

Airport Master Plan Update

Boca Raton Airport Authority Board Workshop #3

November 15, 2023



Workshop Agenda



Airport Master Plan Update Status



Review of Future Demand



Summary of Development Concepts and Recommendations



Capital Improvement Program Overview



Airport Layout Plan



Next Steps



Airport Master Plan Update Status

Primary Master Plan Goals



To evaluate the fleet of business jet aircraft that operate at the Airport



To define, evaluate, and recommend safety, capacity, and operational enhancements for BCT



To update the 10-year Capital Improvement Program (CIP) for the Airport

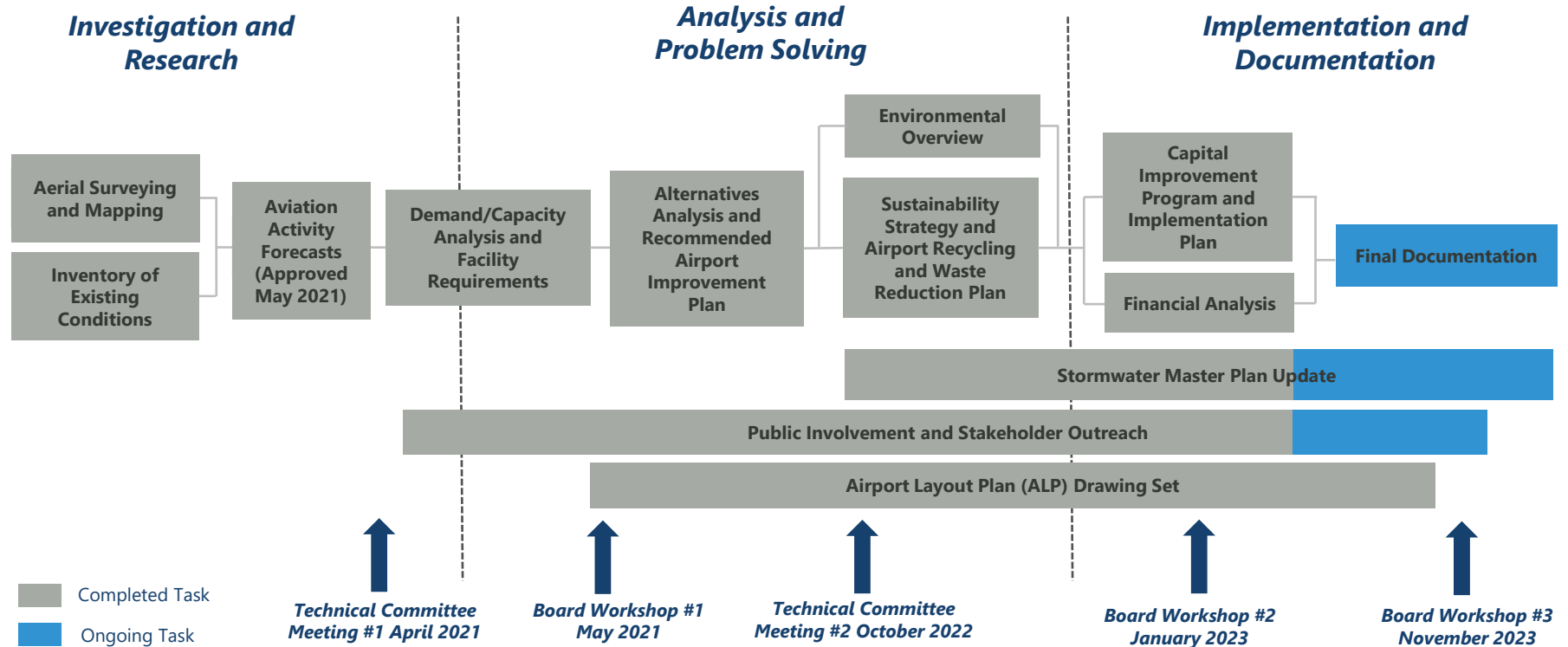


To establish a plan that optimizes the use of BCT's limited land assets

"An airport master plan is a comprehensive study of an airport and 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 Plan Update Process

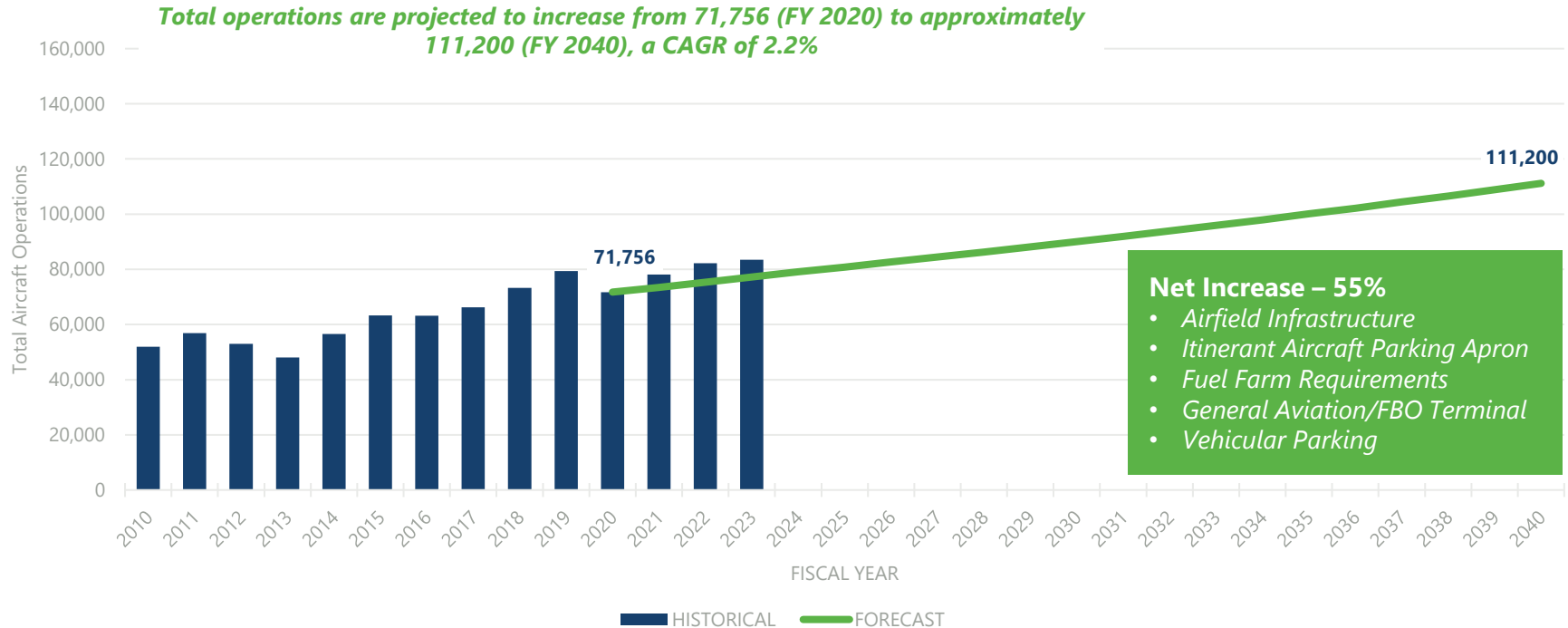


Master plan process follows Federal Aviation Administration and Florida Department of Transportation guidance.



Review of Future Demand

Aviation Activity Forecasts – Operations Forecast



NOTES:
The fiscal year (FY) is October 1 through September 30.
GAGR = Compound Annual Growth Rate
SOURCES: Federal Aviation Administration, Operations Network (OPSNET) (accessed October 2020) (Historical); Ricondo & Associates, Inc. November 2020. (Preliminary Forecast).

Aviation Activity Forecasts – Based Aircraft Forecast

Based aircraft are projected to increase from 241 (FY 2020) to 298 (FY 2040) resulting in 57 additional based aircraft over the forecast period



NOTE:

The fiscal year (FY) is October 1 through September 30.

SOURCES: Federal Aviation Administration, *Terminal Area Forecast FY 2019 – 2045*, February 2020 (Historical); Ricondo & Associates, Inc., October 2020.

Additional General Aviation Facility Requirements

General Aviation Facility Description ^{1/}	FY 2025	FY 2030	FY 2040
Hangars	99,000	140,000	231,000
Apron	110,000	219,000	525,000
Other Support Areas ^{2/}	<u>39,000</u>	<u>87,000</u>	<u>243,000</u>
Total	248,000	434,000	999,000
Total in Acres	5.69	9.96	22.93

Additional general aviation facilities are needed to accommodate the future demand identified in the aviation activity forecasts.

These values are in excess of the current general aviation facilities at BCT.

NOTES:

FBO – Fixed Base Operator

FY – Fiscal Year (October 1 – September 30)

1/ Values are presented in square feet unless otherwise noted.

2/ Other support areas include GA/FBO Terminal facilities, vehicular parking, and landscaping/drainage areas.

SOURCE: Ricondo & Associates, Inc., March 2021.



Summary of Development Concepts and Recommendations

Stormwater Improvements and Wildlife Mitigation (Runway Safety Area Improvements)



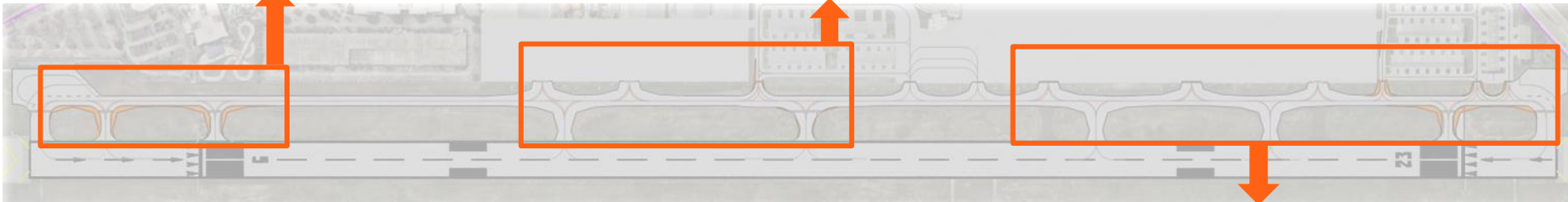
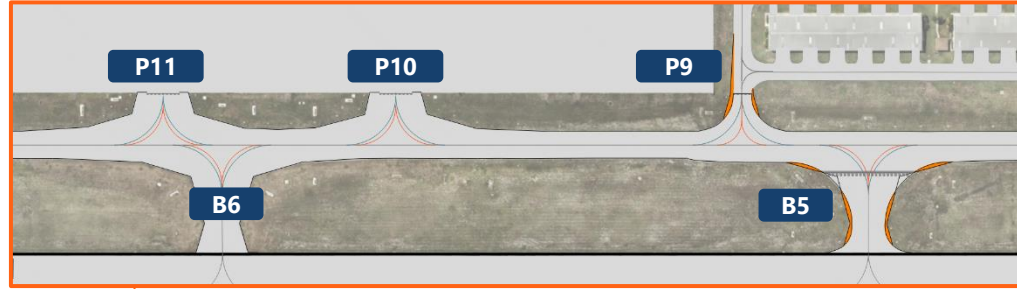
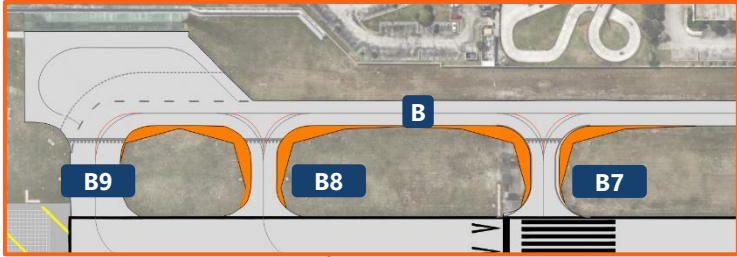
Recommendations:

- Expand Runway Safety Area width
- Improve grading and stormwater management
- Discourage wildlife between the runway and the service road



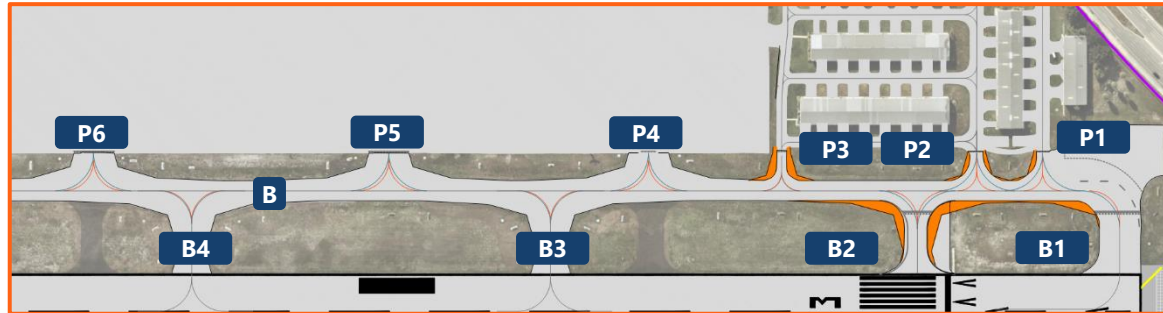
SOURCES: Ricondo & Associates, Inc., September 2022.

Taxiway Geometry Enhancements



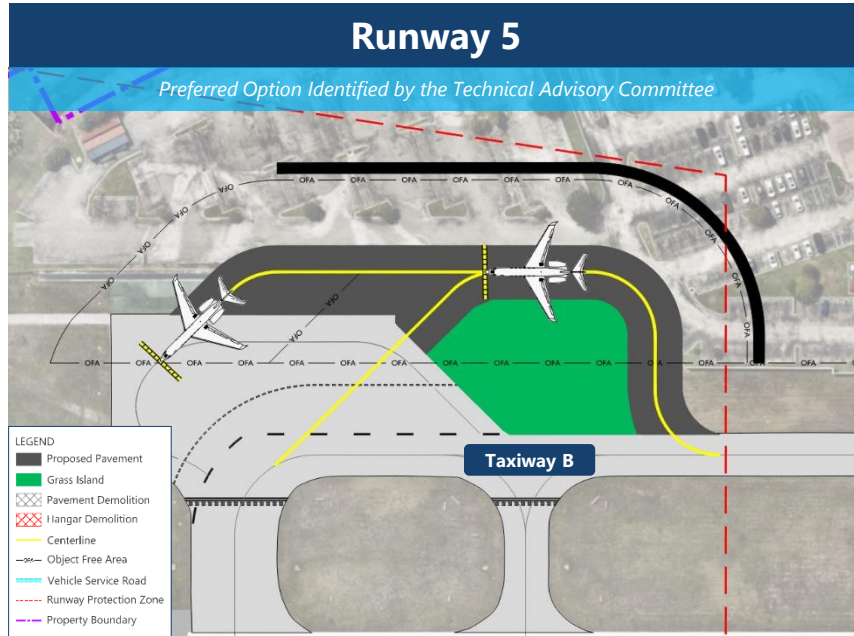
Recommendation:

Enhance geometry to provide standard taxiway edge safety margin in accordance with FAA design standards.



SOURCES: Ricondo & Associates, Inc., September 2022.

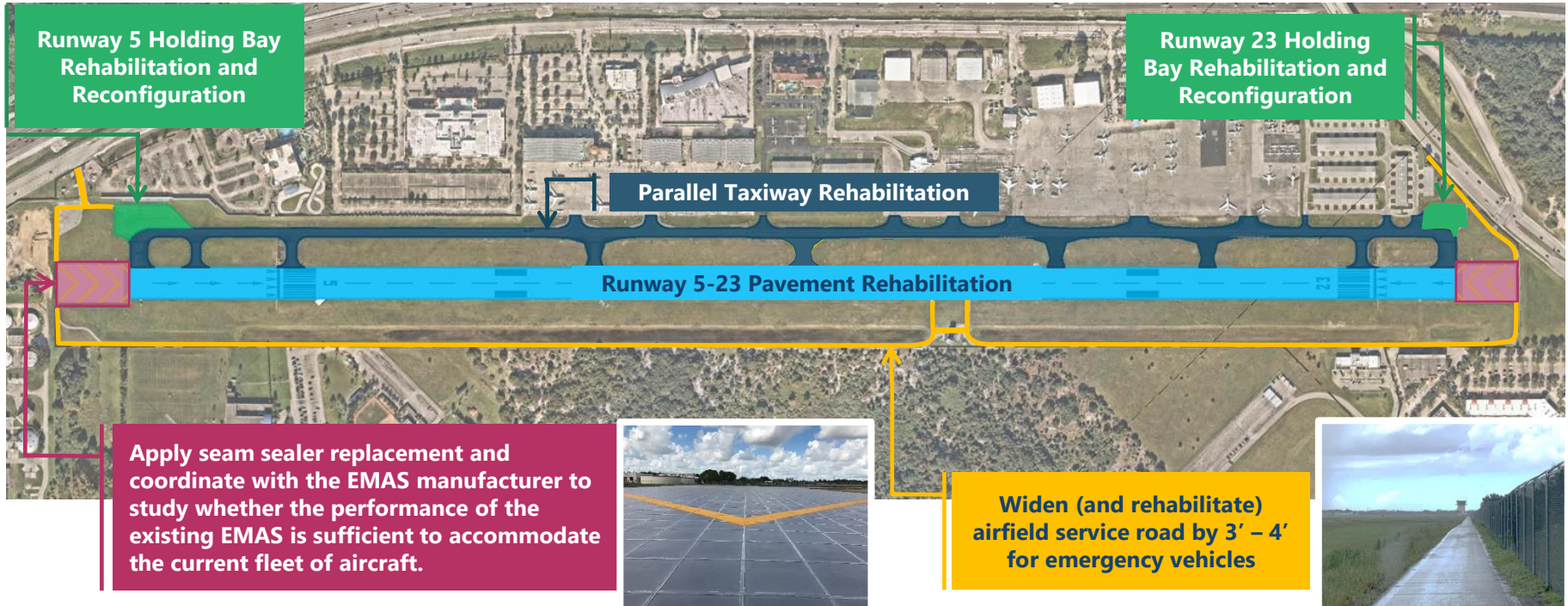
Aircraft Holding Bay Preferred Options



Recommendation:

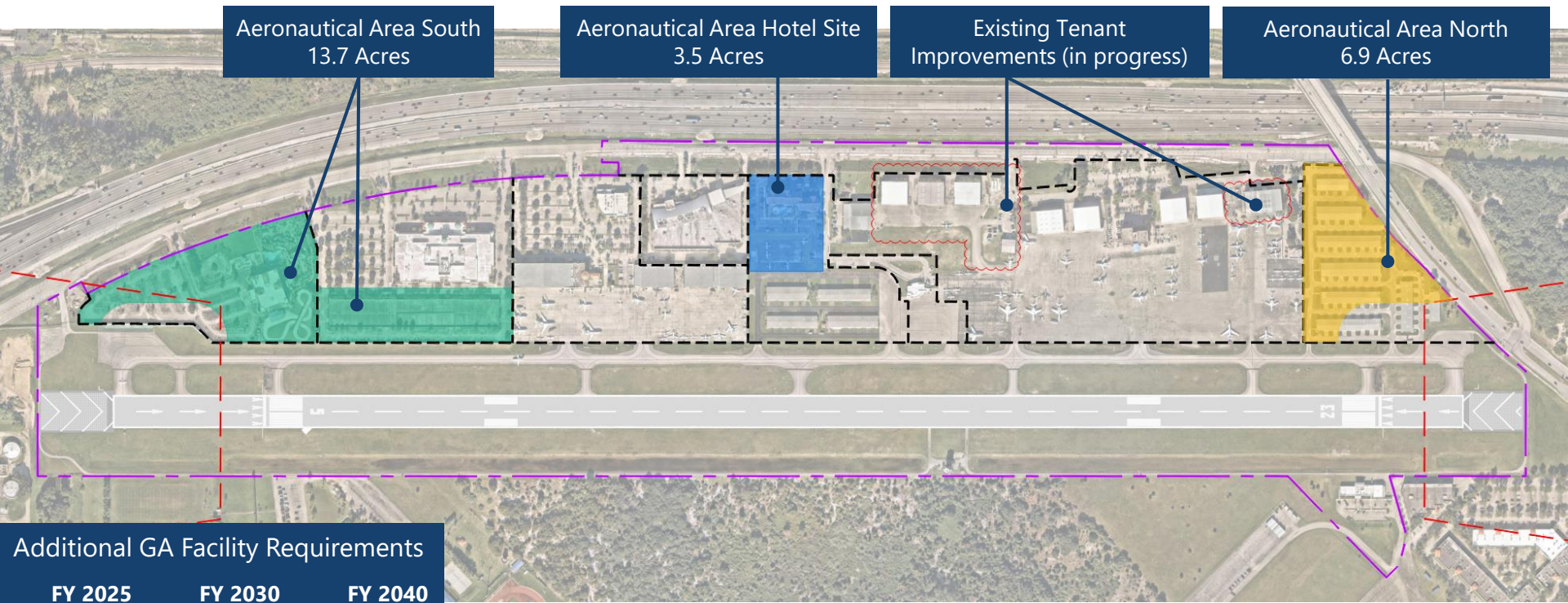
Construct aircraft holding bays outside of the Taxiway B taxiway object free area and in accordance with current FAA design standards.

Pavement Rehabilitation and Asset Preservation



SOURCES: Florida Department of Transportation, Aviation and Spaceport Office, *Statewide Airfield Pavement Management Program District 4*, November 2019; Ricondo & Associates, Inc, January 2023; American Infrastructure Development, Inc., December 2022.

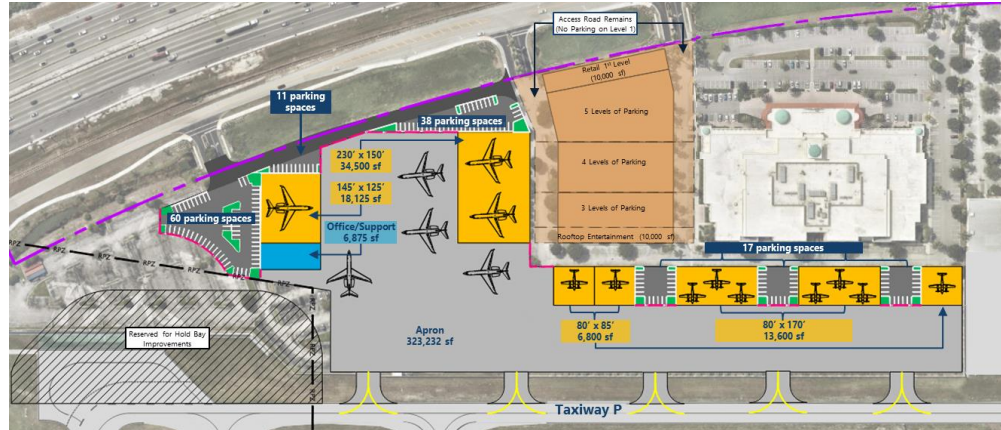
GA/Aeronautical Use – Potential Redevelopment Sites



SOURCES: Boca Raton Airport Authority, January 2020 (leasehold details); Ricondo and Associates, *Airport Layout Plan*, June 2018; Martinez Geospatial, Inc., November 2019 (aerial photo).

GA/Aeronautical Use – South Area Alternatives*

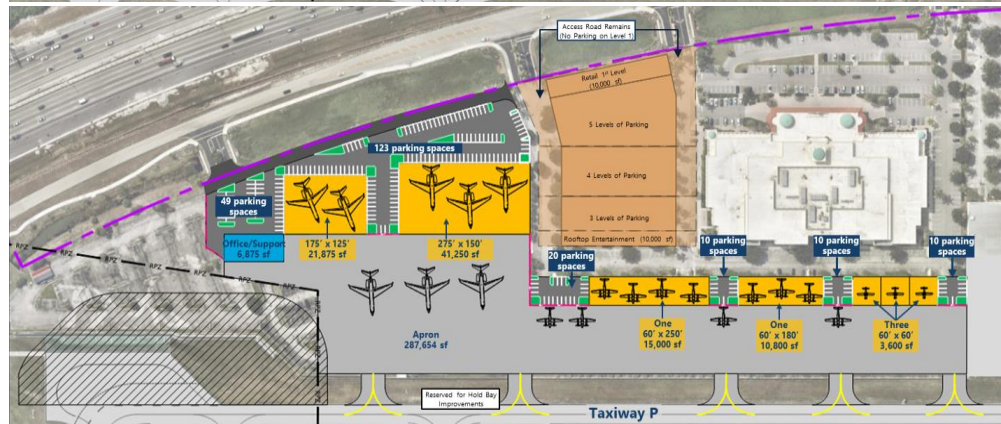
South Area Alternative 1



LEGEND	
	Airfield Pavement
	Apron Pavement
	Parking Lot
	Roadway
	Office/Support
	Entertainment Complex (restaurant, retail, and parking)
	Grass Island
	Hangar
	Fence
	Runway Protection Zone
	Property Boundary

Net Hangars: 100,000 sf
Net Apron Area: 300,000 sf

South Area Alternative 2



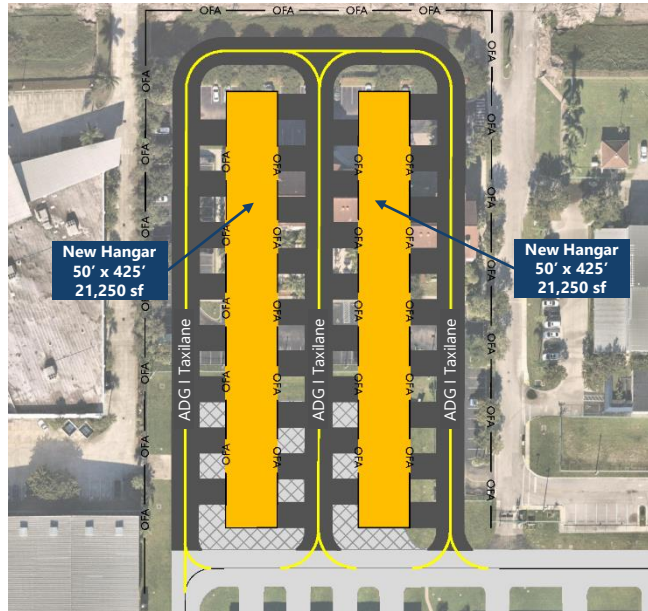
****Potential conversion to aeronautical use pending redevelopment opportunities and amendments to existing leaseholds***

SOURCE: Ricondo & Associates Inc., September 2022.

GA/Aeronautical Use - Hotel Site Alternatives*

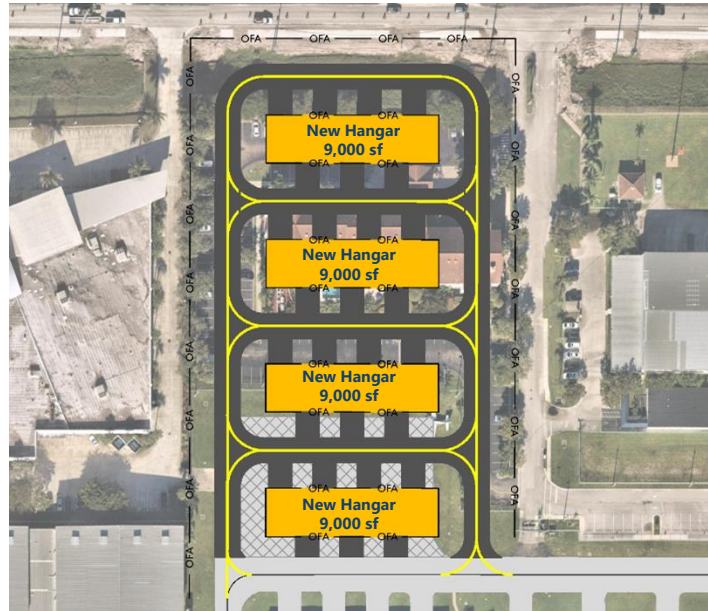
Hotel Site Alternative 1

New T-hangers: 42,500 sf (34 units)








Hotel Site Alternative 2

New T-hangers: 36,000 sf (28 units)



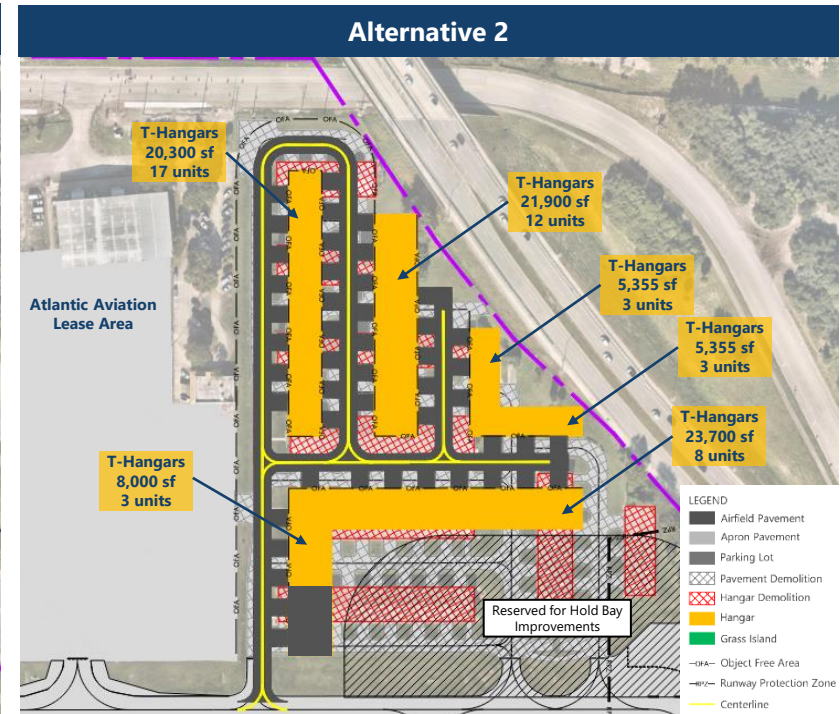
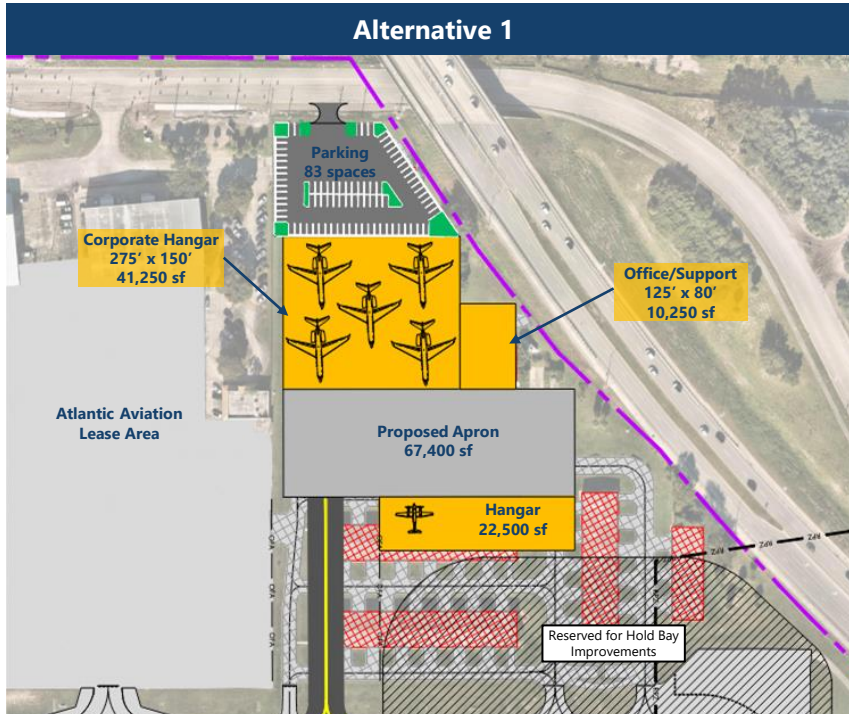
LEGEND

-  Apron Demolition
-  Taxiway Pavement
-  New Hangar
-  Centerline
-  Taxiway Object Free Area (OFA)

****Potential conversion to aeronautical use pending redevelopment opportunity and an amendment to the existing leasehold***

SOURCES: Ricondo & Associates Inc., September 2022; American Infrastructure Development, Inc., December 2022 (cost estimate).

GA/Aeronautical Use - North Area Alternatives*



***Alternatives are conceptual in nature. Development is dependent upon a demand-driven opportunity and an amendment to the existing leasehold.**

NOTE: Alternatives result in a net hangar loss of between 20,000 – 35,000 square feet (inclusive of the area reserved for hold bay improvements).

SOURCE: Ricondo & Associates Inc., September 2022.

Support Facilities

- **Air Traffic Control Tower (constructed in 2000)**

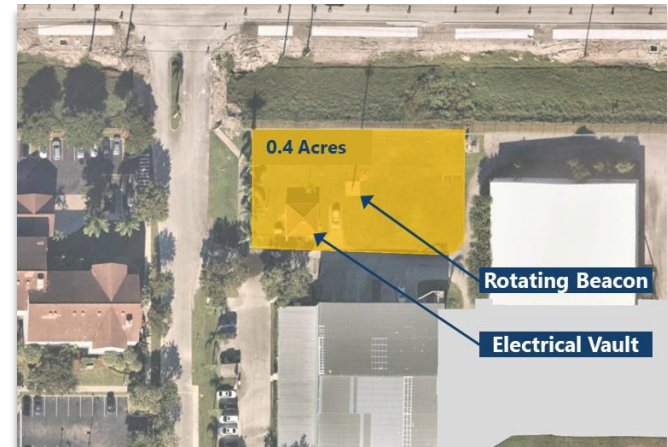
Recommendation: Replace ATCT with new remote (virtual) tower pending FAA approval of technology

- **Automated Weather Observing System (AWOS) (installed in 2013)**

Recommendations: Near-Term: replacement in-kind; Long-Term: Replace AWOS with Automated Surface Observing System (ASOS)

- **Rotating Beacon and Electrical Vault**

Recommendations: Relocate beacon on top of ATCT; Relocate electrical equipment to the first floor of ATCT (or adjacent)



SOURCES: Ricondo & Associates Inc., September 2022; American Infrastructure Development, Inc., December 2022 (cost estimate).



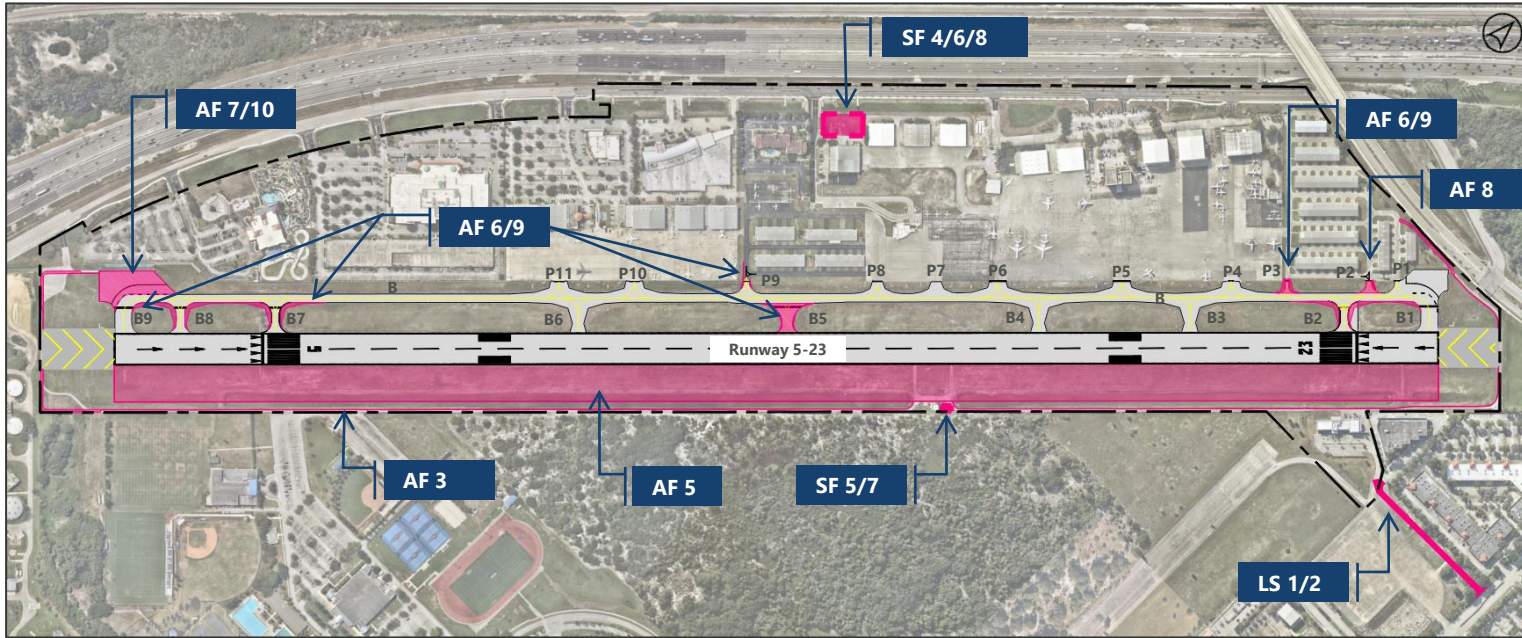
Capital Improvement Program

Capital Improvement Program



- Culmination of the Master Planning process
- Future blueprint or roadmap, intended to be flexible and NOT set in stone
- Includes the following:
 - Project descriptions and sketches
 - Cost estimates and potential funding sources
 - Phasing and sequencing
 - Short-term projects (FY 2023 through FY 2027)
 - Intermediate-term projects (FY 2028 through FY 2032)
 - Long-term projects (FY 2033 through FY 2040)

Short-Term Projects (FY 2023 - FY 2027)



LEGEND

0-5 Years CIP Project

--- Existing Property Boundary

AF – Airfield

CIP – Capital Improvement Program

FY – Fiscal Year

LS – Landside

PS – Planning Study

SF – Support Facility

1. FY 23 projects currently underway not shown for clarity.

Short-Term Studies (not shown on Exhibit)

- AF 11: Engineered Materials Arresting System (EMAS) – Fleet Mix Evaluation
- PS 2: Noise Exposure Map Update
- PS 3: Sustainability Management Plan
- PS 4: Electrification Master Plan
- PS 5: Underground Utility Mapping

- AF 3: Airport Service Road Rehabilitation (Phase 1B) – Construction
- AF 5: Stormwater Improvements and Wildlife Mitigation (Phase 1B) - Construction
- AF 6/9: Taxiways B1, B2, B5, B7, B8, B9, P3, and P9 Geometry Enhancements & Taxiways B5 and P3 Rehabilitation – Design and Construction
- AF 7/10: Runway 5 – Aircraft Holding Bay Rehabilitation – Design and Construction

- AF 8: Taxiway P2 Rehabilitation – Design and Construction
- LS 1/2: BRAA Administration Building Access Road – Design and Construction
- SF 4/6/8: Relocation of Electrical Vault and Airport Beacon – Siting Analysis, Preliminary Engineering, Design and Construction
- SF 5/7: AWOS Replacement – Siting Analysis, Design, and Construction

SOURCE: Ricondo and Associates, Inc., July 2023.

Intermediate-Term Projects (FY 2028 - FY 2032)



Intermediate -Term Studies (not shown on Exhibit)

- SE 1/3: Airport Security Improvement – CCTV Cameras and Associated Infrastructure – Design and Construction
- SE 2: Airport Security Improvement – Replace Gate Controllers and Keycards
- PS 6: Facilities Management Plan Update

- AF 12: Engineered Materials Arresting System (EMAS) Rehabilitation (Seam Sealer Replacement)
- AF 13/15: Taxiways B2, B8, and P9 Rehabilitation – Design and Construction
- AF 14/18: Taxiway B Rehabilitation – Design and Construction
- AF 16/19: Runway 5-23 Rehabilitation – Design and Construction
- AF 17/20: Taxiways B7 and P6 Rehabilitation – Design and Construction
- SF 9/10: US Customs and Border Protection Rehabilitation and Improvements – Design and Construction

SOURCE: Ricondo and Associates, Inc., July 2023.

Long-Term Projects (FY 2033 - FY 2040)



LEGEND

- 11-20 Year CIP Projects
- Existing Property Boundary

AF – Airfield
CIP – Capital Improvement Program
FY – Fiscal Year
PS – Planning Study
SE – Security Improvements
SF – Support Facility

Long-Term Studies (not shown on Exhibit)

- PS 7/8: Facilities Management Plan Update
- SE 4/5: Airport Security Improvements – CCTV Cameras and Associated Infrastructure – Design and Construction
- SE 6: Airport Security Improvements – Replace Gate Controllers and Key pads
- SF 14: AWOS Replacement with ASOS – Siting Analysis and Design

- AF 21: Runway 5-23 Rehabilitation – Construction – Phase 2
- AF 22/23: Improve Runway Safety Area – Install EMAS Runway 5 Departure End – Design and Construction
- AF 24/26: Improve Runway Safety Area – Install EMAS Runway 23 Departure End – Design and Construction

- SF 11/13: Replace Air Traffic Control Tower with Virtual or Remote Tower – Technology Review, Design, and Construction
- SF 12: BRAA Administration Building Rehabilitation and Improvements
- AF 25/27: Runway 5 Aircraft Holding Bay – Design and Construction
- AF 28/29: Runway 23 Aircraft Holding Bay – Design and Construction

SOURCE: Ricondo and Associates, Inc., July 2023.

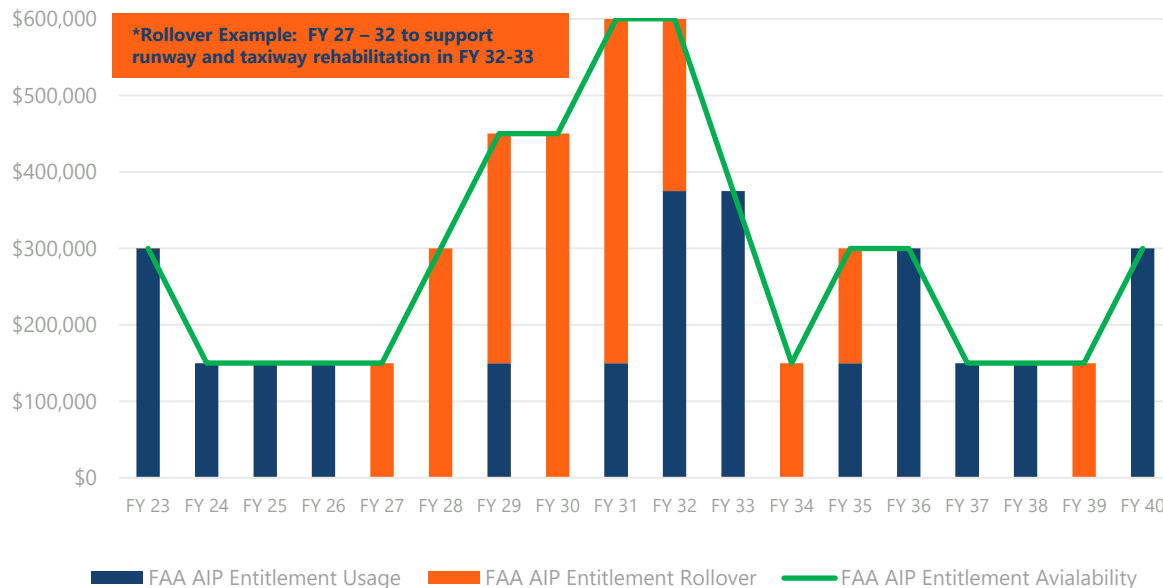
Funding Source Overview

FAA Airport Improvement Program (AIP)

- Federal share for eligible projects – **90%**
- AIP entitlement funds allocated based on airport classification
- BCT receives **\$150,000 annually** with a maximum rollover of \$600,000*

Key Takeaway: BCT is entitled to \$150,000 annually for airfield capital projects and airfield rehabilitation.

FAA Airport Improvement Program Entitlement Funding
Proposed Usage and Rollover (FY 23 - FY 40)



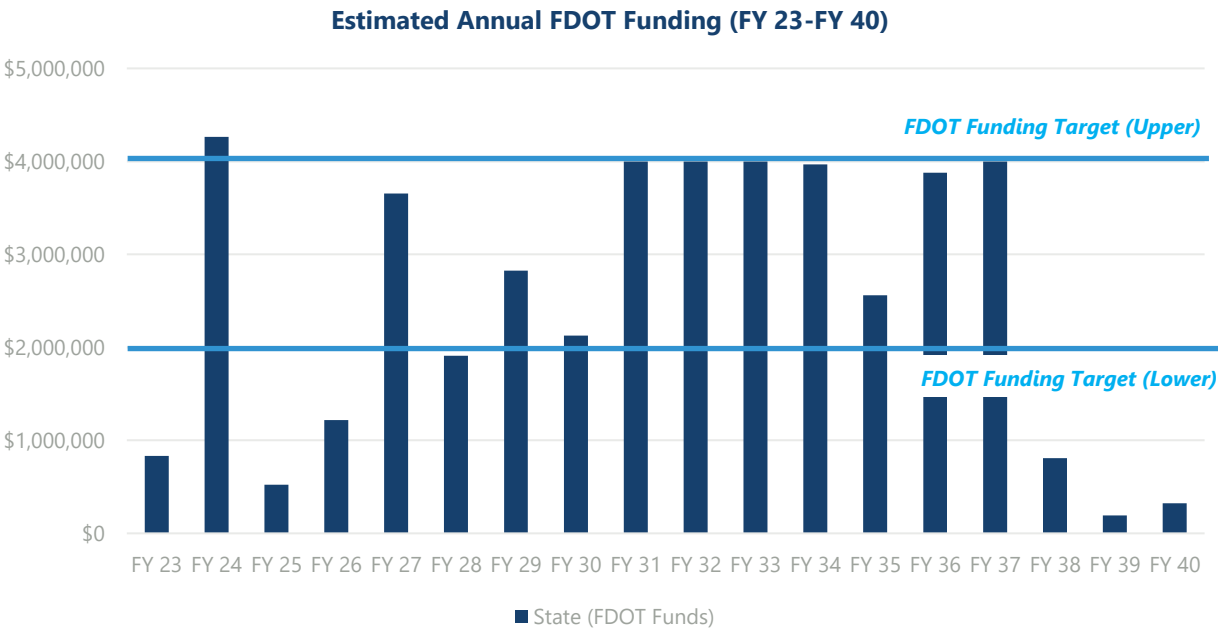
SOURCE: Ricondo & Associates, Inc., July 2023.

Funding Source Overview

FDOT Aviation Grant Program (State Grants)

- FDOT’s Aviation Grant Program provides expanded project eligibility (compared to FAA programs)
- State share for eligible projects
 - 8% for projects receiving **FAA funds**
 - 80% for projects receiving **NO FAA funds**

Key Takeaway: BCT’s CIP is targeting between \$200,000 and \$4.2 M annually of FDOT funding.



SOURCE: Ricondo & Associates, Inc., July 2023.

Funding Source Overview

Other Funding Sources

FAA Bipartisan Infrastructure Law (BIL) Funds – Airport Infrastructure Grants (AIG)

- The BIL was signed into law on November 15, 2021, and provides funding over 5-years (FY 22 – FY 26)
- **CIP assumes approximately \$800,000 annually** for five fiscal years from the AIG program

FAA Airport Improvement Program (AIP) Discretionary Grants

- Competitive grant program distributed by national priorities
- CIP assumes an **annual maximum of \$4M** for airfield improvements and rehabilitation

Local Funds (BRAA)

- Matching funds required for FAA and FDOT grants
- **Funding fluctuates annually between \$100,000 and \$1M** depending on grants received and project eligibility

Private Investment

- Projects undertaken by tenants and/or private entities (e.g. Fixed Based Operators, hangar developers, etc.)
- **CIP does not include assumptions of private investment**

Key Takeaway: The development of BCT's Capital Improvement Program is an iterative process that maximizes the use of federal and state funding to create a financially feasible development program.

SOURCE: Ricondo & Associates, Inc., July 2023.

Estimated Project Funding Sources by Phase

Phase	Total Cost ¹	FAA AIP Entitlement	FAA AIG ²	FAA AIP Discretionary	State (FDOT Funds)	Local Funds
Short-Term Projects (FY 2023 - FY 2027)	\$19,326,666	\$750,000	\$4,139,000	\$1,259,999	\$10,495,133	\$2,682,533
Intermediate-Term Projects (FY 2028 - FY 2032)	\$23,340,000	\$675,000	\$0	\$5,538,400	\$14,866,400	\$2,260,200
Long-Term Projects (FY 2033 - FY 2040)	<u>\$39,350,000</u>	<u>\$1,425,000</u>	\$0	<u>\$15,442,400</u>	<u>\$19,733,600</u>	<u>\$2,749,000</u>
Grand Total Funding Summary (FY 2023 - FY 2040)	\$82,016,666	\$2,850,000	\$4,139,000	\$22,240,799	\$45,095,133	\$7,691,733

NOTES:

AIP - Airport Improvement Program; AIG - Airport Infrastructure Grant; FAA - Federal Aviation Administration; FDOT - Florida Department of Transportation; FY - Fiscal Year

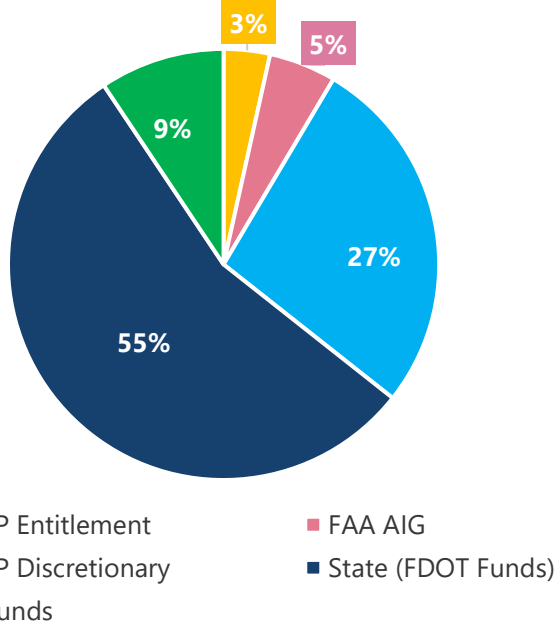
1. Costs developed in 2022 U.S. dollars and have been escalated by 3.5% annually over the course of the planning period.

2. AIG program provides funding allotments between FY 22 and FY 26.

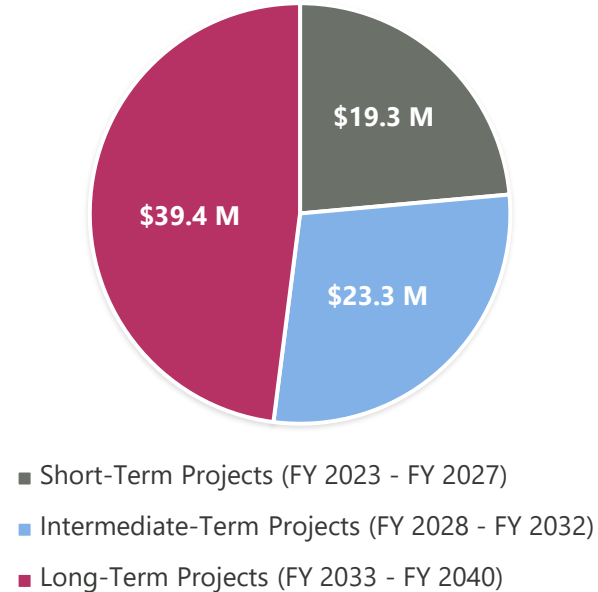
SOURCES: Ricondo & Associates, Inc., January 2022; American Infrastructure Development, Inc., December 2022 (cost estimates); Florida Department of Transportation, *Airport Pavement Evaluation Report Boca Raton Airport*, 2022.

Capital Improvement Program Summary

CIP Breakdown by Funding Type



CIP Breakdown by Planning Horizon



NOTES:

AIG – Airport Infrastructure Grant; AIP – Airport Improvement Program; CIP – Capital Improvement Program

SOURCES: Ricondo & Associates, Inc., January 2022; American Infrastructure Development, Inc., December 2022 (cost estimates).



Airport Layout Plan

Airport Layout Plan

DRAFT - FOR DISCUSSION PURPOSES ONLY

Location Map

FOOT Approval

FAA Approval

Airport Approval

Sheet Number

DRAFT - FOR DISCUSSION PURPOSES ONLY

ALL WEATHER WIND ROSE

PIR WIND ROSE

SPR WIND ROSE

ABBREVIATIONS/ACRONYMS

ALL WEATHER WIND ROSE

DECLARED DISTANCES

NON-STANDARD CONDITIONS TABLE

DESIGN STANDARD

EXISTING TAXIWAY DATA

OBJECTS NEAR TAXIWAY DATA

SEPARATION FROM TAXIWAY TO ROAD

PLAN VIEW

PROFILE VIEW

CONSTRUCTION DATA TABLE

INNER APPROACH PLAN & PROFILE

LEGEND

NOTES

PREPARED BY

DATE

SHEET 1 OF 10

SOURCE: Ricondo & Associates, Inc., October 2022.

**Key Development Items
To Be Reviewed on
Subsequent Slides:**

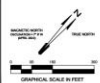
- Aircraft Observation Area
- Atlantic Aviation Improvements
- Taxiway Nomenclature Updates
- Airport Service Road Widening
- Taxiway Geometry Enhancements
- Relocation of Electrical Vault and Airport Beacon
- BRAA Administration Building Access Road
- Runways 5 and 23 Aircraft Holding Bays
- Non-Aeronautical Redevelopment



BOCA RATON
AIRPORT



BOCA RATON
AIRPORT
BOCA RATON AIRPORT AUTHORITY
905 NW 15TH STREET

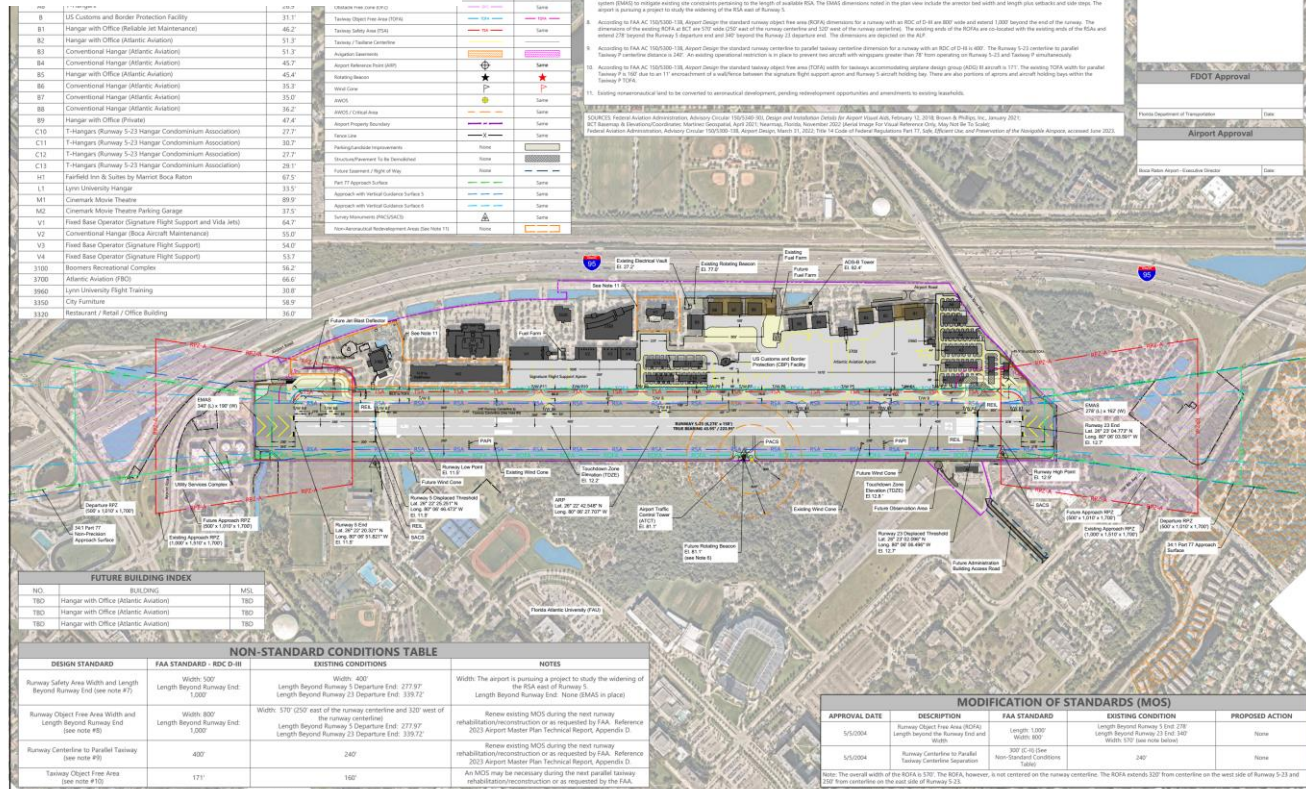
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BOCA RATON AIRPORT
BOCA RATON, FLORIDA

PREPARED BY:
TOMONDO & ASSOCIATES, INC.

DATE:
JULY 2023

SHEET 4 OF 10



Drawing: P:\Project-Miami\BAAQ2017 GCITask 70 - Airport Master Plan Update\11. Airport Layout Plan SelfAutoCAD\04-BCT_Future_Airport_Layout_Plan.dwg, Layout_Future_ALP_Sep 15, 2023, 2:25pm

Future Airport Layout Plan – Key Developments



Note:

1. Pending redevelopment opportunities and amendments to leaseholds.

SOURCE: Ricondo & Associates, Inc., August 2023.

Next Steps

- Recommend BRAA approval for submission of the Airport Master Plan Update Technical Report and Airport Layout Plan to FAA and FDOT
- Address FAA and FDOT comments
- Finalize Stormwater Master Plan
- Complete Master Plan Update documentation
 - Development of an Executive Summary
 - Master Plan Update Video

THANK YOU

