



Southwest Florida  
International Airport(RSW)

# RSW Master Plan Update

Presentation #2  
January 2022

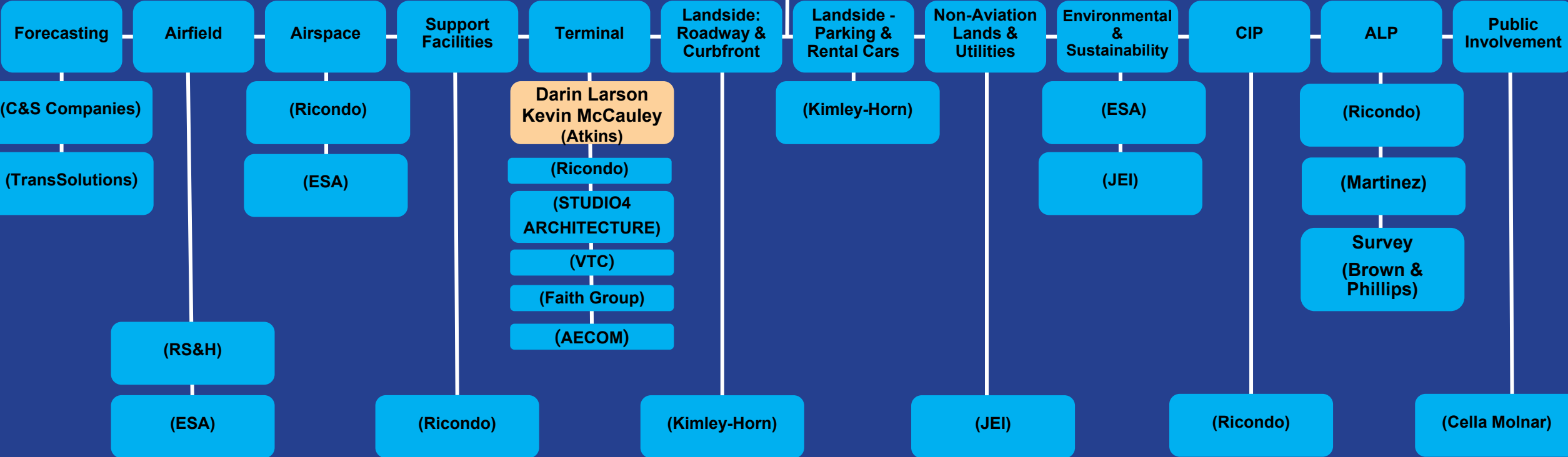
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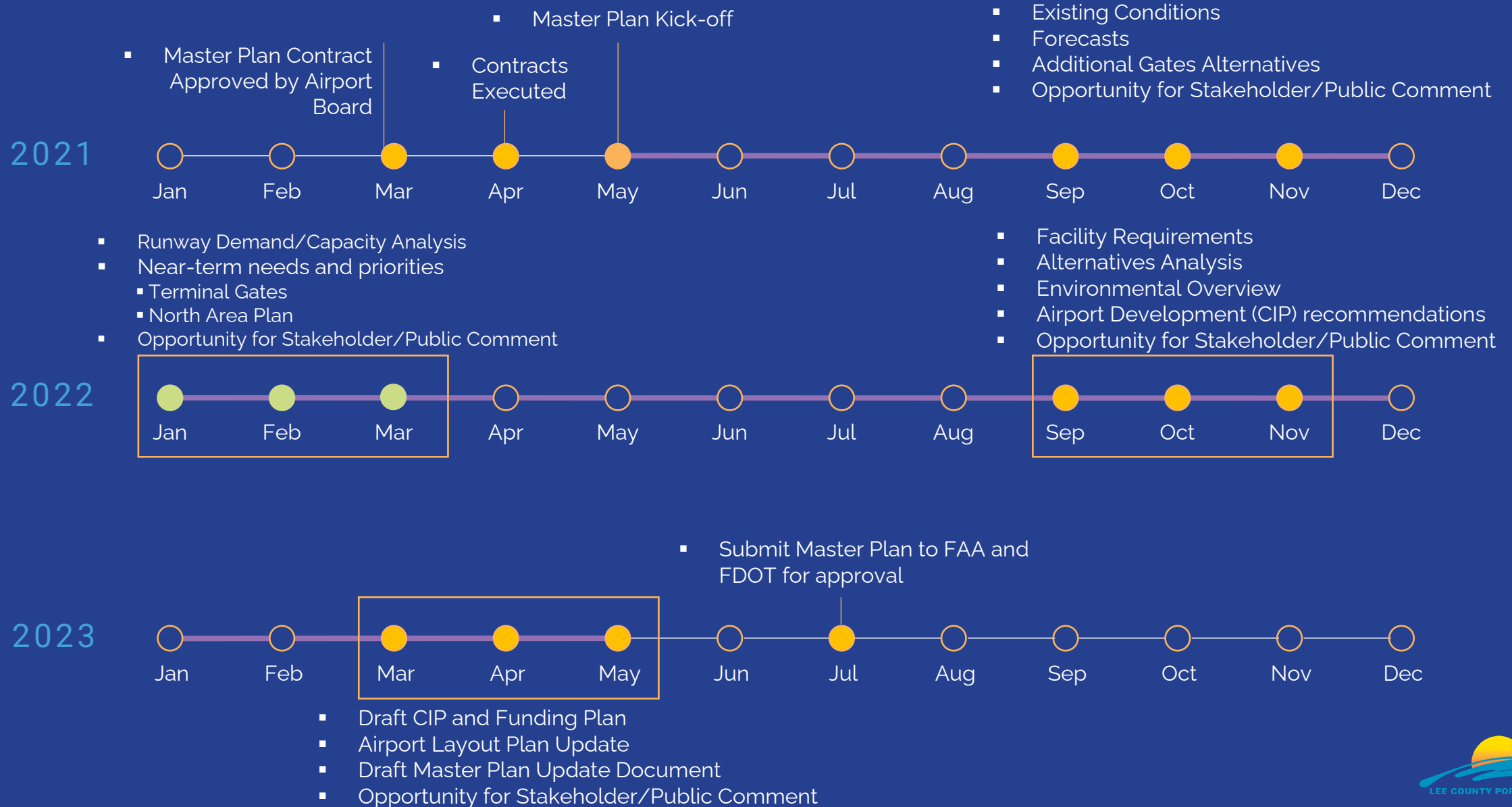
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Project Manager

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Senior Advisor

**Sebastien Carreau (Ricondo)**  
QA/QC



# Two-year Action Plan





# Definitions

## Enplanements

A departing passenger



## Total Passengers

All departing and arriving passengers  
(enplanements x 2)



## Aircraft Operation

A take-off or a landing



## Total Operations

Take-offs + Landings



# Forecast of Future Activity\*

Currently under review by FAA

## Master Plan Forecast

Year	Enplanements	Airline Aircraft Operations
2025	5,999,546	86,103
2030	6,739,935	96,493
2035	7,618,025	108,845
2040	8,528,457	121,655

\* Endorsed by Port Board September 2021



# RSW Demand/ Capacity Analysis

# RSW is the 2nd-busiest commercial single-runway airport in the US



	2021 Operations
San Diego International Airport (SAN)	162,828
<b>Southwest Florida International Airport (RSW)</b>	<b>101,408</b>

# How to determine runway capacity

- Federal Aviation Administration (FAA) details a methodology and formula to estimate a runway's Annual Service Volume (ASV)
- As an airport's ASV is approached, flights will start experiencing increasing delays when they take off or land. Delays will be more extreme during peak travel periods.
- Factors considered in the ASV formula & calculation:
  - Number of runways and their configuration
  - Aircraft Fleet Mix
  - Typical airport weather conditions
  - Peak periods of aircraft takeoffs and landings



# Annual Service Volume

$$ASV = C_w \times D \times H$$

$C_w$  = Weighted Hourly Capacity (influenced by IFR conditions, taxiway exits and touch-and-go landings (T&Gs))

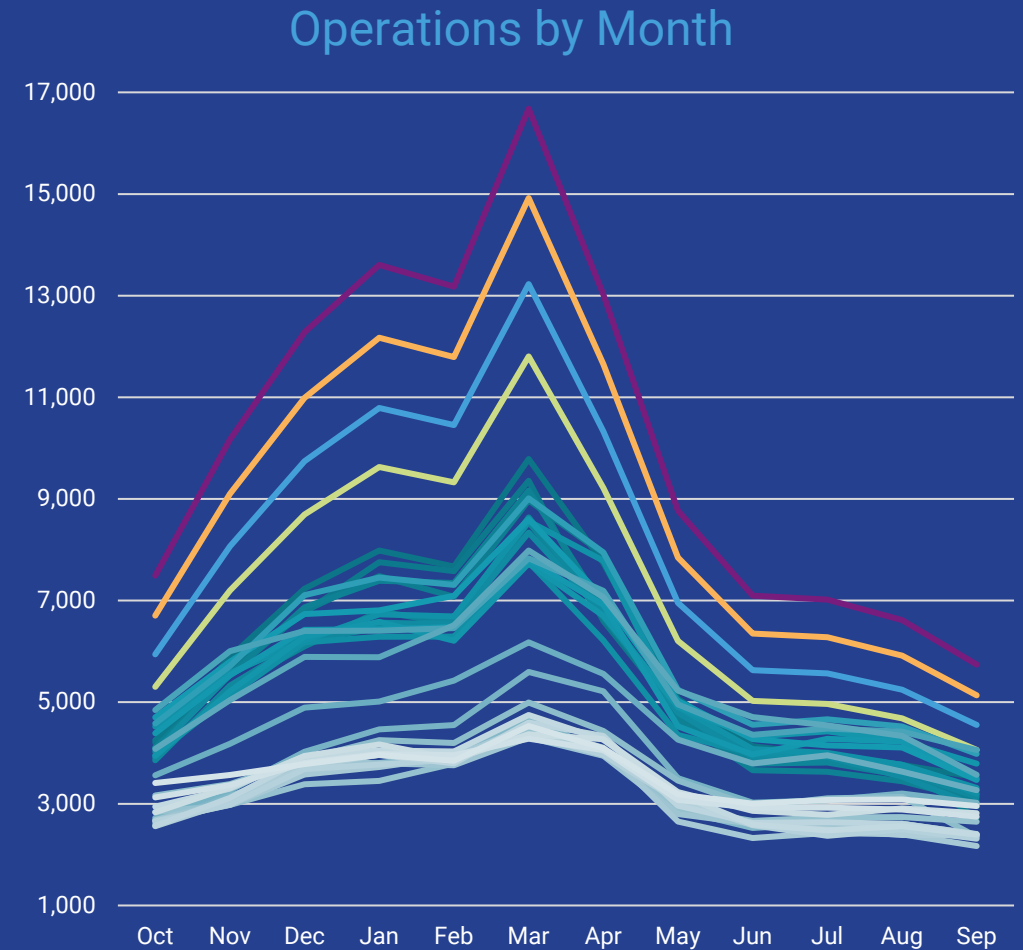
$D$  = Daily Ratio (ratio of annual demand to average daily demand during peak month)

$H$  = Hourly Ratio (ratio of daily demand to average peak-hour demand during peak month)

- Capacity increases as peaking becomes less pronounced
- Capacity decreases as peaking becomes more pronounced

# RSW is the Highest Seasonal-Peaking Airport in the US

- RSW has significantly more traffic in March compared to September.
- RSW's peaking characteristics mean that delays during peak periods will begin to grow exponentially, while delays during off-peak periods will be limited.
- Average delays will become significant at overall aircraft operation levels much lower than those accommodated by other single-runway airports.
- This results in a lower ASV for RSW as compared to other single-runway airports



# Estimated ASV based on September 2021 Board-Endorsed Forecasts

% of time IFR conditions	7.5%
Weighted Hourly Capacity	$(.925 \times 55) + (.075 \times 53) = 54.85$
Training Takeoffs and Landings (Touch & Go)	0
Daily Ratio Annual Demand	$84,721 / 361.4 = 234.42$
Hourly Ratio / Avg. Peak-Hour Takeoffs & Landings	$361.4 / 31.8 = 11.36$

2019 RSW Annual Service Volume (Capacity) = 146,053 Takeoffs & Landings

Based on Board-approved forecast, the airport would not reach ASV until shortly after the Master Plan's 2040 horizon.

# New Runway Timing

September 3, 2019

Order 5090.5

airports with complex operations. If the ASV thresholds shown in Table 4-4 are achieved, follow-on analyses with more detailed methods and metrics are normally needed to validate the need (or justify) a proposed capacity project.

**Table 4-4 Activity Levels That May Trigger Capacity Planning and Development**

Development Item	Activity Levels to Begin Planning and Development	Remarks
<b>New runway or extended runway to increase hourly capacity (based on a specific airfield use configuration)</b>	<p>Planning: 60% ASV</p> <p>Development: 80% of ASV and within 5 years of activity reaching ASV under currently approved forecast.</p>	<ul style="list-style-type: none"> <li>Parallel runway usually preferred for efficiency.</li> <li>Runway length determined by critical aircraft intended to use the new or extended runway.</li> </ul>
<b>Runway extension to accommodate more demanding aircraft</b>	<p>Planning and Development: Regular use of new critical aircraft, existing or forecast within 5 years, that needs increased runway length or payload capability.</p>	<ul style="list-style-type: none"> <li>If the critical aircraft changes, an extension may be necessary.</li> <li>New critical aircraft must be expected to remain in the fleet for the foreseeable future with regular use at the airport.</li> </ul>
<b>Additional exit</b>	<p>Planning: 50% of ASV</p>	<p>To be considered as a capacity project,</p>

- ASV 146,053 x 60% = 87,632 annual aircraft operations (reached in 2021)
- 2021 annual aircraft operations = **101,408**

# New Runway – Accomplishments to Date

- ✓ Land Acquisition
- ✓ Site Preparation/Drainage/Earthwork Design of the New Parallel Runway
- ✓ Environmental Permitting and Mitigation
- ✓ Construction – Midfield Aircraft Rescue & Fire Fighting Facility  
(to serve 2 runways)
- ✓ Construction – Midfield Crossfield Taxiway System  
(connecting the existing and future runway)
- ✓ Construction – Midfield Airport Traffic Control Tower  
(to serve 2 runways)

# Forecast of Future Activity\*

Currently under review by FAA

## Master Plan Forecast

Year	Enplanements*	Airline Aircraft Operations*	Total Operations
2025	5,999,546	86,103	99,128
2030	6,739,935	96,493	109,747
2035	7,618,025	108,845	122,340
2040	8,528,457	121,655	135,401

\* Endorsed by Port Board September 2021

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<b>Additional exit</b>	Planning: 50% of ASV	To be considered as a capacity project,

- ASV 146,053 x 80% = 116,842 annual aircraft operations
- 80% capacity estimated to be reached in 2033
- ASV estimated to be reached in 2043



# New Runway – Next Steps (to begin ~2038)

Estimated 5 years to complete



\*Based on the LCPA Board-approved forecast

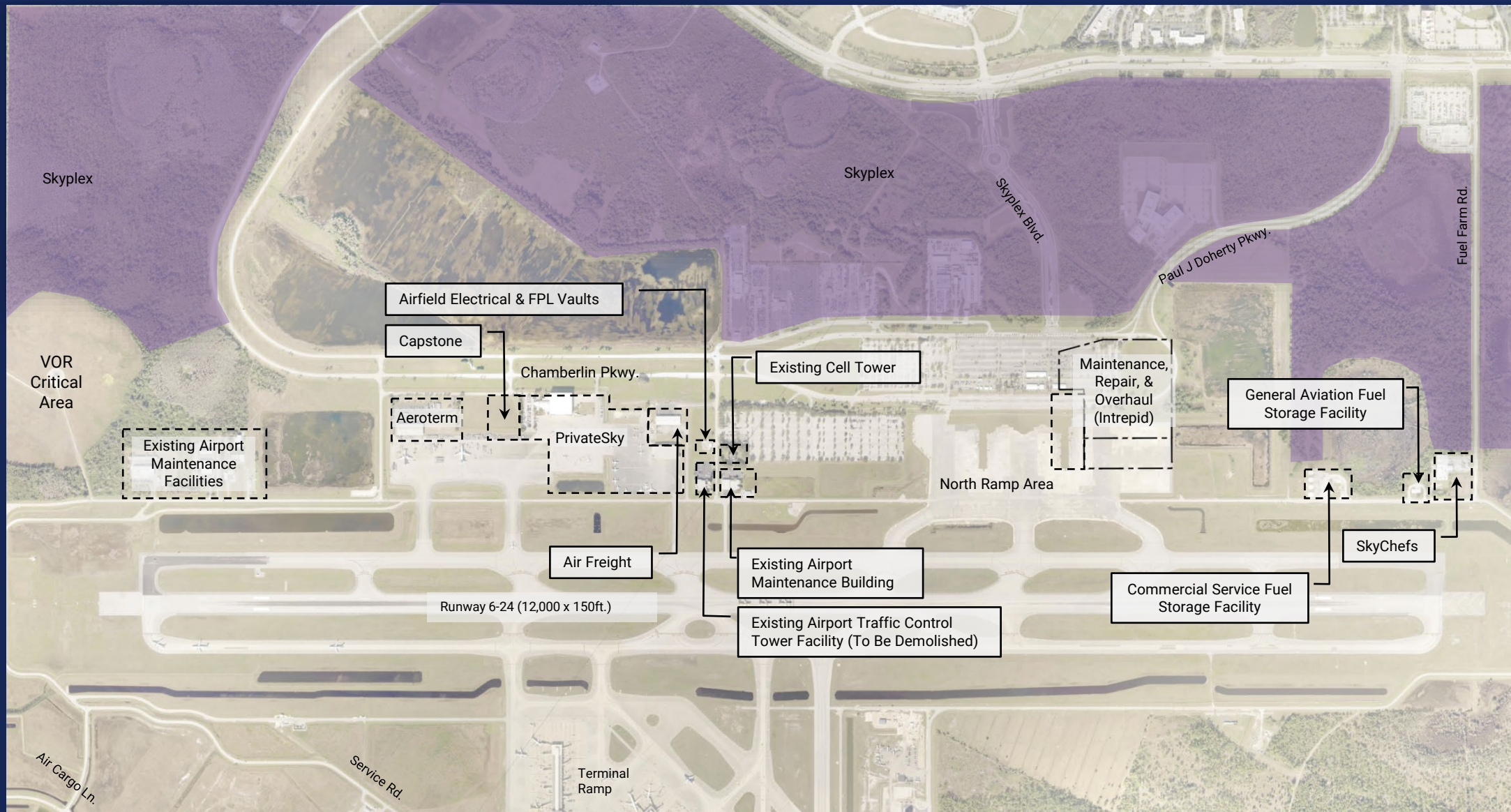










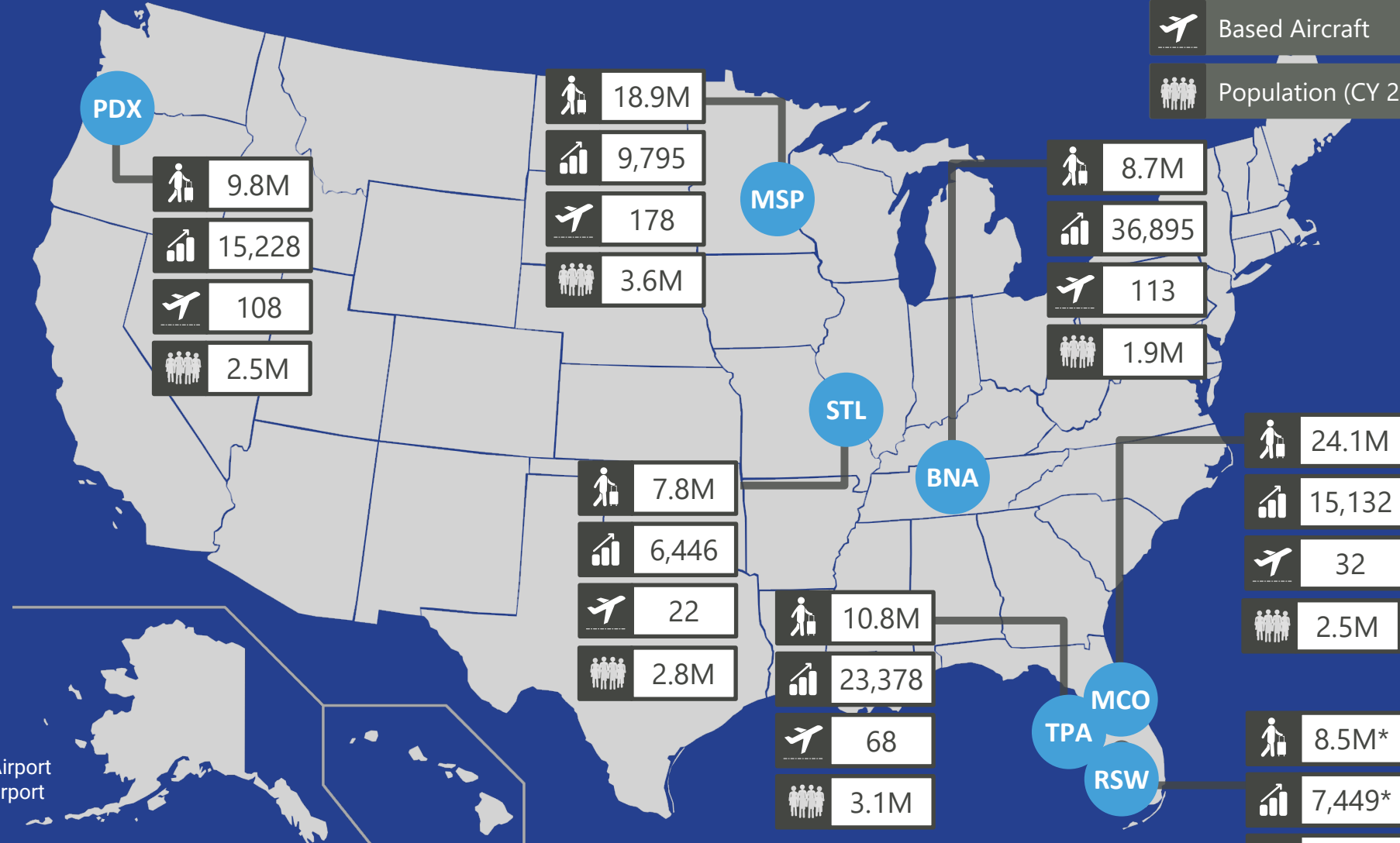
# North Area Plan

# Existing Conditions



# Benchmarked Airports

-  Million Enplaned Passengers (MEP)
-  Annual General Aviation Operations
-  Based Aircraft
-  Population (CY 2018)

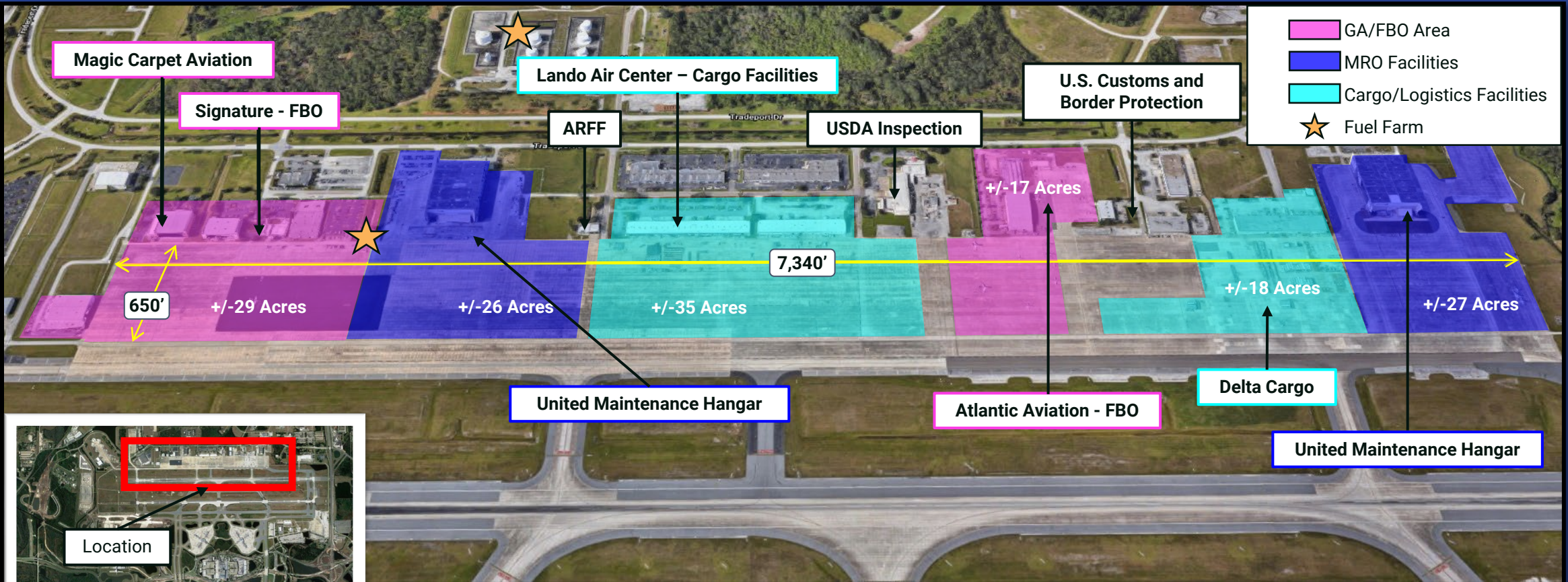


BNA: Nashville International Airport  
 MCO: Orlando International Airport  
 MSP: Minneapolis-Saint Paul International Airport  
 PDX: Portland International Airport  
 STL: St. Louis-Lambert International Airport  
 TPA: Tampa International Airport

\*Indicates Fiscal Year 2040 levels as baseline condition.



# Sample Airport Orlando International Airport (MCO) – Large Hub

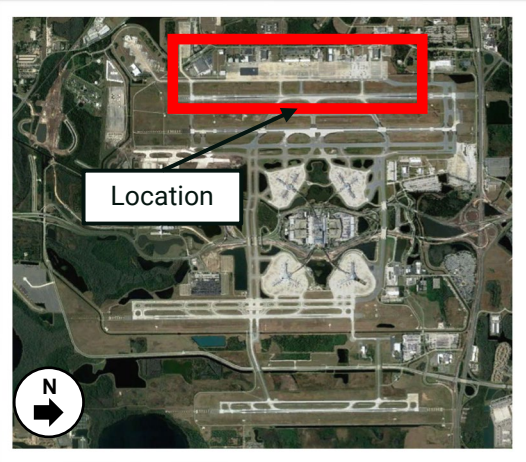


Hangar 1: 30,000 sq ft  
 Hangar 2: 23,800 sq ft  
 FBO Terminal: 13,600 sq ft  
 Hangar 3: 41,000 sq ft

MRO Facility 1: 110,000 sq ft  
 Cargo Facility 1: 59,400 sq ft

Hangar 4: 26,000 sq ft  
 Hangar 5: 26,000 sq ft  
 FBO Space: 9,800 sq ft

MRO Facility 2: 110,000 sq ft  
 Cargo Facility 1: 47,000 sq ft



# Benchmarking Summary

## Minimum and Maximum Facility Land Use Area per Airport

Airport (City)	MCO (Orlando)	BNA (Nashville)	STL (Saint Louis)	PDX (Portland, OR)	TPA (Tampa)	MSP (Minneapolis – Saint Paul)	LAL (Lakeland)	RFD (Chicago Rockford)	AUS (Austin)	Average Acreage
<b>Cargo/ Logistics Area</b>	53 Acres <small>(2 Areas: 18-35 Acres)</small>	74 Acres <small>(3 Areas: 18-30 Acres)</small>	26 Acres <small>(1 Area: 26 Acres)</small>	95 Acres <small>(1 Area: 95 Acres)</small>	37 Acres <small>(4 Areas: 1-22 Acres)</small>	116 Acres <small>(4 Areas: 10-66 Acres)</small>	N/A	N/A	N/A	70 acres <small>(Multiple Users)</small>
<b>GA/FBO Area</b>	46 Acres <small>(2 Areas: 17-29 Acres)</small>	79 Acres <small>(3 Areas: 7-38 Acres)</small>	32 Acres <small>(2 Areas: 14-18 Acres)</small>	49 Acres <small>(1 Area: 49 Acres)</small>	63 Acres <small>(5 Areas: 1-58 Acres)</small>	33 Acres <small>(1 Area: 33 Acres)</small>	N/A	N/A	N/A	50 Acres <small>(Multiple Users)</small>
<b>MRO Area</b>	53 Acres <small>(2 Areas: 26-27 Acres)</small>	42 Acres <small>(2 Areas: 19-23 Acres)</small>	12 Acres <small>(1 Area: 12 Acres)</small>	39 Acres <small>(2 Areas: 14-20 Acres)</small>	41 Acres <small>(3 Areas: 8-17 Acres)</small>	31 Acres <small>(2 Areas: 6-25 Acres)</small>	N/A	N/A	N/A	40 Acres <small>(Multiple Users)</small>
<b>E-commerce Area</b>	N/A	N/A	N/A	N/A	N/A	N/A	38 Acres	33 Acres	N/A	36 Acres <small>(Single Facility)</small>



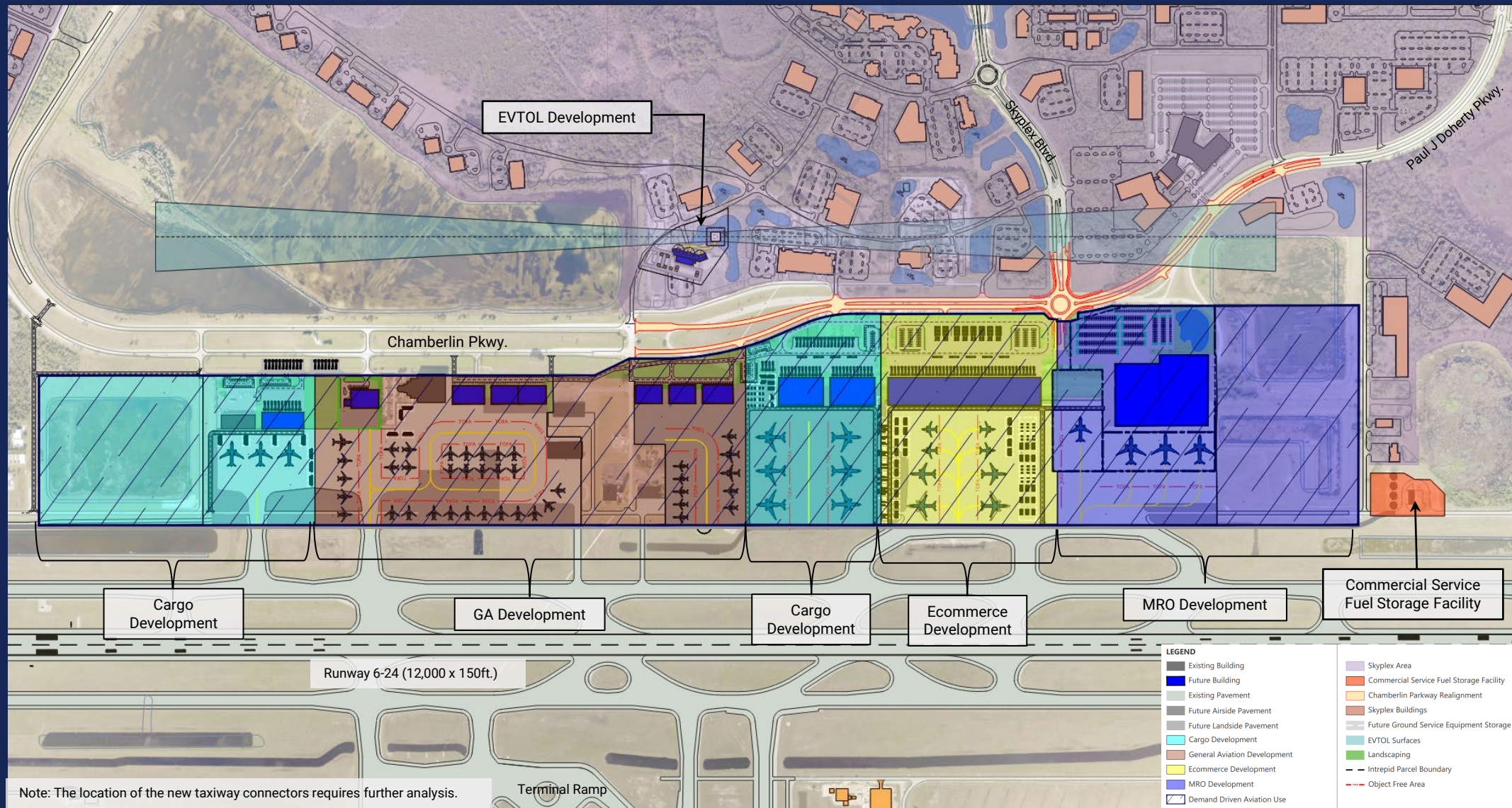
# Benchmarking Recommendations

## Minimum and Maximum Facility Area Ranges per Land Use

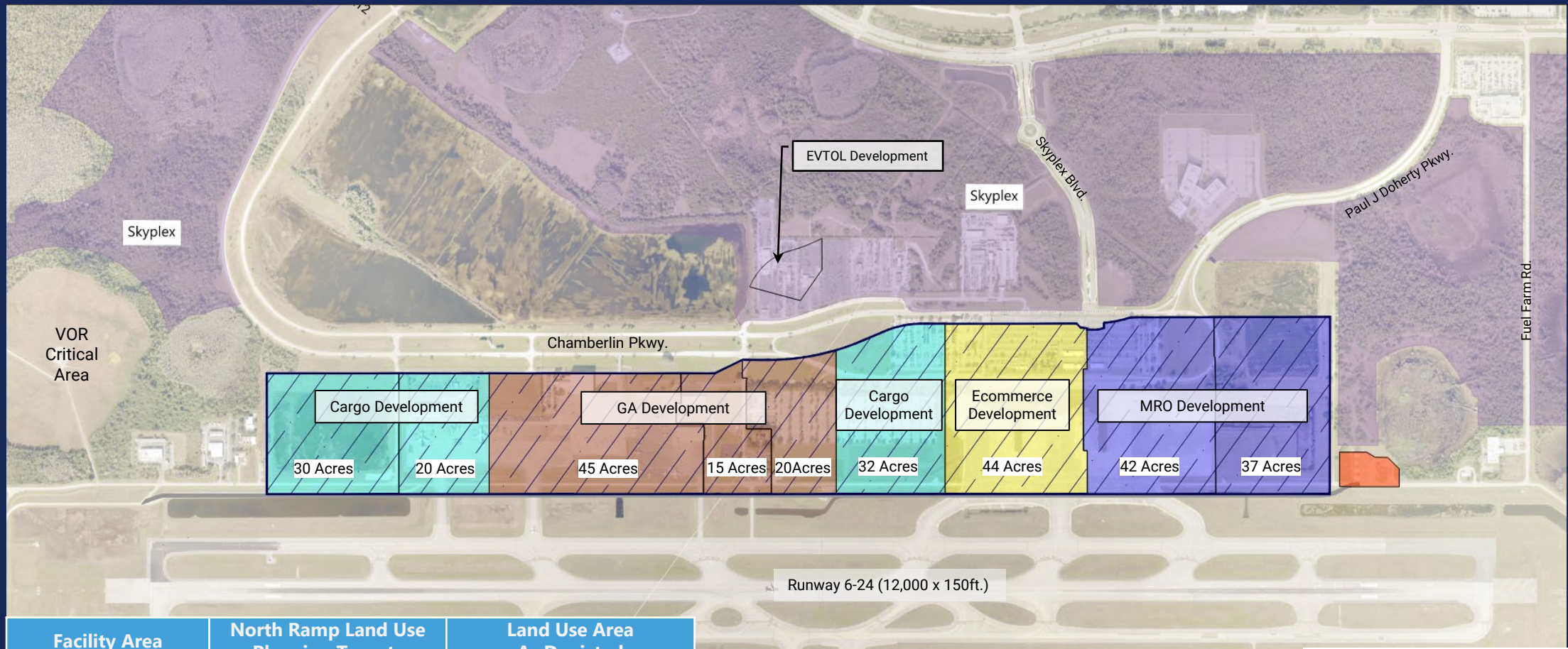
Facility Area	Building Size	Apron Depth	Landside Area Depth	Benchmark Land Use Areas	North Ramp Land Use Planning Targets
<b>Cargo Facility</b>	9,000 - 304,000 sq ft	210 - 880 feet	90 - 450 sq ft	26 - 116 Acres	70 Acres
<b>GA Facilities</b>	6,000 - 64,000 sq ft	240 - 650 feet	85 - 270 ft	31 - 79 Acres	50 Acres
<b>MRO Facilities</b>	14,400 - 235,200 sq ft	205 - 650 feet	120 - 400 ft	14 - 53 Acres	40 Acres



# Recommended Vision Plan



# Recommended Land Use Plan



Facility Area	North Ramp Land Use Planning Targets	Land Use Area As Depicted
<b>Cargo Facility</b>	70 Acres	± 82 Acres
<b>GA Facility</b>	50 Acres	± 80 Acres
<b>MRO Facility</b>	40 Acres	± 79 Acres
<b>E-Commerce Facility</b>	36 Acres	± 44 Acres

**LEGEND**

- Cargo Development
- General Aviation Development
- Ecommerce Development
- MRO Development
- Demand Driven Aviation Use
- Skyplex Area
- Commercial Service Fuel Service Facility

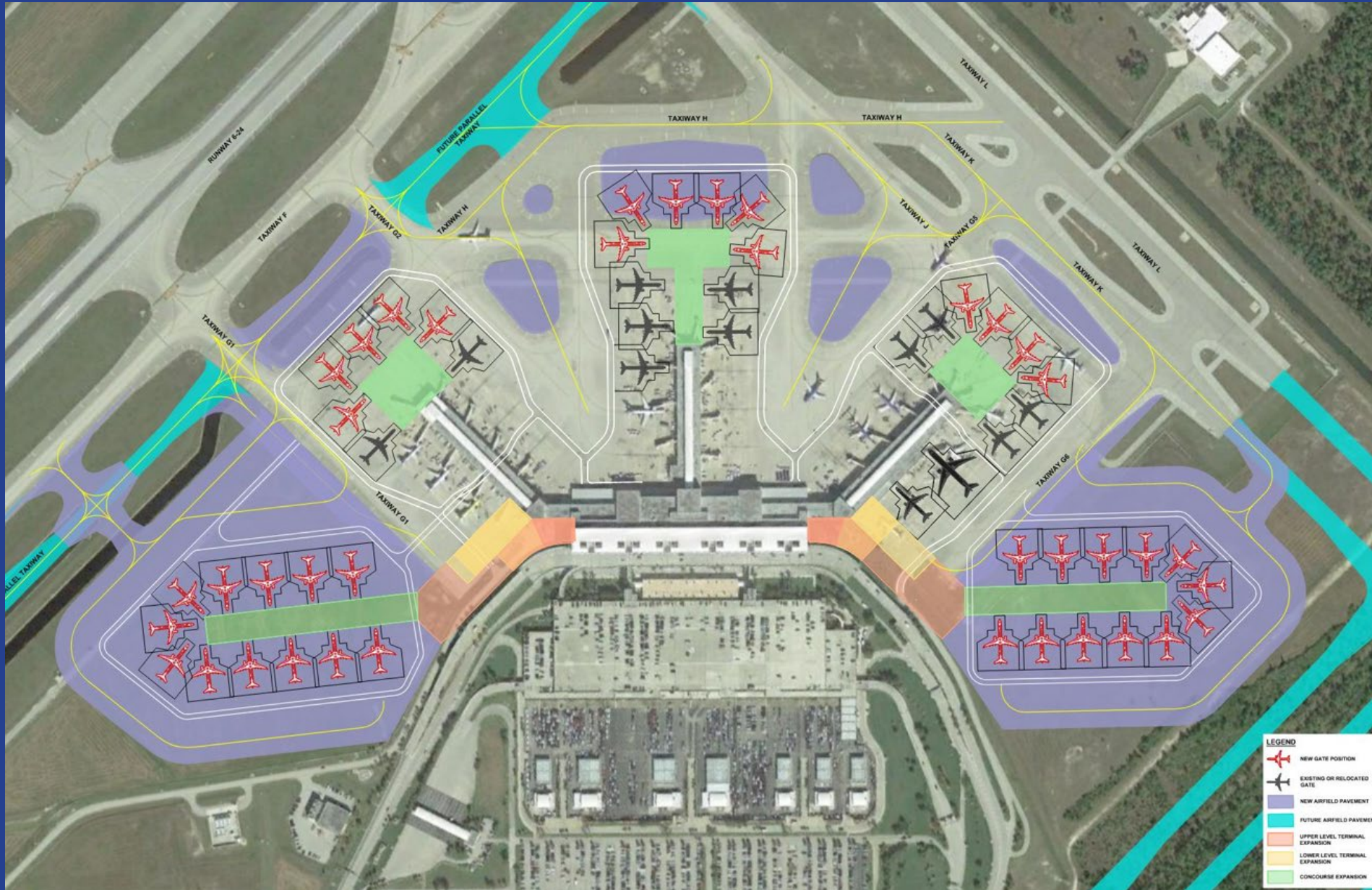






## Additional Gates Recommendations

# Expansion Concepts Summary



# Expansion Concepts Evaluation Matrix Summary

EVALUATION FACTORS	Concourse B Expansion Total Score	Concourse C Expansion Total Score	Concourse D Expansion Total Score	Concourse B + C + D Expansion	New Concourse A	New Concourse E
BUILDING SUB-TOTAL SCORE	88	98	97	83	132	145
AIRSIDE SUB-TOTAL SCORE	76	71	81	56	129	137
LANDSIDE SUB-TOTAL SCORE	27	27	27	52	52	52
OVERALL SUB-TOTAL SCORE	54	54	54	33	55	72
CONCEPT TOTAL SCORE	245	250	259	224	368	406
MEETS PAL 3 DEMAND	NO	NO	NO	YES	YES	YES



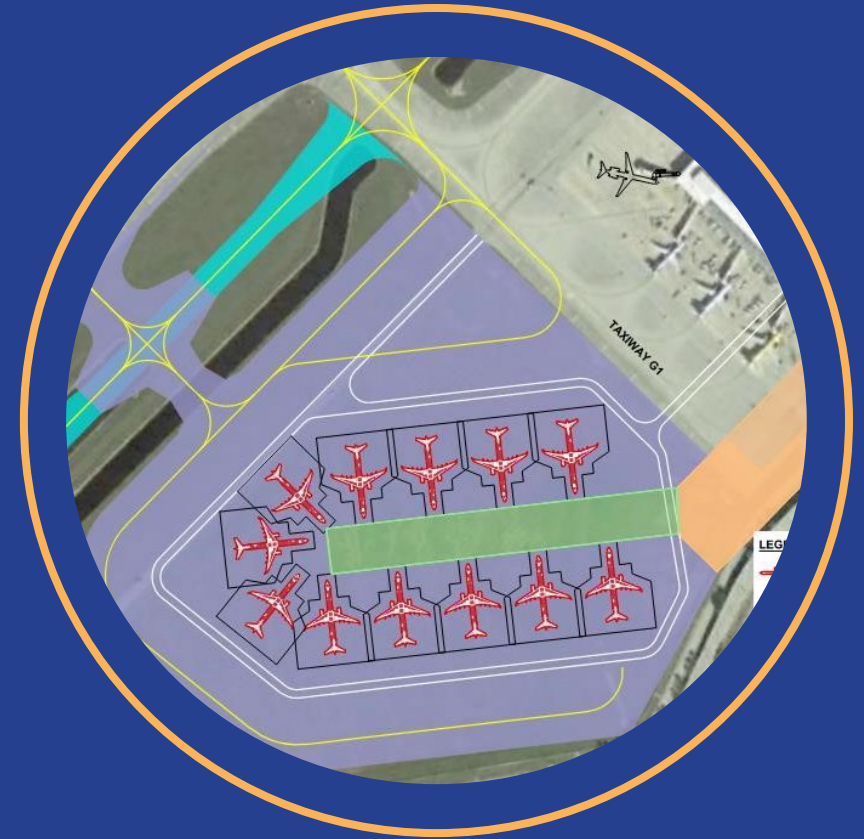
Concourse B, C and D individually do not meet requirement for number of gates. Cannot be considered as options.

## Evaluation :

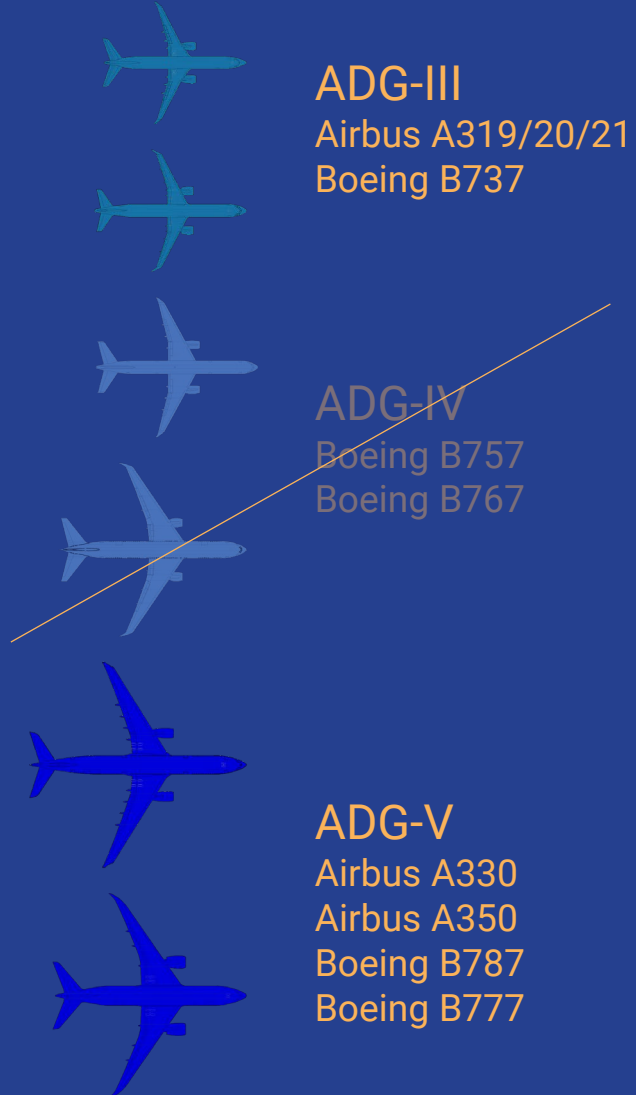
- Concourse B + C + D Option would all have to be done concurrently to provide the needed 12 gates. Additionally:
  - Greater cost
  - Impact to current operations
  - Longer construction schedule
  - Loss of gates during construction
- Concourse A and E options are the only ones that can provide the needed 12 gates. Additionally:
  - Existing airport operations are not impacted during construction
  - Passengers are not impacted during construction
  - Airline operations are not impacted during construction
  - Less costs and faster schedule

# November 2021 Gates Recommendation Summary

- Plan/design facilities to accommodate projected airport traffic for the Peak Hour of the Average Day of March in the year 2035
- Concourse A or E provides the necessary gates required for the 2035 demand
- Concourse E is preferred based on a shorter taxi distance to Runway 6/24, closer to chiller building/utilities (lower cost) and no impacts to existing international Gate B1



# Changes in Aircraft Sizes (Fleet)

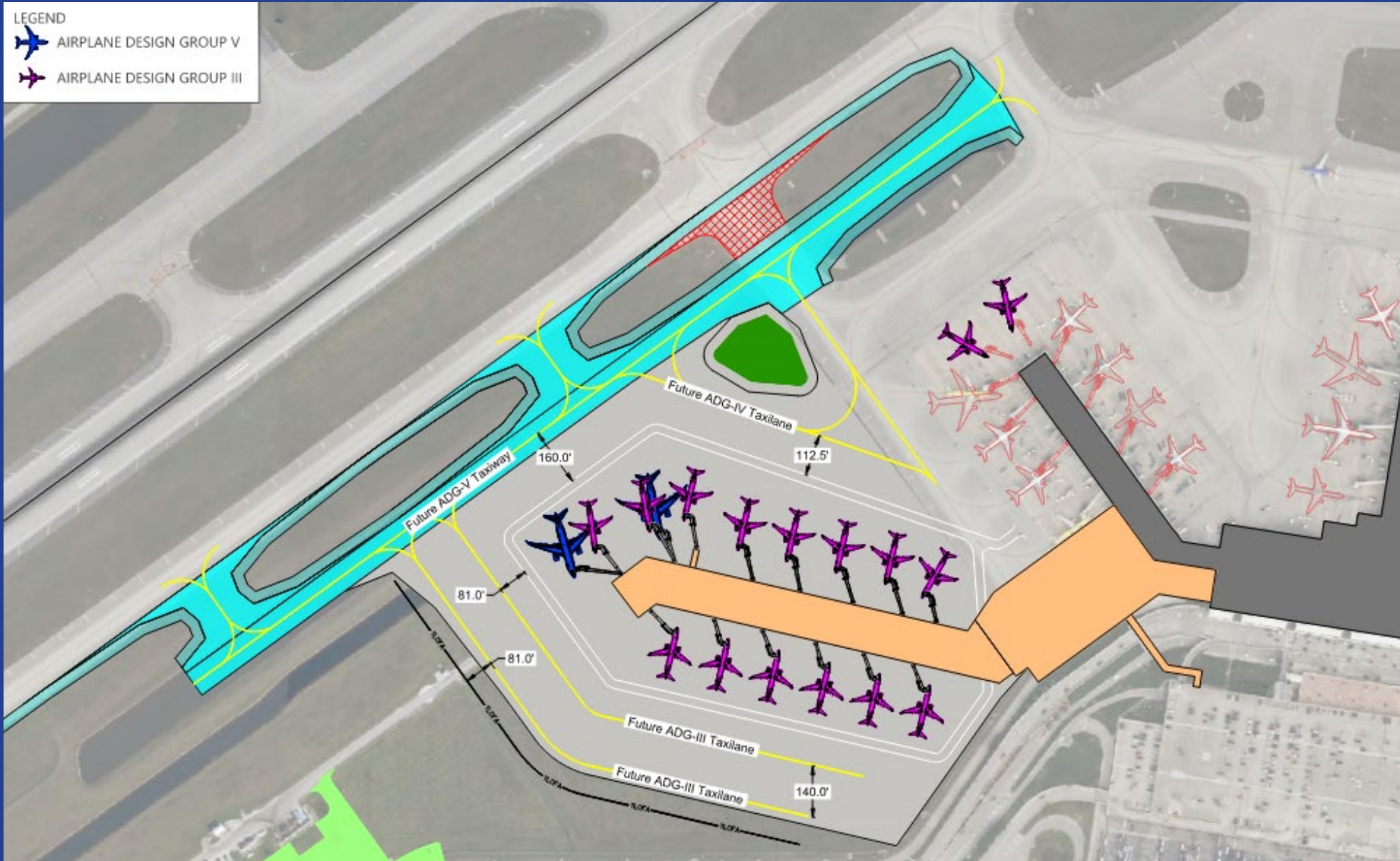


- Airport Design Group (ADG) IV size aircraft to be phased out around 2030
- RSW is projected to primarily accommodate ADG-III size aircraft with occasional ADG-V size aircraft during the peak season
- Recommendations:
  - Maintain ADG-V airfield clearances
  - Design Concourse E for ADG III
  - Provide 2 ADG V gates on each concourse (total of 8)

# Recommended Number of Gates = 14

- Why 14 gates?
  - Preferential Use (PU) Gates = Gates primarily (not exclusively) controlled by one airline pursuant to a “preferential” airport/airline agreement
  - Common Use (CU) Gates = Gates controlled 100% by the airport
  - Airlines prefer PU gates in order to have more control over their own schedules
  - Whether a gate is operated as PU or CU affects the overall capacity of terminal facilities
  - Current split = 67% Preferential Use and 33% Common Use
  - Recommend to transition to greater number of gates as Common Use to provide greater scheduling flexibility in the RSW Peak Season
  - 50% Preferential/Common use split is a realistic goal = 14 Gates
  - Estimated cost per added gate = \$40M each

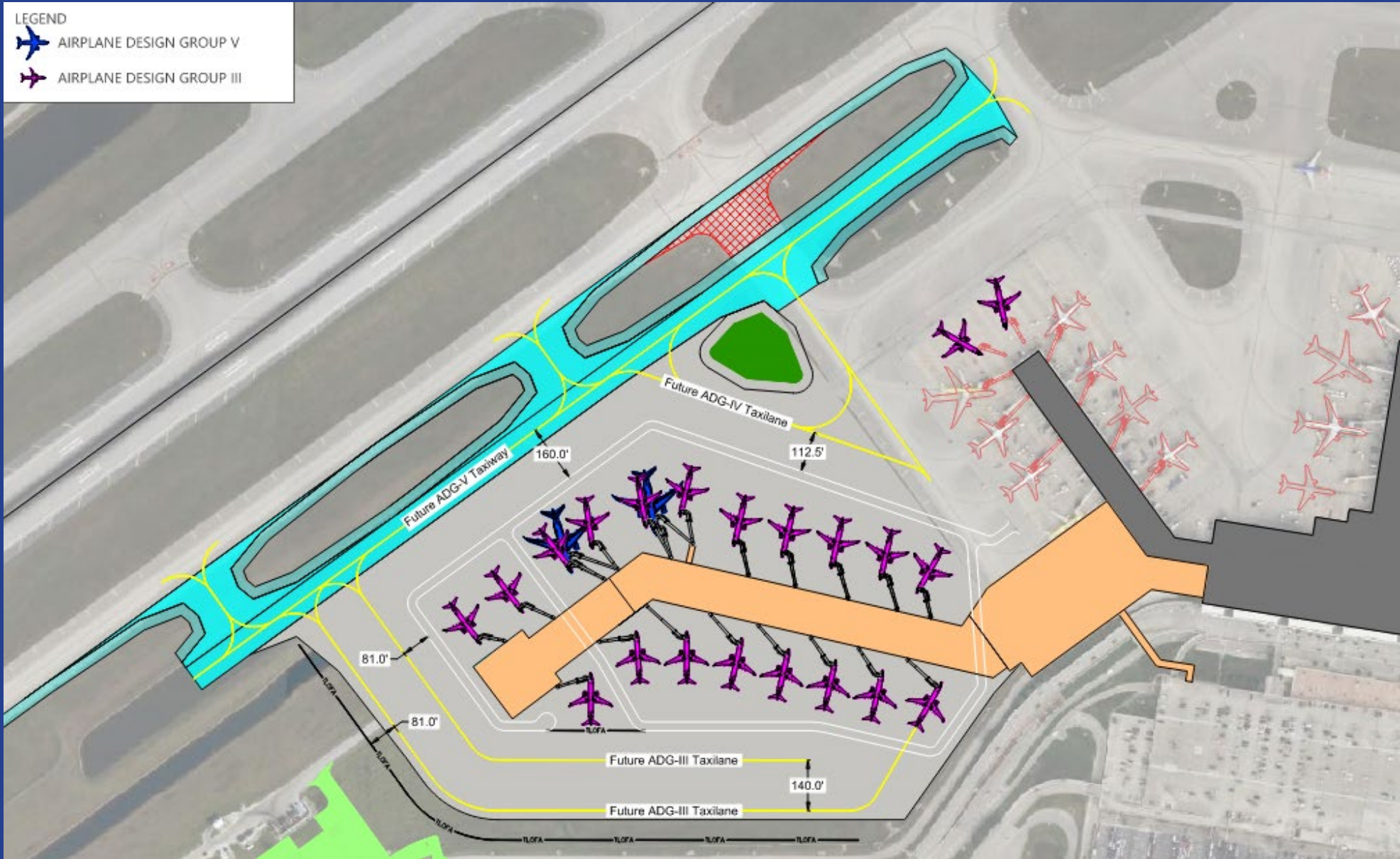
# Concourse E Phase 1 (14 Gates)



# Concourse E Ultimate (+5 = 19 Gates)

LEGEND

-  AIRPLANE DESIGN GROUP V
-  AIRPLANE DESIGN GROUP III

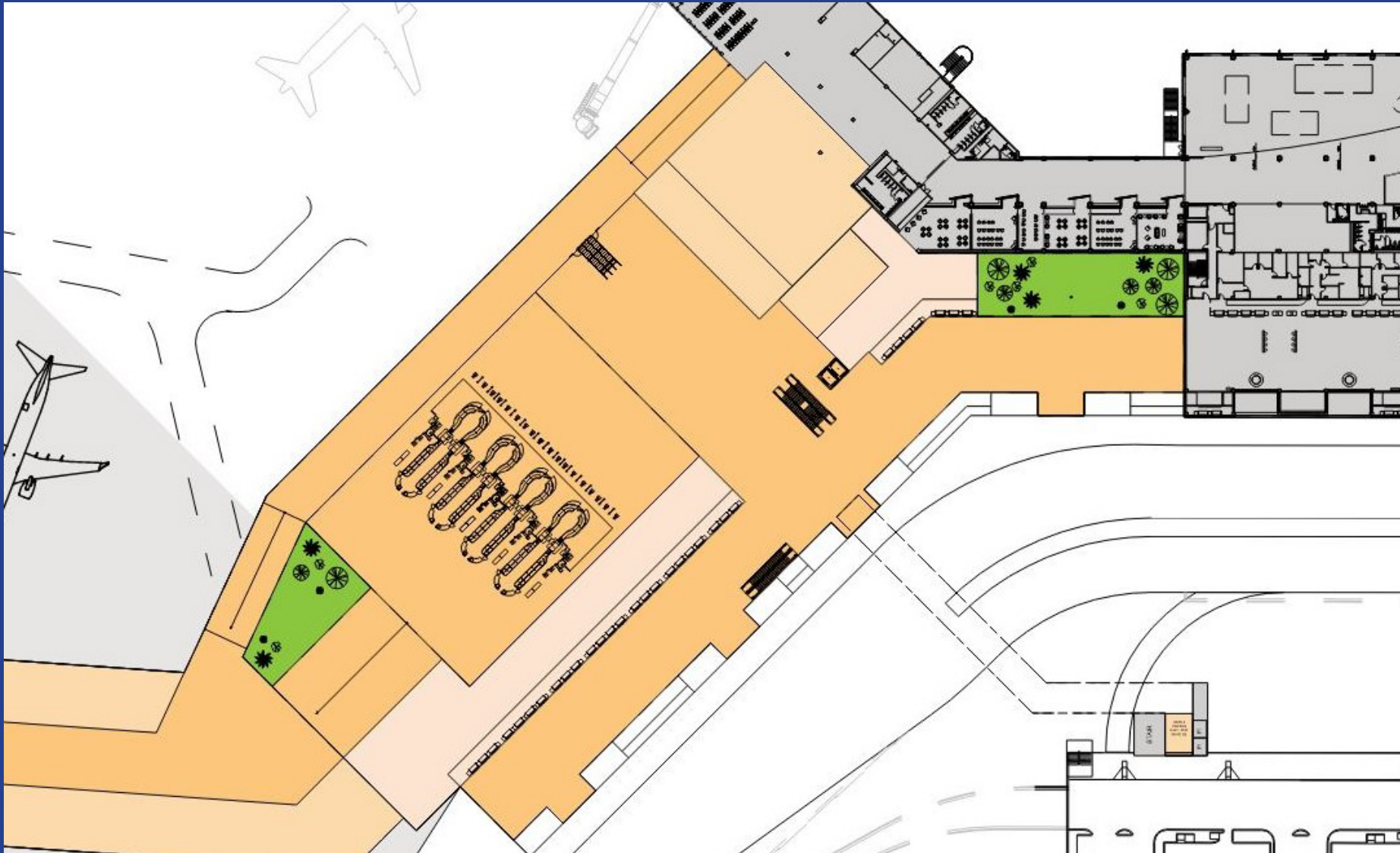




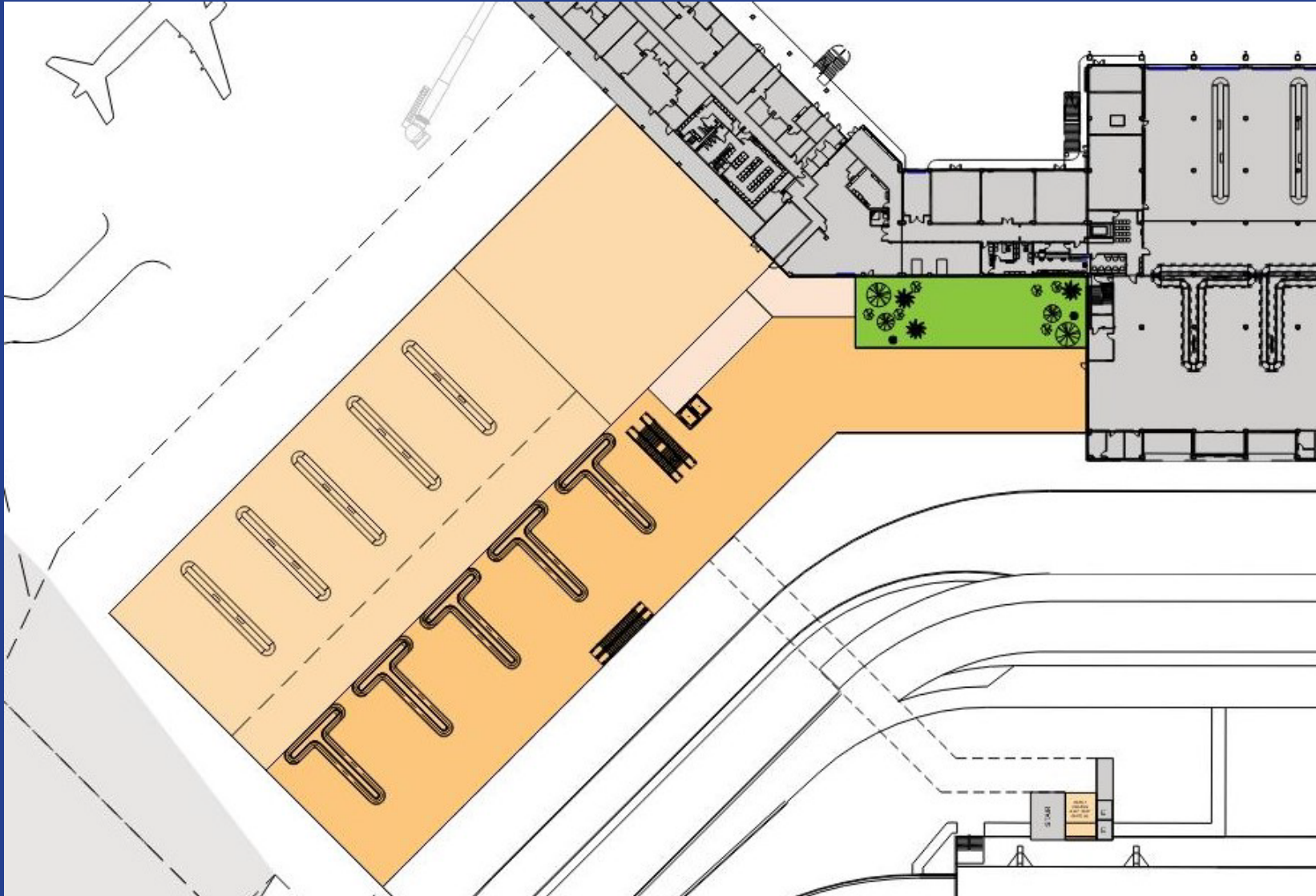
# Recommended Number of Gates = 14

- Conservative Target
  - Demand Target = March 13, 2035
  - Estimated project completion = 2027 = 8 years of peak-season capacity
  - ***NOTE: For 15 days in March 2035, there would be more aircraft than gates. But for the other 350 days in 2035 and every day for the 8 years prior, available gates would meet or exceed aircraft parking needs.***
  - If greater than 50% CU gates achieved = more capacity
  - If aircraft operations grow slower than expected = more capacity
  - If aircraft operations grow faster than expected, the next gate expansion project may be needed sooner than 2035
- ***Estimated cost = \$600M +/- (depending on design, construction market, etc.)***

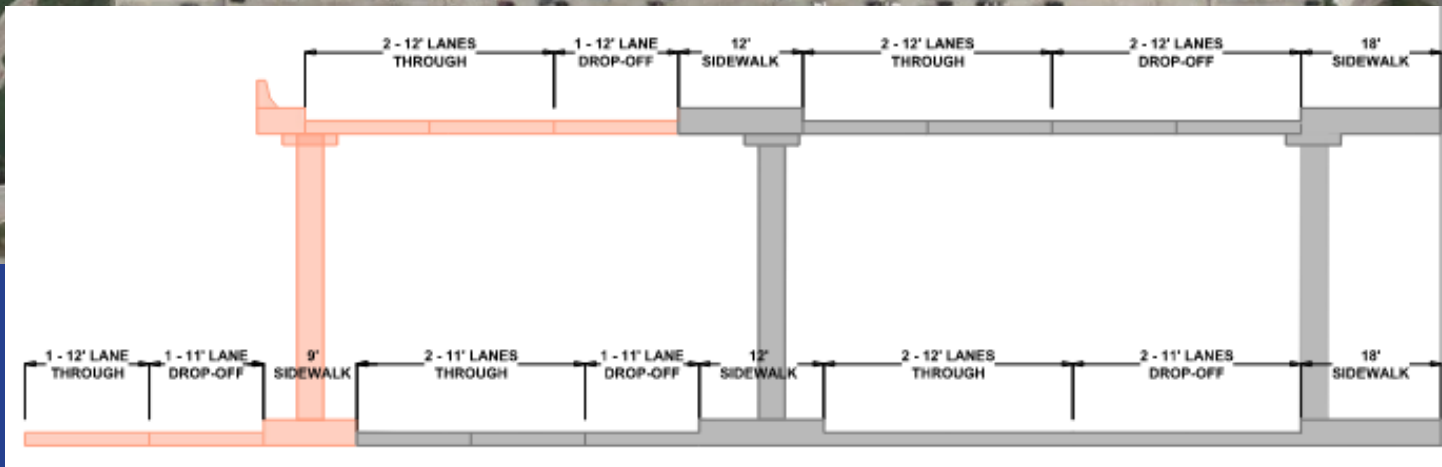
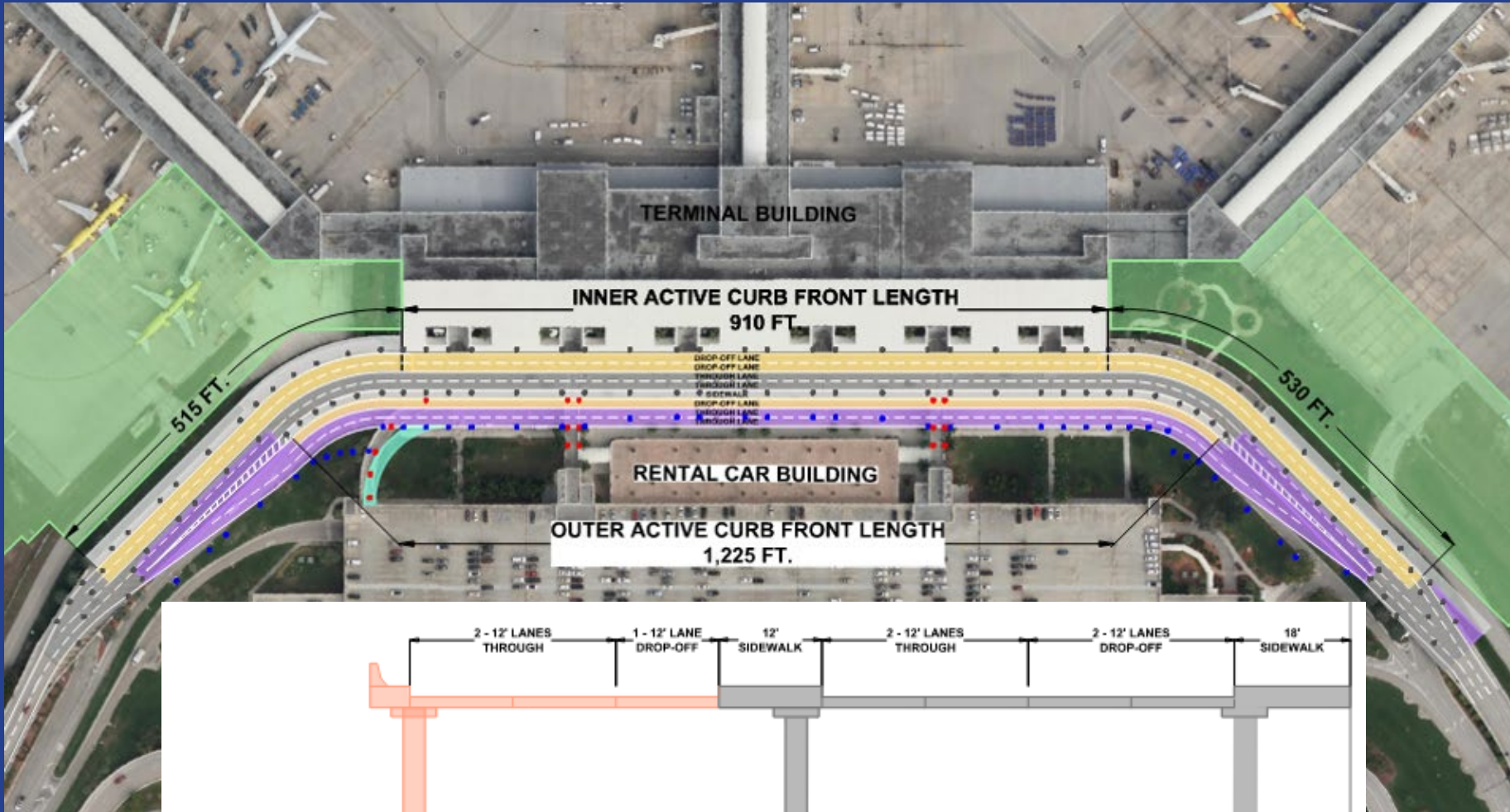
# Concourse E 14 Gates – Planned Departures Level



# Concourse E 14 Gates – Planned Arrivals Level



# Recommended Roadway Expansion



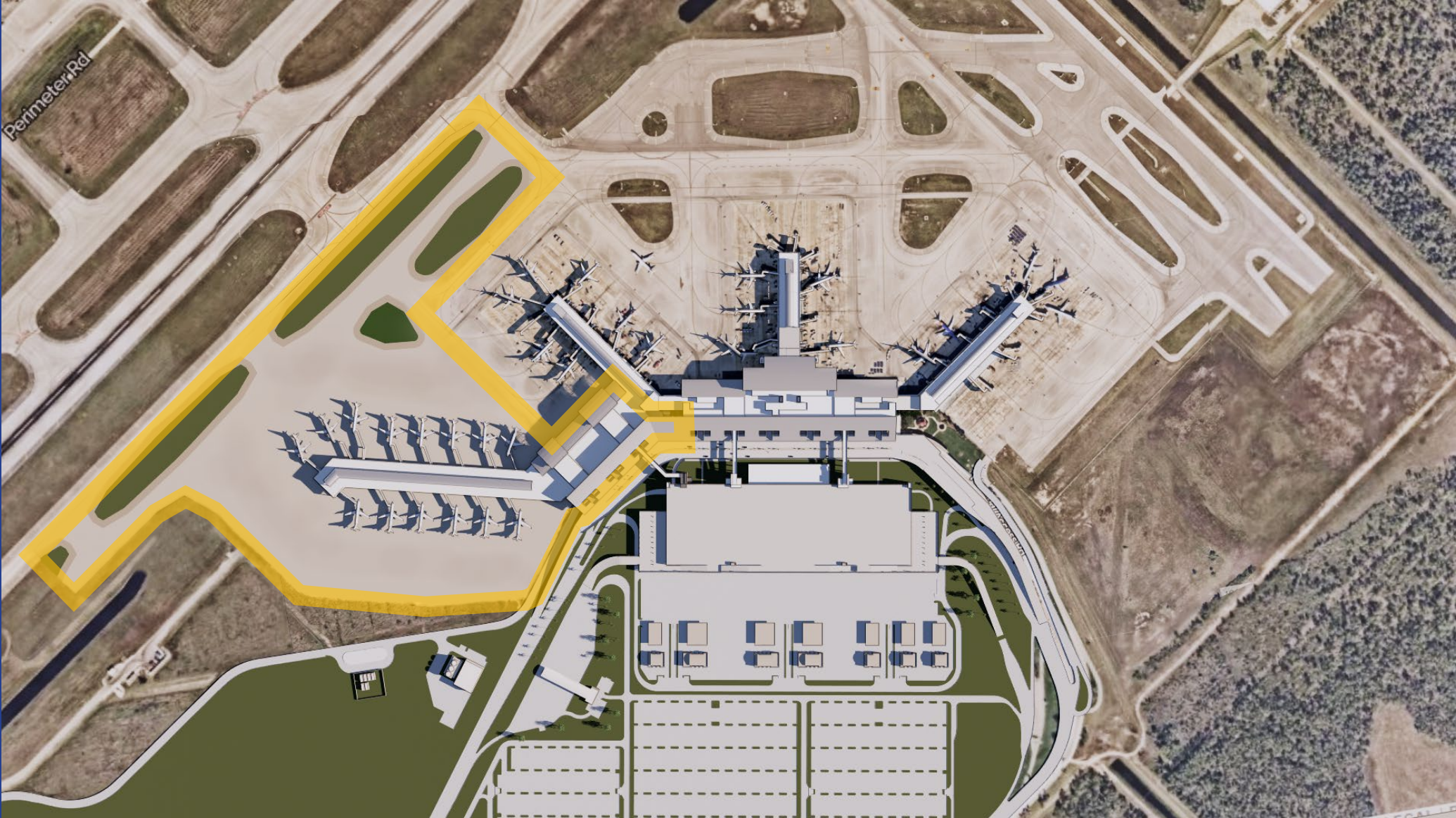
## Upper Level Existing 5 lanes

- Convert 5th travel lane to outer curbside drop-off sidewalk
- Construct 3 additional lanes for a total of 7 travel lanes
- Evaluate cost/benefit of expanding lanes for future Concourse A

# Concept Renderings - Existing Terminal



# Concept Renderings – Concourse E (14 Gates)



# Concept Renderings – Concourse E (14 Gates)



# Concept Renderings – Concourse E (14 Gates)





# Concept Renderings – Concourse E (14 Gates)



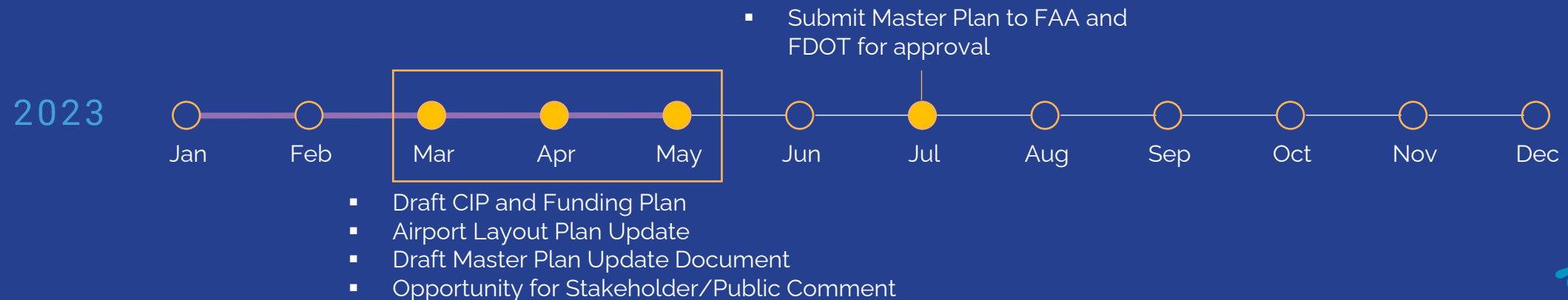
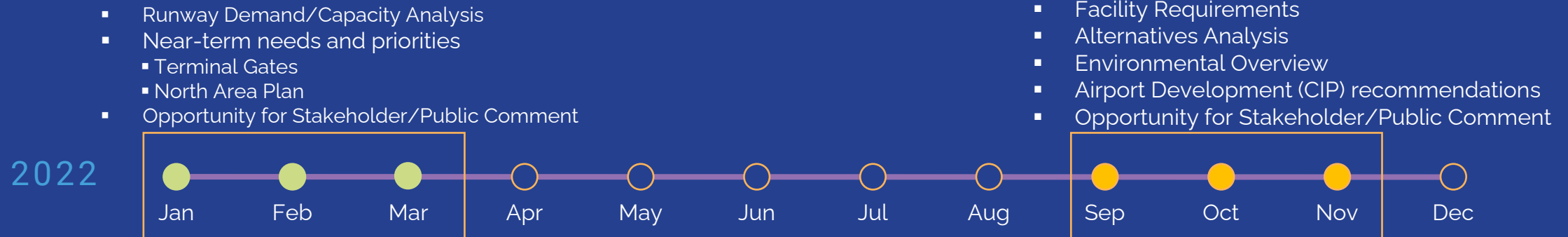
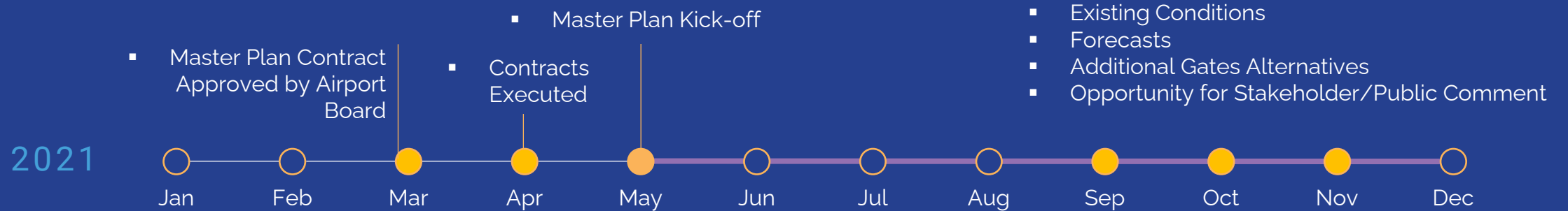
# Concept Renderings – Concourse E (14 Gates)



# Concept Renderings – Buildout (75 Gates)



# Two-year Action Plan



# Be a part of the process

- For more information, to view the Master Plan Update draft chapters completed to date and to provide comments, please visit:

<https://www.flylcpa.com/masterplan>

- The comment period will begin on **Jan. 31, 2022**
- All comments should be submitted on or before **Feb. 17, 2022**
- All comments will be summarized and presented to the Board of Port Commissioners and FAA/FDOT for consideration

# Thank You

For project updates or to provide comments, please visit:

<https://www.flylcpa.com/masterplan>

