AIRPORT MASTER PLAN UPDATE
EXECUTIVE SUMMARY

Merritt Island Airport | December 2025



PREPARED BY

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FLY SPACE COAST
MERRITT ISLAND AIRPORT (COI)


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1 INTRODUCTION

Merritt Island Airport (COI or Airport) is a public use, general aviation (GA) airport serving the recreational aviation and flight training needs of central Brevard County. The Airport is owned and operated by the Titusville-Cocoa Airport Authority (TCAA), which also operates Space Coast Regional Airport (TIX) and Arthur Dunn Airpark (X21).

In 2022, TCAA initiated this Master Plan Update (MPU) to serve as a guide for implementing future airport improvements in an incremental and financially feasible manner, maintaining compliance with evolving federal and state regulatory standards, and ensuring that COI remains a sustainable community asset. The MPU culminates with the development of an Airport Layout Plan (ALP), which is required to secure federal and state funding through the Federal Aviation Administration (FAA) Airport Improvement Program (AIP) and Florida Department of Transportation (FDOT) aviation grant programs.

The recommendations contained in this MPU are intended to accommodate future aeronautical demand, maintain and enhance existing infrastructure, and incorporate TCAA's vision for COI. The MPU documents existing conditions, forecasts future demand, evaluates the capacity of existing facilities, and identifies the future requirements for the 20-year planning horizon.

An iterative process was undertaken to identify and analyze improvements to the airfield, landside areas, GA facilities, and support facilities needed to efficiently service the forecast growth in aviation activity.

COI AT A GLANCE

SINGLE RUNWAY



11-29
Length: 3,601'
Width: 75'



Full length parallel taxiway



Corporate Hangars: **16**



T-Hangars: **151**



Acres: **126**



Active general aviation community

Robust mix of training activity and itinerant general aviation traffic



2 MASTER PLAN PROCESS

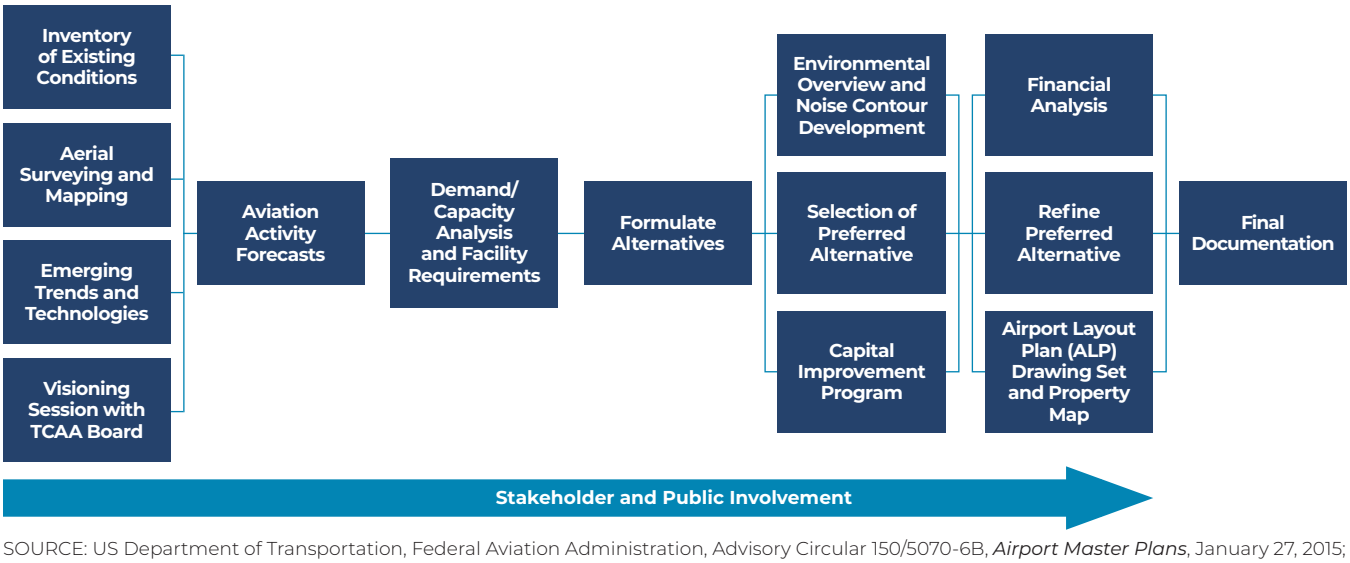
The previous MPU for COI was completed in 2009. Since the 2009 MPU was drafted, the GA industry has evolved, and the FAA has revised pertinent design criteria and other applicable regulatory guidance. TCAA has completed numerous airfield and hangar improvement projects over the past 16 years to provide tenants with competitive and relevant services and facilities.

An updated MPU is needed to provide TCAA with a long-range (20-year) management tool to help guide the Airport development necessary to accommodate forecast growth in demand. The MPU was completed in accordance with federal and state guidance found in FAA Advisory Circular 150/5070-6B, *Airport Master Plans* and the Florida Department of Transportation (FDOT) *Guidebook for Airport Master Planning*. The MPU process was tailored to meet COI's specific needs.



The MPU will focus on the Airport's role within the TCAA system and how to leverage the Airport's existing and proposed facilities and infrastructure to best serve the surrounding region.

Master Plan Process



SOURCE: US Department of Transportation, Federal Aviation Administration, Advisory Circular 150/5070-6B, *Airport Master Plans*, January 27, 2015; Ricondo & Associates, Inc. September 2022; Florida Department of Transportation, *Guidebook for Airport Master Planning* (2021-2022).

AIRPORT VISION AND MASTER PLAN GOALS

A Visioning Workshop was conducted with the TCAA Board of Directors and management staff in June 2023, to identify strengths and opportunities, desired amenities, and a vision for each airport in the TCAA system. The workshop was also a platform to discuss the project's goals to guide the MPU.

COI VISION

To be a vibrant and self-sustaining general aviation airport that supports recreational flight activity with enhanced amenities and modern facilities.

MASTER PLAN GOALS



Forecast future demand and evaluate airfield capacity



Prepare an incremental plan to modernize aging facilities



Develop a plan that considers access, circulation, and aesthetic improvements



Establish an independent and system-wide Capital Improvement Program (CIP) that focuses on financial resiliency


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3 AVIATION ACTIVITY FORECAST

Aviation activity forecasts provide the foundation for determining future facility and infrastructure requirements at COI. They translate demographic and economic conditions, industry trends, and operational patterns into a set of quantified expectations through the 20-year planning horizon (which coincides with fiscal year (FY2043).

The forecasts were approved by the FAA on November 13, 2023, for **aircraft operations** (by fleet mix) and for **based aircraft** (by engine type). Various industry standard forecasting methodologies were applied in the preparation of the aviation activity forecasts for COI. During the evaluation of forecasting methodologies, a Special Purpose Aviation Activity Forecast was developed by Michael Baker International, Inc., in support of an Environmental Assessment for aircraft hangar development. The forecast was approved by the FAA in January 2023, and subsequently adopted for use in this MPU.

The forecasts are unconstrained and intended to provide an approximate indication of future activity levels. These forecasts assume no limitations on growth related to the airport's ability to deliver airfield capacity, supporting infrastructure, hangar and apron space, or adequate landside access and circulation. Actual future activity may vary from these projections due to unforeseen factors, including economic, social, regulatory, political, technological, or environmental changes.

AIRCRAFT OPERATIONS

An aircraft operation is defined as a takeoff or landing on the airport runway. Touch-and-go operations, which are associated with flight training activities, are considered two operations: one landing and one takeoff. Aircraft operational demand levels dictate the need for airfield infrastructure, aircraft fuel storage, and transient aircraft storage.

BASED AIRCRAFT

Based aircraft are aircraft that reside at COI, stored in hangars, or on aircraft parking aprons. Based aircraft volumes typically influence storage requirements, demand for maintenance, and other aviation support services. The total number of based aircraft is expected to grow from 161 in FY2022 to 265 by FY2043, a compound average annual growth rate of 2.4 percent.

FUTURE AVIATION ACTIVITY DRIVERS

Historical Activity and Trends at COI

Industry Aircraft Market Trends for GA

Local, State, and National Socioeconomic Trends



Aircraft operations are forecast to increase from 115,381 in FY2022 to 208,447 in FY2043, a compound average annual growth rate of 2.9%.

Total Operations and Based Aircraft Forecast

CATEGORY	BASELINE FY2022	5-YEAR FY2028	10-YEAR FY2033	20-YEAR FY2043
Total Operations	115,381	182,254	190,597	208,447
Itinerant	50,320	79,485	83,124	90,909
Local	65,061	102,769	107,473	117,538
Total Based Aircraft	161	228	239	265
Jet	3	3	3	4
Single Engine Piston	136	198	208	230
Multi-Engine Piston	14	18	19	21
Helicopter	8	9	9	10

NOTE FY – Fiscal Year
1 The fiscal year is October through September.
SOURCES: US Department of Transportation, Federal Aviation Administration, *Terminal Area Forecast Fiscal Years 2022–2050*, February 2023 (operations, FY2012 through FY2021); Virtower LLC, February 2023 (operations data, FY2022); Michael Baker International, Inc., *Special Purpose Aviation Activity Forecast*, October 2022 (operations forecast and based aircraft forecast); Ricondo & Associates, Inc., March 2023.



4 DEMAND/CAPACITY ANALYSIS AND FACILITY REQUIREMENTS

The purpose of the demand/capacity analysis is to assess the existing airfield, GA, and various other airport support facilities to accommodate future demand levels identified in the aviation activity forecasts. The results of the demand/capacity analyses set the framework for developing a recommended airport improvement plan, ensuring that capital investments are both necessary and timed appropriately.

As a part of the MPU, facility requirements for future Airport facilities and infrastructure were quantified for four key functional areas



Airfield: Ensure the runway and taxiway systems will accommodate forecast demand and comply with FAA standards.



GA: Quantify additional apron space, corporate and T-hangars, fixed-base operator (FBO) facilities, and automobile parking to support the operations of the Airport.



Support Facilities: Develop recommendations for the timing of improvements to the airport maintenance facility, electrical vault, and airport security enhancements.



Landside Improvements: Discuss potential roadway modifications and alignments to enhance access, improve circulation, and elevate landside aesthetics.

AIRFIELD FACILITIES

Airfield capacity is defined by the maximum number of aircraft operations that can be accommodated during a specific period without incurring an unacceptable level of delay. Airfield capacity can vary depending on the configuration of the runway and taxiways, types of aircraft operating on the airfield, percentage of touch-and-go operations, and weather conditions. The results of an airfield capacity analysis are expressed in terms of annual service volume (ASV).

ASV accounts for the hourly, daily, and seasonal variations in aircraft demand associated with the airfield and can be used as a reference point for the general planning of capacity-related improvements. The ASV, based on the FY2022 demand levels and the existing airfield configuration, is estimated at 191,000 annual operations. The Airport's annual demand is forecast to increase from 115,381 operations (60 percent of the ASV) in FY2022 to 208,400 operations (109 percent of the ASV) in FY2043.

Constructing an additional runway at COI is deemed impractical due to existing property and geographic constraints. Taxiway improvements, such as adding high-speed taxiways and additional taxiways, would not enhance hourly capacity, as the runways already have the maximum number of exits for the current configuration. TCAA faces limited options to increase airfield capacity given these constraints. While incorporating demand management practices or making operational changes could marginally increase capacity, the overall outlook suggests COI may experience delays as the total number of annual operations approaches the Airport's capacity. The Airport is estimated to reach airfield capacity by FY2033. Therefore, TCAA will rely on available capacity at TIX and X21 to serve the region's demand.

GENERAL AVIATION, SUPPORT FACILITY REQUIREMENTS, AND LANDSIDE IMPROVEMENTS

The methodologies used to determine demand/capacity relationships and facility requirements are in accordance with industry standards, with planning factors adjusted as appropriate to reflect actual Airport use characteristics. The additional GA facility requirements over the 20-year planning horizon are estimated to encompass approximately 16.3 acres.

As previously mentioned, the annual demand (aircraft operations) is forecast to reach the annual service volume, the metric used to measure airfield capacity, by FY2033. The additional GA facility requirements for FY2033 are approximately 12.8 acres. This includes additional space needed to provide aircraft parking and circulation, FBO/terminal spaces, and supporting infrastructure such as automobile parking. The MPU also includes recommendations for the replacement and relocation of the electrical vault and construction of a new Airport Maintenance facility.

FACILITY	COI
GENERAL AVIATION FACILITY REQUIREMENTS (THROUGH FY2033)	
Apron Space	191,600 sq ft
Corporate Hangar Space	71,500 sq ft
T-hangar Space	78,400 sq ft
FBO/GA Terminal Space	16,500 sq ft
Automobile Parking	89,100 sq ft
Landscaping / Drainage	111,800 sq ft
Total Additional Space	**558,800 sq ft / 12.8 Acres**
SUPPORT FACILITY REQUIREMENTS	
Airport Electrical Vault	The electrical vault is in poor condition and is recommended to be replaced.
Airport Maintenance	There are no dedicated maintenance facilities at COI. Construction of a maintenance facility is recommended.
Security Enhancements	Replacement of north and south access gate operators and keypads are recommended.

SOURCE: Ricondo & Associates, Inc., February 2024.

LANDSIDE RECOMMENDATIONS INCLUDE:

1. **Northern access roadway and parking lot improvements to rehabilitate the north side entrance pavement and provide additional vehicular parking.**
2. **Southern access roadway rehabilitation, lighting, and aesthetic improvements to rehabilitate the south side entrance pavement, improve signage, and the overall appearance of the public entrance and interior service road.**
3. **Relocation of Airport Road and parking lot expansion to provide additional developable space and vehicular parking.**

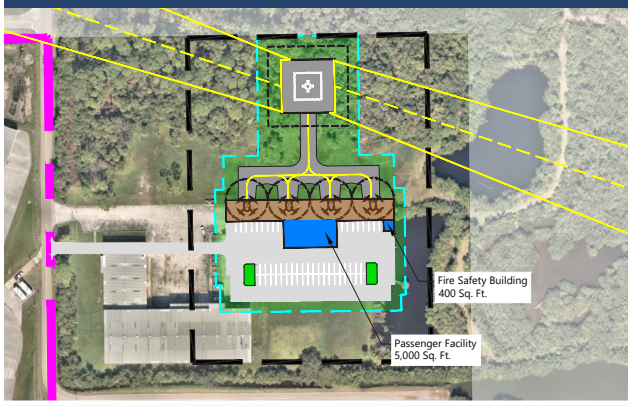
ADVANCED AIR MOBILITY CONSIDERATIONS

Advanced Air Mobility (AAM) is a rapidly evolving air transportation system that introduces innovative ways of moving people and cargo between places with electric vertical takeoff and landing (eVTOL) aircraft. eVTOL aircraft include a variety of designs and propulsion systems being developed by multiple manufacturers and are expected to be certified as early as 2027. The transport of passengers and cargo could occur as a scheduled or an on-demand service between an on-Airport vertiport, such as future vertiport at COI, and other future vertiports within the Central Florida region.



Three sites have been identified to accommodate potential vertiport facilities at the Airport. The selection of a preferred site will depend upon the unique operational considerations of eVTOL aircraft and evolving federal, state, and local regulations related to vertiport siting and design standards. The timing for implementation will be demand driven.

Representative Vertiport Concept



AAM POTENTIAL SITES



5 RECOMMENDED AIRPORT IMPROVEMENT PLAN

The recommended airport improvement plan incorporates the findings from the demand/capacity analyses and the preferred alternative selected from an interactive process involving stakeholder coordination. Recommendations stated in the MPU were selected through a series of interactive work sessions that included various stakeholders, Airport users, regulatory agencies, and TCAA staff and board members.

During these sessions, participants openly discussed the location and configuration of future facilities or replacement facilities. These discussions covered advantages, disadvantages, and tradeoffs of different facility locations, as well as configurations and layouts for the proposed facilities, from operational and land use perspectives.

The recommended airport improvement projects are intended to comply with existing FAA airport design standards, accommodate future demand, modernize and update Airport facilities and equipment, and assist TCAA in meeting its vision.





Projects Not Illustrated

- Runway 11-29 Rehabilitation
- Security Upgrades and Enhancements
- North Side Infrastructure (Utility) Improvements
- Recurring Hangar Improvements
- Rehabilitation North Apron and Sheriff's Apron
- Taxiway A and B Rehabilitation

Airfield Improvements

(1) Construct Engine Run-Up Area and Taxiway Geometry Enhancements

Landside Improvements

(2) Northern Access Roadway and Parking Lot Improvements

(3) Southern Access Roadway Rehabilitation, Lighting and Aesthetic Improvements

(4) Relocation of Airport Road and Parking Lot Expansion

Proposed Buildings

(5) Demolition of Building 2, 3, and 5

(6) EAA Relocation and Hangar Construction

(7) Construct New FBO Facility/GA Terminal

(8) Construct Corporate/Conventional Hangars

(9) Electrical Vault & Rotating Beacon Replacement and Relocation

(10) T-Hangar Development/Redevelopment

(11) Construct Airport Maintenance Facility

LEGEND

- Airport Property Boundary
- Proposed Land Acquisition
- Proposed Airfield Pavement
- Existing Airfield Pavement
- Existing Building
- Pavement Demolition

NOTES:

EAA - Experimental Aircraft Association
FBO - Fixed-Base Operator
GA - General Aviation

SOURCES: Martinez Geospatial, Inc., November 2023 (aerial photography - for visual reference only, may not be to scale); Ricondo & Associates, Inc., July 2024.

NORTH

6 ENVIRONMENTAL OVERVIEW

The Environmental Overview (EO) summarizes environmental processing considerations for the recommended airport improvement plan projects proposed as part of this MPU, specifically as they relate to the requirements in FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, and FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*. All projects that require federal action, including those receiving federal funding, must comply with NEPA.

The intent of the EO is to provide an understanding of key environmental issues that would likely need to be addressed as part of future environmental reviews of MPU projects. Based on the development associated with the recommended projects proposed as part of the MPU, the following environmental resource categories have been preliminarily identified for any potential environmental impacts. Ongoing collaboration with the FAA regarding updates and refinements to future project assumptions, such as timing and anticipated impacts, will be critical to refining a NEPA processing strategy.

PURPOSE OF THE ENVIRONMENTAL OVERVIEW

- **Identify potential environmental constraints** to planned projects.
- **Identify anticipated NEPA documentation requirements:** Categorical Exclusion, Environmental Assessment, or Environmental Impact Statement.
- **Support early coordination** with federal and state agencies to reduce permitting risk.
- **Inform design decisions** to avoid or minimize adverse impacts to sensitive resources.

ENVIRONMENTAL RESOURCE CATEGORIES



7 CAPITAL IMPROVEMENT PROGRAM



The Capital Improvement Program (CIP) provides a structured framework for TCAA staff to guide decision-making on recommended airport enhancements and development initiatives. It incorporates both ongoing TCAA capital projects and the recommended airport improvement plan, prioritizing efforts to maximize federal and state funding, sustain airport operations, and enable future growth for asset preservation.

The TCAA will implement the recommended improvements from the MPU through a phased development approach. Project sequencing depends on factors such as funding availability, facility age and condition for projects associated with existing facilities, and applicable regulatory requirements. The CIP organizes proposed projects into three distinct phases to support efficient and strategic execution over time.

SHORT-TERM PROJECTS
FY2025* through FY2029

INTERMEDIATE-TERM PROJECTS
FY2030 through FY2034

LONG-TERM PROJECTS
FY2035 through FY2043

* The MPU was finalized in FY2026; however, the development of the Capital Improvement Program, and analysis of the subsequent funding plan, began in FY2025.

SHORT-TERM IMPROVEMENT PROJECTS (FY2025* – FY2029)

- Runway 11-29 Rehabilitation – Design and Construction
- Northern Access Roadway and Parking Lot Rehabilitation
- Security Upgrades and Enhancements – New Gate Operators and Keypads
- Demolition of Building 3, Building 5, and Building 2
- Acquisition of River Fly-in Hangars
- EAA Relocation – Design and Construction
- Acquire Land (South Courtenay Parkway, Live Oak Boulevard) for T-Hangar Expansion and Airport Road Relocation
- Southern Access Roadway Rehabilitation, Lighting, and Aesthetic Improvements – Design and Construction
- Northside Infrastructure Improvements
- Electrical Vault and Rotating Beacon Replacement and Relocation – Design and Construction
- Rehabilitate Taxiway A and Connectors and Construct Run-up Area – Design and Construction
- Construct T-Hangars and Access Taxilanes – Design and Construction
- Recurring Hangar Improvements
- Taxiway B and Connectors Rehabilitation – Design
- Relocation of Airport Road and Parking Lot Expansion – Design

INTERMEDIATE-TERM IMPROVEMENT PROJECTS (FY2030 – FY2034)

- Taxiway B and Connectors Rehabilitation – Construction
- Rehabilitate North Apron – Design
- Relocation of Airport Road and Parking Lot Expansion – Construction
- Construct Clear-Span Hangars, Taxilanes, and Vehicular Parking – Design and Construction
- Recurring Hangar Improvements
- Security Upgrades and Enhancements – New Gate Operators and Keypads
- Acquire Land (Wall Street) for Aeronautical Development

LONG-TERM IMPROVEMENT PROJECTS (FY2035 – FY2043)

Long-term improvement projects include constructing T-hangars and access taxilanes, developing a vertiport, and building a new airport maintenance facility. In addition to these new facilities, the plan also calls for rehabilitating existing hangars and apron areas. The MPU Technical Report provides a complete list of projects, along with their planned implementation year and estimated ROM costs.

OTHER DEMAND-DRIVEN DEVELOPMENT OPPORTUNITIES

Additionally, other demand-driven development opportunities were considered and discussed throughout the MPU planning effort; however, they were ultimately not included in the CIP. These other projects, which include the construction of additional corporate and T-hangars, an aircraft wash rack, and access taxilanes should be monitored over the 20-year planning horizon, and they may be added to the CIP, as necessary, pending future Airport needs and identification of funding opportunities.

* The MPU was finalized in FY2026; however, the development of the Capital Improvement Program, and analysis of the subsequent funding plan, began in FY2025.

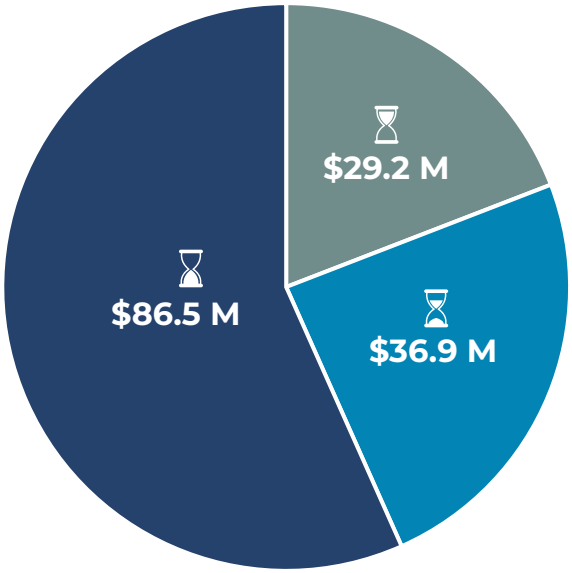
Rough order of magnitude (ROM) cost estimates were developed for each project in the CIP using 2024 U.S. dollars and were escalated at 3.5 percent annually to account for inflation. The ROM cost estimates related to development projects incorporate the direct cost of construction and soft program costs to reflect the overall anticipated project cost. It is anticipated that further refinement of the cost estimates will occur as the projects advance through architectural and engineering analyses, and design development.

Rough Order of Magnitude Cost of the Capital Improvement Program by Phase

SHORT-TERM PROJECTS (FY2025 - FY2029)

INTERMEDIATE-TERM PROJECTS (FY2030 - FY2034)

LONG-TERM PROJECTS (FY2035 - FY2043)



NOTE:
FY - Fiscal Year
SOURCES: Ricondo & Associates, Inc., November 2024; Mohsen Design Group (cost estimates), November 2024

While these three CIP phases estimate the general period (in FYs) for future Airport enhancements, periodic re-evaluation of the proposed timing may be necessary. This would allow TCAA to adjust to evolving Airport needs or priorities due to potential deviations from the operational demand levels contained in the aviation activity forecasts or other unforeseen factors. It is also possible that other enhancements not included in this implementation plan may be identified in the future to support Airport operations and/or improve operational efficiency.



8 FUNDING PLAN

Airport development is typically supported through a mix of public and private funding sources, each with its own requirements and opportunities. The proposed funding strategy for the recommended airport improvement plan includes a variety of funding sources including federal, state, local, and other entities. Actual financing strategies used will be determined as implementation approaches. Typical funding sources include the following:

AIP Grants — FAA distributes federal grants under the AIP to airport operators in two ways: through entitlement grants and discretionary grants. Entitlement grants for GA airports that are included in the National Plan of Integrated Airport Systems (NPIAS), such as COI, are referred to as nonprimary entitlement grants. TCAA is eligible to receive up to $150,000 annually in nonprimary entitlement grants for airfield capital projects and eligible maintenance projects. Discretionary grants are distributed for individual projects based on funding availability and the priority of projects at airports nationwide.

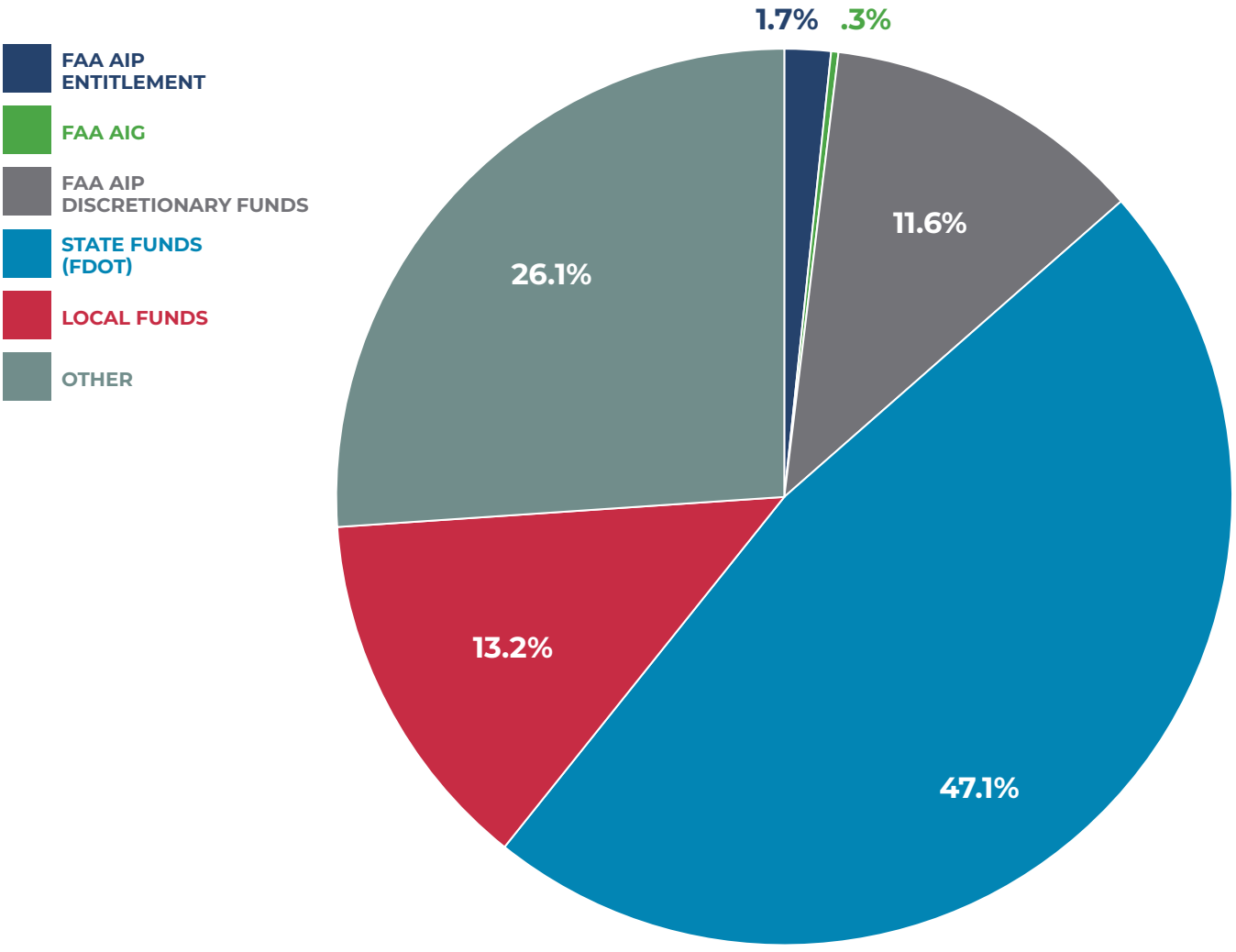
Airport Infrastructure Grants (AIGs) — As part of the Infrastructure Investment and Jobs Act (IIJA), AIG funds for nonprimary airports are allocated based on airport classification in the NPIAS and the aggregated NPIAS eligible development cost for each classification. AIG funds are only applicable for short-term projects, through FY2026.

FDOT Funds — The FDOT grant program was established to fund projects related to airport planning and capital improvements that address safety, security, or capacity improvements; land acquisition; and economic development. To be eligible for FDOT funding, projects must be included in the FDOT Joint Automated CIP (JACIP), which is a cooperative funding program mechanism used by FAA and FDOT for coordination of annual funding and programming of Florida airport projects.

Local Funds — Local funds may be provided by TCAA or other local sources for projects not eligible for federal or state funding and to account for shortfalls in funding levels.

Other Funds — Other funding includes possible grants and assistance from nontraditional federal and state (i.e., FAA and FDOT) entities. Depending on project type or funding availability, grants could also be available from local governmental entities and agencies responsible for economic and workforce development. Other funding would also include private investments from existing and future tenants, as well as public-private partnerships (PPPs).

Estimated Project Funding Sources for Recommended Airport Improvement Plan



NOTES:
1. AIP - Airport Improvement Program; AIG - Airport Infrastructure Grant; FAA - Federal Aviation Administration; FDOT - Florida Department of Transportation; FY - Fiscal Year
2. Costs developed in 2024 U.S. dollars.
3. Project costs have been escalated by 3.5 percent annually over the course of the planning period.
4. Other includes possible grants and assistance from federal, state, and local governmental agencies, as well and private investment or public-private partnerships.
SOURCES: Ricondo & Associates, Inc., November 2024; Mohsen Design Group (cost estimates), November 2024.

9 PUBLIC AND STAKEHOLDER PARTICIPATION



The stakeholder engagement and public outreach program was designed to gather meaningful input from individuals and organizations with a vested interest in the Airport and the MPU. This effort included a series of activities: three Technical Advisory Panel meetings, three Citizens Advisory Panel meetings, a primary tenant survey, two TCAA Board Workshops, two TCAA Board Briefings, and two public workshops. These forums ensured multiple opportunities for participation and informed the resulting recommendations.



10 ACKNOWLEDGMENTS

CONSULTANT TEAM

Ricondo & Associates, Inc.

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Martinez Geospatial, Inc.

Mohsen Design Group, Inc.

The Quotient Group

TECHNICAL AND CITIZENS ADVISORY PANEL

Special thanks to all the members representing the diverse stakeholder organizations that comprised the Technical and Citizens Advisory Panels. Your contributions to this MPU are deeply appreciated.





FLY SPACE COAST

MERRITT ISLAND AIRPORT (COI)