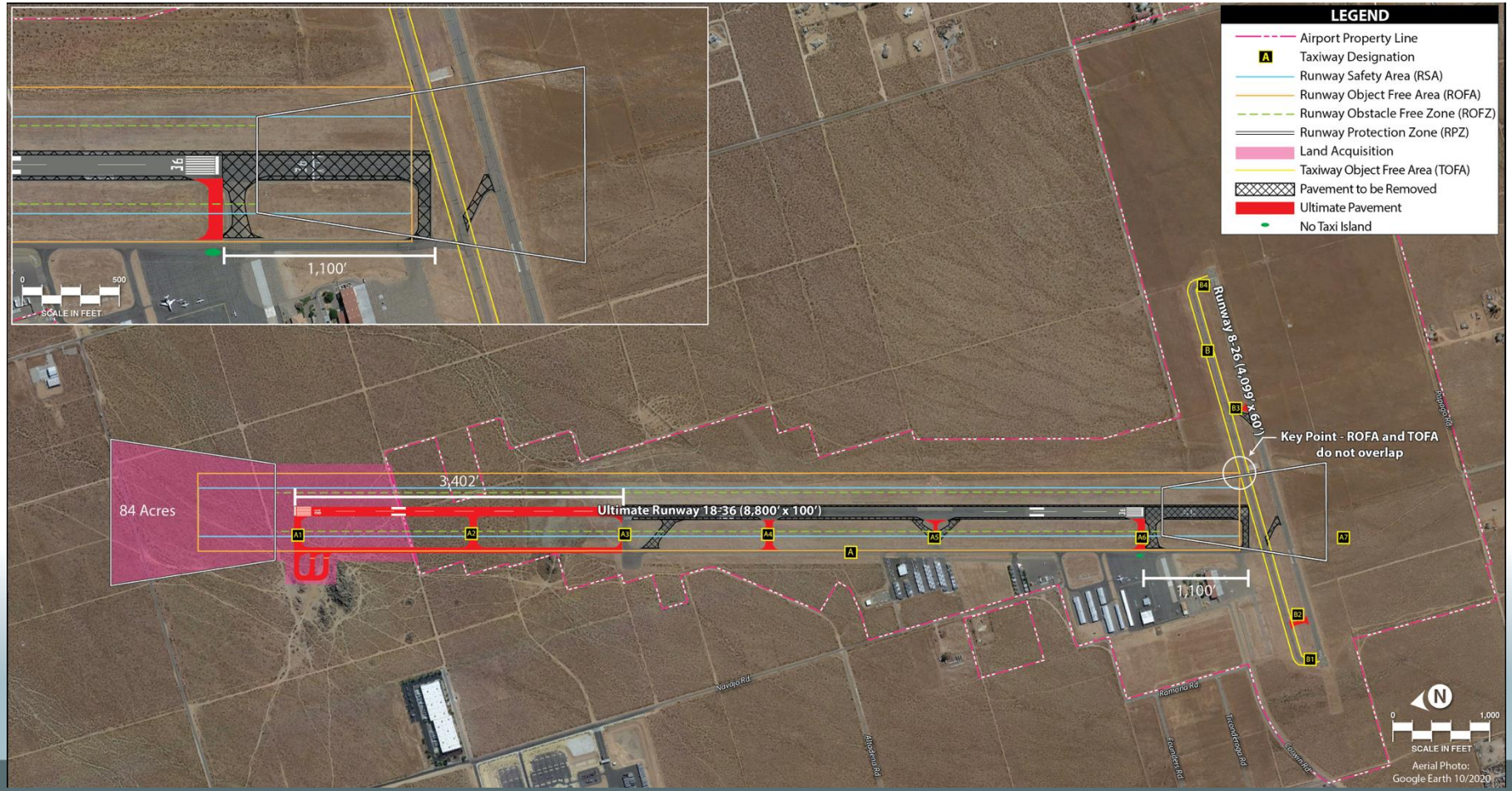
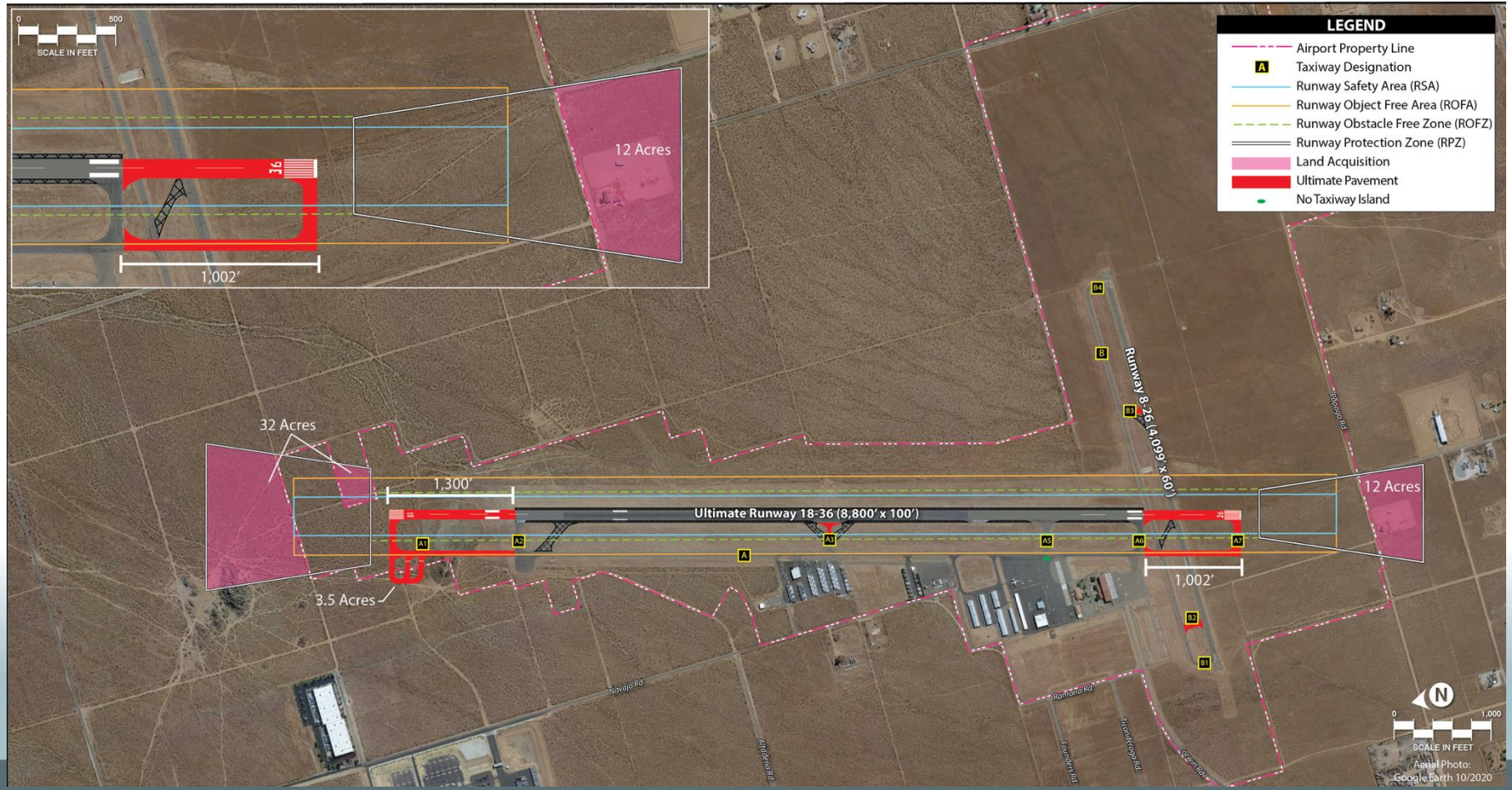


Exhibit 4F – Alternative 4: ARC C-II 8,800' Runway



Examples of Crossing Runways

Chino Airport (CNO)

Riverside Municipal (RAL)

Barstow-Daggett (DAG)

Mojave Air and
Space Port (MHV)

Exhibit 4H – Landside Alternative 1

Exhibit 4J – Landside Alternative 2

Chapter Five

Recommended Master plan Concept

SAN BERNARDINO COUNTY

Exhibit 5A – Recommended Development Plan

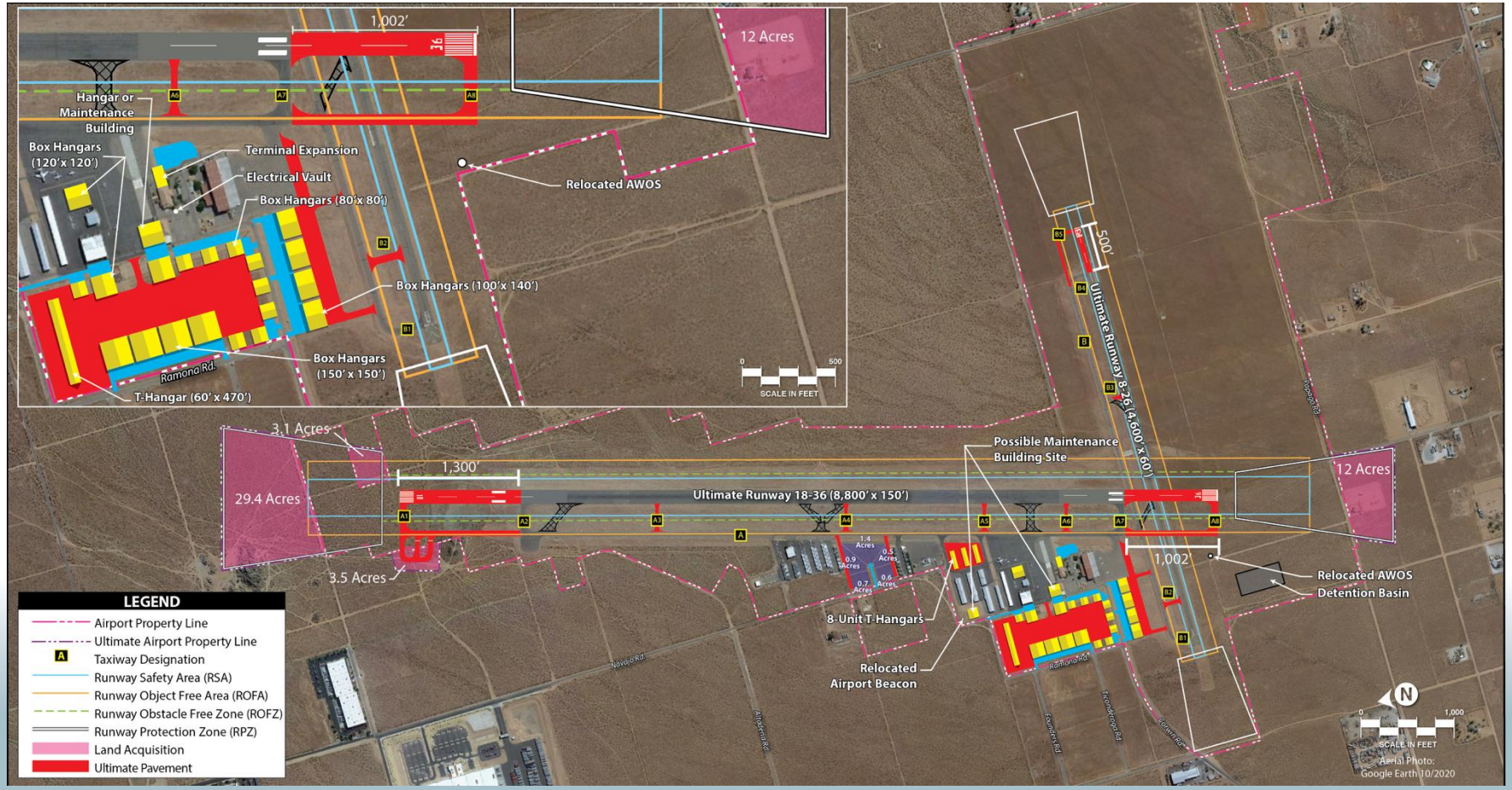
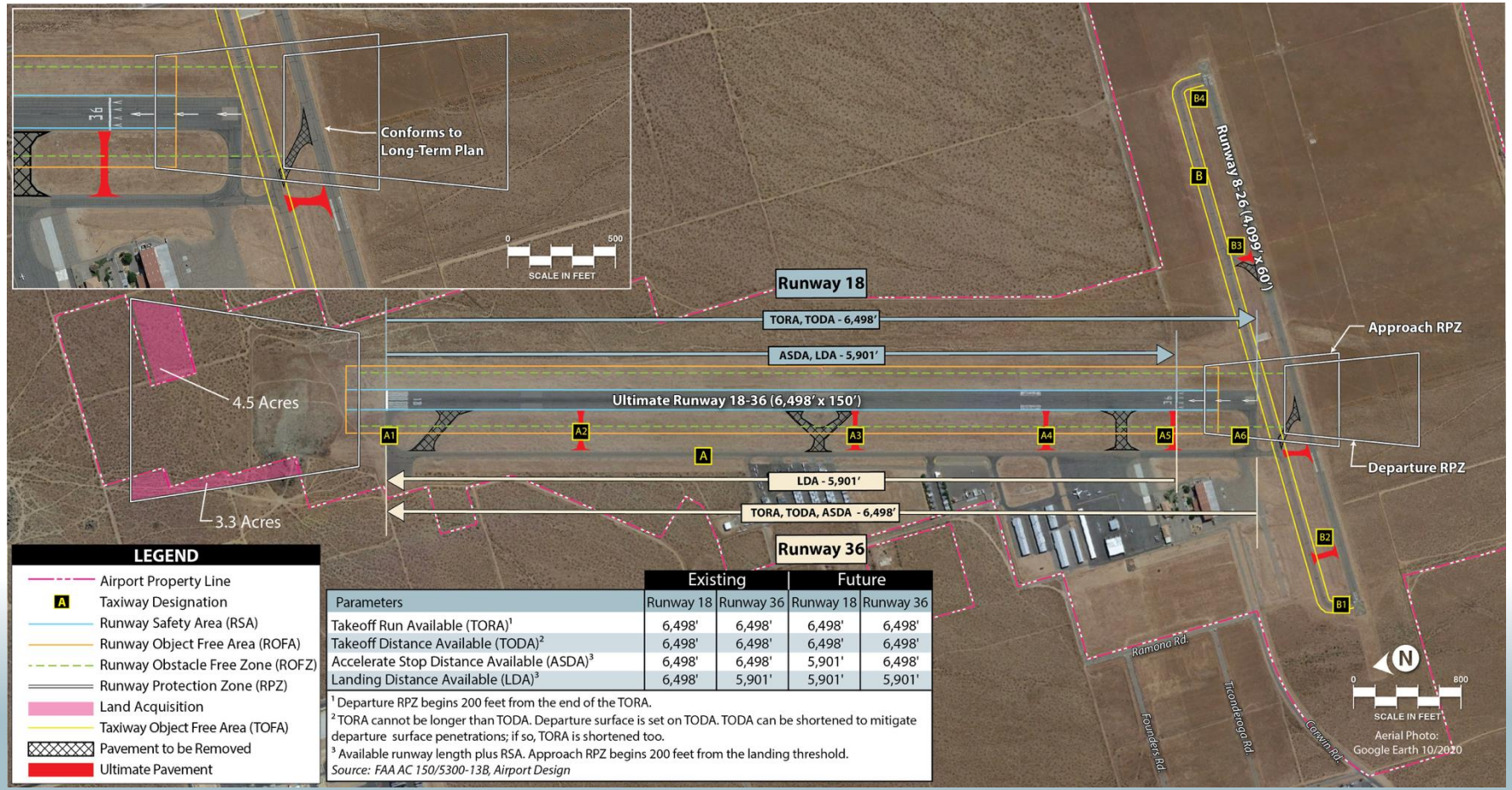


Exhibit 5C – Interim Overlapping RSA Mitigation



LEGEND

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

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

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

Exhibit 4.2 – Runway 8-26 Part 77 Surfaces

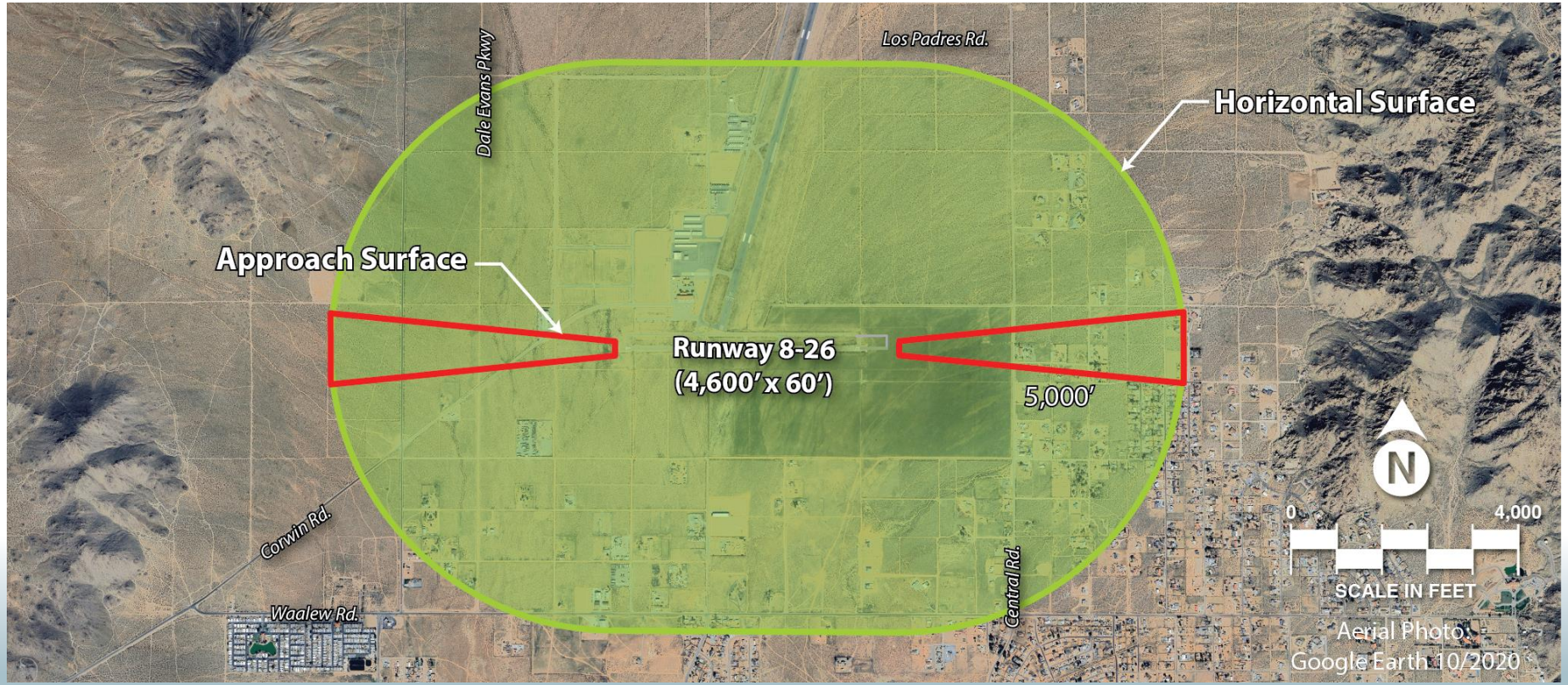
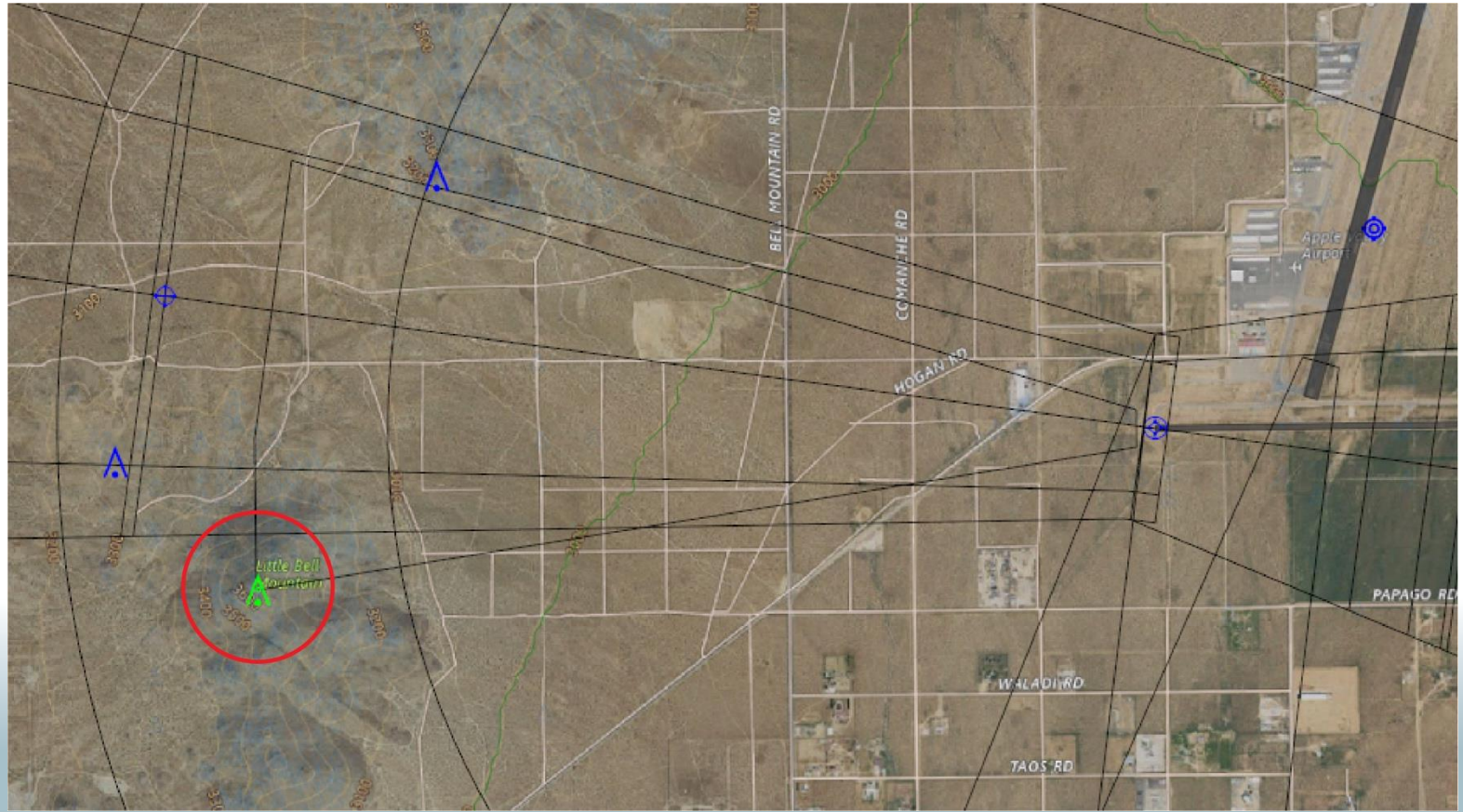


Figure 5.1– TERPS Map Runway 8 Penetration



TERPS: U.S. Standard for Terminal Instrument Procedures

Runway 8-26 TERPS Analysis

- Runway 8 could support a GPS LP instrument approach with 1-mile visibility minimums and 600’ cloud ceiling height, however, due to 20:1 terrain penetration, this would be a day-time only instrument approach.
- Terrain penetration of the TERPS surface by Little Bell Mountain prohibits nighttime operations.
- Other terrain penetrations to the TERPS surfaces prevent an instrument approach to Runway 26.
- Runway 8-26 cannot support nighttime operations due to the current TERPS surface penetrations.

Exhibit 5D – On-Airport Land Use Map

Exhibit 5H – Existing Noise Contours

Exhibit 5H – Ultimate Noise Contours

Chapter Six

Capital Improvement Program

SAN BERNARDINO COUNTY

Exhibit 6B – Development Staging

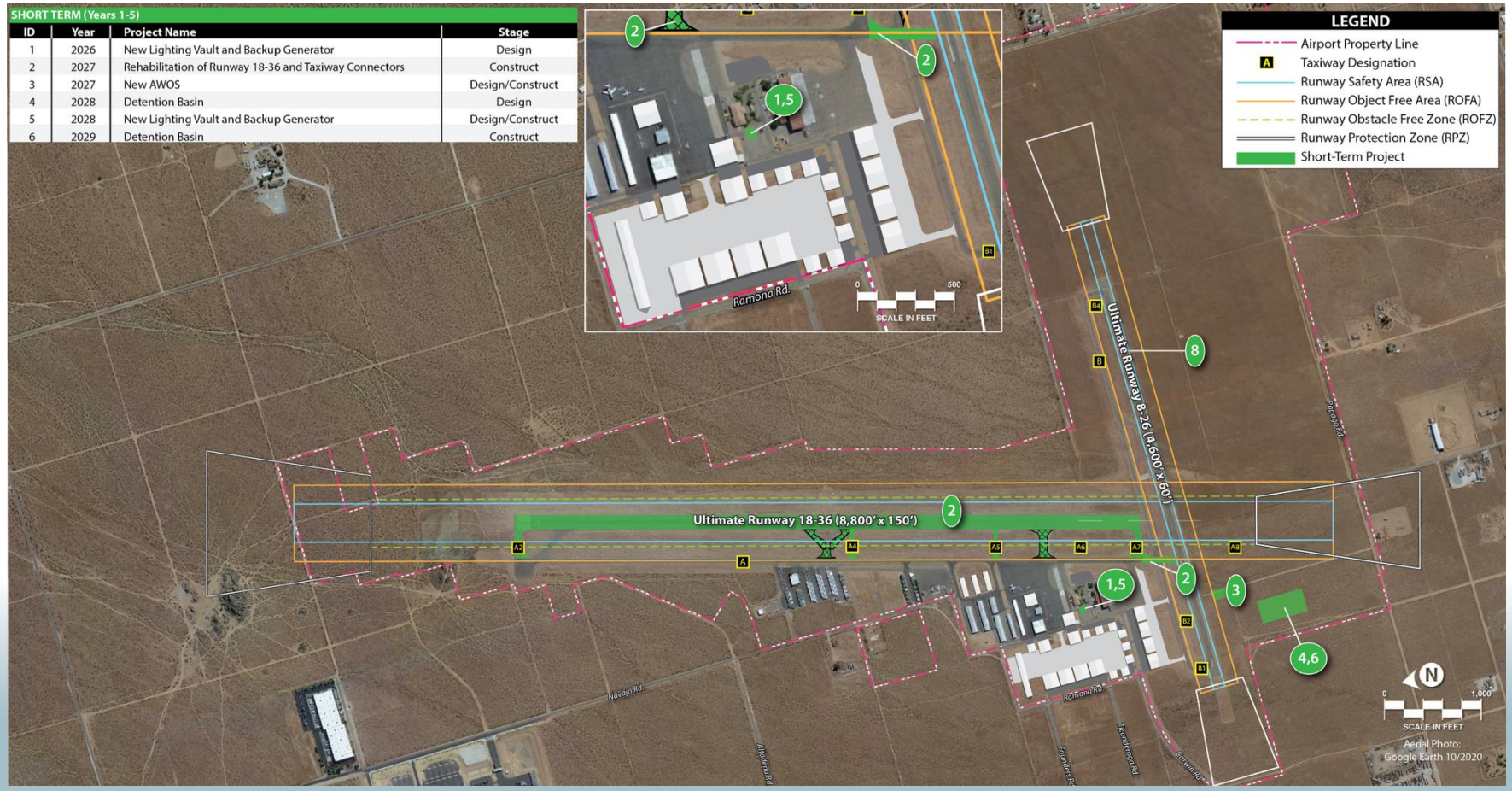


Exhibit 6B – Development Staging

INTERMEDIATE TERM (Years 6-10)

ID	Project Name	Stage
7	Replace Taxiway B3	Design/Construct
8	Add Taxiway B2	Design/Construct
9	Replacement Maintenance Building	Design/Construct
10	Taxilane 1	Design/Construct
11	Taxilane 2	Design/Construct
12	West New Apron/Taxilane Construction	Design/Construct
13	SW New Taxilane/Apron Construction	Design/Construct
14	North T-Hangar Pavement Rehabilitation	Design/Construct
15	Middle Port-a-Port Taxilane Rehabilitation	Design/Construct
16	Terminal Apron Rehabilitation	Design/Construct
17	Taxiway A Rehabilitation	Design/Construct
18	Runway 8-26 Rehabilitation	Design/Construct
19	Taxiway B Rehabilitation	Design/Construct
20	Terminal Building Expansion	Design/Construct
21	Fuel Apron Rehabilitation	Design/Construct
22	Terminal Apron T-Hangar Taxilane Rehabilitation	Design/Construct

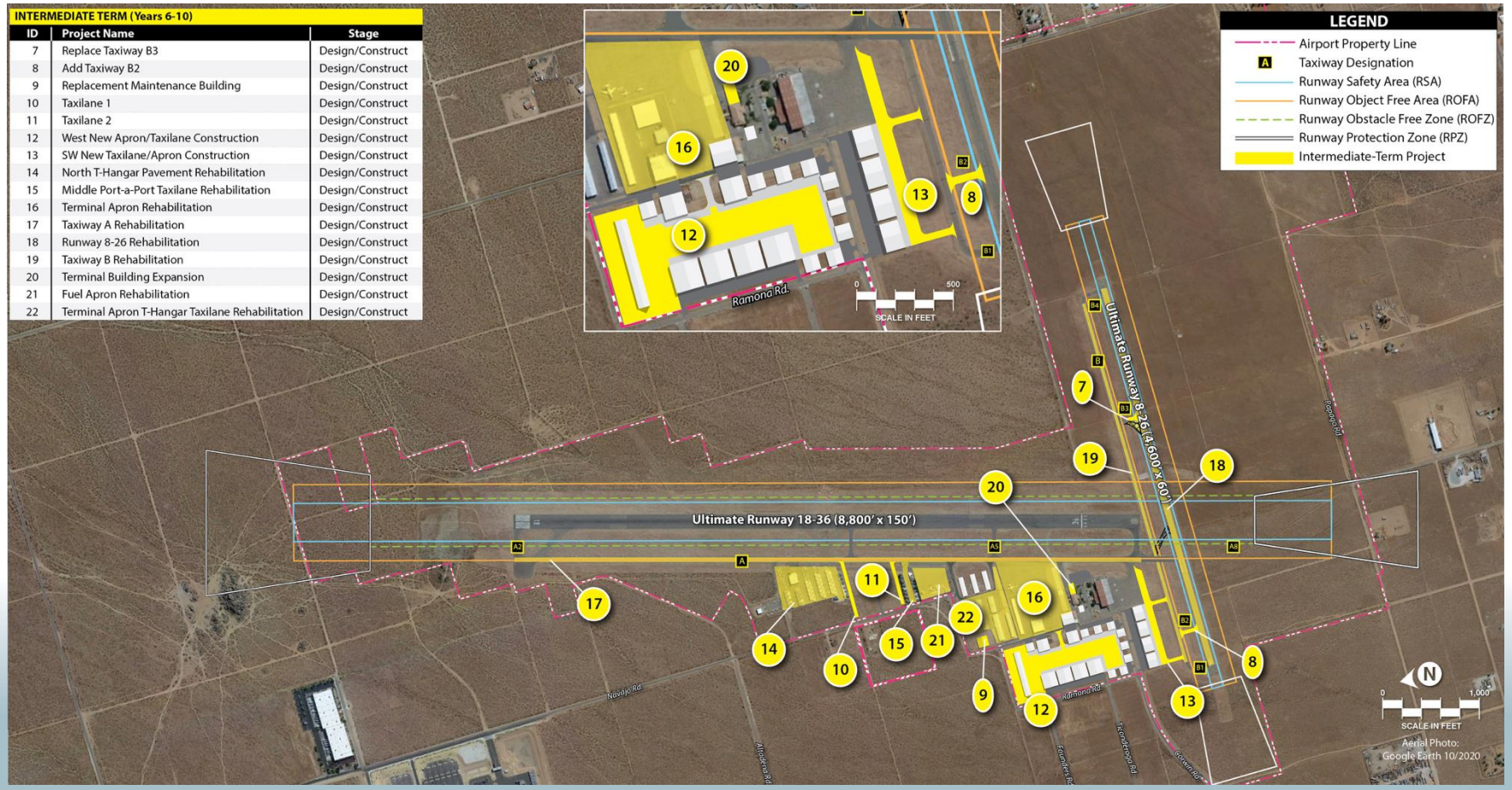


Exhibit 6B – Development Staging

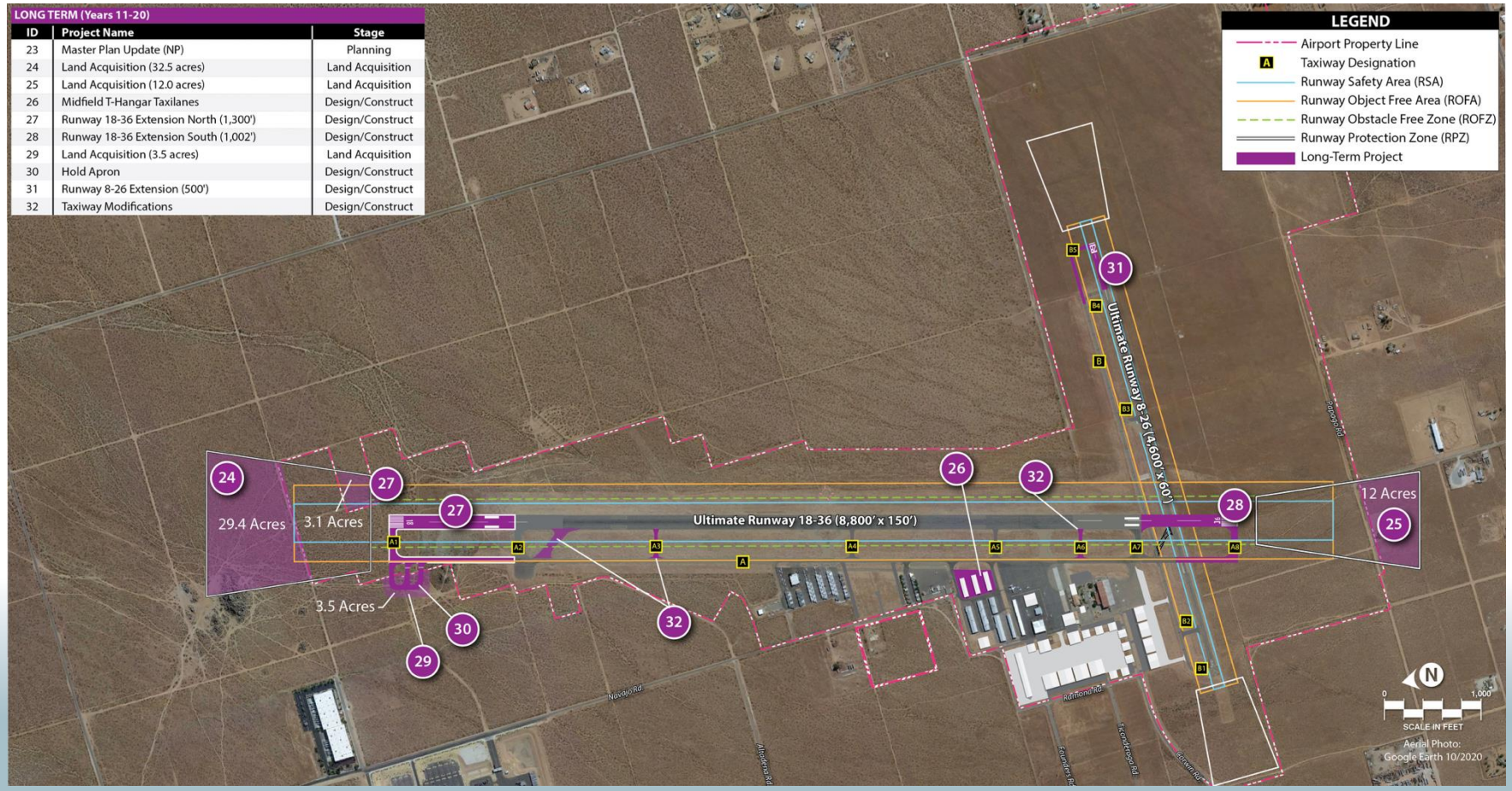


Exhibit 6A – Capital Improvement Program

Project No.	Timeframe	Project Description	Category	NPR	Total	Federal Share	State Share	Local Share
SHORT TERM (Years 1-5)								
1	2026	New Lighting Vault and Backup Generator	Design	39	$350,000	$332,500	$0	$17,500
2	2027	Rehabilitation of Runway 18-36 and Taxiway Connectors	Construct	81	$8,700,000	$7,830,000	$150,000	$720,000
3	2027	New AWOS	Design/Construct	70	$700,000	$630,000	$0	$70,000
4	2028	Detention Basin	Design	39	$200,000	$180,000	$0	$20,000
5	2028	New Lighting Vault and Backup Generator	Construct	39	$3,000,000	$2,700,000	$135,000	$165,000
6	2029	Detention Basin	Construct	39	$1,500,000	$1,350,000	$67,500	$82,500
		SHORT TERM TOTAL			**$14,450,000**	**$13,022,500**	**$352,500**	**$1,075,000**

KEY
NPR: National Priority Rating
AWOS: Automated Weather Observing System

Exhibit 6A – Capital Improvement Program

Project No.	Timeframe	Project Description	Category	NPR	Total	Federal Share	State Share	Local Share
INTERMEDIATE TERM (Years 6-10)								
7	Intermediate Term	Replace Taxiway B3	Design/Construct	72	$299,000	$269,100	$13,455	$16,445
8		Add Taxiway B2	Design/Construct	72	$299,000	$269,100	$13,455	$16,445
9		Replacement Maintenance Building	Design/Construct	26	$1,764,000	$1,587,600	$79,380	$97,020
10		Taxilane 1	Design/Construct	72	$235,000	$211,500	$10,575	$12,925
11		Taxilane 2	Design/Construct	72	$186,000	$167,400	$8,370	$10,230
12		West New Apron/Taxilane Construction	Design/Construct	72	$4,638,000	$4,174,200	$150,000	$313,800
13		SW New Taxilane/Apron Construction	Design/Construct	72	$1,060,000	$954,000	$47,700	$58,300
14		North T-Hangar Pavement Rehabilitation	Design/Construct	66	$1,382,000	$1,243,800	$62,190	$76,010
15		Middle Port-a-Port Taxilane Rehabilitation	Design/Construct	72	$201,000	$180,900	$9,045	$11,055
16		Terminal Apron Rehabilitation	Design/Construct	66	$3,450,000	$3,105,000	$150,000	$195,000
17		Taxiway A Rehabilitation	Design/Construct	72	$5,985,000	$5,386,500	$150,000	$448,500
18		Runway 8-26 Rehabilitation	Design/Construct	76	$5,569,000	$5,012,100	$150,000	$406,900
19		Taxiway B Rehabilitation	Design/Construct	72	$2,433,000	$2,189,700	$109,485	$133,815
20		Terminal Building Expansion	Design/Construct	24	$1,190,000	$150,000	$7,500	$1,032,500
21		Fuel Apron Rehabilitation	Design/Construct	66	$571,000	$513,900	$25,695	$31,405
22		Terminal Apron T-Hangar Taxilane Rehabilitation	Design/Construct	66	$1,134,000	$1,020,600	$51,030	$62,370
		INTERMEDIATE TERM TOTAL			**$30,396,000**	**$26,435,400**	**$1,037,880**	**$2,922,720**

KEY
NPR: National Priority Rating
AWOS: Automated Weather Observing System

Exhibit 6A – Capital Improvement Program

Project No.	Timeframe	Project Description	Category	NPR	Total	Federal Share	State Share	Local Share
LONG TERM (Years 11-20)								
23	Long Term	Master Plan Update (NP)	Planning	68	$750,000	$675,000	$33,750	$41,250
24		Land Acquisition (32.5 acres)	Land Acquisition	25	$1,138,000	$1,024,200	$51,210	$62,590
25		Land Acquisition (12.0 acres)	Land Acquisition	25	$420,000	$378,000	$18,900	$23,100
26		Midfield T-Hangar Taxilanes	Design/Construct	72	$791,000	$711,900	$35,595	$43,505
27		Runway 18-36 Extension North (1,300')	Design/Construct	64	$6,488,000	$5,839,200	$150,000	$498,800
28		Runway 18-36 Extension South (1,002')	Design/Construct	64	$5,597,000	$5,037,300	$150,000	$409,700
29		Land Acquisition (3.5 acres)	Land Acquisition	25	$123,000	$110,700	$5,535	$6,765
30		Hold Apron	Design/Construct	56	$1,194,000	$1,074,600	$53,730	$65,670
31		Runway 8-26 Extension (500')	Design/Construct	64	$854,000	$768,600	$38,430	$46,970
32		Taxiway Modifications	Design/Construct	72	$701,000	$630,900	$31,545	$38,555
		LONG TERM TOTAL			**$18,056,000**	**$16,250,400**	**$568,695**	**$1,236,905**
		GRAND TOTAL			**$62,902,000**	**$55,708,300**	**$1,959,075**	**$5,234,625**

KEY
NPR: National Priority Rating
AWOS: Automated Weather Observing System

Airport Funding Sources

Federal Grants
- Airport Improvement Program (AIP): $4.0 billion per year for 4 years. (90%/10%)
    - Entitlements (NPE or Entitlements): Eligible for up to $150,000 annually
    - Small Airport Fund: Eligible
    - Discretionary: Eligible but nationally competitive
    - Set-Aside Funds: Not eligible (noise projects, MAP, relievers)
- Infrastructure Investment and Jobs Act (IIJA): $20 billion over 4 years (ends 2026)

State Aid to Airports
- AIP Grant Match: Half of the matching amount (5.00% of the federal portion)
- Acquisition and Development Program: Caltrans 90% project funding based on priority
- Local Airport Loan Program: Low interest loan program

Local Funding
- Airport Revenue
- Bonding
- Leasehold Financing

Table 6A – AIG Funding Availability

Fiscal year (FY) funds are first made available:	AIG funds available to APV	Funds must be obligated (under grant) by[1]	Any unobligated funds must be obligated (under grant) in FY:
2022	$203,000	30-Sep-25	2026
2023	$203,000	30-Sep-26	2027
2024	$203,000	30-Sep-27	2028
2025	$203,000	30-Sep-28	2029
2026	$203,000	30-Sep-29	2030
Total	**$1,015,000**		

[1]Applications for grants should be submitted by June to meet the September 30 obligation date.

NEXT STEPS

- Public Information Workshop (Today)
- Receive and Apply Final Comments/Edits
- Local Approvals
- FAA ALP Approval
- Final Document Deliverables