



# Tri-Cities Airport Master Plan

Technical and Community Advisory  
Committee Meeting  
November 15, 2023





# Agenda

- ✈ Welcome & Introductions
- ✈ AMP Process Overview
- ✈ TAC/CAC Roles & Responsibilities
- ✈ Inventory of Existing Conditions
- ✈ Forecast Overview and Preliminary Results
- ✈ AMP Next Chapters
- ✈ AMP Next Steps & Discussion

# Welcome & Introductions

✈️ **AtkinsRéalis Planning Team**



Dave Schilling



Stefan Bobot Jr.



Gavin Fahnestock



Kurt Krier



Madie Poon-Galloway



Kyle Stevens



Kathryn Saucier



Sarah Hayes



Jimmy Bascone



Paulina Fiebig

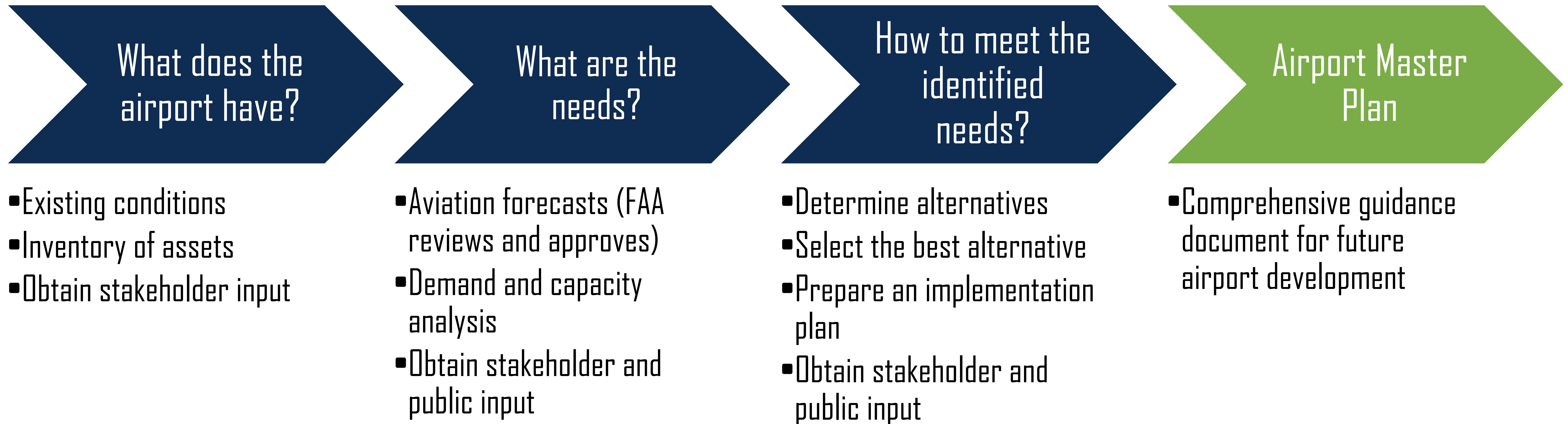




# Meeting Objectives

- ✈ **Educate Stakeholders regarding Airport Master Plan Process**
  - ✈ What are your rolls and responsibilities during this project?
- ✈ **Review Completed Deliverables**
  - ✈ Inventory of Existing Conditions
  - ✈ Forecast Preliminary Results
- ✈ **Gather Stakeholder Input Regarding Master Plan Process**

# Master Plan Objectives



“A comprehensive study of an airport that usually describes the short-, medium-, and long-term development plans to meet future aviation demand.”

- FAA Advisory Circular 150/5070-6B, Airport Master Plans

# Master Planning Process

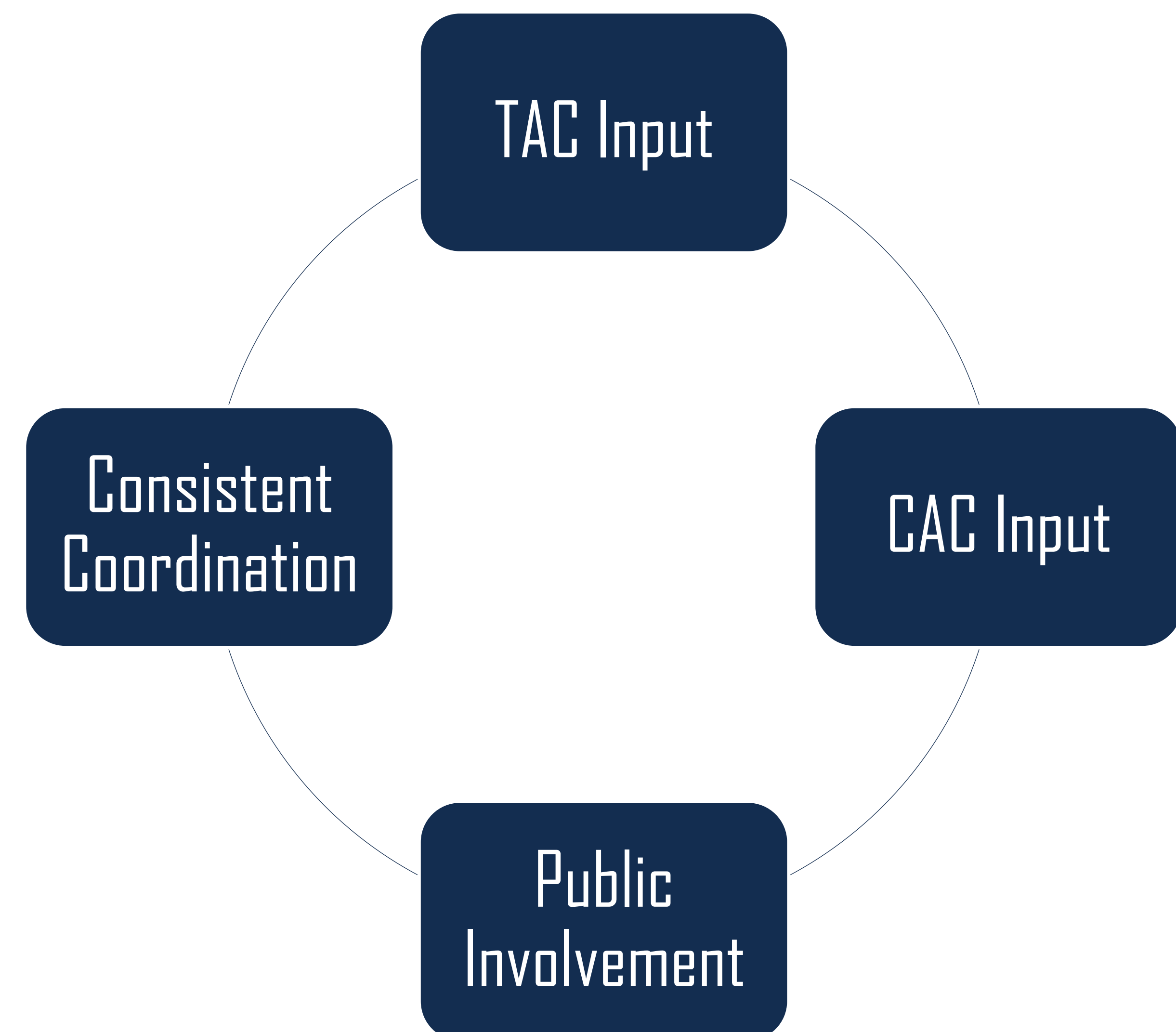
## Planning Life Cycle

The Master Planning process is a continual process that revolves around four basic elements. Investigation, Recommendation, Implementation, and Review. The Airport Master Plan requires continual input from interested stakeholders and the public in order to gain positive acceptance and ultimate implementation.



# TAC/CAC Roles & Responsibilities

- Coordinate with the Master Plan Team
- Provide input on technical topics
- Provide input on existing and future needs
- Review draft documents
- Advise on potential development impacts
- Attend public meetings
- Advise & aid on community relations



# Schedule

Current Position

Inventory of Existing Conditions

Aviation Forecasts (Jacobsen | Daniels)

Surveying and Mapping

Environmental Overview

Demand/Capacity & Facility Requirements

Airport Development Alternatives

CIP & Financial Plan

Sustainability Planning

Airport Layout Plan

Final Documents



Public Meeting

Advisory Committee Meeting

FAA Review



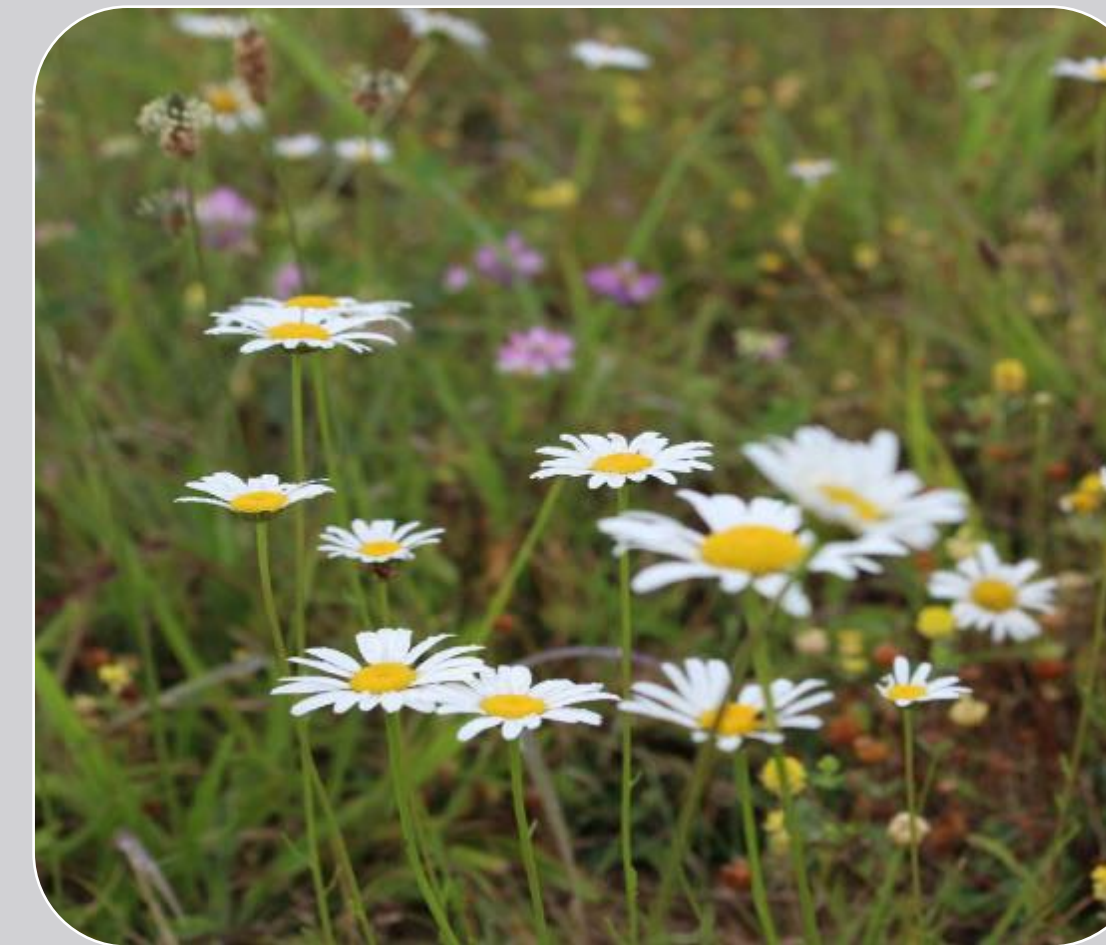
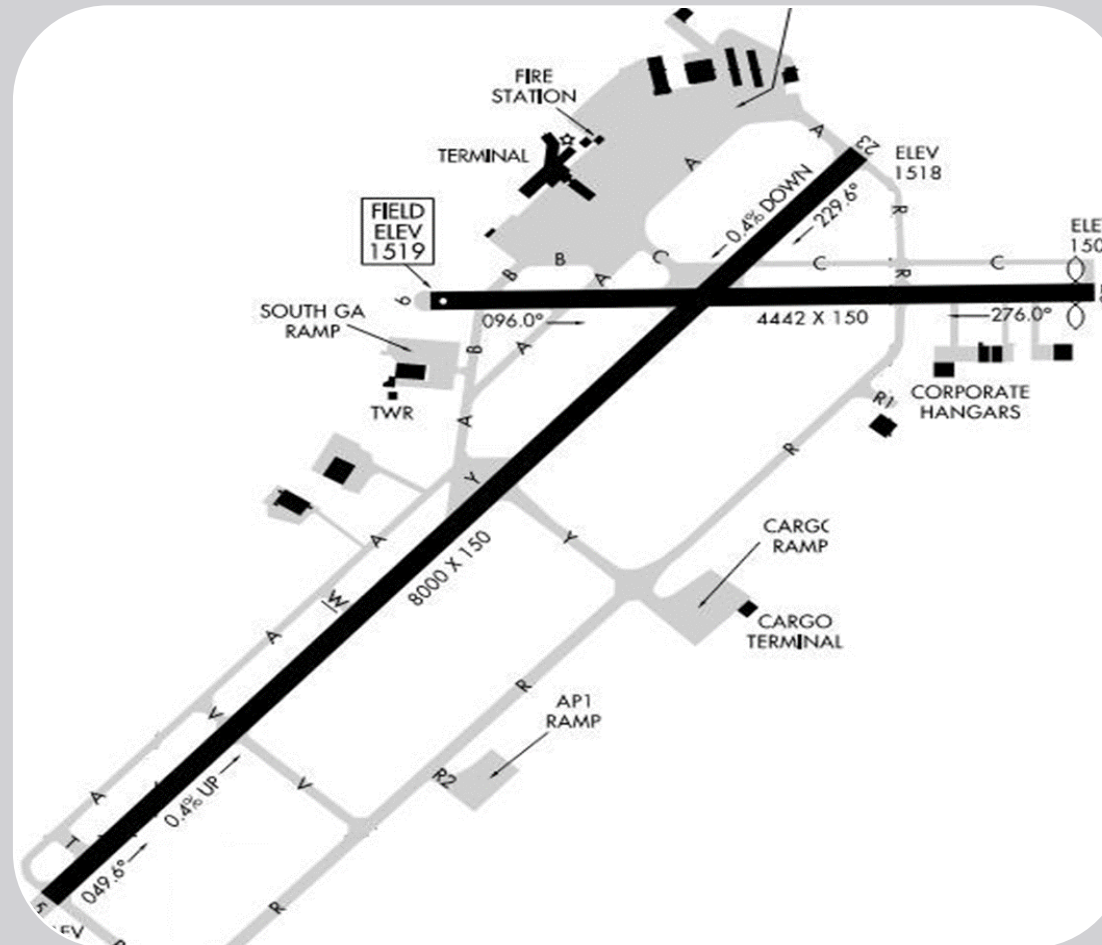
# Inventory of Existing Conditions

## ✈️ What is the Inventory?

- ✈️ Register of all facilities and equipment at the airport, and their respective condition.
- ✈️ Catalogue of airspace environment, land use and zoning, and natural features present.
- ✈️ Completed July 19-21, 2023.



# Inventory of Existing Conditions



## Airport Facilities

- Runways
- Taxiways
- NAVAIDs
- Terminals
- Support Facilities
- Hangars
- Fuel
- Auto Parking

## Airspace Structure

- Class D Airspace
- Victor Airways
- Departure Procedures
- Instrument Approach Procedures
- Obstacle Departure Procedures

## Land Use and Zoning

- Business Centers
- Foreign Trade Zones
- Cemeteries

## Natural Features

- Temperature
- Wind
- Terrain
- Obstructions



# Inventory of Existing Conditions

## Runway Infrastructure



Runway 05 End  
Threshold Elevation: 1,518.7 ft.  
Non-Precision Approach (RNAV (GPS))  
Visibility Minimums: 1 Mile

Runway 05 End  
Threshold Elevation: 1,488.2 ft.  
Precision Approach (ILS, LOC, RNAV (GPS))  
Visibility Minimums: 3/4 Mile  
PAPI - 4L

Runway 05-23  
Length: 8,000 ft.  
Width: 150 ft.  
RDC: D-IV  
Asphalt (Good Condition)  
HIRL

Runway 09-27  
Length: 4,442 ft.  
Width: 150 ft.  
RDC: A-I  
Asphalt (Fair Condition)  
MIRL

Runway 23 End  
Threshold Elevation: 1,517.7 ft.  
Precision Approach (ILS, LOC, RNAV (GPS))  
Visibility Minimums: 1/2 Mile  
PAPI - 4R

Runway 27 End  
Threshold Elevation: 1,508.1 ft.  
Non-Precision Approach (RNAV (GPS))  
Visibility Minimums: 7/8 Mile  
PAPI - 4L



# Inventory of Existing Conditions

## Taxiway Infrastructure

TAXIWAY/TAXILANE DATA										
	A	B	C	R	V	Y	W	T	R1	R2
TAXIWAY DESIGN GROUP	III	III	III	III	III	III	III	III	III	III
TAXIWAY & TAXILANE WIDTH (FT.)	75'	75'	50/75'	75'	75'	75'	75'	75'	50'	75'
TAXIWAY EDGE SAFETY MARGIN (FT.)	10'	10'	10'	10'	10'	10'	10'	10'	10'	10'
TAXIWAY SHOULDER WIDTH (FT.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
AIRPLANE DESIGN GROUP	III	III	III	III	III	III	III	III	III	III
TAXIWAY & TAXILANE SAFETY AREA WIDTH <sup>1</sup> (FT.)	118'	118'	118'	118'	118'	118'	118'	118'	118'	118'
TAXIWAY OBJECT FREE AREA <sup>1</sup> (FT.)	171'	171'	171'	171'	171'	171'	171'	171'	171'	171'
TAXIWAY TO TAXIWAY / TAXILANE SEPARATION (FT.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TAXIWAY / TAXILANE LIGHTING <sup>2</sup>	MITL	MITL	MITL	MITL	MITL	MITL	MITL	MITL	MITL	MITL

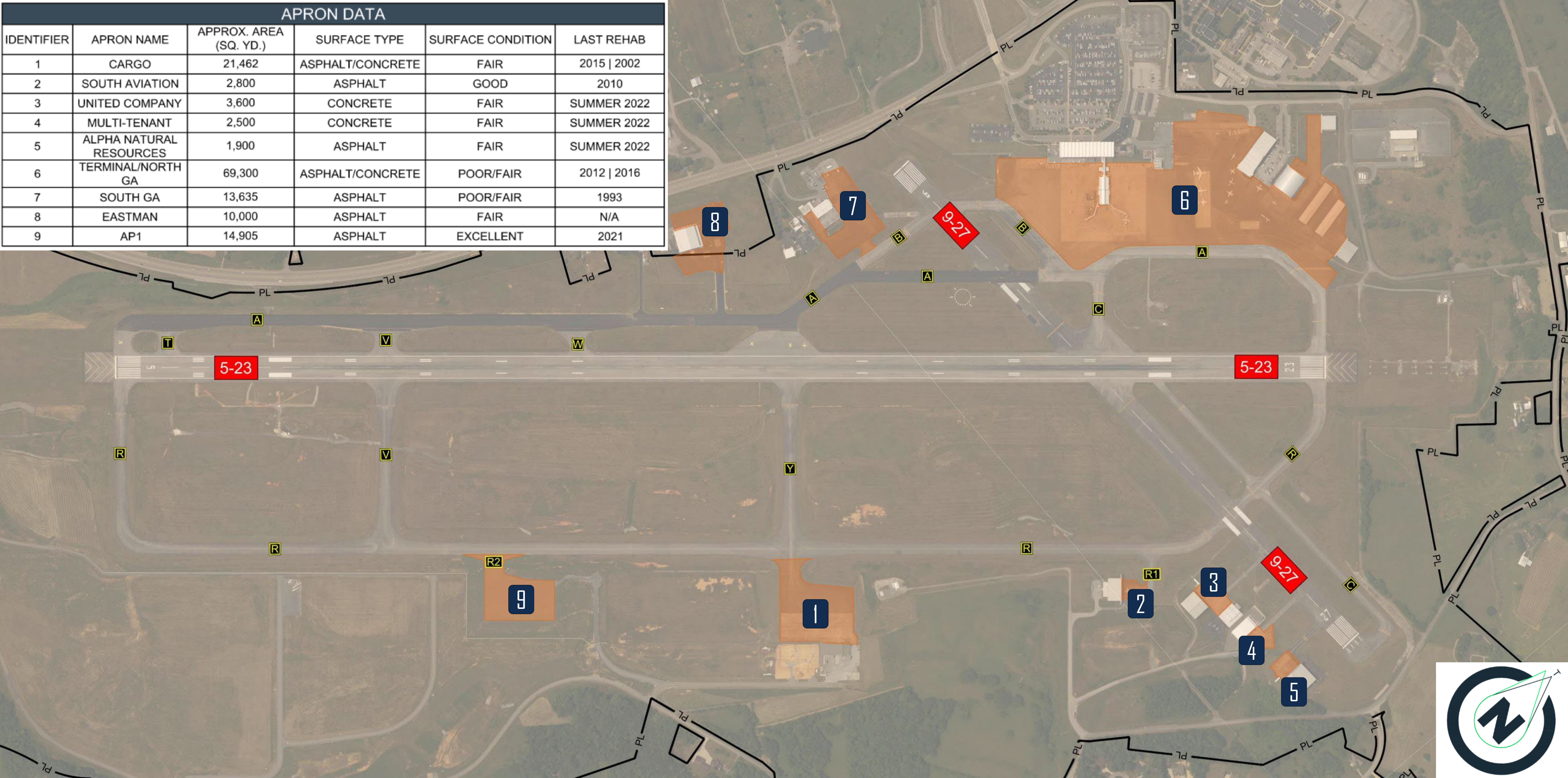
NOTES:  
<sup>1</sup> THE TSA AND TOFA ARE FREE OF OBJECTS, EXCEPT FOR OBJECTS THAT NEED TO BE LOCATED INSIDE THE TSA OR TOFA BECAUSE OF THEIR FUNCTION.  
<sup>2</sup> TAXIWAY LIGHTING CONSISTS OF A MIX OF INCANDESCENT AND LED LIGHTING.



# Inventory of Existing Conditions

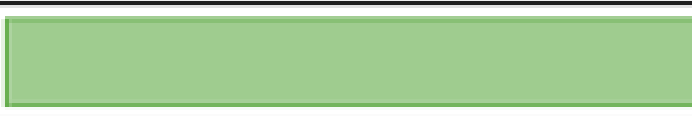


## Apron Infrastructure

APRON DATA					
IDENTIFIER	APRON NAME	APPROX. AREA (SQ. YD.)	SURFACE TYPE	SURFACE CONDITION	LAST REHAB
1	CARGO	21,462	ASPHALT/CONCRETE	FAIR	2015   2002
2	SOUTH AVIATION	2,800	ASPHALT	GOOD	2010
3	UNITED COMPANY	3,600	CONCRETE	FAIR	SUMMER 2022
4	MULTI-TENANT	2,500	CONCRETE	FAIR	SUMMER 2022
5	ALPHA NATURAL RESOURCES	1,900	ASPHALT	FAIR	SUMMER 2022
6	TERMINAL/NORTH GA	69,300	ASPHALT/CONCRETE	POOR/FAIR	2012   2016
7	SOUTH GA	13,635	ASPHALT	POOR/FAIR	1993
8	EASTMAN	10,000	ASPHALT	FAIR	N/A
9	AP1	14,905	ASPHALT	EXCELLENT	2021



# Inventory of Existing Conditions

## Landside Facilities

LEGEND	
DESCRIPTION	SYMBOL
CONVENTIONAL HANGAR	
SHADE PORT	
SUPPORT FACILITY	



# Inventory of Existing Conditions

## NAVAID Infrastructure

NAVAIDs	Rwy 05	Rwy 23	Rwy 09	Rwy 27
Localizer	X	X		
ILS	X	X		
RNAV (GPS)	X	X	X	X
PAPI	x	X		X
VASI				
REILs	X			X
TDZ LIGHTS				
ALSF-II		X		

**ADDITIONAL AIRPORT NAVAIDS**

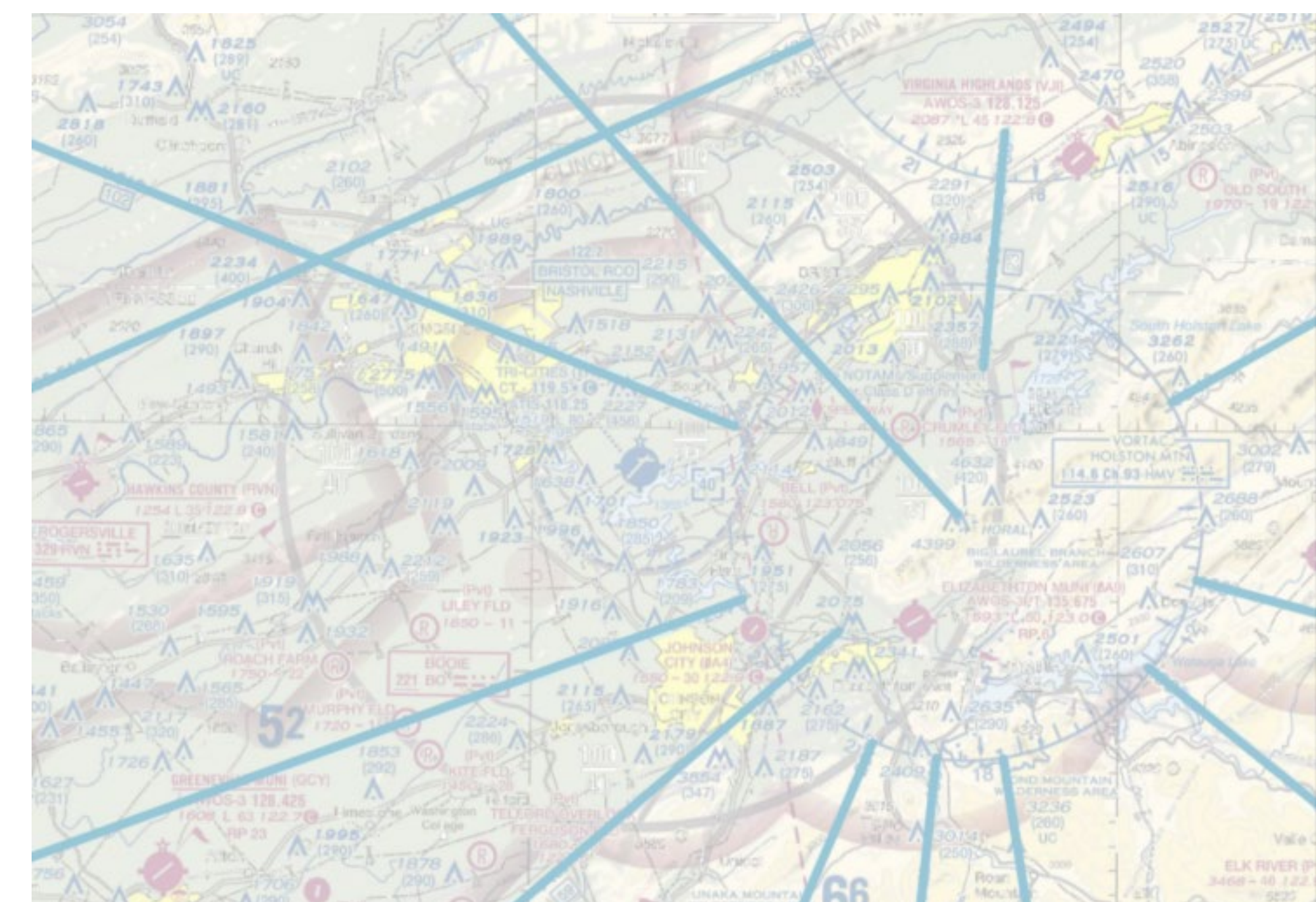
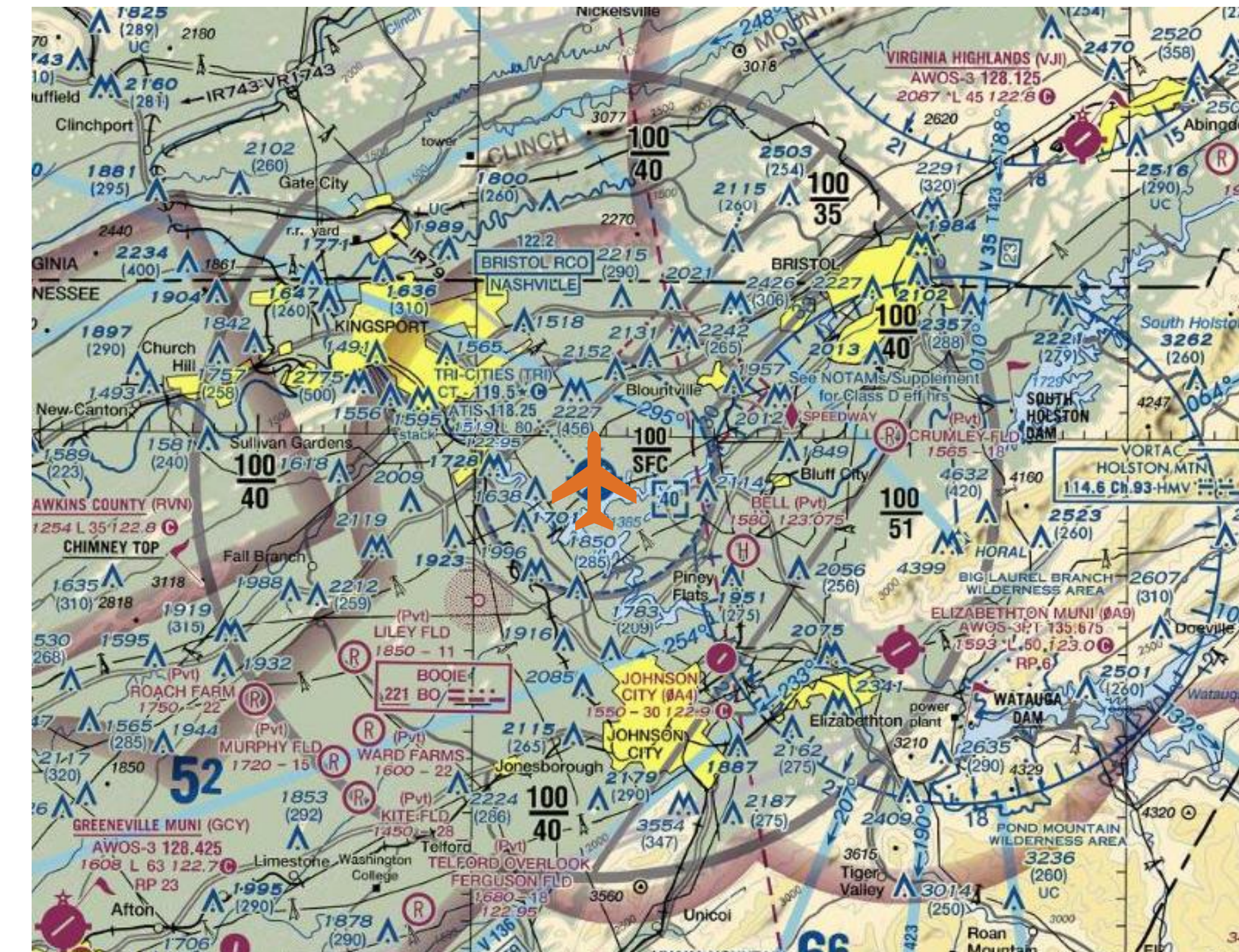
- AWOS
- WIND CONE
- SEGMENTED CIRCLE
- BEACON



# Inventory of Existing Conditions

## Airspace

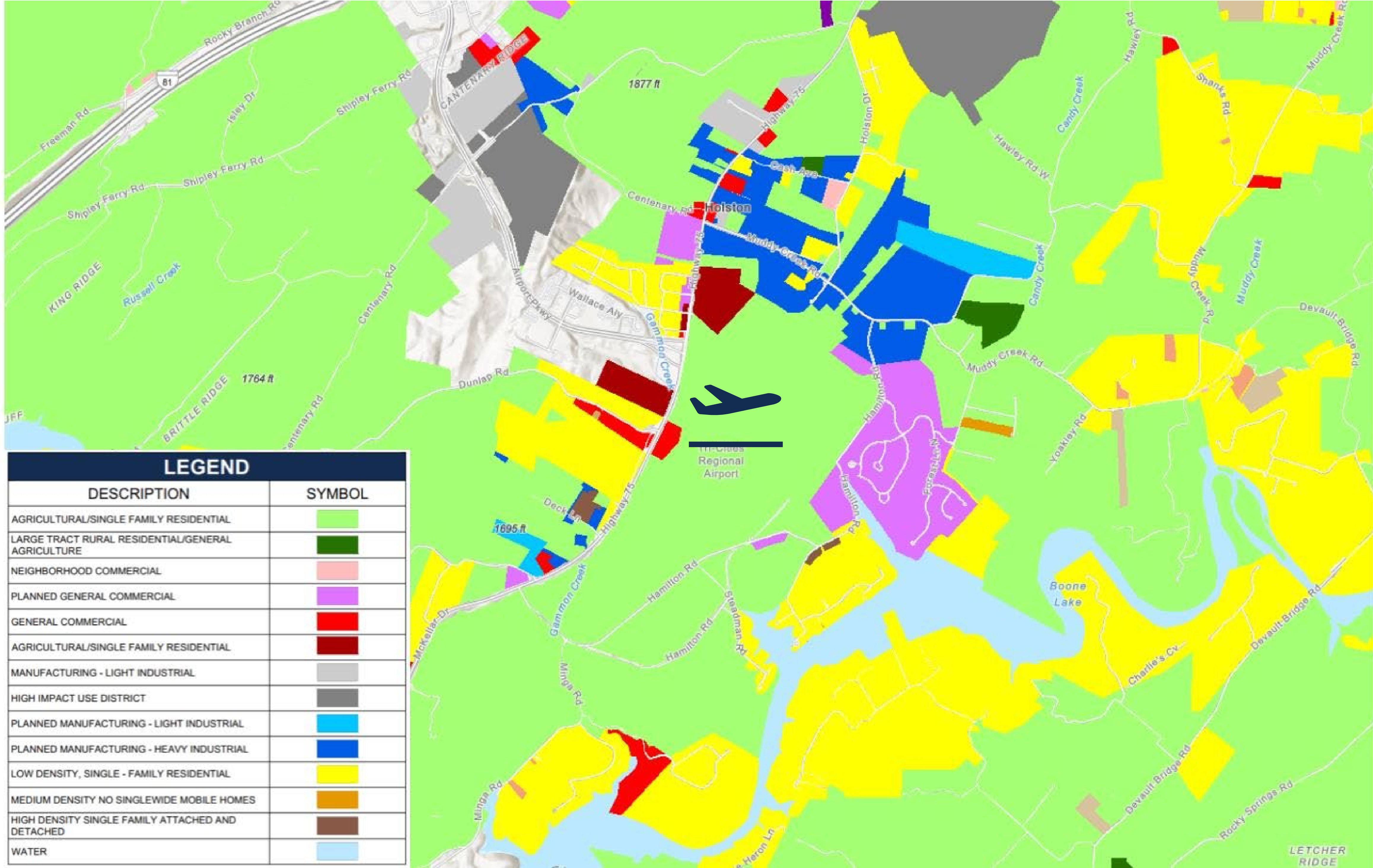
- ✈ **Class D Airspace**
  - ✈ Towered Airport
  - ✈ Requires two-way communications between pilots and ATC
  - ✈ Surface to 4,000ft MSL
  - ✈ 5NM radius
- ✈ **Victor Airways**
  - ✈ Low Altitude, straight segments to/from different radians of a VOR
- ✈ **Departure Procedures**
  - ✈ Kings Two Departure
- ✈ **Instrument Approach Procedures**
  - ✈ Eight (8) instrument approach procedures
- ✈ **Obstacle Departure Procedures**
  - ✈ Tri-Cities Three Departure





# Inventory of Existing Conditions

## Land Use & Zoning



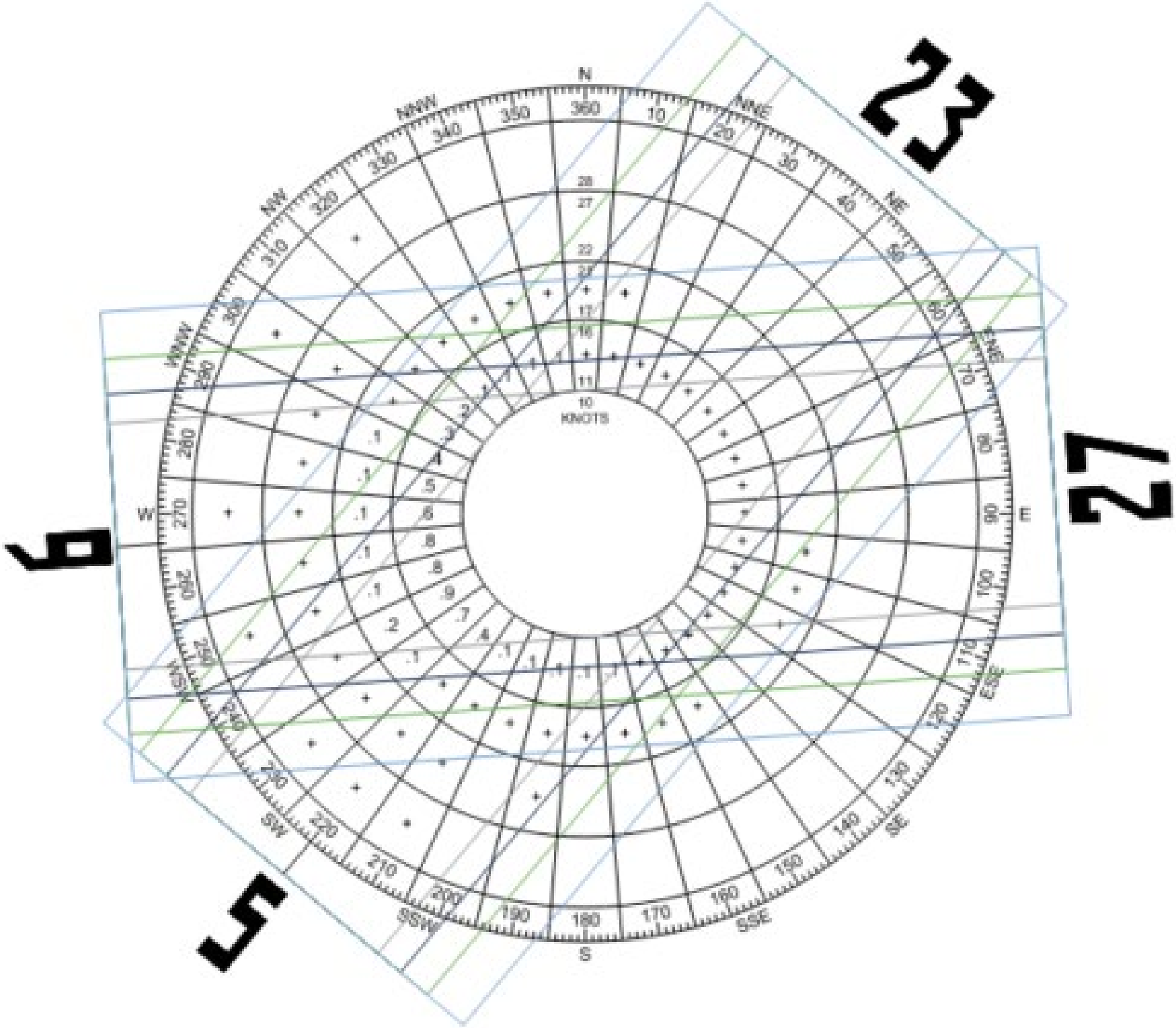
# Inventory of Existing Conditions

## Natural Features

### ✈ Temperature

- ✈ Weather analyzed from Bristol Tri City, Elizabethton and Kingsport
- ✈ Mean Max: 75.6° | 74.5° | 76.5°
- ✈ Mean Min: 36.5° | 35.9° | 36.9°

ALL WEATHER WIND COVERAGE



ALL WEATHER WIND COVERAGE			
CROSSWIND COMPONENT	RUNWAY 5/23	RUNWAY 9/27	COMBINED COVERAGE
10.5 KTS	97.43%	98.74%	99.53%
13 KTS	98.77%	99.45%	99.86%
16 KTS	99.73%	99.90%	99.98%
20 KTS	99.96%	99.99%	100%

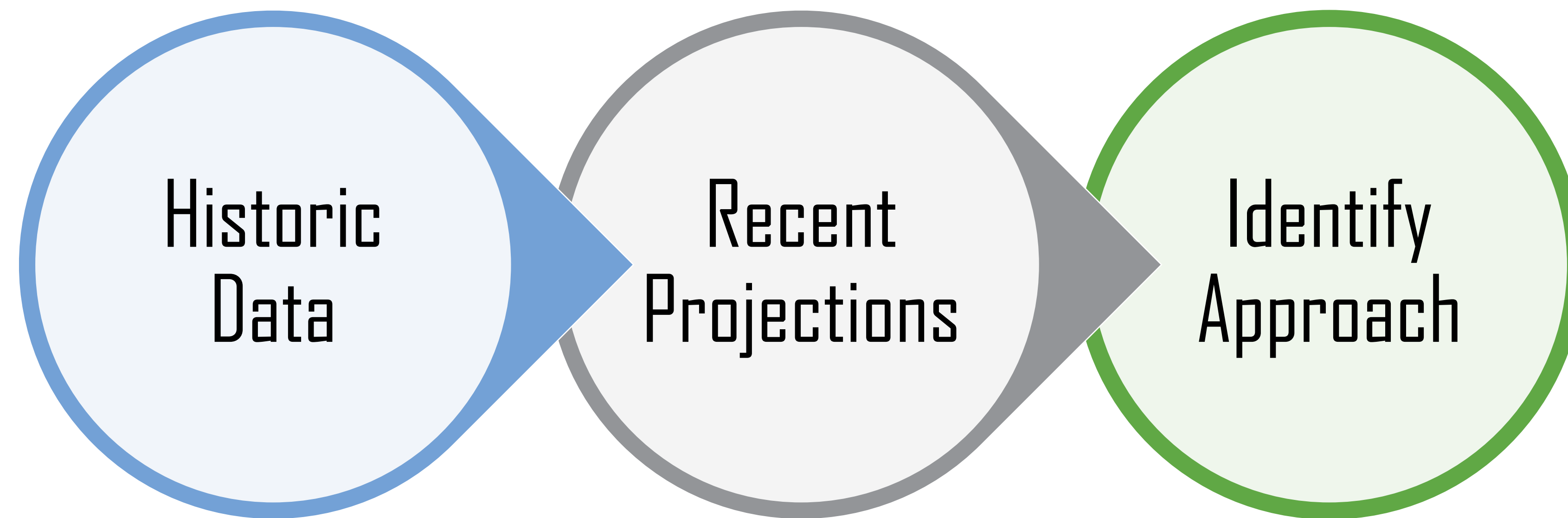


## Forecast

The forecast focuses on the future demand levels of enplaned passengers and scheduled airline, air taxi, general aviation, and military aircraft operations. In addition, the report includes an aircraft fleet mix forecast and peak period analysis. The Forecast compares the projections of enplaned passengers, commercial aircraft operations, and total airport aircraft operations to the FAA's 2022 Terminal Area Forecast for TRI to determine if the Forecast is consistent with the TAF. The Forecast is considered consistent if its projections fall within 10 percent of the TAF within the first five years and 15 percent of the TAF within the first ten years.

# Forecast Overview

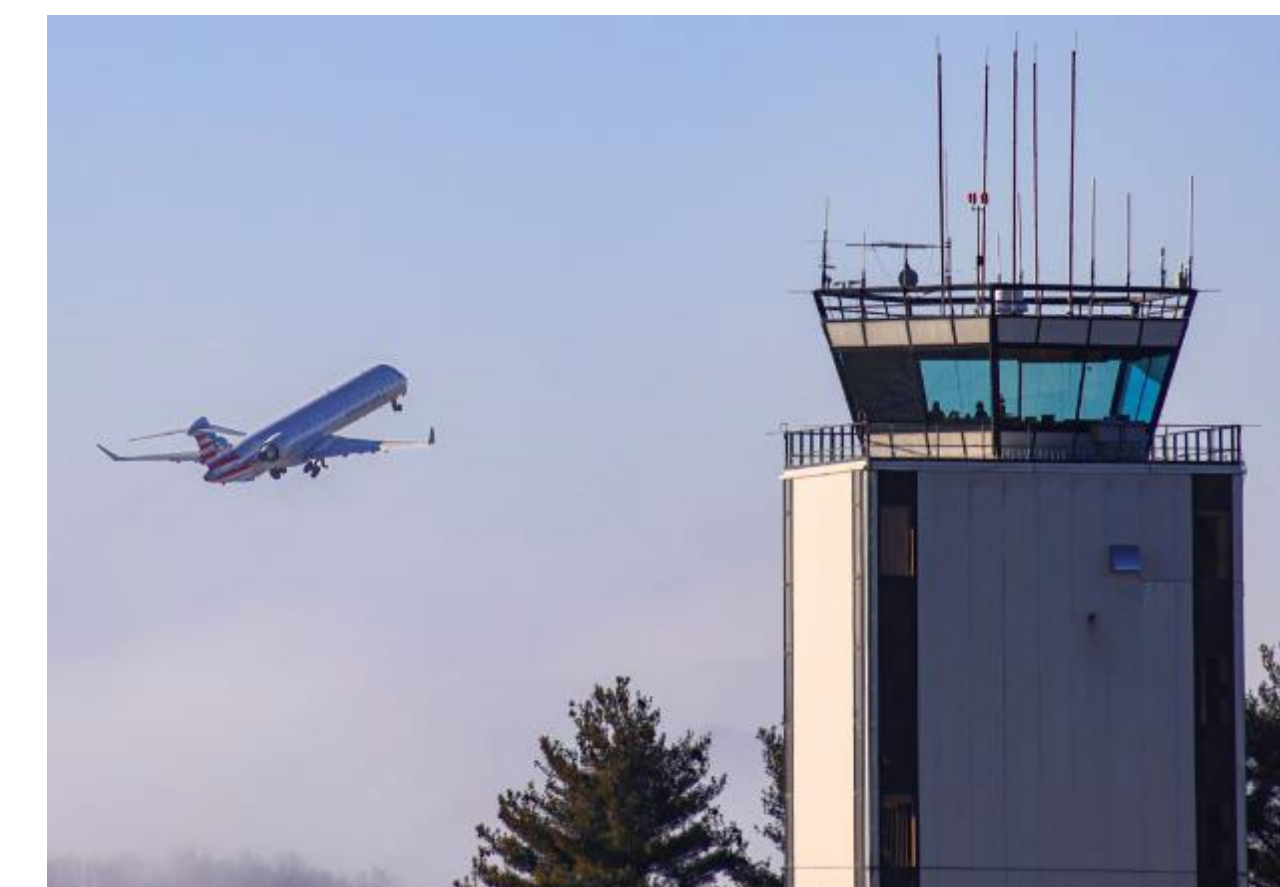
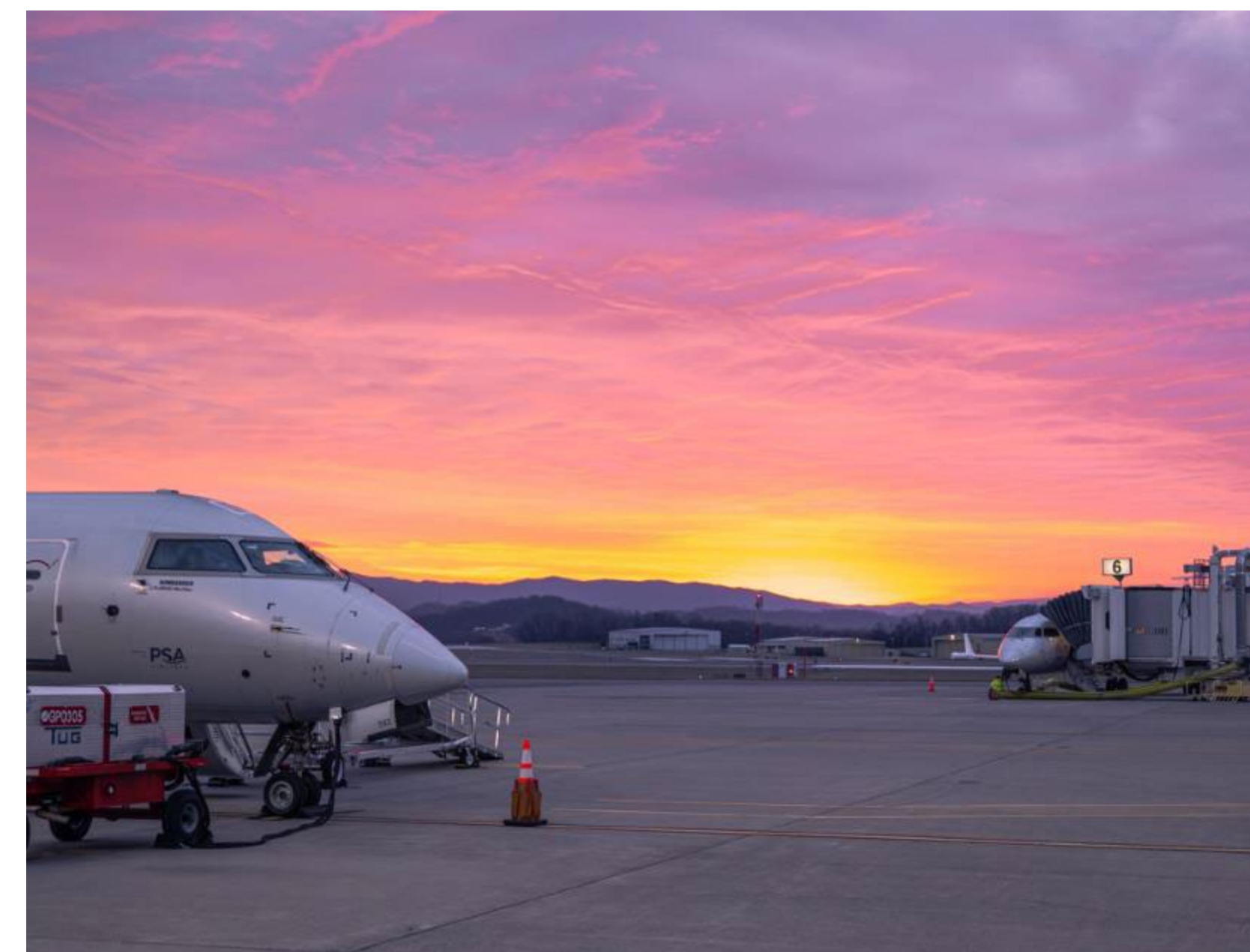
## Forecast Process



- National
  - Industry Trends
  - General Aviation Statistics
- Regional
  - Statewide System Plan
  - Socioeconomic Profile

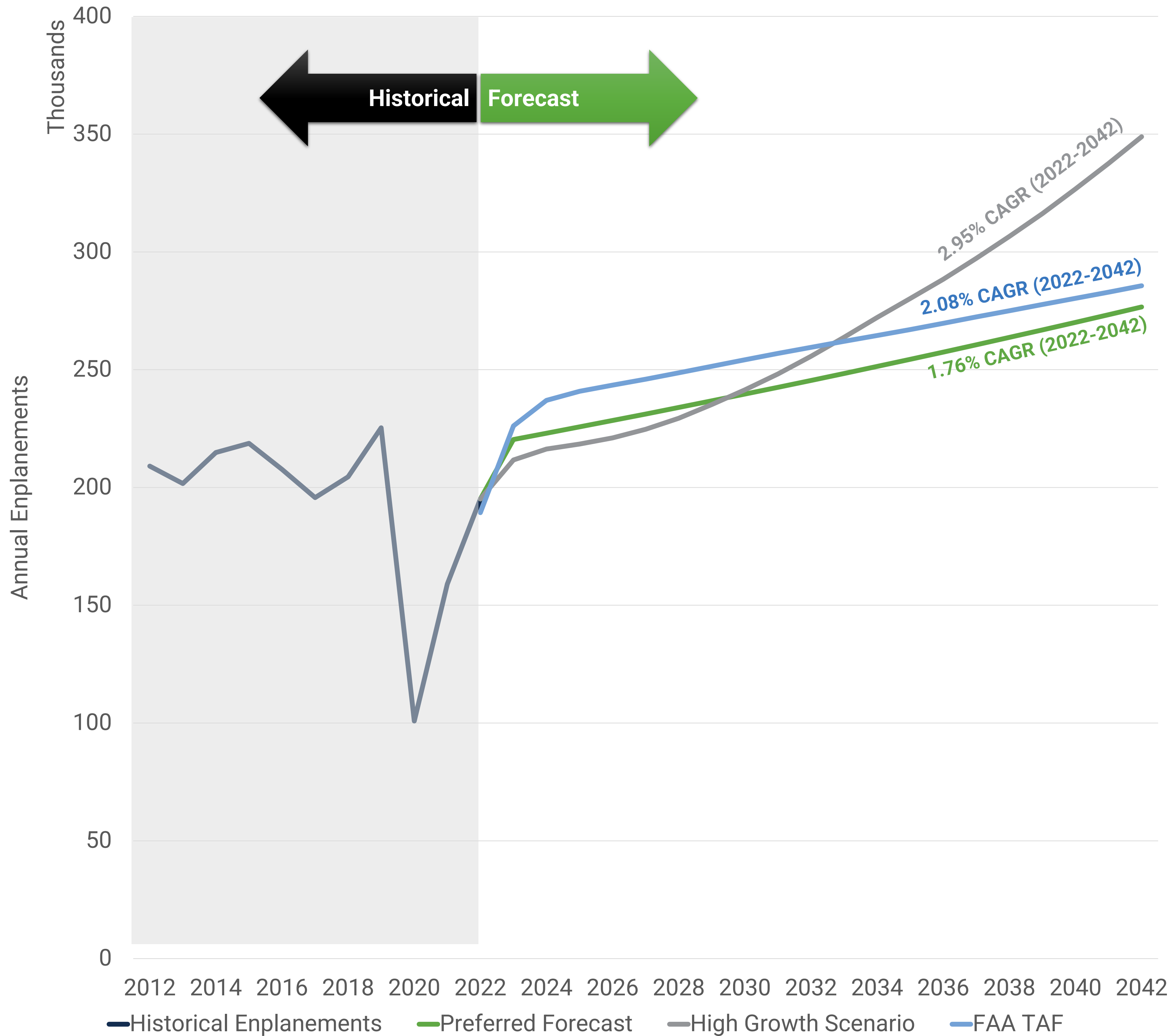
- Tennessee Airport System Plan
- FAA Terminal Area Forecast
- Previous Airport Master Plan

- State and County Socioeconomic Profile
- State of the Industry
- Economic Outlook
- Local Services and Airport Service Area

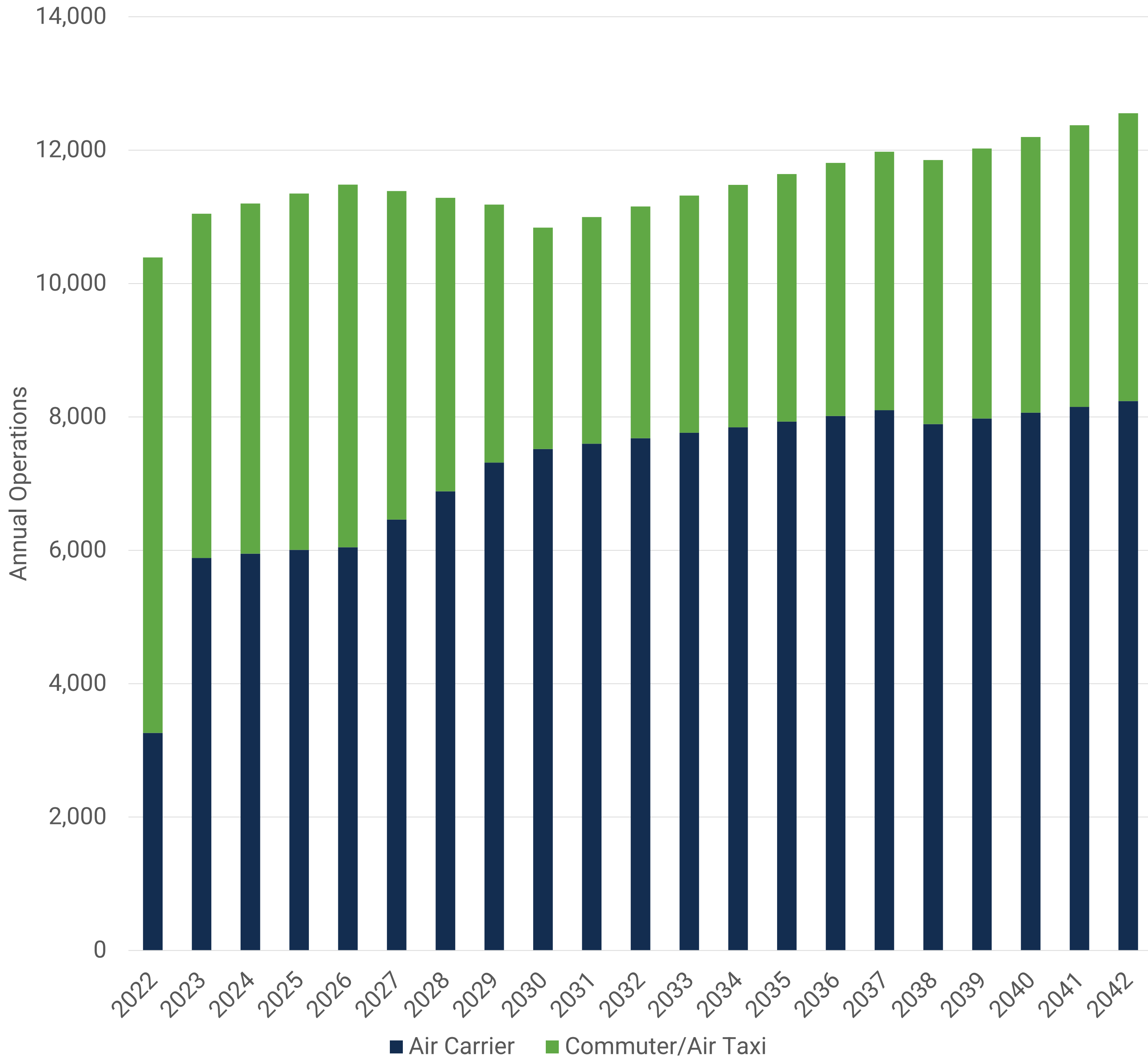


# Forecast Enplanements & Commercial Operations

Tri-Cities Airport  
Preferred Enplanement Forecast

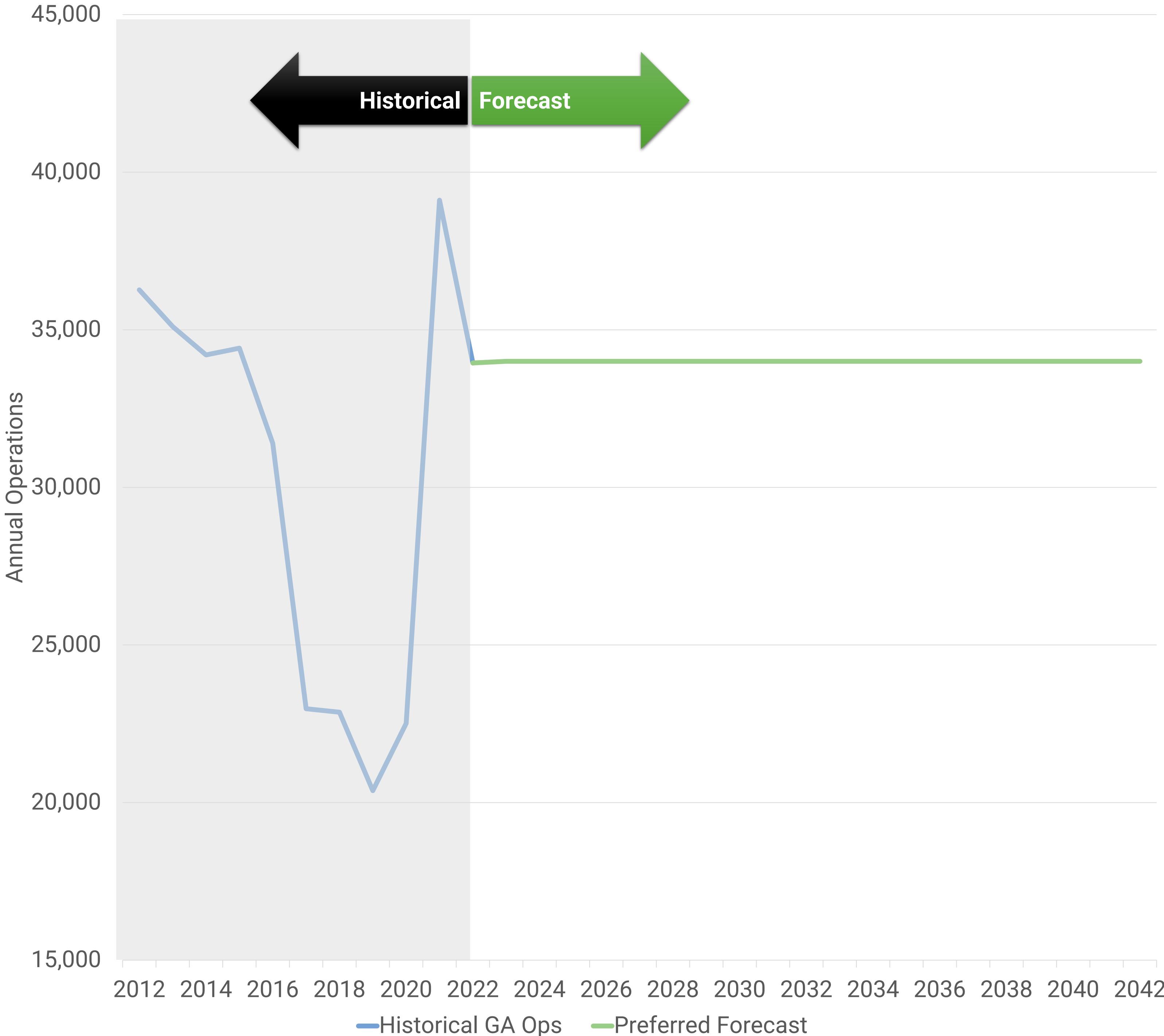


Tri-Cities Airport  
Commercial Operations Forecast

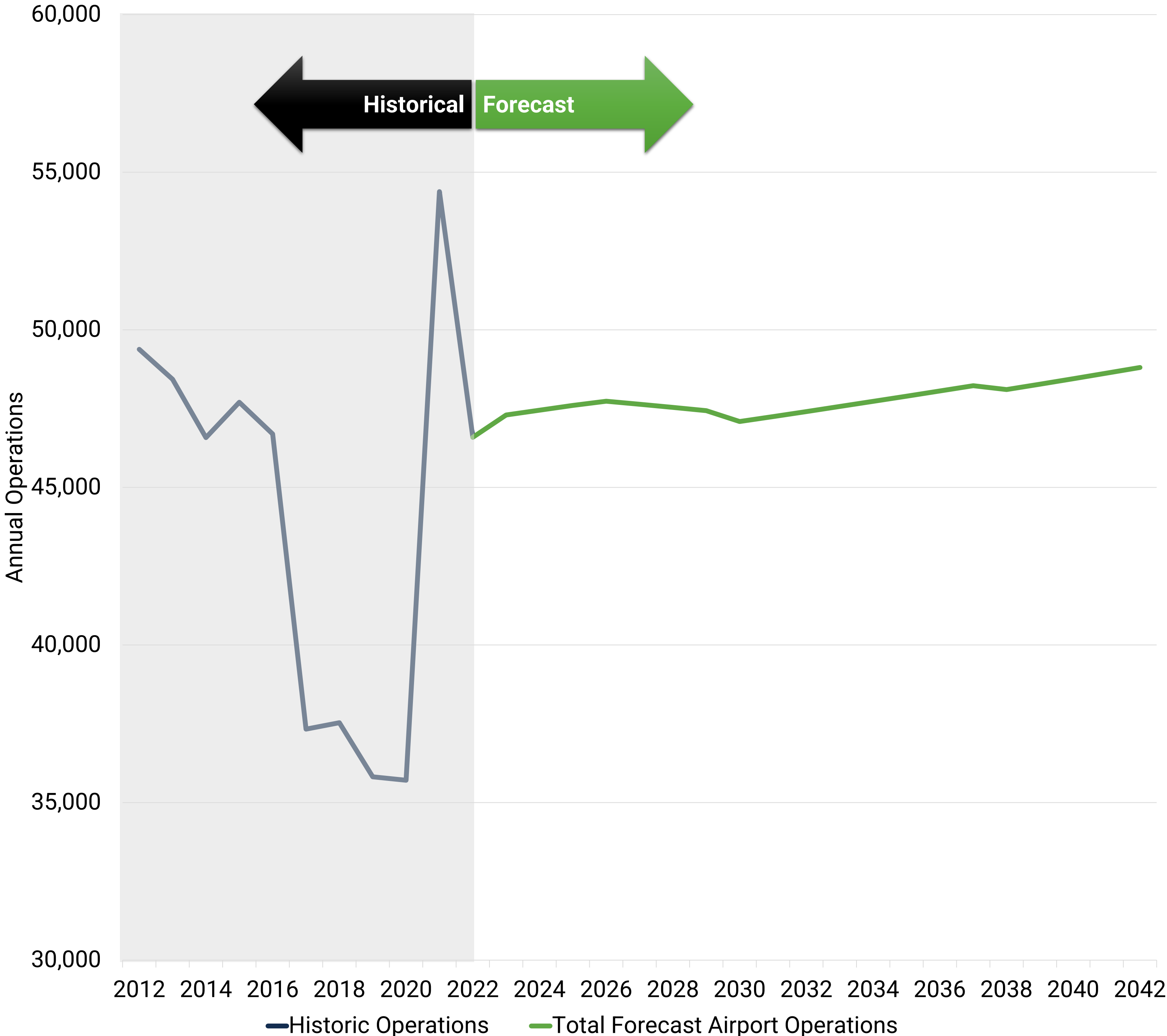


# Forecast Operations

Tri-Cities Airport  
General Aviation Operations Forecast



Tri-Cities Airport  
Forecast Airport Operations



# Peak Period Activity

	2022	2027	2032	2037
<b>Enplaned Passengers</b>				
Annual Enplanements	195,117	231,189	245,442	260,573
Peak Month Enplanements (October)	18,323	21,710	23,049	24,470
Peak Month Average % of Total	9.39%	9.39%	9.39%	9.39%
PMAD	591	700	744	789
Peak Hour Enplanements	103	122	129	137
<b>Scheduled Airline Operations</b>				
Annual Operations	7,709	8,286	7,680	8,100
Peak Month Operations (August)	692	744	689	727
Peak Month Average % of Total	8.98%	8.98%	8.98%	8.98%
PMAD	22	24	22	23
Peak Hour Operations	4	4	4	4
<b>Total Aircraft Operations</b>				
Annual Operations	46,589	47,636	47,406	48,226
Peak Month Operations (August)	4,715	4,821	4,798	4,881
Peak Month Average % of Total	10.12%	10.12%	10.12%	10.12%
PMAD	152	156	155	157
Peak Hour Operations	30	31	31	31

PMAD – Peak Month Average Day



# Critical Aircraft

- FAA Advisory Circular 150/5000-17, *Critical Aircraft and Regular Use Determination*, defines the critical aircraft as:  
*“The most demanding aircraft type, or grouping of aircraft with similar characteristics, that make regular use of the airport.”*
- Regular use is defined as 500 annual operations, including both itinerant and local operations, but excluding touch-and-go operations. An operation is either a takeoff or a landing.
- The critical aircraft is defined by the Aircraft Approach Category (AAC) and the Airplane Design Group (ADG).
- Each runway can have a different critical aircraft.

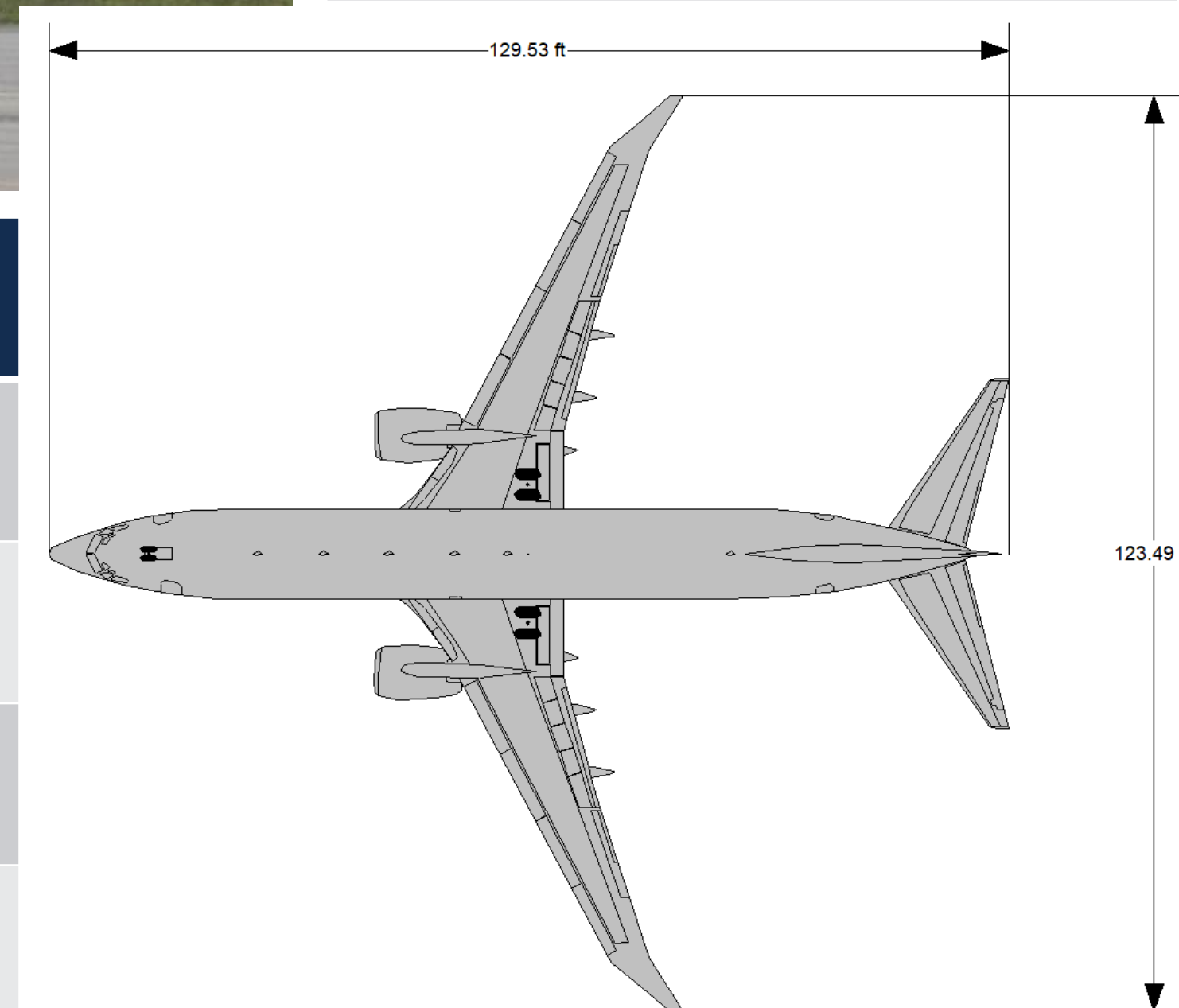


# Runway 5/23 Critical Aircraft

## Runway 5/23 Critical Aircraft (Military) Boeing P-8 Poseidon



<b>AAC</b>
D
<b>ADG</b>
IV
<b>TDG</b>
3



Boeing - P-8A Poseidon [CFM56-7]

### Specifications

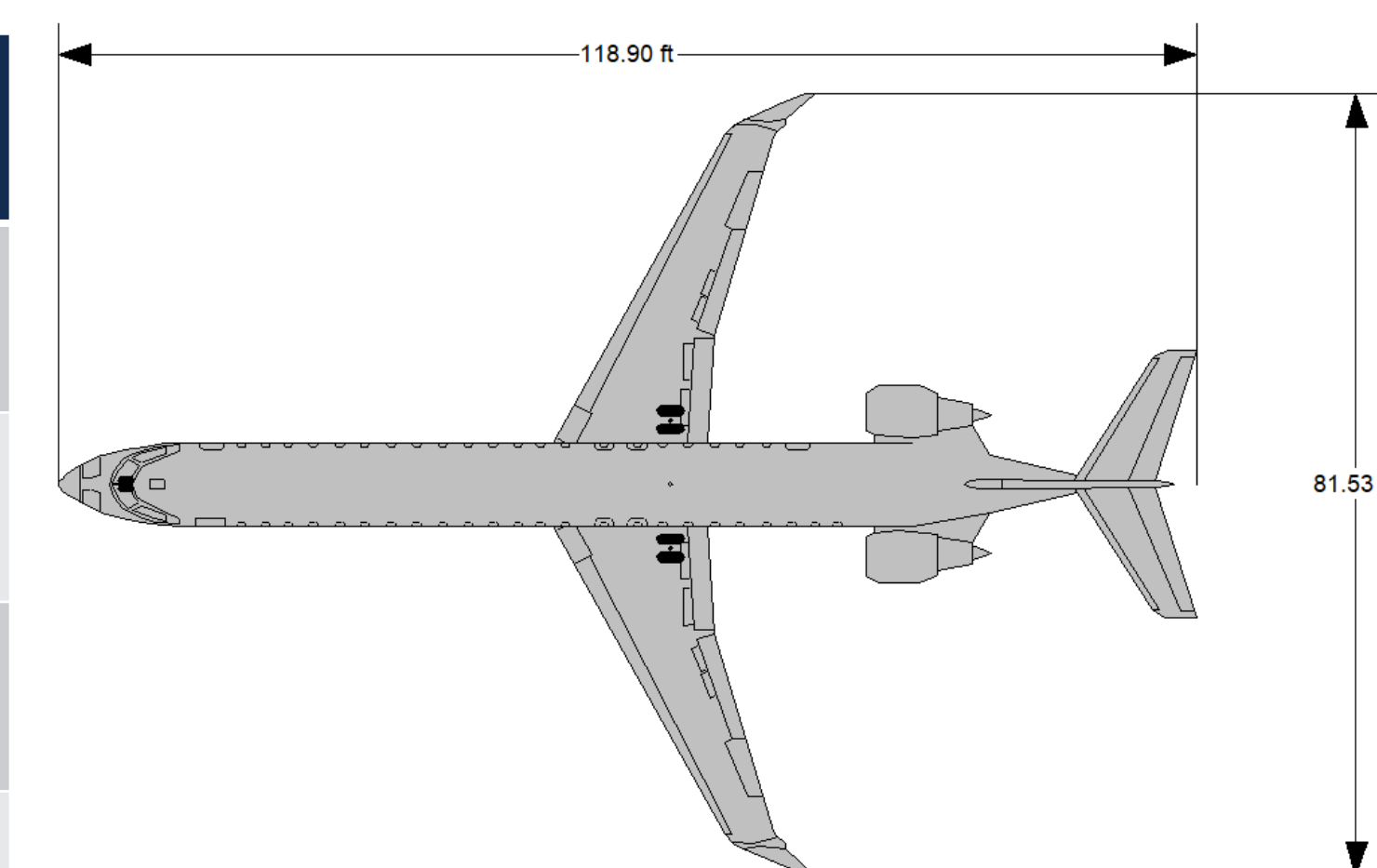
Length (ft)	129.53
Wingspan (ft)	123.49
Tail Height (ft)	42.09
MGTOW (lbs)	182,000

MGTOW – Maximum Gross Takeoff Weight  
Source: Transoft Aircraft Data Viewer 3.5; Tri-Cities Facebook, November 2023

## Runway 5/23 Critical Aircraft (Civilian) Bombardier CRJ-900



<b>AAC</b>
C
<b>ADG</b>
III
<b>TDG</b>
2B



Bombardier Aerospace - CRJ-900 [CF34-8C5]

### Specifications

Length (ft)	118.90
Wingspan (ft)	81.53
Tail Height (ft)	24.11
MGTOW (lbs)	84,500

Source: Transoft Aircraft Data Viewer 3.5; AtkinsRéalis, 2023

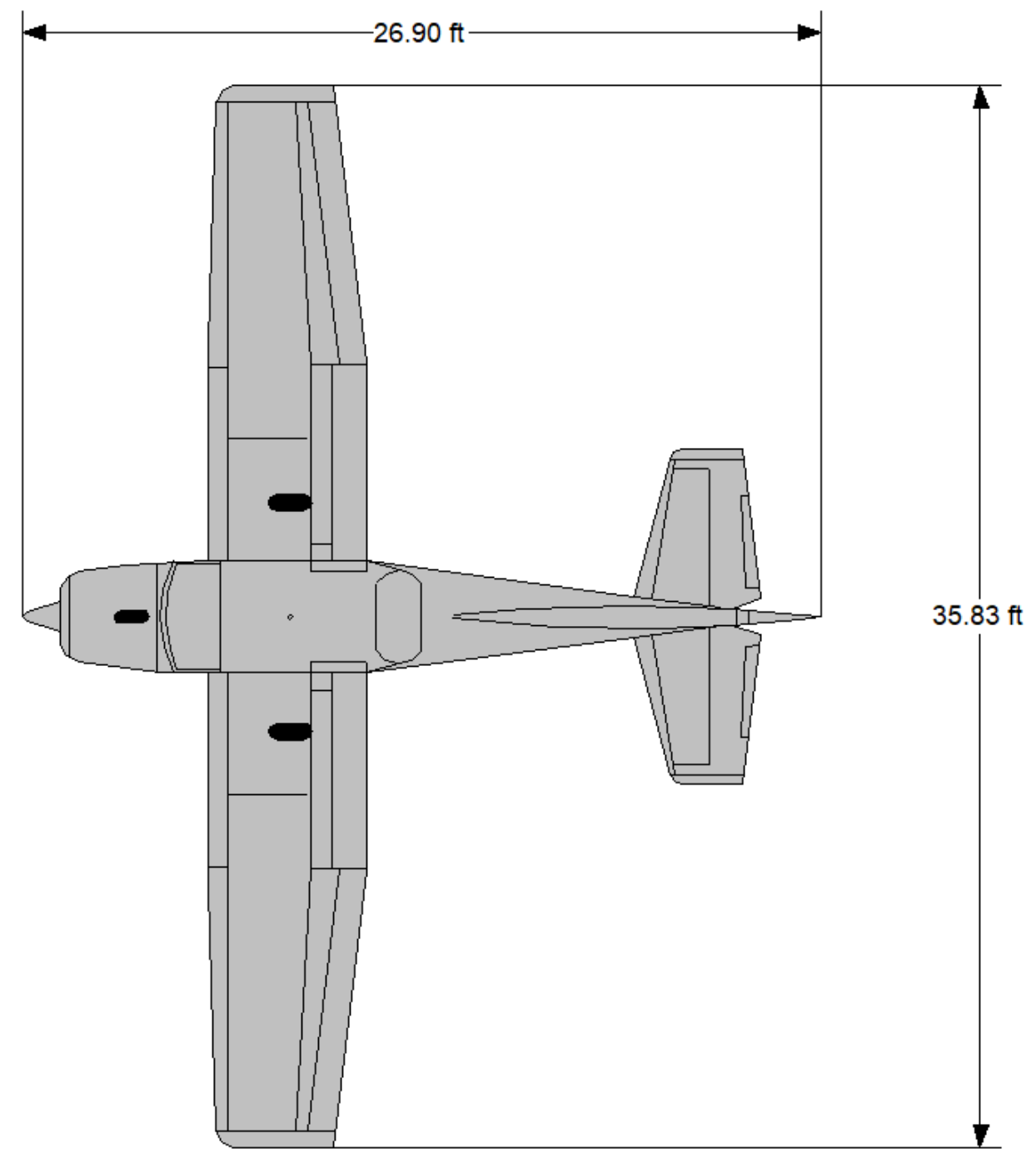
# Runway 9/27 Critical Aircraft

## Runway 9/27 Critical Aircraft Cessna 172 Skyhawk



<b>AAC</b>
A
<b>ADG</b>
I
<b>TDG</b>
IA

Specifications	
Length (ft)	26.90
Wingspan (ft)	35.83
Tail Height (ft)	8.92
MGTOW (lbs)	2,550



Cessna - 172R Skyhawk

MGTOW – Maximum Gross Takeoff Weight  
Source: Transoft Aircraft Data Viewer 3.5; Tri-Cities Facebook, November 2023

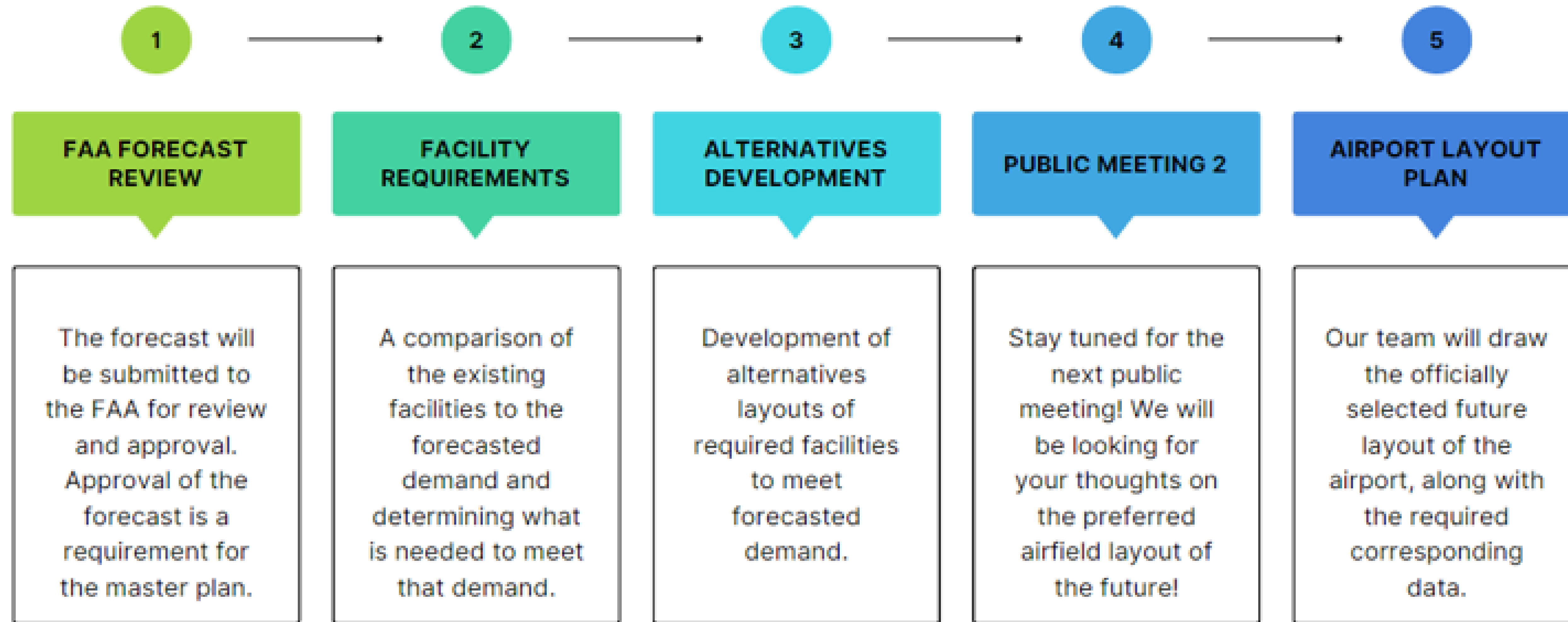


# Next Chapters

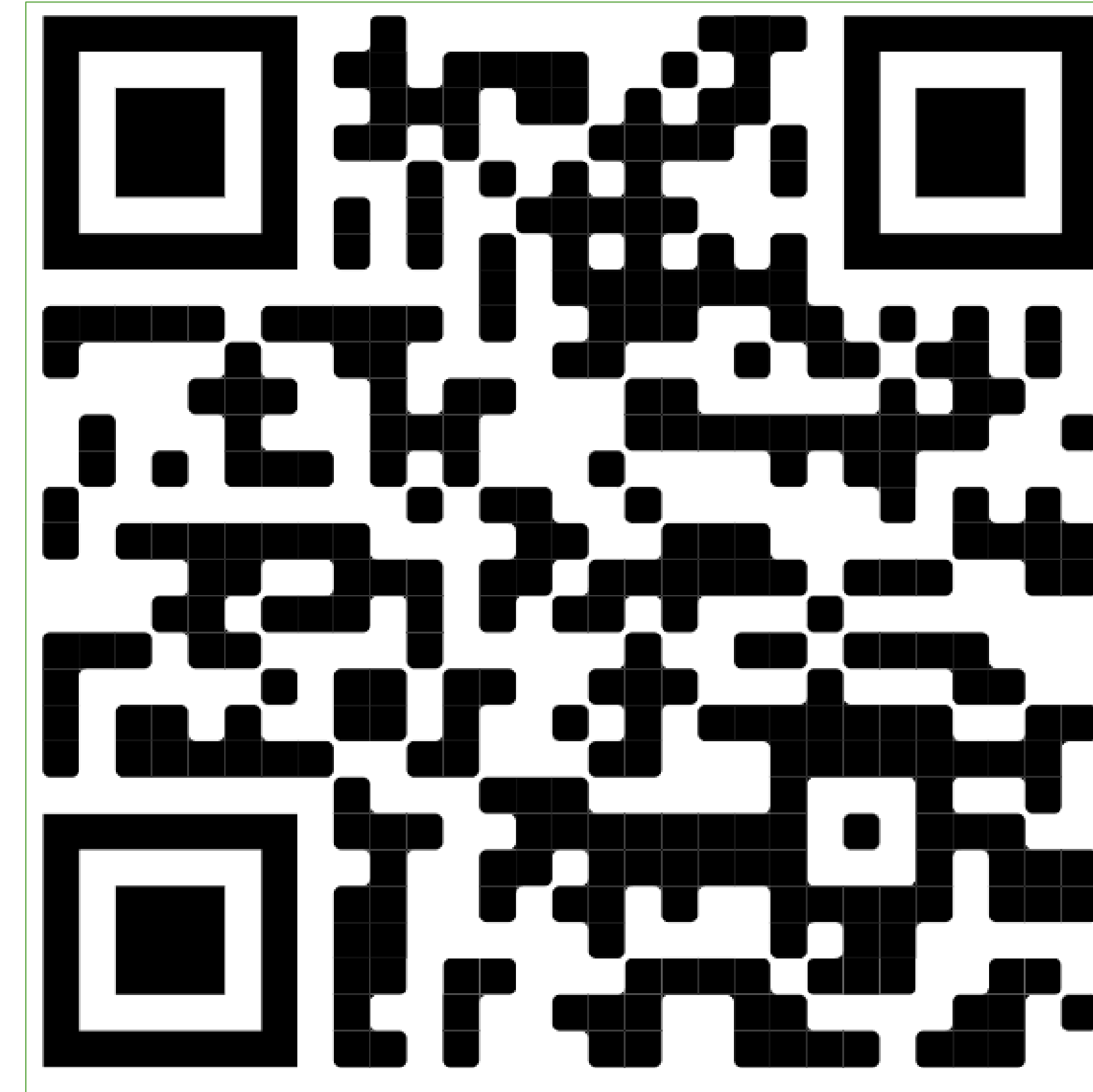
- ✈ **Capacity/Demand & Facility Requirements**
  - ✈ **Compares forecast to existing facilities at the airport to identify any deficiencies**
- ✈ **Environmental Overview**
- ✈ **Development Alternatives**
- ✈ **CIP**
- ✈ **Sustainability Overview**
- ✈ **Business Plan**
- ✈ **ALP Set**



# Next Steps



# Questions/Comments?



Please share this QR code with any stakeholders that would like to provide comments/input on the Airport Master Plan and any future development.

