RDD
REDDING REGIONAL AIRPORT

Redding Regional Airport

Airport Master Plan

AGENDA

Planning Advisory Committee (PAC)
Meeting #3
Thursday, August 28, 2024
1:30 pm
Redding Electric Utility – Shasta Conference Room

---

1. Welcome/Introductions
2. Master Plan Process
3. Review of Forecasts
4. Facility Requirements
5. Development Alternatives

PURPOSE OF THE MASTER PLAN STUDY

- Provide a **visioning document** to guide airport management and other decision makers regarding development of the airport over the next 20 years.
- **Address local and national changes** in the aviation industry that could impact priorities at RDD.
- 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** (aviation and non-aviation)
- Develop a plan that address **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.
- Increase **stakeholder/public awareness** of the airports' goals and objectives.
- Maintain **communication** and capital project discussions with FAA and airport stakeholders.

MASTER PLAN PROCESS

Nov. 3, 2022

Oct 10, 2023

Aug 28, 2024

TBD (Late 2024)

- PAC #1
- INVENTORY — Working Papers
- FORECASTS — Working Papers
- PAC #2
- PIW #1
- FACILITY REQUIREMENTS — Working Papers
- AIRPORT ALTERNATIVES — Working Papers
- PAC #3
- PIW #2
- RECOMMENDED MASTER PLAN CONCEPT/ ENVIRONMENTAL REVIEW — Working Papers
- FINANCIAL PLAN/CAPITAL IMPROVEMENTS — Working Papers
- PAC #4
- PIW #3
- AIRPORT LAYOUT PLANS/LAND USE COMPATIBILITY — Working Papers

KEY:

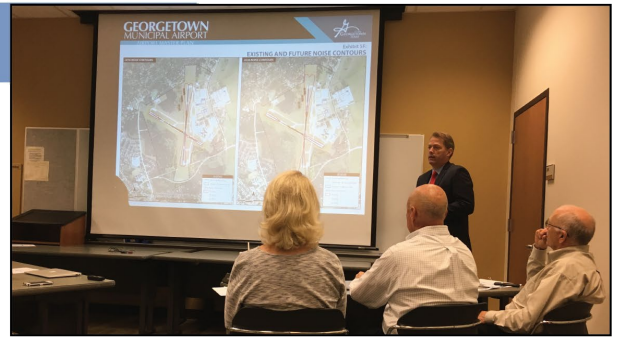
PAC = Master Plan Advisory Committee

PIW = Public Information Workshop

PUBLIC INVOLVEMENT PLAN

• Planning Advisory Committee (PAC)

4 Scheduled

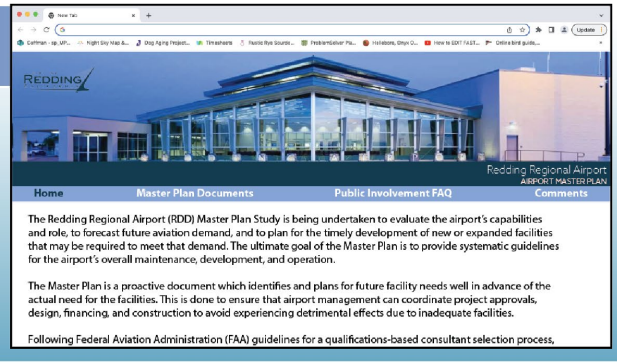


• Public Information Workshop

3 Scheduled

• Project Website

www.redding.airportstudy.net



FORECAST REVIEW

Forecast Summary

	2022	2027	2032	2042	CAGR 2022-2042
ENPLANEMENTS AND AIR CARGO					
Annual Enplanements	100,890	139,402	148,602	154,500	2.15%
Air Cargo (lbs.)	2,643,117	3,361,260	4,057,350	5,737,840	3.95%
ANNUAL OPERATIONS					
Commercial Operations (Itinerant)					
Air Carrier (>59 seats)	1,860	2,748	3,190	2,728	1.93%
Commuter Airline (<60 seats)	2,044	1,123	0	0	-100.00%
Air Cargo	2,235	2,841	3,430	4,850	3.95%
Other Air Taxi	16,304	18,694	21,712	25,803	2.32%
Total Commercial Operations	22,443	25,406	28,332	33,381	2.00%
General Aviation Operations					
Itinerant	17,100	19,101	21,234	26,242	2.16%
Local	21,951	24,311	27,026	33,400	2.12%
Total General Aviation Operations	39,051	43,412	48,260	59,642	2.14%
Military Operations					
Itinerant	548	549	549	549	0.01%
Local	345	298	298	298	-0.73%
Total Military Operations	893	847	847	847	-0.26%
Total Itinerant Operations	**40,091**	**45,056**	**50,116**	**60,173**	**2.05%**
Total Local Operations	**22,296**	**24,609**	**27,324**	**33,698**	**2.09%**
TOTAL ANNUAL OPERATIONS	**62,387**	**69,665**	**77,439**	**93,870**	**2.06%**
BASED AIRCRAFT					
Single Engine Piston	175	176	182	197	0.59%
Multi-Engine Piston	15	14	13	11	-1.54%
Turboprop	19	23	25	29	2.14%
Jet	12	15	18	25	3.74%
Helicopter	19	21	24	28	1.96%
TOTAL BASED AIRCRAFT	**240**	**249**	**262**	**290**	**0.95%**

CAGR - Compound annual growth rate

FAA Forecast Approval Letter

U.S. Department of Transportation
Federal Aviation Administration

Western-Pacific Region
Airports Division

San Francisco Airports District Office
2999 Oak Creek Rd., Suite 200
Walnut Creek, CA 94597

August 29, 2023

Mr. James Wadleigh
Airport Manager
Redding Regional Airport
6751 Woodrum Circle #200
Redding, CA 96002

SENT VIA E-MAIL

Dear Mr. Wadleigh,

RE: FAA Review Comments for Updated Aviation Activity Forecast – 28 August 2023;
Redding Regional Airport (RDD); AIP Grant/Project 3-06-0194-063-2022

The San Francisco Airports District Office (SFO-ADO) has completed the review of the updated Aviation Activity Forecasts for the Redding Regional Airport (RDD). The SFO-ADO review comments are as follows:

- FAA concurs with the forecast approach and methodologies presented in the updated aviation forecast validation document. The COVID-19 adjusted forecast alternative recovery scenario analysis and forecast assumptions presented are considered reasonable and well supported.

- FAA concurs with the forecast levels and growth rates for the total operations, and based aircraft, as presented in **Exhibit 2J – Forecast Summary** of the RDD Chapter 2 Forecasts – dated August 25, 2023. The subject aviation activity forecast is considered generally consistent with the FAA 2022 Terminal Area Forecast (TAF).

- FAA concurs with the near-term forecast presented for peak passenger enplanements through 2027 presented in the **Exhibit 2J – Forecast Summary**. This correlates with the maximum number of departing seats RDDs current Airlines contract(s). Per Table 3-4 of the AIP Handbook, to determine whether a project (e.g., expanded passenger terminal) is justified, there must be an actual need for the project at the airport within the next five years. Thus, the forecasted enplanements in 2027 are the most relevant.

- FAA concurs that the Runway Design Code (RDC) for Runway 16-34 is C-III-2400.
Due to magnetic variation adjustment, the future runway designation is 17-35.
Based on the most recent year of aircraft activity (2022) it appears reasonable that the Future RDC will be D-III-2400 for Runway 17-35.

AIRSIDE FACILITY REQUIREMENTS

Exhibit 3B: Airfield Capacity Analysis

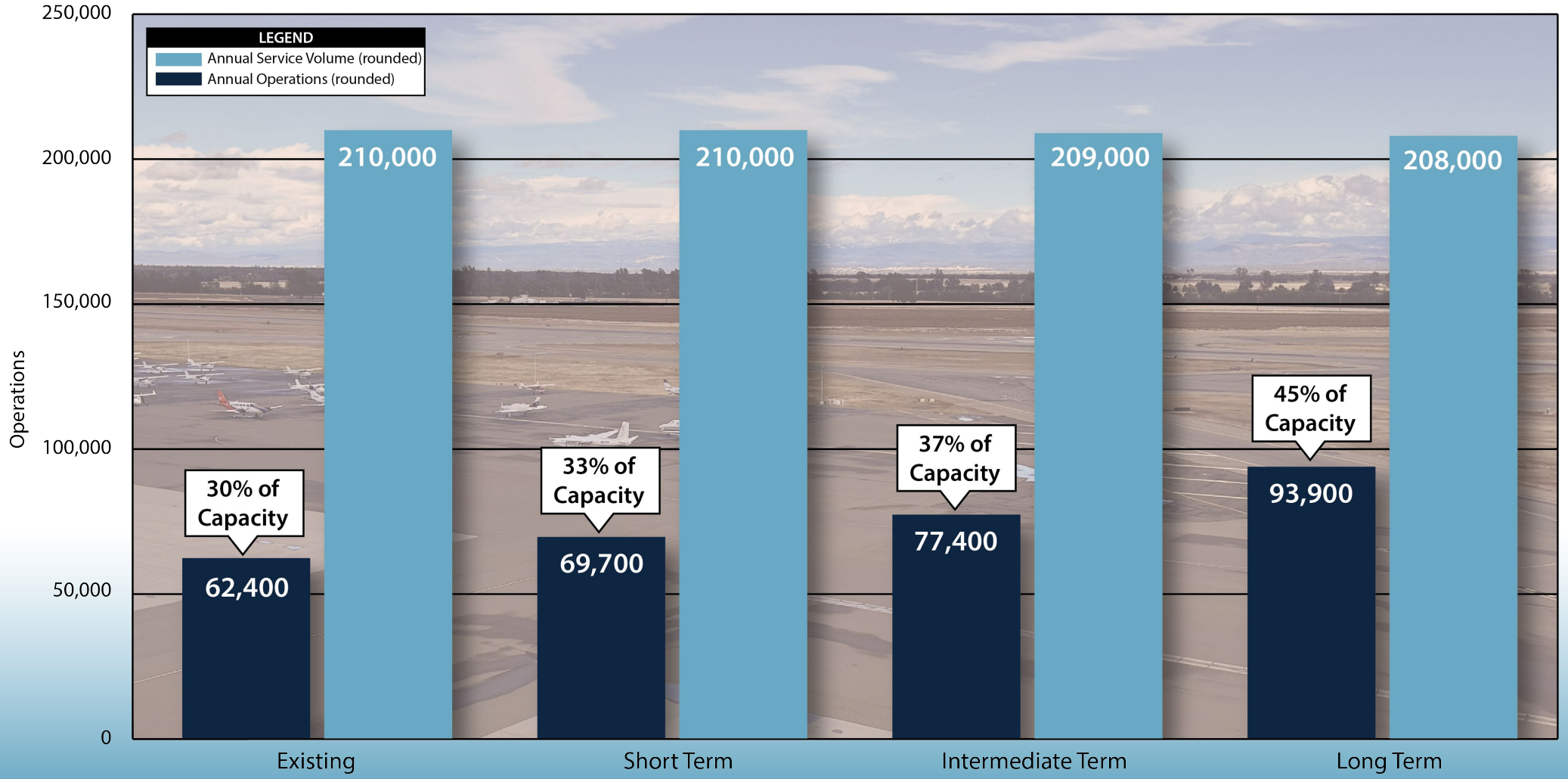
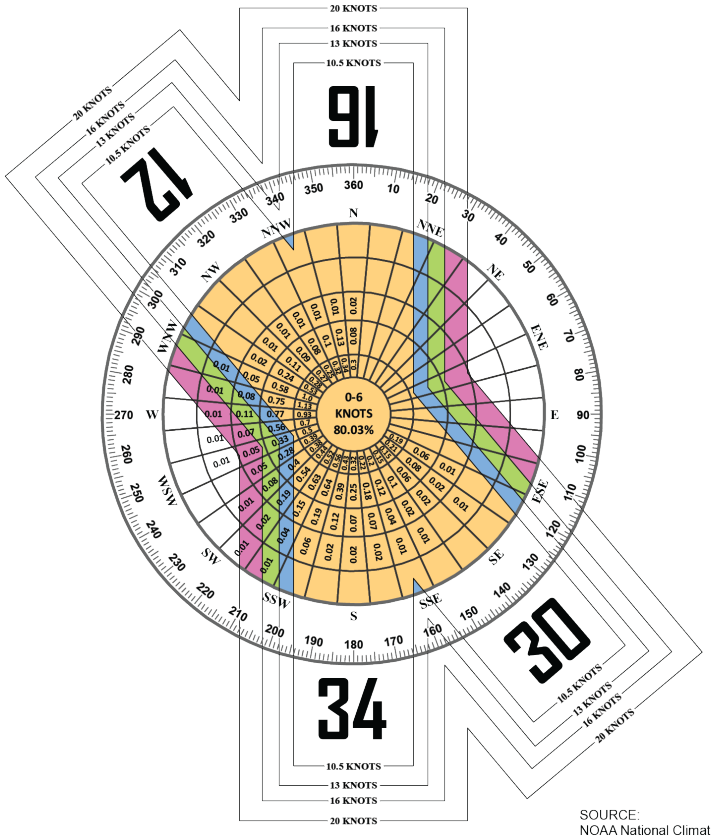


Table 3F: Runway Eligibility

For the following runway type…	Must meet all of 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 3C: Wind Roses

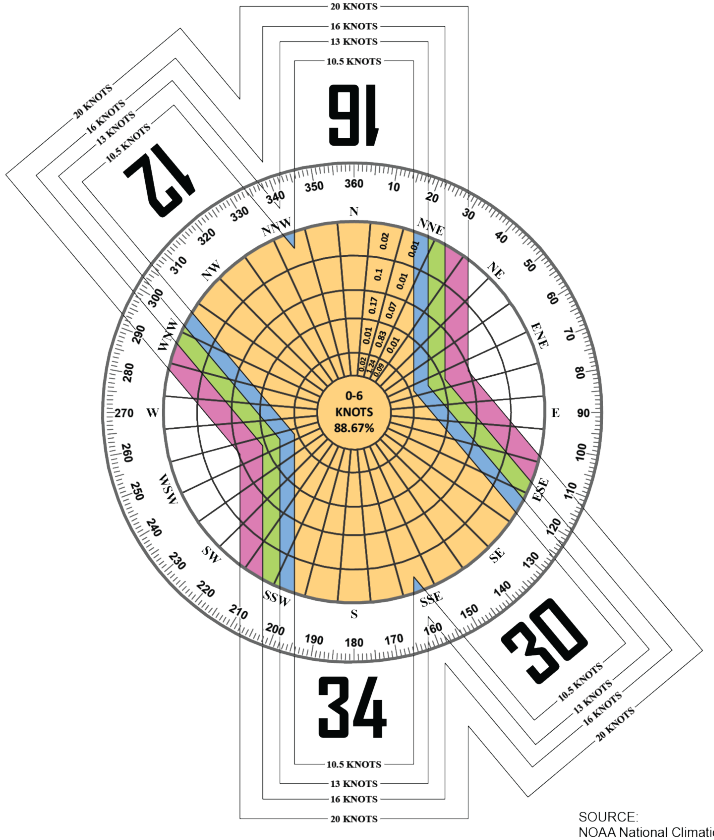
ALL WEATHER WIND COVERAGE				
Runways	10.5 Knots	13 Knots	16 Knots	20 Knots
Runway 16-34	99.50%	99.82%	99.97%	100.00%
Runway 12-30	95.39%	97.83%	99.31%	99.88%
All Runways	99.70%	99.91%	99.99%	100.00%



SOURCE:
NOAA National Climatic Center
Asheville, North Carolina
Redding Regional Airport
Redding, California

OBSERVATIONS:
112,110 All Weather Observations
Jan. 1, 2014 - Dec, 31 2023

IFR WIND COVERAGE				
Runways	10.5 Knots	13 Knots	16 Knots	20 Knots
Runway 16-34	99.50%	99.79%	99.95%	99.98%
Runway 12-30	95.25%	97.76%	99.37%	99.91%
All Runways	99.59%	99.85%	99.96%	99.99%



SOURCE:
NOAA National Climatic Center
Asheville, North Carolina
Redding Regional Airport
Redding, California

OBSERVATIONS:
11,039 IFR Observations
Jan. 1, 2014 - Dec, 31 2023

Exhibit 3D: Design Standards

Table 3J: Commercial Aircraft Takeoff Runway Length

Aircraft Type	MTOW (lbs.)	TAKEOFF LENGTH REQUIREMENTS (feet)				
		Useful Load				
		60%	70%	80%	90%	100%
B737-700	***154,500***	***5,000***	***5,900***	***6,800***	***7,900***	***10,100***
B737-800	174,200	5,300	6,000	6,800	7,300	8,200
B767-300	350,000	7,700	8,300	8,900	9,200	10,000
CRJ-200	53,000	4,500	5,100	5,600	6,100	6,600
CRJ-700	75,000	4,400	4,800	5,200	5,500	5,900
CRJ-900	82,500	5,100	5,600	6,000	6,400	7,000
EMB 170	79,344	3,600	4,000	4,300	4,800	5,300
DC10-40	555,000	8,600	9,000	9,800	10,300	11,100

- Airfield elevation: 504.7' MSL
- Mean maximum temperature of the hottest month: 99.9°F
- MTOW: maximum takeoff weight
- ***Boldface*** is representative of the current critical aircraft.
- Length calculations above 30 are rounded up to the next 100.
- RED indicates the calculated length is greater than the existing 7,003' runway length.

Table 3L: Business Jet Runway Length Requirements (FAA Method)

Airport Elevation		505' MSL		
Average High Monthly Temperature		99.9°F (July)		
Runway Gradient		0.20%		
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	4,891	4,971	5,500	5,500
100% of fleet at 60% useful load	6,105	6,185	5,500	6,200
75% of fleet at 90% useful load	7,493	7,573	7,000	7,600
100% of fleet at 90% useful load	10,127	10,207	7,000	10,200
*Max 5,500' for 60% useful load and max 7,000' for 90% useful load in wet conditions				

Table 3M: Business Jet Takeoff Runway Length

Aircraft Type	MTOW (lbs.)	TAKEOFF LENGTH REQUIREMENTS (feet) Useful Load 60%	70%	80%	90%	100%
Citation Bravo	14,800	3,750	4,035	4,358	4,729	5,140
Citation Sovereign	30,300	3,425	3,555	3,760	4,030	4,333
Challenger 601	45,100	5,200	5,800	6,460	7,200	8,040
Falcon 900B	46,500	4,390	4,960	5,590	6,300	7,080
Falcon 900EX	49,200	4,430	5,030	5,720	6,400	7,020
Gulfstream 300	72,000	4,560	4,859	5,283	5,790	6,338
Gulfstream 550	91,000	4,815	5,492	6,212	6,989	7,813
Gulfstream 650	99,600	5,081	5,588	6,172	6,851	7,649
Gulfstream IV	74,600	4,753	5,056	5,649	6,215	CL
Hawker 1000	31,000	5,610	6,250	CL	CL	CL

- Airfield elevation: 504.7 feet MSL
- Mean maximum temperature of the hottest month: 99.9°F
- MTOW: maximum takeoff weight
- CL: climb limited
- RED indicates the calculated length is greater than the existing 7,003' runway length.

RUNWAY LENGTH SUMMARY

- Commercial Aircraft: At 7,003 feet, Runway 16-34 is adequate for the current critical aircraft (737) for most destinations including Denver.
- Commercial Aircraft: An additional 1,000 feet would accommodate more distant destinations (Dallas, Chicago, etc.).
- Airtankers (DC-10/C-130): Currently weight restricted. Cal Fire/USFS desire an additional 2,000 feet of runway length.

Figure 3.2: Taxiway Considerations

Exhibit 3E: Airfield Facility Requirements

	CATEGORY	RUNWAY 16-34 EXISTING	RUNWAY 16-34 ULTIMATE	RUNWAY 12-30 EXISTING	RUNWAY 12-30 ULTIMATE	PARALLEL RUNWAY 16L-34R ULTIMATE
RUNWAY						
	Runway Design Code	RDC C-III-2400	RDC D-III-2400	RDC C-III-VIS	Consider B-II-VIS or Close Runway	B-II(s)-VIS
	Length	7,003'	9,003'	5,067'	Maintain or Close Runway	4,400'
	Width	150'	150'	150'	75' or Close Runway	75'
	Pavement Strength (landing gear configuration)	98 (S); 128 (D); 195 (DD)	Maintain	60 (S); 72 (D); 110 (DD)	Maintain or Close Runway	12,500 (s)
	Pavement Strength (PCN)	60 F/C/X/T	Maintain	60 F/C/X/T	Maintain or Close Runway	NA
SAFETY AREAS						
	RSA	(500'x1,000') Meets standard	Maintain	Taxiways M and C in RSA	Maintain or Close Runway	150'x300'
	ROFA	(800'x1,000') Meets standard	Maintain	Hangars and Taxiways M and C in ROFA	Maintain or Close Runway	500'x300'
	OFZ	(400'x200') Meets standard	Maintain	Meets Standard	Maintain or Close Runway	200'x250'
	POFZ	(800'x200') Meets Standard (Rwy 34)	Maintain	NA	NA	NA
	RPZ	(Various) Meets standard	Remove incompatible land uses, including public roads from RPZs	Structures in Rwy 12 RPZ	Remove Structures or Close Runway	1,000'x250'x450'
TAXIWAYS						
	Taxiway Design Group	3	Maintain	3	3	2
	Width	50' (standard)	All Taxiways to be at least 50' wide	50' (standard)	All Taxiways to be at least 50' wide	35' for any taxiway serving this runway exclusively
	Parallel Taxiway Separation	400' (standard)	Maintain	NA	NA	240'
	Angled Taxiways	Twys D1, M, B, D (Runway 36 threshold)	Reconstruct at 90° Angle	NA	NA	90-degree intersections

KEY

ASOS - Automated Surface Observing System
ATCT - Airport Traffic Control Tower
MALSR - Medium Intensity Approach Light System with Runway Alignment Indicator Lights
MIRL/HIRL - Medium/High Intensity Runway Lighting
MITL - Medium Intensity Taxiway Lighting
PAPI - Precision Approach Path Indicator
PCN - Pavement Classification Number
POFZ - Precision Obstacle Free Zone
RDC - Runway Design Code
REIL - Runway End Identification Lights
ROFA - Runway Object Free Area
ROFZ - Runway Obstacle Free Zone
RPZ - Runway Protection Zone
RSA - Runway Safety Area
VIS - Visual

Exhibit 3E: Airfield Facility Requirements

		RUNWAY 16-34		RUNWAY 12-30		PARALLEL RUNWAY 16L-34R
	CATEGORY	EXISTING	ULTIMATE	EXISTING	ULTIMATE	ULTIMATE
NAVIGATIONAL AIDS						
	Instrument Approaches	½-mile (Runway 34)/¾-mile (Runway 16)	Maintain	VIS	Maintain or Close Runway	VIS
	Glideslope Antenna	Yes (Part of ILS)	Maintain	NA	NA	NA
	Localizer Antenna	Yes (Part of ILS)	Maintain	NA	NA	NA
	Weather Aids	ASOS Segmented Circle Wind Tee Windsocks	Maintain Maintain Maintain Maintain	Maintain Maintain Maintain Maintain	Maintain Maintain Maintain Maintain	Maintain Maintain Maintain Two additional windsocks
	Control Tower	Yes	Replace with modern facility	Yes	Replace with modern facility	Replace with modern facility
VISUAL APPROACH AIDS						
	Glide Path Indicator Lights	PAPI-4	Maintain	PAPI-2 (Rwy 30)	Maintain or Close Runway	NA
	Runway End Identification Lighting	REIL (Rwy 16)	Maintain	No REIL	Non required	NA
	Approach Lighting System	MALSR	Maintain	NA	NA	NA
LIGHTING, MARKING, SIGNAGE						
	Airport Identification	Rotating Beacon	Maintain	Maintain	Maintain	Maintain
	Runway Edge Lighting	HIRL	Maintain	Maintain	Maintain	MIRL
	Taxiway Edge Lighting	MITL	Maintain	Maintain	Maintain	MITL
	Hold Position Marking	250' from Rwy centerline	Maintain	Maintain	Maintain	125'
	Connecting Taxiways	Enhanced Centerline Markings	Maintain	Maintain	Maintain	Centerline markings
	Other Taxiways	Yellow Centerline Markings	Maintain	Maintain	Maintain	Centerline markings
	Lighted Airfield Signage	Yes	Maintain	Maintain	Maintain	Yes, as appropriate

KEY

ASOS - Automated Surface Observing System
ATCT - Airport Traffic Control Tower
MALSR - Medium Intensity Approach Light System with Runway Alignment Indicator Lights
MIRL/HIRL - Medium/High Intensity Runway Lighting
MITL - Medium Intensity Taxiway Lighting
PAPI - Precision Approach Path Indicator
PCN - Pavement Classification Number
POFZ - Precision Obstacle Free Zone
RDC - Runway Design Code
REIL - Runway End Identification Lights
ROFA - Runway Object Free Area
ROFZ - Runway Obstacle Free Zone
RPZ - Runway Protection Zone
RSA - Runway Safety Area
VIS - Visual

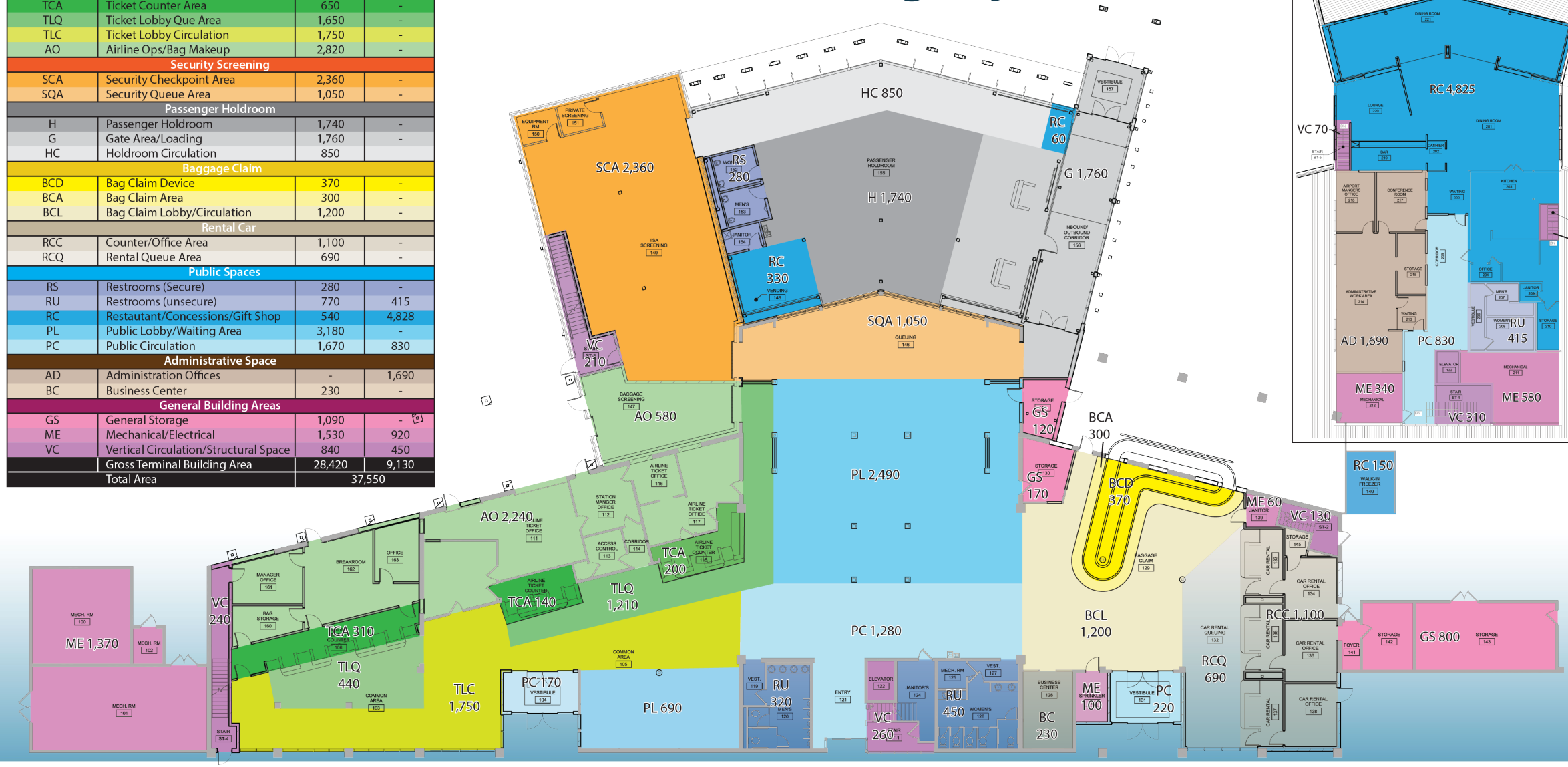
TERMINAL COMPLEX

Table 3P: Airline Peaking Activity Levels

Enplanements	2022 – Current	Short Term	Intermediate Term	Long Term
Annual	100,890	139,402	148,602	154,500
Peak Month	9,806	13,549	14,443	15,017
Design Day	530	732	781	812
Design Hour	182	251	268	279
Deplanements				
Design Hour	244	337	359	374
Total Passengers				
Design Hour	426	588	627	653
Commercial Operations				
Annual	3,905	3,871	3,190	2,728
Peak Month	350	347	286	245
Design Day	12	12	10	8
Design Hour	4	4	3	3
Departures/Arrivals				
Design Day	6	6	5	4
Design Hour	2	2	2	2

Terminal Building Layout

Abbreiviation	Functional Area	Level 1 (sf)	Level 2 (sf)
	Ticketing/Check-In		
TCA	Ticket Counter Area	650	-
TLQ	Ticket Lobby Que Area	1,650	-
TLC	Ticket Lobby Circulation	1,750	-
AO	Airline Ops/Bag Makeup	2,820	-
	Security Screening		
SCA	Security Checkpoint Area	2,360	-
SQA	Security Queue Area	1,050	-
	Passenger Holdroom		
H	Passenger Holdroom	1,740	-
G	Gate Area/Loading	1,760	-
HC	Holdroom Circulation	850	
	Baggage Claim		
BCD	Bag Claim Device	370	-
BCA	Bag Claim Area	300	-
BCL	Bag Claim Lobby/Circulation	1,200	-
	Rental Car		
RCC	Counter/Office Area	1,100	-
RCQ	Rental Queue Area	690	-
	Public Spaces		
RS	Restrooms (Secure)	280	-
RU	Restrooms (unsecure)	770	415
RC	Restautant/Concessions/Gift Shop	540	4,828
PL	Public Lobby/Waiting Area	3,180	-
PC	Public Circulation	1,670	830
	Administrative Space		
AD	Administration Offices	-	1,690
BC	Business Center	230	-
	General Building Areas		
GS	General Storage	1,090	-
ME	Mechanical/Electrical	1,530	920
VC	Vertical Circulation/Structural Space	840	450
	Gross Terminal Building Area	28,420	9,130
	Total Area	37,550	



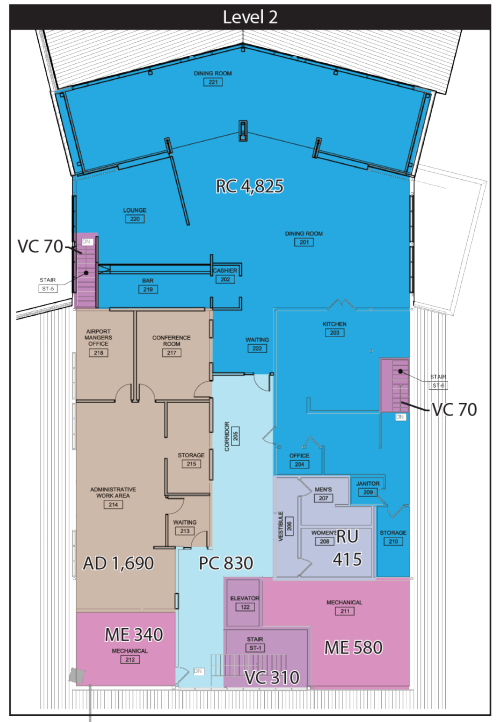


Exhibit 3F: Terminal Space Requirements

			Planning Activity Levels			
		Existing	Current Need 100,890	Short 139,402	Intermediate 148,602	Long 154,500
DEPARTURES PROCESSING						
Ticket Counters						
Utilization Factor	90%	0	164	226	241	251
Agent Positions	#	5	7	9	10	10
Frontage	LF	94	42	54	60	60
Area	SF	650	460	590	660	660
Ticket Lobby						
Queing Area	SF	1,650	920	1,270	1,360	1,410
TSA Baggage Check	SF	580	840	1,080	1,200	1,200
Outbound Baggage	SF	Outside	2,020	2,590	2,880	2,880
Airline Ticket Office/Baggage Screening	SF	2,240	1,720	2,210	2,460	2,460
Ticket Lobby Circulation	SF	1,750	480	620	690	690
Subtotal Airline Operations	**SF**	**6,220**	**5,980**	**7,770**	**8,590**	**8,640**
Public Area						
Circulation	SF	2,500	11,930	16,460	17,560	18,280
Lobby/Waiting Area	SF	3,180		Included in Circulation		
Security Stations						
Number	#	1	1	2	2	3
Queing Area	SF	1,050	590	810	860	900
Station Area	SF	2,360	360	720	720	1,080
TSA Administration/Operations	SF	0	700	1,400	1,400	2,100
CONCOURSE FACILITIES						
Passenger Holdrooms						
Gates	#	1	2	2	2	3
Gate Area	SF	1,760		Included in Holdroom Area		
Holdroom Area	SF	1,740	3,540	4,570	4,830	5,860
Airline Operations	SF	0	2,000	2,000	1,500	1,500
Concourse Circulation						
Circulation Area	SF	850	1,062	1,371	1,449	1,758

Note: Level of Service C+ is applied

Exhibit 3F: Terminal Space Requirements

			Planning Activity Levels			
		Existing	Current Need 100,890	Short 139,402	Intermediate 148,602	Long 154,500
ARRIVALS PROCESSING						
Baggage Claim						
Passengers claiming bags	85%	207	207	286	305	318
Claim Display Frontage	LF	45	150	200	220	220
Claim Device Floor Area	SF	670	750	1,000	1,100	1,100
Inbound Baggage	SF	0	1,800	2,400	2,640	2,640
Baggage Service Office	SF	0	300	400	440	440
Claim Lobby						
Area Excl. Device Area	SF	600	4,930	6,810	7,260	7,560
Circulation Area	SF	600	2,970	4,100	4,360	4,550
PUBLIC SPACES						
Restrooms						
Area	SF	1,465	2,040	2,820	3,010	3,130
Concessions						
Food & Beverage	SF	5,365	1,210	1,670	1,780	1,850
Retail	SF	0	500	700	740	770
Support	SF	0	340	470	500	520
Rental Car						
Counter Frontage	LF	50	43	59	63	65
Counter and Office Area	SF	1,100	640	880	940	980
Counter Queuing Area	SF	690	340	470	500	520
Airport Administration						
Administration/Operations	SF	1,690	5,100	7,100	7,500	7,800
Business Center	SF	230	Included in Admin			
FUNCTIONAL AREA TOTAL						
Total Functional Area	**SF**	**32,720**	**46,702**	**63,431**	**67,139**	**71,483**
BUILDING SYSTEMS/SUPPORT						
Mechanical/HVAC	SF	2,450	1,870	2,540	2,690	2,860
Vertical Circulation/Structural Space	SF	1,290	1,900	2,500	2,700	2,900
General Storage	SF	1,090	3,270	4,440	4,700	5,000
TOTAL TERMINAL						
Gross Building Area	**SF**	**37,550**	**53,742**	**72,911**	**77,229**	**82,198**

Note: Level of Service C+ is applied

Table 3R: Terminal Curb and Parking

	Existing	Current Need	Short Term	Intermediate Term	Long Term
Terminal Curb					
Enplane Curb (ft)	120	100	100	110	110
Deplane Curb (ft)	180	140	240	250	260
Total Curb (ft)	***300***	***240***	***340***	***360***	***370***
Auto Parking					
Short Term	98	64	88	94	98
Long Term	230	143	198	211	219
Employee	34	30	42	45	46
Rental Car	75	85	117	125	130
Taxi/Shuttle Stand	1	1	1	1	1
Total All Parking	**438**	**323**	**446**	**476**	**494**

Terminal Building: The Bottom Line

- Existing Size: 37,550 sf
- Current Need: 53,742 sf (16,192 sf needed now)
- 20-Year Need: 82,198 sf (44,648 needed within 20-years)

Areas of Focus:

Hold Room: Need 4,000+sf
Ticket Lobby: Need 2,000+ sf
Bag Processing (inbound/outbound): Need +3,200 sf
General Circulation (all areas): +12,800 sf
Concessions (excluding existing restaurant): Need +1,000 sf
Gates: 1 currently/3 needed

GENERAL AVIATION FACILITIES
LANDSIDE CONSIDERATIONS

Table 3S: Hangar Needs

	Currently Available	Short Term	Intermediate Term	Long Term	Total Need
Based Aircraft	240	249	262	290	–
Aircraft to be Hangared	192	204	220	249	58
Hangar Positions					
T-Hangar Positions	104	107	113	124	20
Box Hangar Positions	19	37	39	44	25
Conventional Hangar Positions	27	37	42	51	24
Hangar Area Requirements					
T-Hangar Area	122,000	149,000	158,000	173,000	51,000
Box Hangar Area	47,000	92,000	98,000	111,000	64,000
Conventional Hangar Area	82,100	112,000	126,000	153,000	70,900
Total Storage Area (sf)	**251,100**	**353,000**	**382,000**	**437,000**	**185,900**
Maintenance Area	19,365	30,600	33,600	39,600	20,235

Table 3T: Aircraft Apron Requirements

		FORECAST			
	Currently Available	Short Term	Intermediate Term	Long Term	Total Need
Local Apron Positions	36	55	52	51	15
Local Apron Area (sy)	12,500	27,400	26,000	25,300	12,800
Transient Apron Positions	77	43	47	58	-19
Piston Transient Positions	*69*	*21*	*24*	*29*	*-40*
Turbine Transient Positions	*8*	*21*	*24*	*29*	*21*
Transient Apron Area (sy)	30,000	27,700	30,900	37,400	7,400
Total Apron Area (sy)	**42,500**	**55,100**	**56,900**	**62,700**	**20,200**

Exhibit 3G: Landside Facility Requirements

	Available	Short Term	Intermediate Term	Long Term
Based Aircraft	**240**	**249**	**262**	**290**
Hangar Positions				
T-Hangars	104	107	113	124
Executive/Box Hangars	19	37	39	44
Conventional Hangar Positions	27	37	42	51
Hangar Area				
T-Hangars	122,000	149,000	158,000	173,000
Executive/Box Hangars	47,000	92,000	98,000	111,000
Conventional Hangar (s.f.)	82,100	112,000	126,000	153,000
Total Hangar Area (s..f)	**251,100**	**353,000**	**382,000**	**437,000**
Maintenance Area (s.f.)	19,365	30,600	33,600	39,600
Aircraft Parking Positions				
GA Local Positions	36	55	52	51
GA Transient Piston Positions	69	21	24	29
GA Transient Turboprop/Jet Positions	8	21	24	29

Exhibit 3G: Landside Facility Requirements

	Available	Short Term	Intermediate Term	Long Term
GA Aircraft Parking Apron				
				
GA Local Apron Area (s.y.)	12,500	27,400	26,000	25,300
GA Transient Apron Area (s.y.)	30,000	27,700	30,900	37,400
GA Total Apron (s.y.)	**42,500**	**55,100**	**56,900**	**62,700**
GA Terminal Services				
				
Area (s.f.)	7,800	8,800	9,700	11,800
Fuel Storage				
				
AvGas Capacity (underground)	40,700 gal.	Maintain	Maintain	Maintain
Jet A Capacity	112,700 gal.	Maintain	Maintain	Maintain
Perimeter Fencing				
Linear Feet	38,000	Maintain and Replace As Needed	Maintain and Replace As Needed	Maintain and Replace As Needed

DEVELOPMENT ALTERNATIVES

Exhibit 4A: Current ALP Concept

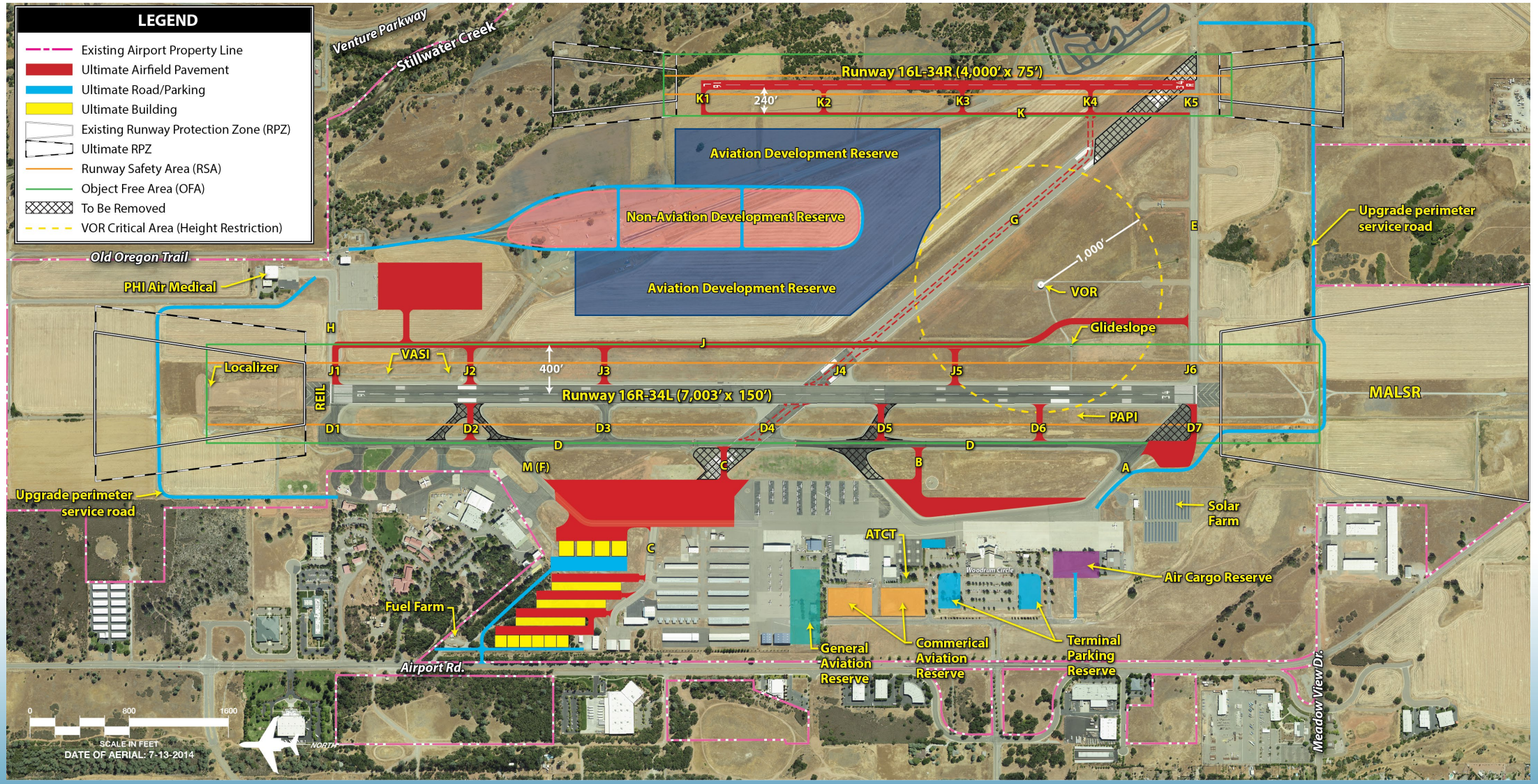


Exhibit 4B: Parallel Runway Alternatives

Exhibit 4C: Runway 12-30 Design Standards Alternatives

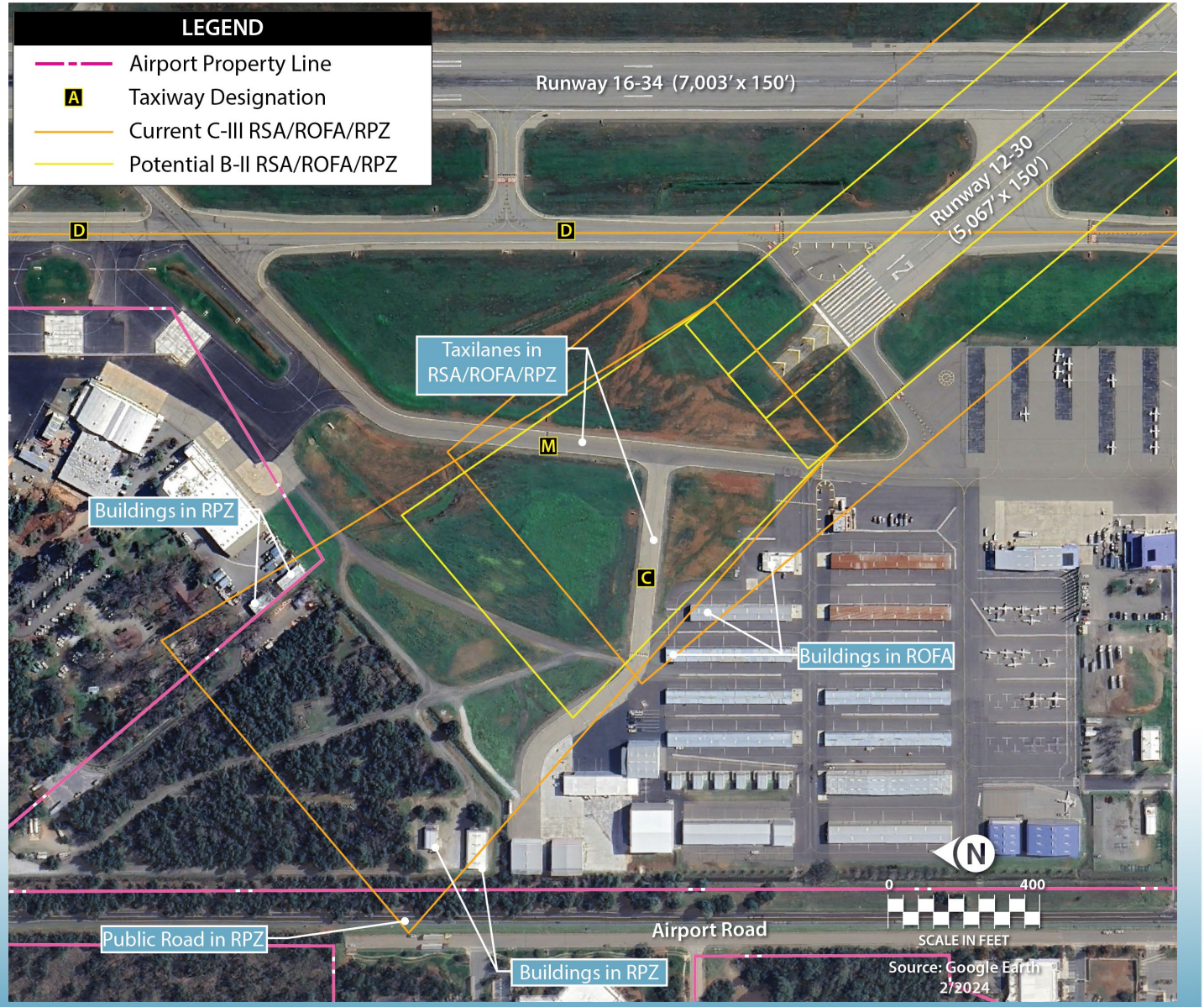


Exhibit 4D: Runway Extension Alternatives

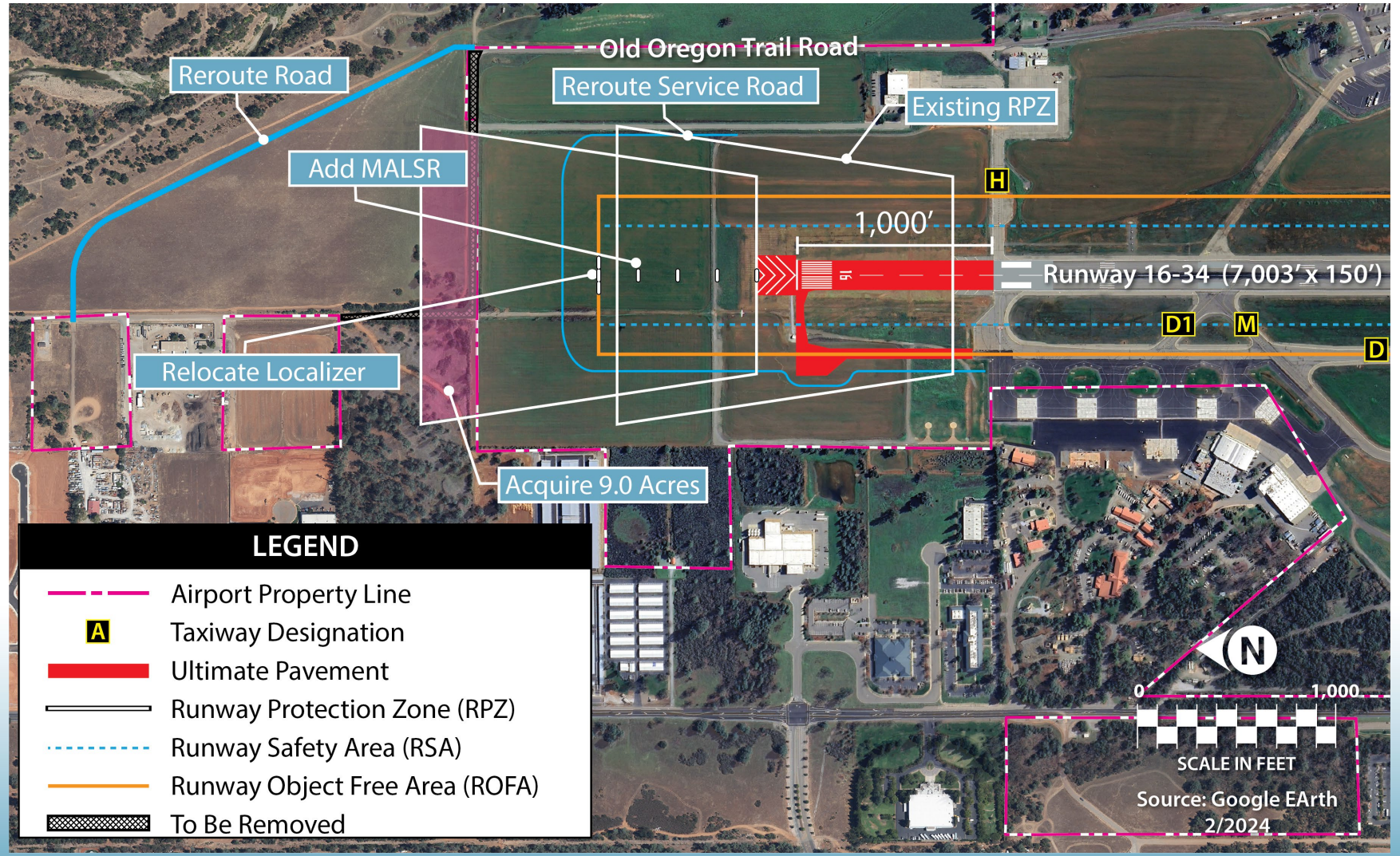


Exhibit 4D: Runway Extension Alternatives

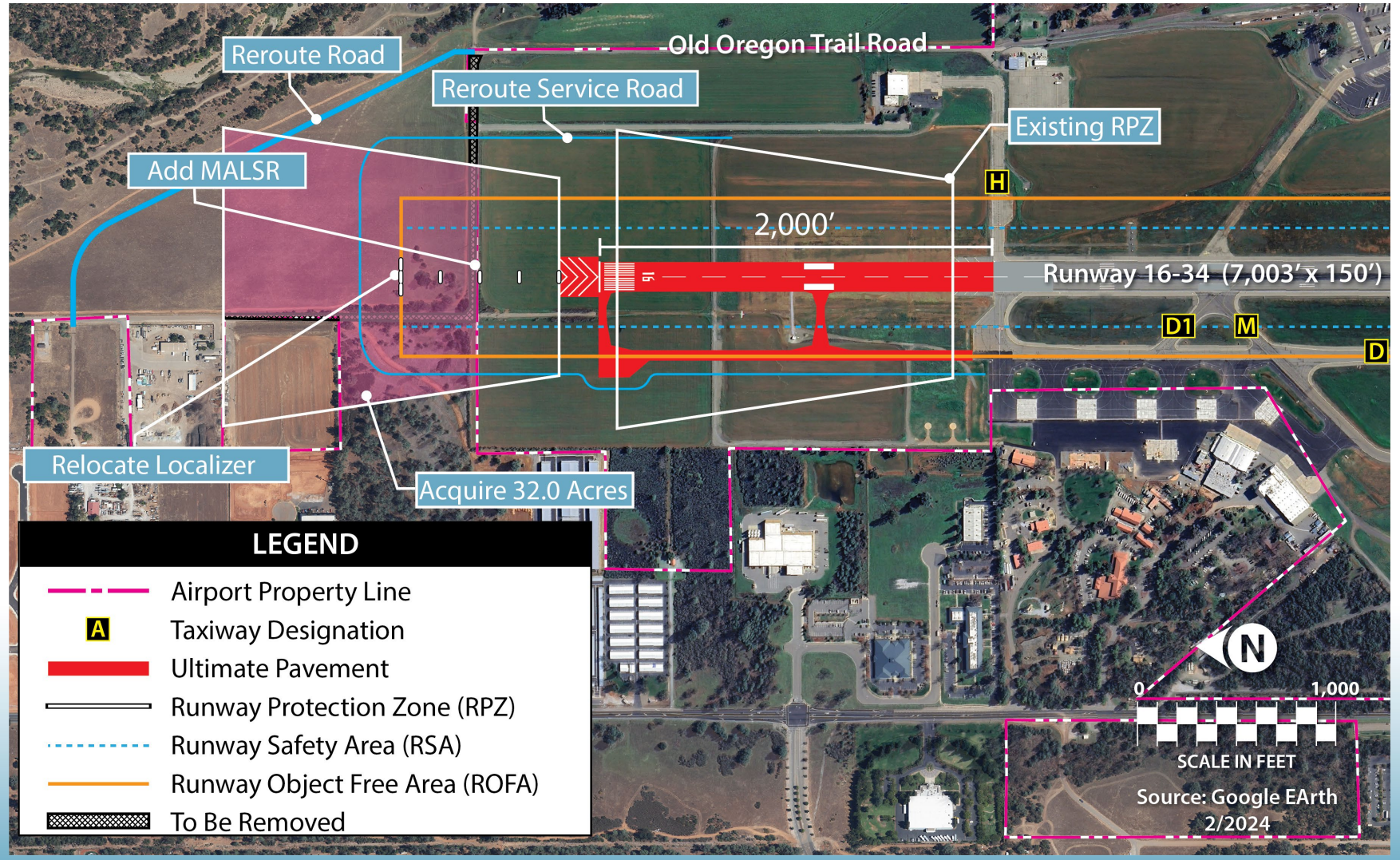


Exhibit 4E: Terminal Expansion Alternative 1

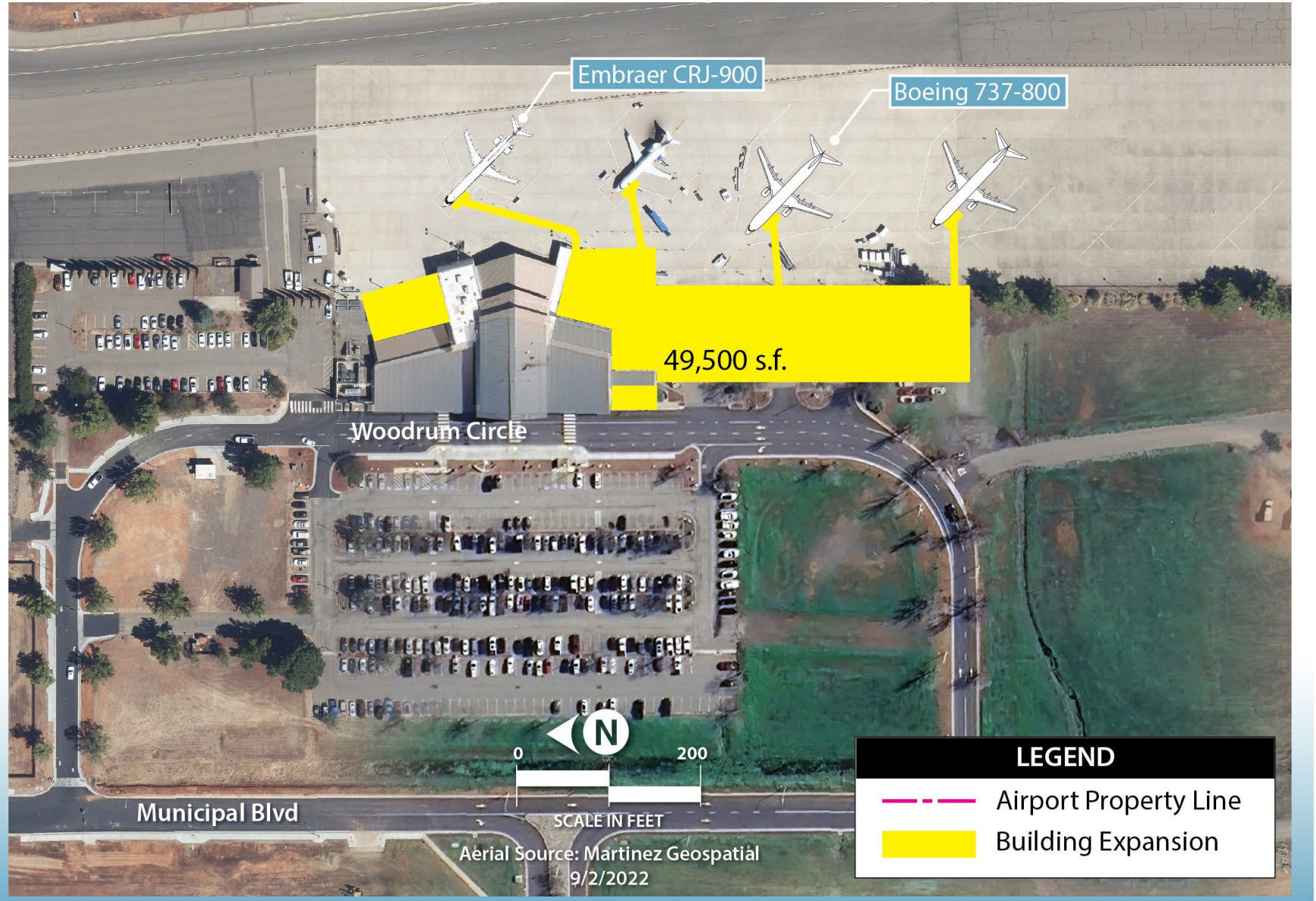


Exhibit 4F: Terminal Expansion Alternative 2

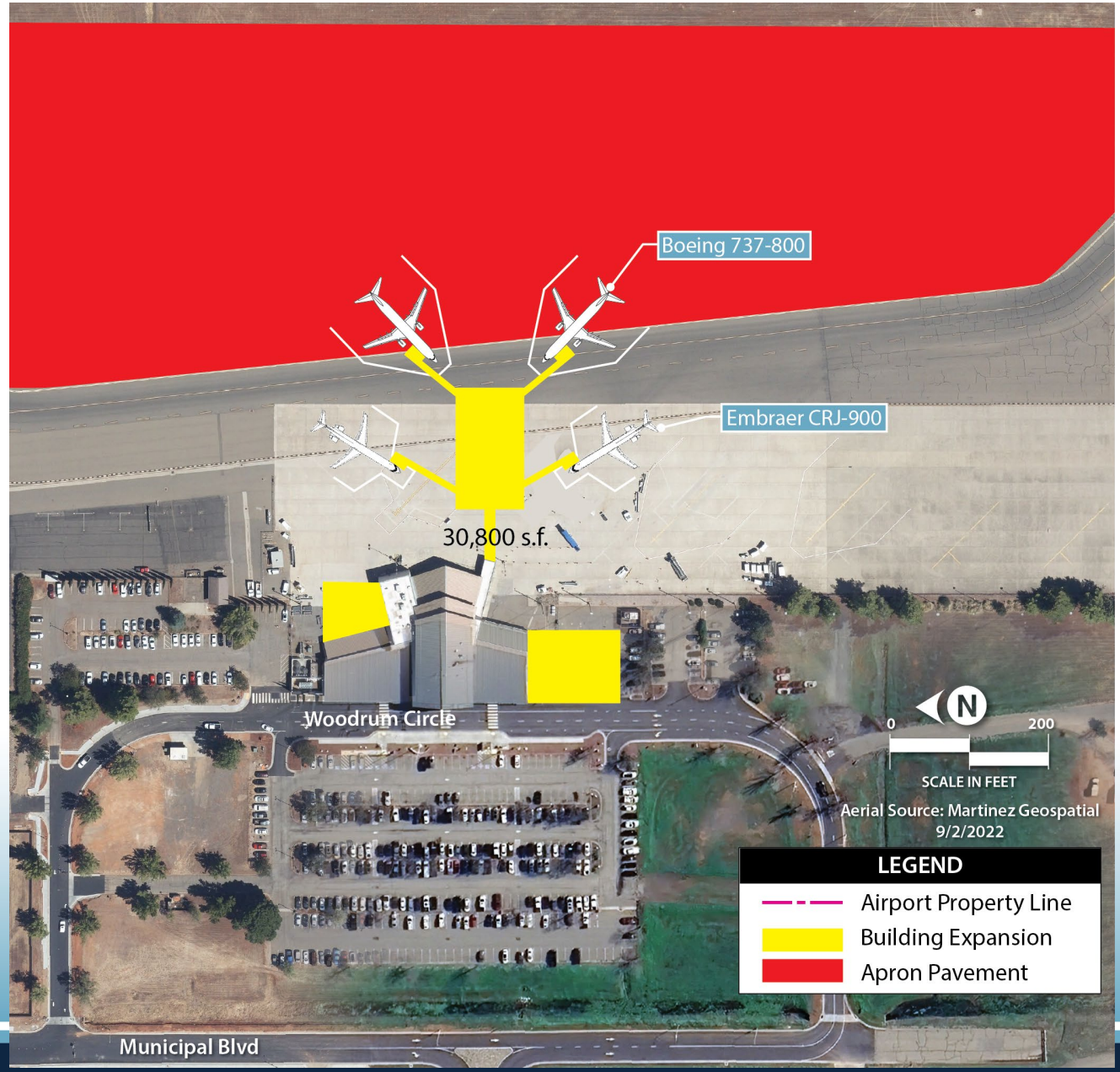


Exhibit 4G: Terminal Expansion Alternative 3

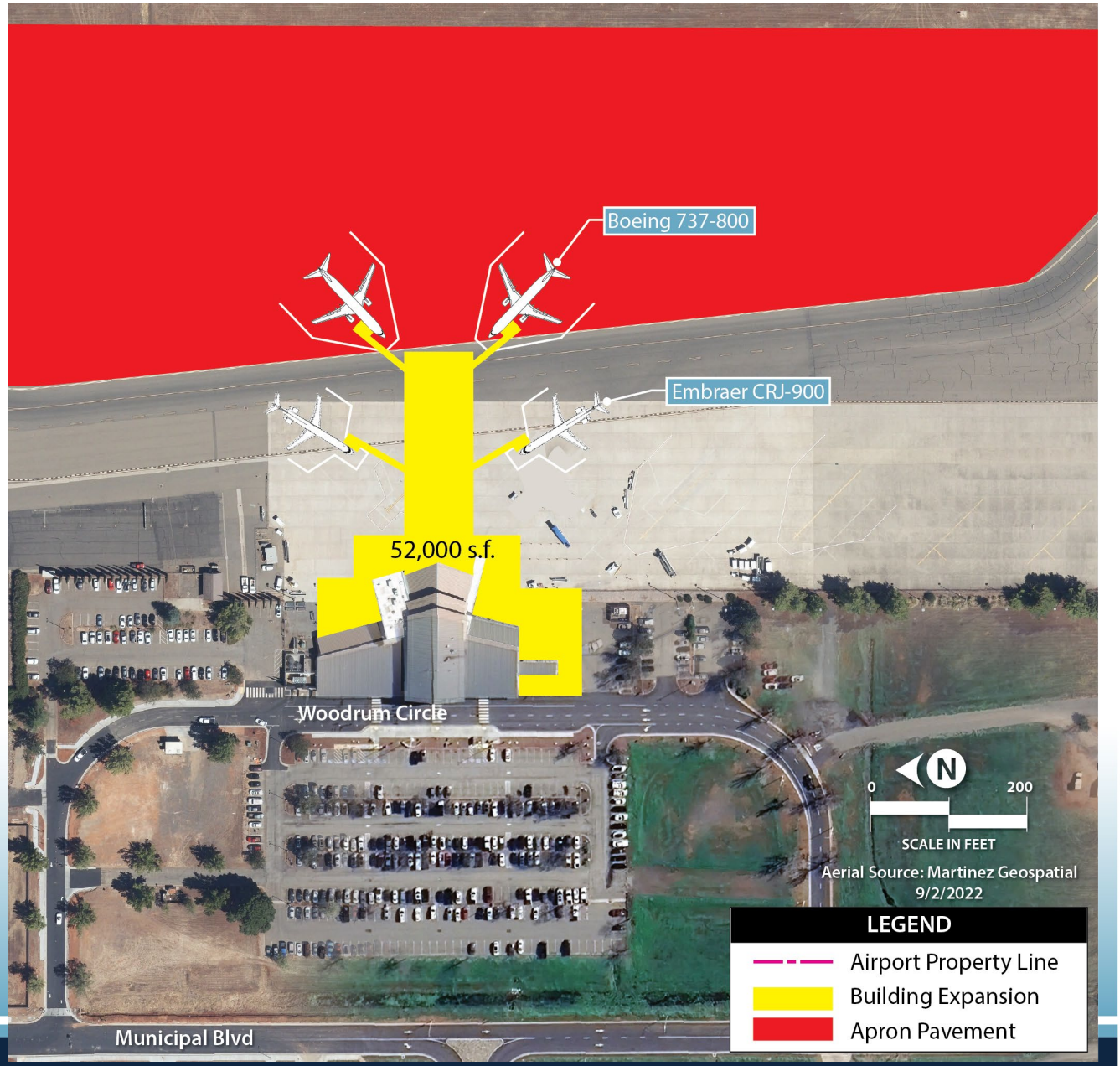


Exhibit 4H: Terminal Apron Alternatives

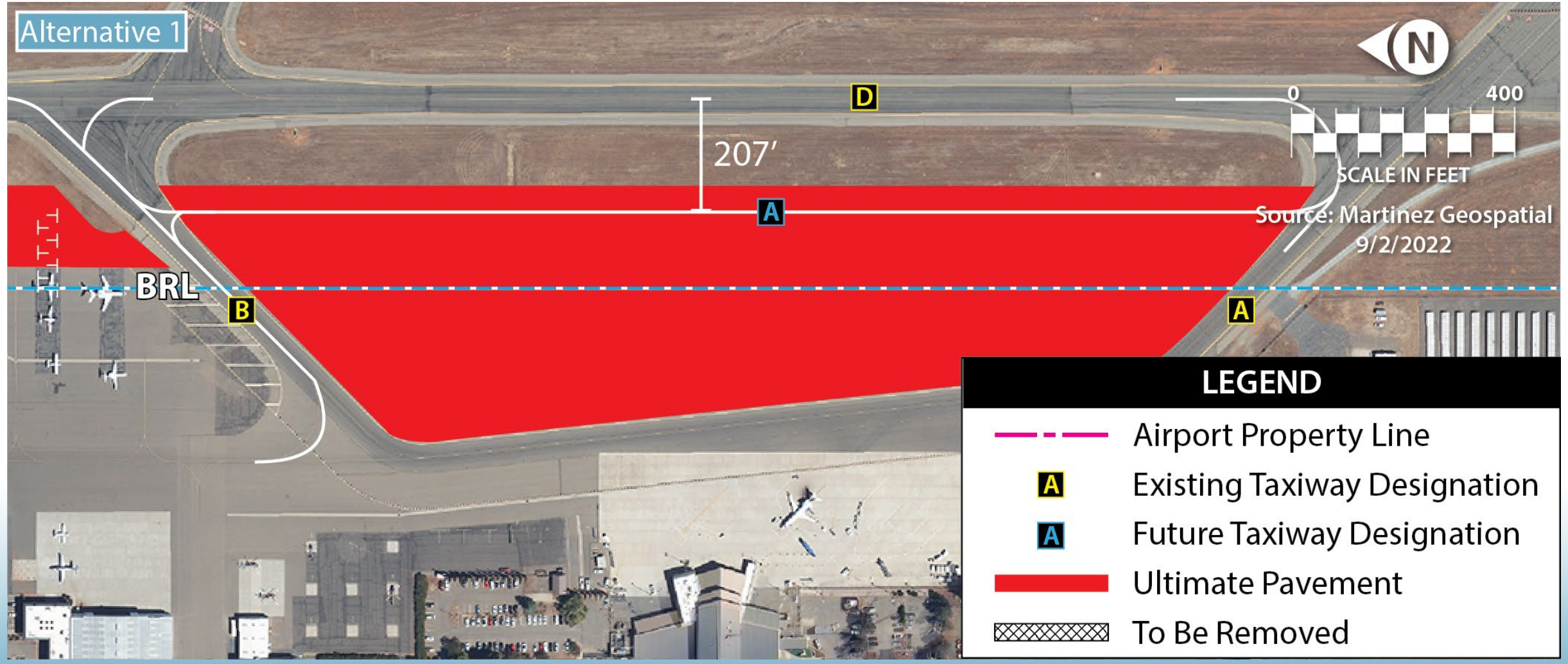


Exhibit 4H: Terminal Apron Alternatives

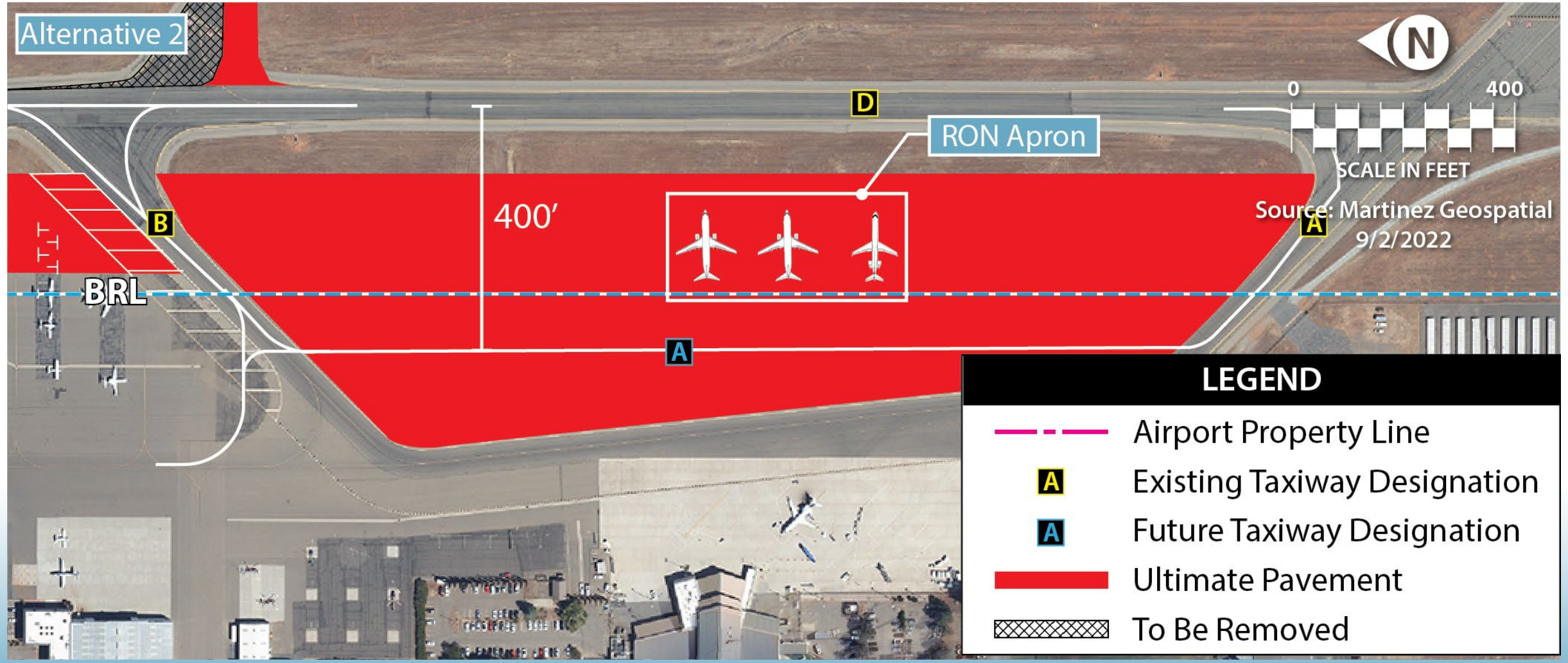


Exhibit 4H: Terminal Apron Alternatives

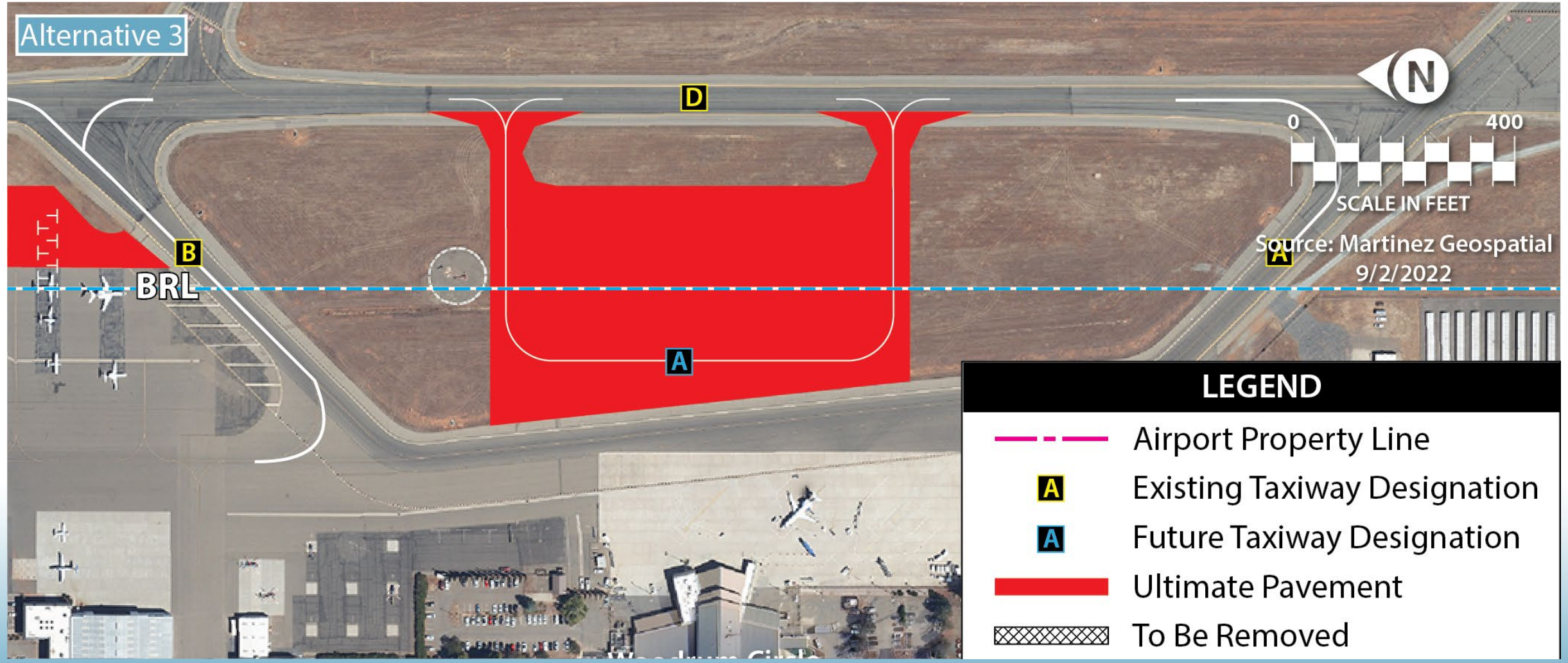


Exhibit 4J: Airport Alternative 1

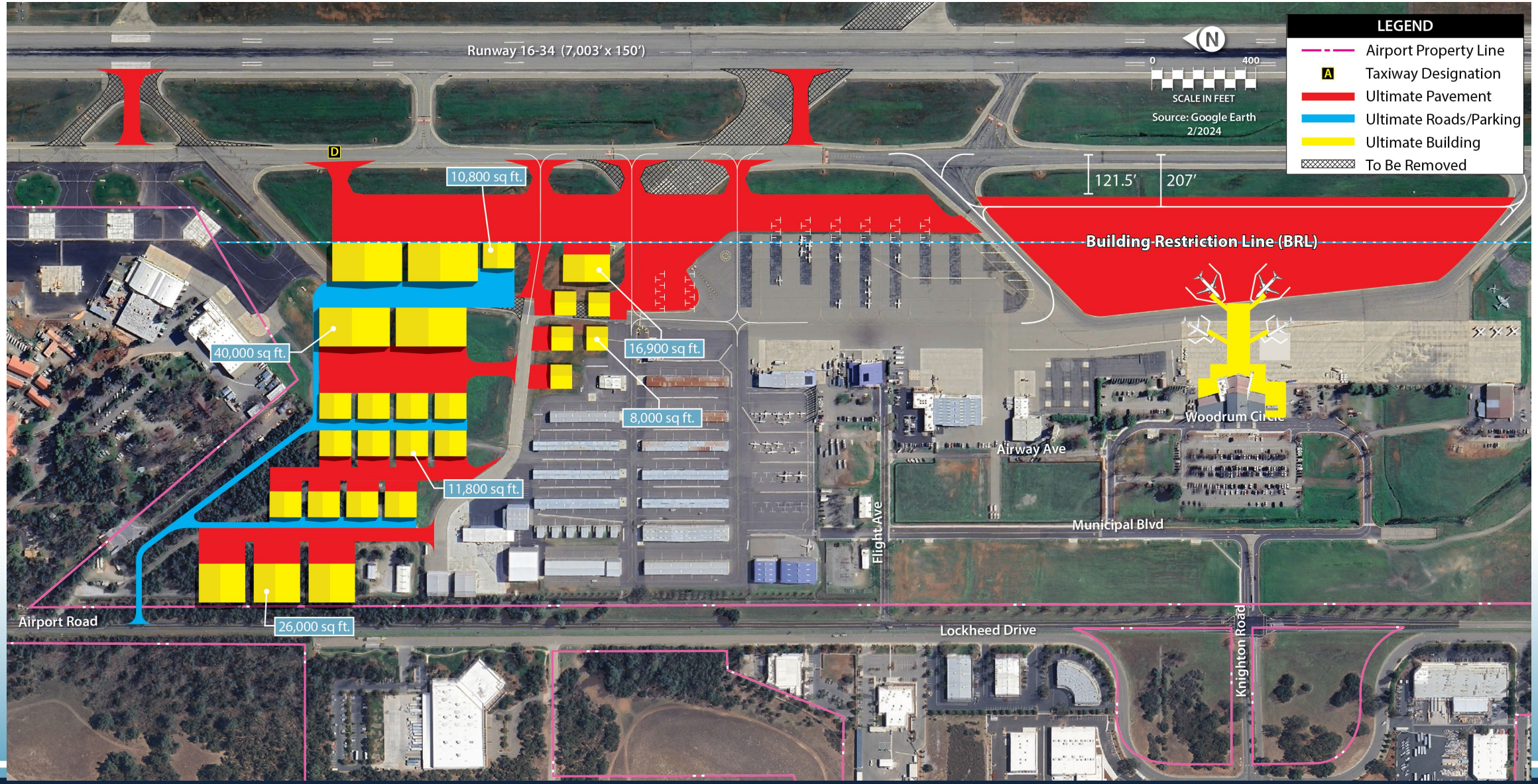


Exhibit 4K: Airport Alternative 2

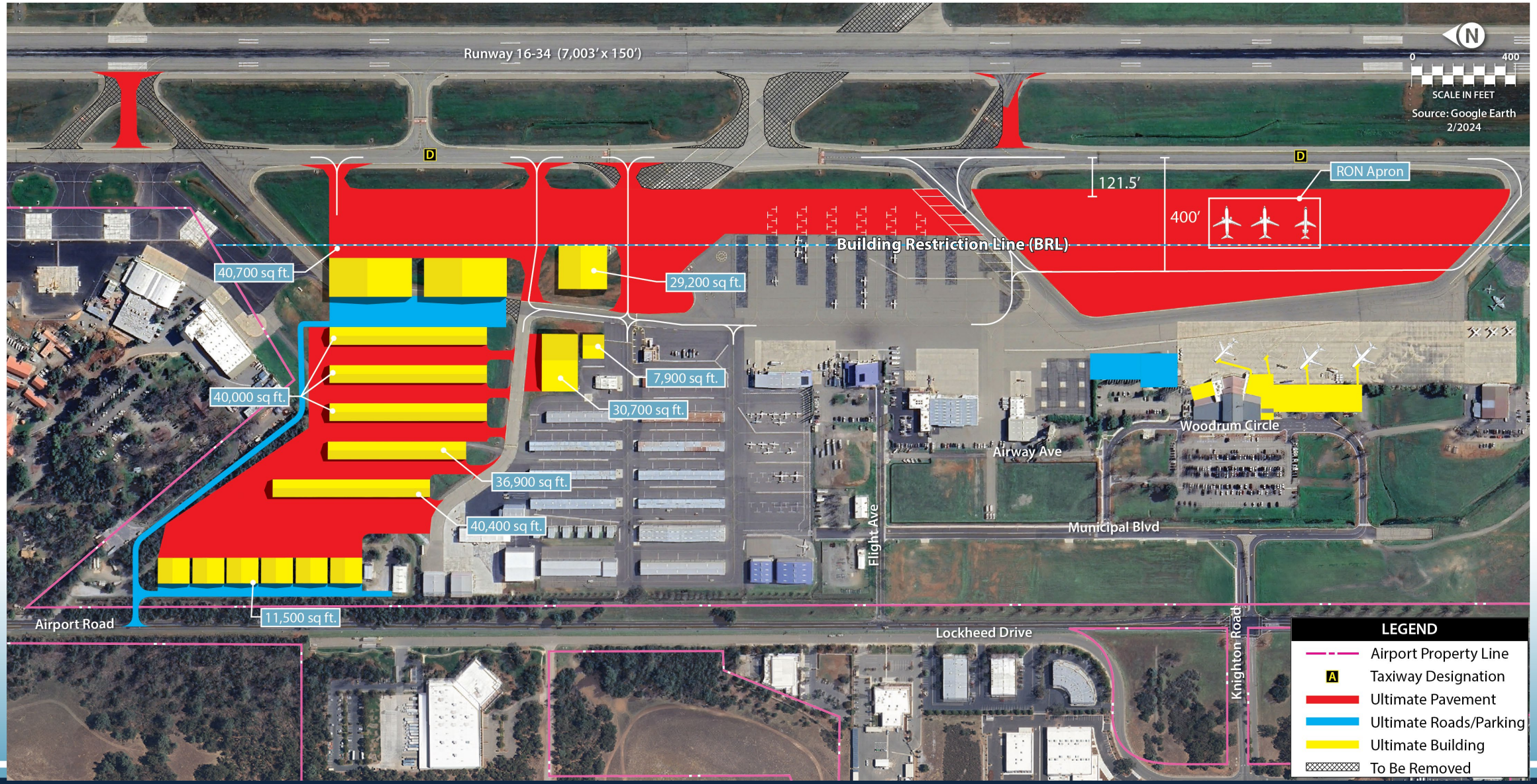


Figure 4.2: Taxiway Geometry Options

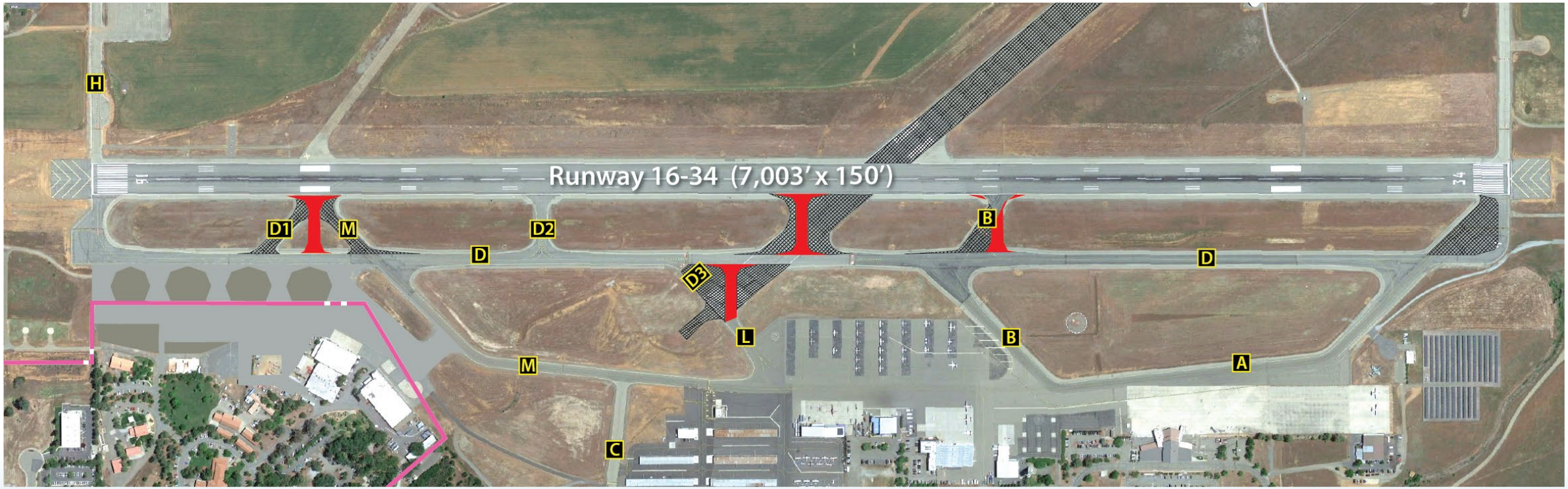


Figure 4.3: Potential Control Tower Locations

Figure 4.4: Vehicle Parking Expansion Options

Figure 4.5: Air Cargo Facilities

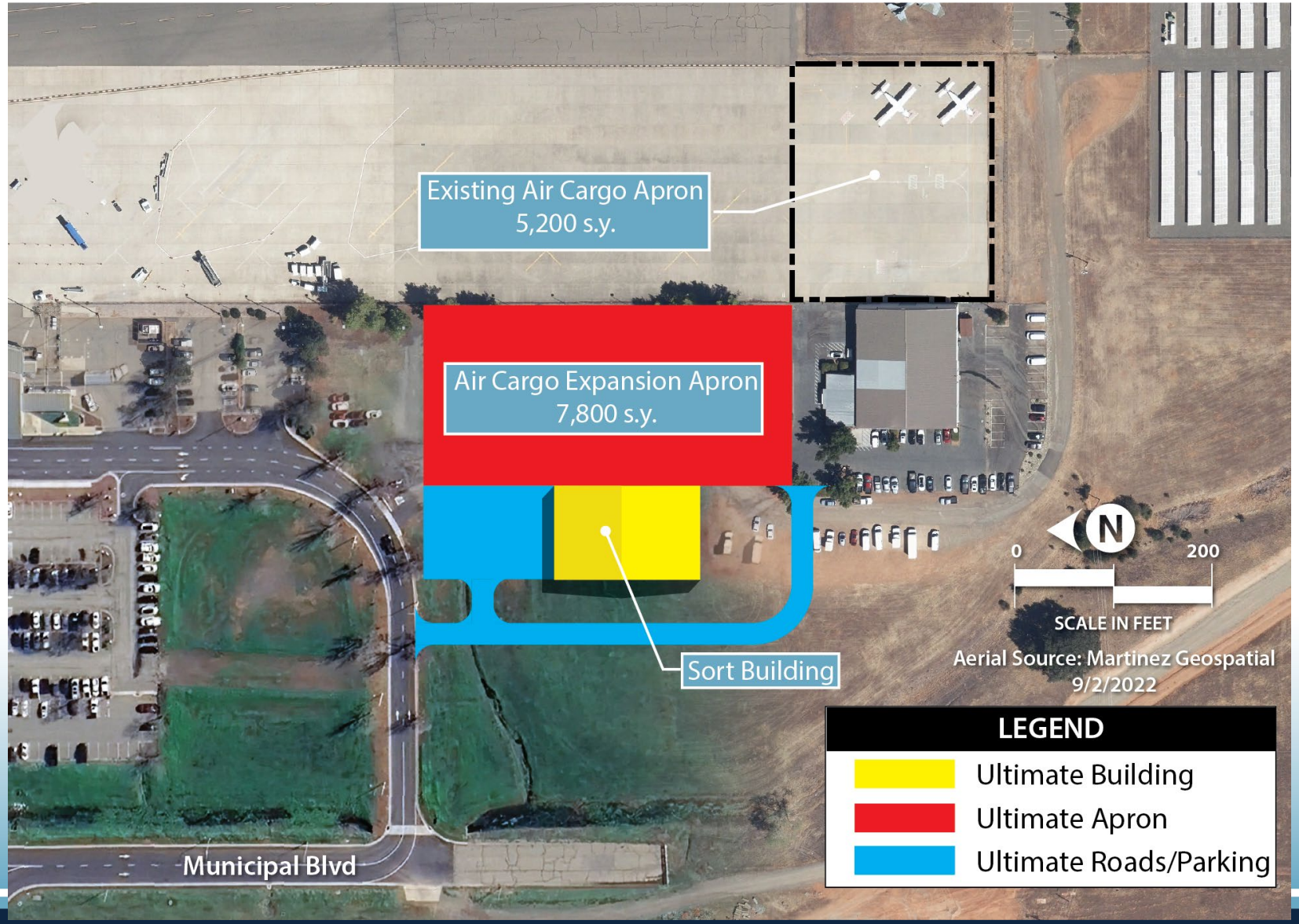


Exhibit 5A: Recommended Development Concept

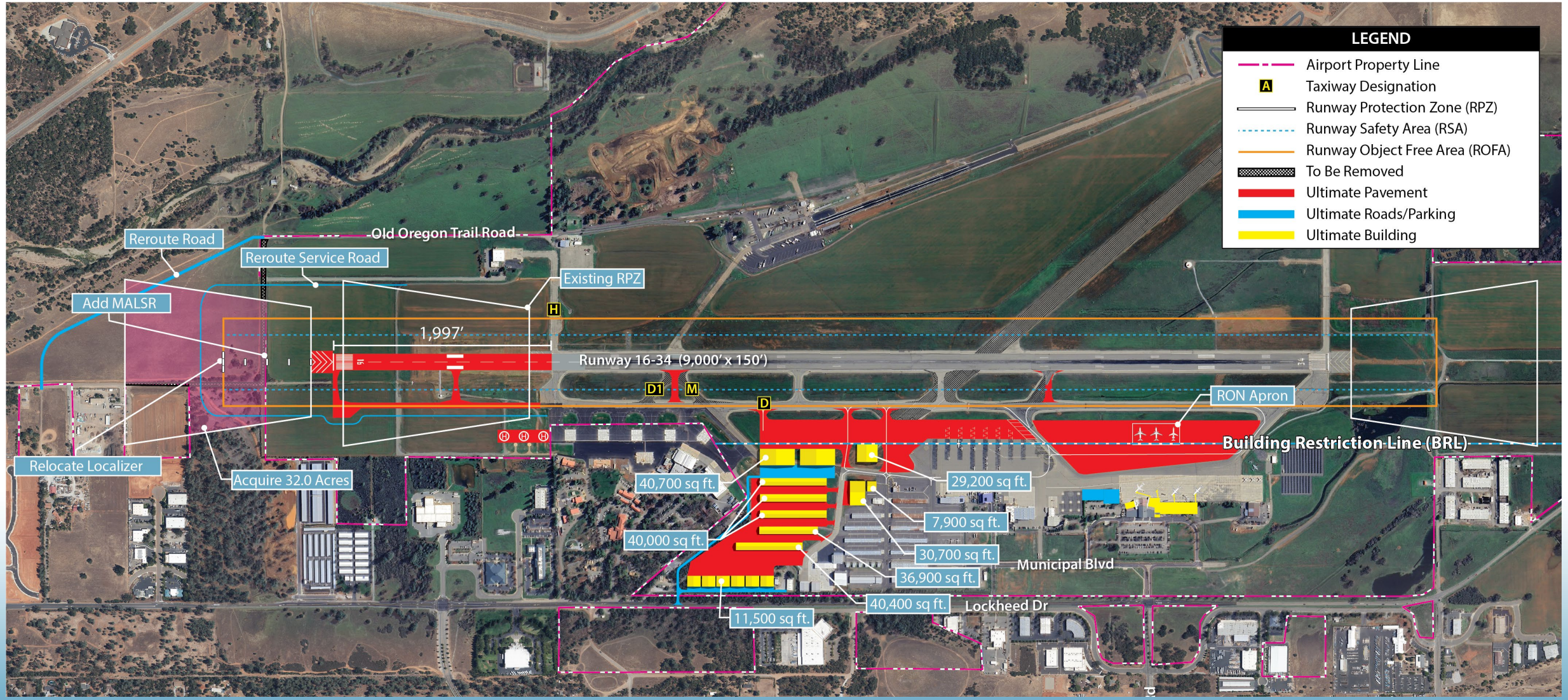
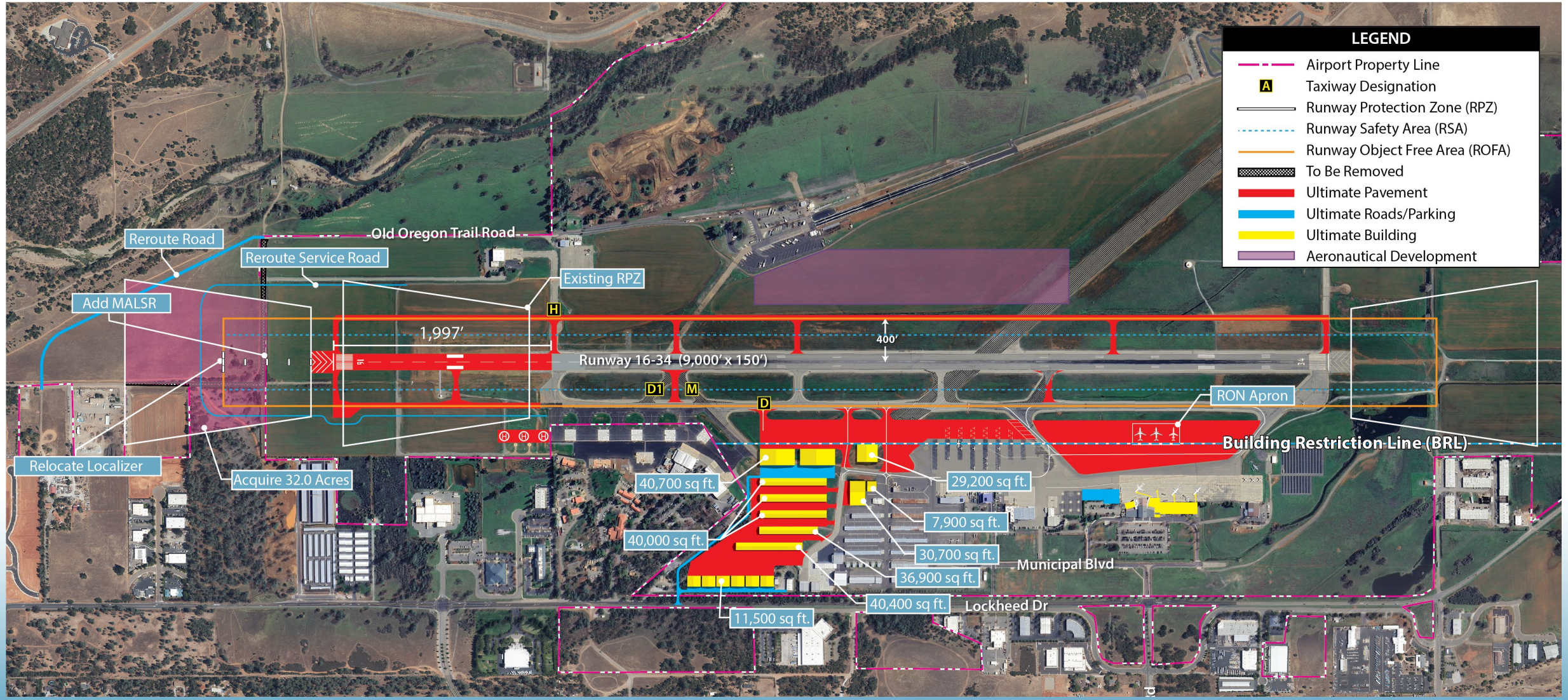


Exhibit 5A: Recommended Development Concept



NEXT STEPS

Recommended Development Concept
Capital Improvement Program
Comprehensive Land Use Plan

Table 3K: Small Aircraft Runway Length Calculations

Airport Elevation	504.7' MSL
Average High Monthly Temperature	99.9°F (July)
Runway Gradient	0.20%
Fleet Mix Category	**Runway Length**
95% of small aircraft	3,400'
100% of small aircraft	4,000'
Small aircraft with 10+ passenger seats	4,400'