

Newport News/
Williamsburg International
Airport (PHF)

AIRPORT MASTER PLAN UPDATE
SWOT ANALYSIS SUMMARY,
INVENTORY AND FORECAST UPDATE

Technical Advisory Committee

Newport News, Virginia

December 14th, 2023



PASSERO

ASM
ROUTE DEVELOPMENT
CONSULTANTS

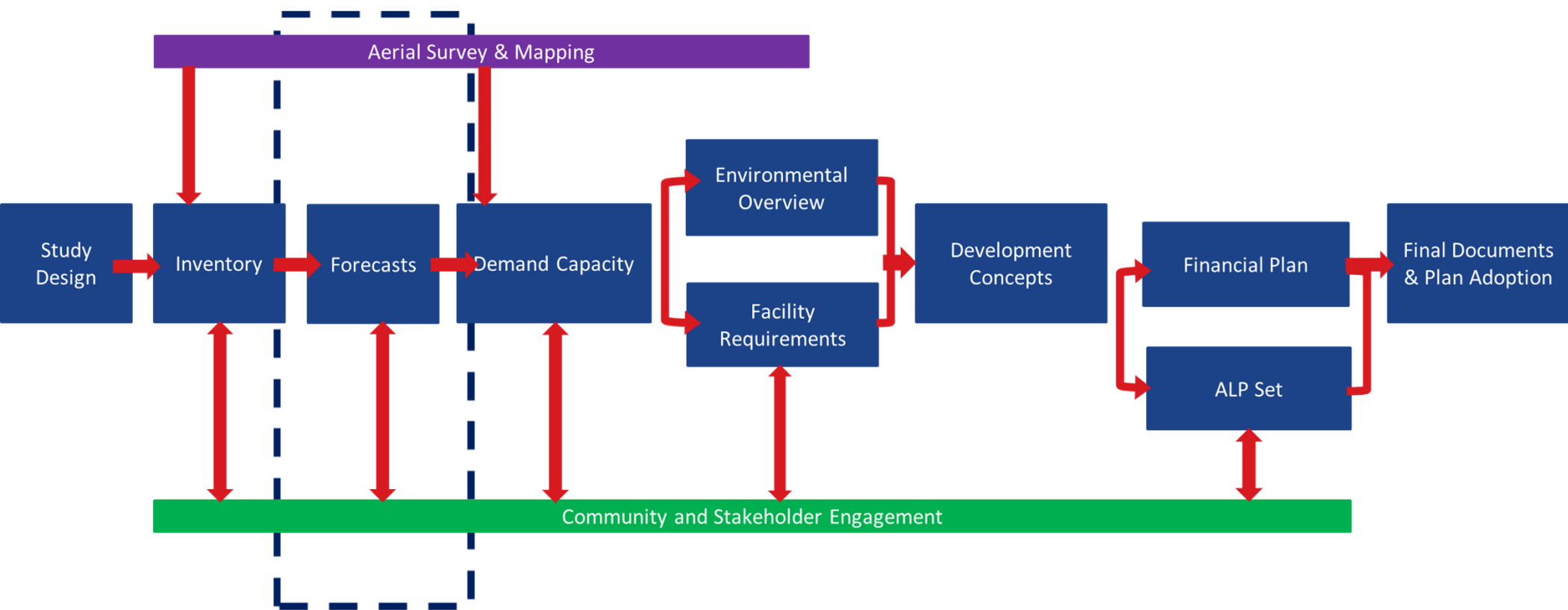
TALBERT & BRIGHT

AGENDA

- ✈ Planning Process
- ✈ SWOT Analysis Results
- ✈ Airport Inventory
- ✈ Forecasting Elements
 - ✈ Forecast Overview
 - ✈ Historical Enplanements
 - ✈ Forecast Methodologies
 - ✈ Comparisons to TAF
 - ✈ Critical Aircraft
- ✈ Questions/Open Discussion



PROJECT OVERVIEW - FLOW CHART



MASTER PLAN GOALS/OBJECTIONS

Airside/Airfield and Landside Improvements that will be explored further in the Master Plan

- ✘ Addressing airfield geometry, specifically related to the two FAA-noted “Hot Spots” on the existing airfield.
 - ✘ Reevaluation of deconflicting the two runway thresholds
 - ✘ RSA analysis - complete RSA forms, with recommended solutions to fix non-standard RSA
 - ✘ Wind analysis and evaluating runway length for primary and crosswind runway based on critical aircraft
- ✘ Reuse of old passenger terminal building and adjacent property
- ✘ Best location for future general aviation development, including the possibility of full relocation of existing facilities
- ✘ Best location for future air cargo development
- ✘ Best location for EVTOL and Urban Air Mobility infrastructure and operations
- ✘ Updated ground access plan and wayfinding
- ✘ Reuse of surplus lands in numerous areas, including potential for both aeronautical and non-aeronautical uses
- ✘ FAR Part 77 “Obstruction” Analysis

SWOT ANALYSIS - RECAP

- ✂ **Strengths:** Resources and capabilities that can benefit the Airport (Internal)
- ✂ **Weaknesses:** Potential or existing factors that can hurt the Airport (Internal)
- ✂ **Opportunities:** External elements that can benefit Airport and support Airport Goals (External)
- ✂ **Threats:** External factors that could hurt the Airport (External)

SWOT ANALYSIS - RESULTS

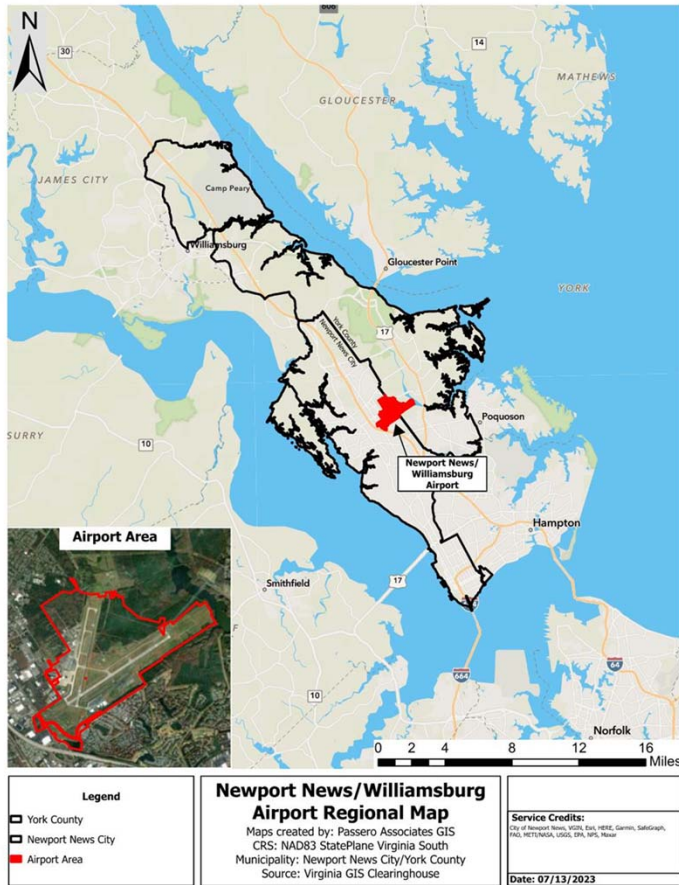
<p style="text-align: center;">Strengths</p> <ul style="list-style-type: none"> • Location/Intermodal/Air Cargo • Mutual Aid/Fire Rescue • On-site wetland banking • Local Weather • Modern SRE • Terminal Spare Gates • Passenger Efficiency/Throughout • Existing Customs (FIS) • GA Hangar Demand • Ticket Counter Space • Space for Rental Cars • 5K run on Runway/ Outreach • Space for growing projects • Available Parking Lots • Space for additional garage 	<p style="text-align: center;">Weaknesses</p> <ul style="list-style-type: none"> • Terminal Brick/ Water Infiltration • Lack of Air Service • AOA vs SIDA Areas • In - line bag screening • Lack of Concessions • Environmental Issues/ Wetlands • PFAS Removal Costs • Environmental Factors Proximity to PHF(Reservoir) • Electrical vehicle chargers • Lack of sidewalk on airport side of Bland Blvd • Ability to fund projects • Way finding • Inoperative Jet Bridge • Terminal/ Tenant HVAC Costs • Baggage claim size/age • Lack of Maintenance Storage • Building Conditions • Parking Lot Conditions • Drainage Issues • Perimeter Fence Conditions • GA Area Locations/ Condition • Noise Complaints • Nike Site Cleanup • Forested Areas - wildlife • No designated Fuel Truck Parking • Deicing Area • Terminal Condition • Outside Escalator Maintenance
<p style="text-align: center;">Opportunities</p> <ul style="list-style-type: none"> • Renewable Energy - Solar/ Geothermal • Developable Lands - Attract Community • EVTOL - Charging • Expand Pedestrian/ Bicycle Trail • Parking Lot Rental (Community Engagement) • School - High School/ University/ Pilot/ Air Frame and Powerplant 	<p style="text-align: center;">Threats</p> <ul style="list-style-type: none"> • Electricity needs (chargers, etc.) • Money for development/maintenance (local fund matching) • Roadway Improvements to RIC • Other Airport Advertising/ Visibility • One - hub location for American Airlines • 50 seat jet service • Increasing fuel costs • Parking - automated cars • Parking revenue loss - TNC • IT/ Security

AIRPORT INVENTORY QUICK FACTS



- ✘ Commercial service airport serving metropolitan Newport News and surrounding areas.
- ✘ Owned by the Peninsula Airport Commission.
- ✘ Encompasses approximately 1800 acres of land.
- ✘ Two runways: intersect near the Runway 7 and Runway 2 ends.
- ✘ Runway 7-25 equipped with ILS with Runway 7 also having an approach lighting system.
- ✘ Three sites, totaling 222 +/- acres, have been identified for additional Commercial Development.
- ✘ One airline currently operate at PHF (i.e., American Airlines operated by Piedmont Airlines)
- ✘ In 2022, approximately 61,204 passengers flew out of Newport News/ Williamsburg International Airport with 3,762 operations.
- ✘ In 2022, there were 137 based aircraft and 42,606 operations.

AIRPORT INVENTORY - LOCATION



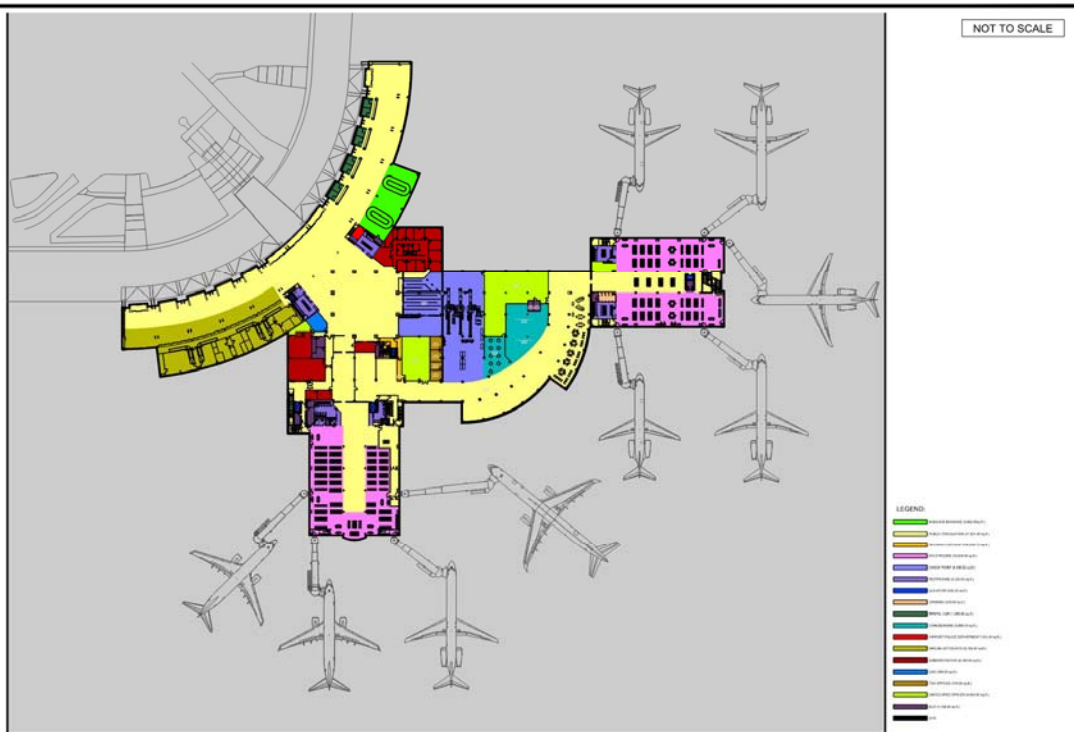
- ✂ PHF is located within the city of Newport News, straddling both Newport News and York County in Virginia
- ✂ Assessable via I-64 and Jefferson Ave

AIRPORT INVENTORY -AIRFIELD INFORMATION



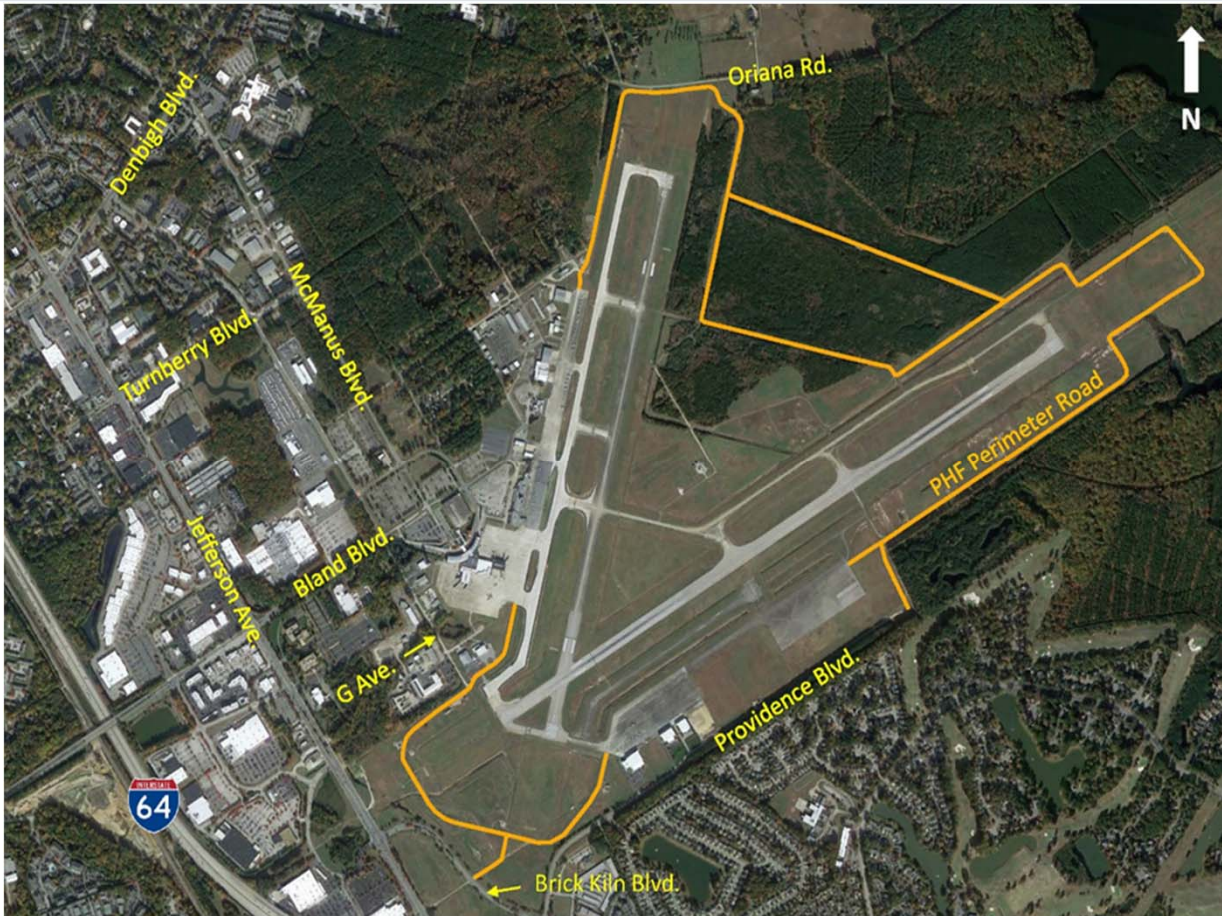
- ✂ Two Runways: Runway 7-25: 8003 feet long; Runway 2-20: 6,526 feet long; no displaced thresholds.
- ✂ Multiple taxiways: Taxiway A is full length taxiway to Runway 2-20, Taxiway D is partial parallel to Runway 7-25
- ✂ Multiple Aprons: West Corporate, Air Carrier Ramp, General Aviation, South Corporate, Abandoned
- ✂ ATCT operates from 6am - 11pm

AIRPORT INVENTORY - TERMINAL BUILDING



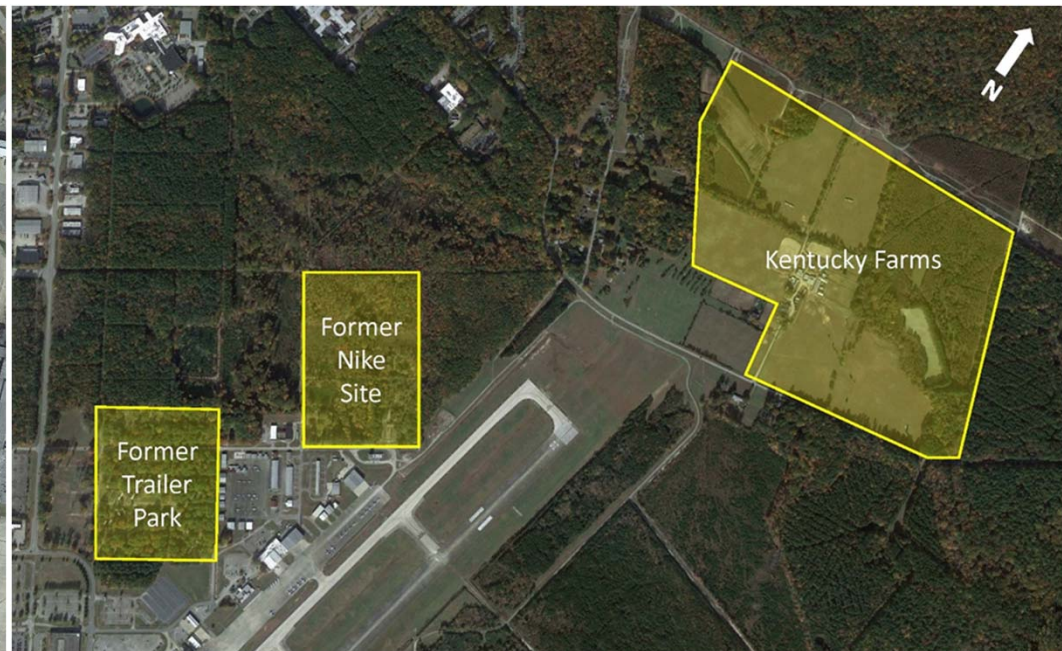
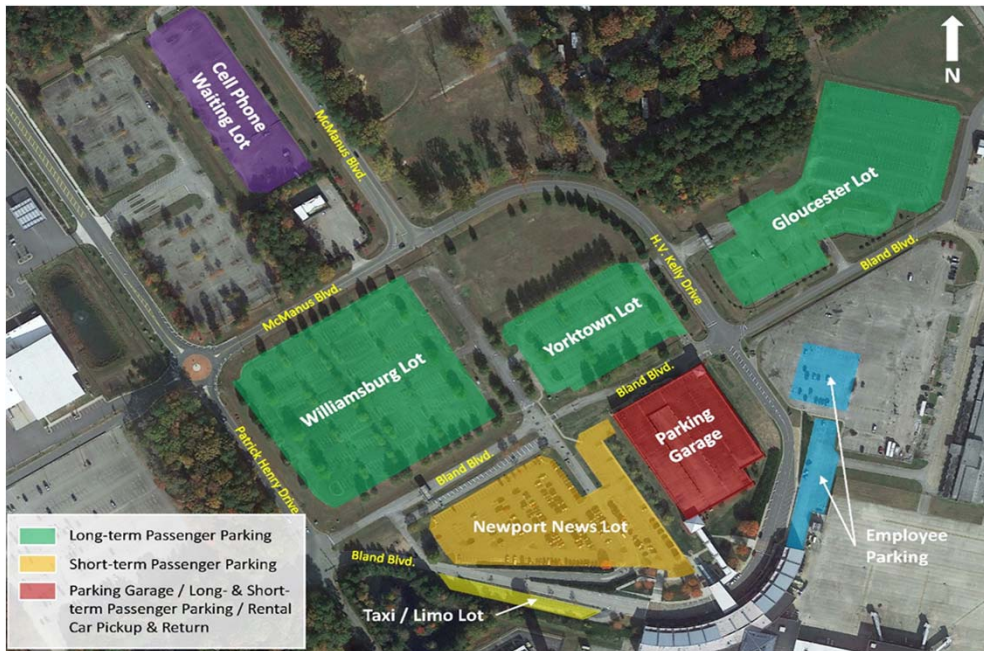
- ✂ Airline Counters
- ✂ Car Rental Counters
- ✂ Offices
- ✂ Terminal Core
 - ✂ Passenger Checkpoint
 - ✂ Concourse A: 4 gates
 - ✂ Concourse B: 7 gates
 - ✂ Holdrooms
 - ✂ U.S. Customs Facility
- ✂ Baggage (Inbound and Outbound)
- ✂ Concessions
- ✂ Restrooms
- ✂ Elevators

AIRPORT INVENTORY -SUPPORT FACILITIES



- ✘ Airport Maintenance
- ✘ Aircraft Rescue and Fire Fighting Facilities
- ✘ Ground Access and Circulation
- ✘ Vehicle Parking = 2,034 spaces
 - ✘ Parking Garage
 - ✘ Newport News Lot
 - ✘ Williamsburg Lot
 - ✘ Yorktown Lot
 - ✘ Gloucester Lot
- ✘ Employee lots
- ✘ Tenant Lots
- ✘ Commercial Development Areas

AIRPORT PARKING AND DEVELOPABLE LANDS



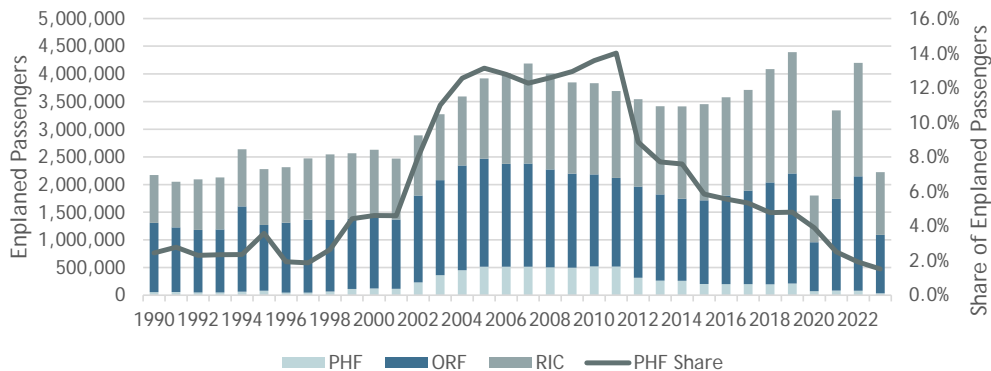
FORECAST OVERVIEW

- Several forecast methods were evaluated and modeled to predict passenger demand volumes over the forecast period.
- Due to historical fluctuations in capacity and demand most forecasting methods provided limited reliability and accuracy for forward-looking passenger demand.
- Market share method was agreed to be the most defensible methodology for determining passenger levels in the forecast.
- The average market share between 2011 and 2022 was evaluated compared to the Virginia state and national enplanement levels.
- The most recent share over this period was used to determine the baseline forecast due to the current competitive environment in the region.
- A high and low scenario was created from the baseline scenario.

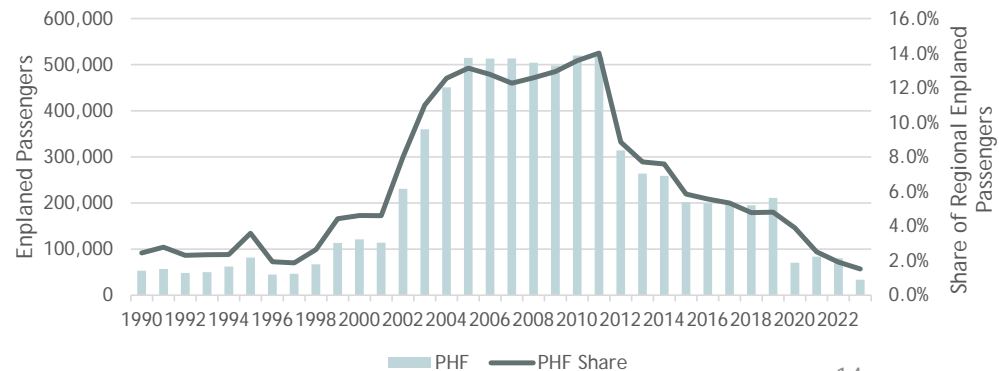
FORECAST OVERVIEW

- The Airport plays a vital role in supporting the local economy and regional tourism
- The Airport has experienced significant changes in airline capacity and demand over the past 20+ years as airlines have shifted capacity across airports within the region
- The growth in enplaned passengers at other regional airports, however, is placing strain on the Airports' ability to maintain passenger traffic

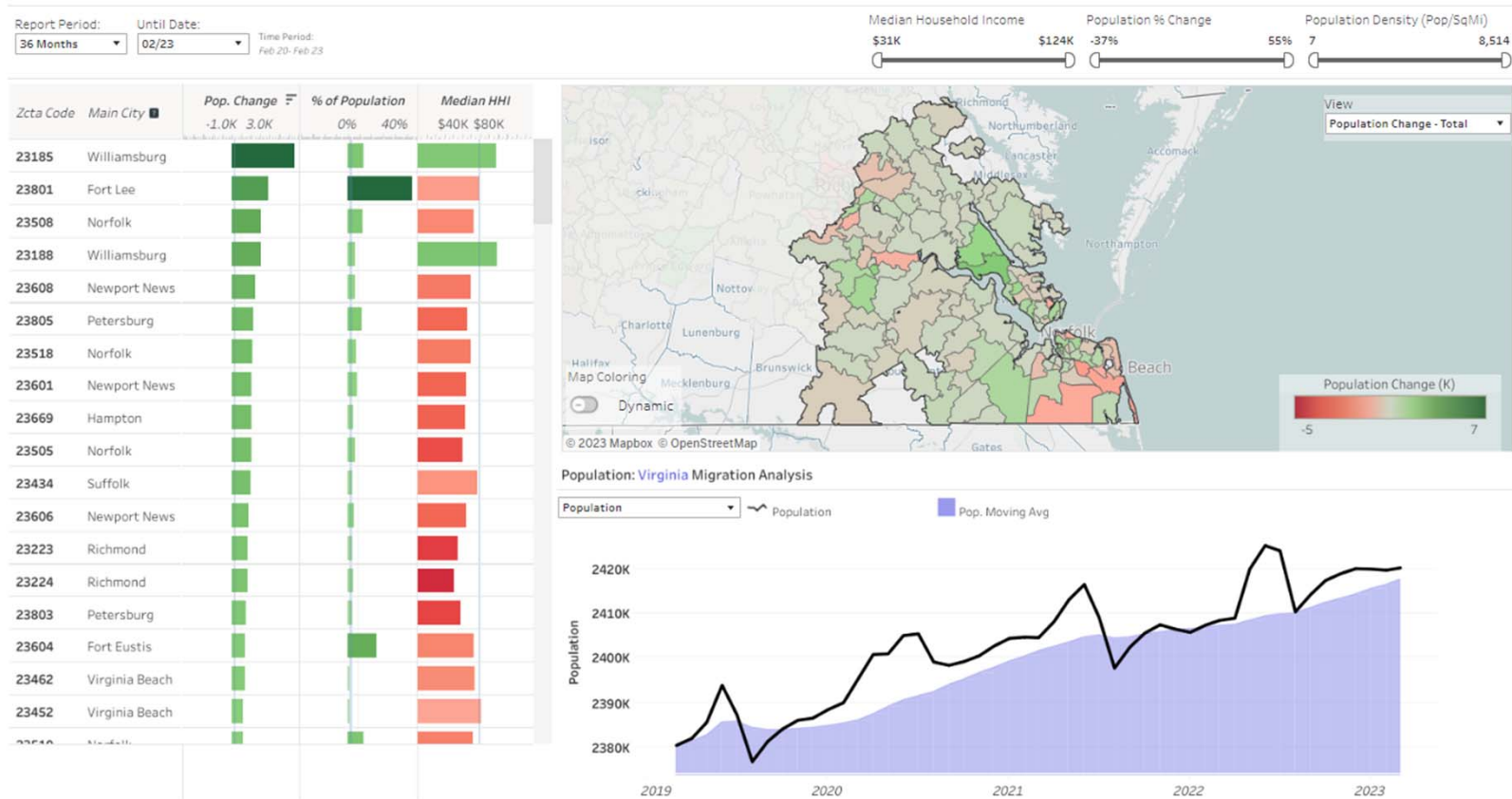
PHF Share of Regional Enplaned Passengers



PHF Share of Regional Enplaned Passengers



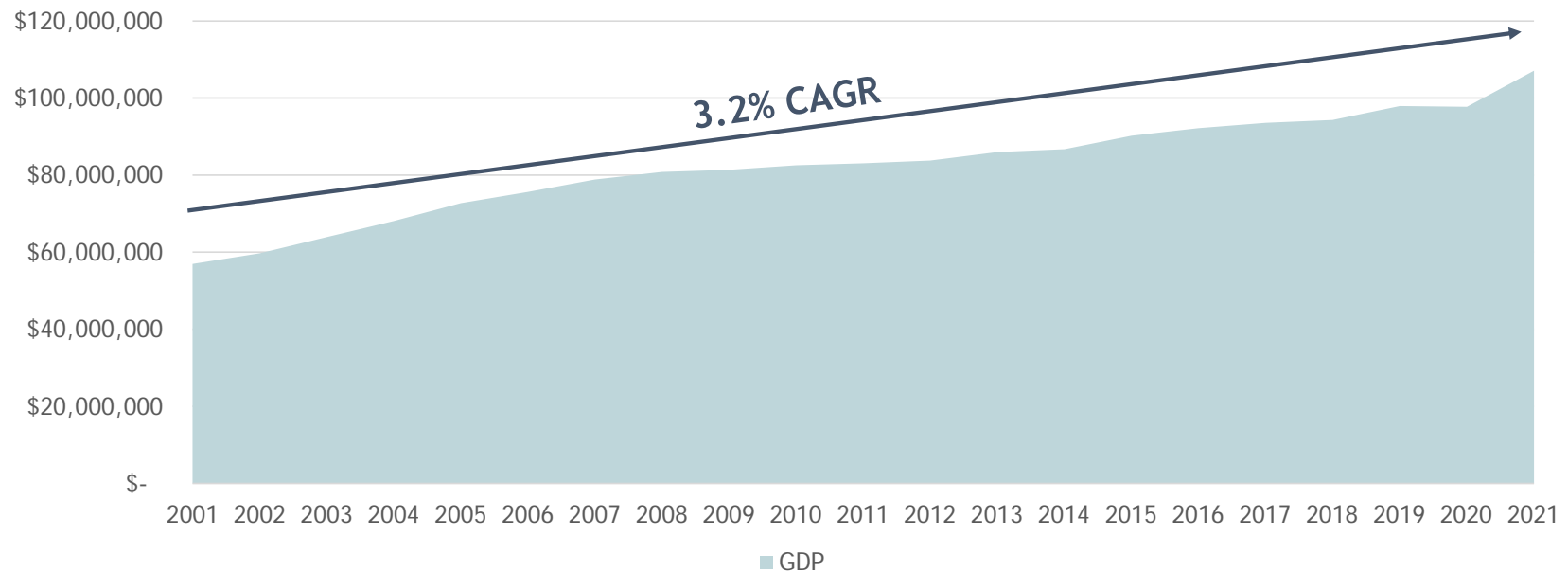
PHF PROVIDES ACCESS TO GROWING POPULATION



Source: Placer.ai Demographics

REGIONAL GDP FOR THE MSA HAS GROWN STEADILY AT 3.2% CAGR OVER THE PAST 20 YEARS

Current-dollar Gross Domestic Product (GDP) (thousands of dollars)

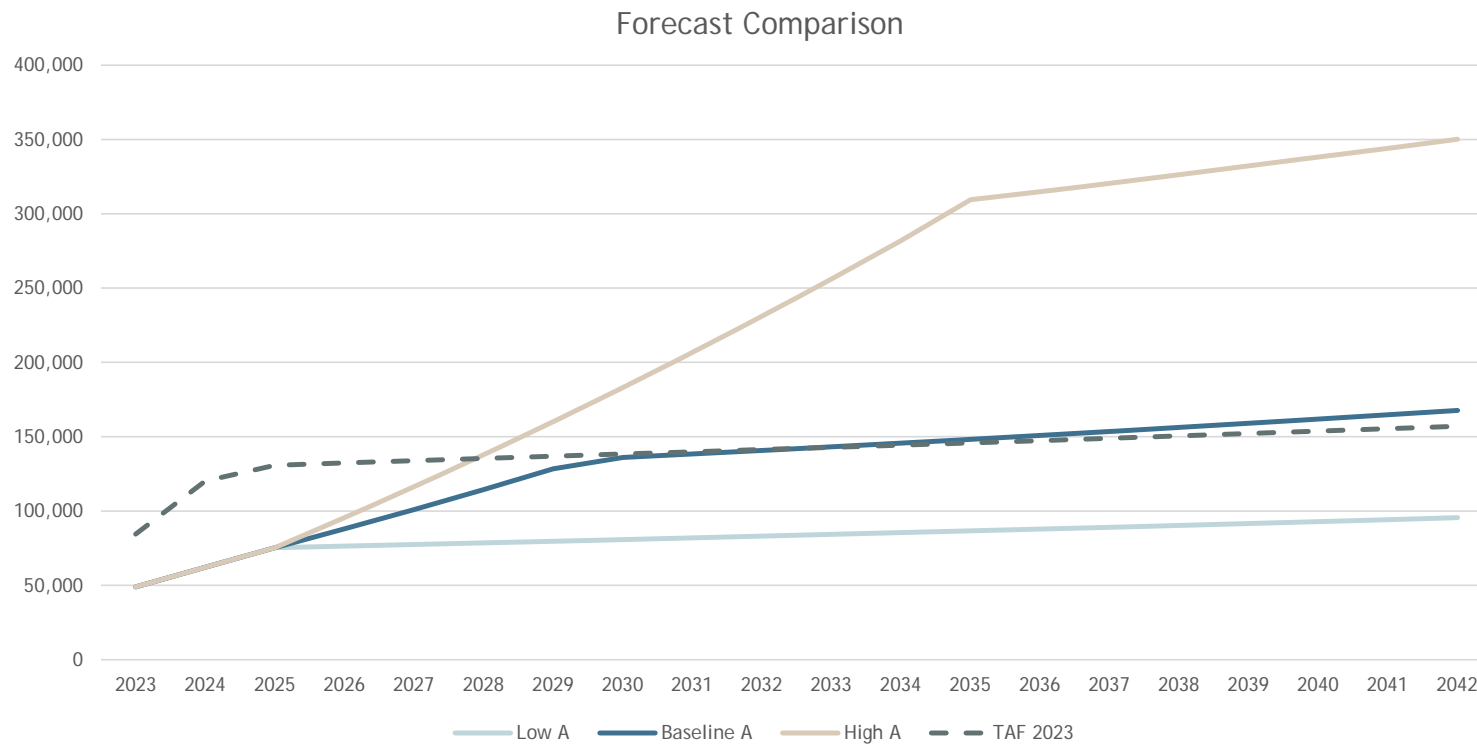


Source: Bureau of Economic Analysis - Regional MSA

FORECAST METHODOLOGY

- Historical trends were analyzed and informed independent growth assumptions for short-term bottom-up forecast for 2024 and 2025
- Near-term forecast was informed by latest forward-looking airline scheduled departures, seat capacity, and fleet mix -including Avelo Airlines recent departure from the Airport
- 2022 was utilized as the base year to incorporate the latest full-year data
- Forecast does not assume any restrictions on operations or enplaned passenger volumes
- Considering the dynamics of the enplaned passenger demand for the Airport, several unconstrained forecasts were developed:
- Market Share Approach: Share of regional enplaned passengers
 - Baseline A - Recent share of VA total enplaned passengers
 - Low A - Maintain service to CLT, modest growth to IAD, and future capacity by AA to PHL
 - High A - Growth to proximate hubs (IAD and ATL), increased gauge by AA, and new entrant ULCC

ENPLANEMENT FORECAST COMPARISON



ENPLANEMENT FORECAST TAF COMPARISON

***DRAFT Pending Agency Approval**

Forecast Year	Low Scenario	Baseline Scenario	High Scenario	FAA TAF
	Slowed Growth Low	Market Share VA Demand Baseline	ULCC and Legacy Growth High	TAF 2023
2023	48,923	48,923	48,923	84,481
2024	62,250	62,250	62,250	120,195
2025	75,393	75,393	75,393	130,685
2026	76,449	88,036	95,543	132,299
2027	77,519	101,016	116,313	133,802
2028	78,604	114,442	137,814	135,311
2029	79,705	128,280	160,012	136,809
2030	80,820	135,933	182,998	138,309
2031	81,952	138,308	206,593	139,784
2032	83,099	140,786	231,058	141,306
2033	84,263	143,175	256,094	142,750
2034	85,442	145,592	281,888	144,219
2035	86,638	148,123	309,407	145,754
2036	87,851	150,727	314,847	147,283
2037	89,081	153,420	320,471	148,862
2038	90,328	156,231	326,344	150,506
2039	91,593	159,010	332,149	152,116
2040	92,875	161,902	338,190	153,791
2041	94,176	164,720	344,075	155,406
2042	95,494	167,633	350,160	157,045

PREFERRED FORECAST TAF COMPARISON

***DRAFT Pending Agency Approval**

Forecast Metrics	2022	2027	2032	2042	CAGR
PHF Enplanement Forecast	61,204	101,016	140,786	167,633	3.5%
2022 FAA TAF	84,108	133,802	141,306	157,045	3.2%
Difference	-	32.5%	0.4%	-6.3%	-9.6%
Allowable Difference	-	10%	15%	15%	
Within FAA Tolerances	-	NO	YES	YES	

GENERAL AVIATION FORECAST OVERVIEW

- General aviation forecasts are based on FAA published data, along with socioeconomic information.
- General aviation forecasts are instrumental in identifying the essential support facilities across the airport that cater to all aviation activities, excluding commercial service.
- Methodologies used in General Aviation forecasting:
 - Market share analysis
 - FAA TAF
 - FAA Aero
 - Socioeconomic



GENERAL AVIATION BASED AIRCRAFT

Based Aircraft Forecast Comparison



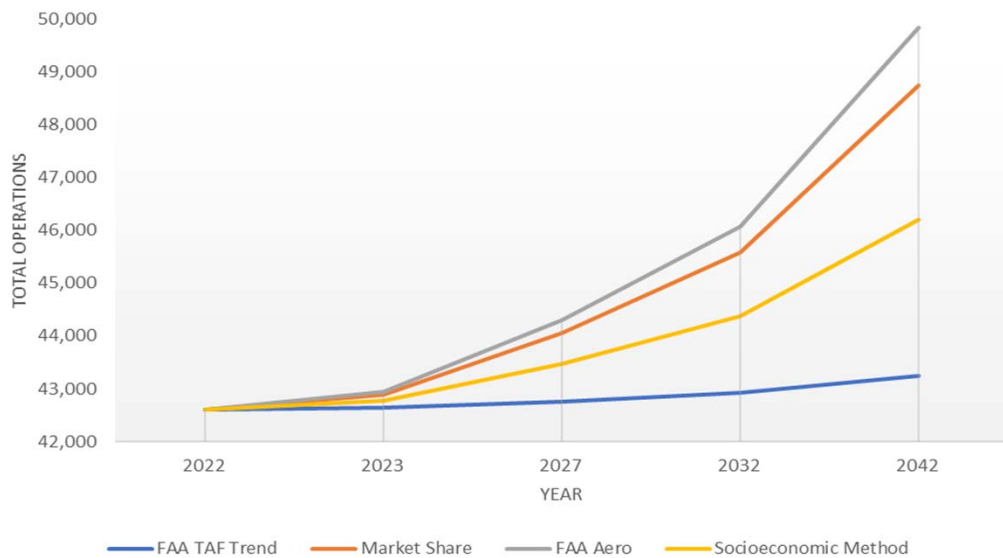
***DRAFT Pending Agency Approval**

YEAR	FAA TAF Trend	FAA Aero	Socioeconomic Method	Market Share
2022	137	137	137	137
Forecast				
2023	139	137	138	138
2027	147	138	140	142
2032	158	139	143	147
2042	182	142	149	158
CAGR	1.43%	0.2%	0.41%	0.71%

- After analyzing each forecasting method, the growth rate determined by the FAA TAF methodology produced the most aggressive forecast for the based aircraft 20-year projections, and the FAA Aerospace methodology produced the most conservative methodology for the based aircraft 20-year projections.
- It should be noted that the growth observed over the last 10 to 20 years recorded by the FAA TAF shows an interest in the increase of GA operations at PHF. However, projecting a continued growth of 1.43% may be unsustainable over the 20-year planning period.
- The Market Share methodology is almost the median between both forecasts, and projects reasonable growth.

GENERAL AVIATION OPERATIONS

Total Operations Forecast Comparison



***DRAFT Pending Agency Approval**

YEAR	FAA TAF Trend	FAA Aero	Socioeconomic Method	Market Share
2022	42,606	42,606	42,606	42,606
Forecast				
2023	42,637	42,941	42,779	42,894
2027	42,763	44,308	43,479	44,063
2032	42,920	46,078	44,370	45,570
2042	43,236	49,833	46,206	48,741
CAGR	0.07%	0.8%	0.41%	0.67%

- After analyzing all total operations forecast methodologies, the FAA Aerospace methodology for total GA operations produced the most aggressive 20-year forecast for total operations. While the FAA TAF methodology produced the most conservative 20-year forecast for total operations at PHF.
- Being that the FAA is projecting significant growth in based aircraft, and the fact that GA operations are growing at PHF, this shows that there is an interest in increasing GA operations at PHF.
- Furthermore, planning studies have shown a positive correlation between based aircraft ownership and growth in total operations. The socioeconomic methodology for total GA operations factored in population growth within PHF's catchment area by applying the OPBA to the existing and forecasted based aircraft counts.
- The socioeconomic methodology also produced a forecast that also was the median between the other forecasting methodologies for total GA operations.

GA FORECAST TAF COMPARISON

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General Aviation Comparison with FAA TAF

Year	Based Aircraft			Airport Operations		
	Preferred Forecast	TAF Forecast	% Difference (TAF)	Preferred Forecast	TAF Forecast	% Difference
2022	137	128	7.0%	42,606	42,606	0.0%
2023	138	133	3.7%	42,779	42,637	0.3%
2027	142	140	1.4%	43,479	42,761	1.7%
2032	147	150	-2.0%	44,370	42,916	3.4%
2042	158	170	-7.2%	46,206	43,236	6.9%

PREFERRED FORECAST SUMMARY

***DRAFT Pending Agency Approval**

	Existing	Forecasted Period			
Year	2022	2023	2027	2032	2042
Enplanements	61,204	48,923	101,016	140,786	167,633
Air Carrier Operations	3,762	3,009	6,218	7,948	7,948
Single engine	84	85	87	90	97
Multi engine	17	17	18	18	20
Jet	36	36	37	39	41
Helicopter	0	0	0	0	0
Glider	0	0	0	0	0
Military	0	0	0	0	0
Ultra-Light	0	0	0	0	0
Annual Based Aircraft	137	138	142	147	158
Annual General Aviation Total Operations	42,606	42,779	43,479	44,370	46,206
Local Split (50%)	22,225	22,315	22,680	23,145	24,103
Itinerant Split (50%)	20,381	22,464	20,799	21,225	22,103

CRITICAL AIRCRAFT COMMERCIAL/ GA/ POTENTIAL CARGO

Bombardier CRJ - 700



Commercial Aircraft

- Existing critical aircraft is the Embraer 145, with an ARC of C-II.
- Future critical aircraft has been identified to be the CRJ - 700, with an ARC of C-III.

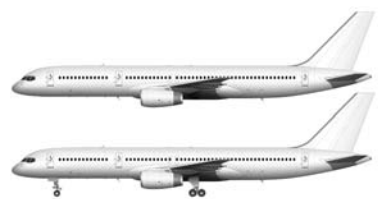
Boeing 737-700 (BBJ)



General Aviation Aircraft

- The family of turbine and jet aircraft have been identified to have a combined ARC of C-III
- The 737-700 Boeing Business Jet (BBJ) has an ARC of C-III

Boeing 757-200



Cargo Aircraft

- The future aircraft that has been identified as potential cargo critical aircraft is a 757-200
- The 757-200 has an ARC of C-IV



THANK YOU

QUESTIONS:
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