



PALM BEACH COUNTY PARK (LANTANA) AIRPORT

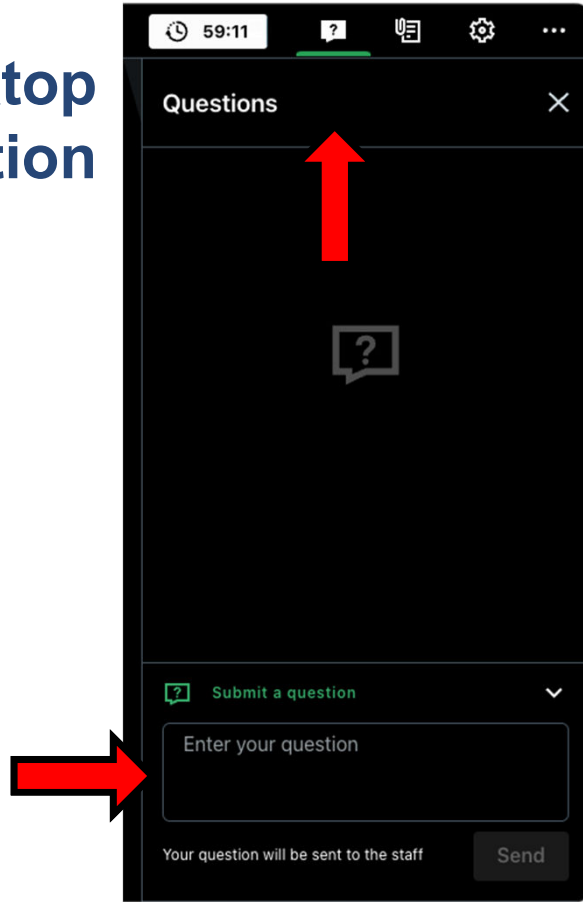
LNA Safety Assessment Interim Community/Technical Stakeholder Briefing

October 5, 2023 (6:30 p.m. – 8:30 p.m.)

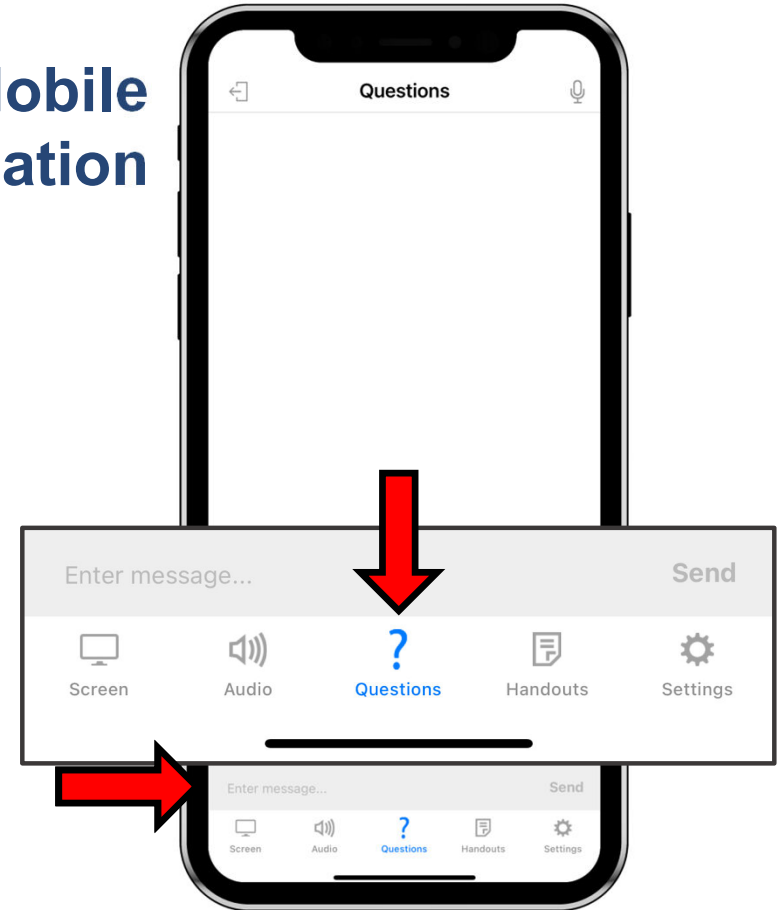
Task: I-23-LNA-R-010

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Agenda

- Introductions and Meeting Overview
- Jet Aircraft Fleet Analysis
- Airfield Design Standards Assessment
- Airfield Pavement Strength Analysis
- Next Steps
- Public/Stakeholder Comments



A small propeller plane, registration N62281, is on a runway. In the background, there are several hangars and a line of trees under a cloudy sky. A blue banner with white text is overlaid at the bottom.

INTRODUCTIONS AND MEETING OVERVIEW

Introductions

- **Palm Beach County Department of Airports**
 - Laura Beebe (Director of Airports)
 - Gary Sypek (Senior Deputy Director of Airports)
 - Michael Giambrone (Director of Airports Planning)
- **Ricondo & Associates, Inc.**
 - Dave Ramacorti C.M. (Project Manager)

Airport Sponsor and Consultant Team



- Palm Beach County Department of Airports (Airport Sponsor)



- Prime Consultant
- Overall Task Management
- Safety Assessment



- Airfield Pavement Strength Analysis
- Obstruction Evaluations
- Cost Estimates



- Federal Contract Tower – Safety Benefit Cost Analysis



- Stakeholder Meetings
- Logistical Support

Meeting Overview

- **Meeting Purpose:**

- Brief stakeholders/community on status of the LNA Safety Assessment and technical summary of the Airfield Assessment

- **LNA Safety Assessment Objectives:**

- Examine potential implications associated with the introduction of jet operations at LNA
- Examine interaction of jet operations at LNA and nearby airports
- Provide recommendations regarding possible mitigation measures to enhance operational safety



Initial Public/Stakeholder Briefing Recap

- **Meeting Date:**
 - July 18, 2023
- **Meeting Location:**
 - Palm Beach State College, Lake Worth Campus
- **Meeting Purpose:**
 - Brief stakeholders/community and solicit input that could inform the LNA Safety Assessment
- **Discussion Topics:**
 - Airport Overview
 - Historical Timeline of Jet Restrictions at LNA
 - Jet Operations Since Denial of Appeal
 - Aviation Safety Roles and Responsibilities
 - Study Overview
 - Public/Stakeholder Comments
- **Study Documents:**
 - <https://www.pbia.org/about/general-aviation/park-airport/>



Other Ongoing LNA Studies

LNA Part 150 Noise Study (www.inapart150.com)

Estimated Completion: Spring 2024

- Title 14 CFR Part 150, *Airport Noise Compatibility Planning*
- Provides a formal process for addressing airport noise and incompatible land uses
- Designed to identify significant existing and future noise impacts from aircraft operations within areas surrounding the airport
- Proposes steps for consideration by FAA to address impacts
- Voluntary effort undertaken by the airport sponsor under FAA guidelines
- Two elements:
 - Noise Exposure Map Report – Shows existing and future aircraft sound exposure levels
 - Noise Compatibility Program – Recommends measures to address aircraft noise

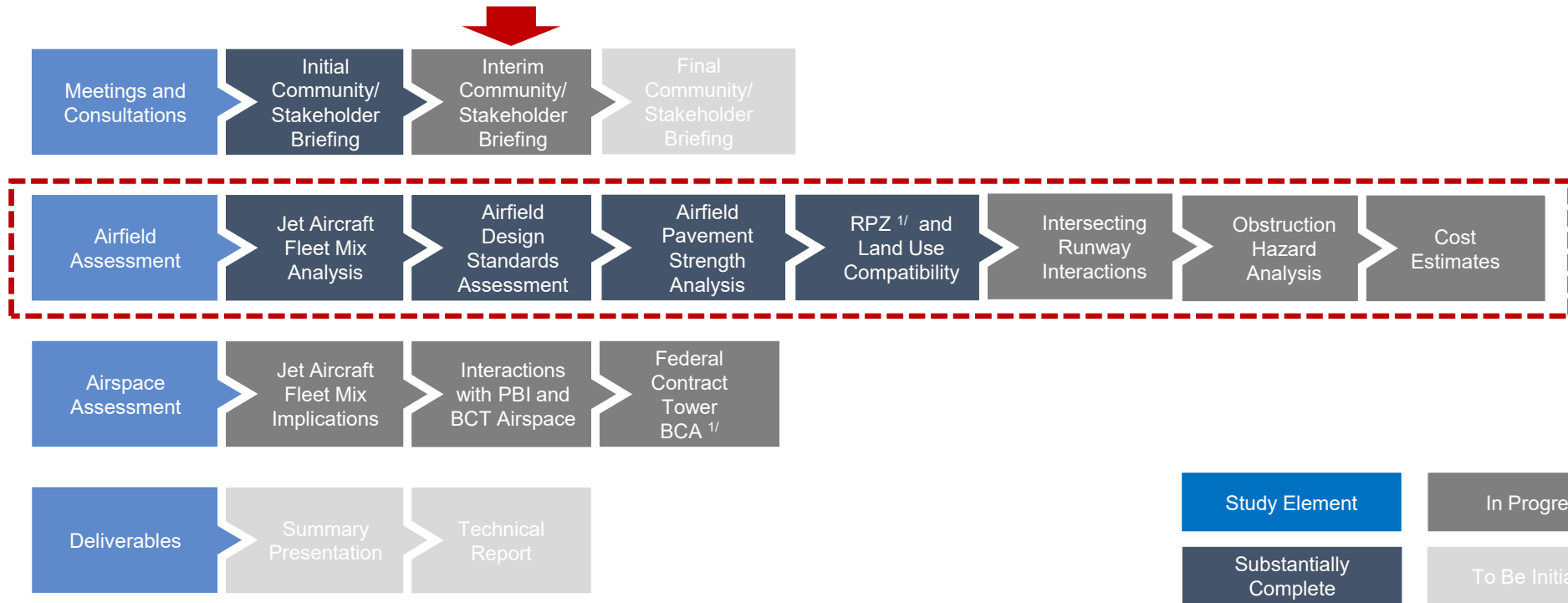
LNA Master Plan Update

Estimated Completion: Fall 2024

- **Definition:** Comprehensive study of the airport describing development plans to meet future aviation demand
- **Function:** Support the modernization or expansion of the airport; serves as the sponsor's strategy and 'blueprint' for development of the airport
- **Goal:** Provide the framework to guide future airport development that will cost-effectively satisfy aviation demand, while considering potential environmental impacts
- **Objectives:**
 - Justify proposed development through evaluation of concepts and alternatives
 - Provide a graphic representation of future airport development
 - Establish a realistic implementation and financial plan



Safety Assessment Study Status

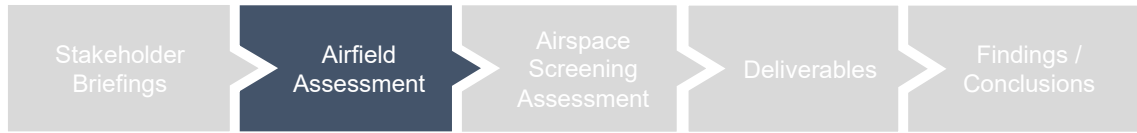


Note:

1/ RPZ – Runway Protection Zone

2/ BCA – Benefit Cost Analysis

LNA Safety Assessment Elements



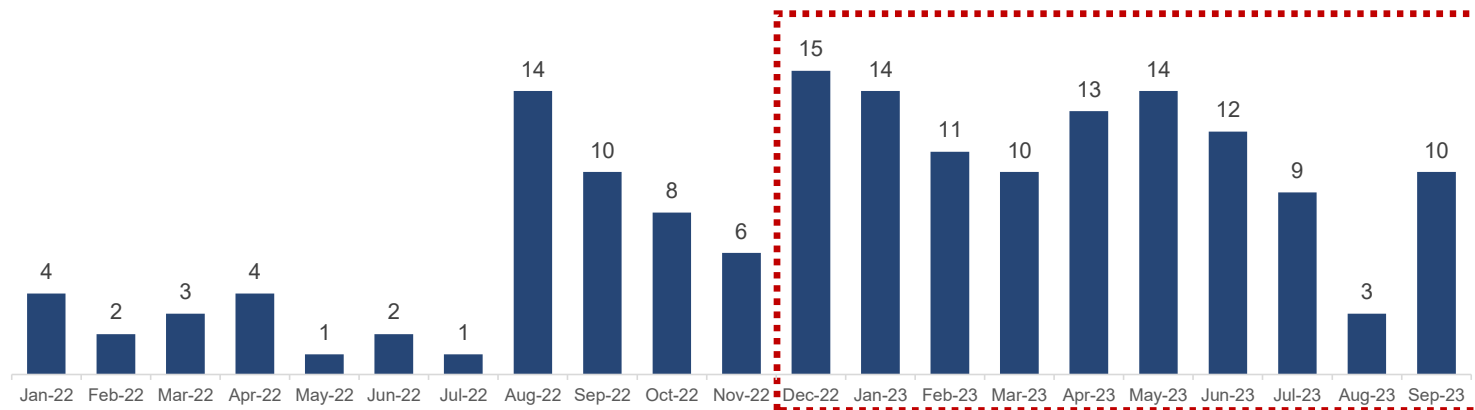
Subtask	Elements
Jet Aircraft Fleet Mix Analysis	<ul style="list-style-type: none"> Identify jet aircraft that could operate at LNA over 20-year period Aircraft performance evaluation (runway length requirements)
Airfield Design Standards Review	<ul style="list-style-type: none"> Verify compliance of existing runways and taxiways with FAA design standards
Airfield Pavement Strength Analysis	<ul style="list-style-type: none"> Determine ability of existing pavement to accommodate current/projected jet fleet
Runway Protection Zone (RPZ) and Land Use Compatibility	<ul style="list-style-type: none"> Existing and future RPZs evaluated to identify potential incompatible land uses Identify mitigation measures to reduce/eliminate incompatible land uses within the RPZs

Subtask	Elements
Intersecting Runway Interactions	<ul style="list-style-type: none"> Evaluate runway use for jet aircraft Interaction of jet aircraft with non-jet aircraft traffic patterns
Obstruction Hazard Analysis	<ul style="list-style-type: none"> Obstruction surveys conducted for LNA Master Plan Update Airspace surfaces evaluated for potential penetrations by obstacles
Cost Estimates	<ul style="list-style-type: none"> Capital expenditures associated with mitigation Potential acquisition of incompatible properties within RPZs



JET AIRCRAFT FLEET MIX ANALYSIS

Monthly Jet Aircraft Operations: January 2022 – September 2023



Operations Since
Denial of Appeal

Jet Operations at LNA:

- 2022: 70 operations
- 2023: 96 operations (YTD)
- Total: 166 operations

Notes:

One operation = one landing or one takeoff

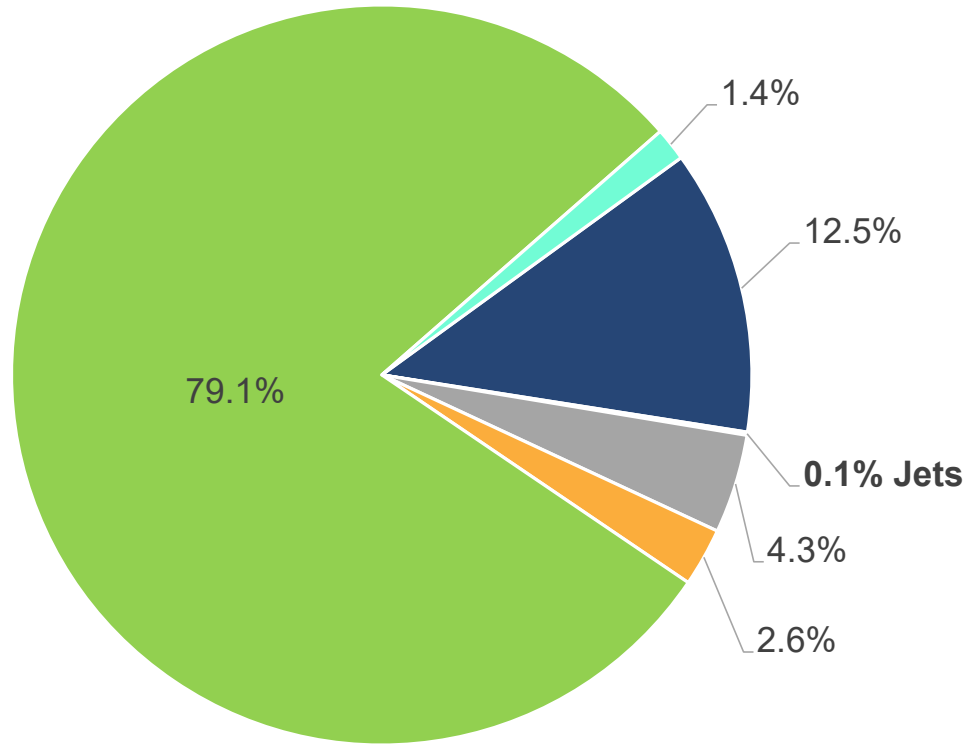
2023 operations through September 30, 2023.

Since the issuance Denial of Appeal of the jet ban in November 2022, there have been an average of approximately 11 jet operations per month at LNA.

Source: Palm Beach County Department of Airports, Airport Noise Monitoring System, January 1, 2022, through September 30, 2023.



Aircraft Fleet Composition Since Denial of Appeal (November 18, 2022)



Notes:

Includes touch-and-go operations








As of September 30, 2023, there had been 112 jet operations at LNA since the Denial of Appeal of the jet ban at LNA.

- Helicopter
- Jet
- Multi Engine Piston
- Other/Unknown
- Single Engine Piston
- Turboprop

Source: Palm Beach County Department of Airports, Airport Noise Monitoring System, November 18, 2022, through September 30, 2023.






Jet Aircraft Operating at LNA (2022-2023)

Manufacturer	Eclipse	Cirrus	Cessna	Cessna	Cessna	Cessna	Cessna	Bombardier	Total
Model	Eclipse 500	Vision SF50	Citation Mustang	Citation CJ1 / M2	Citation I/SP	Citation CJ3	Citation II / 550	Learjet 31	
Max Takeoff Weight	5,950 lbs.	6,000 lbs.	8,645 lbs.	10,600 lbs.	11,850 lbs.	13,870 lbs.	14,800 lbs.	15,500 lbs.	
Wingspan	37.25 ft	38.67 ft	43.17 ft	46.92 ft	47.08 ft	53.33 ft	52.17 ft	43.83 ft	
Approach Speed	90 knots	87 knots	105 knots	108 knots	107 knots	108 knots	112 knots	125 knots	
									
2022 Operations	0	6	0	6	44	0	8	6	70
2023 Operations	2	48	2	8	32	2	2	0	96

Sources: HMMH, LNA Part 150 Study – Request for Review and Approval of Palm Beach County Park Airport Part 150 Study Aviation Forecast, April 3, 2023 (2022 fleet mix and operations); Palm Beach County Department of Airports, Airport Noise Monitoring System, January 2023-September 2023 (2023 fleet mix and operations); Federal Aviation Administration Aircraft Characteristics Database (aircraft characteristics)

Other Jet Aircraft That Could Operate at LNA

Type	Pilatus PC-24		Embraer Phenom 100		Cessna Citation V Ultra	
Max Takeoff Weight	17,968 lbs.		10,582 lbs.		16,300 lbs.	
Wingspan	55.75 ft		40.33 ft		52.17 ft	
Approach Speed	105 knots		100 knots		107 knots	

Source: Federal Aviation Administration Aircraft Characteristics Database (aircraft characteristics)

Federal Aviation Regulations (FARs) Governing Jet Operations

- **FAR Part 91, *General Operating and Flight Rules*:**

- 91.3, Responsibility and Authority of Pilot in Command, (a) The pilot in command of an aircraft is directly responsible for and is the final authority as to the operation of that aircraft.
- 91.103, Preflight Action, Each pilot in command shall, before beginning a flight, become familiar with all available information concerning that flight. This information must include—
 - (b) For any flight, runway lengths at airports of intended use, and the following takeoff and landing distance information:
 1. For civil aircraft for which an approved Airplane or Rotorcraft Flight Manual containing takeoff and landing distance data is required, the takeoff and landing distance data contained therein; and
 2. For civil aircraft other than those specified in paragraph (b)(1) of this section, other reliable information appropriate to the aircraft, relating to aircraft performance under expected values of airport elevation and runway slope, aircraft gross weight, and wind and temperature.



Runway Length Requirements

- **Aircraft Performance:**

- Landing Distance
- Takeoff Distance
- Aircraft Range Capabilities

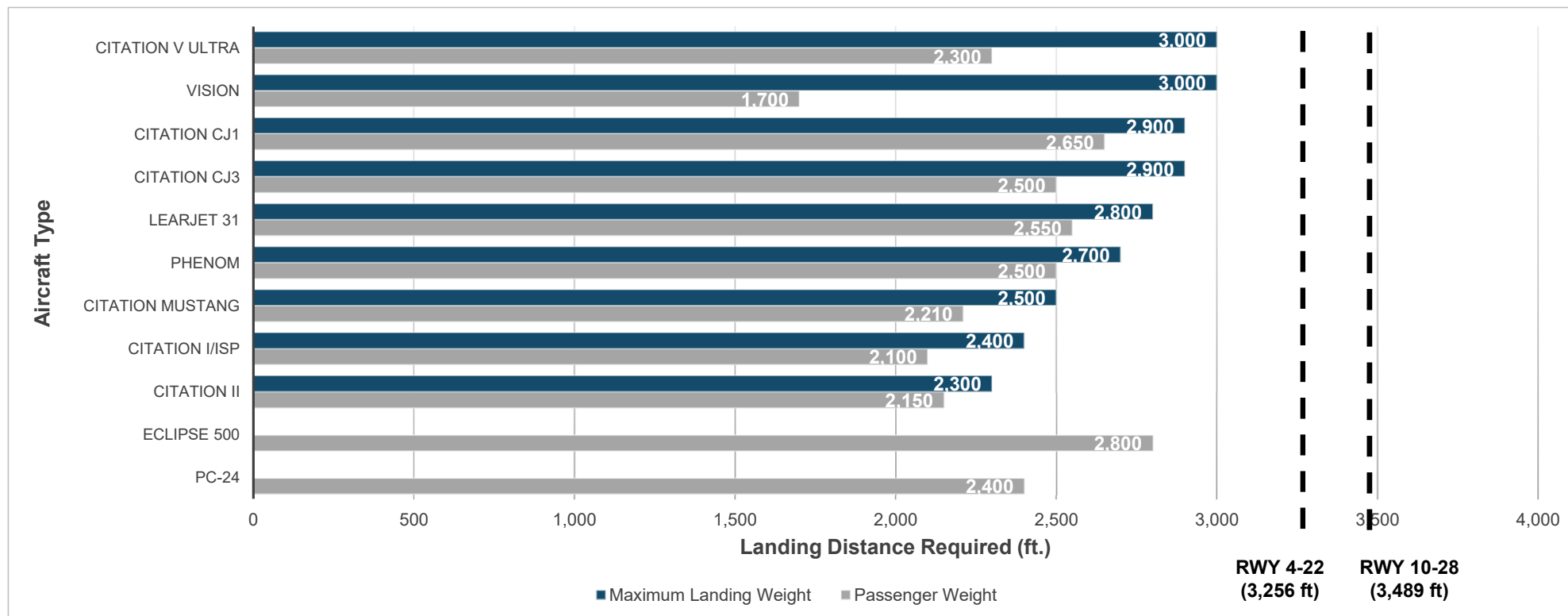
- **Variables Affecting Runway Length Requirements:**

- Federal Aviation Regulations
- Aircraft/Engine Performance
- Aircraft Weight
- Atmospheric Conditions (temperature, atmospheric pressure, prevailing winds, etc.)
- Airport Elevation
- Pavement Surface Condition (wet vs. dry runway, paved vs. turf)
- Pilot Proficiency and Certification
- Runway Gradient



Landing Runway Length Analysis (FAR Part 91)

Dry Runway, 86 ° Fahrenheit

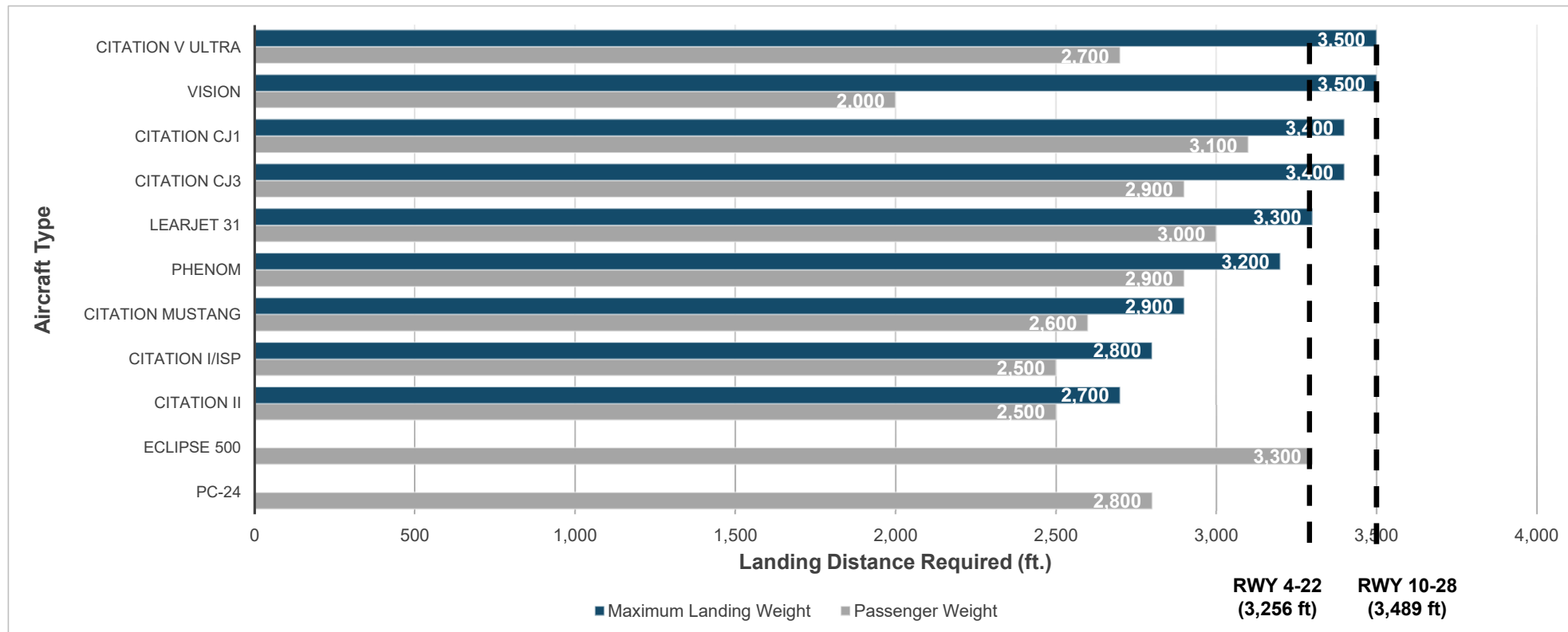


Source: Aircraft Performance Comparator, Conklin & de Decker, June, 2023. Aircraft Manufacturer Data, obtained September 5, 2023; Palm Beach County Department of Airports, Airport Noise Monitoring System, November 18, 2022, through June 30, 2023.



Landing Runway Length Analysis (FAR Part 91)

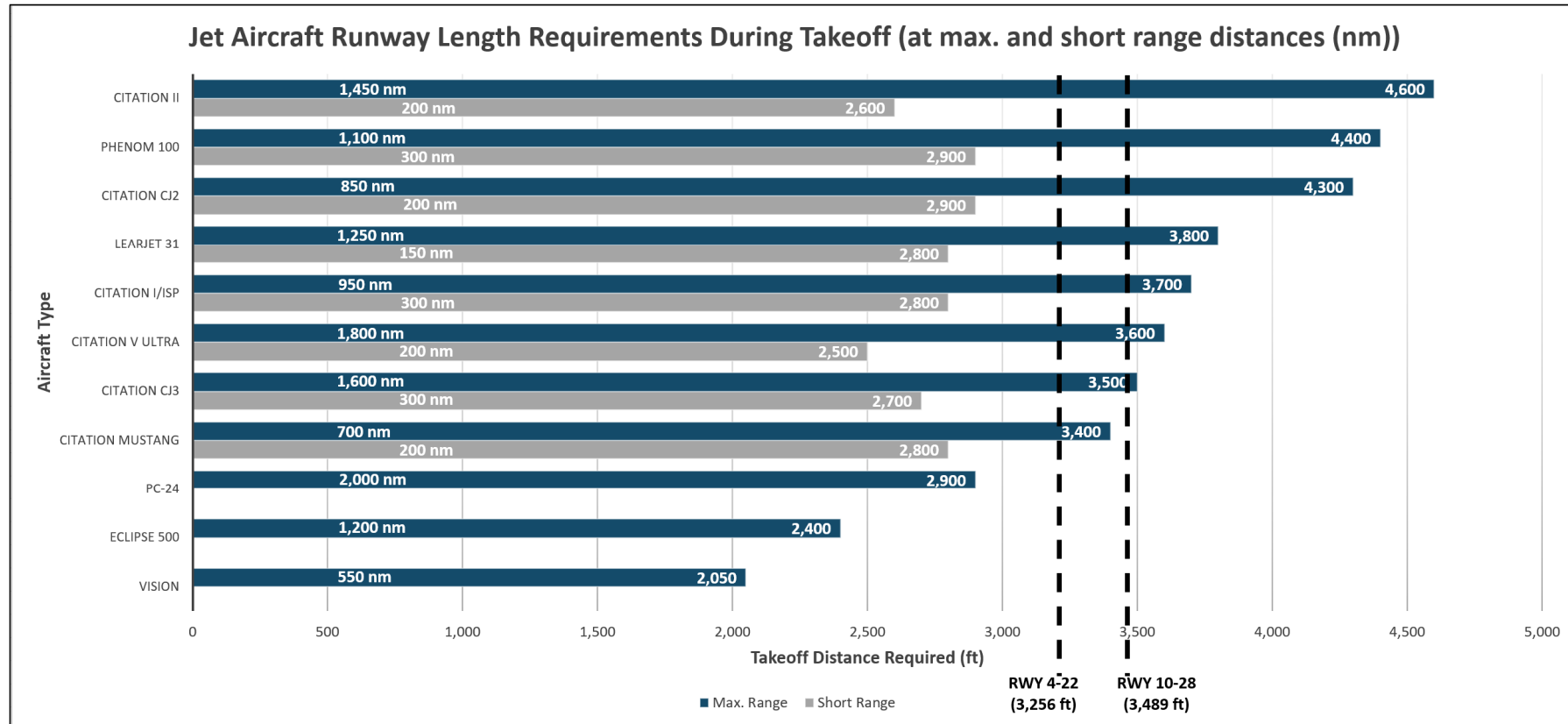
Wet Runway, 86° Fahrenheit



Source: Aircraft Performance Comparator, Conklin & de Decker, June, 2023. Aircraft Manufacturer Data, obtained September 5, 2023; Palm Beach County Department of Airports, Airport Noise Monitoring System, November 18, 2022, through June 30, 2023.



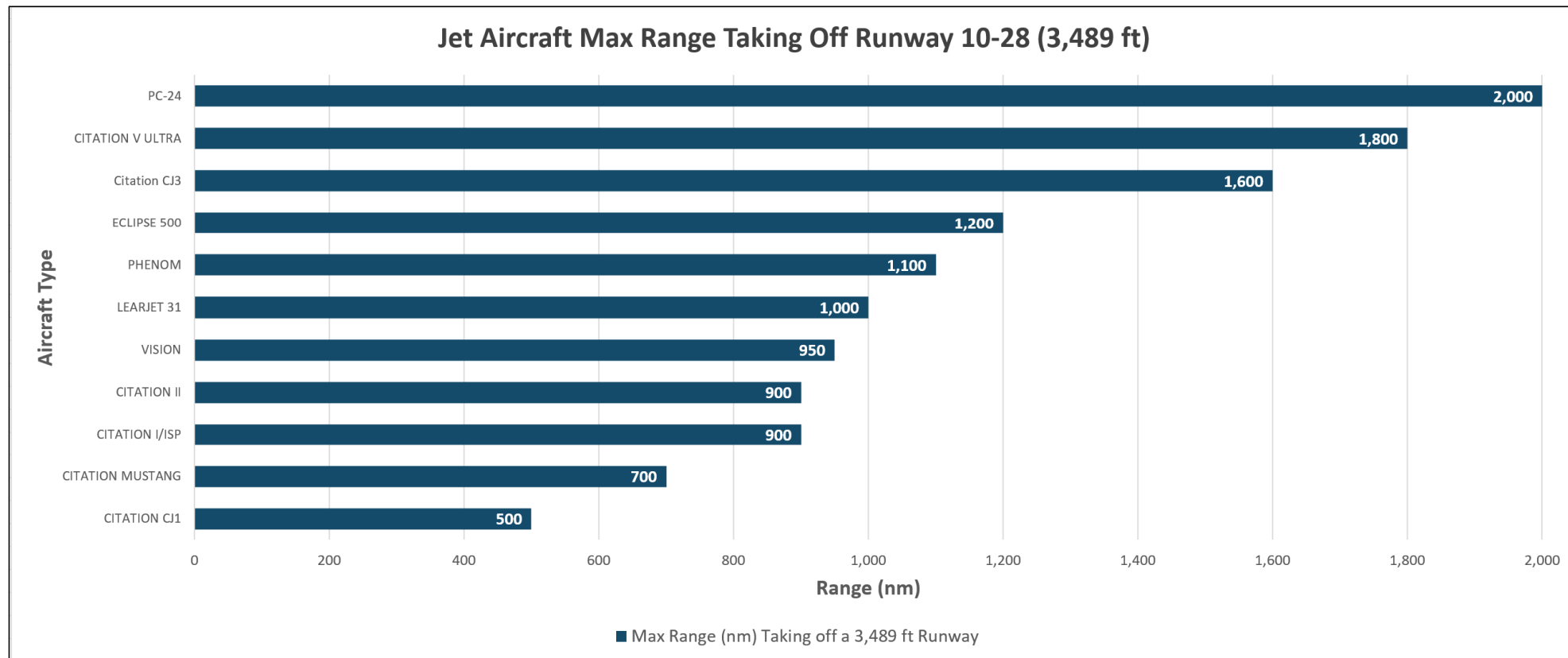
Takeoff Runway Length Analysis (Balanced Field Length)



Source: Aircraft Performance Comparator, Conklin & de Decker, June, 2023. Aircraft Manufacturer Data, obtained September 5, 2023; Palm Beach County Department of Airports, Airport Noise Monitoring System, November 18, 2022, through June 30, 2023.



Jet Aircraft Range Capabilities at LNA



Source: Aircraft Performance Comparator, Conklin & de Decker, June, 2023. Aircraft Manufacturer Data, obtained September 5, 2023; Palm Beach County Department of Airports, Airport Noise Monitoring System, November 18, 2022, through June 30, 2023.



Conclusions

- **Fleet Mix**

- Jets represent a small percentage (approximately 0.1%) of the total aircraft fleet operating at LNA
- There have been eight (8) known jet types that have operated at LNA in 2022 and 2023
- Most jets operating at LNA are small jets with a maximum takeoff weight under 12,500 pounds

- **Runway Length Requirements**

- Given existing runway lengths, the maximum allowable landing weight for some of the jets that could operate at LNA may be restricted (wet runway conditions).
- Given existing takeoff runway lengths at LNA, many of the jets operating at LNA cannot operate at maximum takeoff weight/range.
- Existing takeoff runway lengths at LNA are sufficient to operate at a range of at least 500 nautical miles.



A wide-angle photograph of an airfield under a cloudy sky. In the middle ground, a small, light-colored aircraft with the registration 'N6228T' is on the tarmac. To the right, there is a row of white hangars. The foreground is a grassy field. A blue horizontal bar is overlaid on the lower half of the image, containing the title text.


AIRFIELD DESIGN STANDARDS ASSESSMENT

Airfield Design Standards Assessment

Purpose – Compare existing runway characteristics to FAA design standards



Source: GoogleEarth Pro Imagery, June 2023. Palm Beach County Department of Airports, LNA Airport Layout Plan, 2010.



U.S. Department
of Transportation
Federal Aviation
Administration

Advisory Circular

A/B – I Small Aircraft

A/B – II Small Aircraft

Subject: Airport Design

Date: 3/31/2022
Initiated By: AAS-100

AC No: 150/5300-13B
Change:

- 1 **Purpose.**
This Advisory Circular (AC) contains the Federal Aviation Administration's (FAA) standards and recommendations for airport design.
- 2 **Cancellation.**
This AC cancels AC 150/5300-13A, *Airport Design*, dated September 28, 2012.
- 3 **Applicability.**
The FAA recommends using the standards and guidelines in this AC for application at civil airports. This AC does not constitute a regulation, is not mandatory, and is not legally binding in its own right. It will not be relied upon as a separate basis by the FAA for affirmative enforcement action or other administrative penalty. Conformity with this AC is voluntary, except for the projects described in subparagraphs 3 and 4 below:
 1. Use of these standards and guidelines are practices the FAA recommends for establishing an acceptable level of safety, efficiency, and capacity when designing and implementing airport development projects at civil airports.
 2. This AC provides one, but not the only, acceptable means of meeting the requirements of 14 Code of Federal Regulations (CFR) **Part 139, Certification of Airports.**
 3. Use of these standards is mandatory for projects funded under certain Federal grant assistance programs including, but not limited to, the Airport Improvement Program (AIP). See **Grant Assurance 534**. Airport sponsors should familiarize themselves with the obligations and assurances that apply to each grant program from which they obtained grant funds.
 4. This AC is mandatory, as required by regulation, for projects funded by the Passenger Facility Charge (PFC) program. See **PFC Assurance #9**.

VISIBILITY MINIMUMS			
	Greater than 1 mile	Not Lower than 3/4 mile	Lower than 3/4 mile
to paragraph 3.3 and 3.7.1	75 ft.	75 ft.	100 ft.
to paragraph 3.3.1	10 ft.	10 ft.	10 ft.
to paragraph 3.3.1	95 ft.	95 ft.	120 ft.
to paragraph 3.3.1	50 ft.	150 ft.	150 ft.
to paragraph 3.3.1	13 knots	13 knots	13 knots

to paragraph 3.1.1			
	N/A	200 ft.	800 ft.
A	N/A	200 ft.	800 ft.
B	1,700 ft.	2,500 ft.	1,000 ft.
C	1,000 ft.	1,000 ft.	1,750 ft.
D	1,510 ft.	1,000 ft.	1,750 ft.
E	1,000 ft.	1,000 ft.	1,750 ft.
F	500 ft.	500 ft.	1,750 ft.
G	700 ft.	700 ft.	1,750 ft.

to paragraph 3.9			
	125 ft.	175 ft.	300 ft.
H	125 ft. <td>175 ft. <td>300 ft. </td></td>	175 ft. <td>300 ft. </td>	300 ft.
I	240 ft. <td>175 ft. <td>300 ft. </td></td>	175 ft. <td>300 ft. </td>	300 ft.

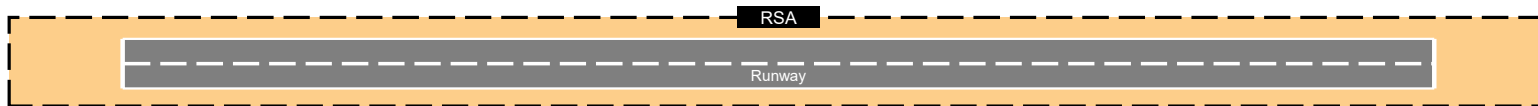
Refer to paragraph 5.4.1.2
Refer to AC 150/5300-2

Federal Aviation Administration, Advisory Circular (AC) 150-5300-13B, *Airport Design*, March 31, 2022.

Airfield Design Standards Assessment

Standards Assessed for Key Airfield Characteristics

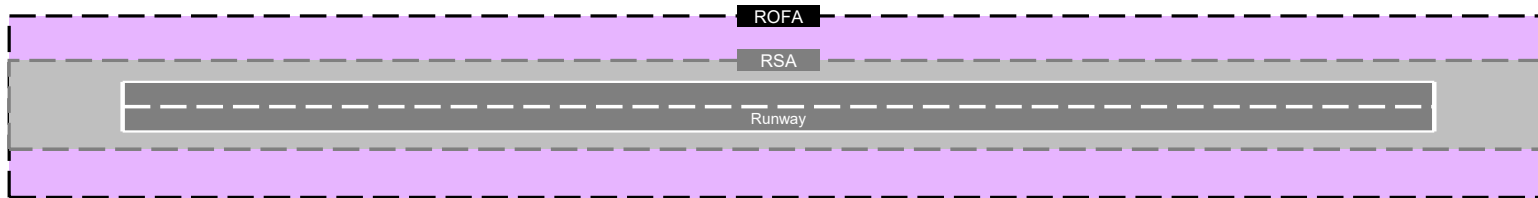
- **Runway Safety Area (RSA)** – Area surrounding the runway consisting of a prepared surface suitable for reducing the risk of damage to aircraft in the event of an undershoot, overshoot, or excursion from the runway
 - Should be clear of all objects excluding those objects that are fixed by function (e.g., runway lights)
 - Standards include grading, drainage and load bearing requirements



Airfield Design Standards Assessment

Standards Assessed for Key Airfield Characteristics

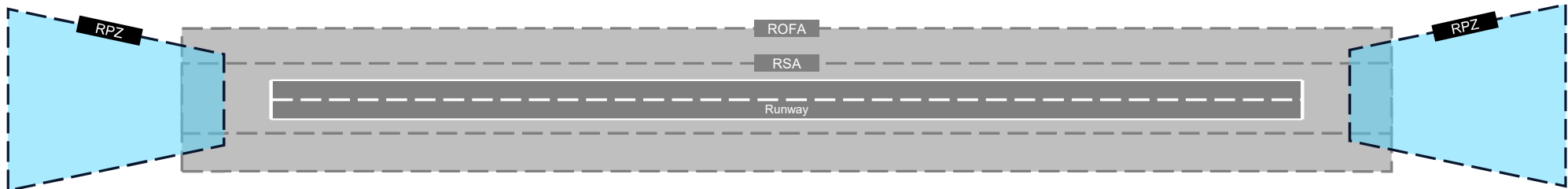
- **Runway Safety Area (RSA)** – Area surrounding the runway consisting of a prepared surface suitable for reducing the risk of damage to aircraft in the event of an undershoot, overshoot, or excursion from the runway
- **Runway Object Free Area (ROFA)** – Area centered on the surface of a runway provided to enhance the safety of aircraft operations
 - Clear area limited to equipment necessary for air and ground navigation
 - Provides additional protection in the event of an aircraft excursion from the runway
 - Taxiing and holding aircraft within the ROFA do **not** violate the standard



Airfield Design Standards Assessment

Standards Assessed for Key Airfield Characteristics

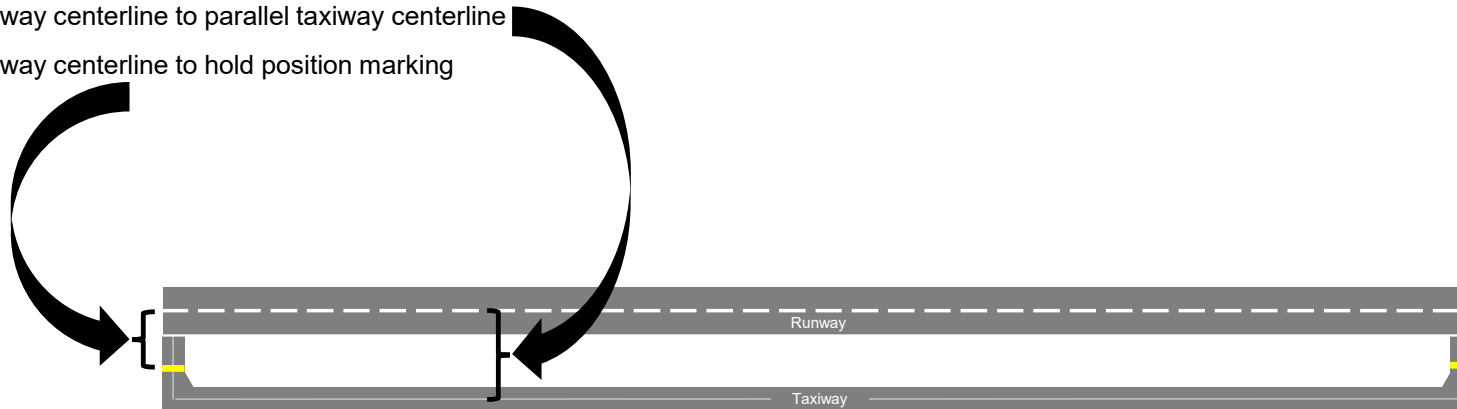
- **Runway Protection Zone (RPZ)** – Area prior to the threshold or beyond the runway end to enhance the safety and protection of people and property on the ground.
 - Purpose is to prevent new incompatible land uses
 - To the extent practical, clear the RPZ areas of existing incompatible objects and activities and ensure this area remains clear of such objects and activities
 - It is desirable to clear the entire RPZ of all above-ground objects
 - Airport owner control (direct ownership/acquisition and easement offers higher degree of control; zoning ordinances offer a lesser degree of control)
 - FAA provides allowances for grandfathering of some existing incompatible conditions – determined on a case-by-case basis
 - FAA does not recommend shortening runway lengths due to existing incompatible land uses
 - FAA expects airport sponsors to seek all possible opportunities to eliminate, reduce, or mitigate existing incompatible land uses



Airfield Design Standards Assessment

Standards Assessed for Key Airfield Characteristics

- **Runway Safety Area (RSA)** – Area surrounding the runway consisting of a prepared surface suitable for reducing the risk of damage to aircraft in the event of an undershoot, overshoot, or excursion from the runway
- **Runway Object Free Area (ROFA)** – Area centered on the surface of a runway provided to enhance the safety of aircraft operations
- **Runway Protection Zone (RPZ)** – Area prior to the threshold or beyond the runway end to enhance the safety and protection of people and property on the ground.
- **Other assessed standards**
 - Runway centerline to parallel taxiway centerline
 - Runway centerline to hold position marking



Aircraft Classifications for Airport Design

- Aircraft fleet mix determines airfield design standards:
 - **Approach speed** dictates requirements for runways and runway dimensional clearances
 - **Wingspan** dictates requirements separation standards for wingtip and other obstruction clearances
- Aircraft are categorized by approach category and design group

Aircraft Approach Category (AAC)

A grouping of aircraft related to approach speed
(operational characteristic)

AAC	Approach Speed
A	<91 knots
B	90 knots to <121 knots
C	121 knots to <141 knots
D	141 knots to <166 knots
E	166 knots or more

Airplane Design Group (ADG)

A grouping of aircraft related to aircraft wingspan
(physical characteristics)

Group #	Wingspan
I	<49 ft
II	49 ft to <79 ft
III	79 ft to <118 ft
IV	118 ft to <171 ft
V	171 ft to <214 ft
VI	214 ft to <262 ft

Source: Federal Aviation Administration, Advisory Circular (AC) 150-5300-13B, *Airport Design*, March 31, 2022.



Critical Aircraft Determination & Runway Design Code

Critical Aircraft:

The most demanding aircraft type (or grouping of aircraft with similar physical and operational characteristics) that make regular use of an airport (i.e., 500 annual operations).

Note: Excludes Helicopter Operations

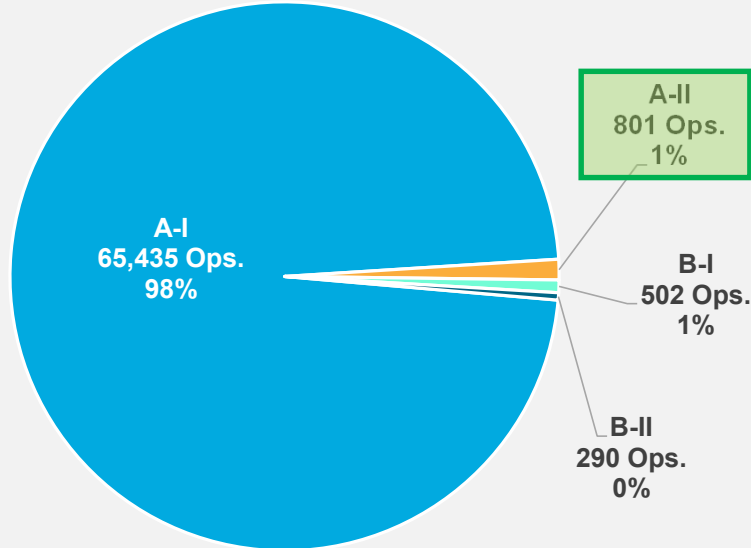
Runway Design Code (RDC):

- Establishes standards that apply to a specific runway
- Critical aircraft establishes Aircraft Approach Category (AAC) and Airplane Design Group (ADG)
- Considers both existing and future aircraft fleet mix composition

Aircraft Fleet Mix Composition Since Denial of Jet Ban (November 18, 2022)

Aircraft Approach Category (AAC) and Airplane Design Group (ADG)

Fleet Mix by AAC-ADG



Current critical aircraft grouping (>500 annual operations) dictates a runway design code of A-II at LNA

ADG Classification

Group #	Wingspan
I	<49 ft
II	49 ft to <79 ft
III	79 ft to <118 ft
IV	118 ft to <171 ft
V	171 ft to <214 ft
VI	214 ft to <262 ft

AAC Classification

AAC	Approach Speed
A	<91 knots
B	90 knots to <121 knots
C	121 knots to <141 knots
D	141 knots to <166 knots
E	166 knots or more

Note:
Ops. - Operations



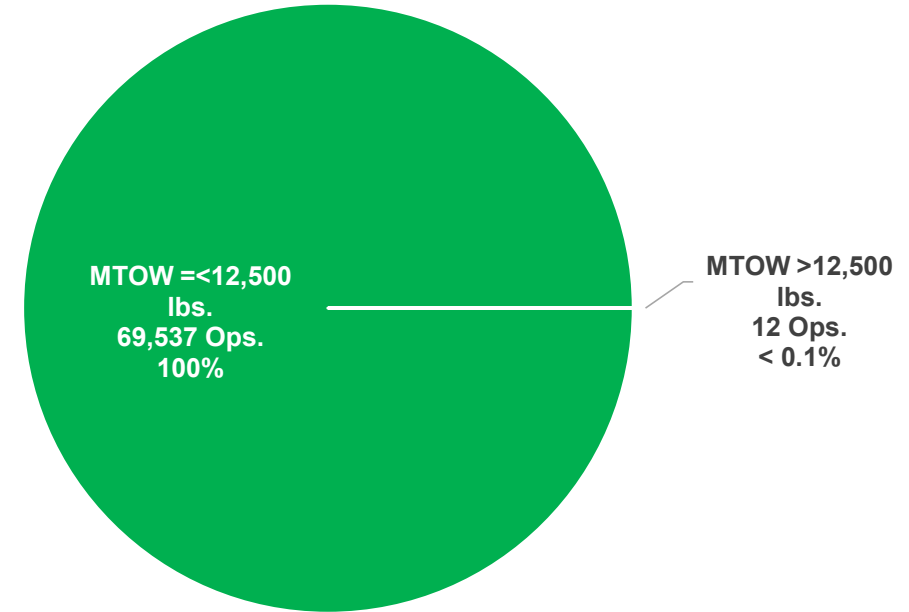
Aircraft Fleet Mix Composition Since Denial of Jet Ban (November 18, 2022) Maximum Takeoff Weight (MTOW)

Airfield design standards may also be influenced by the maximum takeoff weight of the critical aircraft:

Small: MTOW < 12,500 pounds

Large: MTOW > 12,500 pounds

Fleet Mix by MTOW



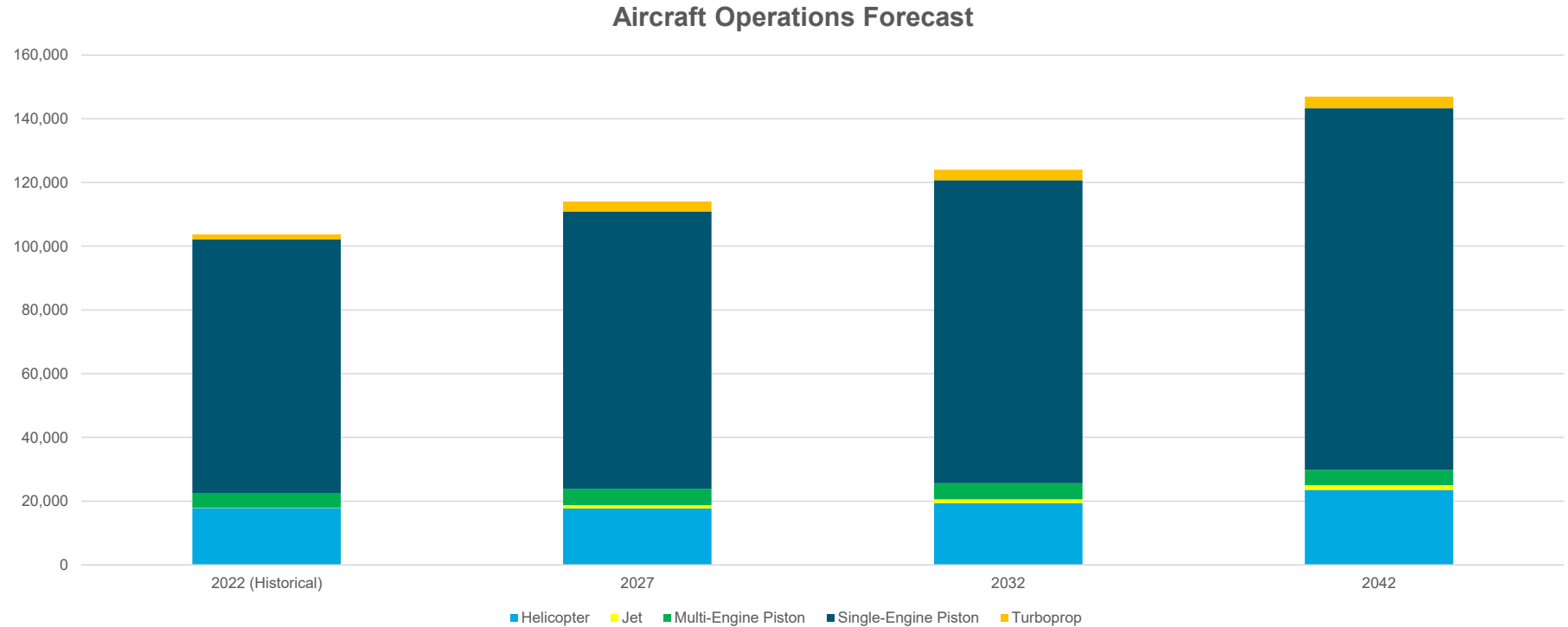
Notes:

Ops - Operations

Source: Palm Beach County Department of Airports, Airport Noise and Operations Management System (ANOMS), September 2023; US Department of Transportation, Federal Aviation Administration, Terminal Area Forecast Fiscal Years 2022 – 2050, March 2023; HMMH, LNA Part 150 Study – Request for Review and Approval of Palm Beach County Park Airport Part 150 Study Aviation Forecast, April 3, 2023; Ricondo & Associates, Inc., August 2023.



Aircraft Operations and Fleet Mix



Notes:

AAC – Aircraft Approach Category; ADG – Airplane Design Group

Source: Palm Beach County Department of Airports, Airport Noise and Operations Management System (ANOMS), September 2023; US Department of Transportation, Federal Aviation Administration, Terminal Area Forecast Fiscal Years 2022 – 2050, March 2023; HMMH, LNA Part 150 Study – Request for Review and Approval of Palm Beach County Park Airport Part 150 Study Aviation Forecast, April 3, 2023; Ricondo & Associates, Inc., August 2023.



Future Critical Aircraft Determination

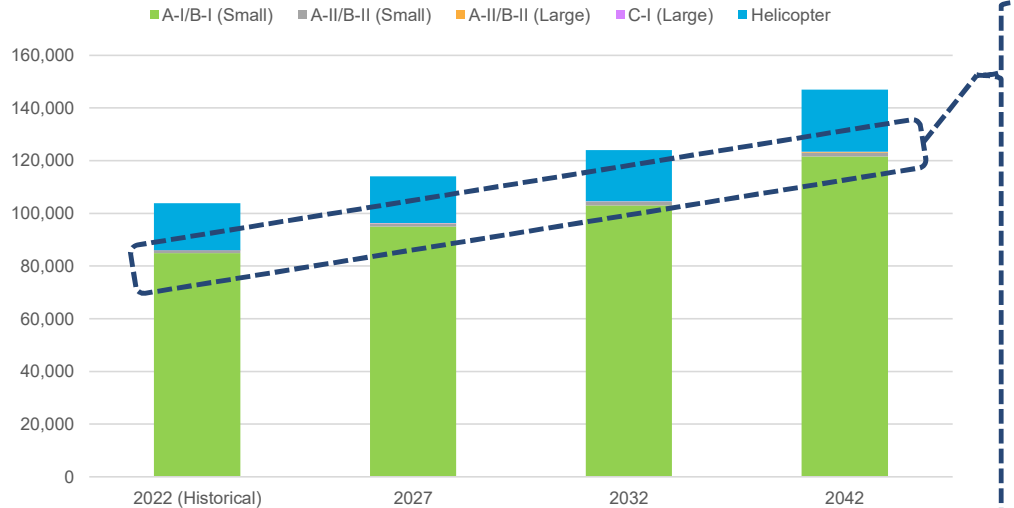
Critical Aircraft: The most demanding aircraft type (or grouping of aircraft with similar physical and operational characteristics) that make regular use of an airport (i.e., 500 annual operations).

Note: Excludes Helicopter Operations

Runway Design Code (RDC): AAC-ADG

- Establishes standards that apply to a specific runway
- Critical aircraft establishes AAC and ADG
- Current/Forecast LNA Critical Aircraft “Family” is A-II/B-II (Small)**

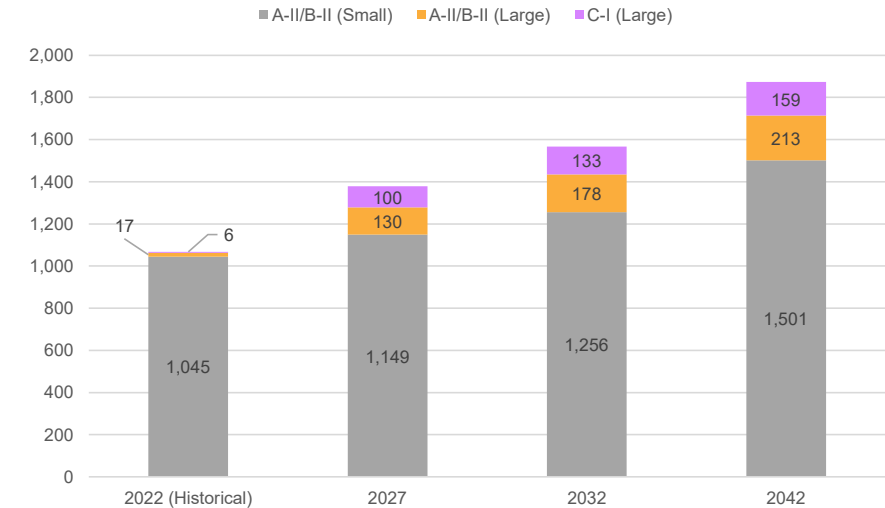
Forecast Aircraft Operations by RDC



Note:

1/ Values exclude operations by helicopters and RDC A-1/B-1 (Small)

Forecast Aircraft Operations by RDC ^{1/}



Sources: Palm Beach County Department of Airports, Airport Noise and Operations Management System (ANOMS), May 2023; US Department of Transportation, Federal Aviation Administration, Terminal Area Forecast Fiscal Years 2022 – 2050, March 2023; HMMH, LNA Part 150 Study – Request for Review and Approval of Palm Beach County Park Airport Part 150 Study Aviation Forecast, April 3, 2023; Ricondo & Associates, Inc., August 2023.



Representative Aircraft at LNA

Representative LNA Aircraft by RDC Classification

A-I/B-I (Small)



Cessna 172 Skyhawk



Beechcraft Baron 58

A-II/B-II (Small)



Cessna 208 Caravan



Beechcraft King Air 200

A-II/B-II (Large)



Beechcraft King Air 350

C-1 (Large)



Bombardier Learjet 31

LNA Jet Aircraft RDC Classification

Jet Aircraft Type	RDC ¹	MTOW Category ²	Operations (2022-2023) ³	Share
Eclipse 500	A-I	Small	2	1.2%
Vision SF50	A-I	Small	54	32.5%
Citation Mustang	B-I	Small	2	1.2%
Citation CJ1 / M2	B-I	Small	14	8.4%
Citation I/SP	B-I	Small	76	45.8%
Citation CJ3	B-II	Large	2	1.2%
Citation II / 550	B-II	Large	10	6.0%
Learjet 31	C-1	Large	6	3.6%

Notes:

1/ RDC – Runway Design Code

2/ MTOW – Maximum Takeoff Weight; Small: less than or equal to 12,500 pounds; Large: greater than 12,500 pounds

3/ 2023 operations through September 30, 2023

Sources: HMMH, LNA Part 150 Study – Request for Review and Approval of Palm Beach County Park Airport Part 150 Study Aviation Forecast, April 3, 2023 (2022 fleet mix and operations); Palm Beach County Department of Airports, Airport Noise Monitoring System, January 2023-September 2023 (2023 fleet mix and operations); Federal Aviation Administration Aircraft Characteristics Database (aircraft characteristics)

Assessed Airfield Design Standards

- **Assessed Airfield Characteristics**

- Runway Safety Area (RSA)
- Runway Object Free Area (OFA)
- Runway Protection Zone (RPZ)
- Runway centerline to parallel taxiway centerline
- Runway centerline to hold position marking

- **Current Runway Design Code (RDC)**

- Runway 10-28: A/B-II (Small)
- Runway 16-34: A/B-II (Small)
- Runway 4-22: A/B-I (Small) ^{1/}

Selected Airfield Design Standards

Design Criteria (dimensions in feet)	RDC A/B-I (Small)	RDC A/B-II (Small)	RDC A/B-II (Large) ^{1/}
Runway Width	60	75	75
Runway Safety Area (RSA) Width	120	150	150
Runway Object Free Area (OFA) Width	250	500	500
Runway Protection Zone (RPZ) Inner & Outer Width	250 & 450	250 & 450	500 & 700
Runway Centerline to Parallel Taxiway Centerline	150	240	240
Runway Centerline to Hold Position Marking	125	125	200

Note:

1/ Runway Design Code (RDC) B-II (Large) standards shown for reference, but not assessed

Source: Federal Aviation Administration, Advisory Circular (AC) 150-5300-13B, Airport Design, March 31, 2022.

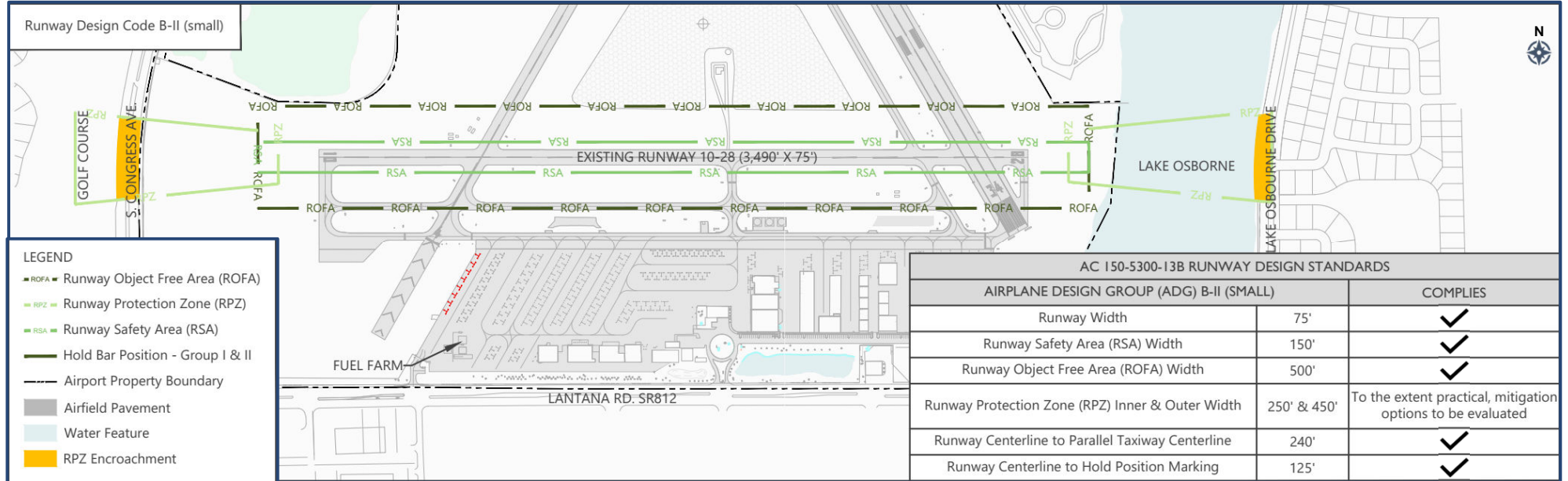
Applicable design standards for LNA based on existing/forecast design aircraft

Note:

1/ RDC B-II (Small) also assessed since Runway 4-22 is the preferred noise abatement runway and may be upgraded to B-II (Small) to accommodate forecast critical aircraft.

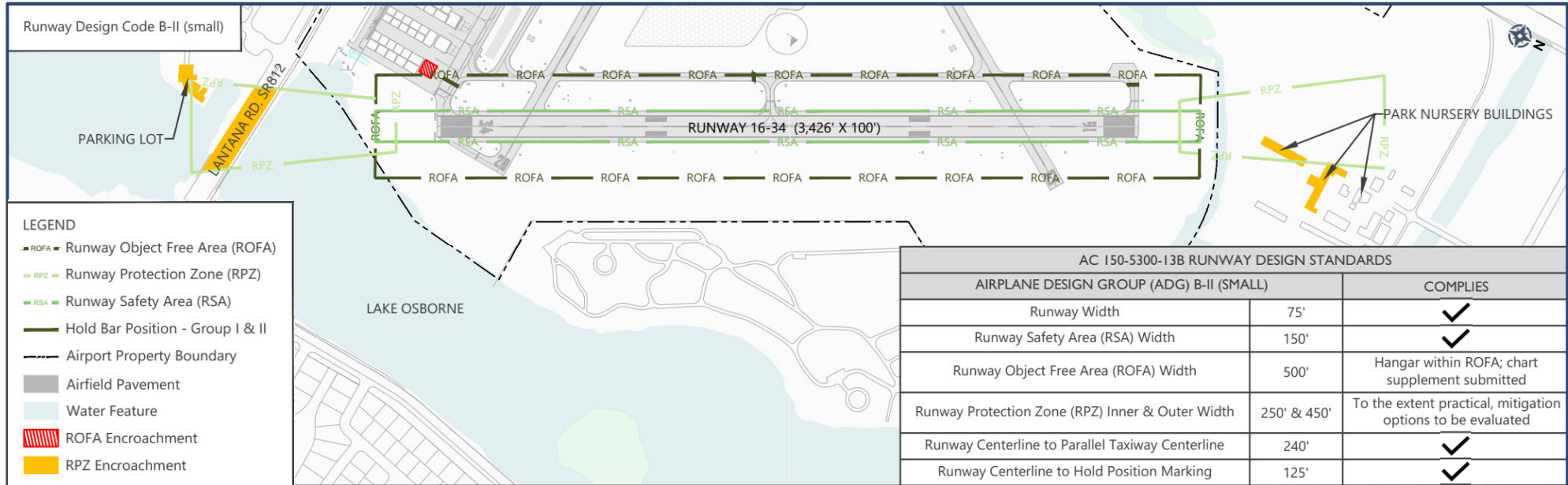


Runway 10-28 Compliance with B-II (small) Design Standards



SOURCE: Palm Beach County Park Airport, Airport Layout Plan, July 2020 (base line work); Federal Aviation Administration Advisory Circular 150/5300-13B (runway design standards); Ricondo & Associates Inc., June 2023.

Runway 16-34 Compliance with B-II (small) Design Standards

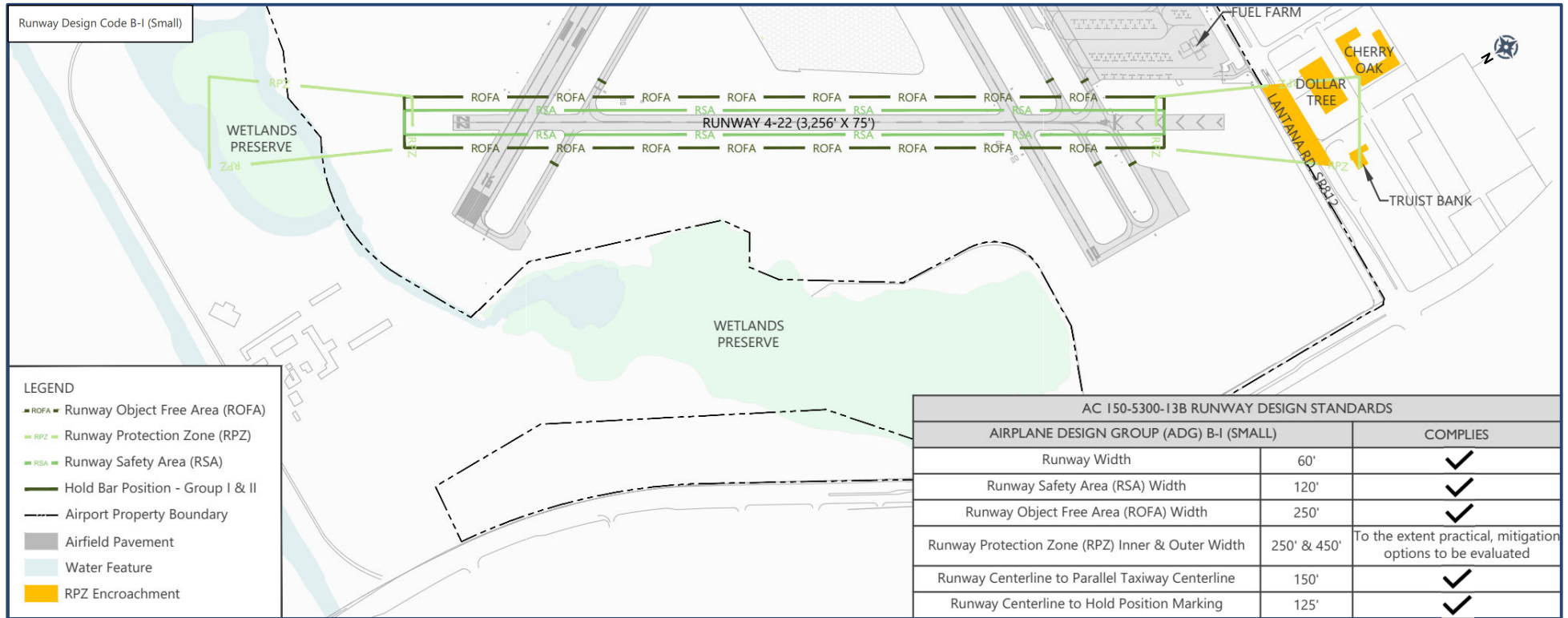


SOURCE: Palm Beach County Park Airport, Airport Layout Plan, July 2020 (base line work); Federal Aviation Administration Advisory Circular 150/5300-13B (runway design standards); Ricondo & Associates Inc., June 2023.

Note:

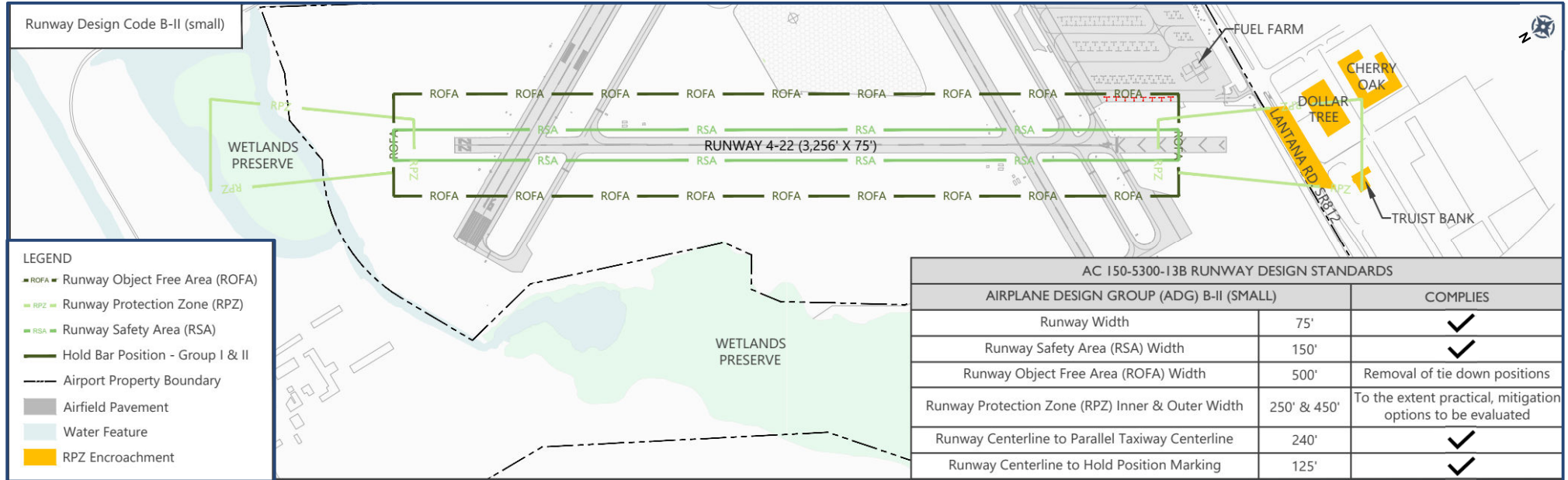
Avigation Easement exists for Runway 34 RPZ to prevent future encroachment

Runway 4-22 Compliance with B-I (small) Design Standards



SOURCE: Palm Beach County Park Airport, Airport Layout Plan, July 2020 (base line work); Federal Aviation Administration Advisory Circular 150/5300-13B (runway design standards); Ricondo & Associates Inc., June 2023.

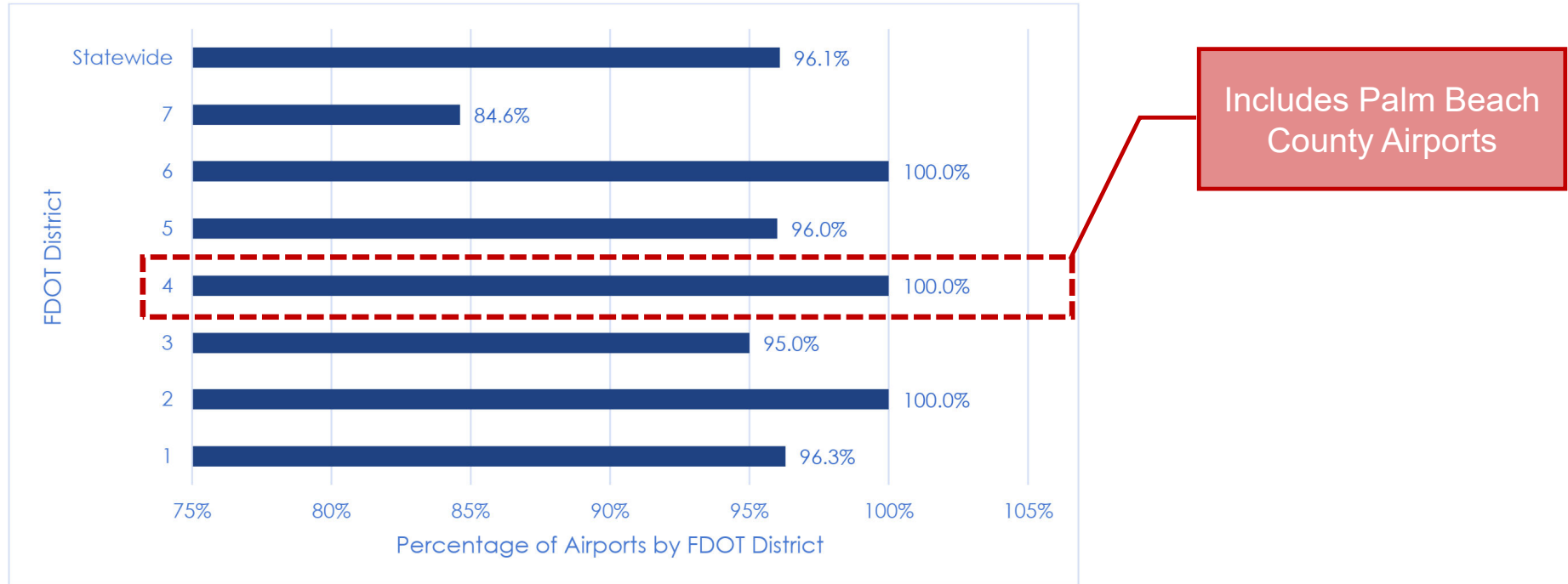
Runway 4-22 Compliance with B-II (small) Design Standards



SOURCE: Palm Beach County Park Airport, Airport Layout Plan, July 2020 (base line work); Federal Aviation Administration Advisory Circular 150/5300-13B (runway design standards); Ricondo & Associates Inc., June 2023.

Runway Protection Zones Compatibility at Florida Airports

Figure 7-6: The Percentage of FASP Airports That Have Incompatible Land Uses within the RPZs of the Primary Runway



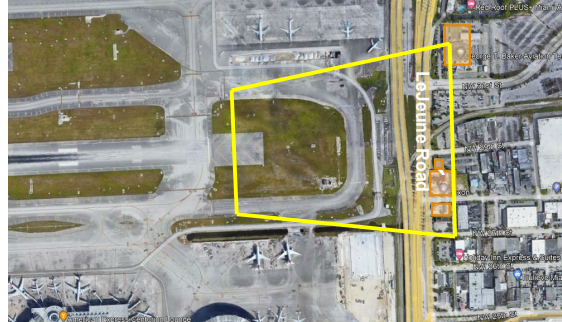
SOURCE: Florida Department of Transportation – Aviation and Spaceports Office, Florida Aviation System Plan (2035 Update), November 2017.

Runway Protection Zone Encroachments at Nearby Airports

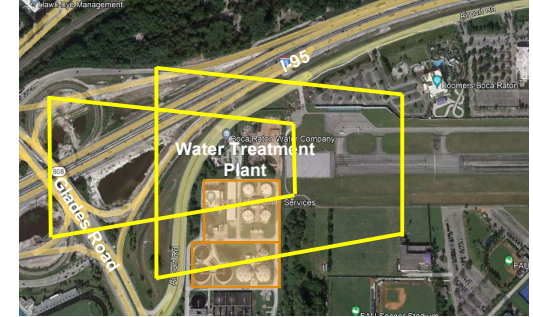
FLL Runway 10L



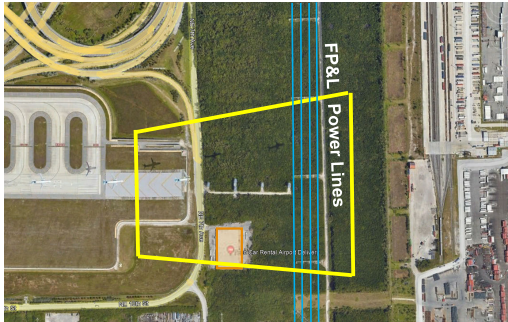
MIA Runway 28L



BCT Runway 5



FLL Runway 28L



MIA Runways 27 & 30



BCT Runway 23



Notes:

BCT – Boca Raton Airport

FLL – Fort Lauderdale/Hollywood International Airport

MIA – Miami International Airport

Sources: GoogleEarth Pro, October 3, 2023; Miami-Dade Aviation Department, MIA Airport Layout Plan Drawing; Broward County Aviation Department, FLL Airport Layout Plan Drawing; Boca Raton Airport Authority, BCT Airport Layout Plan Drawing,

Summary of Existing RPZ Encroachments at LNA to be Evaluated

Runway 10-28

- RDC B-II (Small)
 - South Congress Avenue and Lake Osborne Drive in RPZ

Runway 16-34

- RDC B-II (Small)
 - Lantana Road in RPZ
 - Two County buildings in RPZ
 - Aircraft hangar in ROFA

Runway 4-22

- RDC B-I (Small)
 - Lantana Road in RPZ
 - Three buildings in RPZ (Cherry Oak, Dollar Tree, Trust Bank)
- RDC B-II (Small)
 - Lantana Road in RPZ
 - Three buildings in RPZ (Cherry Oak, Dollar Tree, Trust Bank)
 - Eight tie-down positions in ROFA

Notes:

LNA – Palm Beach County Park Airport

RDC - Runway Design Code

ROFA - Runway Object Free Area

RPZ - Runway Protection Zone



A wide-angle photograph of an airfield under a cloudy sky. A small aircraft is visible in the upper left portion of the frame. The foreground consists of a grassy field, followed by a paved runway or taxiway, and a line of trees in the background.

AIRFIELD PAVEMENT STRENGTH ANALYSIS

Airfield Pavement Condition

Pavement Condition Index (PCI)

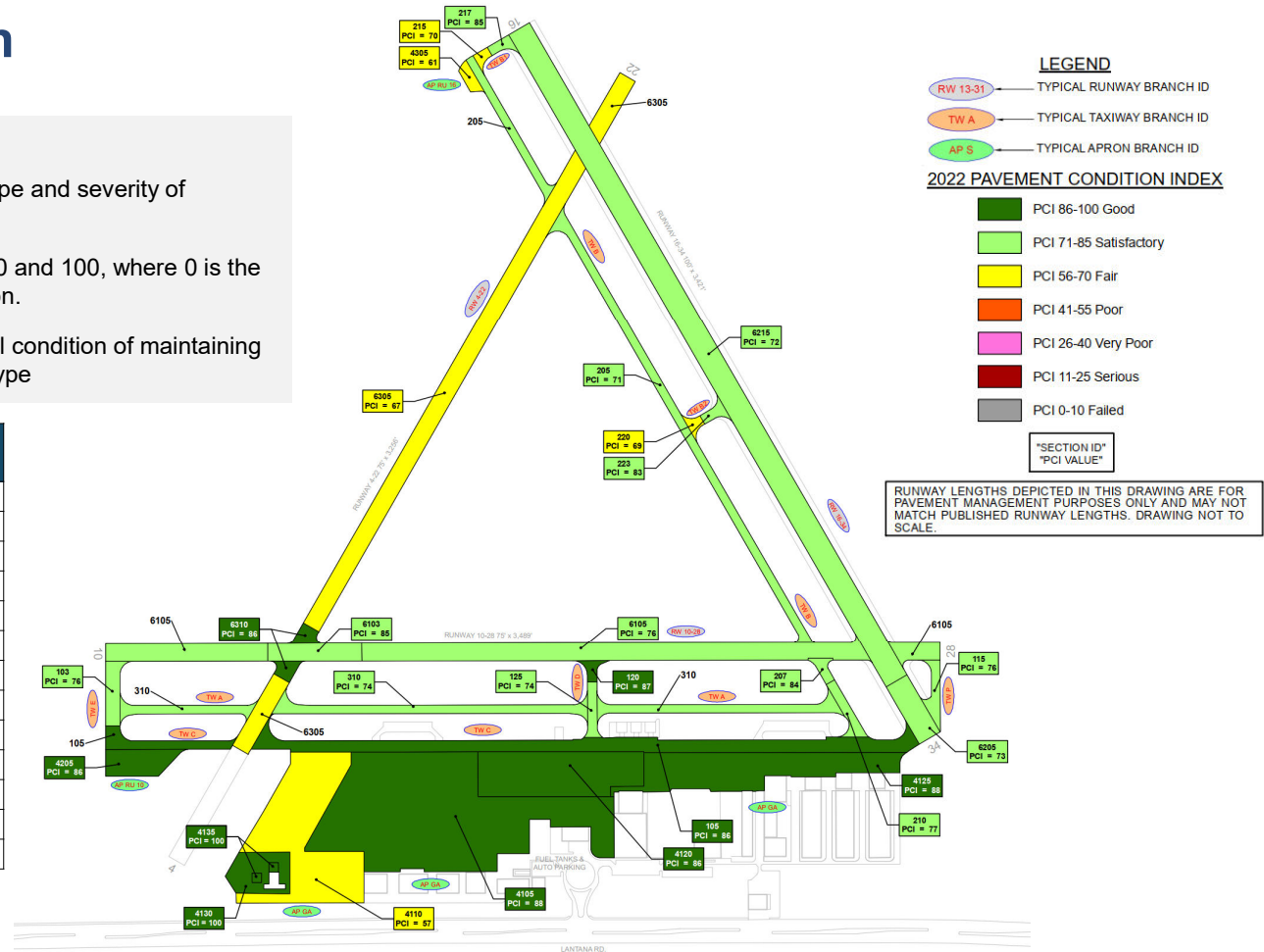
- A numerical rating of the pavement condition based on the type and severity of distresses observed on the pavement surface.
- The PCI value is represented by a numerical index between 0 and 100, where 0 is the worst possible condition and 100 is the best possible condition.
- Pavement maintenance/rehabilitation is required as a general condition of maintaining the airport and not due to the operation of a specific aircraft type

Pavement Section	Last Major Construction	PCI	Condition
Runway 16-34	2013	72	Satisfactory
Runway 4-22	1992	67	Fair ^{1/}
Runway 10-28	2007	76	Satisfactory
Taxiway A	2007	74	Satisfactory
Taxiway B	1992	71	Satisfactory
Taxiway B1	1992	70	Fair
Taxiway B2	1992	69	Fair
Taxiway C	2013	86	Good
Taxiway D	2013	74	Satisfactory
Taxiway E	2006	76	Satisfactory
Taxiway P	2007	76	Satisfactory
General Aviation Apron 1	2016	86-88	Good
General Aviation Apron 2	1984	57	Fair ^{1/}

Note:

1/ Pavement improvement project planned.

Source: FDOT Statewide Airfield Pavement Management Program (Inspection date: August 2022).



Airfield Pavement Strength

- **Aircraft Classification Rating (ACR)** – Expresses effect of an individual aircraft on different pavements with a unique number
 - ACR varies according to aircraft weight and configuration (e.g., tire pressure, gear configuration, etc.), pavement type, and subgrade strength
 - Calculated using ICAO-ACR version 1.25 software
- **Pavement Classification Number (PCR)** – The load-carrying capacity of a section of pavement
 - PCR rating is not aircraft specific
 - Determined based on FAA guidance: Advisory Circular 150/5335-5D, *Standardized Method of Reporting Airport Pavement Strength*
 - Calculated using FAARFIELD 2.0 FAA design software



Main Landing Gear Configuration Considerations

Single Wheel Configuration



Dual Wheel Configuration



Airfield Pavement Strength

Pavement Section	Last Major Construction	PCR
Runway 16-34	2013	122
Runway 4-22	1992	86
Runway 10-28	2007	86
Taxiway A	2007	86
Taxiway B	1992	86
Taxiway B1	1992	86
Taxiway B2	1992	86
Taxiway C	2013	126
Taxiway D	2013	86
Taxiway E	2006	86
Taxiway P	2007	86
General Aviation Apron 1	2016	126
General Aviation Apron 2	1984	126

Notes:

ACR – Aircraft Classification Rating

PCR – Pavement Classification Rating

Inspection date: August 2022

Source: PCR values determined using FAA Advisory Circular 150/5335-5D and FAA Design Software FAARFIELD 2.0

Representative Aircraft	MTOW	ACR
Beechcraft King Air C90	10,000	23.28
Bombardier Learjet 31	15,500	31.73
Cessna Citation CJ1	10,600	32.94
Cessna Citation I/ISP	11,850	35.72
Cessna Citation II	14,100	50.90
Cessna Citation Mustang	8,645	19.95
Cirrus Vision Jet	6,000	16.05

Notes:

MTOW – Maximum Takeoff Weight

ACR – Aircraft Classification Rating

Source: ACR values determined by ICAO-ACR version 1.25 software

- If PCR > ACR: Structural integrity of pavement is sufficient to carry aircraft load
- If PCR < ACR: Potential to accelerated deterioration of the pavement
- Occasional traffic by aircraft with an ACR not exceeding 10% above PCR should not adversely affect the pavement

Airfield Pavement Strength

- Recommended asphalt pavement section thickness for aircraft less than 60,000 lbs. is 3 inches per AC 150/5320-6F, *Airport Pavement Design and Evaluation*
- Majority of pavement at LNA only includes 2 inches of asphalt surface course
- FDOT flexible pavement design manual used to determine equivalent pavement section:
 - FAA recommended pavement section requires equivalent pavement section of 2 inches of asphalt over 4.25 inches Limerock base
 - **Conclusion: All existing LNA pavement meets/exceeds this pavement requirement**

Pavement Section	Asphalt Thickness (inches)	Base Thickness (inches)
Runway 16-34	4	6
Runway 4-22	2	6
Runway 10-28	2	7
Taxiway A	2	6
Taxiway B	2	6
Taxiway B1	2	6
Taxiway B2	2	6
Taxiway C	2	6
Taxiway D	2	6
Taxiway E	2	6
Taxiway P	2	6
General Aviation Apron 1	2	6
General Aviation Apron 2	2	6

Source: FDOT Statewide Airfield Pavement Management Program (Inspection date: August 2022).



Airfield Pavement Strength

- **Conclusion and Recommendations**

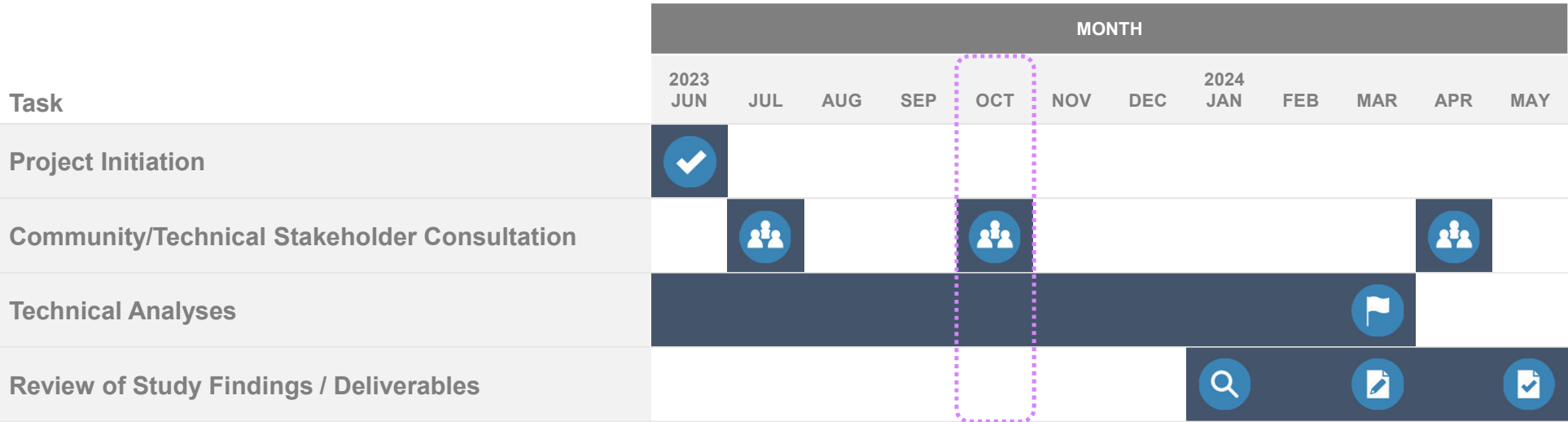
- Current/forecast fleet mix does **not** have any adverse effects that would contribute to premature deterioration of the pavement
- Overall recommended **PCR for LNA = 86**
 - Can accommodate a maximum takeoff weight up to 30,000 pounds for aircraft with a single-wheel landing gear configuration (ACR = 70) or
 - up to 50,000 pounds for aircraft with a dual-wheel landing gear configuration (ACR = 63)
- Overloading by occasional larger aircraft should not exceed the PCR by 10% or an **ACR of 94**
- Pavement maintenance to be undertaken to maintain pavement condition (regardless of aircraft types operating at the Airport)
- Pavement strengthening is **not** needed to accommodate existing or anticipated future jet aircraft operations



A blue-tinted landscape photograph of an airport runway. In the foreground, a blue rectangular box contains the text "NEXT STEPS" in white. The background shows a wide runway, a line of trees, and a small airplane flying in the sky under a cloudy sky.

NEXT STEPS

Study Schedule



KEY Notice to proceed Milestone Draft Final Meeting Review



Next Steps

- Public/stakeholder comment period: October 5, 2023 – October 19, 2023
- Compile public/stakeholder comments
- Complete technical tasks
 - Airfield assessment
 - Airspace screening assessment
- Develop study deliverables
- Conduct final public/stakeholder briefing





PUBLIC/STAKEHOLDER COMMENTS

Public Comments

- **Written Comments:**

- Click on “?” Icon and type in comment.
- Email submissions (LNASafetyAssessment@pbia.org)
- No later than October 19, 2023

- **Oral Comments:**

- Click on “React” Icon
- Order of speakers will be in accordance with the order in which attendees have raised their hand
- 3 minutes to speak
- Audio recording





PALM BEACH COUNTY PARK (LANTANA) AIRPORT



Thank you for your participation