



RS&H

MANASSAS MASTER PLAN

APRIL 18, 2024



Agenda

- » Master Plan Schedule/History
- » Facility Requirements
- » Alternatives Analysis
- » Forecast Update
- » Airport Layout Plan Draft



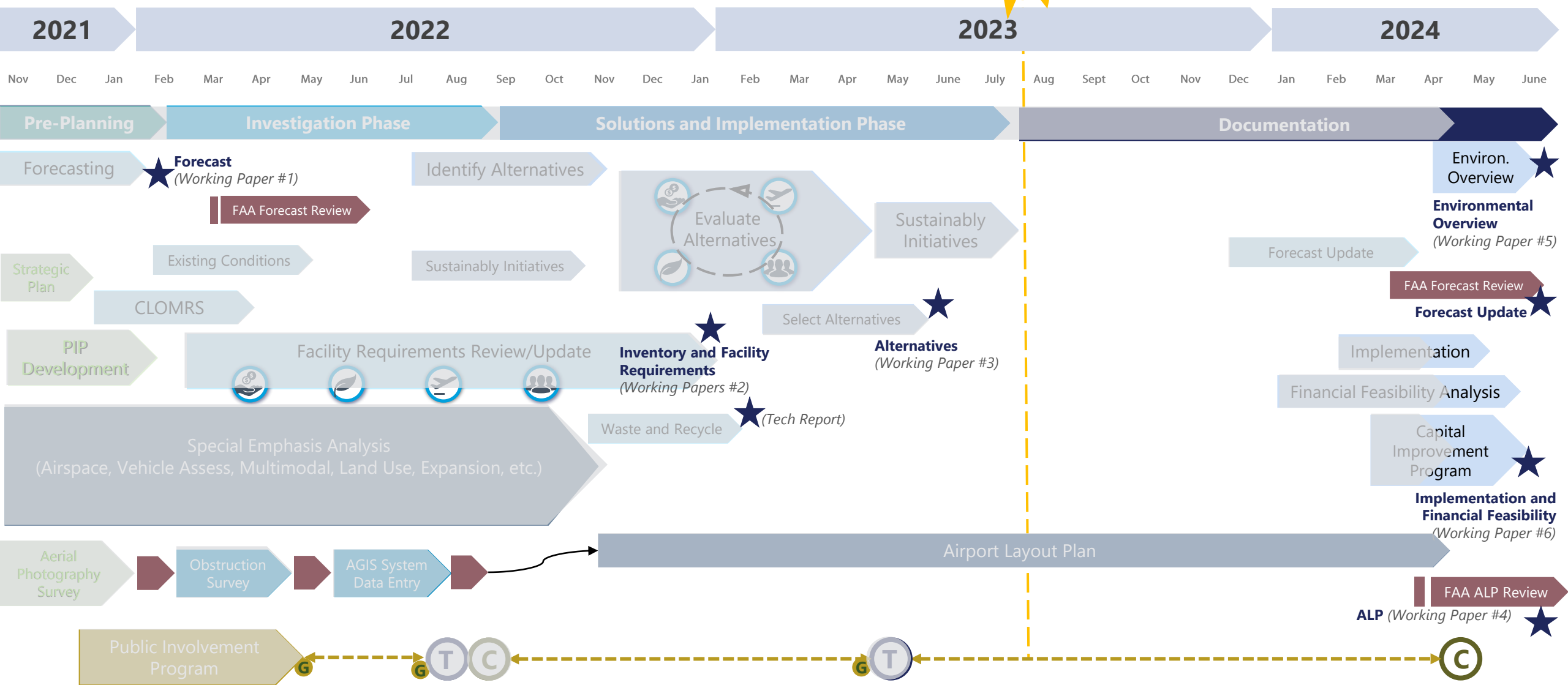
MASTER PLAN SCHEDULE/ HISTORY



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Master Plan Schedule



FACILITY REQUIREMENTS SUMMARY



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Facility Requirements Summary



Runways ●

- 1- Acquisition of all unowned land in RPZ areas
- 2- Construct paved shoulders (recommended)
- 3- Runway 16L blast pad does not align with design standards
- 4- Rehabilitate pavement on Runway 16L-34R
- 5- Preserve land for Runway 16L-34R extension (future)
- 6- Correct Runway 16L-34R surface variations, drainage and slope discrepancies present in the RSA

Taxiways ●

- 7- Rehabilitate taxiway
- 8- Address direct access to apron; address fence and ditch protrusion in TLOFA
- 9- Construct paved shoulders (recommended)
- 10- Assess Hot Spot
- 11- Fix drainage on TWY B2/B3

Aircraft Storage and Parking ●

- 12- Construct T-hangars
- 13- Construct conventional hangars
- 14- Construct additional transient aircraft apron space

Navigational Aids and Lighting ●

- 15- Relocation of Medium Intensity Approach Lighting System with Sequenced Flashers (MALSF) on Runway 16L-34R
- 16- Runway 16L MALSFR does not meet the three inch frangibility requirement within the RSA

Landside ●

- 17- Determine highest and best use for vacant quadrants in terminal area

Support Facilities ●

- 18- Relocation of Air Traffic Control Tower
- 19- Identify site for ARFF facility
- 20- Evaluate opportunities for a satellite fuel farm

Utilities ●

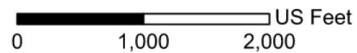
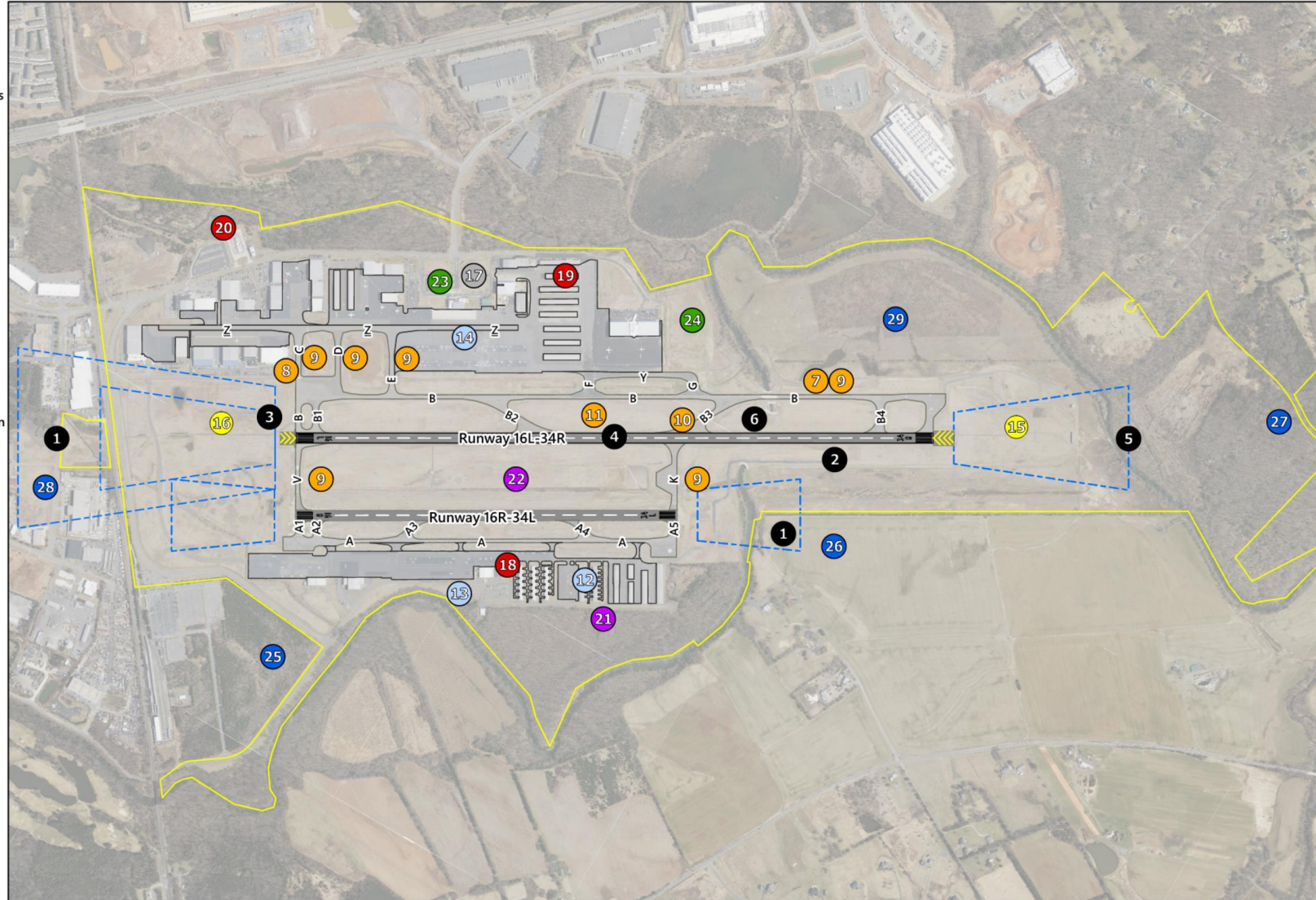
- 21- Expand utility lines
- 22- Assess temperature sensors for runways and bridges.

Sustainability Initiatives ●

- 23- Suggest planning for EV charging stations and infrastructure
- 24- Suggest planning for electric aircraft charging stations infrastructure

Land Acquisition/Disposition ●

- 25- Explore northwest vacant land opportunities (8-acres) between Piper and Observation Road
- 26- Explore southwest land opportunities (50- acre parcel) south of Board Run creek
- 27- Explore disposition of two parcels (11-acre and 14-acre) south of the Airport.
- 28- Acquire land below current RPZ for Runway 16L-34R and 16R-34L
- 29- Explore southeast land opportunity (54-acres) on airport property



Legend

- Runway Protection Zones
- Property Line

ALTERNATIVES ANALYSIS



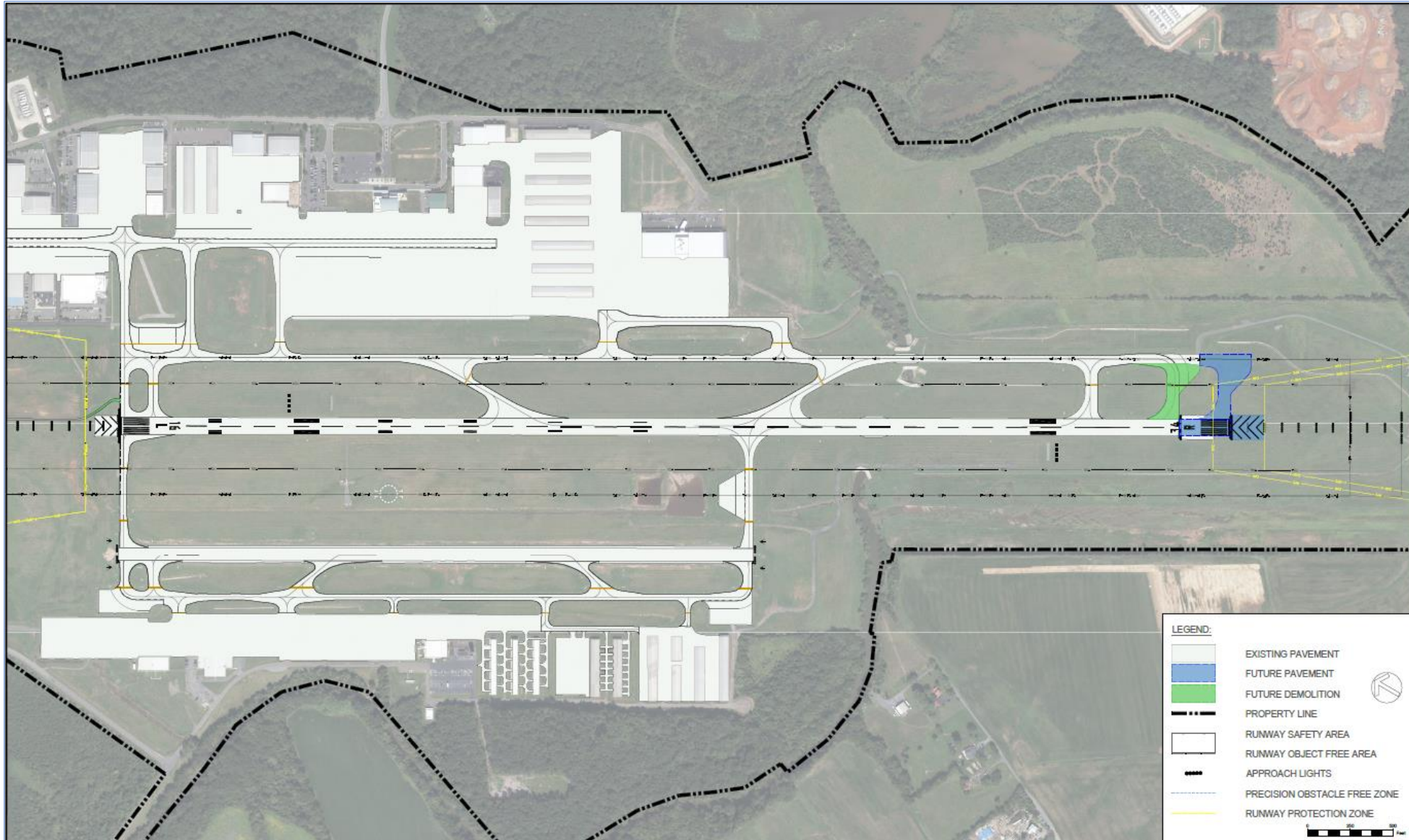
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RWY 16L-34R Extension



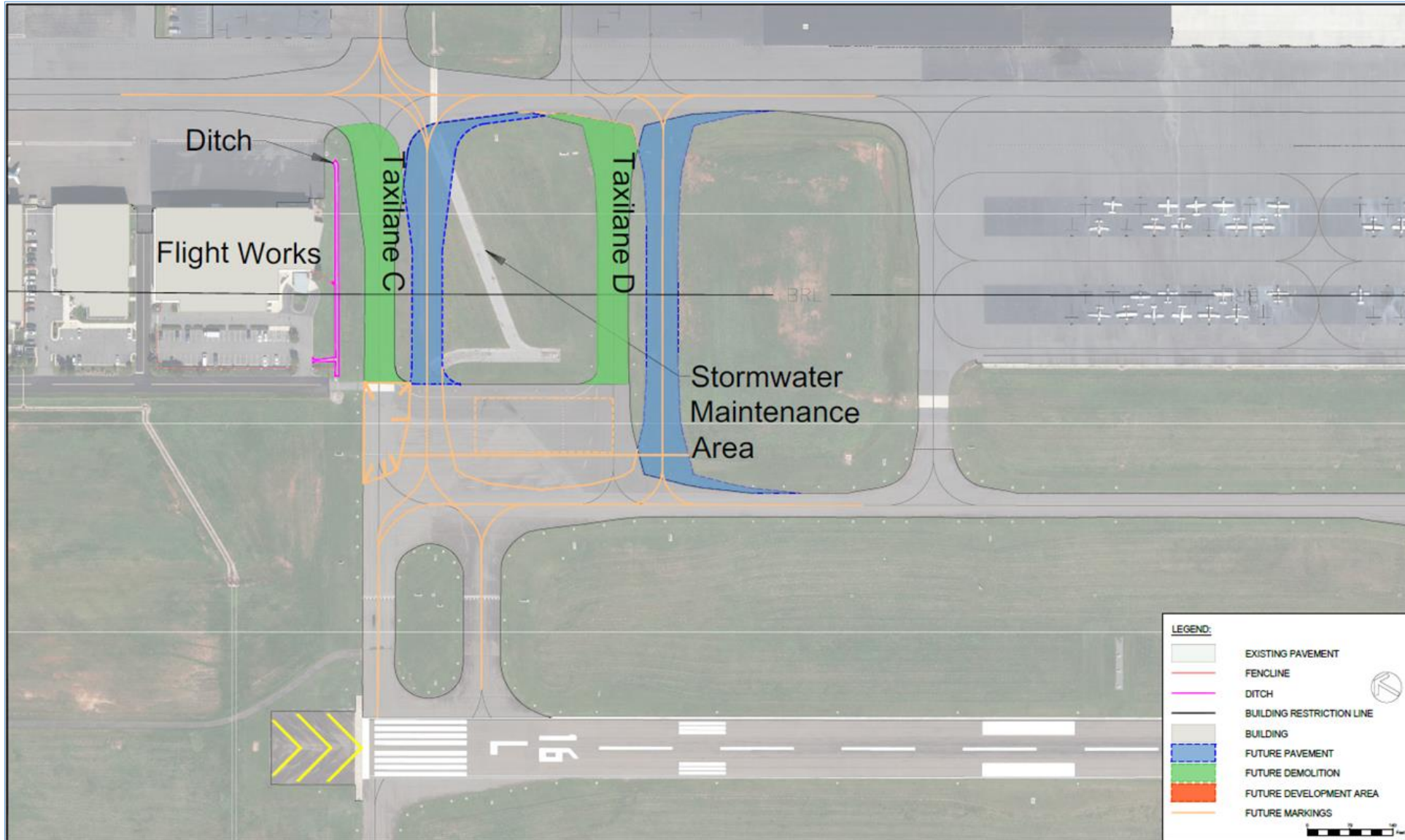
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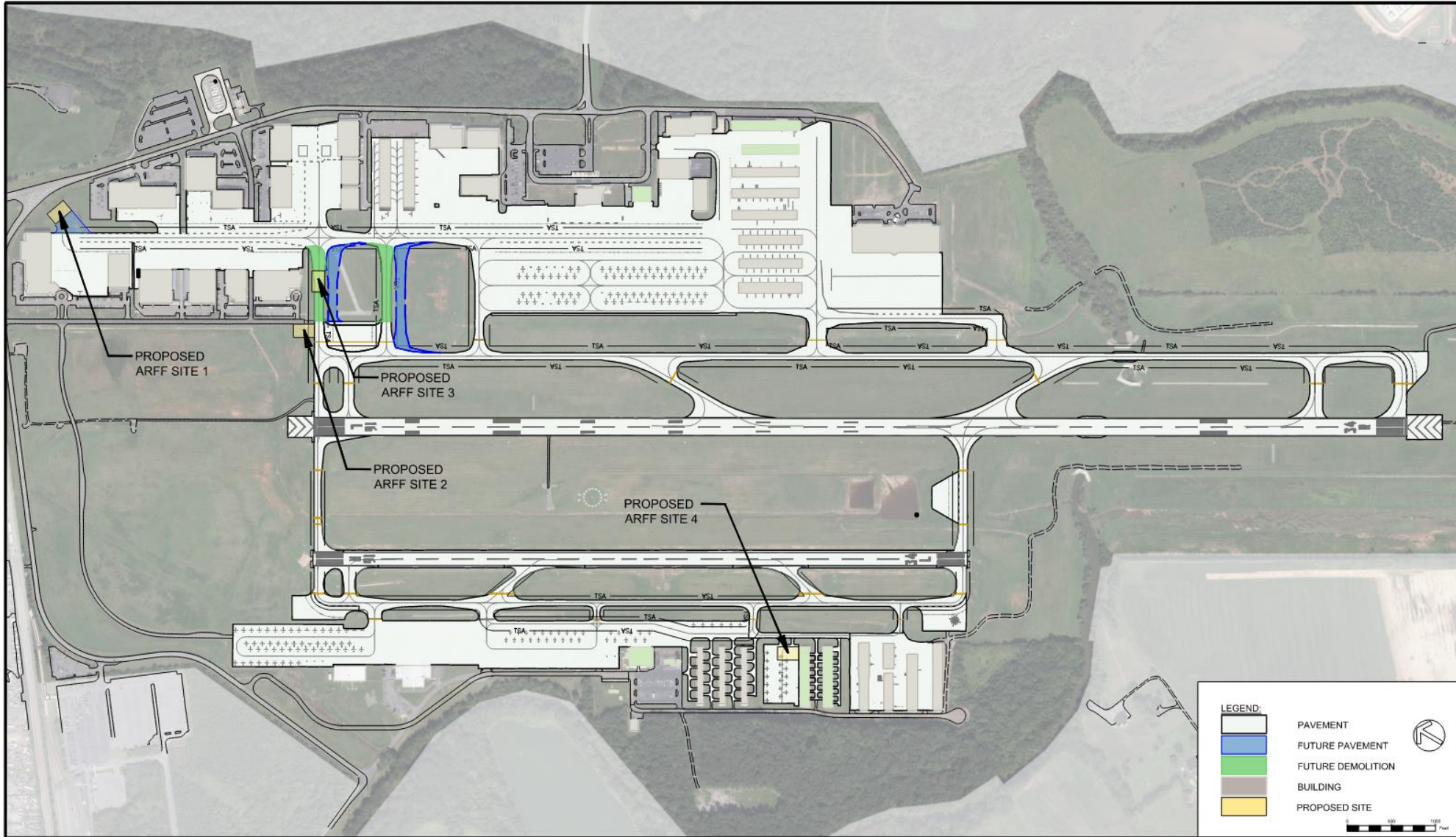
Direct Access and TLOFA Intrusion



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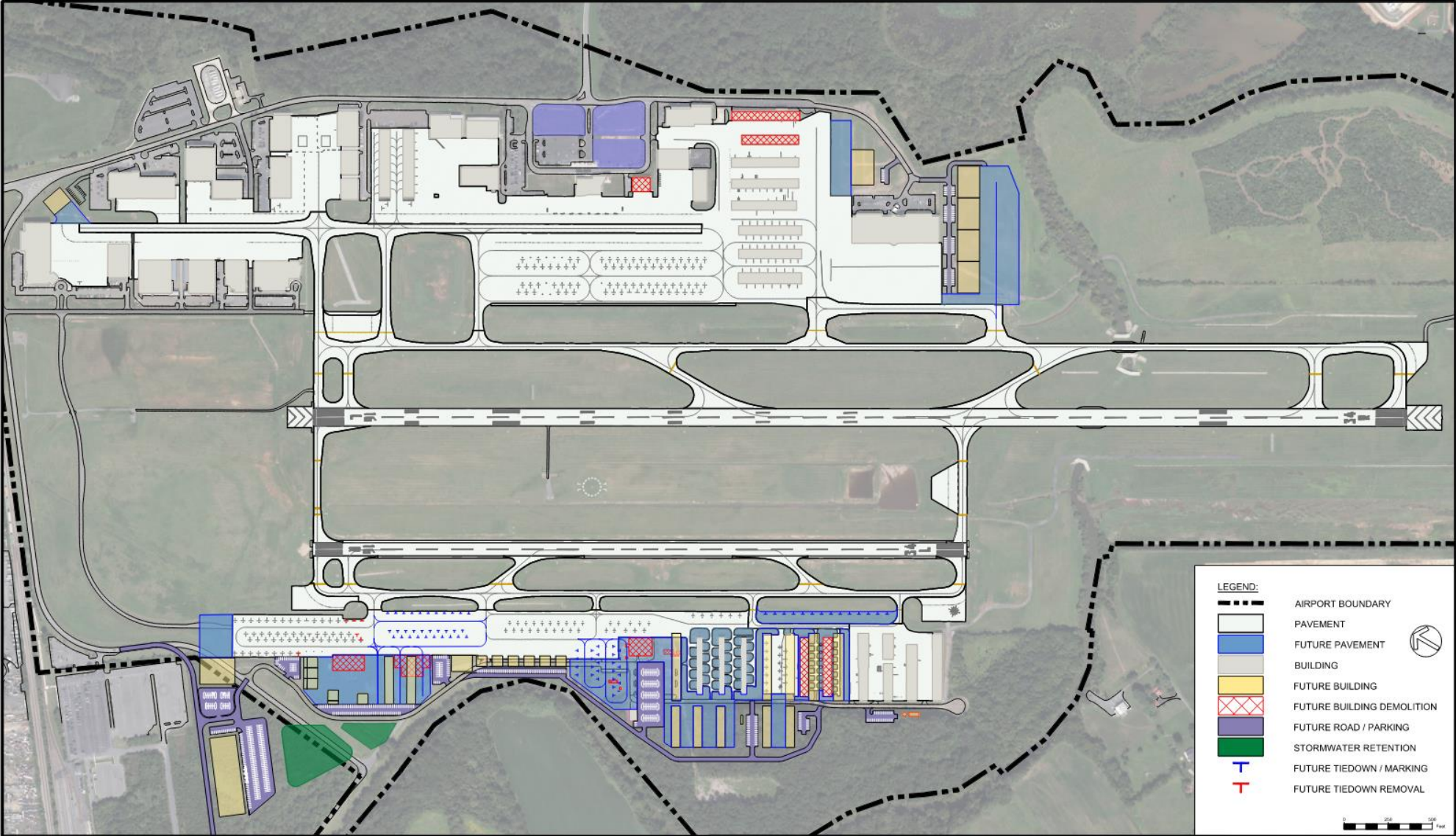
ARFF Siting



Aircraft Storage



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AVIATION ACTIVITY FORECAST



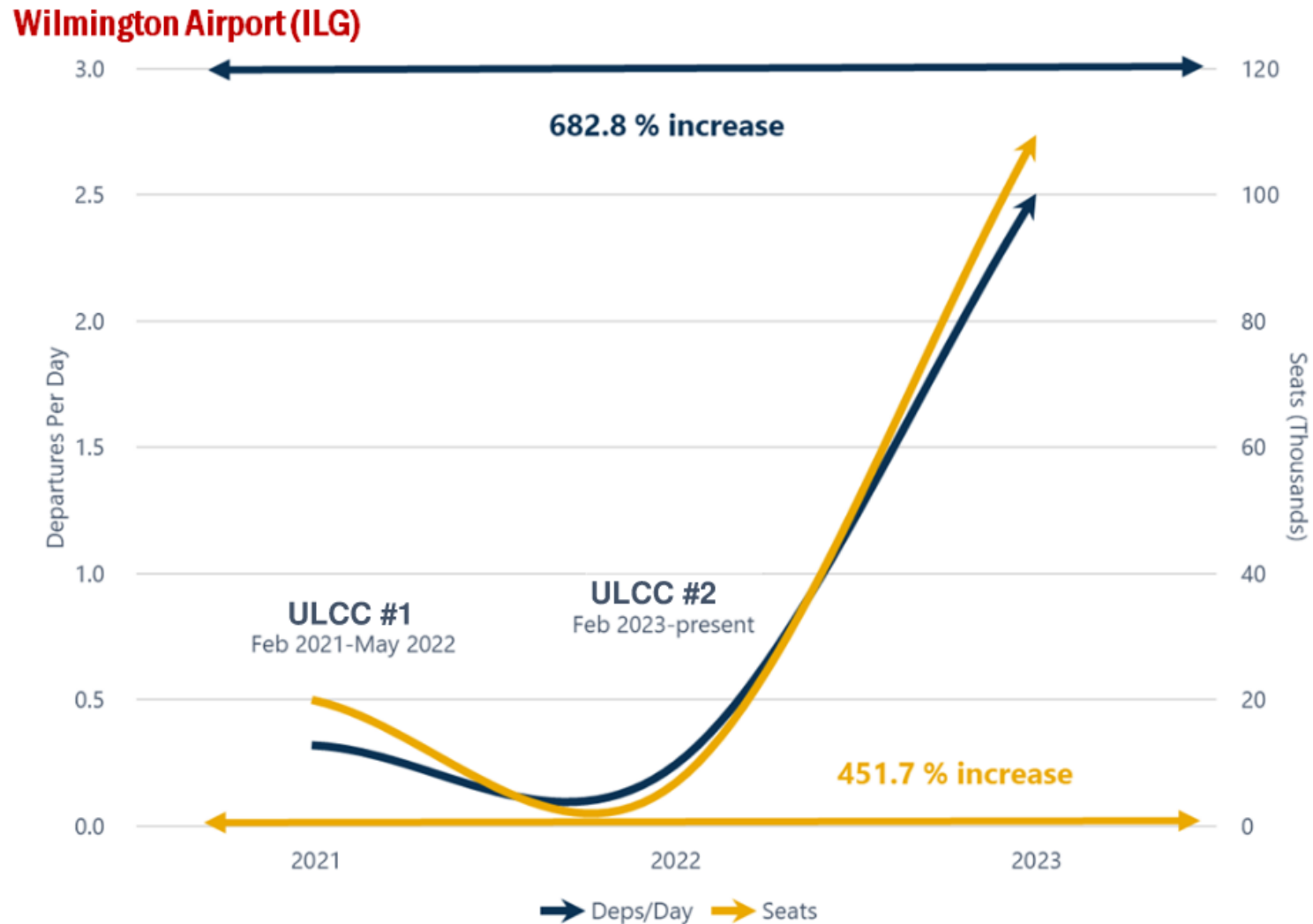
Forecast Update

- » General Aviation Forecast – Approved June 2022
 - Operations (Commuter/Taxi, General Aviation, Military)
 - *130,088 Operations by 2041*
 - Did not account for Air Carrier Operations and Enplanements

- » Commercial Service Agreement – July 2023

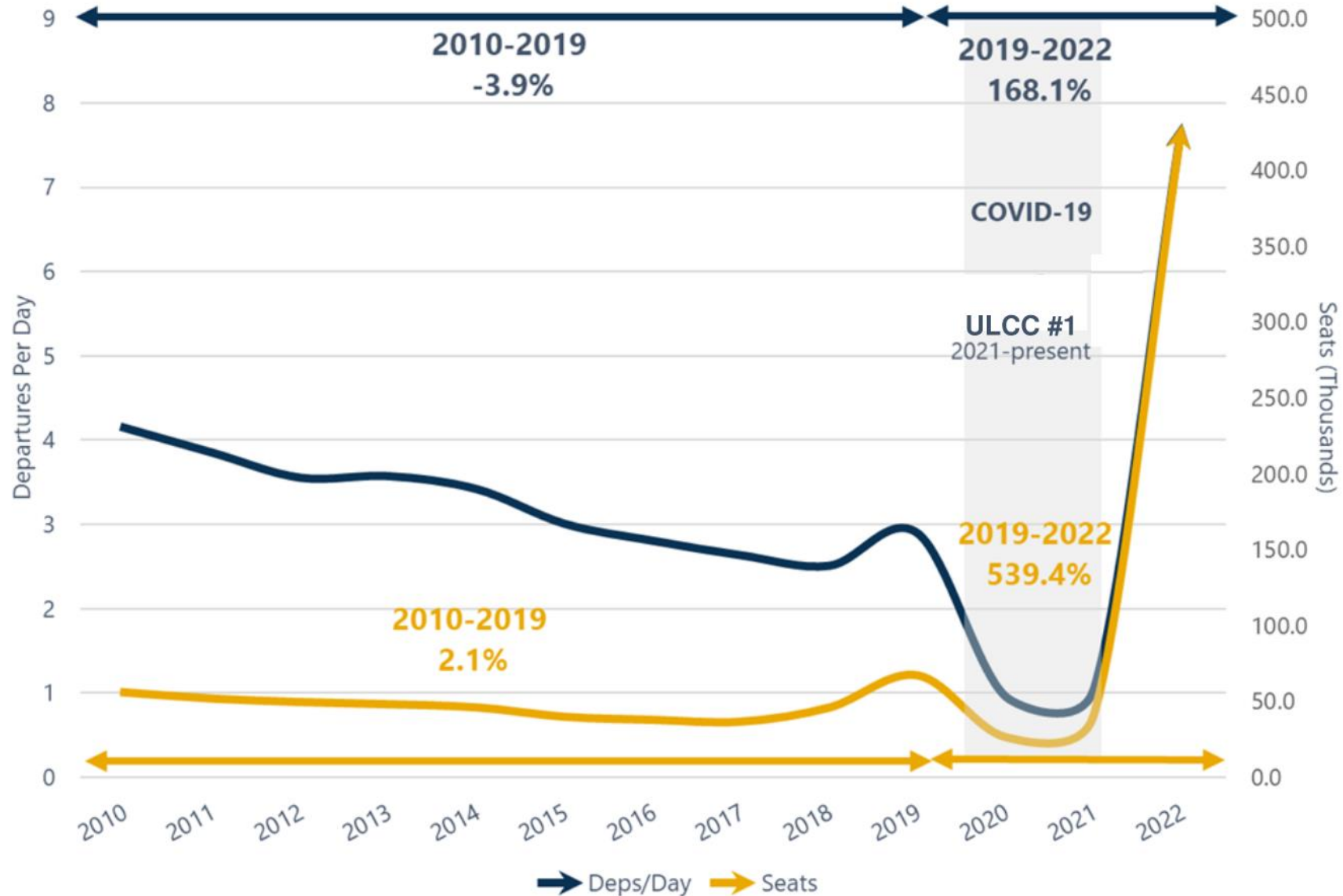
- » Forecast and ALP Update - January 2024
 - RS&H scoped to update the Forecast and ALP
 - *All other MP chapters carried forward.*
 - Forecast Update includes air carrier operations and enplanements
 - ALP updates include projects that will support passenger service
 - Submitted March 2024

Stimulation Effect of ULCCs: Wilmington, DE



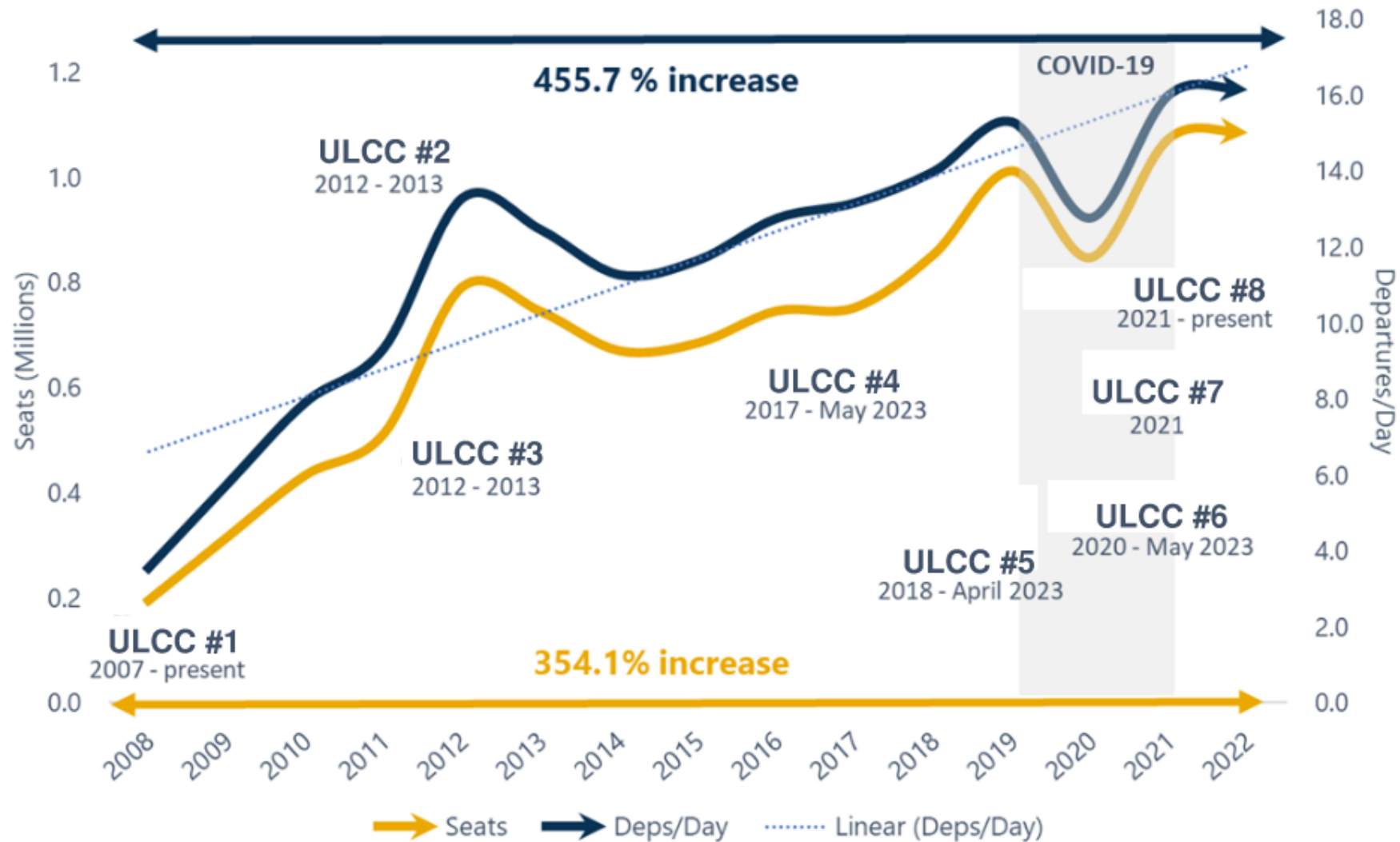
Stimulation Effect of ULCCs: New Haven, CT

Tweed-New Haven Regional Airport (HVN)



Stimulation Effect of ULCCs: Phoenix, AZ

Phoenix-Mesa Gateway Airport (AZA)



Manassas Forecast Methodology

STEP 1

Forecast of DC
Region O&D
Passengers

- Use TAF to identify DC Region enplaned passenger market size

STEP 2

Separate Passengers
Originating in
Manassas Catchment
Area

- Use ARC data to identify prospective HEF passengers to core markets

Use Florida/other leisure
markets as a proxy
of potential HEF
destinations

STEP 3

Identify HEF
Passengers

- Analysis of ULCC enplanements at IAD/DCA/BWI and capture market share

ULCC = Ultra Low-Cost Carrier

Manassas Forecast Methodology

2023 Total Enplanements for IAD, DCA and BWI ¹

36,831,017

O&D Domestic

2023 ARC Annual Passenger from Manassas Catchment Area to Core Markets ²

395,150 or 14%

1/ Source: 2023 FAA TAF

2/ Includes core markets MCO, TPA, PBI, FLL and RSW

Catchment Area

Alexandria City

Arlington County

Clarke County

Culpeper County

Fairfax City

Fairfax County

Falls Church City

Fauquier County

Frederick County

Fredericksburg

Loudoun County

Madison County

Manassas City

Manassas Park

Prince William County

Rappahannock County

Spotsylvania County

Stafford County

Warren County

Winchester City

List of Destination Markets

- Orlando
- Tampa
- West Palm Beach
- Ft. Lauderdale
- Ft. Myers
- Panama City
- Knoxville
- Lexington
- Chattanooga
- New Haven

Basing these markets on
ULCC destinations from New
Haven and other points in
the Midwest and Northeast

HEF Market Analysis

	Calendar Year	DC Region Enplanements	DC Region O&D %	DC Region O&D	O&D DC Region to Core	DC Region/Core %	HEF Catchment to Core	HEF Catchment/Core %
<i>Forecast</i>	2022	32,770,631	57%	18,548,177	3,034,391	16%	n/a	n/a
	2023	36,831,017	57%	21,141,004	3,104,182	15%	395,150	14%
+ 5 years	2026	41,832,560	59%	24,848,541	3,323,335	13%	415,647	13%
+ 10 Years	2031	45,854,904	59%	27,237,813	3,723,508	14%	452,199	13%
+ 15 years	2036	49,772,799	59%	29,565,043	4,171,867	14%	491,965	12%
+ 20 years	2041	53,807,217	59%	31,961,487	4,674,214	15%	535,228	12%
Compound Annual Growth Rate (CAGR)								
2021-2041		2.1%		2.3%	2.3%		1.7%	

HEF Market Analysis

Year	Passengers Per Day Each Way (PDEW)	% of Pax Captured by HEF from expanded Catchment Area	Passengers Per Day Each Way (PDEW) from HEF	Daily Departures from HEF
2023	1,083	n/a	n/a	0
2024	1,101	n/a	n/a	0
2025	1,120	12.0%	134	0.9
2026	1,139	13.6%	155	1.0
2027	1,158	15.2%	176	1.1
2028	1,178	16.8%	198	1.3
2029	1,198	18.4%	220	1.4
2030	1,218	20.0%	244	1.6
2031	1,239	21.6%	268	1.7
2032	1,260	23.2%	292	1.9
2033	1,281	24.8%	318	2.1
2034	1,303	26.4%	344	2.2
2035	1,325	28.1%	372	2.4
2036	1,348	28.1%	379	2.5
2037	1,371	28.1%	385	2.5
2038	1,394	28.1%	392	2.5
2039	1,418	28.1%	398	2.6
2040	1,442	28.1%	405	2.6
2041	1,466	28.1%	412	2.7

Forecast – HEF Enplanements

Year	HEF Enplanements
2025	48,063
2026	55,397
2027	62,967
2028	70,779
2029	78,837
2030	87,149
2031	95,721
2032	104,560
2033	113,671
2034	123,062
2035	133,213
2036	135,477
2037	137,780
2038	140,123
2039	142,505
2040	144,927
2041	147,391

Compound Annual Growth Rate	
2025 - 2030	12.6%
2030 - 2035	8.9%
2035 - 2041	1.7%
2025 - 2041	7.3%

Forecast – HEF Passenger Operations

Year	HEF Passenger Operations
2025	620
2026	715
2027	812
2028	913
2029	1,017
2030	1,125
2031	1,235
2032	1,349
2033	1,467
2034	1,588
2035	1,719
2036	1,748
2037	1,778
2038	1,808
2039	1,839
2040	1,870
2041	1,902

Compound Annual Growth Rate	
2025 - 2030	12.6%
2030 - 2035	8.9%
2035 - 2041	1.7%
2025 - 2041	7.3%

Forecast – Total Operations Compared to FAA TAF

Category	2021		2026		2031		2041	
	Base Case	TAF 2024	Base Case	TAF 2024	Base Case	TAF 2024	Base Case	TAF 2024
Air Carrier & Air Taxi Operations	12,891	12,890	14,965	17,696	17,412	19,444	22,751	23,464
GA & Local GA Operations	84,162	84,162	89,293	84,986	94,736	86,650	106,638	90,153
Military Operations	2,596	2,050	2,596	2,050	2,596	2,050	2,596	2,050
Total Operations	99,649	99,649	106,854	104,732	114,744	108,144	131,985	115,667
GA Based Aircraft	410	372	415	397	424	422	436	472
Comparison with FAA TAF 2024 (percent different)								
Air Carrier & Air Taxi Operations	0.00%		18.2%		11.7%		3.1%	
GA & Local GA Operations	0.00%		5.1%		9.3%		18.3%	
Military Operations	0.00%		26.6%		26.6%		26.6%	
Total Operations	0.00%		2.0%		6.1%		14.1%	
GA Based Aircraft	0.00%		4.5%		0.5%		-7.6%	

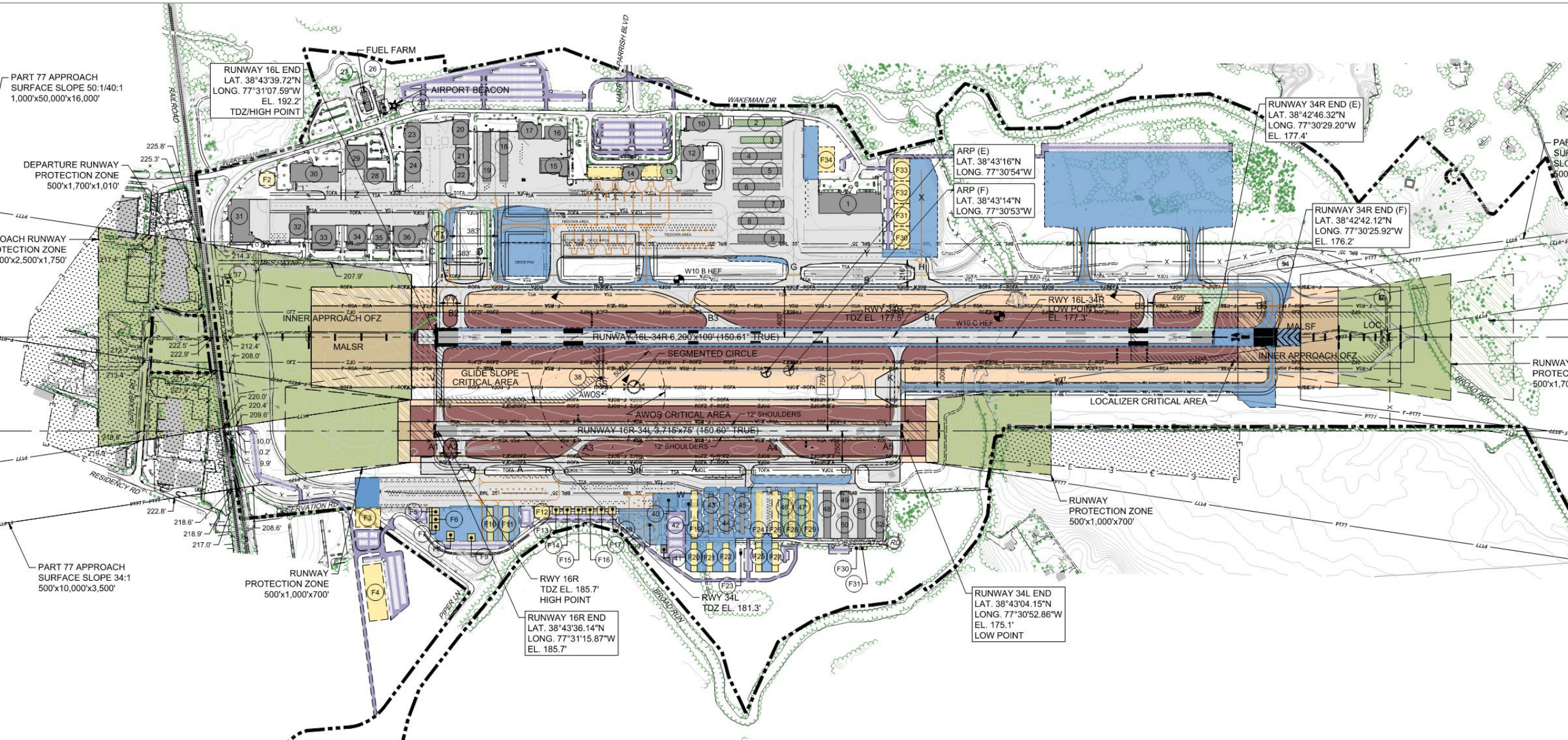
Forecast – Total Operations Compared to FAA TAF

	Compound Annual Growth Rate						
	<u>Base</u>	<u>Base +</u>	<u>Base+</u>	<u>Base+</u>	<u>Base Yr. to</u>	<u>Base Yr. to</u>	<u>Base Yr. to</u>
	<u>Year</u>	<u>5yrs.</u>	<u>10yrs.</u>	<u>20yrs.</u>	<u>+5</u>	<u>+10</u>	<u>+20</u>
	2021	2026	2031	2041	2026	2031	2041
Enplanements	N/A	55,397	95,721	147,391	788.6%	214.8%	81.3%
Operations							
<u>Itinerant</u>							
Air carrier	1	715	1,235	1,902	169.8%	52.6%	27.0%
Commuter/air taxi	12,890	14,250	16,177	20,849	2.0%	2.3%	2.4%
General aviation	37,396	39,676	42,094	47,383	1.2%	1.2%	1.2%
Military	2,425	2,425	2,425	2,425	0.00%	0.00%	0.00%
<u>Local</u>							
General aviation	46,766	49,617	52,642	59,255	1.2%	1.2%	1.2%
Military	171	171	171	171	0.00%	0.00%	0.00%
TOTAL OPERATIONS	99,649	106,854	114,744	131,985	1.3%	1.3%	1.3%
Based Aircraft							
Single Engine	312	314	319	324	0.13%	0.22%	0.19%
Multi Engine	51	51	52	55	0.00%	0.19%	0.38%
Jet Engine	27	30	32	35	2.13%	1.71%	1.31%
Helicopter	18	18	18	20	0.00%	0.00%	0.53%
Other	2	2	2	2	0.00%	0.00%	0.00%
TOTAL	410	415	423	436	0.24%	0.31%	0.31%

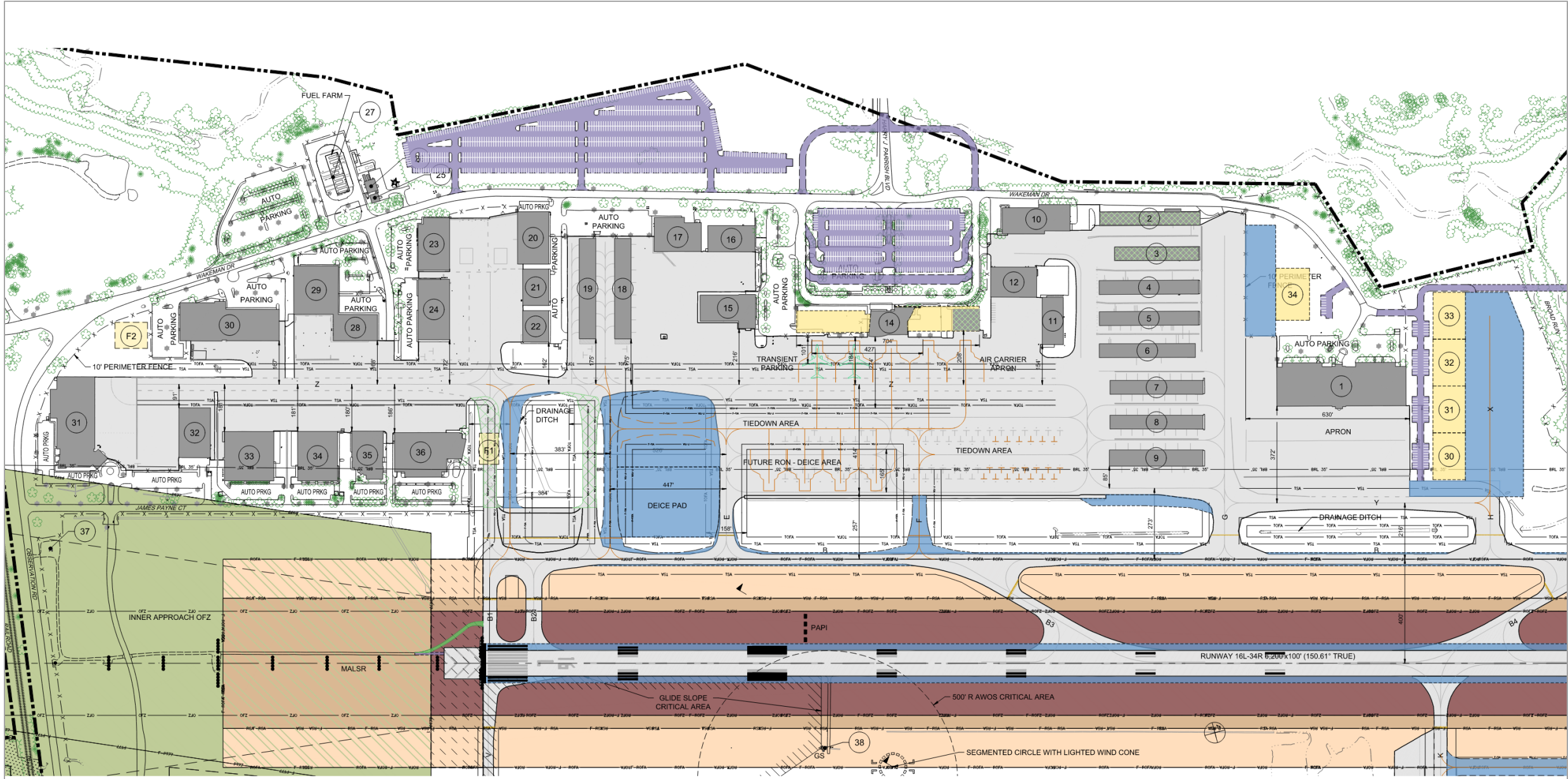
AIRPORT LAYOUT PLAN DRAFT



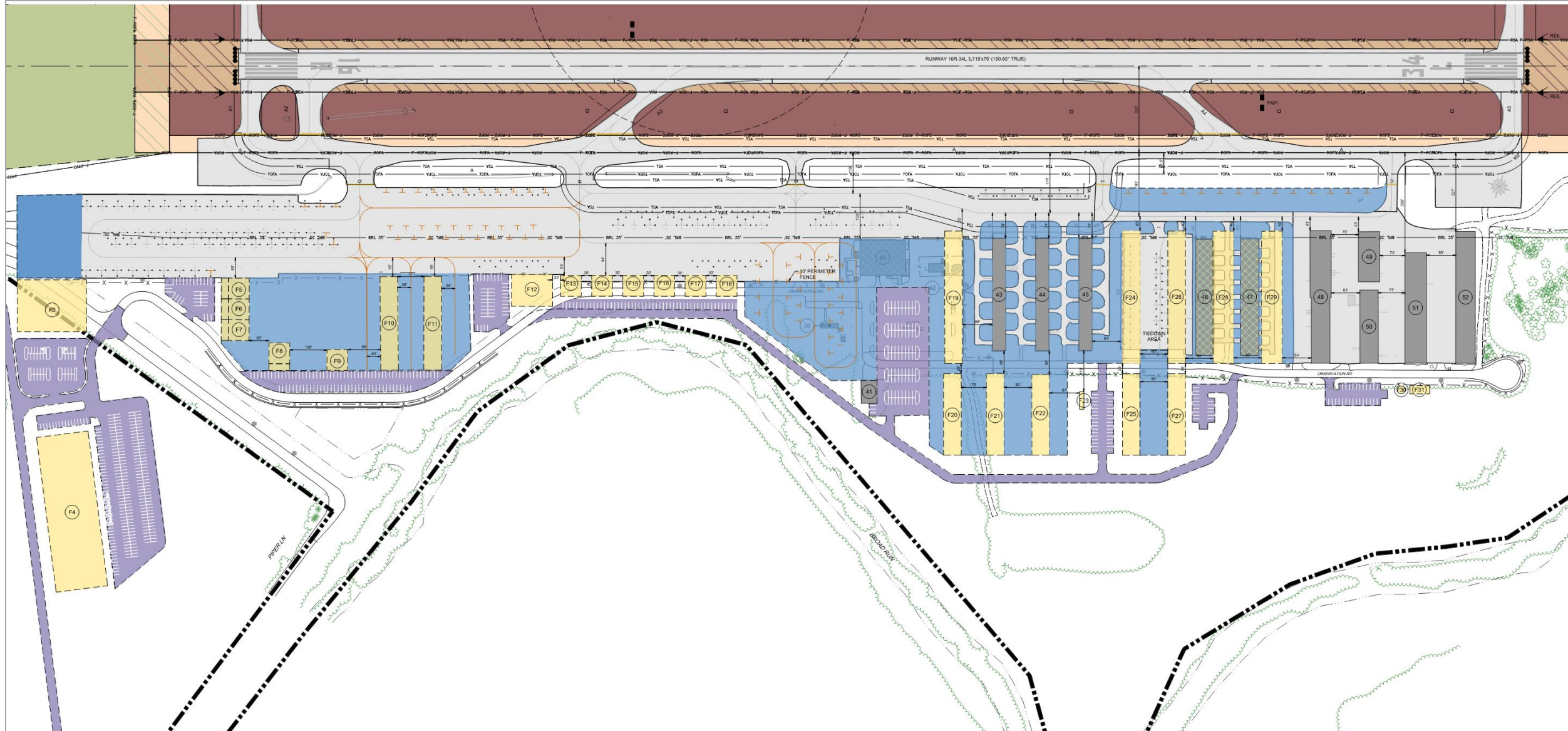
Airport Layout Drawing



Terminal Area – East Plan



Terminal Area – West Plan



Next Steps/In Progress

- » CIP and Implementation Plan
 - Develop Costs and Implementation/Phasing Plan
- » Environmental Overview
 - Overview of anticipated environmental impacts from preferred development
- » Master Plan Completion
 - May 2024



QUESTIONS?