



# APPLE VALLEY AIRPORT

Airport Master Plan



# PLANNING ADVISORY COMMITTEE

Meeting #2 - Phase 1

February 1, 2024 / 12:00 - 1:30 p.m.

## AGENDA

1. Welcome/Introductions
2. Master Plan Process
3. Inventory/Forecasts/Facility Requirements
4. Initial Development Alternatives
5. Adjournment

## Master Plan Project Work-Flow





Chapter One

# INVENTORY



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**

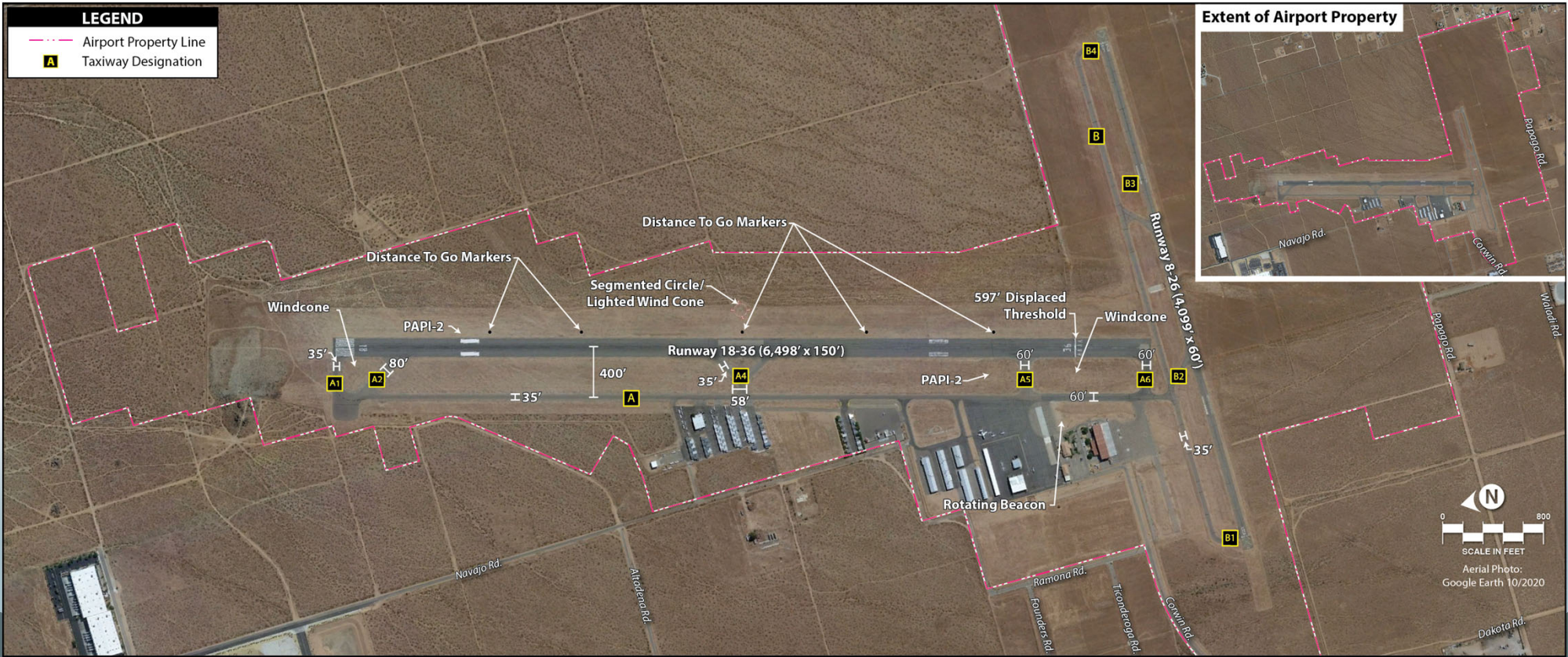
National GA  
(CMA, SBD) 107

Regional GA  
(VCV, OXR) 501

Local GA  
(**APV**, L35 – Big Bear) 1,179

Basic/Unclassified GA  
(L17 – Taft/Kern Co.) 1,117

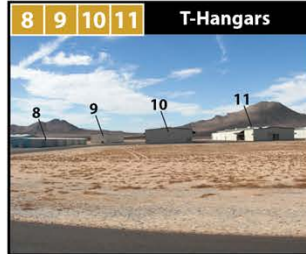
## Exhibit 1C – Airside Facilities





## Exhibit 1F – 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
<b>TOTALS</b>		<b>231,800</b>	<b>198,100</b>	<b>33,700</b>	<b>145</b>



**LEGEND**

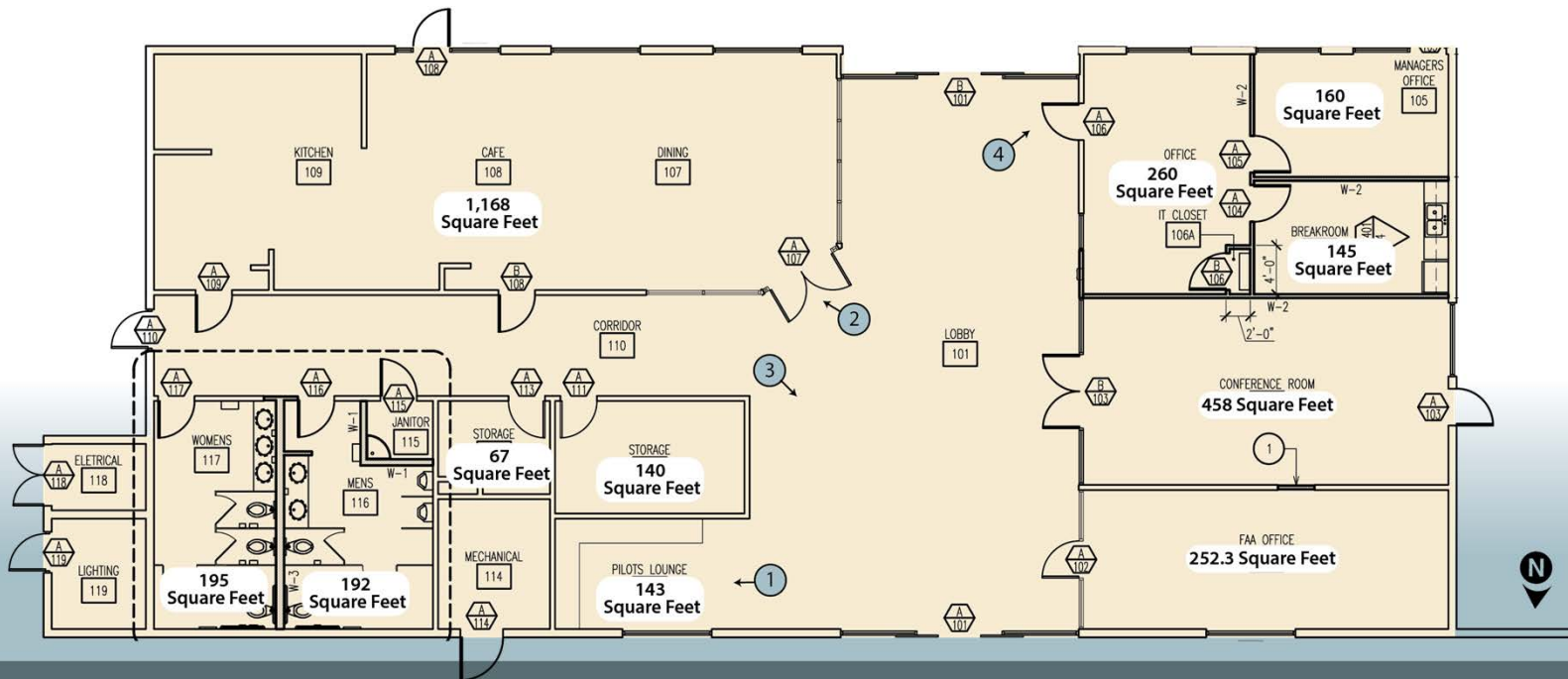
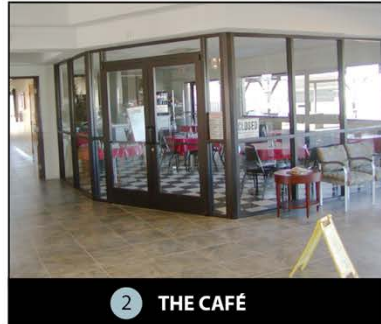
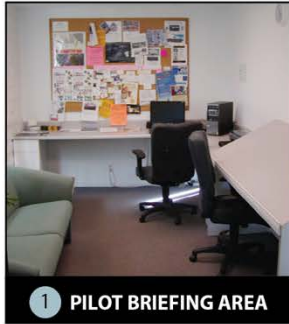
- Airport Property Line
- A Taxiway Designation
- 1 Building Identification

SCALE IN FEET  
Aerial Photo: Google Earth 10/2020





### Exhibit 1G – Terminal Building



# Exhibit 1M – Instrument Approach Procedure

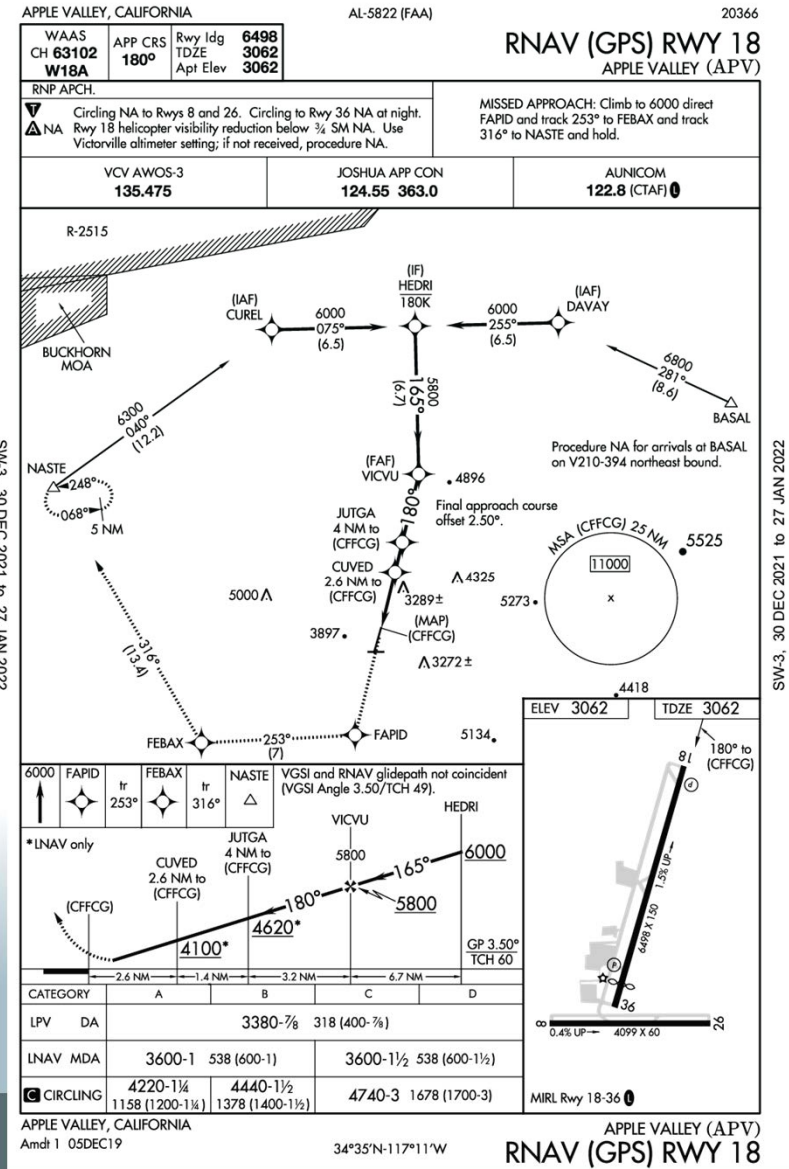
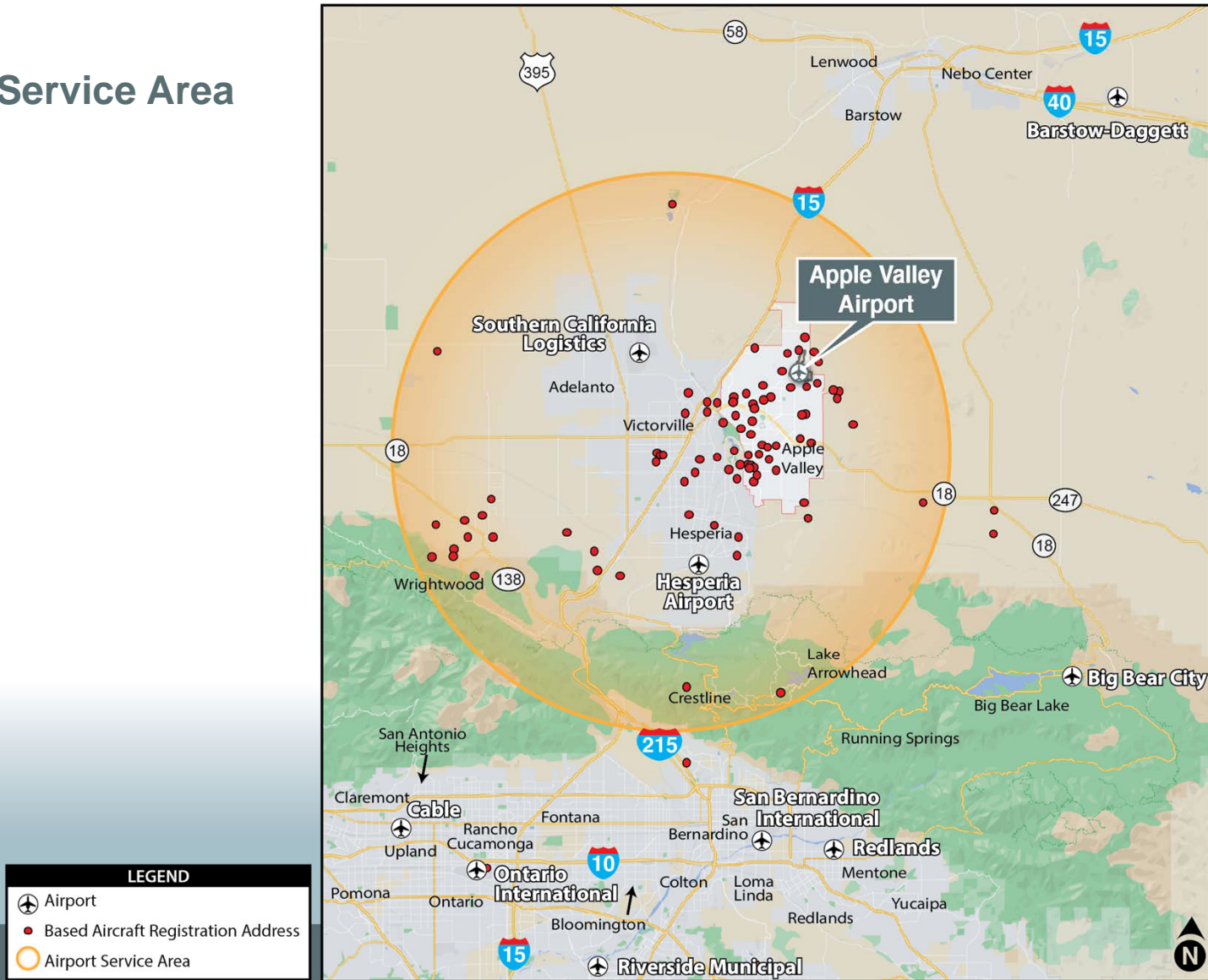


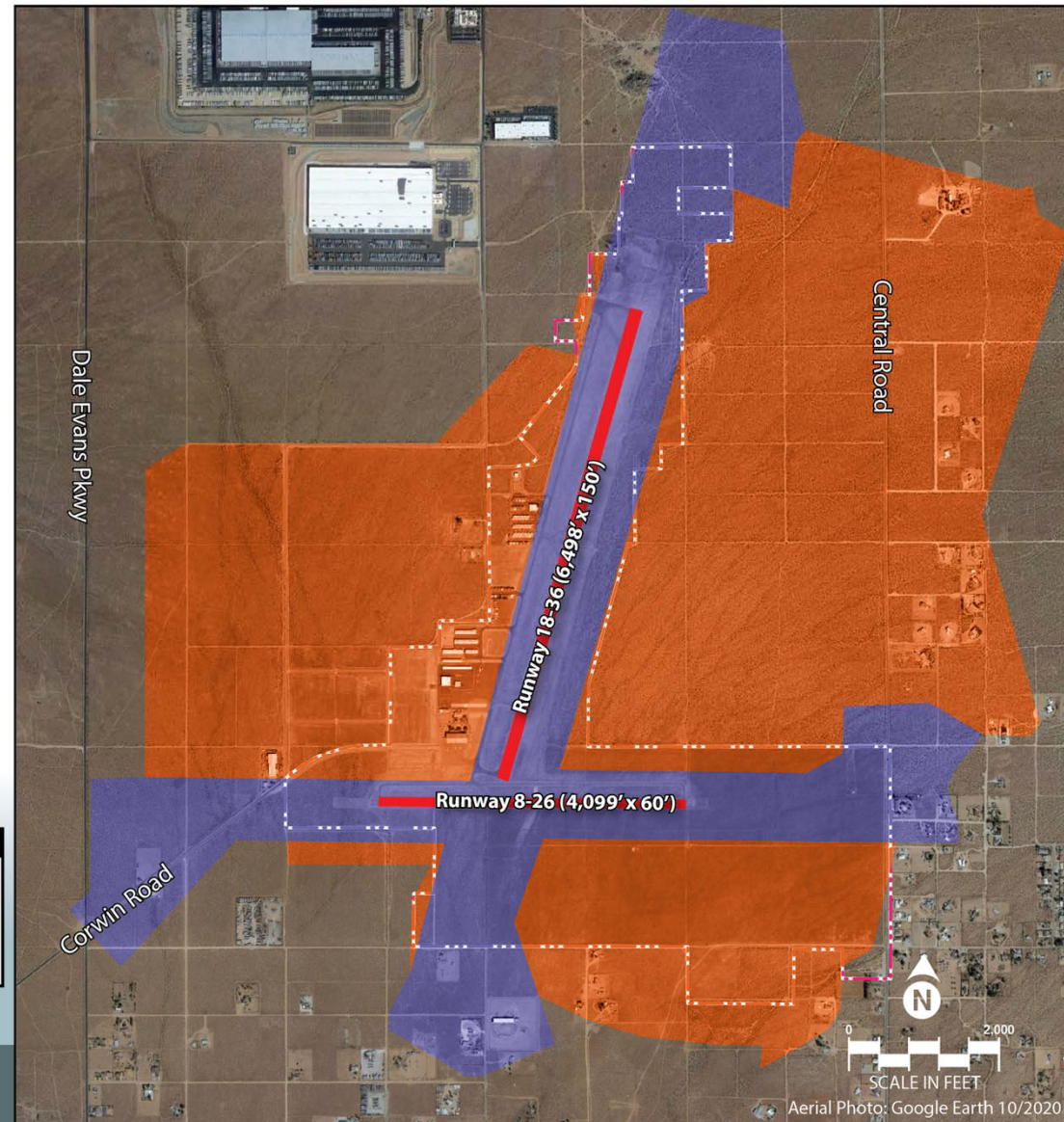
Exhibit 1N – Service Area



## 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.

LEGEND	
	Airport Property Line
	Airport (A-1) Overlay District
	Airport (A-2) Overlay District





Chapter Two

# FORECASTS



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 CMA 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 the Part 150 study.

### 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.

**Table 2A – Socioeconomic Forecasts**

Year	SERVICE AREA <sup>3</sup>		
	Population	Employment	Households
2012 <sup>1</sup>	312,000	64,000	91,100
2020 <sup>1</sup>	332,800	82,100	104,700
2022 <sup>2</sup>	346,800	85,600	108,600
<b>CAGR 2012-2022</b>	<b>1.18%</b>	<b>3.28%</b>	<b>1.97%</b>
2027 <sup>2</sup>	384,300	95,000	119,100
2032 <sup>2</sup>	425,800	105,400	130,600
2035 <sup>1</sup>	452,900	112,200	138,000
2040 <sup>1</sup>	484,200	116,400	147,400
2042 <sup>2</sup>	522,900	118,100	151,300
<b>CAGR 2022-2042</b>	<b>2.07%</b>	<b>1.62%</b>	<b>1.67%</b>

<sup>1</sup>Southern California Association of Governments, Connect SoCal - Regional Transportation Plan 2016-2040  
<sup>2</sup>Interpolated/Extrapolated  
<sup>3</sup>Includes Town of Apple Valley, City of Victorville, City of Hesperia, and City of Adelanto  
CAGR: Compound Annual Growth Rate



**Table 2B – FAA General Aviation Forecast**

Demand Indicator	2022	2042	CAGR
<b>General Aviation Active Fleet Mix</b>			
Total Fixed-Wing Piston	137,465	119,350	-0.70%
Total Fixed-Wing Turbine	26,145	38,980	2.02%
Total Helicopters	10,175	13,680	1.49%
Total Other (experimental, light sport, etc.)	35,355	43,380	1.03%
<b>Total General Aviation Fleet</b>	<b>209,140</b>	<b>215,390</b>	<b>0.15%</b>
<b>General Aviation Operations</b>			
Local General Aviation	14,029,412	16,562,635	0.83%
Itinerant General Aviation	14,634,811	16,660,141	0.65%
<b>Total General Aviation Operations</b>	<b>28,664,223</b>	<b>33,222,776</b>	<b>0.74%</b>
<b>Total Air Taxi/Commuter Operations</b>	<b>5,013,000</b>	<b>6,287,000</b>	<b>1.14%</b>
CAGR: compound annual growth rate (2022-2042)			

**Table 2D – 2022 FAA Terminal Area Forecast (TAF)**

	2022	2027	2032	2042	CAGR 2022-2042
<b>ANNUAL OPERATIONS</b>					
<i>Itinerant</i>					
Air Taxi	0	0	0	0	-
General Aviation	12,500	12,500	12,500	12,500	0.00%
Military	0	0	0	0	-
<i>Total Itinerant</i>	<i>12,500</i>	<i>12,500</i>	<i>12,500</i>	<i>12,500</i>	<i>0.00%</i>
<i>Local</i>					
General Aviation	25,000	25,000	25,000	25,000	0.00%
Military	0	0	0	0	-
<i>Total Local</i>	<i>25,000</i>	<i>25,000</i>	<i>25,000</i>	<i>25,000</i>	<i>0.00%</i>
<b>Total Operations</b>	<b>37,500</b>	<b>37,500</b>	<b>37,500</b>	<b>37,500</b>	0.00%
<b>BASED AIRCRAFT</b>					
<b>Total Based Aircraft</b>	<b>124</b>	<b>124</b>	<b>124</b>	<b>124</b>	0.00%

**Table 2E – 2012 Master Plan Forecasts**

Year	Based Aircraft	OPERATIONS		
		Local General Aviation	Itinerant General Aviation	Total
2009	148	30,933	15,467	46,400
2015	155	32,200	16,000	48,200
2020	175	35,400	17,600	53,000
2030	225	43,000	21,400	64,400
<b>CAGR</b>	<b>2.12%</b>	<b>1.66%</b>	<b>1.64%</b>	<b>1.65%</b>

CAGR: Compound Annual Growth Rate

**Table 2F - Historical Based Aircraft**

<b>TABLE 2F   Historical Based Aircraft at APV</b>	
<b>Forecast Year</b>	<b>APV Based Aircraft<sup>1</sup></b>
2013	130
2014	132
2015	131
2016	125
2017	123
2018	68
2019	100
2020	95
2021	112
2022	117

<sup>1</sup>Source: *basedaircraft.com*.

**Table 2G – Population BA forecast**

Year	Service Area Population <sup>1</sup>	Based Aircraft per 1,000 Population	Aircraft Based at APV <sup>2</sup>
2013	314,527	0.4133	130
2014	317,075	0.4163	132
2015	319,643	0.4098	131
2016	322,232	0.3879	125
2017	324,842	0.3786	123
2018	327,473	0.2077	68
2019	330,126	0.3029	100
2020	332,800	0.2855	95
2021	339,728	0.3297	112
2022	346,800	0.3374	117
<b>Decreasing Share of Population (CAGR = 0.94%)</b>			
2027	384,300	0.3300	127
2032	425,800	0.3100	132
2042	522,900	0.2700	141

<sup>1</sup>Southern California Association of Governments, Connect SoCal - Regional Transportation Plan 2016-2040 for the Town of Apple Valley, City of Victorville, City of Hesperia, and the City of Adelanto.  
<sup>2</sup>Source: basedaircraft.com.

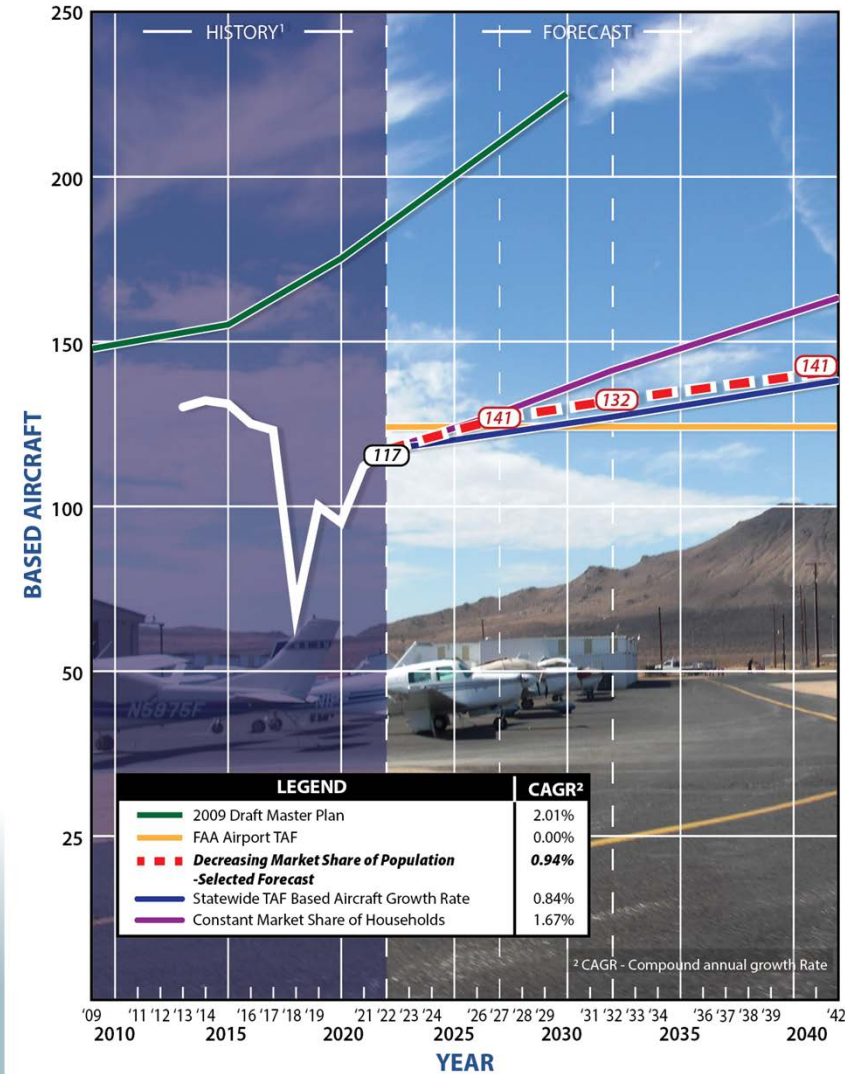
## Exhibit 2B – Based Aircraft Forecasts

Projection Sources	2027	2032	2042	CAGR 2022-2042
FAA Airport TAF	124	124	124	0.29%
Statewide TAF Based Aircraft Growth Rate	122	127	138	0.84%
Decreasing Market Share of Population	127	132	141	0.94%
Constant Market Share of Households	128	141	163	1.67%
<b>SELECTED BASED AIRCRAFT FORECAST</b>	<b>127</b>	<b>132</b>	<b>141</b>	<b>0.94%</b>

CAGR: Compound annual growth rate

## Table 2L– Based Aircraft Fleet Mix Forecasts

Aircraft Type	2022	Percent	2027	Percent	2032	Percent	2042	Percent
Single Engine Piston	111	94.9%	117	92.1%	119	90.1%	121	85.8%
Multi-Engine Piston	4	3.4%	4	3.1%	4	3.1%	4	2.8%
Turboprop	0	0.0%	2	1.6%	3	2.3%	6	4.3%
Jet	0	0.0%	1	0.8%	2	1.5%	4	2.8%
Helicopters	2	1.7%	3	2.4%	4	3.1%	6	4.3%
<b>Total</b>	<b>117</b>	<b>100.0%</b>	<b>127</b>	<b>100.0%</b>	<b>132</b>	<b>100.0%</b>	<b>141</b>	<b>100.0%</b>



## Operations Forecasts

- For a non-towered airport, there is a need to establish a current year baseline operational count.
- FAA approved model for non-towered airports.

**Table 2M – Estimated Annual Operations**

Function	Category	2022	2027	2032	2042
	775	775	775	775	775
+	241 (BA)	28,197	30,563	31,812	34,025
-	0.14 (BAsquared)	1,916	2,252	2,439	2,791
+	31478 (%100mi)	702	702	702	702
+	5577 (VITFSnum)	0	0	0	5,557
+	.001 (Pop100)	18,794	22,550	24,496	26,611
-	3736 (WACAORAK)	3,736	3,736	3,736	3,736
+	12121 (Pop25/100)	304	304	304	304
=	<b>Total (Round to 100)</b>	<b>43,100</b>	<b>48,900</b>	<b>51,900</b>	<b>61,400</b>
<b>Operations Per Based Aircraft</b>		<b>368</b>	<b>386</b>	<b>393</b>	<b>435</b>

**Function Definitions:**

- BA: Based Aircraft
- BAsquared: Based Aircraft Squared
- %100mi: % Based aircraft among based GA aircraft within 100 miles
- VITFSnum: # of FAR 141 flight schools on airport
- Pop100: Population within 100 miles
- WACAORAK: 1 if WA, CA, OR, AK; 0 otherwise
- Pop25/100: Ratio of Pop 25 to Pop 100 (proportion between 1 and 0)



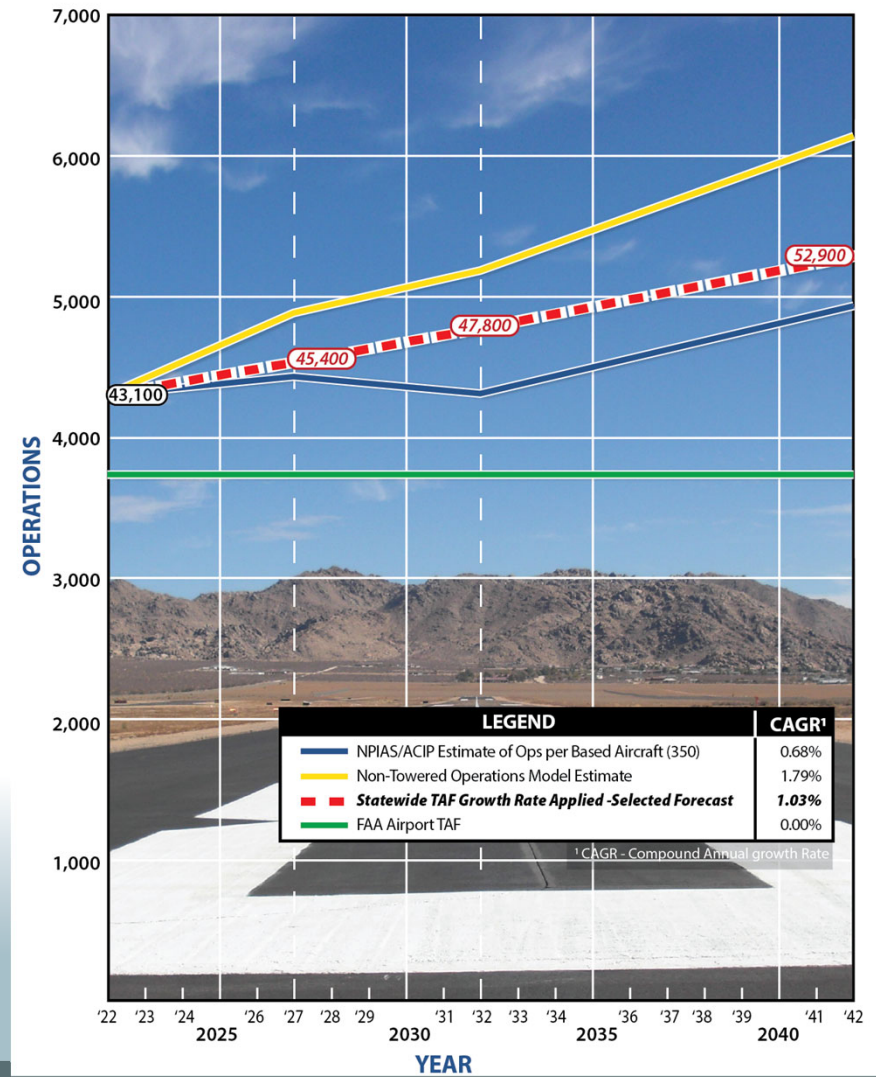
**Table 2N – NPIAS Operations Estimate of 350 per Based Aircraft**

	2022	2027	2032	2042	CAGR 2022-2042
<b>Based Aircraft Forecast</b>	<b>117</b>	<b>127</b>	<b>132</b>	<b>141</b>	-
Operations per Based Aircraft	368	350	350	350	-
Operations Forecast	43,100	44,400	46,200	49,400	0.94%
<i>CAGR = Compound annual growth rate</i>					

## Exhibit 2C – Operations Forecasts

	2022	2027	2032	2042	CAGR 2022-2042
Non-Towered Operations Estimate	43,100	48,900	51,900	61,400	1.79%
NPIAS Ops per Based Aircraft (350)	43,100	44,400	46,200	49,400	0.68%
<b>Statewide TAF Growth Rate Applied - SELECTED</b>	<b>43,100</b>	<b>45,400</b>	<b>47,800</b>	<b>52,900</b>	<b>1.03%</b>

*Note: Operations rounded to the nearest 100*



**Table 2R – Total Operations Forecast**

Year	LOCAL OPERATIONS		ITINERANT OPERATIONS			Grand Total
	General Aviation	Total	General Aviation	Air Taxi	Total	
2022	28,735	28,735	14,325	40	14,365	43,100
2027	30,268	30,268	14,732	400	15,132	45,400
2032	31,868	31,868	15,032	900	15,932	47,800
2042	35,268	35,268	16,132	1,500	17,632	52,900
					<b>CAGR</b>	<b>1.03%</b>
<i>CAGR = Compound annual growth rate</i>						

## Exhibit 2D – Forecast Summary

	Base Year	Forecast			CAGR* 2022-2042
	2022	2027	2033	2042	
<b>BASED AIRCRAFT</b>					
Single-engine piston	111	117	118	121	
Multi-engine piston	4	4	4	4	
Turboprop	0	2	3	6	
Jet	0	1	2	4	
Helicopter	2	3	4	6	
<b>Total Based Aircraft</b>	<b>117</b>	<b>127</b>	<b>131</b>	<b>141</b>	<b>0.94%</b>
<b>ANNUAL OPERATIONS</b>					
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%
<b>TOTAL OPERATIONS</b>	<b>43,100</b>	<b>45,400</b>	<b>47,800</b>	<b>52,900</b>	<b>1.03%</b>
<b>PEAKING CHARACTERISTICS</b>					
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

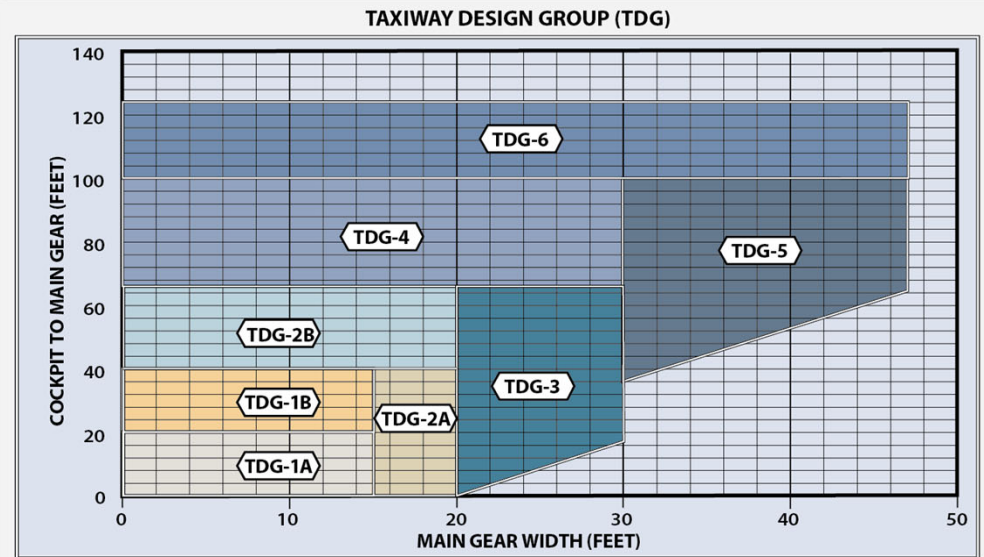
**Table 2U – Forecast Comparison to the Terminal Area Forecast**

	Base Year 2022	FORECAST			CAGR 2022-2042
		2027	2032	2042	
<b>TOTAL OPERATIONS</b>					
Master Plan Forecast	43,100	45,400	47,800	52,900	1.03%
2022 FAA TAF <sup>1</sup>	37,500	37,500	37,500	37,500	0.00%
% Difference	13.9%	19.1%	24.2%	34.1%	
<b>BASED AIRCRAFT</b>					
Master Plan Forecast	117	127	132	141	0.94%
2022 FAA TAF <sup>1</sup>	125	125	125	125	0.00%
% Difference	-5.8%	2.4%	6.3%	12.8%	
CAGR: Average annual growth rate					









## 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



## Exhibit 2F – Aircraft Reference Codes

A-I	Aircraft	TDG	B-II <i>over 12,500 lbs.</i>	Aircraft	TDG	C/D-II	Aircraft	TDG
	<ul style="list-style-type: none"> <li>Beech Baron 55</li> <li><b>Beech Bonanza</b></li> <li>Cessna 150, 172</li> <li>Eclipse 500</li> <li>Piper Archer, Seneca</li> </ul>	1A 1A 1A 1A 1A		<ul style="list-style-type: none"> <li>Beech Super King Air 350</li> <li>Cessna Citation CJ3(525B), V (560)</li> <li>Cessna Citation Bravo (550)</li> <li><b>Cessna Citation CJ4 (525C)</b></li> <li>Cessna Citation Latitude/Longitude</li> <li>Embraer Phenom 300</li> <li>Falcon 10, 20, 50</li> <li>Falcon 900, 2000</li> <li>Hawker 800, 800XP, 850XP, 4000</li> <li>Pilatus PC-24</li> </ul>	2A 2A 1A 1B 1B 1B 1B 2A 1B 1B		<ul style="list-style-type: none"> <li>Challenger 600/604/800/850</li> <li>Cessna Citation VII, X+</li> <li>Embraer Legacy 450/500</li> <li><b>Gulfstream IV, 350, 450 (D-II)</b></li> <li>Gulfstream G200/G280</li> <li>Lear 70, 75</li> </ul>	1B 1B 1B 2A 1B 1B
	<ul style="list-style-type: none"> <li><b>Beech Baron 58</b></li> <li>Beech King Air 90</li> <li>Cessna 421</li> <li>Cessna Citation CJ1 (525)</li> <li>Cessna Citation 1(500)</li> <li>Embraer Phenom 100</li> </ul>	1A 1A 1A 1A 2A 1B					<ul style="list-style-type: none"> <li>Gulfstream V</li> <li><b>Gulfstream G500, 550, 600, 650 (D-III)</b></li> </ul>	2A 2B
	<ul style="list-style-type: none"> <li><b>Beech Super King Air 200</b></li> <li>Cessna 441 Conquest</li> <li>Cessna Citation CJ2 (525A)</li> <li>Pilatus PC-12</li> </ul>	2A 1A 2A 1A		<ul style="list-style-type: none"> <li>Bombardier Dash 8</li> <li><b>Bombardier Global 5000, 6000, 7000, 8000</b></li> <li>Falcon 6X, 7X, 8X</li> </ul>	3 2B 2B		<ul style="list-style-type: none"> <li>Airbus A319-100, 200</li> <li>Boeing 737 -800, 900, BBJ2 (D-III)</li> <li>MD-83, 88 (D-III)</li> </ul>	3 3 4
				<ul style="list-style-type: none"> <li><b>Lear 25, 31, 45, 55, 60</b></li> <li>Learjet 35, 36 (D-I)</li> </ul>	1B 1B		<ul style="list-style-type: none"> <li>Airbus A300-100, 200, 600</li> <li>Boeing 757-200</li> <li>Boeing 767-300, 400</li> <li>MD-11</li> </ul>	5 4 5 6
							<ul style="list-style-type: none"> <li>Airbus A330-200, 300</li> <li>Airbus A340-500, 600</li> <li>Boeing 747-100 - 400</li> <li>Boeing 777-300</li> <li>Boeing 787-8, 9</li> </ul>	5 6 5 6 5

Note: Aircraft pictured is identified in bold type.

**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
<b>Runway Design Code (RDC)</b>		
Runway 18-36	B-II-4000	C-II-2400
Runway 8-26	B-I-VIS	Same
<b>Approach Reference Code (APRC)</b>		
Runway 18-36	D-IV-4000/ D-V-4000	D-IV-2400
Runway 8-26	B-II-VIS	Same
<b>Departure Reference Code (DPRC)</b>		
Runway 18-36	D-IV/D-V	Same
Runway 8-26	B-II	Same







Chapter Three

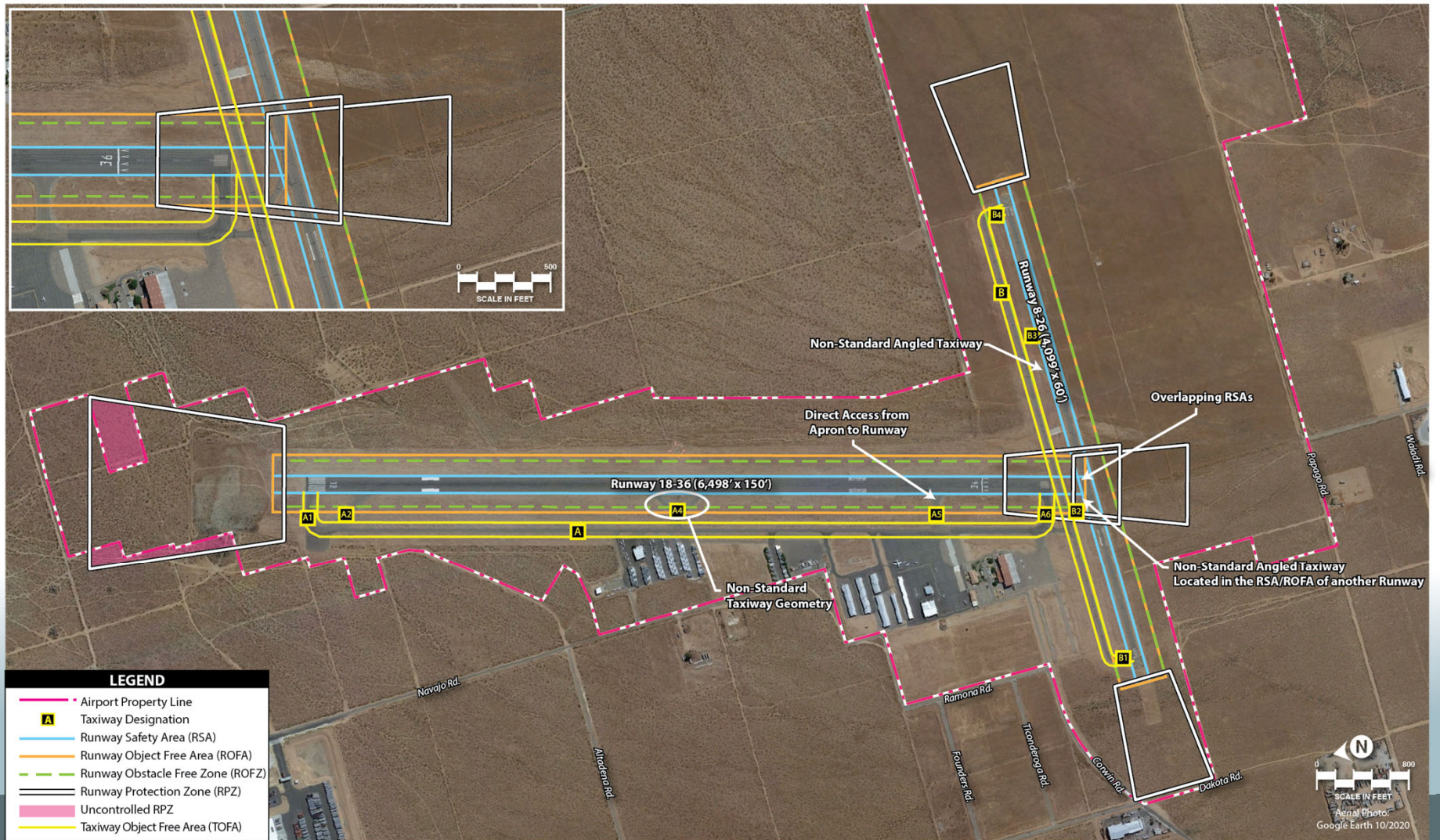
# FACILITY REQUIREMENTS



## Exhibit 3C – Runway Design Standards

AIRPORT DATA	RUNWAY 18-36			RUNWAY 8-26	
	Existing Standard	Ultimate Standard	Current Condition	Current/Ultimate Standard	Current Condition
Airport Design Aircraft	B-II-2A	C-II-2A	C-II-2A	B-I-1B	B-I-1B
Runway Design Code	B-II-4000	C-II-2400	C-II-4000	B-I-VIS	B-I-VIS
Visibility Minimums	¾-Mile	½-Mile	¾-Mile	VIS	VIS
<b>RUNWAY DESIGN</b>					
Runway Width	75	100	<b>150</b>	60	60
Runway Shoulder Width	10	10	10	10	10
Blast Pad Length/Width (if provided)	150 x 95	150 x 120	NA	100 x 80	100 x 80
<b>RUNWAY PROTECTION</b>					
<i>Runway Safety Area (RSA)</i>					
Width	150	500	500	120	120
Length Beyond Departure End	300	1,000	1000	240	240
Length Prior to Threshold	300	600	600	240	240
<i>Runway Object Free Area (ROFA)</i>					
Width	500	800	800	400	400
Length Beyond Departure End	300	1,000	1000	240	240
Length Prior to Threshold	300	600	600	240	240
<i>Runway Obstacle Free Zone (OFZ)</i>					
Width	400	400	400	250	250
Length Beyond End	200	200	200	200	200
<i>Approach Runway Protection Zone (RPZ)</i>					
Length	1,700	2,500	1,700	1,000	1,000
Inner Width	1000	1,000	1,000	500	500
Outer Width	1,510	1,750	1,510	700	700
<i>Departure Runway Protection Zone (RPZ)</i>					
Length	1,000	1,700	1,000	1,000	1,000
Inner Width	500	500	500	500	500
Outer Width	700	1010	700	700	700
<b>RUNWAY SEPARATION</b>					
<i>Runway Centerline to:</i>					
Holding Position	200	250	250	200	<b>130</b>
Parallel Taxiway	240	400	400	225	240
Aircraft Parking Area	302	462	<b>465.5</b>	284.5	284.5
Note: All dimensions in feet.					

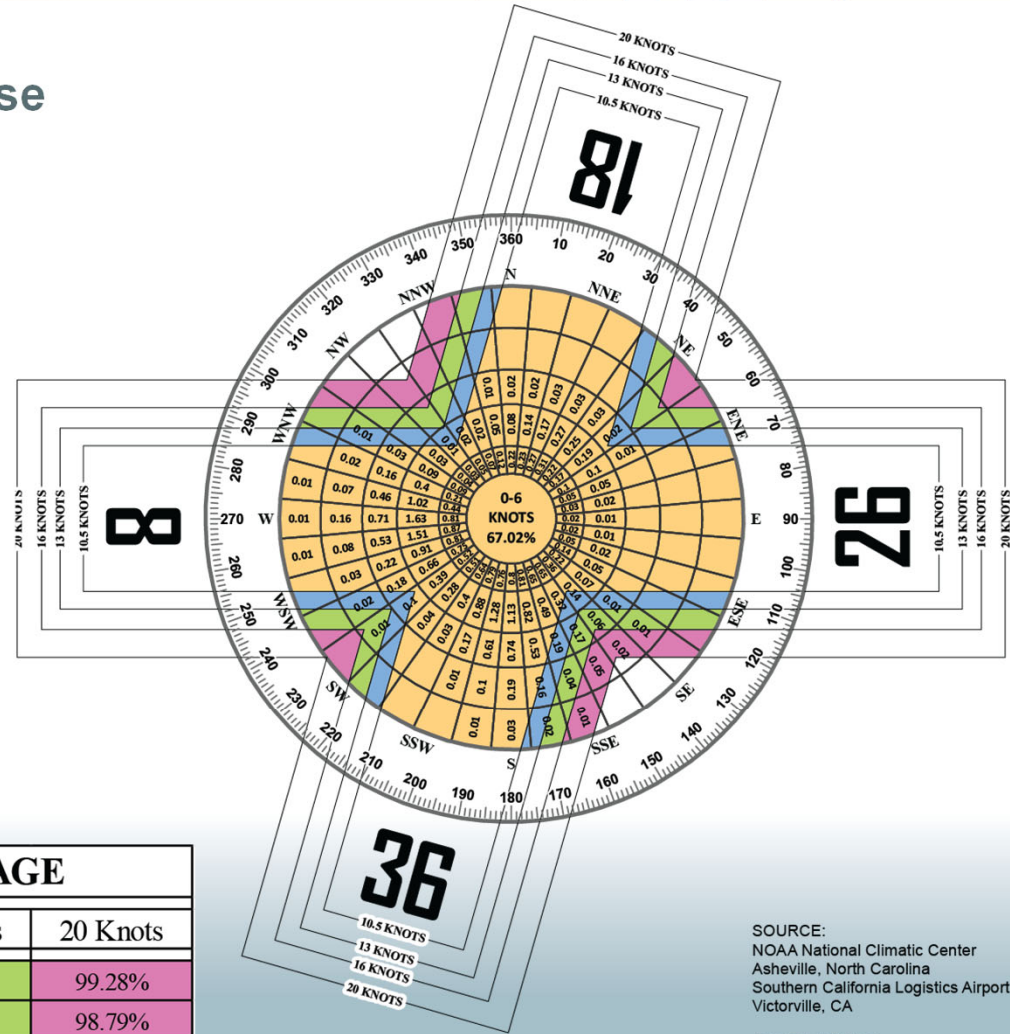
Exhibit 3C – Safety Areas



### Exhibit 3B – Runway Eligibility

For the following runway type...	Must meet all the following criteria...	And is...
Primary Runway	1. A single runway at an airport is eligible for development consistent with FAA design and engineering standards.	Eligible
Crosswind Runway	1. The wind coverage on the primary runway is less than 95%	Eligible if justified
Secondary Runway	1. There is more than one runway at the airport. 2. The non-primary runway is not a crosswind runway. 3. Either of the following: a) The primary runway is operating at 60% or more of its annual capacity. b) FAA has made a specific determination that the runway is required.	Eligible if justified
Additional Runway	1. There is more than one runway at the airport. 2. The non-primary runway is not a crosswind runway. 3. The non-primary runway is not a secondary runway.	Ineligible

### Exhibit 3A – All Weather Wind Rose

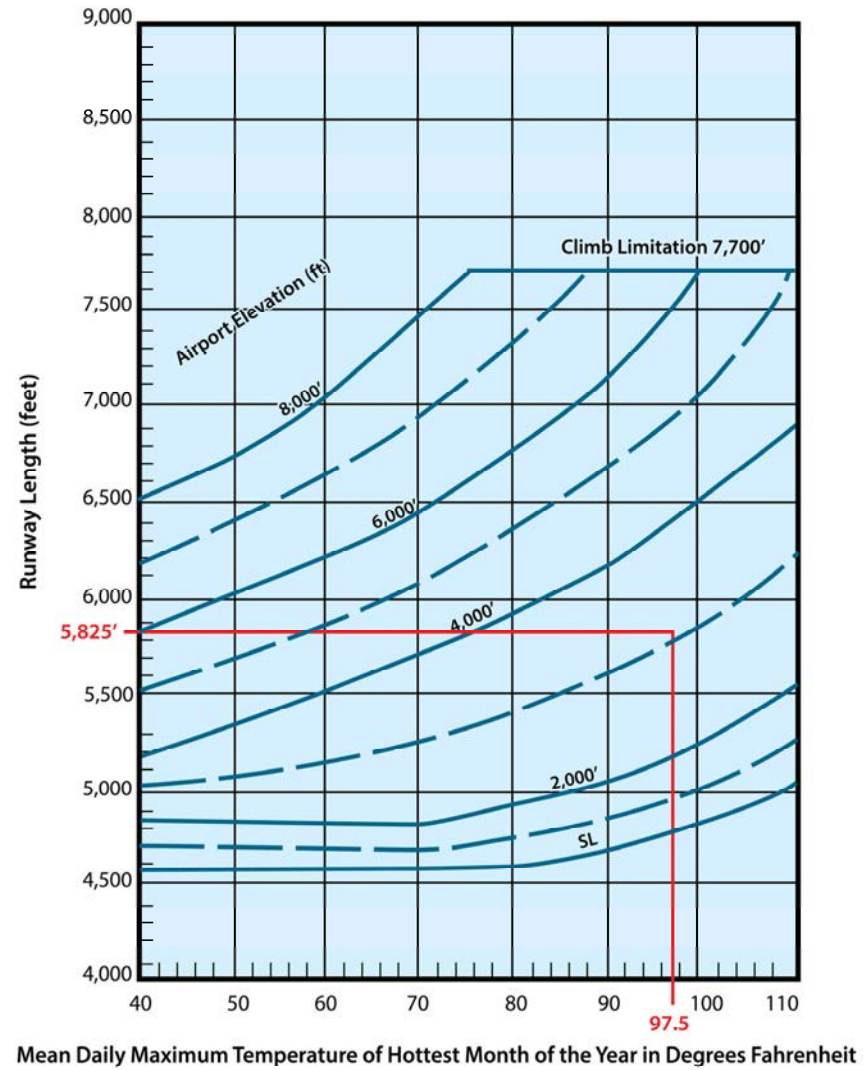


ALL WEATHER WIND COVERAGE				
Runways	10.5 Knots	13 Knots	16 Knots	20 Knots
Runway 18-36	91.03%	94.35%	97.48%	99.28%
Runway 8-26	90.38%	93.38%	96.65%	98.79%
All Runways	98.99%	99.64%	99.90%	99.99%

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

Figure 3-2 – Useful Load Performance Chart



Source: FAA AC 150/5325 - 4B, Runway Length Requirements for Airport Design. Reproduced by Coffman Associates

### 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 3K – Taxiway Width Standards

Taxiway Designation	Current & Future TDG/ Standard Width	Current Width
Taxiway A (Parallel North of A5)	2A/35'	35'
Taxiway A (Parallel South of A5)	2A/35'	60'
Taxiway A1 (Rwy 18 Threshold)	2A/35'	60'
Taxiway A2	2A/35'	60'
Taxiway A4 (Convergence)	2A/35'	50'
Taxiway A4 (Legs)	2A/35'	35'
Taxiway A5	2A/35'	60'
Taxiway A6 (Rwy 36 Threshold)	2A/35'	60'
Taxiway B (Parallel)	1B/25'	35'
Taxiway B1 (Rwy 8 Threshold)	1B/25'	35'
Taxiway B2	1B/25'	35'
Taxiway B3	1B/25'	35'
Taxiway B4 (Rwy 26 Threshold)	1B/25'	35'





## Exhibit 3D – Airside Facility Requirements

RUNWAYS	AVAILABLE	POTENTIAL IMPROVEMENT/CHANGE
	<b>RUNWAY 18-36</b>	
	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 8,500'/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 1/2-mile visibility minimums
Medium intensity runway lighting (MIRL)	Meets standard - Maintain	
<b>RUNWAY 8-26</b>		
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	

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

## Exhibit 3D – Airside Facility Requirements

	AVAILABLE	POTENTIAL IMPROVEMENT/CHANGE
<b>TAXIWAYS</b>		
	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 Centerline markings Taxiway layout/geometry deficiencies	Add MITL Same/Maintain Redesign taxiway layout/geometry deficiencies
<b>INSTRUMENT NAVIGATION AND WEATHER AIDS</b>		
	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	
<b>VISUAL AIDS</b>		
	PAPI-2L REILs: NA	Upgrade to PAPI-4L Add REILs to both ends of Runway 18-36

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



Chapter Four

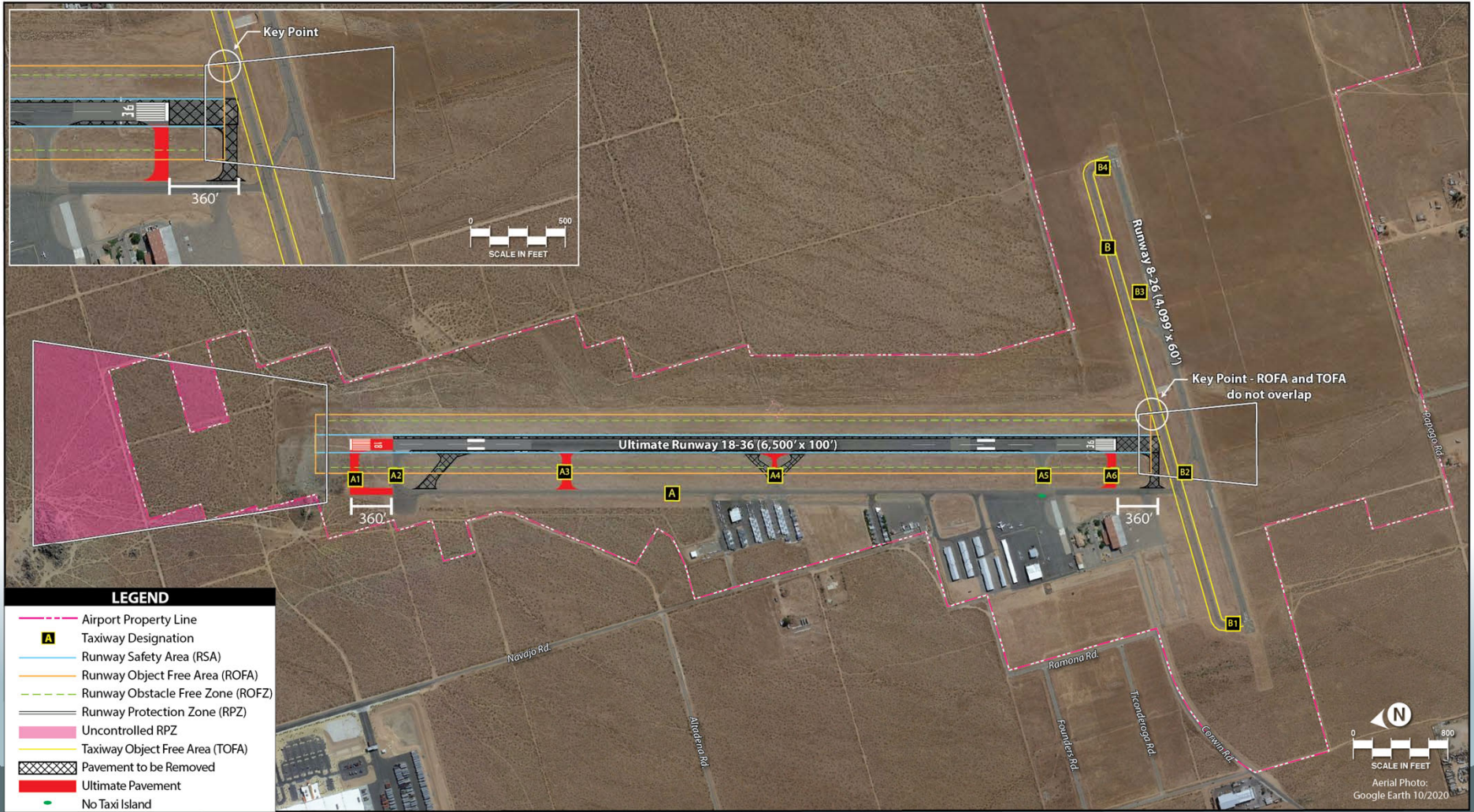
# ALTERNATIVES



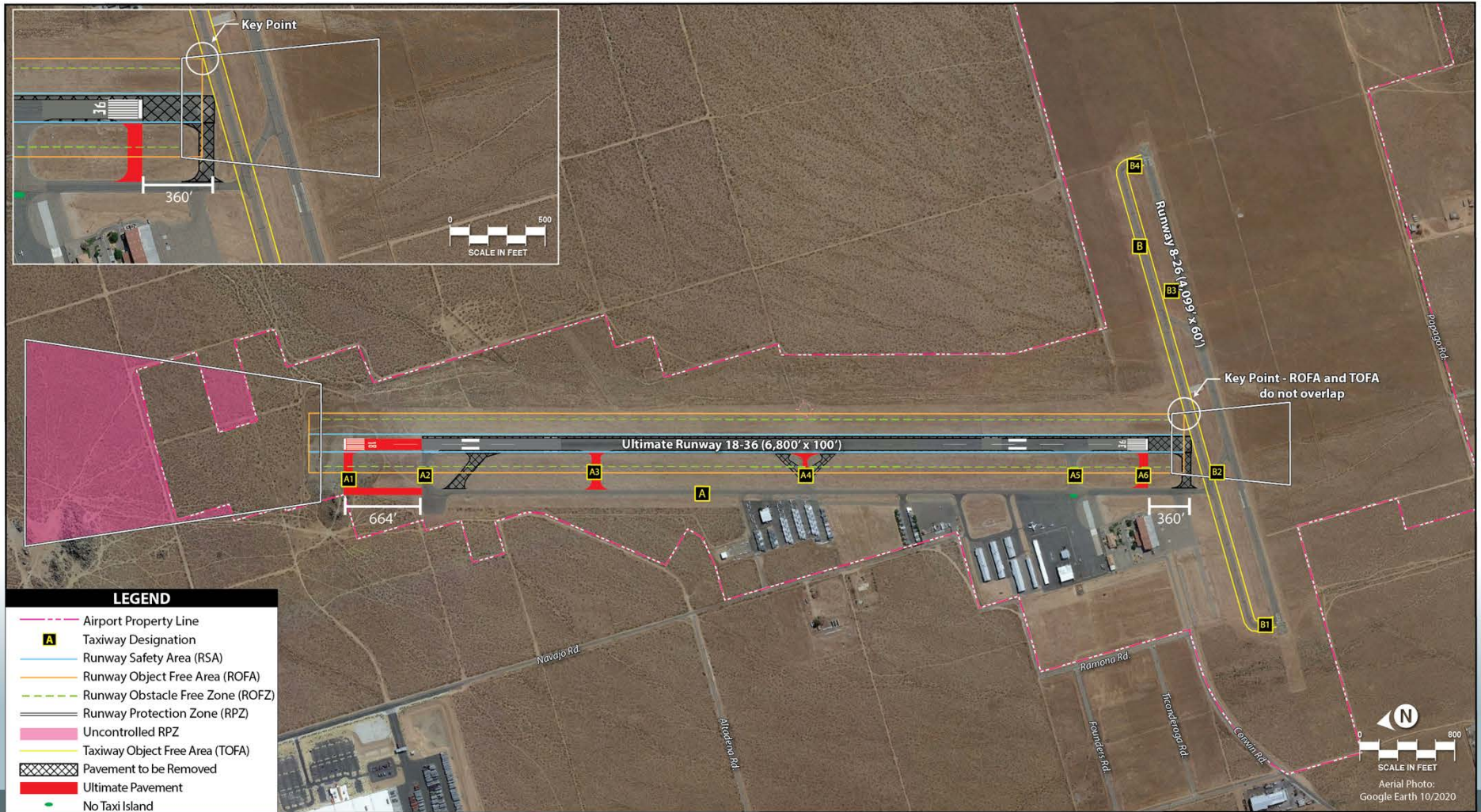
## Alternatives Goals

- Resolve overlapping runway safety areas.
- Plan for the transition from B-II to C-II design standards
  - RSA/ROFA goes from 300' to 1,000' beyond runway ends.
- Plan for a longer runway (8,500' - 8,800')
- Correct non-standard taxiway geometry (angled taxiways).
- Plan for lower visibility minimums to Runway 18 (down to ½-mile)
- Identify potential land acquisition needs.

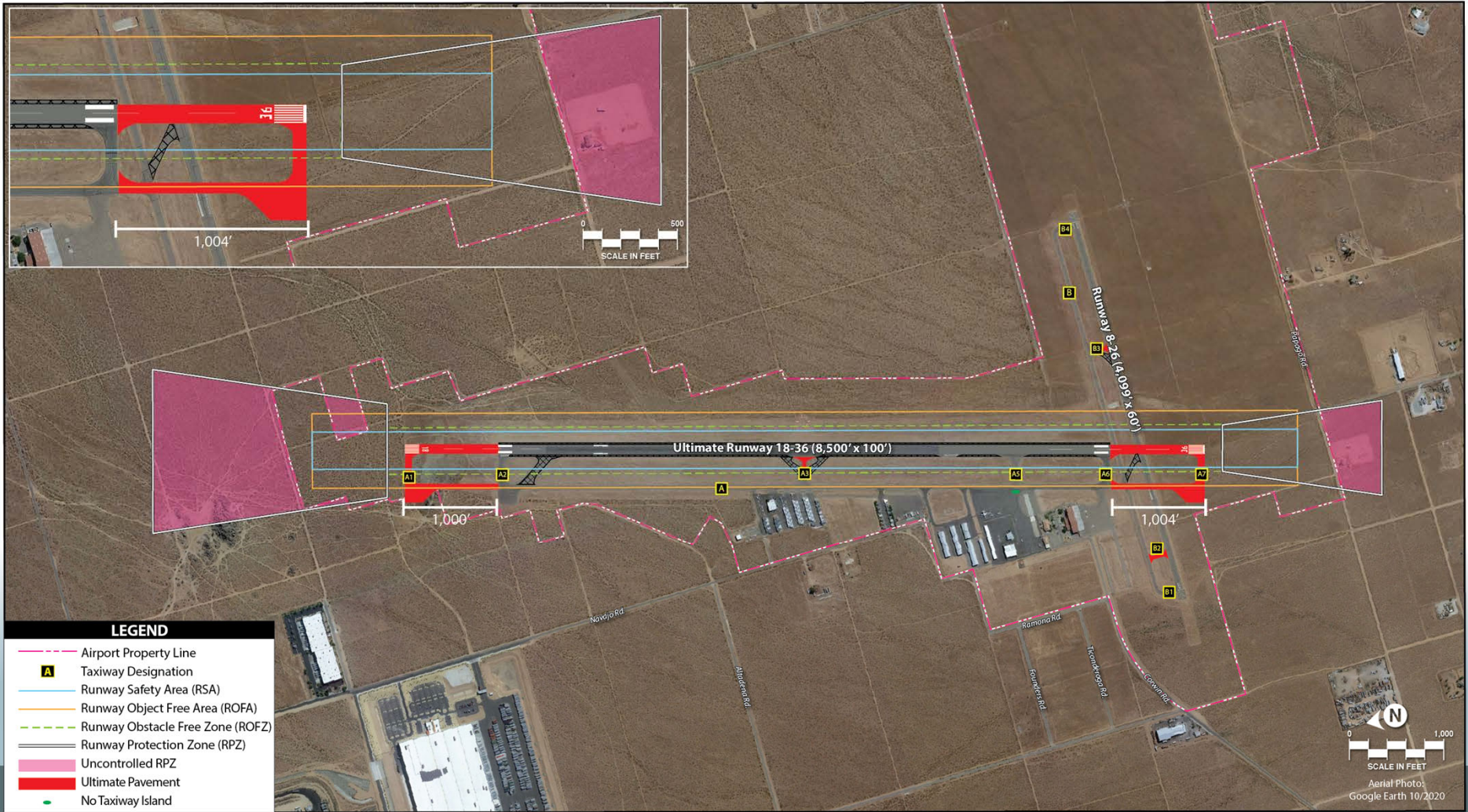
### Exhibit 4A – Alternative 1 – ARC B-II 360' Runway Shift



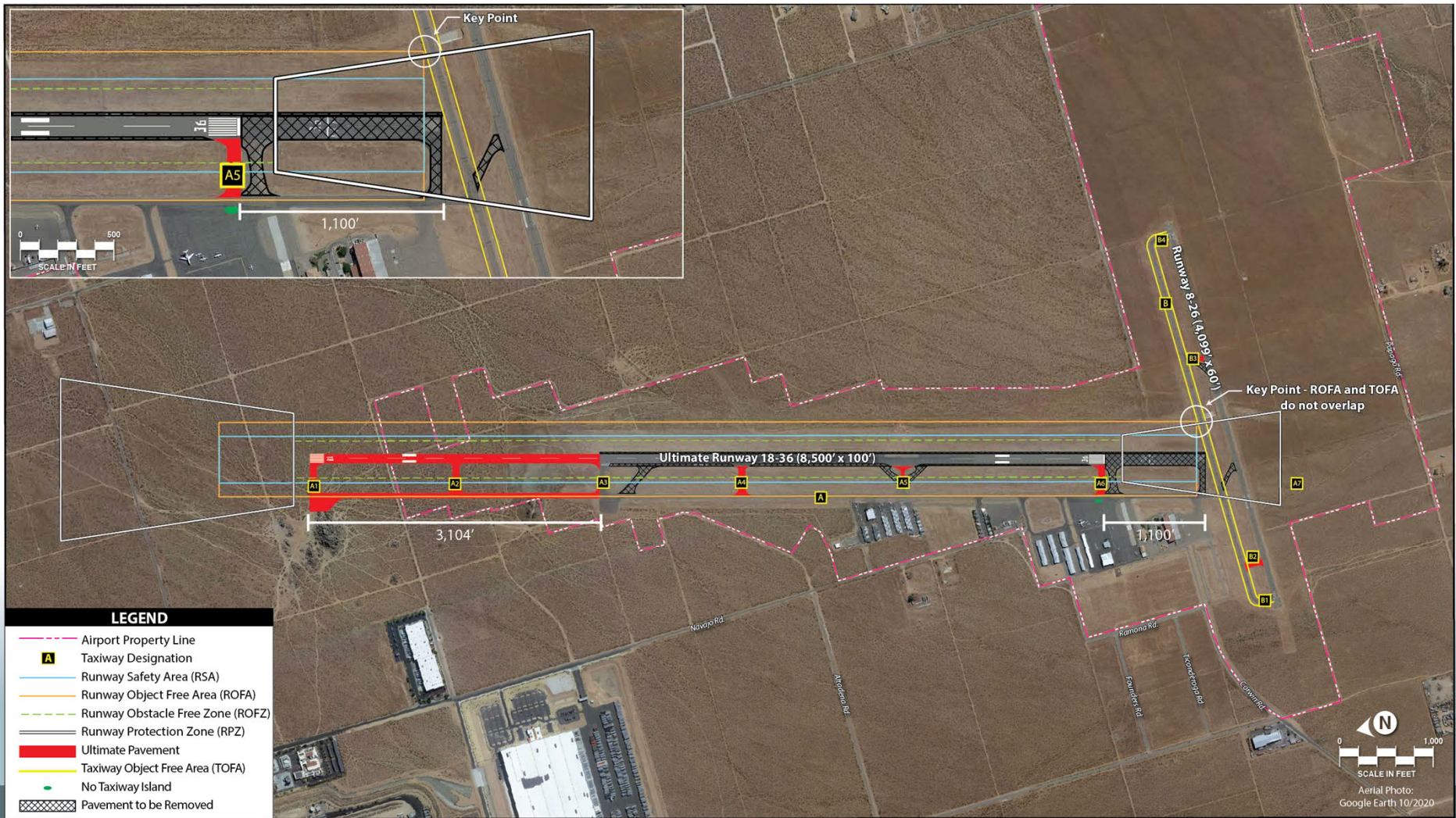
### Exhibit 4D – Alternative 4 – ARC B-II 6,800' Runway



### Exhibit 4B – Alternative 2 - ARC C-II 8,500' Runway

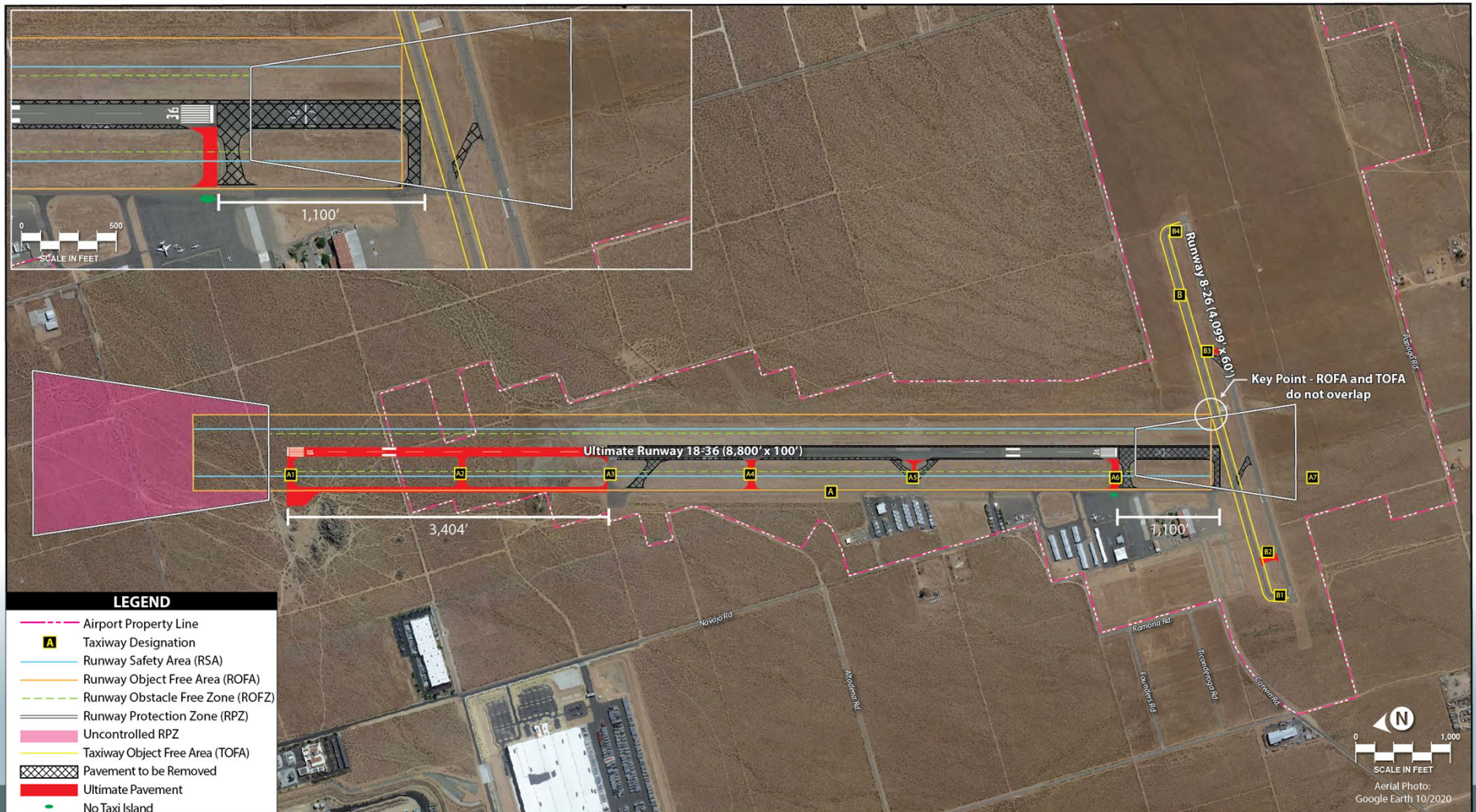


### Exhibit 4C – Alternative 3 - ARC C-II Shift North





### Exhibit 4E – Alternative 5 – ARC C-II 8,800' Runway



# NEXT STEPS



Public Workshop 4:30-6:00pm  
Complete Alternatives  
Next PAC Meeting in 4 months.