



Airport Master Plan Update

Technical Advisory Committee (TAC) Meeting #1

April 22, 2021



Meeting Agenda

- Introductions
- Master Plan Update Overview
- Technical Advisory Committee (TAC) Role and Responsibilities
- Airport Baseline Conditions/Tenant Survey Feedback
- Forecast of Aviation Activity
- BCT's Critical Design Aircraft
- Preliminary Facility Requirements (Hangar, Apron, FBO, and Automobile Parking Spaces)
- Next Steps



Introductions

Project Team

BRAA Team/Officials

- **Randy Nobles**, Vice Chair
- **Clara Bennett**, Executive Director
- **Scott Kohut**, Deputy Director
- **Travis Bryan**, Operations Manager
- **Christine Landers**, Business Manager



Consultant Team | Project Role

- **Pete Ricondo** (Ricondo) | Officer-in-Charge
- **Brad Weston** (Ricondo) | Project Manager
- **Sebastien Carreau** (Ricondo) | Deputy Project Manager
- **Ryan Flicek** (Martinez) | Aerial Surveying and Photogrammetry
- **Mark Jansen, P.E.** (AID) | Civil Engineering Support/Cost Estimates
- **Elton Smith, P.E.** (AID) | Stormwater Planning
- **John Phillips** (Brown & Phillips) | Ground Survey



Primary Stakeholders

Aeronautical Tenants

- Atlantic Aviation
- Boca Aircraft Maintenance
- Boca Aircraft Owners
- Global Wings
- Journey Aviation
- Lynn University
- Privaira
- Reliable Jet Maintenance
- Runway 5-23 Hangar Condo Association
- Signature Flight Support
- Southern Jet

Non-Aeronautical Tenants

- Boomer's/ Palace Entertainment, L.L.C.
- Cinemark
- City Furniture
- Fairfield Inn & Suites by Marriott
- Premier Aviation of Boca Raton

Federal and State Agencies

- FAA Orlando Airports District Office
- Florida Department of Transportation
- Air Traffic Control Tower

Local Agencies and Organizations

- Boca Raton Chamber of Commerce
- City of Boca Raton
- Florida Atlantic University
- Palm Beach International Airport
- Palm Beach Transportation Planning Agency



Master Plan Update Overview

Project Background

What is an Airport Master Plan?

- Local level planning effort tailored to BCT
- Intended to guide future airport development over a 20-year timeframe that:
 - Satisfies future aviation demand
 - Identifies facility requirements for all Airport users
 - Considers environmental and socioeconomic impacts
 - Enables the Airport to achieve its mission
 - Complies with all applicable FAA requirements

“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

Project Background – Physical Changes

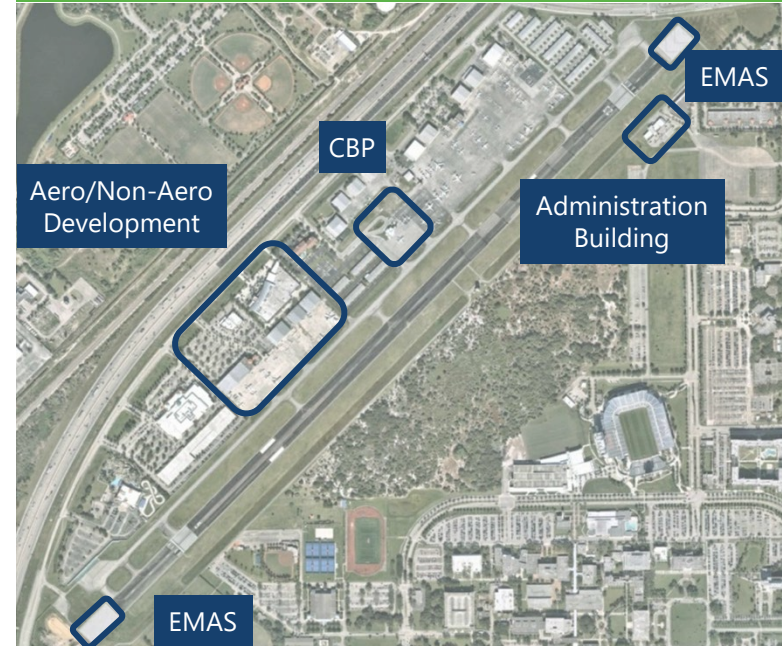
BCT Airport – 2004*



SOURCE: Google Earth Pro, January 2004.

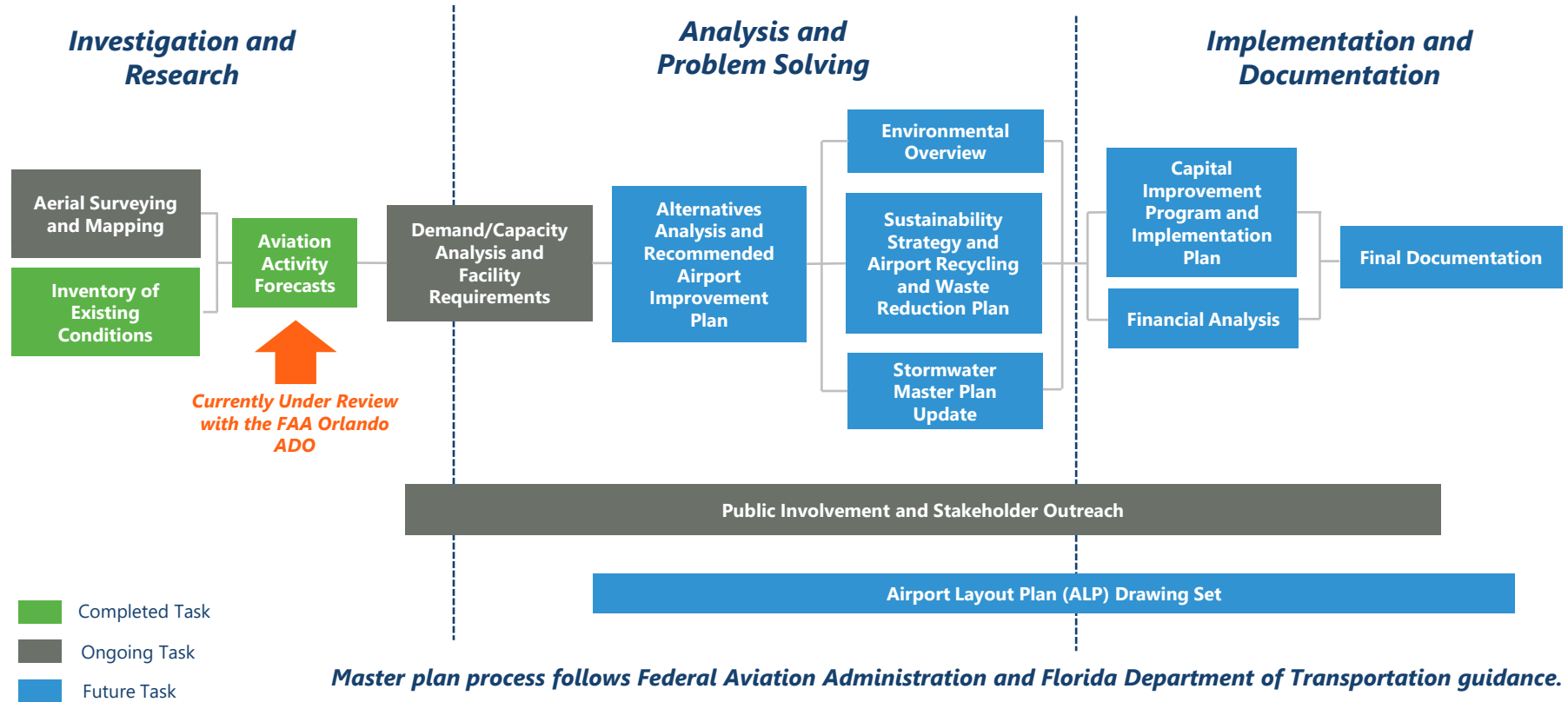
*Completion Date of the Airport Enhancement Plan (Previous Master Plan)

BCT Airport - 2020



SOURCE: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, January 2020.

Project Process



Airport Master Plan Deliverables

Master Plan Study Document

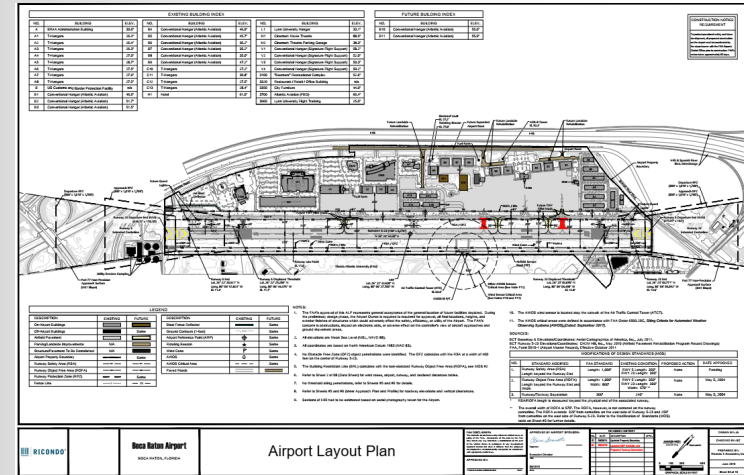
- Compilation of technical documentation
- Includes FAA approved activity forecast
- Includes updated Capital Improvement Program (CIP)
- Accepted by FAA and conditionally approved by FDOT

Airport Layout Plan (ALP)

- Graphical representation of existing and future airport facilities (drawing set)
- Ensures development is consistent with design standards, safety requirements, and airport/community land use plans
- FAA/FDOT approved ALP is required for issuance of grants

Airport Data Set

- Compliant with FAA's AGIS (Airport GIS) standards
- Allows FAA to protect airspace and instrument approach procedures



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

Project Schedule

Public Involvement and Stakeholder Coordination

Technical Advisory Committee Meeting #1	April 2021
Technical Advisory Committee Meeting #2	Summer/Fall 2021
BRAA Board Workshop #1	May 2021
BRAA Board Workshop #2	Fall 2021

Master Plan Documentation and Completion

Stormwater Master Plan Update Completion	Fall 2021
Airport Layout Plan Update Completion	Winter 2021
Master Plan Update Project Completion	Early 2022

Master Plan key milestones subject to change.

Technical Advisory Committee Role and Responsibilities

Technical Advisory Committee Role

- Advisory in nature. Will provide consensus opinion for Airport staff to consider when making planning decisions.
- Provide feedback and technical guidance on each element of the Master Plan Update:
 - Bring various master local perspectives to the master planning process
 - Reach consensus on key master plan topics



Technical Advisory Committee Responsibilities

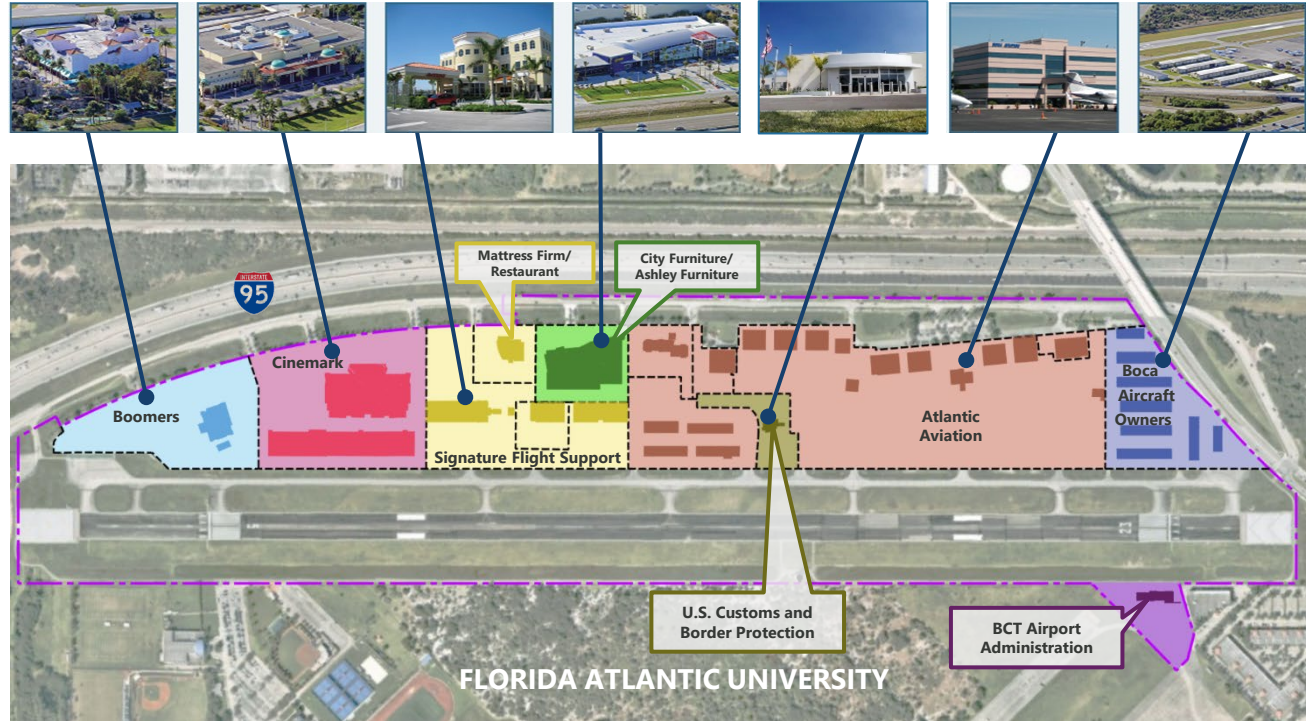
- Attend two meetings over the course of the study
- Provide input and guidance on technical analyses
- Provide ideas for consideration in the Master Plan
- Help build the Airport's future by sharing what you learn from your participation in the Technical Advisory Committee



Airport Baseline Conditions/ Tenant Survey Feedback

Current Conditions

- Airport Size: 215 acres
- Existing Leaseholds: 95 acres
- Designated as a General Aviation Reliever Airport
- One runway:
 - Runway 5-23 (non-precision)
- Contract Air Traffic Control Tower

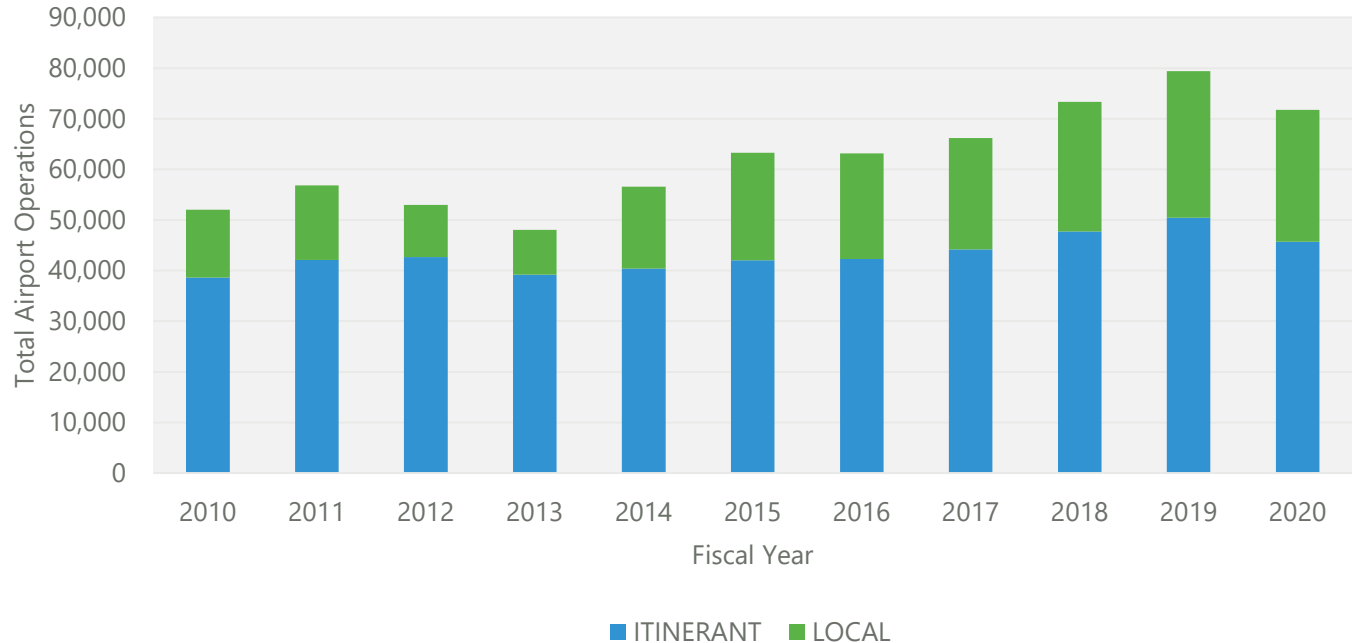


Baseline Conditions



Aircraft Operations – FY 2010 to FY 2020

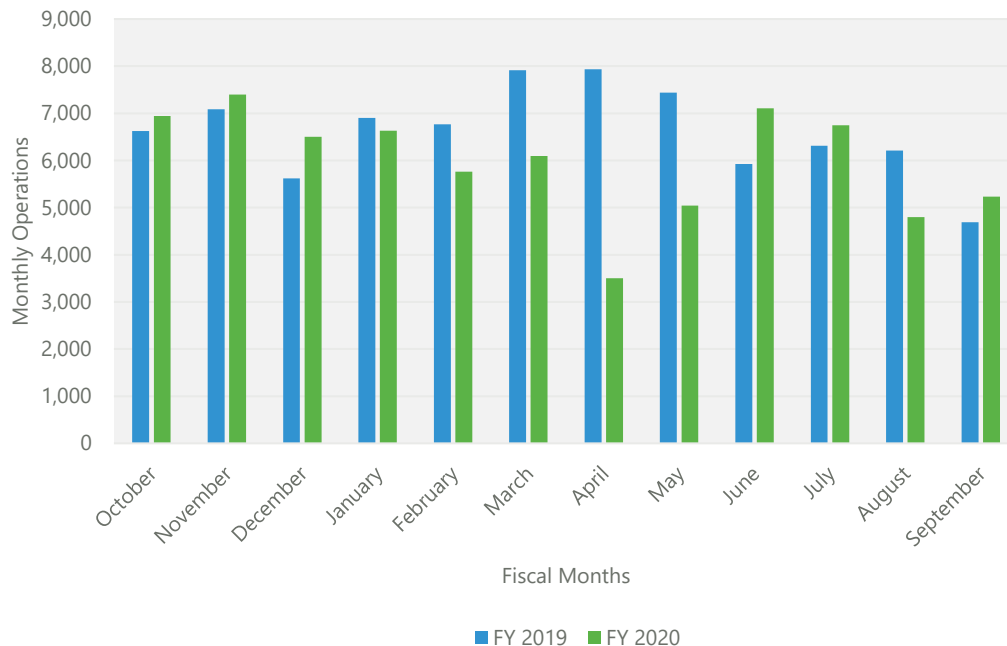
- Overall operations - 3.3% CAGR
- Itinerant operations - 1.7% CAGR
- Local operations - 6.9% CAGR



SOURCE: FAA Operations Network (OPSNET) (accessed October 2020).

COVID-19 Impact on BCT Operations

	BCT MONTHLY OPERATIONS		
Fiscal Month	FY 2019	FY 2020	Change (%)
October	6,622	6,941	4.8%
November	7,088	7,399	4.4%
December	5,617	6,505	15.8%
January	6,903	6,630	-4.0%
February	6,766	5,760	-14.9%
March	7,914	6,093	-23.0%
April	7,932	3,505	-55.8%
May	7,437	5,041	-32.2%
June	5,924	7,107	20.0%
July	6,310	6,745	6.9%
August	6,210	4,797	-22.8%
September	4,689	5,233	11.6%
FY Total	79,412	71,756	-9.6%

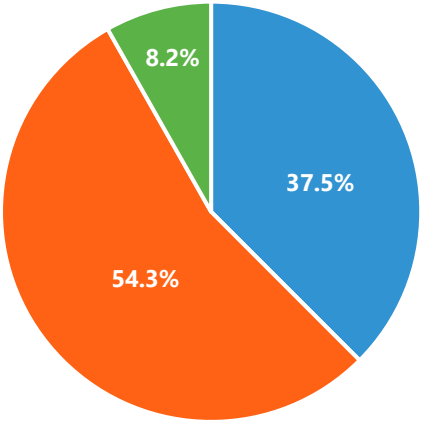


NOTE: FY = Fiscal Year (October – September)

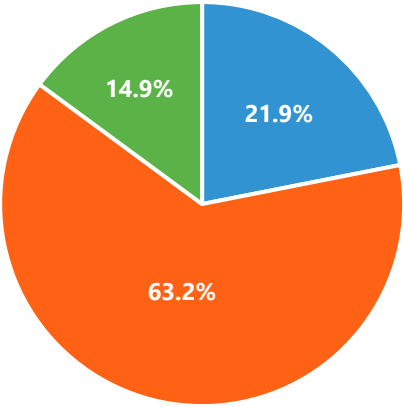
SOURCES: FAA Operations Network (OPSNET) (accessed October 2020). Innovata; U.S. DOT T100 (scheduled passenger data), (accessed October 2020); Ricondo & Associates, Inc., October 2020.

Business Jet Activity

Business Jet Activity CY 2010



Business Jet Activity CY 2019

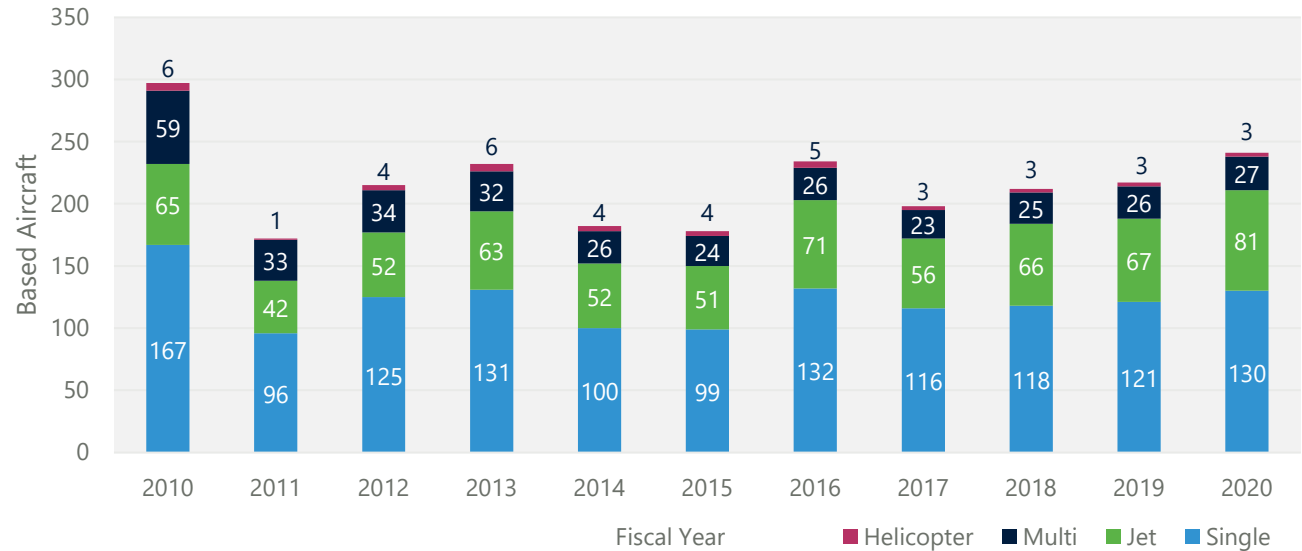


■ Light Jets (<21,000 lbs.) ■ Midsize Jets (21,000 - 65,000 lbs.) ■ Heavy Jets (> 65,000 lbs.)

SOURCES: Boca Raton Airport Authority, Airport Noise Operations and Monitoring System, September 2020; Ricondo & Associates, Inc., *Operational Needs Assessment and Runway Safety Area Study*, June 2012.

Based Aircraft – FY 2010 to FY 2020

- Historically, single-engine aircraft represent over 50% of total based aircraft; however, jet-based aircraft have experienced an increased share of total based aircraft



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total	297	172	215	232	182	178	234	198	212	217	241

SOURCES: FAA National Based Aircraft Inventory Program (FY 2020 data), (accessed September 2020); FAA Terminal Area Forecast (TAF) (FY 2010 – FY 2019 data), (accessed October 2020).

Tenant Survey Feedback

Airfield Improvements:

- Widening and strengthening of taxiway exits onto FBO ramps
- Ramp resurfacing
- LED airfield lighting
- New fuel farm

Landside Improvements:

- Additional vehicular parking
- Four lane expansion of airport road
- Underground utilities
- Improved landscaping
- Security lighting along airport road
- Self fueling station
- Aircraft viewing area
- Larger corporate aircraft hangars
- Larger t-hangars
- Additional office space (e.g., classroom space)
- Hangar and FBO improvements

Other Comments:

- Limited space to expand
- Convert commercial areas to aeronautical uses

Tenant Survey Feedback

- Key Trends:
 - Larger aircraft (e.g., Global 7500)
 - Electric vertical takeoff and landing (EVTOL) Aircraft Operations
 - Sustainable Aviation Fuels (SAF)



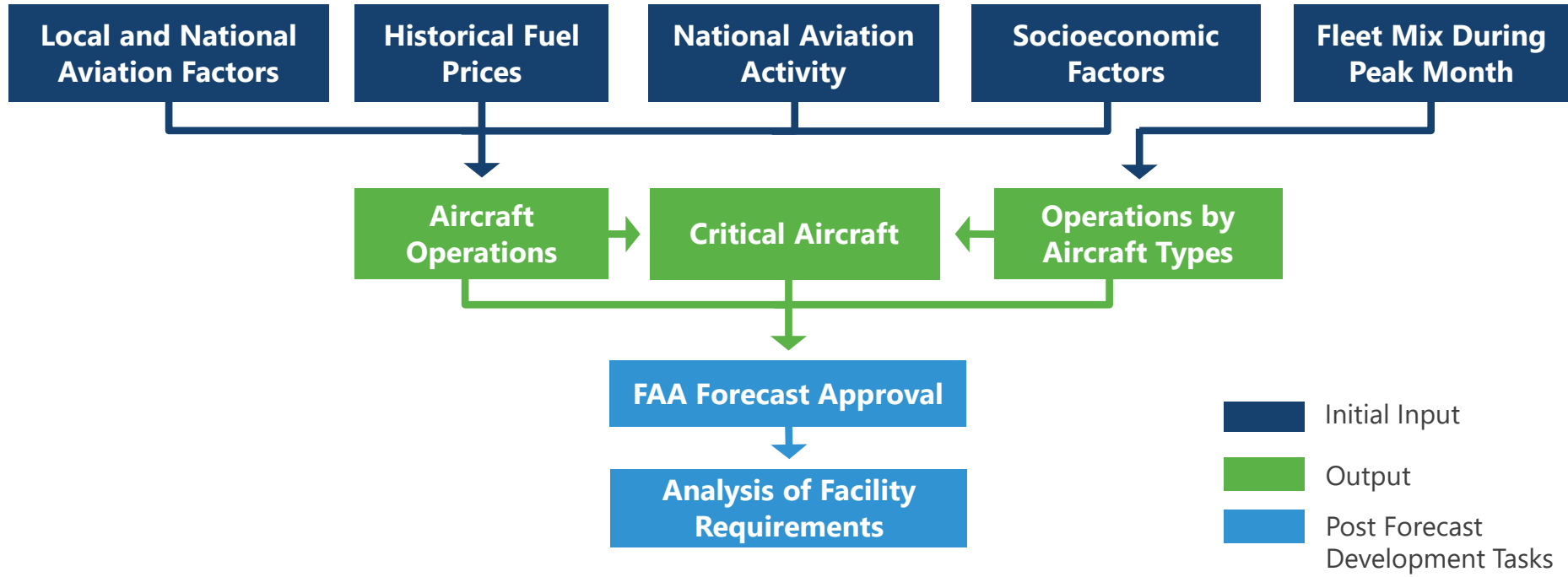
SOURCE:

1/ AIN Online, Global 7500 to Drive Delivery Increase at Bombardier, <https://www.ainonline.com/aviation-news/business-aviation/2020-02-13/global-7500-drive-delivery-increase-bombardier> (accessed April 2021).

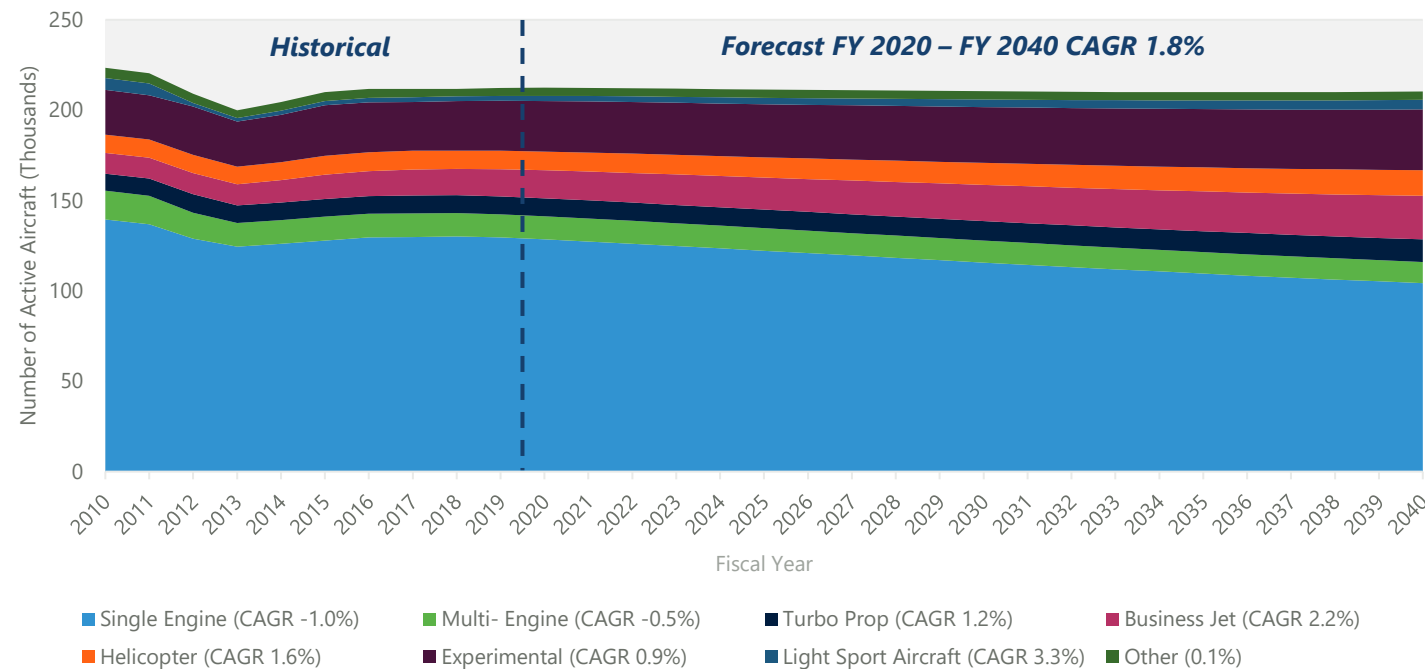
2/ Lilium, Daniel Bachmann, <https://robbreport.com/tag/lilium/> (accessed April 2021).

Forecast of Aviation Activity

The Master Plan Forecast Development Process

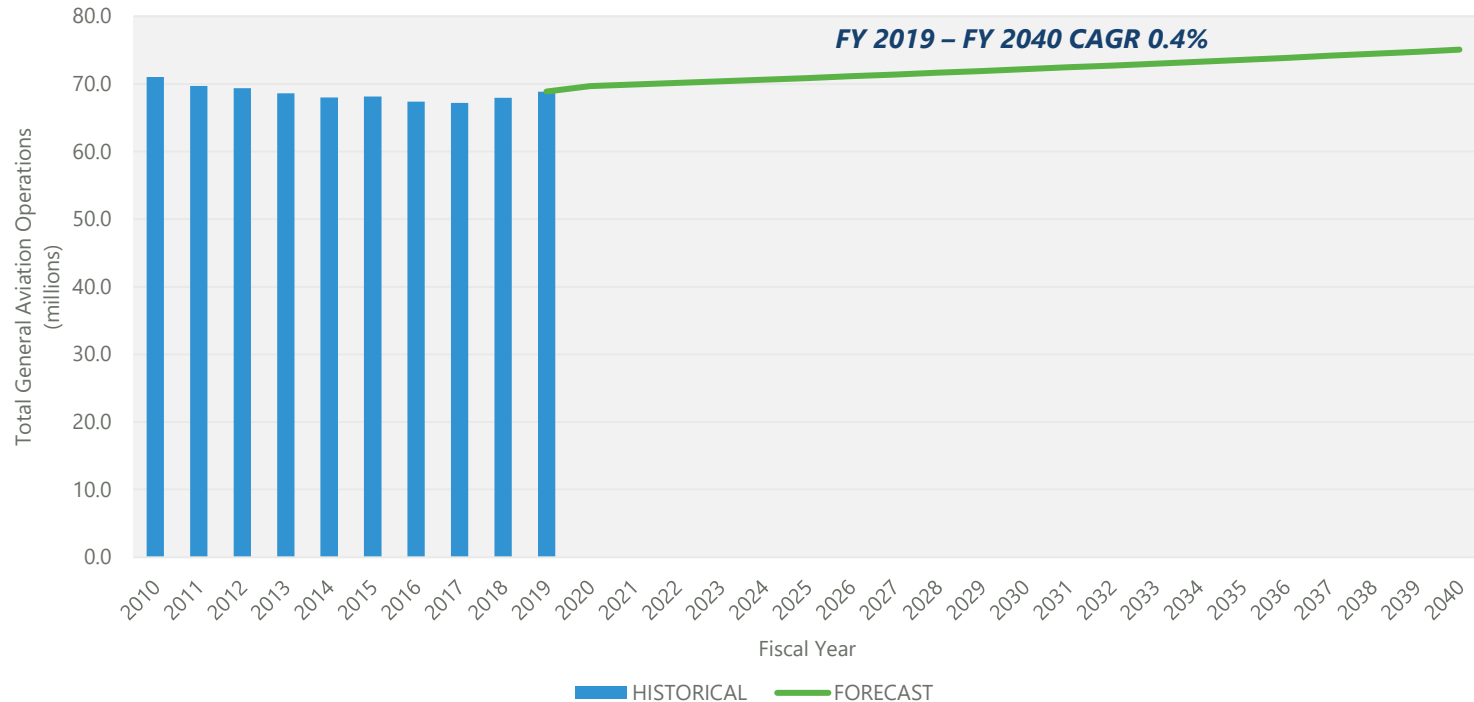


General Aviation Market – Active General Aviation Aircraft



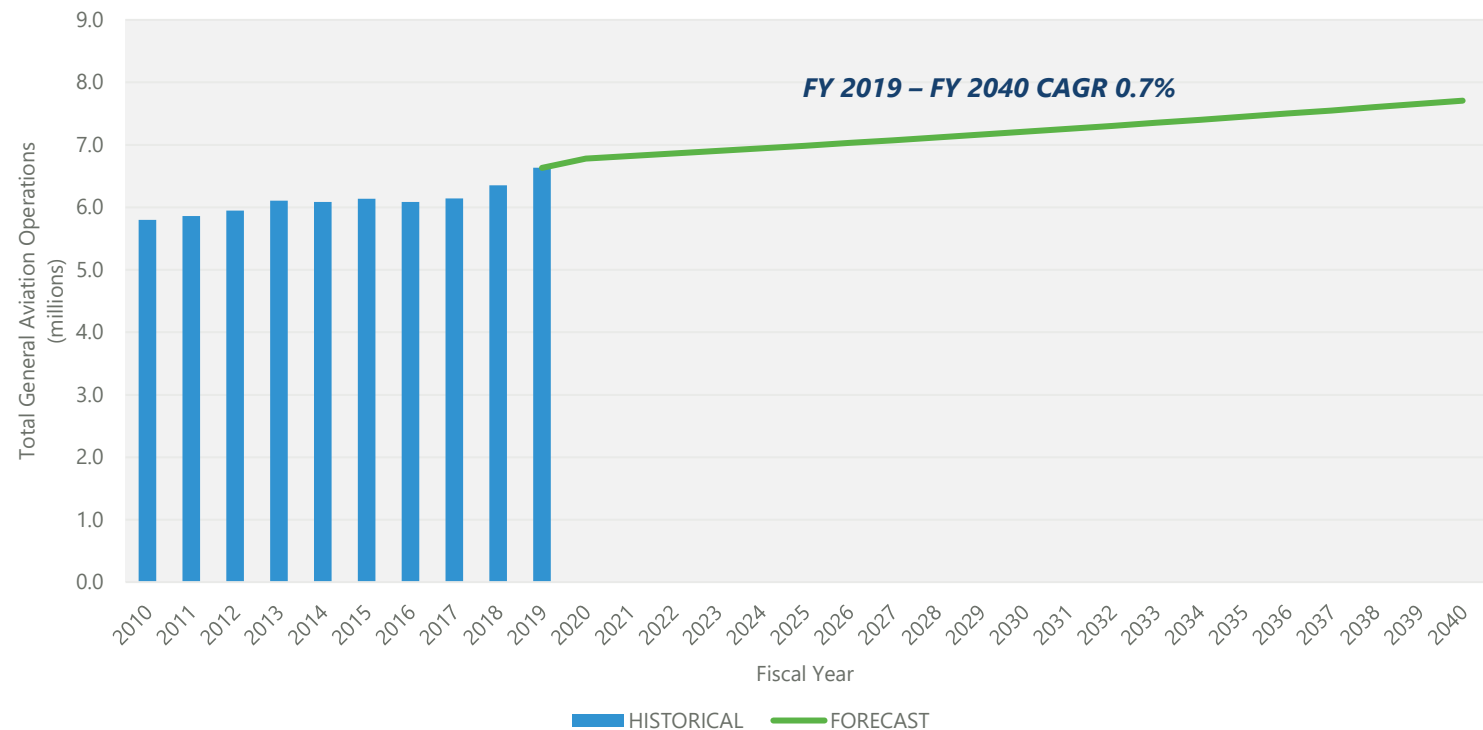
SOURCE: FAA Aerospace Forecast FY 2020 – 2040 (accessed October 2020).

General Aviation Market – National Forecast



SOURCE: FAA Terminal Area Forecast FY 2019 – 2045 (TAF) (accessed October 2020).

General Aviation Market – State Forecast



SOURCE: FAA Terminal Area Forecast FY 2019 – 2045 (TAF) (accessed October 2020).

Industry Trends and Opportunities

- New electric aircraft could revitalize recreational general aviation activity.



Pipistrel, Panthera, 4-Seater Single Engine Propeller Aircraft
Photo Credit: Pipistrel: <http://www.pipistrel-ca.com/panthera.html>



Bye Aerospace Sun Flyer 2, 2-seater single engine propeller aircraft
Photo Credit: Bye Aerospace: <https://bye aerospace.com/3603-2/>

Industry Trends and Opportunities

- New products (VTOL aircraft) and service offerings (VTOL air taxi including UBER Elevate, Lilium, etc.) may offer new opportunities for airports like BCT.



Lilium

Photo Credit: Daniel Bachmann
<https://robbreport.com/tag/lilium/>



Aurora (A Boeing Company) Passenger Air Vehicle (PAV)

Photo Credit: Aurora Flight Sciences <https://www.aurora.aero/pav-evtol-passenger-air-vehicle/>

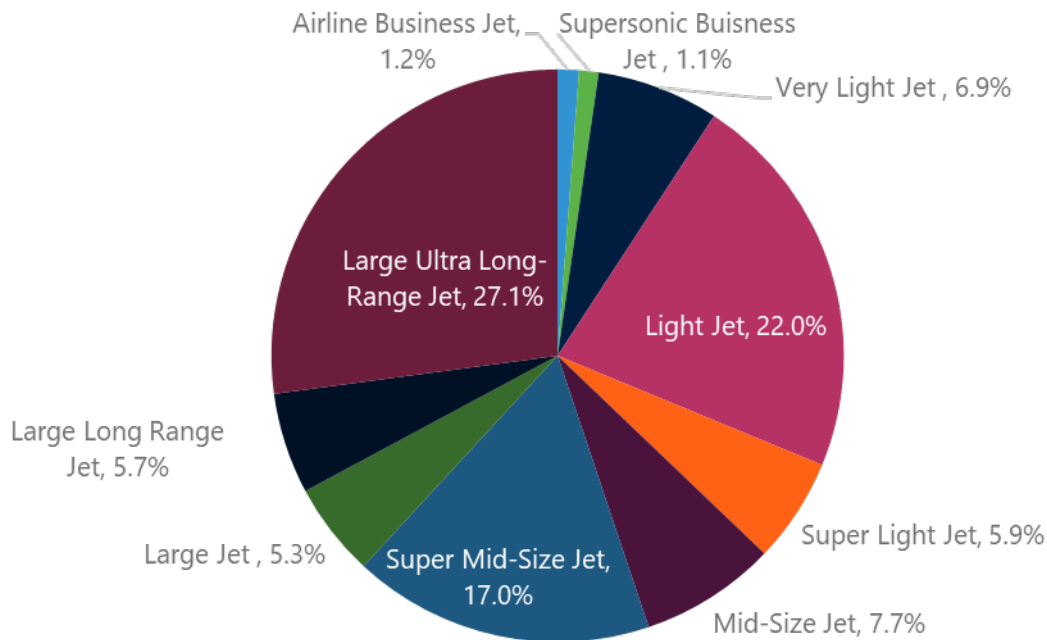


Bell Nexus

Photo Credit: Bell Flight <https://www.bellflight.com/products/bell-nexus>

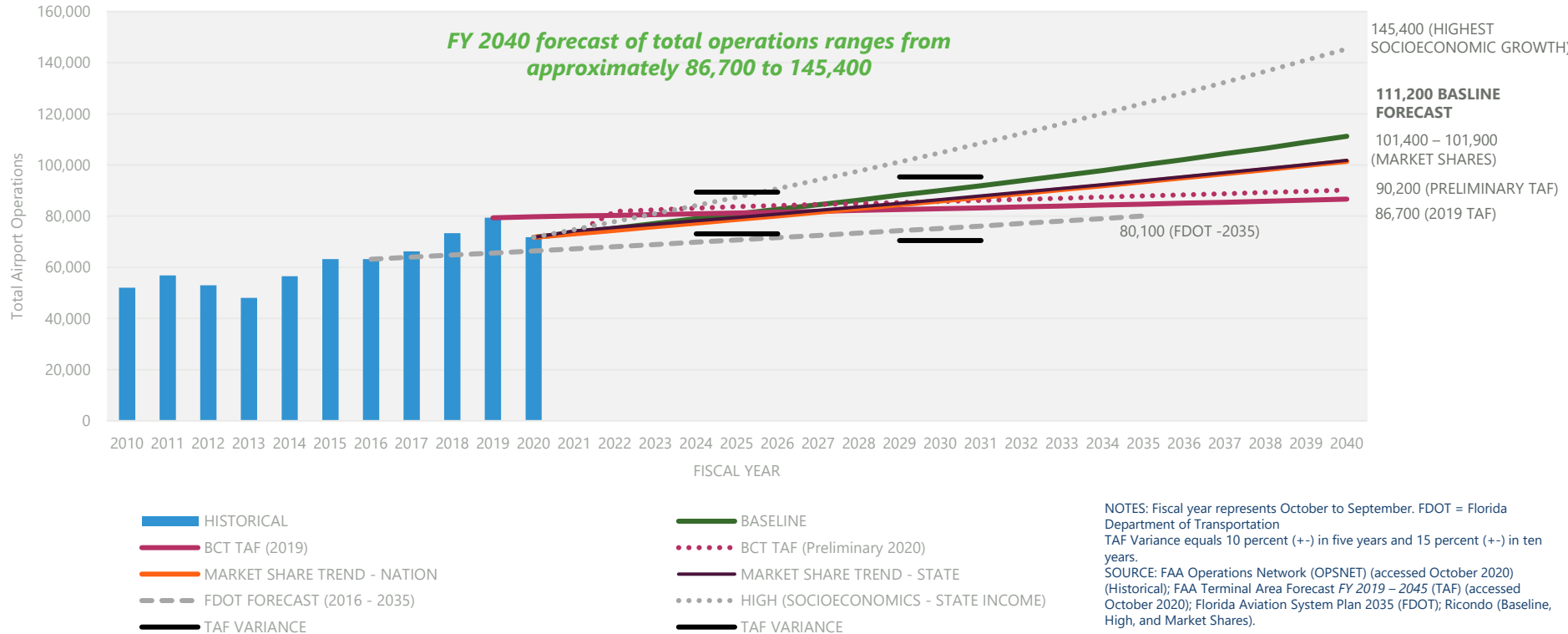
Industry Trends and Opportunities

JETNET iQ Business Jet Delivery Forecast: 2020-2029 (Share by Size Category)



SOURCE: Sherpa Report, <https://www.sherpareport.com/aircraft/2020-business-jet-forecasts.html> (accessed November 2020).

Operations Forecast Comparison

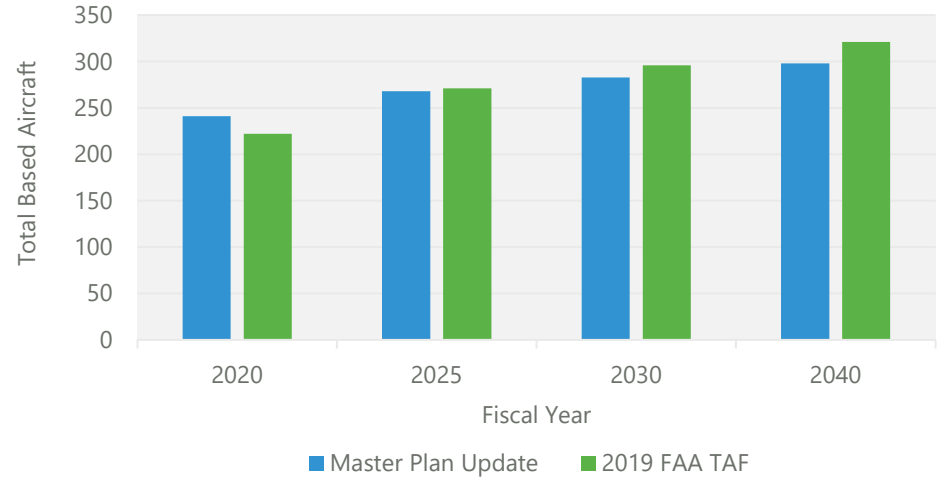


Based Aircraft Forecasts

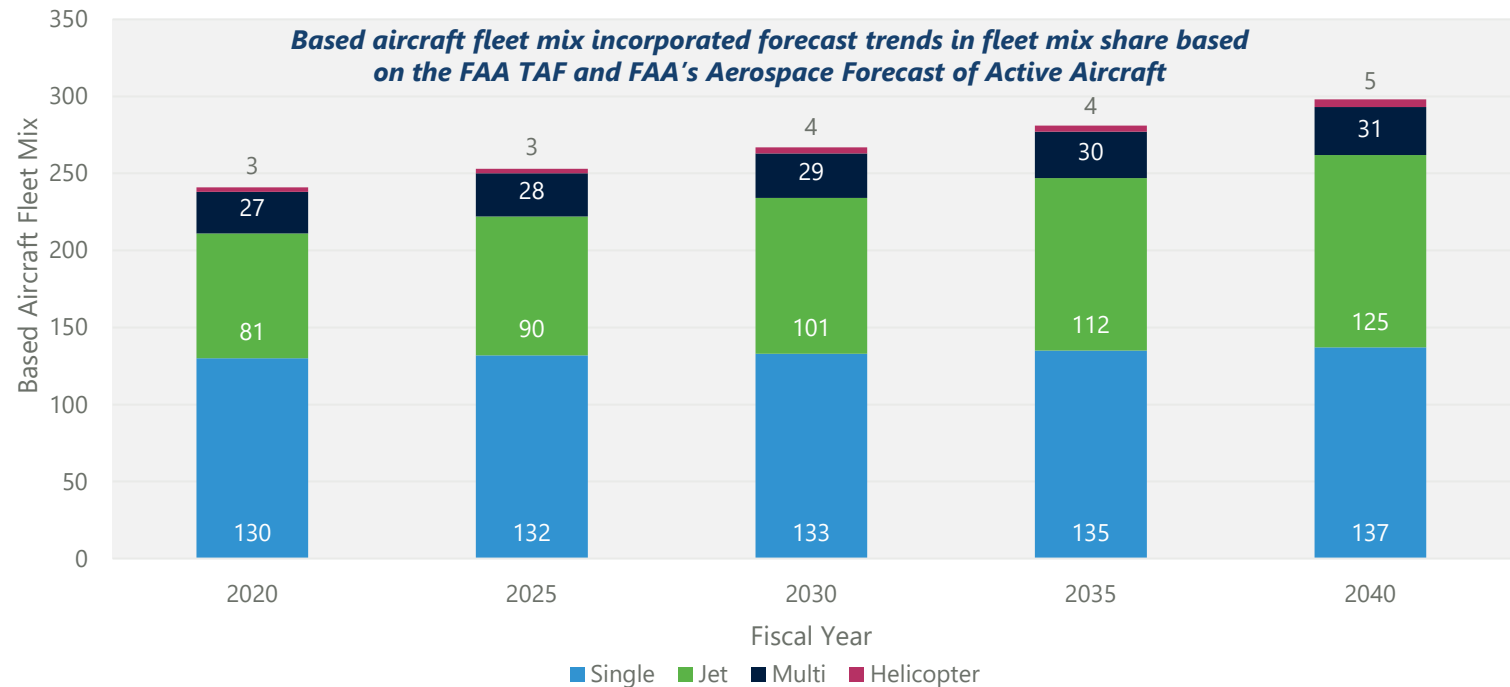
Fiscal Year	Master Plan Update	2019 FAA TAF
2020	241	222
2025	268	271
2030	283	296
2040	298	321
CAGR	1.1%	1.9%

NOTES:
CAGR – Compound Annual Growth Rate
Fiscal year represents October to September.

SOURCE: FAA Terminal Area Forecast FY 2019 – 2045 (TAF) (accessed October 2020); Ricondo & Associates, October 2020.



Based Aircraft Fleet Mix Forecast



NOTES: Fiscal year represents October to September.
SOURCE: FAA Terminal Area Forecast FY 2019 – 2045 (TAF) (accessed October 2020); FAA Aerospace Forecast FY 2020 – 2040 (accessed October 2020);; Ricondo.

Future Demand Summary (Pending FAA Approval)

CATEGORY	PROJECTED			
	FY 2020	FY 2025	FY 2030	FY 2040
Total Aircraft Operations	71,756	80,800	90,000	111,200
Itinerant	45,683	50,600	55,800	67,200
Local	26,073	30,200	34,200	44,000

Net Increase – 55%

- Airfield Infrastructure
- Itinerant Aircraft Parking Apron
- Fuel Farm Requirements
- General Aviation/FBO Terminal
- Vehicular Parking

Total Based Aircraft	241	253	267	298
Single Engine	130	132	133	137
Multi Engine	27	28	29	31
Jet	81	90	101	125
Helicopter	3	3	4	5

Net Increase – 24%

- Hangar Requirements
- Maintenance Requirements
- Based Aircraft Parking Apron


NOTE: FBO – Fixed Base Operator; FY – Fiscal Year (October 1 – September 30)
SOURCE: Ricondo & Associates, Inc., March 2021.

BCT's Critical Design Aircraft

Existing Airport Reference Code

- Airport design standards are determined by the Airport Reference Code (ARC)

AIRCRAFT APPROACH CATEGORY (AAC)	
AAC	APPROACH SPEED
A	Approach speed less than 91 knots
B	Approach speed 91 knots or more, but less than 121 knots
C	Approach speed 121 knots or more, but less than 141 knots
D	Approach speed 141 knots or more, but less than 166 knots
E	Approach speed 166 knots or more

 ARC / family of aircraft exceeding 500 annual operations

AIRPLANE DESIGN GROUP (ADG)		
ADG	WINGSPAN (FEET)	TAIL HEIGHT (FEET)
I	<49	<20
II	49 to <79	20 to <30
III	79 to <118	30 to <45
IV	118 to <171	45 to <60
V	171 to <214	60 to <66
VI	214 to <262	66 to <80

$$\text{AAC} + \text{ADG} = \text{ARC}$$

SOURCE: US Department of Transportation, Federal Aviation Administration, Advisory Circular 150/5300-13A, Change 1, *Airport Design*, February 26, 2014.

Representative Aircraft by Airport Reference Code

A-I

Cessna 172¹



B-I

Hawker Beechjet 400³



C-I

Learjet 45⁵



A-II

Cessna 208²



B-II

Embraer Phenom 4⁴



C-II

Bombardier Challenger 300⁶



SOURCES: Reference next slide.

Representative Aircraft by Airport Reference Code

D-I

Learjet 35⁷



C-III

Global Express⁹



D-II

Gulfstream 450⁸



D-III

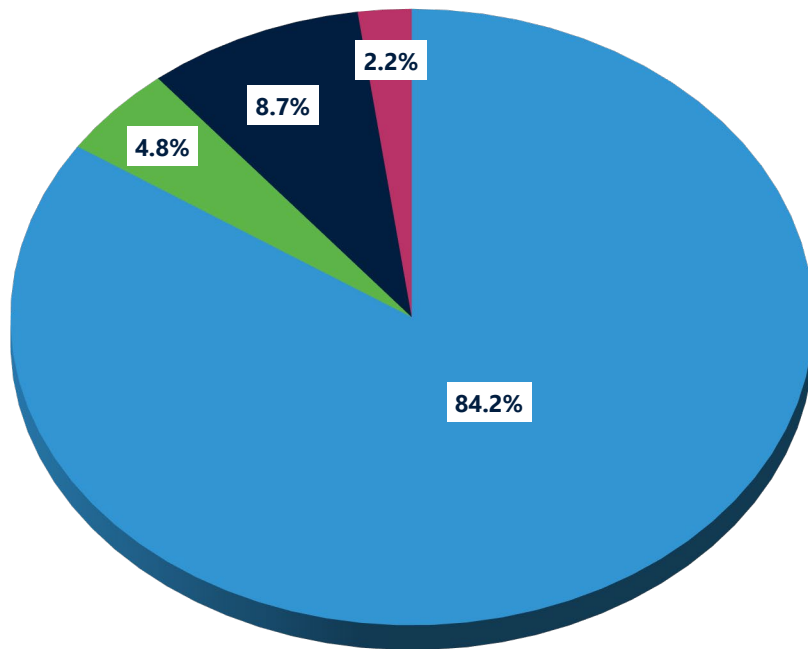
Gulfstream 550¹⁰



SOURCES:

1. BWI Aviation Insurance, November 16, 2019, <https://bwifly.com/aircraft-insurance/cessna-172-insurance-cost/>
2. Air Vectors, Dec 01, 2020, <http://www.airvectors.net/avcvan.html>
3. Nextant Aerospace, July 18, 2018, <https://www.nextantaerospace.com/faa-awards-nextant-aerospace-true-blue-powertm-lithium-ion-battery-installation-stc-for-beechjet-400a-and-hawker-400xp/>
4. Privatejet, <https://privatejetcardcomparisons.com/embraer-phenom-300/>
5. Business Jet Traveler, <https://www.bjtonline.com/aircraft/bombardier-learjet-45>
6. Magellan Jets, Bombardier Challenger 300, <https://magellanjets.com/travel/bombardier-challenger-300-html/>
7. Paramount Business Jets, Learjet 35, <https://www.paramountbusinessjets.com/aircraft>
8. Pro Aircraft Interiors, Gulfstream IV, https://proaircraftinteriors.com/portfolio_page/gulfstream-iv-sn-1337/
9. Controller, Bombardier Global Express XRS, <https://www.controller.com/listings/for-sale/bombardier/global-express-xrs/aircraft>
10. Paramount Business Jets, Gulfstream G550, <https://www.paramountbusinessjets.com/aircraft/gulfstream-g550.html>

CY 2019 Total Operations by Airport Reference Code



■ A-I/ B-I/ A-II/ B-II ■ C-I/ D-I ■ C-II/ D-II ■ C-III/ D-III

Note: C-V and D-V operations are excluded. Totals may be slightly lower than 100 percent due to rounding.
SOURCE: Boca Raton Airport Authority, CY 2019 ANOMS Database (accessed September 2020).

ARC	CY 2019 Operations
A-I/ B-I/ A-II/ B-II	68,109
B-III	75
C-I/ D-I	3,851
C-II/ D-II	7,059
C-III/ D-III	1,742
Helicopters	90
Total Operations (CY 2019)	80,926

■ ARC / family of aircraft exceeding 500 annual operations

Existing and Future Aircraft Operations by ARC

Airport Reference Code (ARC)	Representative Aircraft (Typical)	Existing Fleet Mix	Forecast Aircraft Operations Fleet Mix		
		FY 2020	FY 2025	FY 2030	FY 2040
A-I/B-I	Cessna 172, Cirrus SR22, Beechjet 400, Cessna 525	50,253	56,587	63,030	77,877
A-II/B-II	Pilatus PC-12, Cessna 208, Cessna 560X, Embraer Phenom 300	10,138	11,416	12,716	15,711
B-III	Dassault Falcon 7X	67	75	83	103
C-I/D-I	Raytheon Hawker 800, Learjet 60, Learjet 45, Learjet 35	3,415	3,845	4,283	5,292
C-II/D-II	Bombardier Challenger 300/350/600, Gulfstream IV	6,259	7,048	7,851	9,700
C-III/D-III	Bombardier Global 5000, Global Express, Gulfstream V/500/550, Gulfstream 650	1,545	1,739	1,937	2,394
N/A	Helicopter	80	90	100	124
Total		71,756	80,800	90,000	111,200

NOTE:
N/A – Not Applicable



ARC / family of aircraft exceeding 500 annual operations

SOURCE: Boca Raton Airport Authority, CY 2015-2019 ANOMS Database, September 2020.

BCT's Critical Design Aircraft

2004 Airport Enhancement Plan¹

Gulfstream III – C-II

- Approach Speed – 125 knots
- Wingspan – 77.8 feet



2020 Airport Master Plan

Gulfstream G550 (G500, GV-SP, G-V) - D-III

- Approach Speed – 150 knots
- Wingspan – 93.3 feet

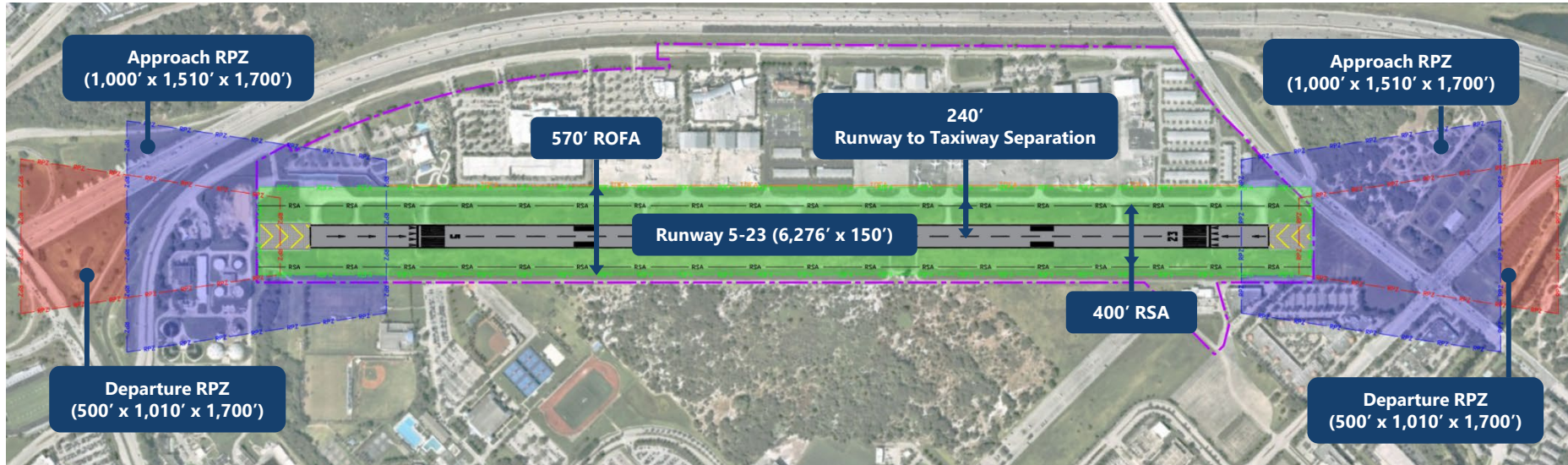


NOTE: 1. The 2004 Airport Enhancement Plan is considered the previous Airport Master Plan.

SOURCES: Boca Raton Airport Authority, CY 2015-2019 ANOMS Database, September 2020; Robb Report, <https://robbreport.com/motors/aviation/gulfstreams-g550-business-jet-flew-from-shanghai-to-seattle-in-10-5-hours-2850852/> (accessed November 18, 2020); Liberty Jet, https://www.libertyjet.com/private_jets/G-1159A (accessed January 11, 2021).

Runway Design Standards

Existing Conditions – ARC C-II



NOTES:

- Existing conditions based upon approach visibility minimums of not lower than $\frac{3}{4}$ mile.
- BCT has approved MOSs for ROFA length and width and runway centerline to taxiway centerline separation distance, EMAS on both ends, and ADG III operational restrictions.

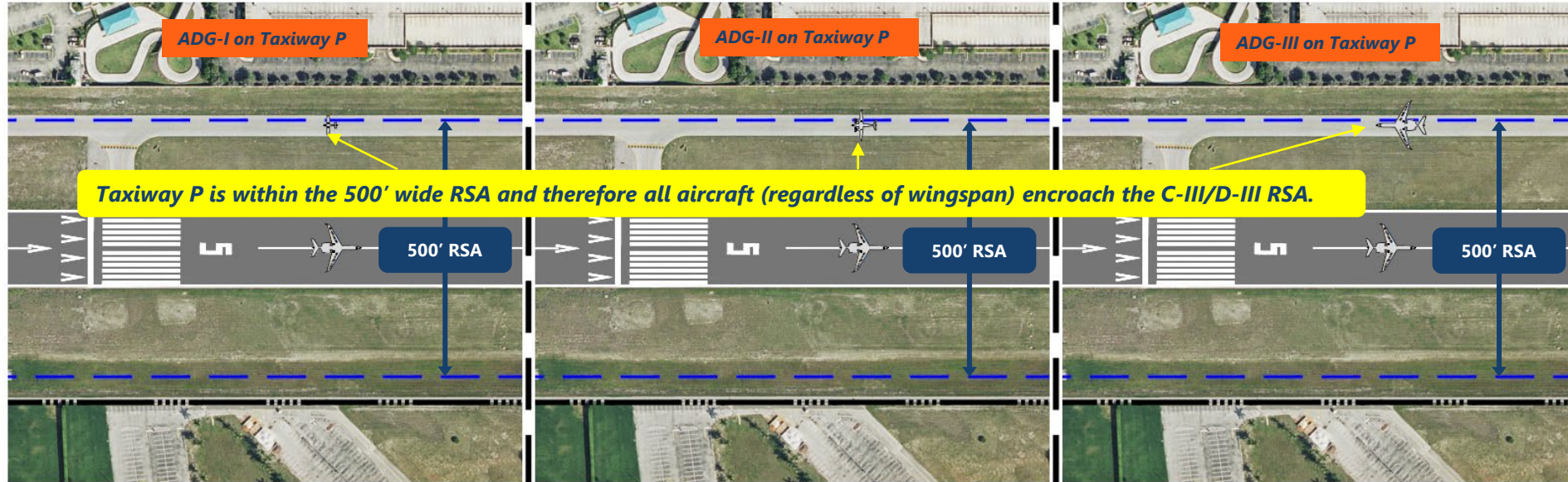
■	Runway Object Free Area
■	Approach Runway Protection Zone
■	Departure Runway Protection Zone

SOURCES: U.S. Department of Transportation, Federal Aviation Administration, Advisory Circular 150/5300-13A, *Airport Design*, February 2014; Ricondo and Associates, *Airport Layout Plan*, June 2018; Nearmap, November 2019 (aerial photo).

Runway Design Standards

DESIGN STANDARD	RUNWAY 5-23 DESIGN STANDARD		
	EXISTING CONDITIONS	C-III/D-III (FUTURE ARC)	DIFFERENCE
Runway Safety Area Width	400 ft	500 ft	100 ft
Runway Object Free Area Width	570 ft	800 ft	230 ft
Runway Safety and Object Free Area Length	Length beyond Runway 5: 300 ft Length beyond Runway 23: 350 ft <i>Mitigated with non-standard EMAS on both runway ends</i>	Length beyond Runway 5: 1,000 ft Length beyond Runway 23: 1,000 ft	To be Determined
Runway-Taxiway Centerline Separation	240 ft	400 ft	160 ft gap

C-III/D-III Runway Safety Area (500' Wide)

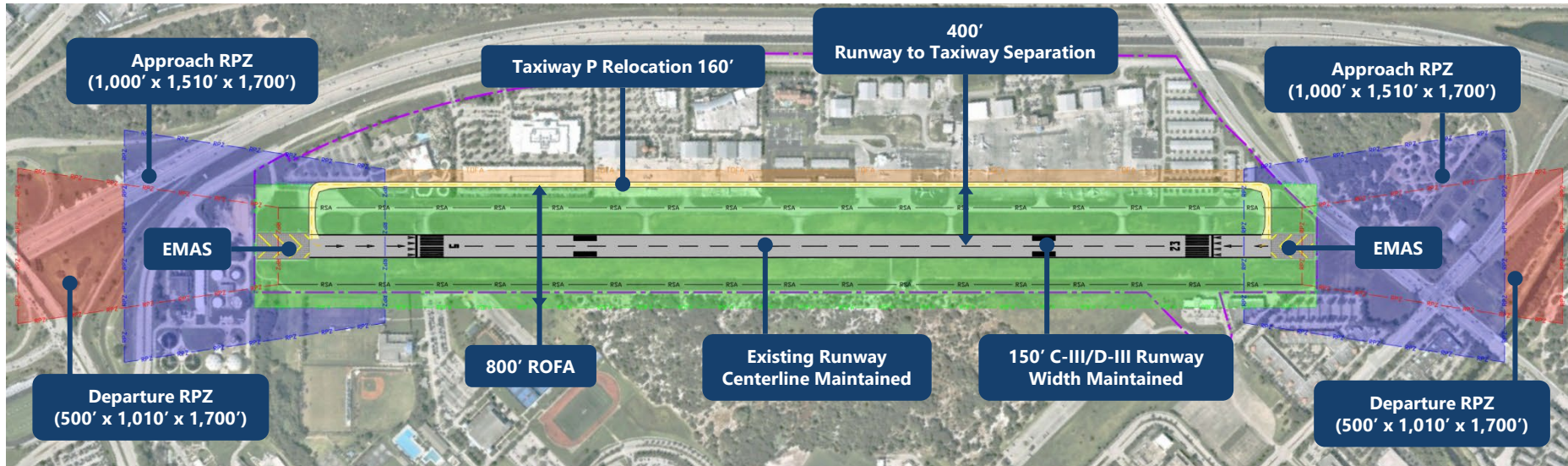


--- C-III/D-III Runway Safety Area (RSA)
 Airport Property Boundary

AIRPLANE DESIGN GROUP (ADG)	
ADG	WINGSPAN (FEET)
I	<49
II	49 to <79
III	79 to <118

SOURCES: Aerial Photography and Basemap: Boca Raton Airport Authority, May 2011; US Department of Transportation, Federal Aviation Administration, Advisory Circular 150/5300-13A, Change 1, *Airport Design*, February 26, 2014.

Preliminary Alternative – ARC C-III/D-III Relocate Taxiway



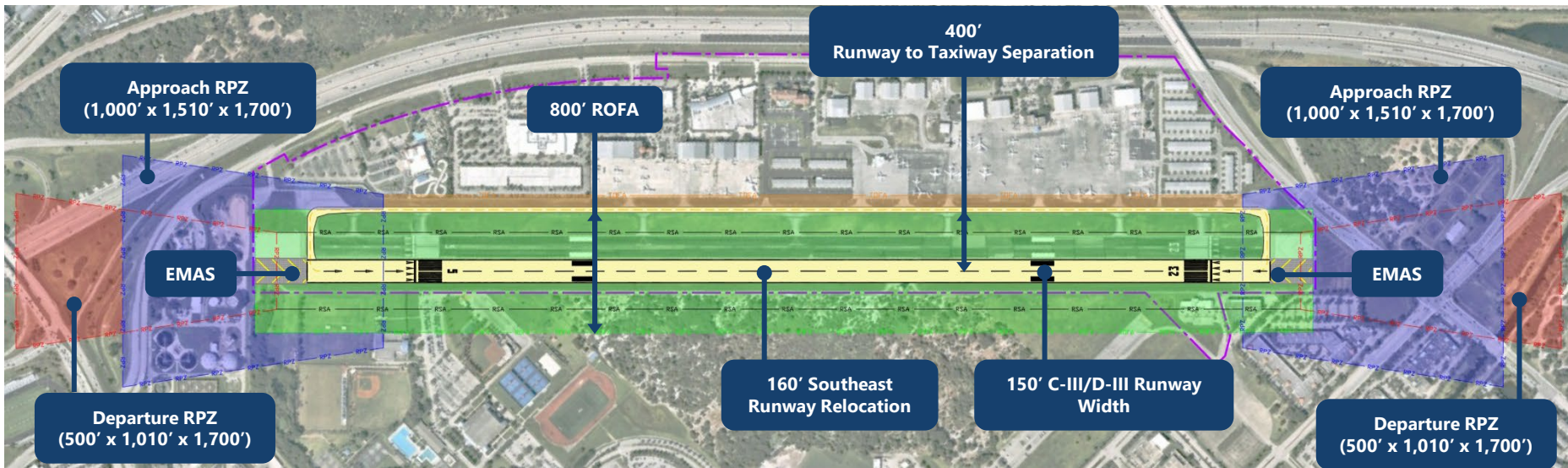
NOTES:

1. Preliminary alternative includes relocating Taxiway P 160' northwest.
2. Design standards based upon an approach visibility minimums not less than $\frac{3}{4}$ mile.

■	Runway Object Free Area
■	Approach Runway Protection Zone
■	Departure Runway Protection Zone

SOURCES: Federal Aviation Administration Advisory Circular 150/5300-13A, *Airport Design*, February 2014; Ricondo and Associates, *Airport Layout Plan*, June 2018; Nearmap, November 2019 (aerial photo).

Preliminary Alternative – ARC C-III/D-III Relocate Runway

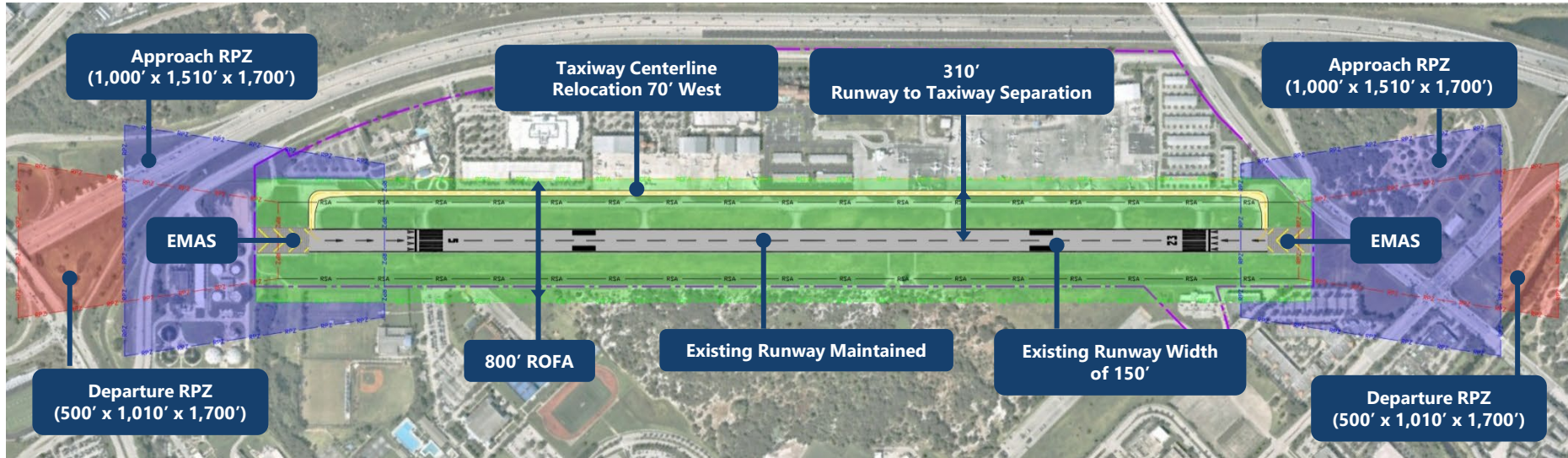


NOTES:

1. Preliminary alternative includes relocating Runway 5-23 160' southeast.
2. Design standards based upon an approach visibility minimums not less than $\frac{3}{4}$ mile.

SOURCES: Federal Aviation Administration Advisory Circular 150/5300-13A, *Airport Design*, February 2014; Ricondo and Associates, *Airport Layout Plan*, June 2018; Nearmap, November 2019 (aerial photo).

Preliminary Alternative – ARC C-III/D-III Relocate Taxiway (Non-Standard Separation Distance)



NOTES:

1. Preliminary alternative includes maintaining the existing runway and increasing the runway to taxiway separation from 240' to 310' by relocating the Taxiway P centerline 70' west.
2. Design standards based upon an approach visibility minimums not less than $\frac{3}{4}$ mile.

SOURCES: Federal Aviation Administration Advisory Circular 150/5300-13A, *Airport Design*, February 2014; Ricondo and Associates, *Airport Layout Plan*, June 2018; Nearmap, November 2019 (aerial photo).

Non-Standard Conditions

- Would require approval of Modification of Standards (MOS) by FAA
- Could lead to operational restrictions
- Per FAA Order 5300.1G, a MOS is not applicable for:
 - Non-standard RSA dimensions
 - Non-standard Obstacle Free Zone (OFZ) surfaces
 - Non-standard approach / departure surfaces
 - To match existing equipment owned by the airport
 - Impermissible land use within Runway Protection Zone (RPZ) limits
- All MOS associated with design standards expire no later than 5 years from the approved date. The airport must re-submit the MOS for review and approval if an extension is requested.

Aircraft Hangar Requirements

Demand/Capacity and Facility Requirements Assumptions

- Aircraft Hangar Space Requirement:
 - Aircraft Length * Wingspan + Clearance
- Share of Based Aircraft in Hangars:
 - Single Engine/Multi Engine: 80%
 - Jets: 70%
- Share of Itinerant Aircraft in Hangars:
 - Single Engine/Multi Engine: 0%
 - Large Jets: 10%
- Maintenance Hangar Space Requirement
 - \approx 20% of Conventional Hangar Space



Aircraft Hangar Requirements

Description	Actual	Projected		
	FY 2020	FY 2025	FY 2030	FY 2040
Hangars ^{1/}				
T-Hangars	149,500	180,000	182,000	190,000
Conventional Hangars	164,000	263,000	294,000	361,000
Maintenance Hangars	39,000	62,000	70,000	86,000
Total Hangars	352,500	505,000	546,000	637,000

NOTES:

FY – Fiscal Year

1/ Values are presented in square feet.

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

Apron Requirements

Demand/Capacity and Facility Requirements Assumptions

BASED APRON

- Aircraft Space Requirements:
 - Single Engine: 1,700 sq.ft. (Cessna 172)
 - Multi Engine: 2,900 sq.ft. (Cessna 421)
 - Jet: 7,700 sq.ft. (Falcon 2000*)
 - Helicopter: 1,600 sq.ft. (Bell 206/407)



**Representative mid-size corporate jet based at BCT*

Demand/Capacity and Facility Requirements Assumptions

ITINERANT/TRANSIENT APRON

- 10% of PMAD Arrivals for Busy Day
- 65% of PMAD Busy Day Arrivals on Ground
- Aircraft Space Requirements:
 - ADG-I: 5,400 sq.ft.
 - ADG-II: 13,500 sq.ft.
 - ADG-III: 28,700 sq.ft.
 - Helicopter: 3,200 sq.ft.



NOTE:

PMAD – Peak Month Average Day

Apron Requirements

Description	Actual	Projected		
	FY 2020	FY 2025	FY 2030	FY 2040
Apron ^{1/}				
Hangar Access	352,500	505,000	546,000	637,000
Based Aircraft	296,000	271,000	299,000	357,000
Itinerant Aircraft	708,000	718,000	786,000	954,000
Total Apron	1,356,500	1,494,000	1,631,000	1,948,000

NOTES:

FY – Fiscal Year

1/ Values are presented in square feet.

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

General Aviation/FBO Terminal and Vehicle Parking Requirements

Demand/Capacity and Facility Requirements Assumptions

FBO TERMINAL

- Peak Hour Operations:
 - 15.3% of Peak Day
- Passengers per Operation: 5
- Space Needs per Passenger: 125 sq.ft.
 - Common Waiting Area: 30 sq.ft.
 - FBO Retail: 15 sq.ft.
 - Public Convenience: 20 sq.ft.
 - Concessions: 20 sq.ft.
 - Circulation: 40 sq.ft.

AUTOMOBILE PARKING

- Stalls Required (for Aircraft Operators)
 - Peak Hour Aircraft Operations x 2.0 Stalls
- Stalls Required (for Office Users)
 - One parking stall per 175 sq.ft. of administrative space



General Aviation/FBO Terminal and Vehicle Parking Requirements

TERMINAL AREA REQUIREMENTS								
Year	Peak Month Average Day Operations	Peak Hour Operations (15.3% of Peak Day)	Passengers Per Operation	Total Passengers per Peak Hour	Space Needs Per Passenger (sq.ft.)	Total Space Needs (sq.ft.)	Existing (sq.ft.)	Surplus / (Deficit)
2025	278	43	5	213	125	27,000	31,000	4,000
2030	309	47	5	237	125	30,000	31,000	1,000
2040	382	59	5	293	125	37,000	31,000	(6,000)

STANDARD AUTOMOBILE PARKING REQUIREMENTS							
For Aircraft Operators			For Administrative Space Users				
Year	Peak Hour Aircraft Operations	Automobile Parking Spaces Required	Estimated FBO Administrative Space (sq.ft.)	Automobile Parking Spaces Required	Total Automobile Parking Spaces Required	Existing Parking Spaces	Surplus / (Deficit) [# of Stalls]
2025	43	85	79,000	451	537	526	(11)
2030	47	95	83,000	474	569	526	(43)
2040	59	117	91,000	520	637	526	(111)

Summary of Requirements

General Aviation Facility Deficiency Summary

General Aviation Facility Description ^{1/}	FY 2025	FY 2030	FY 2040
Hangars			
T-Hangars	(30,500)	(32,500)	(40,500)
Conventional Hangars	(99,000)	(130,000)	(197,000)
Maintenance Hangars	(23,000)	(31,000)	(47,000)
Subtotal Hangars	(152,500)	(193,500)	(284,500)
Apron			
Hangar Access	(152,500)	(193,500)	(284,500)
Based Aircraft		(3,000)	(61,000)
Itinerant Aircraft	(10,000)	(78,000)	(246,000)
Subtotal Apron	(162,500)	(274,500)	(591,500)
General Aviation / FBO Terminal			(6,000)
Vehicle Parking	(3,000)	(14,000)	(36,000)
Landscaping/Drainage	(72,000)	(120,000)	(229,000)
Grand Total	(390,000)	(602,000)	(1,147,000)
Grand Total in Acres	(9.0)	(13.8)	(26.3)

NOTES:

FBO – Fixed Base Operator

FY – Fiscal Year (October 1 – September 30)

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

SOURCE: Ricondo & Associates, Inc., March 2021

Next Steps

Next Steps

- Additional TAC comments accepted through April 30, 2021. Please submit to bctmpu@ricondo.com
- Address FAA comments on the aviation activity forecasts
- Finalize the analysis of future facility requirements
- Continue the development of airport development alternatives

THANK YOU

