Fulton County Executive Airport
Charlie Brown Field

AIRPORT MASTER PLAN UPDATE 2040

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Table of Contents

Figures

Tables

INTRODUCTION

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Chapter 1 – Introduction

Fulton County Executive Airport (FTY) Master Plan has been undertaken to evaluate the airport's capabilities and role, to forecast future aviation demands, and to plan for the timely development of new or expanded facilities that maybe required to meet that demand and maintain the airport. The preparation of this Master Plan is evident that Fulton County recognizes the importance of the airport to the community and the associated challenges inherent in providing for its improvement needs. The cost of maintain and airport is an investment that yields impressive benefits to the community. With a sound and realistic plan, the airport can maintain its role an important link to the national air transportation system.

Fulton County initiated this Master Plan in 2020 to re-evaluate and adjust as necessary the future development plan for FTY. The last full Master Plan Update for FTY was completed in 2012. . This Master Plan is intended to provide guidance through an updated capital improvement and financial program to demonstrate the future investments required by airport stakeholders.

1.1 Object

As Airport Sponsor, Fulton County is obligated, through federal grant assurances, to maintain an up-to-date Airport Layout Plan (ALP) for Fulton County Executive Airport. The following objectives have been established to help guide the Master Planning process:

- Identify airside, landside, and airspace improvements and recommend options to further optimize the economic aspects of the airport while enhancing the safety and operational capability;
- Create a plan that meets the transportation needs of the community and establish an implementation schedule for short, intermediate and long-term improvements;
- Incorporate the interests of public and government agencies into the planning process; and
- Be sensitive to the overall environmental characteristics and needs of the surrounding area.

1.2 Key Issues

As a community with a growing economy and increasing population, Fulton County is faced with unique challenges. The key issues to be addressed by this Master Plan are:

- Responding to economic growth within the community;
- Meeting the needs of existing and future aviation stakeholders;
- Identifying improvements to increase airport landside capacity;
- Identifying areas of highest and best use for future airside facilities; and
- Meeting FAA airport design standards.

1.3 Master Plan Key Elements and Process

The Fulton County Executive Airport Master Plan is being prepared following Federal Aviation Administration (FAA) guidelines and industry-accepted principles and practices. The Master Plan has

seven chapters that are intended to assist in the discovery of future facility needs and provide the supporting rationale for their implementation.

- Chapter One – Introduction sets the tone for the study by highlighting the objectives the study will address, sets goals, identifies key issues, as well as a summary of the overall development plan.

- Chapter Two – Inventory summarizes the inventory efforts. The inventory efforts are focused on collecting and assembling relevant data pertaining to the airport and the area it serves. Information is collected on existing airport facilities and airport environment and airspace.

- Chapter Three – Aviation Forecasts examines the potential aviation demand at the airport. The analysis utilizes local socioeconomic information, as well as national air transportation trends to quantify the levels of aviation activity which can reasonably be expected to occur at FTY through the year 2040. The results of this effort are used to determine the types and sizes of facilities which will be required to meet the projected aviation demand at the airport through the planning period.

- Chapter Four – Facility Requirements comprises the airfield analysis focuses on improvements needed to safely serve the type of aircraft expected to operate at the airport in the future, as well as navigational aids to increase the safety and efficiency of operations. This element also examines the general aviation terminal, hangar, apron, and support needs.

- Chapter Five – Airport Alternatives considers a variety of solutions to accommodate the projected facility needs. This element proposes various facility and site plan configurations which can meet the projected facility needs. An analysis is completed to identify the advantages and disadvantages of each proposed development alternative, with the intention of determining a single direction for development.

- Chapter Six – Airport Layout Plan provides both a graphic and narrative description of a concise ALP drawing set reflecting the proposed improvements through 2043.

- Chapter Seven – Capital Improvement Plan focus is also given to a proposed capital needs program which defines the schedules, costs, and funding sources for the recommended development projects.

1.4 Public Involvement

The Fulton County Executive Airport Master Plan is of interest to many within the local community. This includes airport users, airport tenants, local community, community organizations and County stakeholders. As an important component of the regional, state and national aviation systems, FTY is of importance to both state and federal agencies responsible for overseeing air transportation.

To assist in the development of the Master Plan, the Airport has identified a group of aviation-interest/users to act as an advisory role in the development of the Master Plan. Members of the Technical

Advisory Committee (TAC) and airport personnel met and reviewed phased presentations and provided comments throughout the study to help ensure that a realistic and viable plan is developed. At the conclusion of the Master Plan Update, a final presentation was provided to the stakeholders on February 16, 2023. The recommendations of the Master Plan were adopted formally by BOC resolution August 16, 2023.

1.5 Summary

Overall, the Master Plan will provide an overview of the airport's needs over the twenty-year planning period including issues related to costs, timing, and funding. The goal of the plan is to act as an aid in management decisions for airport facility improvements. Major improvements recommended in the plan include:

- Runway 8-26 RSA Improvements
- Runway 8 EMAS with 304' Lead-in Extension
- Runway 26 EMAS
- Taxiway (TDG 2B) Improvements
- Proposed Runway 14-32 Conversion
- North Terminal Area Improvements
- Main Terminal Apron Pavement Rehab
- Proposed New Terminal Building
- Proposed Vertiport
- Support Facilities: ARFF, Customs

Over the twenty-year planning period, the total estimated cost of the proposed airport improvements are $127.9 million. Including $41.3 million in the initial five-year planning period. Portions of these cost could be eligible for potential state and federal grants as described in Chapter 7. **Table 1-1** provides proposed development summary and timeline. **Figure 1-1** provides a graphical depiction of proposed improvements and phasing plan.

Table 1-1: Proposed Development Summary and Timeline Initial (FY 2024-2043), Intermediate, Long, Ultimate Term

Timeline	Map ID	Proposed Project Description	Action Items/Next Steps/Status	Source	Total Cost
FY 2024	1	Airport Terminal Improvement - Terminal Building (Design and Construction)	Design/Funding	FEDERAL-BIL	$ 6,500,000
		Airport Customs Facility Improvements (Design & Construction)	Design/Funding	FEDERAL-BIL	$ 2,500,000
		Taxiway Pavement TDG 2B Improvements (Design)	Design/Funding	FEDERAL-BIL	$ 100,000
		Main Ramp Pavement Rehabilitation (Design)	Design rehab/strengthen pavement to support critical aircraft.	FEDERAL	$ 104,714
		Runway 8-26 EMAS Both Ends (Environmental & Permitting)	Environmental for Runway 8-26 (9-27) EMAS	FEDERAL	$ 320,000
		Runway 8-26 EMAS Both Ends (Design)	Environmental for Runway 8-26 (9-27) EMAS	FEDERAL	$ 300,000
		Stormwater Pollution Prevention Plan (SWPPP) Update	Evaluate/Update current stormwater pollution plan.	FEDERAL	$ 15,000
		FY 24-26 DBE Update	Routine update.	FEDERAL	$ 15,000
	2	Repair Taxiway 'I' (East Area) (Design & Construction)	Rehab weaken taxiway segment	FEDERAL	$ 200,000
	3	Runway/Taxiway Painting Preventative Project, and Signage Upgrade.	Remark runways according to magnetic north.	LOCAL	$ 200,000
	4	Aircraft Rescue & Firefighting (ARFF) Facility Improvements - Phase III (Construction)	Complete construction of ARFF Facility.	LOCAL	$ 2,500,000
		Acquire Aircraft Rescue & Firefighting (ARFF) Vehicle [Index B] & associated Gear/Equipment	Purchase ARFF equipment/assets.	LOCAL	$ 1,000,000
					$ 13,754,714

Table 1-1: Proposed Development Summary and Timeline Initial (FY 2024-2043), Intermediate, Long, Ultimate Term (Cont.)

Timeline	Map ID	Proposed Project Description	Action Items/Next Steps/Status	Source		Total Cost
FY 2025	❺	Taxiway Pavement TDG2 Improvements - Construction	To meeting TDG 2B design standards.	FEDERAL-BIL	$	1,215,000
	❻	Runway 8-26 EMAS (Both Ends) - Construction	Improve existing RSA upon successful construction of EMAS and 304' runway length	FEDERAL	$	13,400,000
	❼	Main Ramp Pavement Rehabilitation - Construction	Rehab/strengthen pavement to support critical aircraft.	FEDERAL	$	4,800,000
		FY 24-26 DBE Update - Reimbursement		FEDERAL	$	500,000
	❽	Taxiway "I" Extension to Runway 26 - (Environmental & Permitting)	Pursue permitting for Taxiway "I" extension	FEDERAL	$	130,000
		Runway/Taxiway Painting Preventative Project	Maintain airfield marking.	LOCAL	$	50,000
		Runway Length Analysis Study - Reimbursement		FEDERAL	$	38,500
					$	**20,133,500**
FY 2026	❾	Taxiway A & B Airfield Lighting & Signage Rehabilitation, including Vault Improvements - Phase 2 (Design)	Design for lighting equipment approaching the end of usual life.	FEDERAL	$	101,300
		Taxiway "I" Extension to Runway 26 (Design)	Design to achieve full parallel taxiway to extended *(by 304')* Runway 8-26 (9-27).	FEDERAL	$	212,500
		Main Entrance/Business Park - Site Development to Pad Ready - (Design)	Prepare site for development.	LOCAL	$	1,500,000
		Runway 32 -RPZ - Site Development to Pad Ready (Design)	Prepare site for development.	LOCAL	$	80,000
					$	**1,893,800**

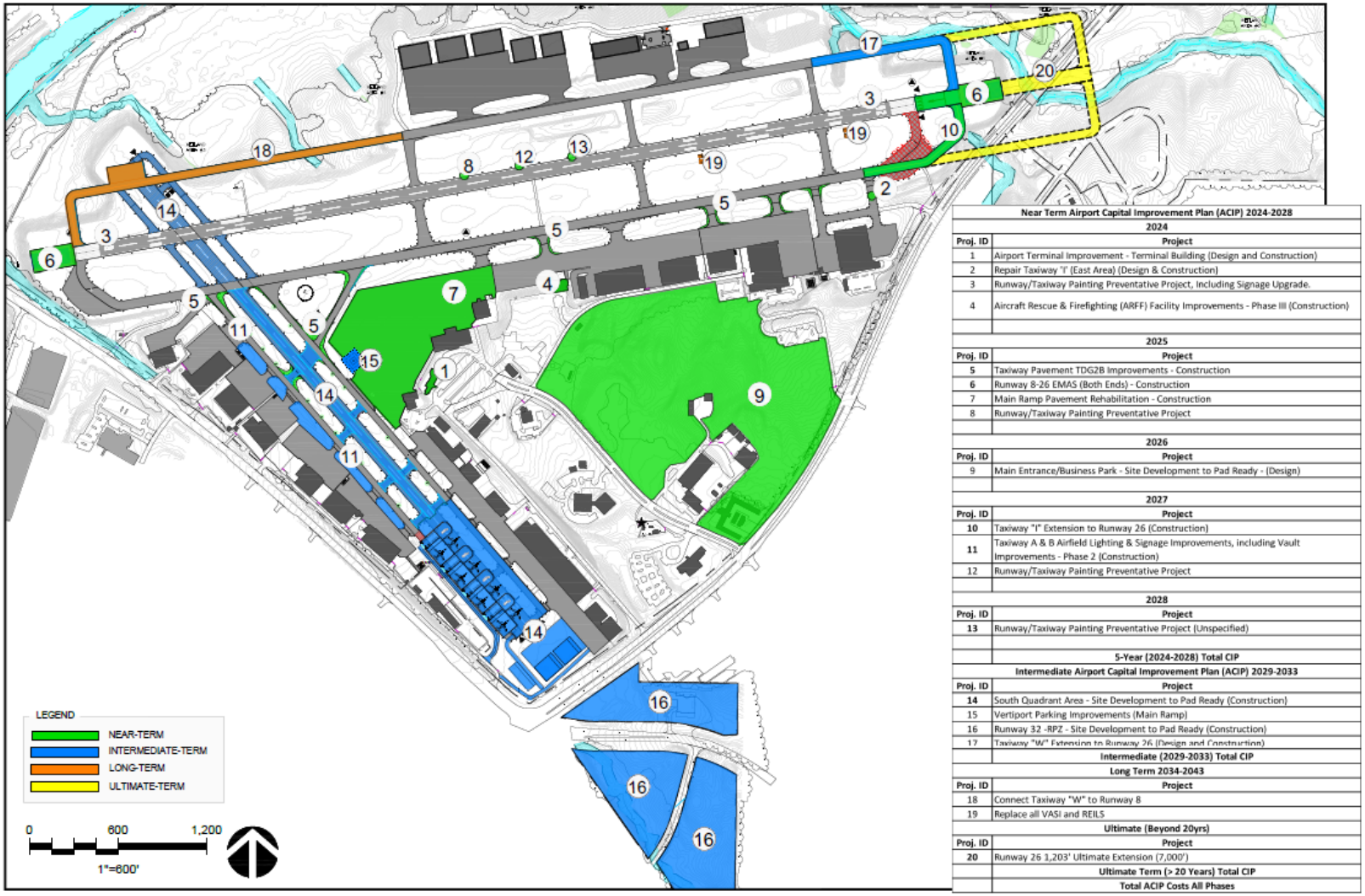
Table 1-1: Proposed Development Summary and Timeline Initial (FY 2024-2043), Intermediate, Long, Ultimate Term (Cont.)

Timeline	Map ID	Proposed Project Description	Action Items/Next Steps/Status	Source		Total Cost
FY 2027	⑩	Taxiway "I" Extension to Runway 26 (Construction)	Construct to achieve full parallel taxiway to extended *(by 304')* Runway 8-26 (9-27).	FEDERAL	$	2,000,000
	⑪	Taxiway A & B Airfield Lighting & Signage Improvements, including Vault Improvements - Phase 2 (Construction)	Equipment is approaching the end of usual life.	FEDERAL	$	1,013,000
	⑫	Runway/Taxiway Painting Preventative Project	Maintain airfield marking.	LOCAL	$	50,000
					$	**3,063,000**
FY 2028		Taxiway "W" Extension to Runway 26 (Design, Environmental, Permitting)	Seek environmental, permitting, and design for Taxiway "W" extension.	FEDERAL	$	450,000
		South Quadrant Area (Closed Runway 14-32) Site Development to Pad Ready (Design)	Close Runway 14-32.	LOCAL	$	1,540,000
		Airfield Pavement Rehabilitation (Unspecified)	Maintain/strengthen pavement to support critical aircraft.	FEDERAL	$	500,000
	⑬	Runway/Taxiway Painting Preventative Project (Unspecified)	Maintain airfield marking.	LOCAL	$	50,000
					$	**2,540,000**
				5-Year (2024-2028) Total CIP	**$**	**41,385,014**

Table 1-1: Proposed Development Summary and Timeline Initial (FY 2024-2043), Intermediate, Long, Ultimate Term (Cont.)

Timeline	Map ID	Proposed Project Description	Action Items/Next Steps/Status	Source		Total Cost
Intermediate 2029-2033	14	South Quadrant Area - Site Development to Pad Ready (Construction)	Project site ready for hangar development.	LOCAL	$	15,400,000
	15	Vertiport Parking Improvements (Main Ramp)	Install Evtol pad for Vertiport.	FEDERAL	$	250,000
	16	Runway 32 -RPZ - Site Development to Pad Ready (Construction)	Project site ready for non-aeronautical development.	LOCAL	$	-
		Airfield Pavement Rehabilitation (Unspecified)	Maintain airfield marking.	FEDERAL	$	2,500,000
	17	Taxiway "W" Extension to Runway 26 (Design and Construction)	Construct to achieve partial parallel taxiway to extended *(by 304')* Runway 8-26 (9-27).	FEDERAL	$	7,700,000
					$	**25,850,000**
Long Term 2034-2043	18	Connect Taxiway "W" to Runway 8	Construct full parallel Taxiway "W" to Runway 8-26 (9-27)	FEDERAL	$	10,500,000
		Airfield Pavement Rehabilitation (Unspecified)	Maintain airfield marking.	FEDERAL	$	5,000,000
	19	Replace all VASI and REILS	Equipment is approaching the end of usual life.	FEDERAL	$	250,000
					$	**15,750,000**
Ultimate (Beyond 20yrs)	20	Runway 26 1,203' Ultimate Extension (7,000')	Construct 899' for Runway 26 (27).	FEDERAL	$	45,000,000
					$	**45,000,000**
				Total ACIP Costs All Phases	**$**	**127,985,014**

Figure 1-1: Phasing Plan



Near Term Airport Capital Improvement Plan (ACIP) 2024-2028	
2024	
Proj. ID	**Project**
1	Airport Terminal Improvement - Terminal Building (Design and Construction)
2	Repair Taxiway 'I' (East Area) (Design & Construction)
3	Runway/Taxiway Painting Preventative Project, Including Signage Upgrade.
4	Aircraft Rescue & Firefighting (ARFF) Facility Improvements - Phase III (Construction)
2025	
Proj. ID	**Project**
5	Taxiway Pavement TDG2B Improvements - Construction
6	Runway 8-26 EMAS (Both Ends) - Construction
7	Main Ramp Pavement Rehabilitation - Construction
8	Runway/Taxiway Painting Preventative Project
2026	
Proj. ID	**Project**
9	Main Entrance/Business Park - Site Development to Pad Ready - (Design)
2027	
Proj. ID	**Project**
10	Taxiway "I" Extension to Runway 26 (Construction)
11	Taxiway A & B Airfield Lighting & Signage Improvements, including Vault Improvements - Phase 2 (Construction)
12	Runway/Taxiway Painting Preventative Project
2028	
Proj. ID	**Project**
13	Runway/Taxiway Painting Preventative Project (Unspecified)
	5-Year (2024-2028) Total CIP
Intermediate Airport Capital Improvement Plan (ACIP) 2029-2033	
Proj. ID	**Project**
14	South Quadrant Area - Site Development to Pad Ready (Construction)
15	Vertiport Parking Improvements (Main Ramp)
16	Runway 32 -RPZ - Site Development to Pad Ready (Construction)
17	Taxiway "W" Extension to Runway 26 (Design and Construction)
	Intermediate (2029-2033) Total CIP
Long Term 2034-2043	
Proj. ID	**Project**
18	Connect Taxiway "W" to Runway 8
19	Replace all VASI and REILS
Ultimate (Beyond 20yrs)	
Proj. ID	**Project**
20	Runway 26 1,203' Ultimate Extension (7,000')
	Ultimate Term (> 20 Years) Total CIP
	Total ACIP Costs All Phases

Source: Michael Baker International, 2022.

INVENTORY

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Chapter 2 – Inventory

The body of data presented in the following subsections was assembled through thorough research, on-site inspections, review of previously prepared documents, and the collection of secondary data at the federal, state, and local levels.

The inventory phase of a master plan is critical to the overall conduct of the master plan from the standpoint that all analyses, evaluations, and findings have a direct relationship with the airport and how it presently exists. Historic aviation activity, current airport service levels, and regional socioeconomic characteristics all function to form a basis from which aviation-related activity is forecast (reference Chapter 3). These forecasts of future demand are compared to the existing array of facilities to identify deficiencies over the next 20 years. Concepts are developed and evaluated for various functional areas with the purpose being to establish directions of growth that will work harmoniously with existing facilities while also providing the optimum plan for the Airport. Cost estimates and a capital improvement program will be developed for the total airport development concept, drawing from base information on facilities presented in this chapter. Finally, the existing conditions digital database will serve as the base map and key component of the Airport Layout Plan drawing set.

The following sections address general information, major airport facilities, and the local community characteristics relevant to the project. Various tables and exhibits are presented to facilities a comprehensive understanding of the many integral components to be studied at the Fulton County Executive Airport- Charlie Brown Field.

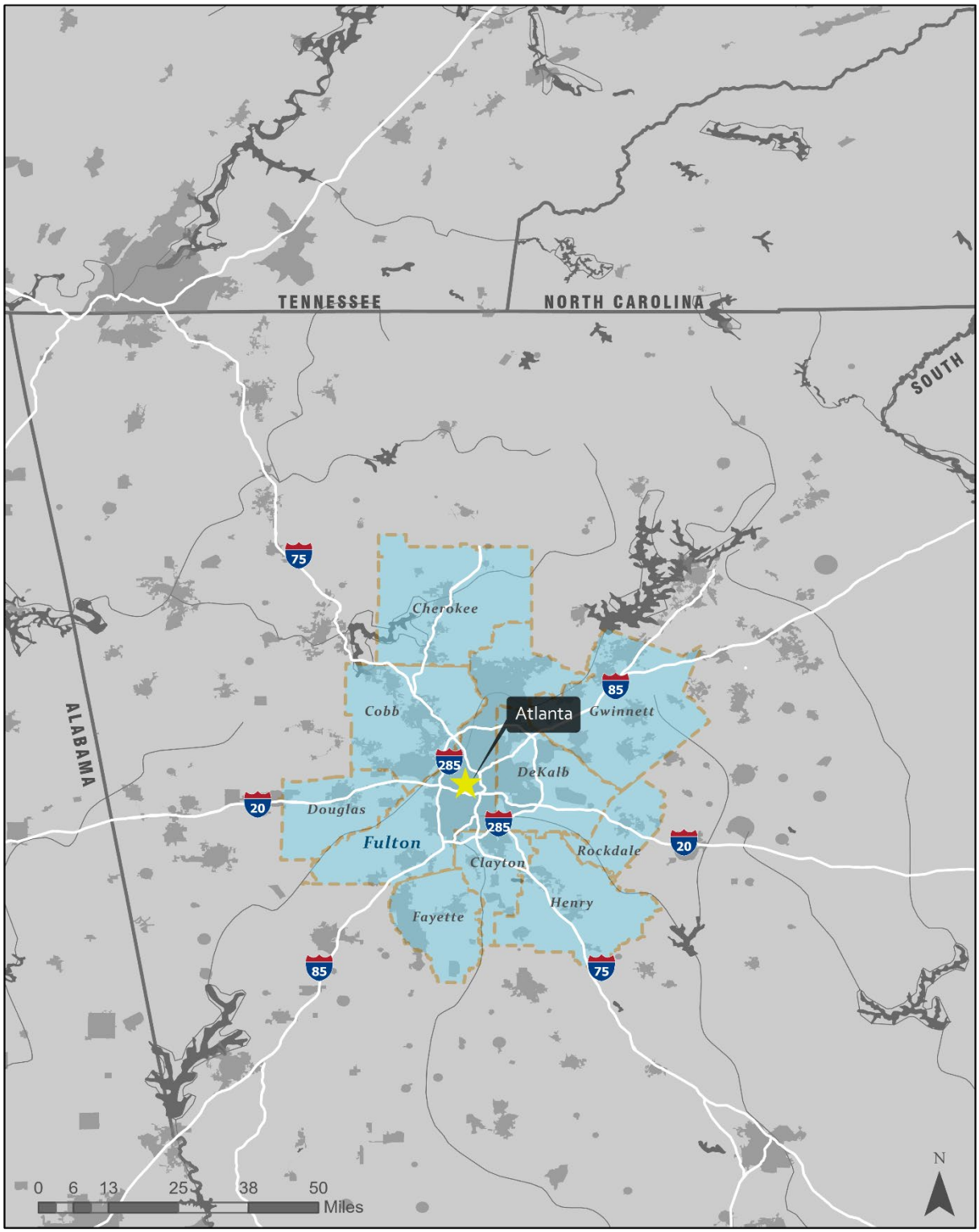
2.1 General Information

Fulton County Executive Airport - Charlie Brown Field (FTY) is a public owned facility, whereby its current role in the national aviation system meets needs of general aviation patrons and other tenants. The existing and potential role of the airport is affected and, in some instances, dictated by such factors as historical events, geographic location, acreage, and surface transportation.

2.1.1 Airport Location and Study Area

The study area for the airport is considered the Atlanta Metropolitan Region. The 10-county Atlanta Metropolitan Region consists of the counties in Georgia that are identified as the primary area shown shaded in **Figure 2-1**. These counties include Cherokee, Clayton, Cobb, DeKalb, Douglas, Fayette, Fulton, Gwinnett, Henry ad Rockdale. Atlanta Regional Commission (ARC) data for the Atlanta region shows that in 2019 the region accounted for a population of 4,628,400 people which makes up roughly 43% of Georgia's population. This thriving area is the economic power-center of not only Georgia but the Southeast region of the country and hosts the world's most-travel airport.

Figure 2-1: Regional Location



Source: Michael Baker International, 2020.

Fulton County Executive Airport is a general aviation service airport located in the Chattahoochee River valley within the Atlanta metropolitan area. The airport is currently situated in the west-central portion of Fulton County and is near the city limits of Atlanta. Approximately 6 miles west of downtown, 1.5 miles north of U.S. Interstate 20 (I-20) and roughly 3.5 miles from the (I-20) and U.S. Interstate (I-285) junction. Fee simple property held by the FTY totals in excess of 985 acres.

Besides FTY, there are four publicly-owned, public use airport in proximity of the airport:

- Hartsfield-Jackson Atlanta International Airport (ATL), 8 nautical miles (nm) southeast;
- Cobb County International Airport-McCollum Field (RYY), 15 nm north;
- DeKalb-Peachtree Airport (PDK), 12 nm northeast; and,
- Paulding Northwest Atlanta Airport (PUJ), 22 nm west.

In addition, there is one military base in vicinity of FTY:

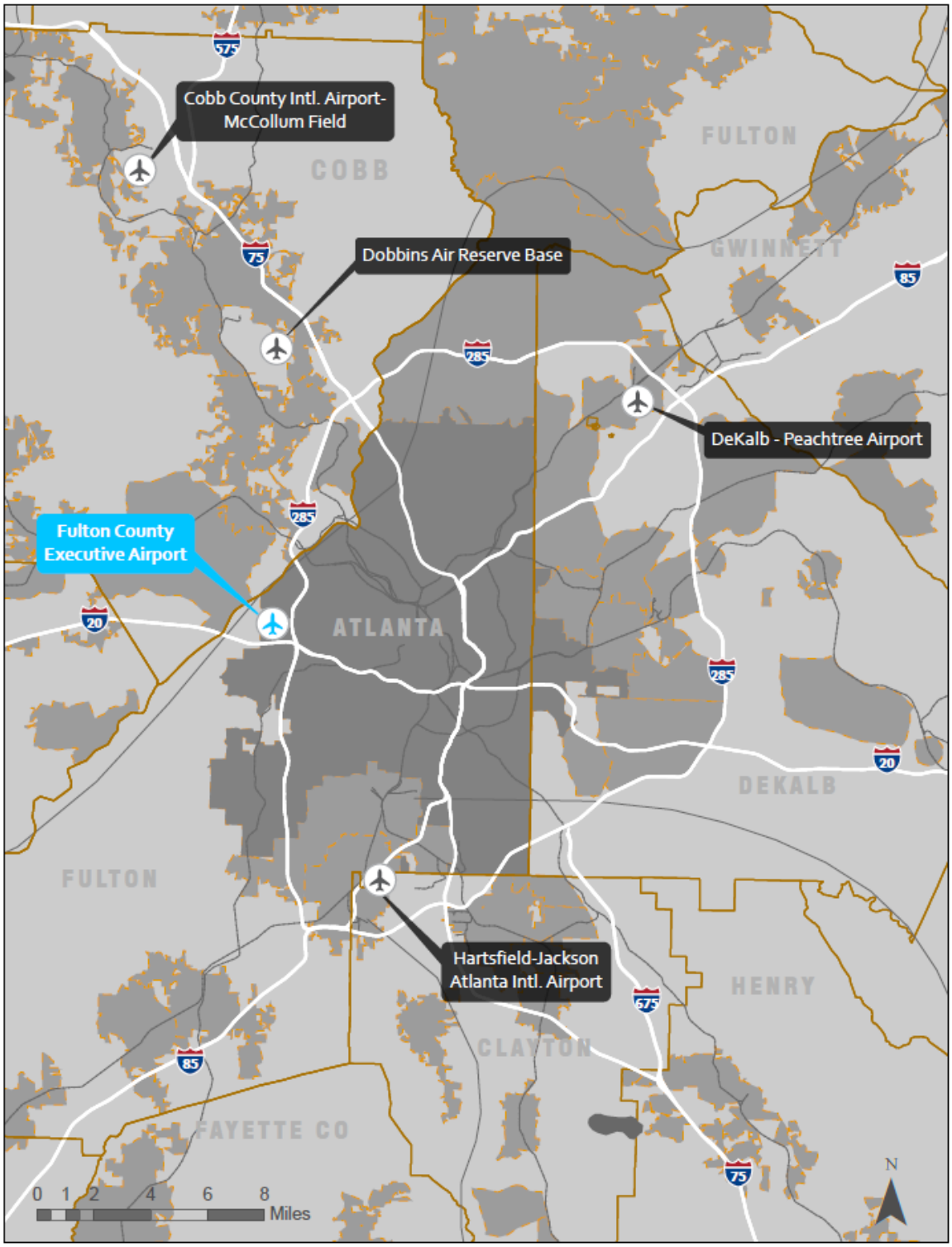
- Dobbins Air Force Base (MGE), 8 nm north.

Figure 2-2, provides a graphic representation of nearby cities/towns and airports in proximity of Fulton County Executive Airport.

2.1.2 Airport Background

Fulton County Executive Airport was constructed in 1949. Since then the airport has grown to include large corporations such as Home Depot, Norfolk Southern, Coca-Cola, Arthur Blank, and Cox Media. The airport has two runways, 8/26 and 14/32. FTY is a public use airport located approximately 15 minutes from Downtown Atlanta. With the proximity to Downtown Atlanta, FTY conveniently offers services to corporate aviation serving downtown businesses. There are multiple flight schools that teach young pilots how to fly fixed wing and rotary aircraft. The name Charlie Brown Field was coined in 1960 to honor Commissioner Charlie Brown who was influential in the growth of the airport. In 2019 the name of the airport was updated to the Fulton County Executive Airport to reflect its identity as the preferred airport of choice for corporate aviation. No other general aviation airport operates a 24-hour air traffic control tower in metropolitan Atlanta.

Figure 2-2: Vicinity Map



Michael Baker International, 2020.

2.2 Airport Classification

2.2.1 FAA Service Level

In the United States, there are 5,099 public-use airports. Of these there are 3,321 airports that are identified by the FAA's *2019-2023 National Plan of Integrated Airport Systems* (NPIAS) as important to national air transportation and eligible to receive grants under the FAA Airport Improvement Program (AIP). The NPIAS groups airports into two categories: Primary and Nonprimary. Primary airports are airports receiving scheduled air carrier service with more than 10,000 passengers a year. Primary airports are further grouped into four subcategories: large hub, medium hub, small hub and nonhub. Nonprimary airports primarily support general aviation aircraft. **Table 2-1** presents the NPIAS service level classifications and their criteria.

Table 2-1: FAA NPIAS Classification

<table>
<tr><th colspan="2">Airport Classifications</th><th>Hub Type: Percentage of Annual Passenger Boarding</th><th>Common Name</th></tr>
<tr><td rowspan="4">Commercial Service:
Publicly owned airports that have at least 2,500 passenger boardings each calendar year and receive scheduled passenger service</td><td rowspan="3">Primary:
Have more than 10,000 passenger boardings each year</td><td>Large:
1% or more</td><td>Large Hub</td></tr>
<tr><td>Medium:
At least 0.25%,
but less than 1%</td><td>Medium Hub</td></tr>
<tr><td>Small:
At least 0.05%,
but less than 0.25%</td><td>Small Hub</td></tr>
<tr><td>Nonhub:
More than 10,000,
but less than 0.05%</td><td>Nonhub Primary</td></tr>
<tr><td>Non Primary</td><td>Nonhub:
At least 2,500
and no more than 10,000</td><td>Nonprimary Commercial Service</td></tr>
<tr><td colspan="2">Nonprimary (FTY's Role)
(Except Commercial Service)</td><td>Not Applicable</td><td>Reliever (FTY's Role)

General Aviation</td></tr>
</table>

Source: 2019-2023 NPIAS.

In the FAA NPIAS, FTY is categorized as a *Nonprimary General Aviation – Reliever Airport*. The term "reliever" means that FTY relieves congestion from nearby Hartsfield-Jackson Atlanta International Airport (ATL) by offering an alternative airfield for use by general aviation aircraft.

As reported in the *2019-2023 NPIAS*, the term "reliever" is defined in the FAA's authorizing statute at *49 U.S.C., section 47102*, as "an airport the Secretary designates to relieve congestion at a commercial service airport and to provide more general aviation access to the overall community." The term "reliever" is relevant in a small number of contexts but is increasingly problematic because only a small number of commercial service airports still experience significant congestion. Regardless, because the term is still defined and used in statute, the FAA continues to report the current designations in the NPIAS.

In 2012, the FAA further defined the roles of General Aviation airports in *General Aviation Airports: A National Asset* (known as the ASSET report). This comprehensive study developed the following categories of general aviation airports: National, Regional, Local, Basic, and Unclassified. **Table 2-2** presents these categories and their descriptions. FTY is classified in the ASSET report as a *National* airport.

Table 2-2: FAA Airport Roles

Airport Roles	
National **(FTY's Role)**	Located in metropolitan areas near major business centers and support flying throughout the Nation and the world. These airports provide pilots with attractive alternatives to the busy primary airport.
Regional	Located in metropolitan areas and serve relatively large populations. These airports support regional economies with interstate and some long-distance flying and have high levels of activity, including some jets and multiengine propeller aircraft.
Local	Provide communities with access to local and regional markets. Typically, local airports are located near larger population centers but not necessarily in metropolitan areas. They also accommodate flight training and emergency services.
Basic	Basic airports fulfill the principal role of a community airport providing a means for private general aviation flying, linking the community with the national airport system, and making other unique contributions. In some instances, the airport is the only way to access the community and provides emergency response access, such as emergency medical or firefighting and mail delivery. These airports have moderate levels of activity with an average of nine propeller-driven aircraft and no jets.
Unclassified	These airports tend to have limited activity and include public- and private-owned airports

Source: "General Aviation Airports: A National Asset" and ASSET 2: In-Depth Review of the 497 Unclassified Airports"

2.2.2 Georgia Aviation System Plan Role

The *Georgia Aviation System Plan* is a state level planning document prepared by GDOT. Most recently updated in 2019, the system plan evaluated all public-use general aviation airports in Georgia and classified each according to the type of aviation demand served. **Table 2-3** presents the system plan airport role classifications.

Table 2-3: Georgia Aviation System Plan Airport Role Classifications

Airport Level	Description
Level I	Minimum Standard General Aviation Airport
Level II	Business Airport of Local Impact
Level III (FTY's Role)	Business Airport of Regional Impact

Source: Georgia Aviation System Plan, 2019.

FTY is classified as a Level III airport, a *Business Airport of Regional Impact* and of significant importance to the state's aviation needs.

2.3 Previous Studies

The following studies were obtained from FTY and other agencies during the inventory phase of this project. These documents were reviewed for valuable historic data and significant insight into the process of long-range planning at the airport.

- 2000 Airport Master Plan Update, RW Armstrong,
- 2012 Airport Layout Plan Update, CDM Smith,
- 2016 Airport Layout Plan (limited), Michael Baker International,
- 2019 Economic Impact Study, Michael Baker International.

2.4 Meteorological Conditions

Local weather condition ultimately affects and influence future development at airports. Climate, visibility, and the direction and force of prevailing wind directly are significant elements that assistance in determining airfield design parameters, necessary NAVAIDs, and airport operations. Information regarding Atlanta metro's temperature and wind characteristics is presented in this section.

2.4.1 Local Climate

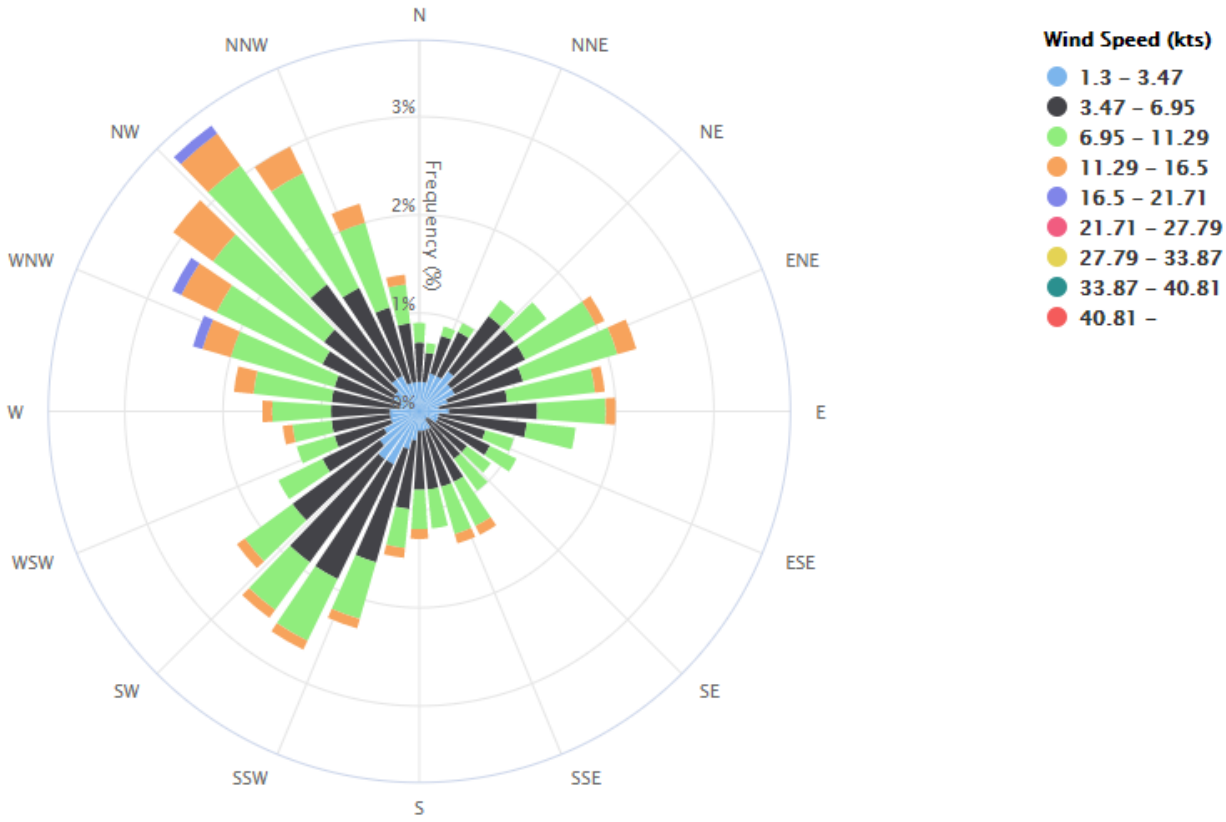
The climate data for Atlanta is derived from three decades of meteorological information (1981-2010), obtained from the National Oceanic and Atmospheric Administration (NOAA). Due to the city's location and altitude, the climate of Atlanta is humid and subtropical temperatures during the summer months and mild temperatures during the winter months. The city's average annual temperature is, 61.9°F. The average low is 44.7°F, while the annual average high is 78.5°F. The month of July and August are reported

to have the warmest months, with a mean temperature of 88.7°F and a max high of 89.5°F. The area occasionally deals with freezing temperatures. The average winter temperature is 44.7°F, with January traditionally being the coldest month. Average monthly precipitation rages from 3.61 inches to 5.06 inches, with an annual precipitation averaging 51.17 inches. Conventionally the months of October seem to be the driest while July experience the most rainfall.

2.4.2 Wind

Since aircraft take off and land into the wind, wind is a factor that plays a critical role in the development and operations of an airport. A wind rose diagram is a tool used to display the distribution of wind speed and wind direction at a specific geographical location. Airport planners use wind roses to determine the position of the runway and need for a crosswind runway. The direction of the wind is measured in accordance with the number of degrees from true north, or 360 degrees on the compass and is described according to the direction it originates from. The size of the spoke indicates how frequently wind comes from that direction. The spokes are subdivided by color indicating how often the winds speed is a various factor. The data displayed on **Figure 2-3** correspond to a 10-year wind observation 2010-2019 at FTY. The windrose illustrates that although there are some scattered frequencies of wind from the southwest and northeast the dominate wind pattern is observed from the northwest.

Figure 2-3: Prevailing Winds



Source: NOAA, Climate.gov, Midwest Regional Climate Center, 2020.

2.5 Airfield Facilities

Airside facilities where inventoried as part of the master plan process and include runways, taxiways, apron and ramp areas, pavement conditions, airfield lighting and marking, fueling facilities, airfield lighting, navigational aids and published procedures. The following sections provide a concise accounting for all applicable airfield assets at the Airport.

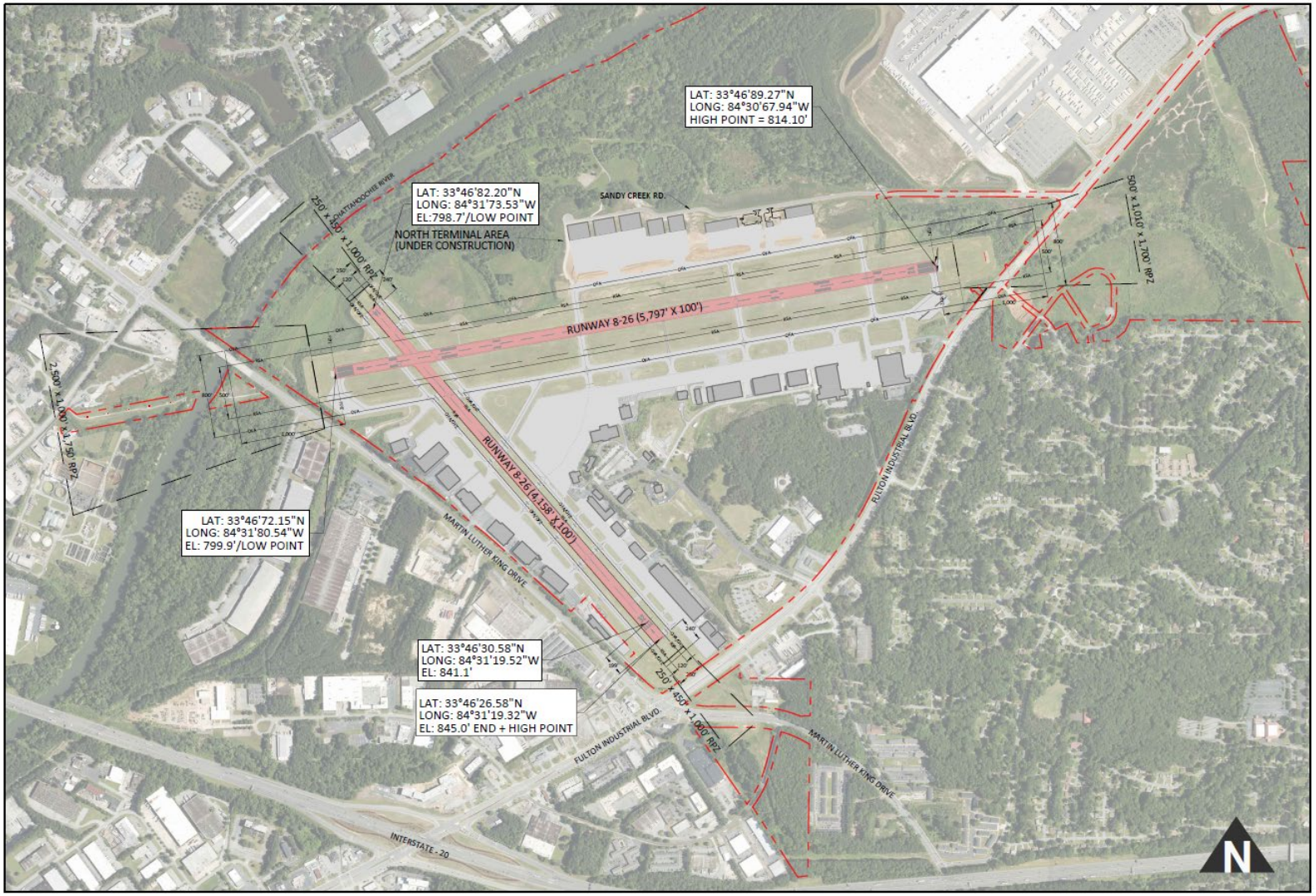
2.5.1 Runways

The existing airfield configuration at FTY consist of two active and intersecting runways shown in **Figure 2-4**. The airport's primary runway, Runway 8-26 is orientated in the east/west- direction. Runway 14-32 serves as the airport's crosswind runway and is orientated in the north-west/south-east direction. As shown, the combination and orientation of the two runways satisfy the FAA's recommended 95 percent wind coverage requirement.

Runway 8-26 is constructed of asphalt pavement in good condition. The runway is 5,797 feet long with a width of 100 feet. The runway heading is 085° magnetic (080 true) and 265° magnetic (260 true). The runway end of Runway 8 has an elevation of 779.9 feet AMSL. Runway 26 threshold elevation of 814.1 feet AMSL equating to an overall difference of 34.2 feet, making the slope of the runway is 0.5%. Pavement markings on Runway 8-26 satisfactorily meet the FAA requirements for precision runways.

Runway 14-32 is constructed using asphalt pavement. The runway is 4,158 feet long with a width of 100 feet, however, includes a 200-foot displaced threshold on Runway 32. Displaced threshold is a runway threshold located at a point other than the physical end of the runway. Most often the offset threshold is in place to grant arriving aircraft clearance of an obstruction, while still allowing departing aircrafts the maximum amount of runway available. The runway heading 144 magnetic (139 true) and 324 magnetic (319 true). The end of Runway 14 has an elevation of 798.7 feet AMSL. Runway 32 has a threshold elevation of 841.1 feet AMSL equating to an overall difference of 42.4 feet, making the slope of the runway is 1.0%. Pavement markings on Runway 14-32 are basic and are also in adequate condition.

Figure 2-4: Runway Configuration



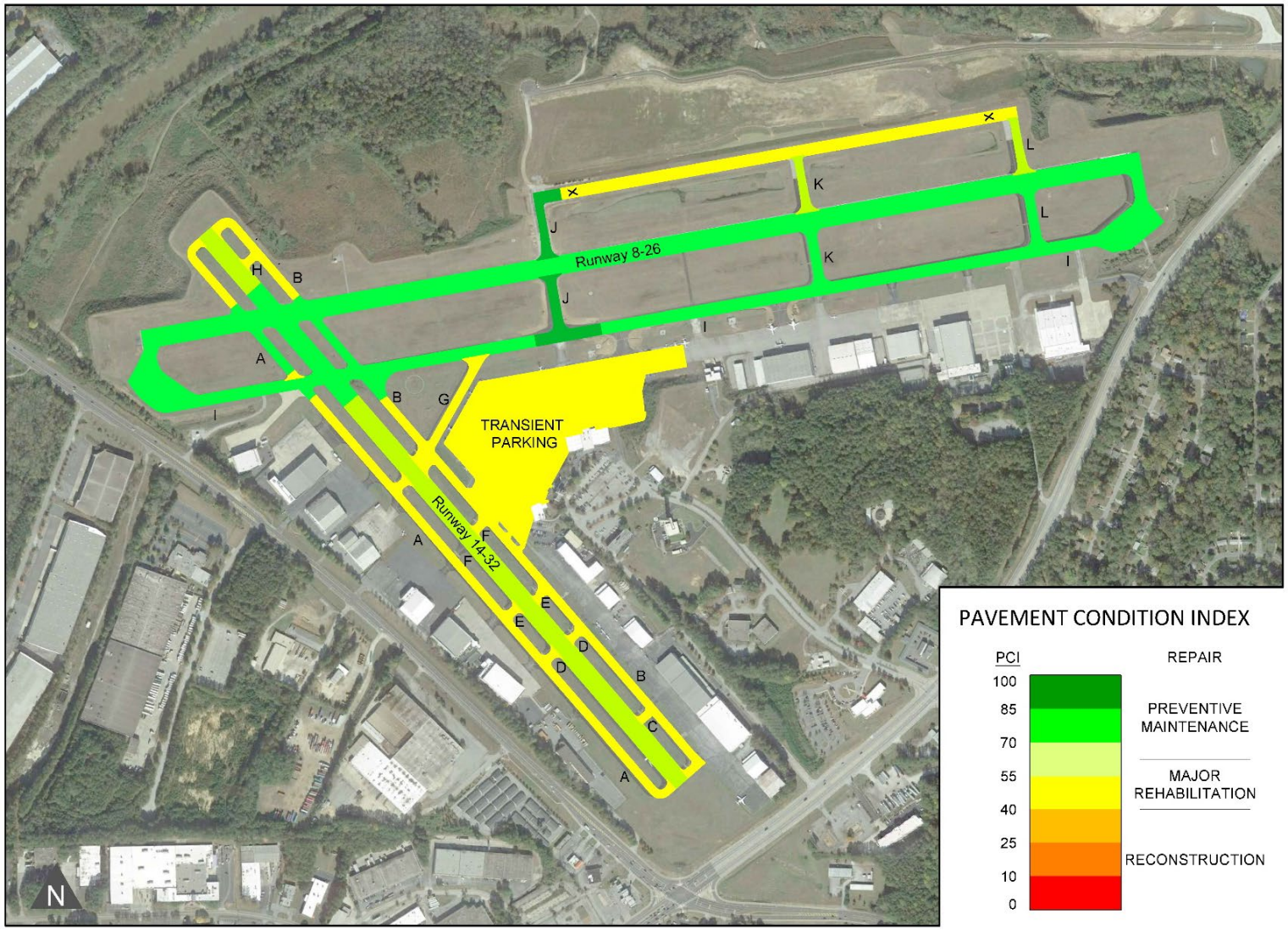
Source: Michael Baker International, 2020.

2.5.2 Pavement Strength and Condition

Runway pavement strength defines the weight limits at or below which an aircraft may operate on the runways without causing undue stress on the pavement. Bearing strength are classified by the various main landing gear system configurations that are able to operate on runways at FTY. Single wheel aircraft have one wheel on each side of their main landing gear and are typically characterized by piston aircraft as well as some turboprop and smaller jet aircraft. Double wheel aircraft have two wheels on each side of their main landing gear and are characterized by larger corporate jet and turboprop aircraft. Dual tandem aircraft have four wheels on each side of their main landing fear and are characterized by larger commercial aircraft.

The Pavement Condition Index (PCI) is based on a visual inspection of pavement condition. Georgia Department of Transportation (GDOT) completed an inventory of airport pavements in 2018. The findings were published in the 2019 Fulton County Executive Airport Pavement Management Plan. Per the 2019 report, on a 100-point scale, with 100 being perfect condition, FTY had an overall PCI of 65. For comparison, the previous 2012 pavement report listed a PCI of 64. As shown in **Figure 2-5** although the primary runway, Runway 8-26 pavement is in better condition than the secondary runway, Runway 14-32, the runway pavement had an average of 71, which require preventative maintenance. The taxiways that serve Runway 8-26 are also in good condition, only requiring preventative maintenance while both parallel taxiways that serve Runway 14-32 need major rehabilitation. The overall taxiway system has a PCI of 67. Lastly the Transient Parking Ramp that's adjacent to the Administration Building needs major rehabilitation with an average PCI of 49.

Figure 2-5: Pavement Condition Index (PCI) by Branch



Source: Georgia Department of Transportation GDOT, Fulton County Executive Airport-Charlie Brown Field Pavement Management Report, 2019.

Information on runway pavement condition and strengths were taken from FAA form 5010-1, site visits and information provided by the Airport. Overall, Runway 8-26 and Runway 14-32 are in good condition. The Pavement Classification Number (PCN) for FTY has not been established. **Table 2-4** displays the pavement strength presently at FTY.

Table 2-4: Runway Pavement Strength

Wheel Configuration	Runway 8-26	Runway 14-32
Single	105,000 lb.	30,000 lb.
Dual	121,000 lb.	--
Dual Tandem	198,000 lb.	--
Double Dual Tandem	870,000 lb.	--

Source: FAA Form 5010- 1, 2020.

Taxiways

In addition to the runways, the airside facility at FTY consists of a taxiway system that provides access between the airside surfaces and the landside aviation use areas displayed in **Figure 2-6** and outlined in **Table 2-5**. At FTY the taxiways are constructed of asphalt and offers a network of pavement for aircraft to navigate around the airfield, connecting various airfield components and providing access to the runways and ramps. Different types of taxiways serve different purposes on the airfield. Taxiway systems include entrances and exit taxiways, by-pass taxiways, taxiway run-up areas, apron taxiways, and taxilanes. The design standards for taxiways and taxilanes are derived from the RDC and the Taxiway Design Group (TDG). Similar to the RDC, the FAA has defined the TDG to determine taxiway and taxilane width requirements, taxiway/taxilane separations and fillet radii. TDG is based on the undercarriage dimensions of the critical aircraft. The RDC defines most of the separation standards and clearance offsets.

Taxiway A is a full-length parallel taxiway located 150 feet (runway centerline-to-taxiway centerline) west of Runway 14-32 and is 40-feet wide. The taxiway provides access to areas on the southwest side of the airfield, which is home to serval corporate hangars. Taxiways E, F and D serve as connector taxiways to Runway 14-32. Taxiways E, F and D are located between the Corporate Ramp Area and Runway 14-32.

Taxiway B also parallels Runway 14-32 along its northeast side and has a 150-foot runway centerline-to-taxiway centerline separation. This taxiway provides access to Runway 14-32 and serves a number of corporate and aircraft service hangars. Taxiway B is 40-feet wide. Connector Taxiway C, D, E, and F are located between Runway 14-32 and Taxiway B. Connector Taxiway H is found on the end of Runway 14.

Taxiway I parallels Runway 8-26 and is located south of Runway 8-26 and has a 400-foot runway centerline-to-taxiway centerline separation. Taxiway I is 60-feet in width and provides access to the airport's central transient parking and apron areas. This taxiway has two holding bays located at both ends of Runway 8-26. Holding bays are used as a place where aircraft can hold short perpendicular to the runway and await their clearance for takeoff. Connector Taxiways J, K and L are located off of Taxiway I

and are 40-feet wide between Taxiway I and Runway 8-26 and 50-feet wide from Runway 8-26 to closed Runway 9-27 which has been converted into a taxiway.

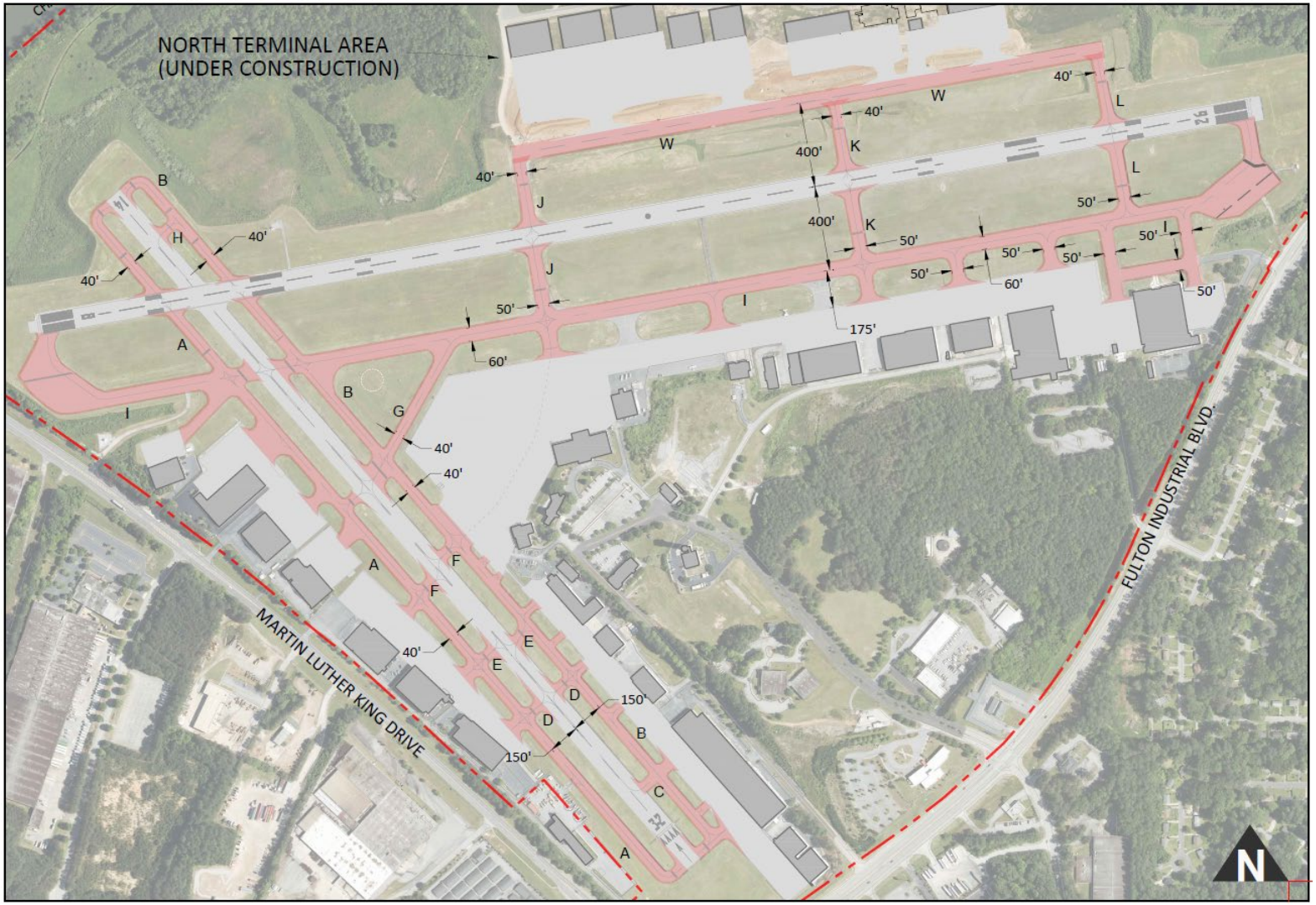
Taxiway G is located between Taxiway B and Taxiway I and is 40-feet wide. Taxiway G provides east and west access of the airfield.

Table 2-5: Existing Taxiway System

Taxiway	Width (ft)	Function
A	40	Parallel Taxiway
B	40	Parallel Taxiway
C	40	Connector
D	40	Connector
E	40	Connector
F	40	Connector
G	40	Taxiway Connector
H	40	Connector
I	50	Parallel Taxiway
J	40-50	Connector
K	40-50	Connector
L	40-50	Connector

Source: Michael Baker International, 2020.

Figure 2-6: Taxiway System



Source: Michael Baker International, 2020.

2.6 Visual Aids

Besides the utilization of markings and lighting, runways are generally equipped with other navigational devices (NAVAIDS) to assistance pilots with the takeoff and landing details. Some provide signals of weather conditions, while others offer either visual or instrument course guidance. It should be noted that most of these systems are owned and operated by the FAA. FTY is equipped with the systems identified on, **Figure 2-10,** and discussed below.

2.6.1 Marking

Runways 8-26 is a precision instrument runway. The markings include runway numbers (designation), centerlines, runway thresholds, aiming points, and touchdown zone markings. Runway designators indicate the magnetic azimuth of the centerline of the runway. The runway centerlines identify the centers of the runway and provide alignment guidance during takeoff and landing operations. The runway threshold markings consist of twelve (12) longitudinal stripes of uniform dimensions disposed symmetrically about the runway centerline. The aiming point markings are located approximately 1,000 feet from the runway end threshold. These markings serve as a visual aiming point for landing aircraft. Finally, runway touchdown markings identify the touchdown zone for landing operations and are coded to provide distance information in 500 feet increments. These markings consist of groups of one, two, and three rectangular bars symmetrically arranged in pairs about the runway centerline.

Runway 14-32 is a non-precision runway. The markings for non-precision, include runway numbers (designation), centerline, runway thresholds, and aiming points. Runway 14-32 does not have side strip markings; however, displaced threshold markings are located on Runway 32 depicted in **Figure 2-7**. Displaced threshold markings have arrows as the centerline of the runway. A thick white line with four arrows pointed in the direction of the runway denounces the end of the threshold at the beginning of the runway.

Figure 2-7: Displaced Threshold

Basic taxiway markings consist of a yellow centerline and holding position markings at FTY. The holding markings are used to protect the Runways 14-32 and 8-26 safety area/object free zone, ILS critical area, and approach surface, as appropriate, and designate the location that an aircraft must hold until cleared to move through the critical area or onto an active runway.

2.6.2 Airport Lighting

Runway and Taxiway Lighting

Several runway lighting systems can be installed as an aid to pilots. The airport currently has edge lights along both runways. These lights help to identify where the edge of usable pavement lies, aid pilots during nighttime operations and during poor visibility and also serve as an indication of how much runway length is remaining. The different runway lighting systems are categorized by the brightness or intensity of light produced. Runway 8-26 currently is equipped with High-Intensity LEDs Runway Lights (HIRL) with variable intensity controls while Runway 14-32 has Medium-Intensity Runway Lights (MIRL).

The runway edge lights are white in color except for the last 2,000 feet of lights which are equipped with a two-color (amber/white) lens. The amber lens is facing an aircraft as it takes off or lands. This color change of the lights from white to amber indicates that the active runway pavement is ending. This gives a pilot a visual warning in case a takeoff needs to be aborted. These high-intensity edge lights are a requirement for certain instrument approaches that are discussed later.

Taxiway edge lighting is similar to runway edge lighting in that it helps identify the edge of taxiway surfaces when visibility is limited during such inclement weather conditions. Taxiway edge lights are blue and are typically installed with three illumination intensity settings at airports that support commercial services. The taxiway edge lights installed at the airport are equipped with Medium Intensity Taxiway Lights (MITL). Having the lights, a different color from those on the runway gives a visual indication of the transition from one type of operating area to another. Spaced approximately 200 feet apart, these lights were installed with light cans and conduits.

In 2021, the Airport has undergone and completed a lighting project to replace the existing incandescent with new LED lights on Runway 8-26 and well as the taxiway system.

Runway End Identifier Lights

Runway End Identifier Lights (REILs) are installed to provide rapid and positive identification of the approach end of a particular runway. The system consists of a pair of synchronized flashing lights located laterally at each side of the runway threshold. They are effective for identifying a runway surrounded by preponderance of other lighting, identifying a runway, which lacks contrast with identifying a runway during reduced visibility. FTY has a REIL system in place on all ends of their runways.

Approach Lighting

Approach lighting systems shown in, **Figure 2-8**, are located along the extended runway centerline and serve to enhance the runway visibility upon approach. A variety of systems can be used based upon the types of IFR approaches to that runway. As required for conducting CAT I instrument approaches, runways must be equipped with approach lighting systems that have sequenced flashers. These systems help to guide pilots under poor visibility conditions to the runway so that a visual confirmation of the runway can be made. Currently, the primary Runway 8-26, is equipped with such systems at the FTY.

Runway 8 is equipped with an approach lighting system, a Medium Intensity Approach Lighting System (MALSR) with runway alignment indicator lights (MALSR), that supports the CAT I ILS approach. This system is 2,400-feet in length and with light stationed located every 200-feet. The MALSR is in excellent condition.

Figure 2-8: Medium Approach Lighting System

FAA, Lighting System – Medium Approach Light System with Runway Alignment Indicator Lights (MALSR), 2019.

Vertical Glide Slope Indicator

- **Visual Approach Slope Indicators** - Visual Approach Slope Indicators (VASIs) are lighting systems that indicate the correct glide path to pilots when on approach to runway. A combination of red and white lights emitted from the VASI allows for pilots to identify whether they are above, below, or on path with the appropriate glide slope. VASIs are typically a two bar, four-light until located adjacent to the runway near the touchdown point aiming point marking. At the airport, a four-light unit VASI is located on the approach end of Runway 26.

- **Precision Approach Path Indicators** - Precision Approach Path Indicators (PAPIs) are a more simplified version of a VASI that also indicate the correct glide slope to pilots. Like VASIs, the correct glide path is indicated by a combination of red and white lights that identify whether a pilot is above, below or on a path with a correct glide slope. PAPIs are usually made up of two- or four-light unit located adjacent to the touchdown zone aiming point marking of a runway. A four-light PAPI is located at the airport on the approach end of Runway 14.

Rotating Beacon

Pilots are aided in locating airports that operate at night or during very adverse weather conditions by rotating lighted beacons. FTY is equipped with a rotating beacon, located directly west of Aviation Circle. The beacon rotates 360 every six seconds, providing the illusion of emitting flashes of light. The beacon is outfitted with an optical rotating lighting system that projects two beams of light, one green and one white, 180° apart. The beacon is in good condition and is operational during nighttime hours and alternate every 180°, green and white lights. As of this study the beacon is new and in good condition.

Wind Cone

The purpose of the segmented circle is to help pilots locate the wind cone while in-flight and to identify any special traffic patterns that maybe present at the airport. The segmented circle encompasses 360° similar to a compass, and where applicable, traffic pattern and landing strip indicators are provided outside the circle to denote the established traffic patterns. At FTY, there are no traffic pattern or landing strip indicators located outside the segmented circle, displayed in **Figure 2-9**, and for this reason the traffic patterns for both runways are standard left-hand patterns. In this arrangement, pilots make a series of left-hand turns in order to access the approach end of each runway. The wind cone and segmented circle at FTY is located between Taxiway B, G and I and is illuminated at night for visibility.

Figure 2-9: Segmented Wind Circle

2.6.3 Instrument Approaches and Navigational Aids

Related to the airfield layout are the types of approaches aircraft can utilize to land at a facility. The various approaches have differing safety related setbacks and facility requirements, such as radio beacons or approach lighting systems, and are included here as an indication of the facilities available at FTY.

There are two general classes of procedures under which pilots operate aircraft. These procedures are dependent upon the current visibility and weather conditions. Under clear conditions with the cloud ceiling greater than 1,000 feet above ground level (AGL) and with visibility greater than three statute miles, pilots can operate aircraft under visual flight rules (VFR). During times of inclement weather when the cloud ceiling falls below 1,000 feet and visibility is less than three statute miles, instrument flight rules (IFR) must be followed. These procedures allow aircraft to land safely when ideal weather conditions are not experienced.

They are two basic types of instrument approaches are precision and non-precision. Per FAA AC 150/5300-A, a Precision Approach (PA) is defined as an instrument approach procedure that provides course and vertical path guidance with visibility below ¾ mile (4000 RVR). A Non-Precision Approach (NPA) is defined as approach procedure that provides course guidance, with or without vertical path guidance, with visibility minimums not lower than ¾ mile (4000 RVR). Visibility minimums, measured in feet or miles, are associated with instrument approaches. During an IFR approach, the pilot must ultimately make a visual confirmation of the runway. If the runway cannot be visually confirmed, they must execute a missed approach procedure. Each IFR approach procedure has a published height related to the aircraft's distance above the runway touchdown zone elevation, at which point the pilot must have visual confirmation. For non-precision approaches this is referred to as the minimum descent altitude (MDA) and for precision

approaches it is the decision height. If the visual confirmation is not initially attained, the pilot has to abort the landing and then can attempt the approach again or request to land at another airport.

Runway 8-26

Runway 8-26 is equipped with an instrument landing system that allows for precision approaches. An instrument landing system is comprised of the following three components: 1) localizer (LOC) antenna array, 2) glide slope (GS) antenna array, and 3) runway approach lighting system. With these three components, an aircraft is guided to a touchdown point just beyond the approach end of a runway. This system allows aircraft to land when weather conditions at FTY are poor.

GPS approaches are also available to both ends of Runway 8-26. These approaches are based upon navigation utilizing either the runway localizer or GPS technology and offer a wide variety of approach procedures to be used.

The published minimums for each of these approaches are given in **Table 2-6**.

Table 2-6: Runway 8-26 Available Instrument Approach Procedures

Runway	Approach	Ceiling Minimums	Lowest Visibility Minimums	Vertical Guidance
8	ILS/Localizer	300	½ mile	Yes
8	RNAV (RNP) Z	600	1 ¼mile	Yes
8	RNAV (GPS) Y	800	1 ⅞mile	Yes
26	RNAV (GPS)	600	1 mile	Yes

Source: FAA Instrument procedures published for use from 26 March 2020 to 23 April 2020.

Runway 14-32

Runway 14-32 exclusively provides visual approach capabilities.

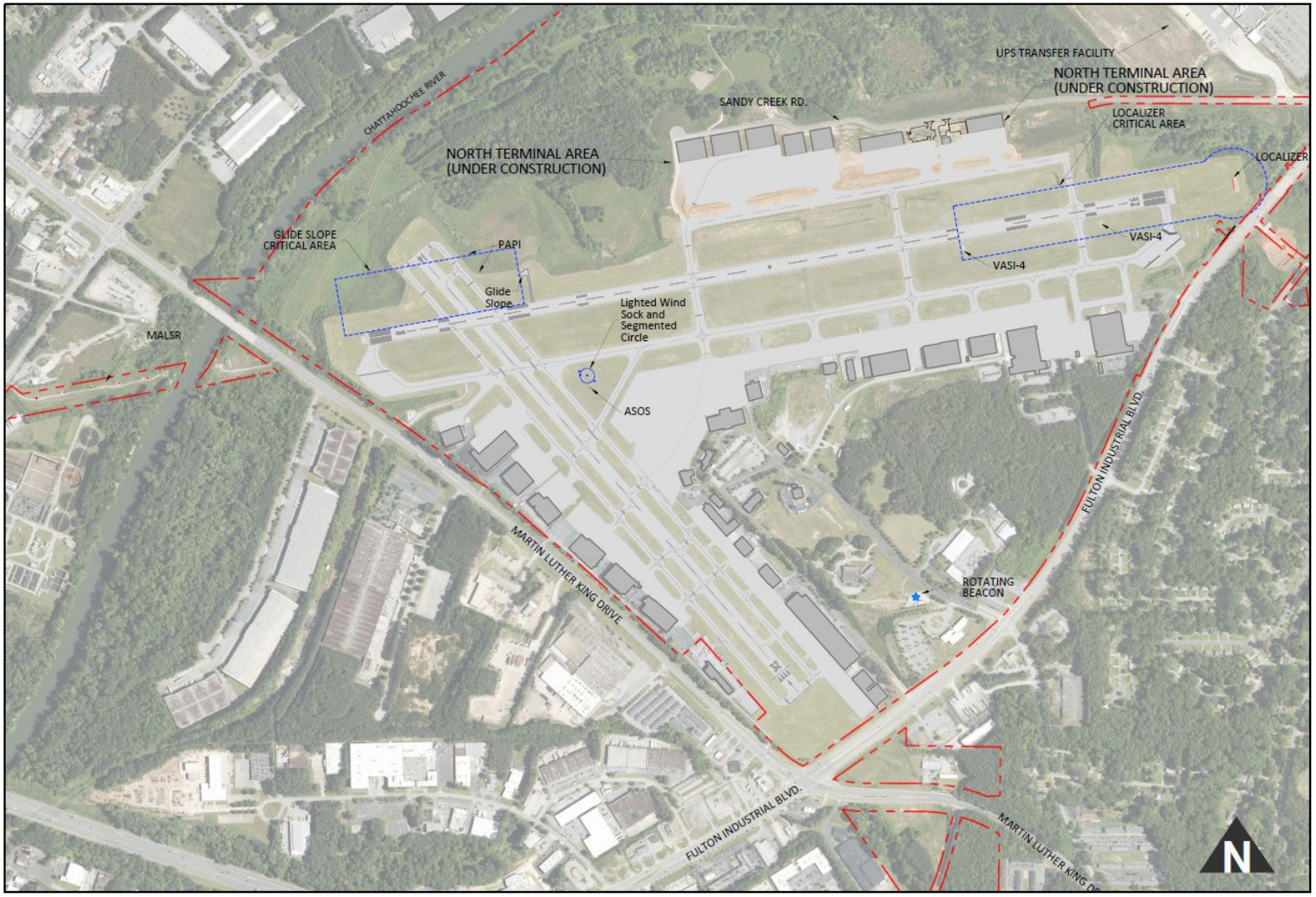
2.6.4 Weather Reporting Facilities

Since aircraft operations are directly impacted by the weather, equipment is installed at an airport to accurately record and timely disseminate locate airfield weather conditions. Two forms of whether reporting equipment are often installed at airports to accomplish this task: Airport Surface Observation System (ASOS) an Airport Weather Observation System (AWOS). The main elements of each weather observation system are relatively identical; however, build-in redundancy is included for components installed in ASOS units. The weather reporting system, ASOS, is located adjacent to the segmented circle glide slope antenna near between Taxiways B, G and I.

The ASOS is used to measure and record weather conditions by using a suite of sensors. ASOS units are implemented operatively with the National Weather Service (NWS) and the FAA, which distributes information to pilots. Specifically, the ASOS at RYY records the following:

- visibility conditions,
- cloud cover and sky conditions,
- temperature,
- wind direction and speed,
- precipitation types and amounts.

Figure 2-10: Navigational Aids



Source: Michael Baker International, 2021.

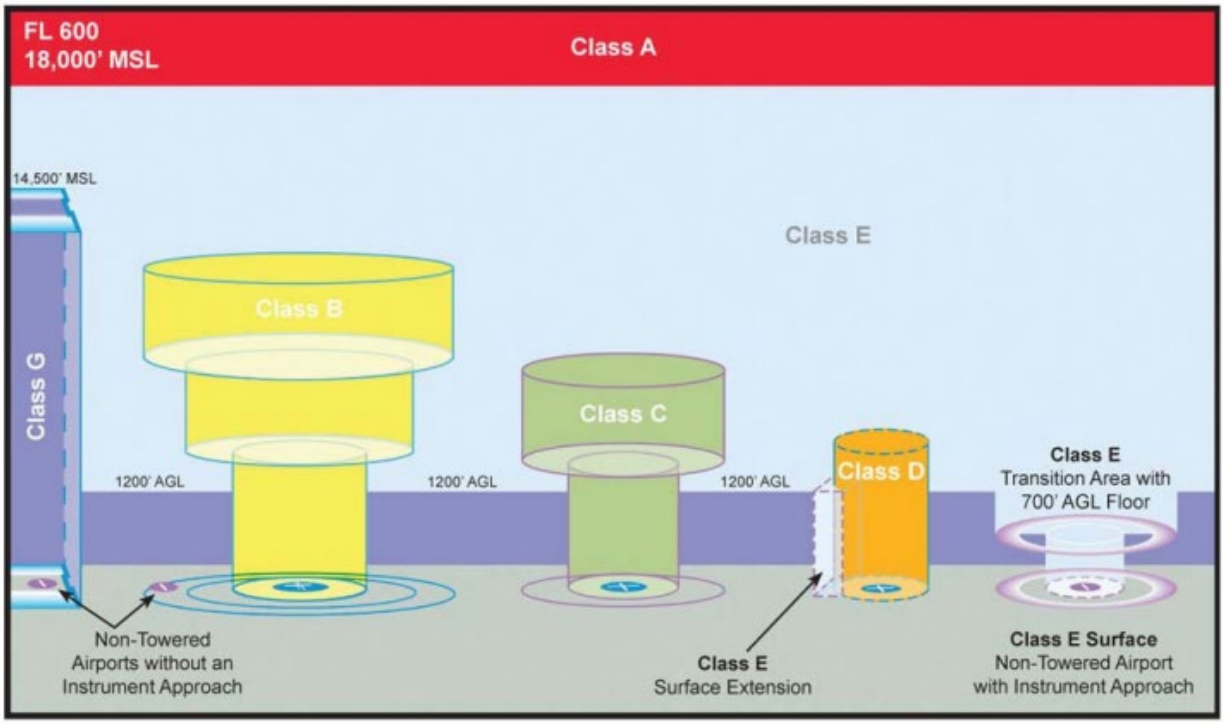
2.7 Airspace and Air Traffic Control

According to the AC 150-5300-13B, Airport Design, information on use of the airspace and how air traffic is managed should also be collected, including operational limitations resulting from traffic interaction with other airports or reserved airspace, obstructions to air navigation, noise abatement procedures, and airfield or navigational aid shortcomings. The FAA is responsible for the control and use of navigable airspace within the United States. The FAA has established the National Airspace System (NAS) in efforts to protect persons and property on the ground and to establish a safe and efficient airspace environment for civil, commercial, and military aviation. The NAS is made up of a network of air navigation facilities, Air Traffic Control (ATC) facilities, airports, technology, and appropriate rules and regulations that are needed to operate the system.

Airspace Structure

Airspace is broken down into two categories: regulatory and non-regulatory. Within the regulatory airspace category, there are two types of airspace: controlled and uncontrolled. Categories and types of airspace are defined based on their complexity or density of aircraft movement, or the nature of the operation conducted within the airspace, which dictates the level of safety required and the level of national and public interest. Controlled airspaces cover the different classifications of airspace and defined dimensions in which air traffic control service is provided in accordance with airspace classification. Controlled airspace consists of A, B, C, D, and E. Class G is uncontrolled airspace. **Figure 2-11**, displays the different types of airspace.

Figure 2-11: Airspace Classes



Source: FAA Aeronautical Information Services, Aeronautical Chart User's Guide, March 2020.

Immediately within the area of FTY and illustrated in **Figure 2-12**, are several airports, including Dobbins Air Reserve Base/Naval Air Station (MGE) and Cobb County Airport (RYY) to the north, DeKalb-Peachtree Airport (PDK) east of FTY in DeKalb County; and Gwinnett County Airport (LZU) east of FTY near Lawrenceville. Excluding MGE, each of these airports serves as a general aviation reliever for ATL, located southeast of FTY near College Park. ATL, being the world's busiest airport, is enclosed within Class B airspace. The structure of this airspace resembles an upside-down wedding cake and is tailored to meet ATL's requirements. At the center, the airspace structure extends from the surface to 12,500' MSL. Further from the center, the floor of the airspace begins at progressively higher levels ranging from 2,500' MSL up to 10,000' MSL. Class B airspace stipulates certain operating rules and pilot/equipment requirements.

In the vicinity of FTY, ATL's Class B airspace begins at 2,500' MSL in the southwest quadrant, 3,500' MSL in the southeast quadrant and 5,000 ft in the northwest quadrants. FTY has an air traffic control tower and is surrounded by Class D airspace. The Class D airspace usually constitutes a cylinder with a horizontal radius of four to five nautical miles (NM) from the airport extending from the surface up to the designated vertical limit of 3,300 feet above mean sea level.

Figure 2-12: Surrounding Airspace

Source: FAA Aeronautical Chart, Atlanta, April 15, 2020.

Airspace Obstructions

Obstructions are termed as being objects that penetrate defined imaginary surfaces around airports. These surfaces include all runway approach surfaces, primary surface, horizontal surface, and conical surface. All surfaces, with the exception of the conical surface, are predicated upon each type of runway approach (visual, non-precision instrument and precision instrument). Additional obstruction surfaces related to actual airspace procedures are identified in FAA Engineering Brief No. 99, Table 3-2 as amended by FAA Memorandum dated September 20, 2018. As part of this Master Plan, an obstruction survey based on these criteria will be flown. Obstructions to the imaginary surfaces will be identified on the Airport Layout Plan (ALP) including proposed disposition of any potential hazardous obstructions.

Air Traffic Control Tower (ATCT)

Fulton County Executive Airport is served by a VFR Air Traffic Control Tower (ATCT) that is located off of Aviation Cir before Aero Dr NW and adjacent to the administration building. The ATCT at FTY is a contract tower. Contract towers are air traffic control towers that are staffed by employees of private companies rather than by FAA employees. The FAA Contract Tower (FCT) Program was established in 1982 to allow the agency to contract out the operation of certain towers.

Only a two-way radio communication is required for pilots that wish to enter or transition through the Class D airspace surrounding FTY. The ATCT is responsible for ground control, vehicles and aircraft operating on the ground within the defined movement area. Vehicle or aircraft operators must maintain contact with tower personnel in either of these areas, whether on the ground or in the air. ATCT personnel's purpose is to ensure that all movement are coordinated in a safer manner.

Although this is a contract tower, the FAA owns and is responsible for maintaining the structure. The existing tower facility was constructed in the 1992-1993 timeframe.

2.7.1 General Aviation Facilities

Many elements compose the broad definition of general aviation activity. Based on the FAA AC 150-5300, Airport Design, general aviation includes assessing the quantity and type of hangars; transient aircraft parking apron areas, tie-down positions; general aviation terminal facilities; aircraft parking aprons; fixed base operators; flight schools; pilot shops; and the number and mix of based aircraft. All general aviation facilities, with exception to certain hangars at FTY are owned by the Airport but maintained by the tenants. Facilities available to the general aviation patrons are located in the southern half of airport property shown in **Figure 2-14** with ongoing construction to add new general aviation facilities in the North Terminal Area.

Aircraft Storage

Aircraft storage facilities at FTY are comprised of tie-downs, T-hangars and conventional hangars. According to FAA AC 5300-13B, conventional (box) hangars are square or rectangular hangars designed for the safe storage of various sizes and types of aircraft. T-hangars are rectangular buildings with a nestled tee-shaped floor plan that is mostly utilized for small aircraft storage. These hangars typically provide storage for only one aircraft and are used for private storage only. Tie-downs are simply marked parking positions on designated ramps with in-ground anchors installed for securing the aircraft.

There are 23 separate hangar facilities at the Airport providing approximately 657,624 square feet of hangar, maintenance, and office space. The Airport also has 2 T-hangars totaling approximately 15,693 square feet. There are 6 individual storage units contained within each T-hangar. Finally, there is a single tie-down area shared by both Signature and Hill FBOs that provide approximately 60 separate aircraft parking spaces comprising approximately 318,434 square feet.

Fixed Based Operator (FBO)

Fixed Based Operators (FBOs) are aviation-related business that provide serves for pilots, aircraft and passengers that range from ground servicing, aircraft fueling, aircraft maintenance and repair, and at times flight training. FBOs also serve as a terminal for passengers boarding general aviation aircraft and may include a passenger lobby, food or vender options and rental car agencies. Accommodations for pilots to rest and prepare for their next flight such as pilot lounge, flight planning rooms, conference rooms, etc. There are currently two FBOs at FTY.

Hill Aircraft is located northeast of the Administration Building. Hill Aircraft's terminal building footprint covers approximately 423,003 square feet shared between two buildings and includes a wide variety of amenities, including pilot's and passenger's lounge, restrooms, kitchenette and conference rooms. In addition to its FBO terminal, Hills Aircraft provides a myriad of services to its clients including rental car, aircraft maintenance and parts supply, aircraft sales, hangar rental, aircraft tie-down parking and aircraft fueling.

Signature Flight Support is located southwest of the Administration Building. Signature Flight Support terminal building has an approximately 8,308 square feet footprint and includes the following amenities passenger's lounge, business center, Customs and Immigration On-Site, restrooms, flight planning and concierge services. In addition to its FBO terminal, Signature Flight Support provides the following a variety of services to its clients, including, car rental, aircraft fueling. The available aircraft apron is approximately 26,374.6 square yards and is able to accommodate numerous aircraft contingent on size.

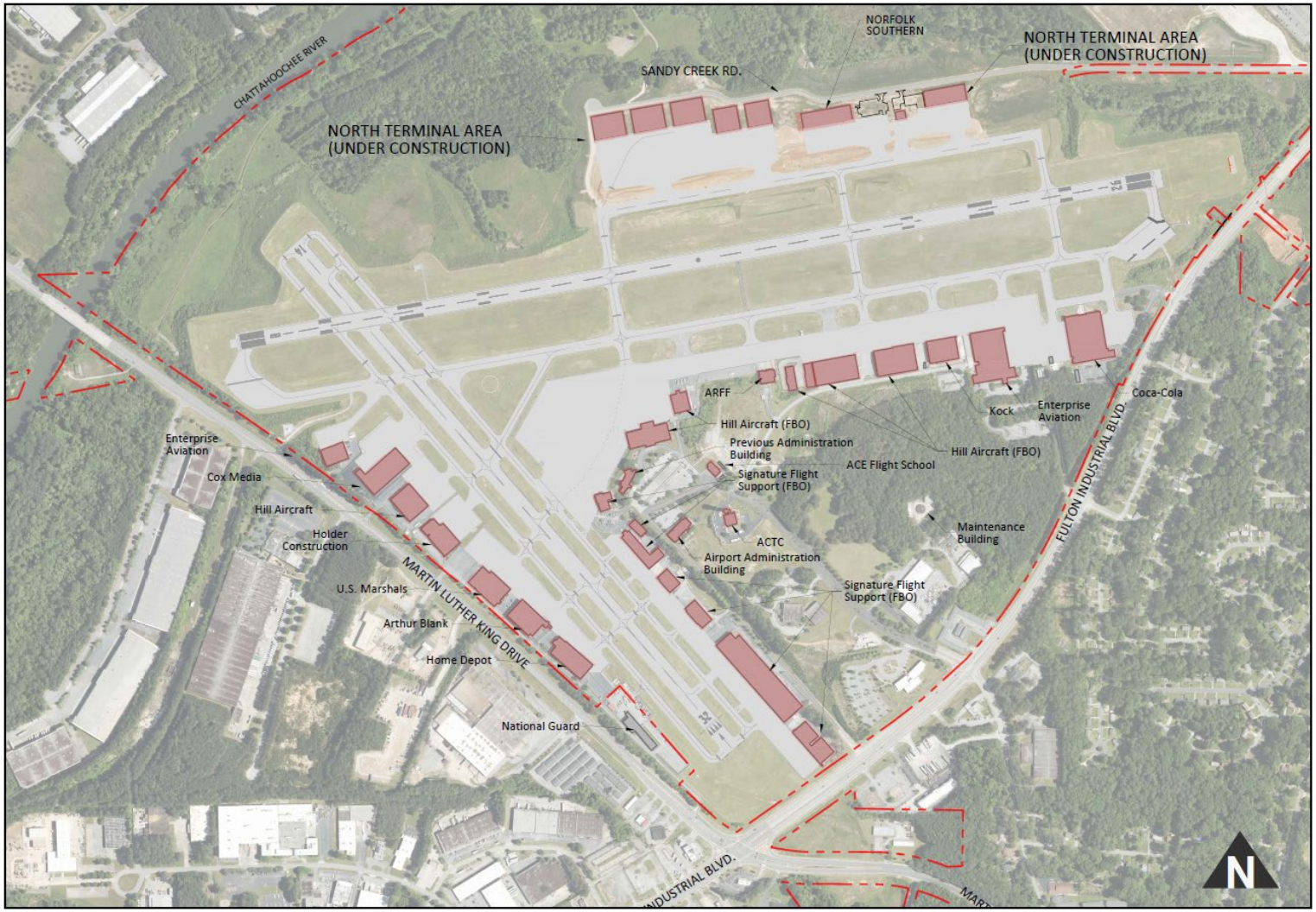
North Terminal Area

The North Terminal Area located northeast of Runway 8-26 is an operational area dedicated to future airport tenants. Although portions of the North Terminal Area have completed construction, this area is largely undeveloped. Norfolk Southern, who is the first tenant to establish their presence within the North Terminal Area has constructed their corporate hangar shown below in **Figure 2-13**. In addition, the United States Customs and Boarder Protection (CBP) are among the near future tenants expected to operate on the north side of the airport.

Figure 2-13: Norfolk Southern Corporate Hangar (North Terminal Area)

Source: Norfolk Southern Railway, 2022.

Figure 2-14: Airport Facilities



Source: Michael Baker International, 2021.
Note: North Terminal Area, configuration is not definite and may change.

Fueling Facilities

There are several on-airport fueling facilities at FTY, including the private self-fueling station adjacent to designated corporate hangars and full-service fueling at both Hill Aircraft and Signature Flight Support FBOs. Fuel providers generally supply two varieties of aviation fuel, 100-Low Lead (AvGas) and JetA fuel. AvGas is mainly used by piston-powered general aviation aircraft while JetA is typically used by turboprop and jet-powered aircraft. The Hill Aircraft full-service fueling facilities include three underground tanks, a single 12,000-gallon AvGas tank and two 12,000-gallon JetA tanks. Signature Flight Support fill-service fueling station include two above ground 20,000-gallon JetA tanks and a single above ground AvGas 15,000-gallon tank. Like mentioned, a number of tenants housed at FTY are equipped with their own fueling facilities. **Table 2-7** displays fuel located at the airport.

Table 2-7: On-site Fueling Faculties

Tenant	Fuel Type	Size (gallons)
Signature Flight Support	Jet A	20,000
	Jet A	20,000
	AvGas	15,000
Hill Aircraft	Jet A	12,000
	Jet A	12,000
	AvGas	12,000
Home Depot	Jet A	12,500
	Jet A	12,500
Coco Cola	Jet A	20,000
	Jet A	20,000
ICE	Jet A	30,000
	Jet A	30,000
	Jet A	30,000
Cox	Jet A	15,000
	Jet A	15,000
Koch	Jet A	12,000
AMB	Jet A	20,000
Holder	Jet A	12,000

Source: Fulton County Executive Airport-Charlie Brown Field, 2020.

Aprons

Aprons, also known as ramps, are large surfaces that are specially designed for the parking and servicing of aircraft. In addition, aprons provide aircraft access to hangars, fixed based operators (FBOs), terminals, and locations to transfer aircraft users, as well as fueling and maintenance. There are mainly three apron

area at the airport for aircraft parking and storage. The aprons are generally categorized as follows and are identified in **Figure 2-15.**

- Main FBO Ramp,
- North-East Terminal Area Ramp,
- North Terminal Area Ramp,
- Signature Flight Support,
- Corporate Ramp Area.

Main Ramp. Located adjacent to the Taxiway G and spans parallel to Taxiway I is approximately 63,632 square yards. The apron is used mainly for both based aircraft tie downs and transient parking. This ramp is shared by both Hill Aircraft and Signature Flight Support.

North-East Terminal Area Ramp. Consisting of approximately 52,837 square yards, the North-East Terminal Area Ramp is located south of the Taxiway I and east of the Main Ramp. This apron is used for itinerant corporate aircraft parking.

Signature Flight Support (FBO). This apron is located east of Runway 14-32 and south of the Main Ramp. The apron consists of 26,374 square yards of paved surface for aircraft parking and movement.

North Terminal Area Ramp. At the time of writing, this area is largely under construction. Norfolk Southern is currently the only tenant operating in the North Terminal Area. The U.S. Customs Facility is expected to begin construction within the near-term period of this study.

Corporate Ramp Area. There are several apron areas associated the numerous corporate general aviation tenants at FTY located west of Runway 14-32. The total apron area, which consists of about 38,784 square yards, includes both open aprons areas and apron associated with individual hangar facilities. The pavement condition varies for each of the apron areas.

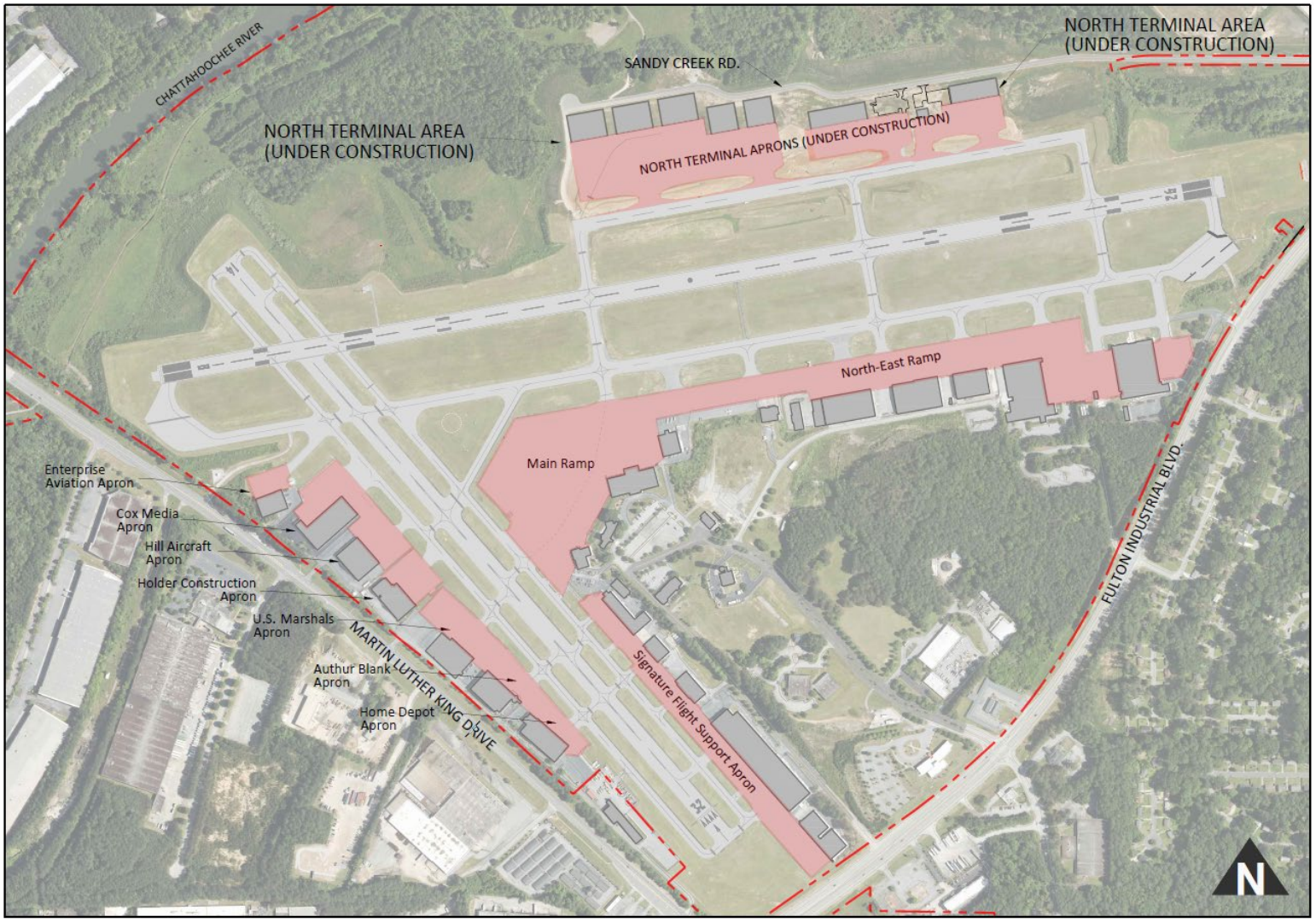
The airport's ramp and apron areas are inventoried below in **Table 2-8**.

Table 2-8: Apron Inventory

Ramp Area	Square Yards (approximately)
Main Ramp (Shared by Signature and Hill Aircraft)	63,632
North-East Terminal Area Apron	52,837
Signature Flight Support (FBO)	26,375
North Terminal Area	
Norfolk Southern	10,891
U.S. Customs Facility	10,103
Corporate Ramp Area	
Enterprise Aviation	2,647
Cox	7,721
Hill Aircraft	16,179
Holder Construction	5,066
U.S. Marshal	8,745
Arthur Blank	3,662
Home Depot	4,766

Source: Michael Baker International, 2020.

Figure 2-15: Apron Inventory



Source: Michael Baker International, 2020.

2.8 Airport Support Facilities

Support facilities are those airport features that are not necessarily specific to aircraft operations, movement, and storage, but which are vital to ensuring the efficiency and safety of airport operations. A review of FTY's existing support facilities are presented in the following sections.

Airport Administration Building

Many general aviation airports have an administration building that houses not only airport management offices, conference rooms, rest rooms, and other facilities for pilots and the general public. Sometimes a restaurant is included within the facility. The airport's original terminal building was originally constructed sometime in the 1950s and over the years began deteriorating. Because of the deteriorating condition of the building, airport management offices are now located adjacent to the ATCT and directly south of the original Airport Administration Building.

Aircraft Rescue and Fire Fighting (ARFF) Facility

The vacant Aircraft Rescue and Fire Fighting (ARFF) facility has a 7,248 square foot building footprint and is located south of Taxiway I just east of Hill Aircraft. At the present time, the ARFF facility is undergoing a complete renovation which includes both airport administrative and ARFF spaces. These renovations are expected to be completed in phases over the period of 2023 and 2024. Once operational, the Airport intends to staff the facility with rescue and firefighting personnel that will be dedicated solely to airport operations. At the present time, the airport is served by nearby City of South Fulton Fire Station 11.

Airport Maintenance

The Airport Maintenance facility is located off of Aviation Circle. on Airway Rd. NW. The maintenance area encompasses approximately .57 acres and includes three structures. The on-airport facility is used for the storage and maintenance of county-owned vehicles and equipment. **Table 2-9** displays the type of maintenance equipment and quantity owned by Fulton County.

Table 2-9: Airport Maintenance Equipment

Equipment	Quantity
Mowing Tractor	4
Turn Mower	2
Dump Tuck	2
Snow Plow	2
Snow Blower	1
Backhoe	1
Bucket Truck	1
Front End Loader	1
Bobcat	1
Gator	1
Source: Airport Management, 2020,	

Airport Business

In addition to the two FBO's, at least 6 other businesses operate on the airport in industries including aircraft parts and sales, flight training, aircraft clearing services, and car rentals facilities. **Table 2-10** identify known aviation and non-aviation businesses operating at FTY. It is possible other businesses operate at the airport or that private individuals use their FTY based aircraft for business purposes.

Table 2-10: Airport Businesses

Business	Business Type	# of Full-time Employees	# of Part-time Employees
Aviation Career Enrichment (AEC)	Flight School	37	11
Rotorcorp	Helicopter Parts	3	--
Bravo Aviation Specialist	Aircraft Cleaning	2	--
South Atlantic Flight Training	Flight School	2	--
Hertz Rental Car	Rental Car	2	--
Enterprise Rental Car	Rental Car	2	--

Source: Airport Sponsor, 2020.

Fencing

Fulton County Executive Airport's operation areas are completely enclosed with chain link fence topped by three-strand barbed-wire to prevent the inadvertent access on the airport by vehicles and pedestrians. There are several functional controlled access gates serving different areas of the airfield. In addition, there are manual gates on airport property that are controlled by airport personnel as well as private airport tenants.

2.9 Access Circulation and Parking

This section describes the physical elements of the on-airport surface transportation system for FTY, including the public and restricted use roadways, the parking facilities, and any applicable public transportation. For the purpose of this study, facilities referred to as "on-airport", are those located within the physical boundary of the airport.

Vehicle access is an important component in the overall ability of an airport to operate and function property. It is important that users have easy access throughout airport grounds since many airports are major employment centers, proper access for people employed on airport property must be provided.

Airport Access and Circulation

Highway and arterial access in the immediate vicinity of the airport is provided by a number of four and six-lane roadways such as Fulton Industrial Blvd. and Martin Luther King Jr Dr. NW. There are two primary vehicular access points at FTY. The southeast entrance is provided Aviation Cir. NW., leading to the Airport Administration Building and FBO's. South Airport Rd NW. is located on the southwest are of the airport and services several conventional hangars. A secondary access point to the airport is provided by means of Sandy Creek Rd. located off Fulton Industrial Boulevard northeast of the airport and from Martin Luther King Drive SW. Internal circulation is provided to the Hill Aircraft facilities, ARFF, and several conventional hangars tenants from Aero Dr. NW.

Vehicular Parking

There are a number of surface public parking is provided at the airport. There are multiple designated parking area for vehicles to the south of Hill Aircraft and adjacent to the previous Administration Building, accessible from Aviation Circle NW. Between the old administration building and Hill Aircraft a total of 55 parking spaces are included in the area. There is an overflow lot adjacent that accommodates 119 spaces. To the west, Signature Flight Support is able to accommodate 43 parking spaces in their lot. The existing Administration building lot located south of the old administration building and north of the ATCT is able to accommodate up to 38 marked spaced and 2 handicap spaces. The ATCT contains 33 controlled-access parking spaces and the ARFF accommodates approximately 12 marked parking spaces and 1 handicap. Excluding the ATCT and the ARFF building totaled, there are approximately 257 public vehicular parking spaces serving a variety of activities at Fulton County Executive Airport.

2.10 Regional Setting and Land Use

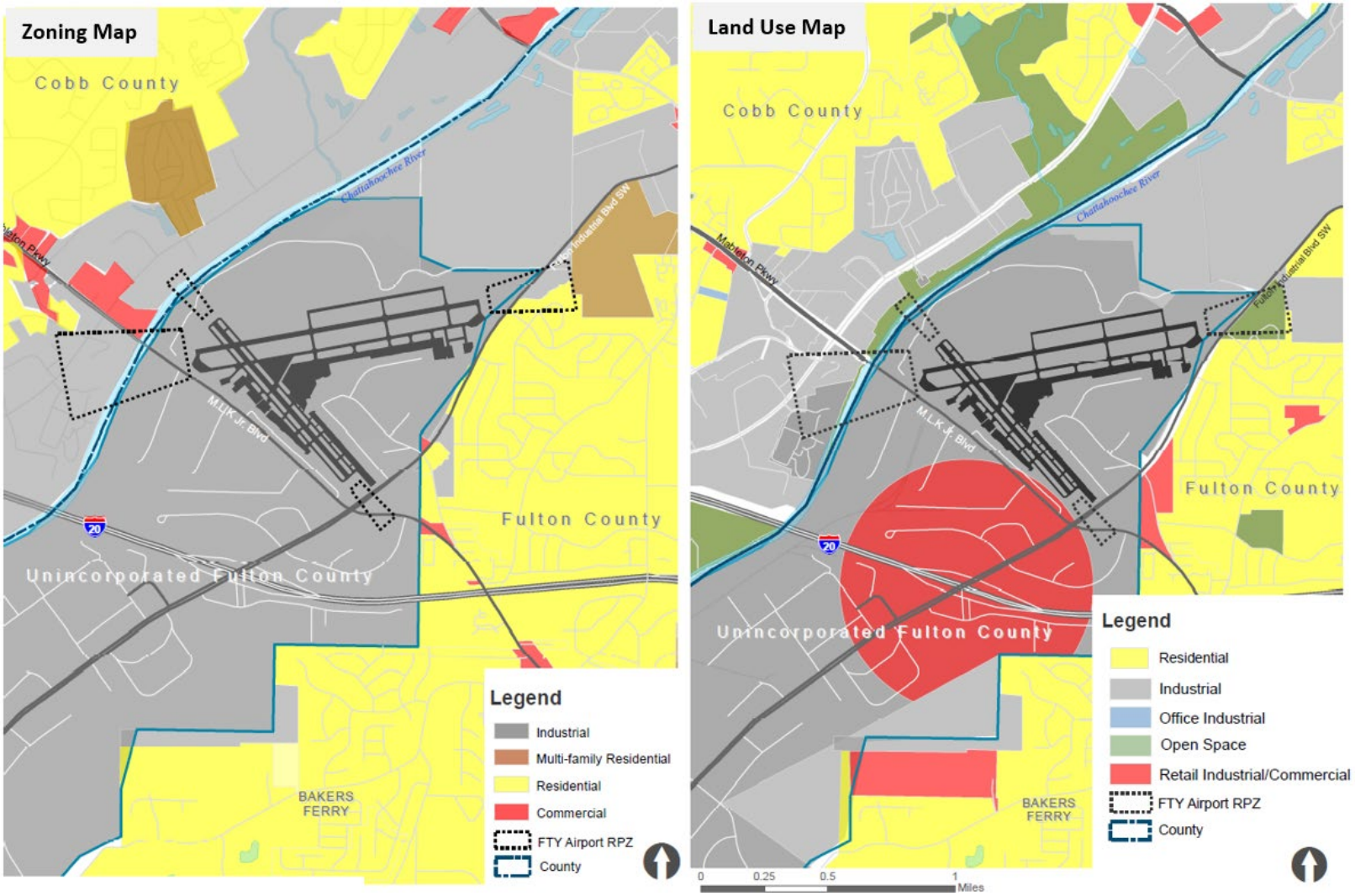
The area land use surrounding Fulton County Executive Airport can have a significant impact on airport operation and growth. Although the airport property is entirely contained inside the boundaries of Fulton County, as can be seen on the following illustration, some of the land in the vicinity of the airport is located in the City of Atlanta, Cobb County and portions of unincorporated Fulton County. The following identifies baseline information related to land use and zoning in the vicinity of the airport. By understanding the land use issues surrounding the airport, more appropriate recommendations can be made for the future of the airport.

2.10.1 Land Use Planning

The airport does not physically lay within the city limits of Atlanta, however on the unincorporated areas of Fulton County as shown in **Figure 2-16**. The airport is surrounded to the north and west by Cobb County whereas the City of Atlanta surrounds FTY to the east and south. Under ideal conditions, the development immediately surrounding the airport would be controlled and limited to compatible land uses. Compatible land use would include light industrial development and some commercial development. Based on, 2035 Fulton County Comprehensive Plan, the purpose of the Industrial Zone is to preserve the integrity of industrial areas in Unincorporated Fulton that accommodate the most intense industrial uses while limiting their impact on the surrounding neighborhoods. In 2013, Fulton County adopted the Fulton Industrial Boulevard Redevelopment Framework in order to revitalize the corridor.

According to Fulton County GIS Portal, the unincorporated portions of Fulton County are, for the most part, industrial areas. A small variety of land uses exist within this portion of Fulton County, including mixed-used offices and retail industrial and commercial uses. In the north along the northwestern direction the Chattahoochee River exist.

Figure 2-16: Surrounding Zoning and Land Use



Source: Michael Baker International, 2023.

2.10.2 Existing Zoning

Zoning is the public regulation of the use of land. It involves the adoption of ordnances that divide a community into various districts or zones. Each districts allows a certain use of land within that zone, such as residential, commercial, and industrial (and others). Typical zoning regulations address things such as the height of buildings, number of people that can occupy a building, lot area, setbacks, parking, signage and density.

In addition to evaluating existing land uses, it is also important to review the boundaries and locations of adjacent zoning districts to gain an understanding of future permitted uses of land around the airport. As part of grant assurances to the FAA, the airport is required, to the extent reasonable, to adopt zoning laws and restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations, including landing and takeoff of aircraft.

A review of existing zoning designations in the vicinity of the airport reveal that Industrial is the dominant zone in the following illustration, **Figure 2-16**. Virtually the entire area of unincorporated Fulton County is zoned either Light Industrial District, Heavy Industrial or Industrial Park. These districts are designated to provide areas suitable for full range manufacturing and warehousing to research, offices and fabrication. In addition, small areas designated for retail industrial and commercial use lie along Fulton Industrial Blvd. The area of land to the north and east of the airport, lie within the Cobb County and City of Atlanta and are subject to the County's and City's zoning and land use controls. Fulton County's zoning map identifies the airport as being zoned as an "Industrial Park" and "Light Industrial."

2.11 Conclusion

While the above inventory descriptions are quite detailed, they do not include an exhaustive listing of every feature of FTY. The purpose of this inventory is to provide general facility data on which subsequent and more detailed analyses will be conducted. For example, the forecasting section utilizes various regression-based methodologies to project future levels of passenger enplanements based upon the historical passenger levels presented in this section.

FORECAST

FULTON COUNTY

Michael Baker
INTERNATIONAL

Chapter 3 - Forecast

3.1 Background

This section presents forecast of aviation activity at Fulton County Executive Airport - Charlie Brown Field and will be used as the basis for anticipating facility needs throughout 20-year planning period that extends from 2020 through 2040. These projections of activity are presented in a 5, 10, and 20-year increments, where typically the base year data for analysis is the year, the report is completed. The development of forecasts includes the analyses of historical activity data, factors affecting aviation activity and existing forecasts. The elements of this forecast are:

- Total annual operations,
- Annual itinerant/local operation,
- Based aircraft, and
- Critical aircraft determination.

The forecast approval process typically constitutes an approval for planning purposes only, which allows the Sponsor to depict projects that are consistent with the long-term growth expectations on the Airport Layout Plan (ALP) Drawing Set. In most cases, prior to issuing a grant, GDOT may require updated information demonstration that a proposed project is justified by demand at the time, or by demand that would directly result from the implementation of the proposed project. This policy helps to ensure that funding is directed towards critical projects throughout the state.

3.2 Forecasting Limitations

Forecasting aviation activity is a complex process that considers a multitude of factors, both controllable and beyond an airport's control. Forecasts are not to be construed with predictions of the future, but rather an estimate of demand for future activity based on a variety of predictions, calculations, assumptions and subjective judgement. The accuracy of the estimates decline as the planning term is extended, potentially as a result of unforeseen local or geo-political events, natural disasters, and/or climatological events.

3.3 Historical and Baseline Activity Analysis

Many elements compose the broad definition of GA activity. In simplest terms, GA includes all segments of the aviation industry except those conducted by scheduled air carrier and the U.S. military. GA activity may include pilot training, sightseeing, aerial photography, law enforcement, and medical flights, as well as business, corporate or personal travel. GA operations are divided into categories of local or itinerant. Local operations are arrivals or departures performed by aircraft that remain within the airport traffic pattern, or those that occur within sight of the airport. Local operations are most often associated with training activity and flight instructions (e.g., touch-and-goes). Itinerant operations are arrivals or departures that do not remain within the airport traffic pattern and/or that originate from another airport. The FAA defines an operation as either a single aircraft landing or takeoff. Under this definition, touch-and-goes are considered two operations (one takeoff plus one landing) and are deemed local operations. Itinerant operations are typically comprised of private, business/corporate, and air taxi flight

activity, but may include law enforcement and medical flights. A summary of the historical and baseline operations and based aircraft values are presented below.

There are several historical activity trends that must be analyzed to determine what the likelihood may be for growth opportunities during the planning period. The forecast is presented over a 20-year planning period that extends from 2020 through 2040. However, due to the unusual and uncertain nature of 2020, which will be discussed further later in this chapter, the 2019 activity totals were consistent with the gradual growth occurring at FTY before the impact of a global pandemic struck; therefore, for the planning purposes, the 2020 base year activity total was held consistent with the 2019 totals. As typical to most master planning activity forecast, the forecast period is divided into 5-year Near-Term (Years 2021 through 2025), another 5-year Intermediate -Term (Years 2026 through 2030) and 10-year Long-Term (Years 2031-2040).

Using 2020 as the Base Year, the following published sources of aviation activity data and information were referenced and used as appropriate to formulate the "Existing Conditions" historical data for FTY:

- FAA Terminal Area Forecast (TAF),
- FAA Traffic Flow Management System Counts (TFMSC) Database,
- FAA Operational Network (OPSNET)/Air Traffic Activity Data System (ATADS) Database, and
- FTY Air Traffic Control Tower Operational Counts.

3.3.1 Historical & Baseline Operations

This section also provides a summary of historical activity levels via **Table 3-1**. The purpose of this section is to start building a context for the forecast. The past is not always a good predictor of the future; however, analysis of historical information offers the opportunity to understand those factors which have either caused traffic to increase or decrease and how they might change in the future, thus influencing the forecast.

Historical ATCT records from 2010 through 2020 were obtained from the FAA's Operations Network (OPSNET) database. The information in the OPSNET database is generated from the ATCT-reported activity counts and thus closely resembles the records maintained by the ATCT staff at FTY. The activity counts are divided into four categories: air carrier, air taxi, general aviation (GA), and military (MIL). An air carrier operation is an aircraft with seating capacity of more than 60 seats or a maximum payload capacity of more than 18,000 pounds. Air Taxi aircraft area designed to have a maximum seating capacity of 60 seats or less or a maximum payload capacity of 18,000 pounds or less. General Aviation operations are all civil aviation aircraft takeoffs and landings not classified as commercial (air carrier or air taxi) or military.

From a period 2010 to 2020 as shown in **Table 3-1**, 2010 was the busiest for total operations at Fulton County Executive Airport with 67,182 operations. Since 2010, the Airport has experienced a downward trend across all aviation categories and bottoming out in 2013 with 48,090 operations, which can be attributed to the effects of the Great Recession, which occurred in late 2000's. During this time, the aviation industry witnessed a surge in costs to purchase aircraft, as well as a rise in the cost of aviation

fuel[1]. The recession also caused individuals to have less disposable income[2], therefore decreasing recreational GA activity and local operations. However, business jet operations have increased due to cost efficiency compared to commercial air travel cost, thus more Fixed Based Operators (FBO) and other airport tenants are transitioning to jets for based aircraft. The General Aviation Manufacturers Association reports 2019 as the highest number of business jet delivered since 2009.[3] Since bottoming out in 2013, airport operations increased from 48,090 in 2013, to 58,733 operations in 2019. With the exception of 2010, 2019 was the busiest year of activity at the airport during the previous ten-year time period.

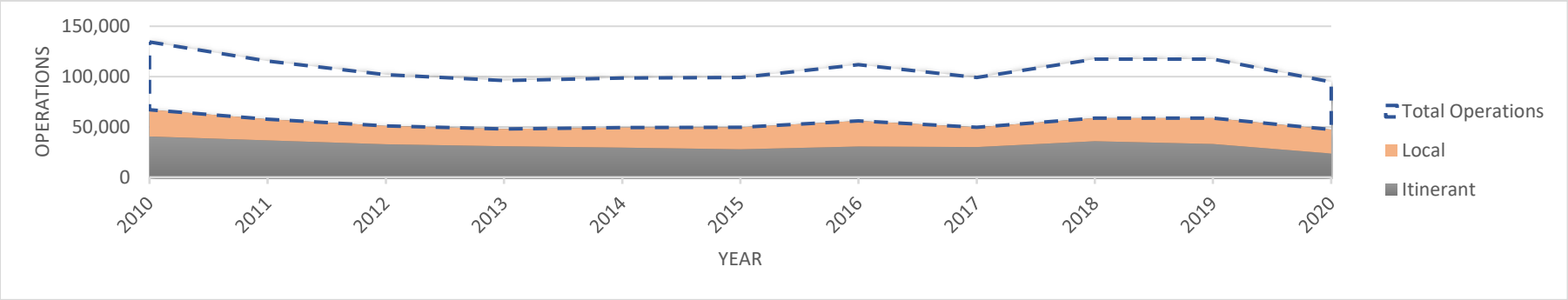
[1] https://www.bradenton.com/news/business/article121397863.html, accessed December, 2020.
[2] https://www.bea.gov/news/2013/personal-income-and-outlays-january-2013, accessed December, 2020.
[3] https://gama.aero/wp-content/uploads/GAMA_2019Databook_Final-2020-03-20.pdf, Table 1.1, accessed December, 2020.

Table 3-1: Historical & Baseline Operations (2010-2020)

Year	Itinerant						Local				Total Operations
	Air Carrier	Air Taxi	GA	Military	**Total**	% of Total	Civil	Military	**Total**	% of Total	
2010	4	4,452	35,443	524	**40,423**	60.17%	26,729	30	**26,759**	39.83%	**67,182**
2011	2	4,298	32,059	341	**36,700**	63.57%	20,981	50	**21,031**	36.43%	**57,731**
2012	0	3,518	29,020	125	**32,663**	64.16%	18,181	68	**18,249**	35.84%	**50,912**
2013	0	4,039	26,852	83	**30,974**	64.41%	17,076	40	**17,116**	35.59%	**48,090**
2014	0	3,345	25,898	187	**29,430**	59.72%	19,792	58	**19,850**	40.28%	**49,280**
2015	0	2,925	24,865	128	**27,918**	56.35%	21,598	28	**21,626**	43.65%	**49,544**
2016	0	2,558	27,857	102	**30,517**	54.53%	25,438	8	**25,446**	45.47%	**55,963**
2017	0	2,616	27,306	109	**30,031**	60.57%	19,515	36	**19,551**	39.43%	**49,582**
2018	0	5,071	30,757	19	**35,847**	61.09%	22,823	10	**22,833**	38.91%	**58,680**
2019	0	3,695	29,415	41	**33,151**	56.44%	25,582	0	**25,582**	43.56%	**58,733**
2020	0	2,654	20,881	88	**23,623**	49.83%	23,763	23	**23,786**	50.17%0	**47,409**
AAGR	AAGR	AAGR	AAGR	AAGR	AAGR	AVG	AAGR	AAGR	AAGR	AVG	AAGR
2010-2020	-100.00%	-5.04%	-5.15%	-16.34%	-5.23%	59.17%	-1.17%	-2.62%	-1.17%	40.83%	-3.43%
2010-2019	-100.00%	-2.05%	-2.05%	-24.66%	-2.18%	60.10%	-0.49%	-100.00%	-0.50%	39.90%	-1.48%
2019-2020	0.00%	-28.17%	-29.01%	114.63%	-28.74%	53.14%	-7.11%	0.00%	-7.02%	46.86%	-19.28%

Source: FAA OPSNET database and Michael Baker International, 2021

Figure 3-1 : Historical & Baseline Operations (2010-2020)



Source: FAA OPSNET database and Michael Baker International, Inc., 2021.

As shown in **Table 3-1**, FTY has historically received a larger percentage of itinerate operations than local operations primarily due to the high volume of corporate travel activity. In 2010, the greatest number of itinerant Air Taxi and GA operations was recorded. The recent decline in itinerant operations is due to the impact of a global pandemic, COVID-19. As mentioned, further historical and forecast activity trends are explored later in this chapter, such as the potential impacts of a global pandemic, COVID-19 that caused some of the activity decline overall 19.28 percent between 2019 to 2020 at FTY, which can be seen in **Figure 3-1**.

3.3.2 Historical & Baseline Flight Plan Activity

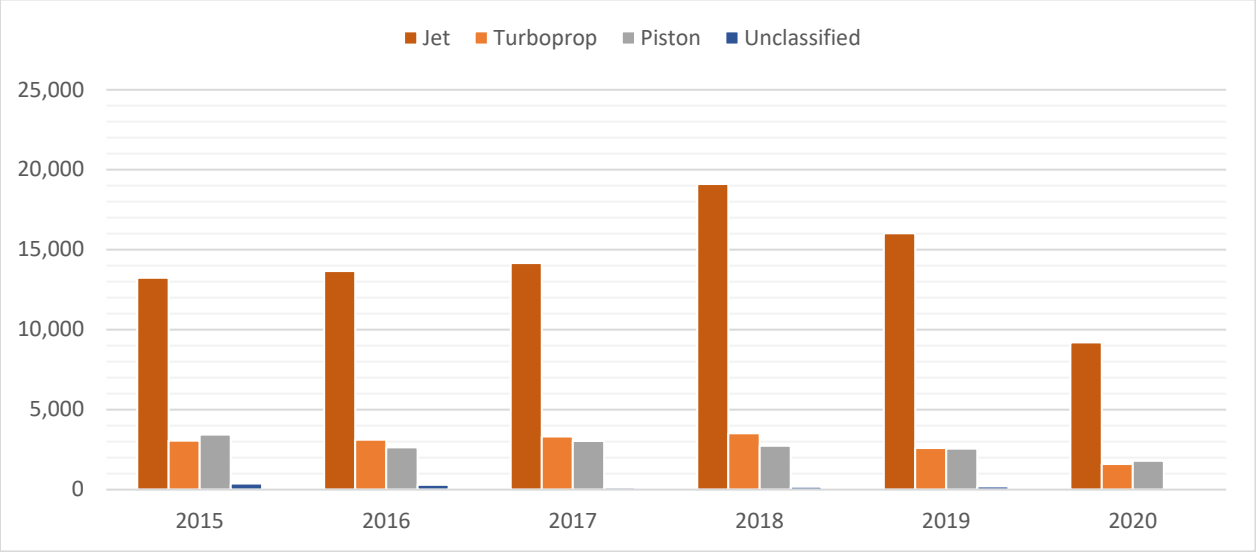
Historical flight plan activity data from the FAA's Traffic Flow Management System Counts (TFMSC) database is presented in **Table 3-2** and **Figure 3-2**. Flight plans are filed by aircraft that intend to fly Instrument Flight Rules (IFR) within controlled airspace, which includes the majority of jet operations. As seen in the table, jet operations have grown 0.44 percent annually and reached their highest totals in 2018 over the ten-year period. Turbine operations decline 6.62 percent from 2010 to 2019 and piston operations declined 9.51 percent over the same period. Due to the effects of COVID-19; IFR total activity dropped 40.67 percent from 2019 to 2020; however, these numbers are rebounding across the general aviation market as discussed in a later section.

Table 3-2: Historical & Baseline FAA Flight Plan Data (2010-2020)

Year	Jet	Turbine	Piston	Unclassified	Total Instrument	Total Operations	% of Total
2010	15,412	4,834	6,295	143	26,684	42,096	39.72%
2011	14,347	4,062	5,253	143	23,805	38,152	41.23%
2012	14,121	3,683	3,927	153	21,884	36,005	42.98%
2013	14,329	3,547	3,640	173	21,689	36,018	45.10%
2014	13,668	3,047	3,440	179	20,334	34,002	41.26%
2015	13,246	3,057	3,432	371	20,106	33,352	40.58%
2016	13,659	3,123	2,634	292	19,708	33,367	35.22%
2017	14,164	3,320	3,042	140	20,666	34,830	41.68%
2018	19,109	3,521	2,736	176	25,542	44,651	43.53%
2019	16,029	2,609	2,562	191	21,391	37,420	36.42%
2020	9,206	1,602	1,795	89	12,692	21,898	26.77%
Average Annual Growth Rate (AAGR)							
2010-2019	0.44%	-6.62%	-9.51%	-3.27%	-7.16%	-3.43%	-3.87%
2010-2020	-5.02%	-10.46%	-11.79%	-4.63%	-2.43%	-1.48%	-0.96%
2019-2020	-42.57%	-38.60%	-29.94%	-53.40%	-40.67%	-19.28%	-26.49%

Source: FAA TFMSC database and Michael Baker International, 2021.

Figure 3-2: Historical Flight Plan Activity by Aircraft Type (2020-2040)



Source: FAA TFMSC database and Michael Baker International, 2021.

3.3.3 Historical & Baseline Based Aircraft

This section examines historical based aircraft activity shown in **Table 3-3**. The source that is presented include airport records maintained by the FAA Terminal Area Forecast (TAF).

According to the TAF there has been an overall reduction in based aircraft numbers at FTY over the last ten years from 123 aircrafts in 2010 to approximately 67 in 2020. However, after recent inventory of based aircraft at FTY, a total of 97 based aircraft[4] were identified. Growth or decline in based aircraft is dependent upon a variety of factors including local influences such as personal disposable income growth, economic activity and outlook, pilot population and the degree of business development potential and employment in the area. Moreover, aircraft owners are also vigilant of airport fees, fuel costs and available facilities when choosing a location to base their aircraft.

At FTY, the decline in based aircraft population is due to a number of factors. Discussions with airport tenants revealed that the majority of these losses were due to decline in flight school activity and flight school aircraft. Further, with more amenities and affordable storage options at outlying airports, significant numbers of single engine light aircraft owners have relocated to other fields. In addition, the FAA recently relocated its flight department from FTY to RYY which can be attributed to the drop in based aircraft.

In recent years, Fulton County has begun to make significant investments in capital improvements including renovations of outdated support facilities and improvements to airfield infrastructure which explains the recent rebound in based aircraft counts. These investments include construction of the North Terminal Area which is attracting a number of new tenants and aircraft to the airfield. The County and Boulevard Community Improvement District (CID) also have begun to revitalize the immediate vicinity of

[4] : National Based Aircraft Inventory Program, www.basedaircraft.com, Accessed 3/25/2021.

the airport with a number of transportation, land use and beautification projects. As investments progress and additional storage and amenities become available at the airport, based aircraft counts should recover and exceed historical levels.

Table 3-3: TAF Historical and Baseline Based Aircraft (2010-2020)

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	AAGR 2010-2020
Based Aircraft	123	123	101	101	101	85	82	63	60	64	67[1]	**-5.89%**

Source: FAA TAF FTY, 2010-2020, Issued January 2021.
Note:
1) The current TAF does not reflect a recent based aircraft inventory that reports 97 based aircraft as of March 2021.

3.3.4 Based Aircraft Inventory

The National Based Aircraft Inventory Program is equipped with a secured internet portal, www.BasedAircraft.com, which has been established to allow airport managers direct on-line entry of their based aircraft details. According to, Basedaircraft.com, the information derived from the online portal is the sole and official source in which FAA Form 5010-1, Airport Master Record, retains their based aircraft data from. Because this information is normally obtained by the airport manager, the accuracy will vary depending on information provided to the airport manager by airport FBO's or personal inspections.

Based on the information obtained via the National Based Aircraft Inventory Program, for Fulton County Executive Airport, the validated inventory is 79 however indicates a total of 97 based aircraft including 39 single-engine, 6 multi-engine, 46 jets and 6 helicopters as shown in **Table 3-4**. These users include business and recreational transport, healthcare and emergency services, law enforcement and Georgia's Department of Natural Resources operations.

Table 3-4: 2021 Based Aircraft Inventory

Aircraft Type	2021 Based Aircraft
Single-Engine	39
Multi-Engine	6
Jet	46
Helicopter	6
Total	**97**

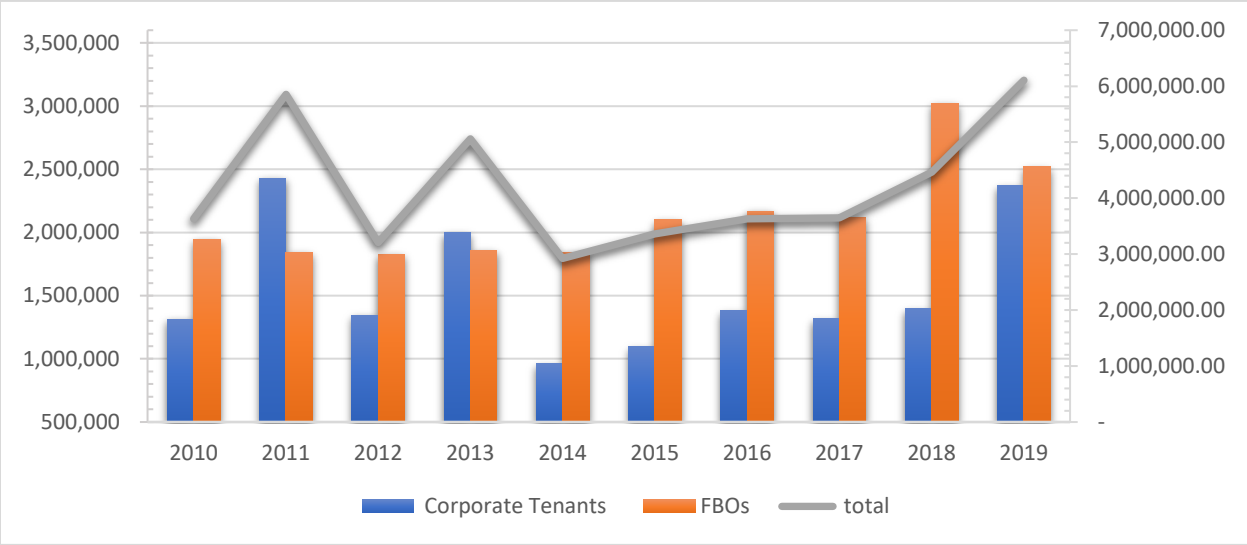
Source: National Based Aircraft Inventory Program, www.basedaircraft.com, Accessed 3/25/21.

3.3.5 Fuel Sales

Ten years of historical fuel sales at FTY are presented in **Figure 3-3**. Fuel consumption is categorized into groups: fuel used by corporate tenants and fuel dispensed from the two FBOs located at the airport. Corporate users exclusively use Jet-A fuel while FBO's may supply both AvGas and Jet-A depending on aircraft being serviced. As shown, corporate fuel flow at FTY has varied between 1 to 2.5 million gallons over the last ten years with an uptick in sales in 2019. In contrast, the FBO's witnessed relatively consistent

fuel sales within the same period with a recent uptick in sales in 2018 and 2019. From ten years of fuel sales, 2019 proved to be the most combined fuel sold at 6.1 million gallons.

Figure 3-3: Historical Fuel Flow in Gallons (2010-2019)



Source: Michael Baker International, 2021.

3.4 Factors & Opportunities Affecting Activity Level

For this analysis purposes, several factors were examined, including consideration of community's economic character is particularly important to the determination of business travel and general aviation. The economic conditions surrounding an airport have the potential to influence the activity levels. For example, the growth or decline in a local population may correlate to the growth or decline in operations and based aircraft levels at an airport.

3.4.1 Airport Service Area

Airports within Georgia's air transportation system contribute to the state's transportation and economic needs at different levels. For the purpose of evaluating reasonable airport performance, features from surrounding similar general aviation airports within FTY's service area that might encourage individual pilots or businesses to use their airport key performance measures used by Georgia Aviation System Plan (GASP) were considered. These features add to the establishment of an airport's market area. The market area served by FTY is designated as the "airport service area". The airport service area is defined by its proximity to other airports serving the general aviation needs of the community. Aviation demand correspond with local and regional trends as it relates to the socio-economic characteristics and other factors that influence the demand and supply factor.

In determining which airport(s) would have the greatest impacts on FTY, Level III GA airports were selected utilizing performance measures taken from, Georgia Aviation System Plan. This analysis identified three airports within a 45-minute drive time for all GA airports in Metro Atlanta thus, being a part of the general

aviation market or service area for FTY. **Table 3-5**, identifies the airports in the service area. In addition to the airport name, the table list specific operational data and facility characteristics which play key part of attracting customers to a facility within a service area. Fulton County Executive Airport serves a fairly busy region which includes DeKalb Peachtree Airport (PDK), Cobb County Internasal-McCollum Field (RYY), Gwinnett County – Briscoe Field (LZU).

Below provides a graphical representation of number of airports within Atlanta Metro that an impact on FTY and its operations. Within the 45-minute drive time are airports that have similar aviation activity and provide comparable facilities and services to those offered at FTY. Based on the information obtained, all airports within the study area comply with key performance measures that might appeal to customers in the region. Of note, only FTY and LZU provide weather minimums as low as ½ mile, a factor that allows better access to these airports in poor weather conditions when compared to PDK and RYY.

Table 3-5: GA Airport Market Surrounding FTY

Capabilities	FTY	PDK	RYY	LZU	Market Total
Published Approach	✓	✓	✓	✓	
Lowest Minimums	½ mile	⅞ mile	¾ mile	½ mile	
Vertical Guidance	✓	✓	✓	✓	
Weather Reporting Capabilities	✓	✓	✓	✓	
4,000' Runway or <	✓	✓	✓	✓	
5,000' Runway or <	✓	✓	✓	✓	
5,500 Runway or <	✓	✓	✓	✓	
Based Aircraft	97	292	275	157	**821**
Itinerant GA Operations	29,415	96,598	37,954	55,888	**219,855**
Local GA operations	25,582	42,750	37,443	66,958	**172,733**
Market Total	**54,997**	**139,348**	**75,397**	**122,846**	392,588

Note: Data does not include Military Based Aircraft, Military Operations or Air Carrier Operations.
Source: Georgia System Aviation System Plan, 2018., OPNET 2019., Airnav.com

Fulton County's based aircraft number of 97 ranks behind the four airports identified in the service area. The remaining airports reported the following based aircraft number to the FAA; PDK with 292, RYY with 275, and LZU with 157. Understanding the market share established for the purposes of this study as identified, FTY holds 11.8 percent of the based aircraft market, 13 percent of itinerant GA operations, 15 percent of local GA operations, and 14 percent of the total operations in the study area.

3.4.2 National Peer Airport Comparison

In 2019, Fulton County prepared an Economic Impact Analysis[5] to help examine the potential benefits of further development at Fulton County Executive Airport, as part of this study, nine similarly constrained reliever-type airports in other parts of the United States were reviewed an compared to FTY. Each of these

[5] *Fulton County Executive Airport-Charlie Brown Field – Airport Economic Impact Analysis*, 2019, prepared by CDM Smith and Michael Baker International.

peer airports has a similarly constrained location and comparable activity profile to Fulton County Executive Airport. All are located within highly developed urban environments and nearly all are designated reliever airports of busy commercial service airports. As such, all are among the most dominant and busiest airports for general aviation within their respective regions. The following are the nine identified peer airports:

- Cobb County International Airport-McCollum Field (Atlanta, Georgia)
- DeKalb-Peachtree Airport (Atlanta, Georgia)
- Chicago Executive Airport (Chicago/Prospect Heights, Wheeling, Illinois)
- Cincinnati Municipal Airport-Lunken Field (Cincinnati, Ohio)
- Concord Regional Airport (Concord, North Carolina)
- McKinney National Airport (Dallas, Texas)
- Allegheny County Airport (Pittsburgh, Pennsylvania)
- Spirit of St. Louis Airport (St. Louis, Missouri)
- St. Paul Downtown Airport Holman Field (St. Paul, Minnesota)

The locations of these peer airports are shown on **Figure 3-4**.

Figure 3-4: Peer Airport Locations

Source: CDM Smith.

This peer assessment analyzed the airport and compared it to nine peer airports across several characteristics such as airport facilities and services, community factors, and economic impact, as well as providing an overview of the facilities and recent development histories for each airport, along with a

broader comparison of economic impacts among reliever airports. In most categories, Fulton County Executive Airport was found to be competitive with its peers (**Table 3-6**).

Table 3-6: FTY Completeness with Peer Airports

Category	Level of Competitiveness Compared to Peer Airports	Details of Competitiveness
Airside Facilities	**Highly Competitive**	Comparable facilities to peer airports
Aviation Services	**Highly Competitive**	Comparable services to peer airports
Aircraft Operations	Less Competitive	45% below average of analyzed airports
Based Aircraft	Less Competitive	257% below average of analyzed airports
Jet Operations	Somewhat Competitive	18% above average of analyzed airports
Community Trends: Population	**Highly Competitive**	Atlanta's population grew over 12% from 2007 to 2017
Community Trends: Unemployment	Somewhat Competitive	Atlanta's 4.7% unemployment rate is near the average
Community Trends: Median Household Income	Somewhat Competitive	Atlanta's median household income is higher than the average of all included airport associated cities but lower than the national average.
Metro Region GDP	**Highly Competitive**	Atlanta metro region has the 10th highest metro GDP in the U.S.
Economic Impact: Employment	Somewhat Competitive	27% below average of analyzed airports
Economic Impact: Payroll	**Highly Competitive**	12% above average of analyzed airports
Economic Impact: Output	Somewhat Competitive	19% below average of analyzed airports

Source: CDM Smith.

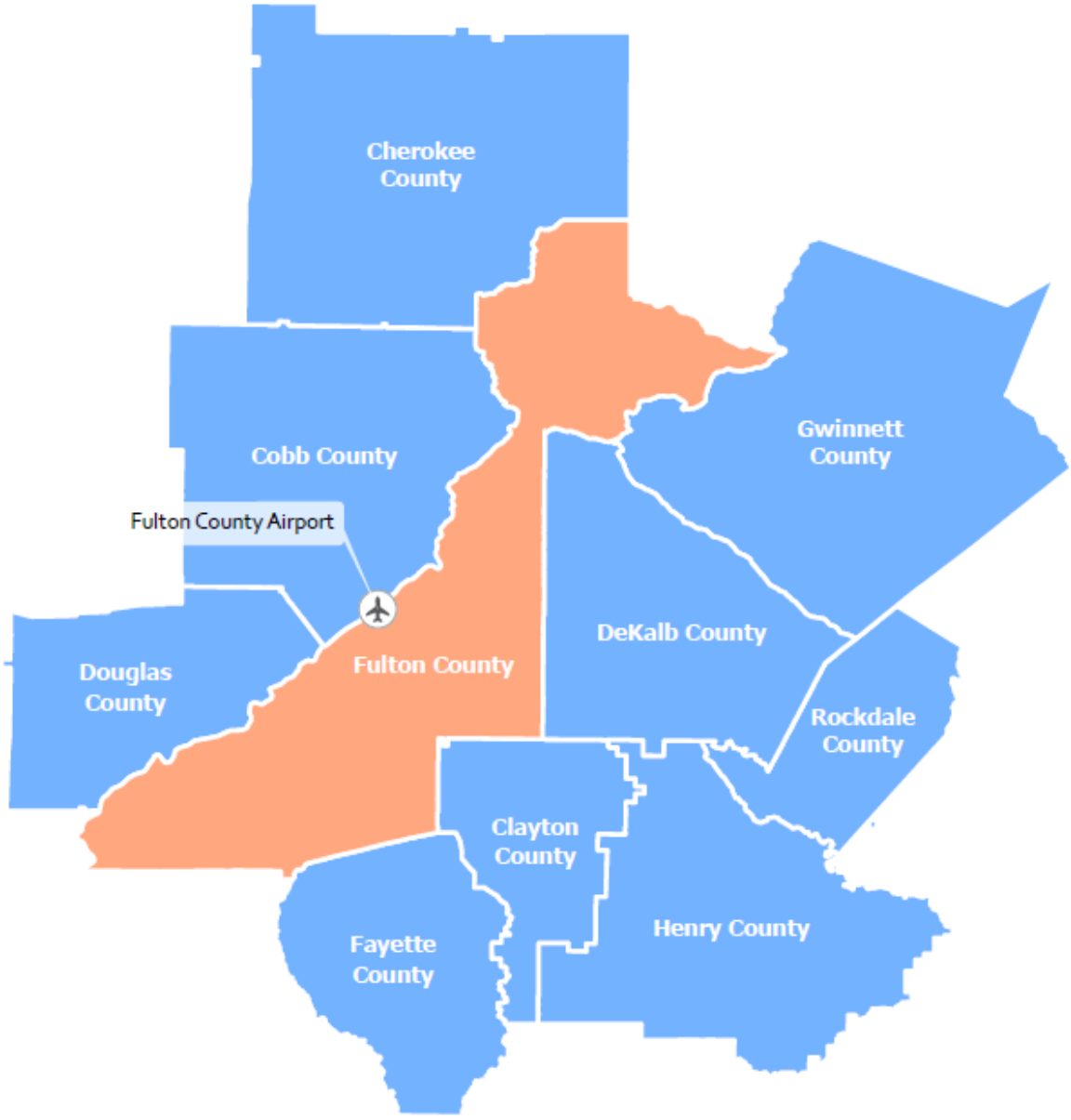
3.4.3 Socio-economic Characteristics

Table 3-7, summarizes historical and forecast population of the 10-county area covered by the Atlanta Regional Commission (ARC) and historical data for the City of Atlanta (refer to **Figure 3-5**). The forecasts were produced by the ARC in 2020 with a base year of 2015 and a forecast year of 2050. It is noted that the U.S. Census Bureau reported a July 1, 2019 population of 1,063,937 for Fulton County and 506,811 for the City of Atlanta. According to information from Fulton County, the population of the county grew the largest amount between 2017 and 2018 since between 2000 and 2001. "The City of Atlanta, which lost population between 1970 and 2000, is growing again amid a boom in multifamily housing. The city added

10,100 residents in the past year (2017 to 2018), compared to 9,700 the year before, and has grown by 9.00 percent since 2010." (obtained from a press release on atlantaregional.org dated August 28, 2019). The U.S. Census Bureau lists Atlanta as the 10th fastest growing city in the country between 2016 and 2017 and the Atlanta Metropolitan Statistical Area (MSA) as the ninth most populated MSA in the country. By 2040, the ARC projects the top employment sectors in the 10-county area to be health care, retail, education, scientific, and other professional services.

With the airport's proximity to Downtown Atlanta and the growing 10-county area, it is anticipated that the projected population and employment growth will result in additional aviation activity at FTY. Although the historical population growth of the area has not produced increasing GA activity over the long-term, it is assumed with airport improvements coupled with county-wide population growth the activity at FTY is anticipated to stabilize and begin trending upwards. Georgia continues to be a popular state for business relocations and start-ups. The 2020 Georgia Statewide Airport Economic Impact Study estimated the total economic impact of airports in the state to be $73.7 billion annually and FTY's impact to be $342 million annually. Consequently, the economic conditions surrounding FTY and the growth in the aviation industry surrounding the Atlanta area should result in increasing levels of activity and based aircraft at the airport over the course of the 20-year planning period.

Figure 3-5: 10-County Region



Source: Michael Baker International, 2021.

Table 3-7: Historical and Forecast Growth Rates (2015 – 2050)

Year	Region	Cherokee	Clayton	Cobb	DeKalb	Douglas	Fayette	**Fulton**	Gwinnett	Henry	Rockdale
2015	4,107,750	233,231	266,888	727,521	718,442	137,343	110,975	**970,290**	859,757	218,364	89,390
2019	4,327,263	246,083	278,275	756,162	745,543	142,411	114,615	**1,014,495**	912,515	232,038	91,846
2020	4,383,950	249,405	281,197	763,497	752,477	143,707	115,543	**1,025,857**	926,202	235,588	92,471
2025	4,678,721	266,700	296,273	801,252	788,124	150,366	120,299	**1,084,606**	997,783	254,170	95,658
2030	4,993,312	285,195	312,158	840,874	825,460	157,333	125,250	**1,146,720**	1,074,896	274,219	98,955
2035	5,329,056	304,973	328,894	882,455	864,564	164,623	130,406	**1,212,391**	1,157,968	295,848	102,365
2040	5,687,375	326,122	346,527	926,093	905,521	172,251	135,774	**1,281,823**	1,247,460	319,184	105,893
2050	6,478,669	372,153	385,938	1,021,984	995,591	189,090	147,678	**1,433,025**	1,448,676	371,071	113,463
Average Annual Growth Rate (AAGR)											
2015-2050	1.31%	1.34%	1.06%	0.98%	0.94%	0.92%	0.82%	**1.12%**	1.50%	1.53%	0.68%

Sources: Atlanta Regional Commission, 2021.

3.4.4 Corona Virus (COVID-19) Pandemic

No part of America's economy has escaped the impact of the COVID-19 pandemic. The aviation industry has suffered a painful setback, one strengthened by global travel restrictions and stay at home orders. The airline industry in particular, has experienced massive financial losses with empty planes and furloughed pilots. According to Airlines for America, *Tracking the Impacts of COVID-19*[6], U.S. commercial passengers' levels are down 68 percent while domestic flights were down 46 percent. Despite commercial travel paralysis, COVID-19 has affected general aviation activity to a much smaller degree and in some cases has fostered increases in demand.

After an early hit to the general aviation industry in March 2020 due to statewide business shutdowns, operations at general aviation airports have made a comeback in spite of the global pandemic. Based on information from FAA OPSNET, six-month worth (June-November) of Air Traffic Control Tower activity counts at nearby airports were analyzed, four general aviation and one commercial airport shown in **Table 3-8**. All airports have experienced different variation in activity during the captured six-month period. By comparing the total IFR operations of 232,015 in 2019 and 210,459 IFR operation in 2020, general aviation airports within the surrounding area have witnessed overall 9 percent decline in operations compared to the same time the previous year. Hartsfield-Jackson Atlanta International Airport, the only commercial service airport within this analysis and busiest in the world has shown a 45 percent drop in 2020 operations compared to 2019.

[6] https://www.airlines.org/dataset/impact-of-covid19-data-updates/#, accessed December 17, 2020.

Table 3-8: Surrounding Airports COVID-19 Effects on IFR Operation 2019 v. 2020

DeKalb Peachtree Airport - General Aviation (GA)							
Year	June	July	August	September	October	November	**Total**
2019	13,544	14,720	13,702	15,435	14,019	14,640	**86,060**
2020	12,666	12,191	11,649	13,274	13,067	11,855	**74,702**
Percent Change	-6%	-17%	-15%	-14%	-7%	-19%	**-13%**
Gwinnett County Airport - Briscoe Field - General Aviation (GA)							
Year	June	July	August	September	October	November	**Total**
2019	10,442	11,439	13,134	12,141	11,041	11,454	**69,651**
2020	10,973	12,076	10,583	1,362	6,261	8,180	**49,435**
Percent Change	5%	6%	-19%	-89%	-43%	-29%	**-29%**
Cobb County International Airport - McCollum Field (GA)							
Year	June	July	August	September	October	November	**Total**
2019	6,396	8,015	8,572	7,660	6,266	7,589	**44,498**
2020	9,450	10,085	8,847	9,708	8,844	8,015	**54,949**
Percent Change	48%	26%	3%	27%	41%	6%	**23%**
Hartsfield-Jackson Atlanta International Airport - Commercial							
Year	June	July	August	September	October	November	**Total**
2019	78,280	80,583	80,990	72,503	76,491	71,015	**459,862**
2020	24,458	40,135	47,391	44,245	47,359	49,061	**252,649**
Percent Change	-69%	-50%	-41%	-39%	-38%	-31%	**-45%**

Source: FAA OPSNET,

The same analysis was performed for Fulton County Executive Airport, displayed in **Table 3-9** FTY has witnessed a 1 percent operational drop compared to the same months in 2019. In fact, during July, October and November of 2020, airport operations at FTY exceeded those same months in 2019. Overall general aviation continues to do well and remain more resilient than commercial operations under these circumstances, due to the nature and functionality of the aircrafts and facilities. Most GA aircraft cabins sit less than 10 people who typically are familiar with one another. In addition, GA terminal facilities provide more social distancing capability than that of a commercial passenger terminal. Further, general aviation includes many uses besides passenger travel (i.e. flight training, aerial surveying, firefighting, pipeline patrol) that have seen little to no disruption from COVID-19. Discussions with major airport tenants revealed that many operations at FTY have increased due to the flexibility of general aviation and the ability to safely transport passengers during a time of social distancing policies.

Table 3-9: Fulton County Executive Airport COVID-19 Effects on IFR Operations 2019 v. 2020

Fulton County Executive Airport - Charlie Brown Field							
Year	June	July	August	September	October	November	**Total**
2019	5,263	4,774	6,273	5,459	5,086	4,951	**31,806**
2020	4,934	5,443	5,215	5,254	5,377	5,150	**31,373**
Percent Change	-6%	14%	-17%	-4%	6%	4%	**-1%**

Source: FAA OPSNET,

3.5 Existing Aeronautical Forecasts

Recent aeronautical forecasts have been prepared by the FAA and GDOT Aviation Programs. These include the FAA Terminal Area Forecast (TAF), GDOT Statewide System Plan forecast, and the FAA National Aerospace forecast.

3.5.1 Terminal Area Forecast

The FAA prepares forecasts of aviation activity for individual airports as well as industry-wide projections consisting of many variables annually. These forecasts are used as the basis for FAA national facility planning and is useful in determining industry and national trends. This TAF forecast is calculated based upon each airport's historical activities and national averages for change in aircraft operations and other aviation activity measures. Because the FAA uses the TAF for airport facility planning, it is a logical basis for evaluating ALP forecasts. A table and graph of the TAF forecast of aircraft operations count are presented in **Table 3-10**.

Despite the historic operational trends at Fulton County Executive Airport, the TAF has forecast a 0.46 percent average annual growth rate (AAGR)projection of activity (66,001) and 3.79 percent AAGR projection for based aircraft (141).

Table 3-10: FAA Terminal Area Forecast (TAF)

FAA TAF										
Year	Itinerant					Local				
	Air Carrier	Air Taxi	GA	Military	**Total**	Civil	Military	**Total**	**Total Operations**	**Based Aircraft**
2020*	0	5,475	31,011	40	36,526	23,630	0	23,630	60,156	67
2021	0	5,475	31,322	40	36,837	23,774	0	23,774	60,611	70
2025	0	5,475	31,923	40	37,438	24,266	0	24,266	61,704	83
2030	0	5,475	32,690	40	38,205	24,894	0	24,894	63,099	99
2035	0	5,475	33,477	40	38,992	25,540	0	25,540	64,532	119
2040	0	5,475	34,284	40	39,799	26,202	0	26,202	66,001	141
AAGR 2020-2040	**0.00%**	**0.00%**	**0.50%**	**0.00%**	**0.43%**	**0.52%**	**0.00%**	**0.52%**	**0.46%**	**3.79%**

Source: FAA TAF, 2020.

3.5.2 Georgia Aviation System Plan

The 2018 Georgia Aviation System Plan forecast of operations and based aircraft for FTY was evaluated. Three forecasting methodologies were used to generate a low, medium, and high forecast for based aircraft in Georgia. The System Plan concludes that the lowest scenario forecast was selected based on operations per based aircraft. The plan projected a statewide compound AAGR of .54 percent through 2035. Using a based year of 2016, the plan reflects 61,800 operations and 84 based aircraft by 2035. By continuing the same growth rate carried to 2040, it is anticipated according to the GASP, FTY will have 63,487 operation and 94 based aircraft (**Table 3-11**).

Table 3-11: Georgia Aviation System Plan (GASP) Forecast

Year	GA Operation	Based Aircraft
2016	55,853	82
2020	57,000	84
2025	58,600	86
2035	61,800	91
2040	*63,487*	94
AAGR 2016-2035	**0.54%**	**0.54%**
AAGR 2020-2040	***0.54%***	***0.54%***

Source: Georgia Aviation System Plan (GASP), 2018.
Note: GASP forecast ends in 2035. Table assumes growth rate of .54 percent continues to 2040.

3.5.3 FAA National Aerospace Forecast

The FAA Aerospace Forecast 2020-2040 is developed to support budget and planning needs of the FAA. The forecasts rely on statistical models to explain and incorporate emerging trends of the different segments of the aviation industry.

Within the FAA Aerospace Forecast, long term growth within the general aviation industry will be driven by turbine aircraft activity although the overall general aviation fleet is projected decline by 0.9 percent over the 20-year period. Within the overall general aviation fleet numbers, the turbine-powered fleet is expected to grow by 1.8 percent a year, the turbojet fleet is expected to grow 2.3 percent a year and the fixed wing piston aircraft fleet will shrink at an annual rate of 1.0 percent. The smallest category, light-sport-aircraft is expected to grow by 3.4 percent annually.

In terms of hours flown, general aviation hours are forecast by the FAA to increase 0.7 percent annually overall. Fixed wing piston hours are forecast to decrease 1.0 percent annually, turbine aircraft are forecast to increase 2.2 percent annually and jet aircraft hours are expected to grow 2.7 percent annually. Rotorcraft flight hours are expected to grow 2.1 percent annually and light-sport-aircraft hours are projected to grow by 4.2 percent annually.

Using its National Aerospace Forecast, the FAA projects an average annual growth in operations of 0.31% annually at airports like FTY (**Table 3-12**).

Table 3-12: FAA National Aerospace Forecast

FAA Aerospace Growth Rate									
Year	Itinerant					Local			
	Air Carrier	Air Taxi	GA	Military	**Total**	Civil	Military	**Total**	**Total Operations**
2020*	0	3,695	29,415	41	33,151	25,582	0	25,582	58,733
2021	0	3,706	29,503	88	33,297	25,659	23	25,682	58,979
2025	0	3,751	29,859	88	33,698	25,968	23	25,991	59,689
2030	0	3,807	30,309	88	34,205	26,360	23	26,383	60,588
2035	0	3,865	30,767	88	34,720	26,758	23	26,781	61,500
2040	0	3,923	31,231	88	35,242	27,161	23	27,184	62,427
AAGR 2020-2040	**0.00%**	**0.30%**	**0.30%**	**3.89%**	**0.31%**	**0.30%**	**0.00%**	**0.30%**	**0.31%**

Source: FAA Aerospace Forecast, 2020.

3.6 Preferred Forecasts

General aviation encompasses a wide variety of aviation activities and captures a broad range of aircraft types, including small, piston aircraft, large corporate jets, as well as gliders and other light aircraft. General aviation activity also captures the largest portion of the civil aircraft fleet operating in the US and accounts for the majority of operations handled by towered and non-towered airports.

As mentioned, general aviation growth relies on many factors including the level of services offered at an airport, competitive pricing, airfield and FBO facilities, and pilots' perception of services. As a result, these forecasts assume that airport management, the fixed base operator, and other tenants will actively support all aviation activity and initiate the appropriate measures to either maintain or extend activity at the airport. The forecasts developed in the ALP Update will provide a framework to guide the analysis for future development needs and alternatives.

It should be recognized that there are always fluctuations in an airport's activity due to a variety of factors that cannot be anticipated. Projections of aviation activity for Fulton Executive were prepared for the 20-year planning horizon including the near-term (+5 Years), Intermediate-term (+10 Years), and long-term (+20 Years) timeframes. Existing conditions are considered 2020 (utilizing 2019 total counts) with the base year of the forecast beginning in 2021. The forecast planning horizons correspond to the following years:

- Existing Conditions – 2020*
- Base Year - 2021
- Near Term – 2025
- Intermediate-Term – 2030
- Long-Term – 2040

3.6.1 Operations Forecast

As part of the planning effort for FTY, the first set of forecasts were conducted for itinerant and local operations. Several factors were reviewed in the determination of applicable growth trends for this

forecast, and it was ultimately determined that the existing FAA TAF AAGR of 0.46% appears consistent with expected operational growth at the airport considering local trends that appear favorable to modest operational growth as facility improvements attract new based aircraft and greater itinerant operations. The preferred operations forecast is presented in **Table 3-13.**

Table 3-13: Preferred Operations Forecast

Preferred Operations Forecast									
Year	Itinerant					Local			
	Air Carrier	Air Taxi	GA	Military	**Total**	Civil	Military	**Total**	**Total Operations**
2020*	0	5,475	31,011	40	36,526	23,630	0	23,630	60,156
2021	0	5,500	31,154	40	36,694	23,739	0	23,739	60,433
2025	0	5,602	31,731	40	37,373	24,179	0	24,179	61,551
2030	0	5,732	32,467	40	38,240	24,740	0	24,740	62,979
2035	0	5,865	33,221	40	39,126	25,314	0	25,314	64,440
2040	0	6,001	33,992	40	40,034	25,902	0	25,902	65,935
AAGR 2020-2040	**0.00%**	**0.46%**	**0.46%**	**0.00%**	**0.46%**	**0.46%**	**0.00%**	**0.46%**	**0.46%**

Source: FAA Aerospace Forecast, 2020.

3.6.2 Instrument Operations Forecast

At FTY, IFR operations generally consists of approaches and departures by aircraft filing flight plans with the FAA, which included a total of 12,692 operations in 2020 or 21.10 percent of all operations. For this forecasting effort, it was assuming that instrument operations would increase at an average growth rate of 0.3 percent per year in accordance with the FAA's forecast of IFR GA aircraft at en route traffic control centers from the FAA Aerospace Forecast. As shown in **Table 3-14**, this forecast results in instrument operations increasing from 12,692 operations in 2020 to 13,476 operations by 2040.

Table 3-14: Instrument Operations Forecast (2020-2040)

Year	IFR	Total	% Total
2020	12,692	60,156	21.10%
2021	12,730	60,433	21.06%
2025	12,884	61,551	20.93%
2030	13,078	62,979	20.77%
2035	13,275	64,440	20.60%
2040	13,476	65,935	20.44%
AAGR 2020-2040	**0.30%**	**0.46%**	**-0.16%**

Source: FAA TFMSC, 2021

3.6.3 Based Aircraft Forecast

In determining an accurate based aircraft projection for FTY, Average Annual Growth Rates (AAGR) forecasts from the existing airport were first analyzed. Ultimately, a composite forecast of based aircraft was determined based on projections from the FAA Aerospace Forecast, and reasonable projection assumptions for each aircraft type.

The 2020-2040 FAA Aerospace Forecast predicts an overall based aircraft to grow by 1.73 percent annually throughout the planning period shown in **Table 3-15**. With the construction of the North Terminal Area, it is anticipated airport growth will be higher than the national average for the first 5 years as new corporate tenants move to the airport. Assuming additional hangars will be built within the initial 5 years, the growth rate is 2.53 percent. Subsequently, the remaining 15 years for based aircraft will grow at the national rate of 1.73 percent.

The total number of based aircraft forecast through the planning period was further evaluated to consider the projected aircraft types expected to base at the airport. Projections generally examine market conditions and demand for various aircraft types as they relate to local influences and general increases in the pilot population. According to the FAA Aerospace Forecast estimates, the general aviation fleet will decline from an estimated 212,335 aircraft in 2019 to 210,380 in 2040. However, most of this growth is driven by turbine-powered aircraft including rotorcraft and sector. It is anticipated that the turbine market will see an increase at an AAGR of 1.8 percent. The single-engine sector is divided into light-sport and experimental aircrafts. Although single-engine aircrafts exclusively are expected to see a -1.0 percent decline, experimental aircrafts will increase 0.9 percent while light sport aircrafts will increase by 3.3 percent. The jet industry is expected to witness an annual increase of 2.3 percent. Driven by these factors,

the FAA Aerospace Forecast assumes that business use of general aviation aircraft will expand at a more rapid pace than that for personal. As a result, is expected to see an increase in the number of corporate jets based at the airport, whereas traditional single piston aircraft are projected to see a slight declining share of total based aircraft.

Table 3-15: Based Aircraft Forecast (2020-2040)

Year	Single Engine	Multi-Engine	Jet	Heli	Total
2020	39	6	46	6	97
2021	39	6	49	6	99
2025	37	7	60	7	110
2030	35	7	68	7	117
2035	34	8	77	8	126
2040	32	9	88	9	137
AAGR 2020-2025	-1.00%	1.80%	5.34%	1.80%	2.53%
AAGR 2025-2030	-1.00%	1.80%	2.60%	1.80%	1.34%
AAGR 2030-2040	-1.00%	1.80%	2.60%	1.80%	1.53%
AAGR 2020-2040	**-1.00%**	**1.80%**	**3.28%**	**1.80%**	**1.73%**

Source: Michael Baker International, 2021.

3.7 Existing and Future Critical Aircraft

In addition to understanding the trends within the industry and local economy, it is also important to understand the significance of the critical aircraft when planning an airport. According to FAA AC 150/5000-17, *Critical Aircraft and Regular Use Determination*, the critical aircraft is the most demanding aircraft type, or grouping of aircraft with similar characteristics, that make *regular use* or anticipated to use the make regular use of the airport. The most demanding aircraft is outlined in terms of Aircraft Approach Speed (AAC), wingspan, tail height which comprises the Aircraft Design Group (ADG) and/or weight. “Regular use” is defined as, 500 annual operations, including both itinerant and local operations but excluding touch-and-go operations. An operation is either a takeoff or landing of an aircraft.

3.7.1 Existing Critical Aircraft

The identification of an airport’s Critical Aircraft is a critical aspect of airport planning and design for federally obligated airports. It sets dimensional requirements on an airport, such as the separating distance between taxiway and runways, and the size of certain areas protecting the safety and of aircraft operations. An accurate Critical Aircraft determination helps to ensure the proper development of airport facilities and appropriate federal investments in airport facilities.

The existing critical aircraft must be identified based on aeronautical activity, typically from the most recent 12-month period that is available. Following guidance provided in FAA AC 150/5000-17, *Critical Aircraft and Regular Use Determination*, the FAA’s Traffic Flow Management System Counts (TFMSC) data base for 12-month period (November 2019 - November 2020) was reviewed to identify the make and model of aircraft that have filed instrument flight plans to or from FTY within the past 12-months. In addition, the TFMSC database provides frequency of operations of per aircraft type as well as ADG and

ACC. **Table 3-16**, highlights those aircraft reaching a minimum of 500-operations within the last 12-months.

Table 3-16: Aircraft Operations Greater Than or Equal to 500 (Nov 19-Nov 20)

Aircraft	Total Operations	AAC	ADG	Max Takeoff Weight (MTOW)	Taxiway Design Group (TDG)
Pilatus PC-12	531	A	I	10,450	1A
Raytheon/Beech Beechjet 400/T-1	710	B	I	N/A	N/A
Cessna Citation II/Bravo	529	B	II	11,850	2
Cessna Excel/XLS	986	B	II	20,000	1B
Cessna Citation Latitude	717	B	II	30,800	1B
Dassault Falcon 2000	627	B	II	41,000	1B
Dassault Falcon 900	594	B	II	49,000	1B
BAe HS 125/700-800/Hawker 800	547	C	I	28,000	1B
Bombardier (Canadair) Challenger 300	717	C	II	38,850	1B
Bombardier Challenger 600/601/604	516	C	I	41,100	1B
Bombardier Learjet 35/36	715	D	I	18,000	N/A

Source: FAA Traffic Flow Management System Counts (TFMSC), Michael Baker International, 2021.

As shown in **Table 3-16**, although several aircraft performed over 500 operations, their aircraft characteristics do not meet the criteria for most demanding aircraft in terms of physical size and max takeoff weight (MTOW). According to recent history of annual operations, the Gulfstream 500/600 is recorded having used the airport numerous times per year. Due to the impacts of COVID-19 over the recent 12-month period the dataset does not accurately reflect a typical year of operation performed at FTY. To better understand and determine the critical aircraft, a pre-COVID-19 timeframe of IFR data taken from November 2018 – November 2019 was also considered within this analysis. The results are displayed in **Table 3-17**.

Table 3-17: Aircraft Operations Greater Than or Equal to 500 (Nov 18-Nov 19)

Aircraft	Total Operations	AAC	ADG	Max Takeoff Weight (MTOW)	Taxiway Design Group (TDG)
Pilatus PC-12	633	A	I	10,450	1A
Raytheon/Beech Beechjet 400/T-1	1,124	B	I	N/A	N/A
Beech Super King Air 350	628	B	II	16,500	2
Beech 200 Super King	624	B	II	12,500	2
Cessna Citation CJ3	510	B	II	17,110	1B
Cessna Citation II/Bravo	610	B	II	11,850	2
Cessna Citation V/Ultra/Encore	586	B	II	16,630	1A
Cessna Excel/XLS	1,859	B	II	20,000	1B
Cessna Citation Latitude	809	B	II	30,800	1B
Embraer Phenom 300	571	B	II	17,968	1B
Dassault Falcon 2000	876	B	II	41,000	1B
Dassault Falcon 900	810	B	II	49,000	1B
BAe HS 125/700-800/Hawker 800	1,166	C	I	28,000	1B
Bombardier (Canadair) Challenger 300	957	C	II	38,850	1B
Bombardier Challenger 600/601/604	690	C	I	41,100	1B
Gulfstream G150	689	C	II	26,100	1B
Gulfstream G280	985	C	II	39,600	1B
Bombardier Learjet 35/36	513	D	I	18,000	N/A
Gulfstream 400	665	D	II	74,600	2
Gulfstream 500/600	**1,020**	**D**	**III**	**92,000**	**2**

Source: FAA Traffic Flow Management System Counts (TFMSC), Michael Baker International, 2021.

Based on 2018-2019 IFR data, which suggests normal operations at the airport, the most demanding aircraft is recommended to be the Gulfstream 500/600 which is a D-III aircraft. This designation is appropriate for the primary runway, Runway 8-26.

For Runway 14-32, the previous ALP lists the Cessna 182 and Beech 36 are the most demanding aircraft utilizing the runway. Based on a discussion with the ATCT Manager, Runway 14-32 is primarily utilized by small fixed-wing aircraft and training helicopters. There is no evidence of more demanding operations, therefore, the Cessna 182 is the designated critical aircraft for Runway 14-32. The Cessna 182 falls into the RDC of A-I Small Aircraft with a TDG of 1A.

3.7.2 Future Critical Aircraft

The future critical aircraft is based on an FAA-approved forecast and any changes to the existing critical aircraft must be supported by credible source. As previously noted, it is the Airport's intent to add addition corporate tenants within the near to intermediate terms of the planning period. Upon the arrival of the new airport users, a future tenant intends to base a Gulfstream 500/600 at the airport. To accommodate

this aircraft safely, the Gulfstream 500/600 should be considered as the future critical aircraft for planning purposes. This designation is appropriate for the primary runway, Runway 8-26 and the taxiway system that serves this runway. Runway 14-32, there are no expectations that the existing critical aircraft will change; therefore, the Cessna 182 is the designated critical aircraft for this runway and its associated taxiways.

3.8 Forecast Summary

This chapter has outlined various activity levels that might reasonably be anticipated over the 20-year planning horizon. Nationwide, every sector of air traffic activity has been affected by the COVID-19 pandemic. Although commercial traffic is undergoing an overall decline in services, general aviation airports are experiencing positive trends in operations and is expected to further respond to the increase in operational demand due to COVID-19.

The FAA considers total operations and based aircraft forecasts consistent with the TAF if they differ by less than 10 percent in the five-year forecast period and 15 percent in the 10-year forecast period. As shown in **Table 3-18**, the recommended operational forecasts of this Master Plan Update are considered consistent with the TAF because they do not exceed those thresholds. Note that the comparisons to the 2020 TAF were made based on adjustments that replaced 2020 actual values with 2019 and spanned to 2040. The recommended based aircraft projections utilize FAA 5010 data while applying FAA Aerospace projections.

Fulton County Executive Airport total operations are projected to increase at an average annual rate of 0.46 percent through the forecast period. Based aircraft at the airport are expected to grow as additional corporate tenants base their aircrafts. Projected average annual growth rate for based aircraft is 1.73 percent. The recommended forecasts are used throughout the remainder of this study to plan for the long-term development of FTY.

Table 3-18: Preferred Forecast vs. TAF

Year	Year +	Operations			Based Aircraft		
		TAF	Recommended	Difference	TAF	Recommended	Difference
2020	0	60,156	60,156	0.00%	67	97	44.77%
2021	1	60,611	60,433	0.29%	70	99	41.42%
2025	5	61,704	61,551	0.25%	83	110	32.53%
2030	10	63,099	62,979	0.19%	99	117	18.18%
2035	15	64,532	64,440	0.14%	119	126	5.8%
2040	20	66,001	65,935	0.10%	141	137	2.83%
Average Annual Growth Rate (AAGR)							
2020-2040	N/A	0.46%	0.46%	N/A	3.79%	1.73%	N/A
Source: Michael Baker International, Inc., 2021.							

FACILITY REQUIREMENTS

FULTON COUNTY

Michael Baker
INTERNATIONAL

Chapter 4 – Facility Requirements

4.1 Introduction

The facility requirements chapter assess the needs of the aviation infrastructure of Fulton County Executive Airport - Charlie Brown Field (FTY) including the runways and taxiways, aircraft storage facilities, supporting infrastructure (roadways and parking), and undeveloped properties. In addition to meeting Federal Aviation Administration (FAA) design standards identified in FAA Advisory Circular (AC) 150/5300-13B, Airport Design, and other appropriate guiding documents, the analysis includes improvements necessary to support the aeronautical forecast and critical aircraft. The goal was to identify improvements that would be needed over the course of the 20-year planning horizon that extends from 2020 to 2040.

An analysis of the following airport opponents is presented herein:

- Airfield Design Standards,
- Wind Coverage Analysis,
- Airfield Capacity Analysis,
- Airfield Protection Areas,
- Runway Length Analysis,
- Pavement Strength,
- Taxiway and Taxilane System,
- Airfield Lighting, Markings, Signage,
- Navigational Aid System
- General Aviation Facilities,
- Aircraft Storage Requirements, and
- Airport Support Facilities.

4.2 Airfield Design Standards

FAA airfield design standards (e.g., required separations and safety area dimensions) are determined based on the approach speed, tail height, landing gear configuration and wingspan of the identified critical aircraft. As shown in **Table 4-1**, each runway is assigned a Runway Design Code (RDC) that is a function of the critical aircraft's Aircraft Approach Category (AAC), the Airplane Design Group (ADG), and the approach visibility minimums expressed in Runway Visibility Range (RVR). The RDC provides the information required to determine the applicable standards found in FAA AC 150/5300-13B, *Airport Design*. The Aircraft Approach Category (AAC) is based on the reference landing speed (V_{REF}) when specified, or in cases where a V_{REF} is not specified, the AAC is determined based on 1.3 times the stall speed (V_{SO}) at the maximum certificated landing weight. The ADG is a design parameter based on the wingspan and tail height of the aircraft. The first portion of **Table 4-1** summarizes the parameters that define the AAC and the ADG and highlights the AAC and ADG corresponding to the existing and forecasted critical aircraft.

Table 4-1, also describes the RVR visibility minimums and the associated instrument visibility category. The details of the available instrument procedures were provided in the Inventory Chapter. Runway 8-26 currently has an ILS approach to Runway 8 with visibility minimums as low as ½ mile. Runway 14-32 has only visual approach. Therefore, the RVR for Runway 8-26 is 2400 and for Runway 14-32 it is VIS.

The Gulfstream 500/600 series, which has an RDC of D-III and TDG-2 has been established as the critical aircraft for Runway 8-26 and the Cessna 182 which has an RDC of A-I Small and TDG-1A has been established as the critical aircraft for Runway 14-32.

Therefore, based upon these criteria and the critical aircraft determination in Chapter 3, the RDCs for FTY are as follows:

- Runway 8-26 – D-III 2400 (Existing and Proposed)
- Runway 14-32 – A-I VIS Small Aircraft (Existing and Proposed)

Table 4-1: Aircraft Approach Categories and Airplane Design Groups

Aircraft Approach Category (AAC) (kts)		
Category	Approach Speed	
A	< 91	
B	91 to 120	
C	121 to 140	
D	141 to 165	
E	>166	
Aircraft Design Group (ADG) (ft)		
Category	Wingspan	Tail Height
I	< 48	< 20
II	48 to 79	20 to 29.9
III	79 to 117	30 to 44.9
IV	118 to 170	45 to 59.9
V	171 to 213	60 to 65.9
VI	> 214	>66
Visibility Minimums		
Runway Visual Range RVR (ft)	Instrumental Flight Visibility Category (statute mile)	
VIS	Visual approaches only	
5000	Not Lower than 1 mile	
4000	Lower than 1 mile but not lower than ¾ mile	
2400	Lower than ¾ mile but not lower than ½ mile	
1600	Lower than ½ mile but not lower than ¼ mile	
1200	Lower than ¼ mile	

Source: FAA AC 150/5300-13B, Airport Design 2020.

4.3 Wind Coverage Analysis

The purpose of a wind coverage analysis is to determine if a crosswind runway is necessary in the runway system. At FTY the runway system consists of a primary runway, Runway 8-26 and an additional runway, Runway 14-32.

As part of the master plan inventory, ten years of historical wind data were obtained from the National Climatic Data Center. FAA guidelines in FAA AC 150/5300-13-A, *Airport Design* recommend a minimum 95 percent crosswind coverage by the runway system. This is calculated by examining the percentage of time crosswinds exceed a maximum 10.5-knot crosswind component for light aircraft and a 13-knot, 16-knot, and 20-knot crosswind components for larger aircraft utilizing the airport. To determine suitable wind coverage at FTY, the current runways were evaluated independently and together.

Table 4-2, summarizes the percent of wind coverage for individual runways and combined runway configurations under All Weather Conditions, Visual Meteorological Conditions (VMC) and Instrument Meteorological Conditions (IMC). This runway wind coverage is also presented in the form of wind rose diagrams on the Airport Layout Plan drawing. As shown in the table below, the primary runway (8-26) and additional runway (14-32) each exceed 95 percent crosswind coverage in any configuration, combined or uncombined, and for every weather condition.

Table 4-2: Weather Coverage Analysis

Airfield Configuration	10.5-knots (12 mph)	13-knots (15 mph)	16-knots (18.4 mph)
RDC	**A-I and B-I**	**A-II and B-II**	**A-II, B-II, C-I to D-III, D-I to D-III**
All Weather Conditions (percent)			
8-26	97.32%	98.76%	99.79%
14-32	97.97%	99.02%	99.86%
Combined	99.66%	99.92%	99.98%
Visual Meteorological Conditions (VMC): Ceiling => 1,000', AND Visibility => than 3 Statute Miles			
8-26	97.24%	98.75%	99.82%
14-32	98.13%	99.12%	99.90%
Combined	99.69%	99.94%	99.99%
Instrument Meteorological Conditions (IMC): Ceiling < 1,000', OR Visibility < than 3 Statute Miles			
8-26	98.02%	98.89%	99.62%
14-32	96.92%	98.37%	99.65%
Combined	99.48%	99.77%	99.92%

Sources: AWOS/ASOS Station Number 722195, Fulton County Executive Airport – Charlie Brown Field (KFTY), National Climatic Data Center, 2010-2019; Michael Baker International, 2020.

4.4 Airfield Capacity Analysis

This section evaluates whether the existing airfield configuration can accommodate forecasted levels of demand over the planning period. According to the FAA, airfield capacity is defined by the number of aircraft operations conducted at the airfield over a defined period at an acceptable level of delay. An acceptable level of delay is essentially a policy decision about the tolerability of delay being longer than some specified amount, considering the technical feasibility and economic practicality of available remedies.

Estimates of airfield capacity were developed in accordance with the methods presented in FAA AC 150/5060-5, *Airport Capacity and Delay*. This methodology, generally known as the "handbook methodology" does not account for every possible situation at an airport, but rather the most common situations observed at U.S. airports at the time the advisory circular was adopted. FAA AC 150/5060-5 provides a methodology for determining the hourly capacity, Annual Service Volume (ASV), and aircraft delay. According to FAA Order 5090.3C *Field Formulation of the National Plan of Integrated Airport Systems (NPIAS)*, recommends that the handbook methodology should be used where capacity is not a constraining factor. The hourly capacity and ASV was calculated for existing conditions and for the last year of planning period at FTY. The results are used for planning purposes to determine if airfield capacity improvements are needed.

- **Hourly Airfield Capacity** – An airport's hourly airfield capacity represents the maximum number of aircraft that can be accommodated under conditions of continuous demand during a one-hour period. Using peak hour forecasts, the hourly airfield capacity is determined for both Visual Flight Rules (VFR) and Instrument Flight Rules (IFR) activity.
- **Annual Service Volume (ASV)** – The ASV estimates the annual number of operations that the airfield configuration should be capable of handling with minimal delays. Consistent with FAA Order 5090.3C *Field Formulation of the National Plan of Integrated Airport Systems (NPIAS)*, delay may be considered minimal when the average delay per operation is four minutes or less. The ASV accounts for peaking characteristics in its calculation of 12-month demand as well as periods of low-volume activity.
- **Delay** – The average anticipated delay is based on a ratio of forecast demand to the calculated ASV. According to the FAA AC 150/5060-5, "as demand approaches capacity, individual aircraft delay is increased. Successive hourly demands exceeding the hourly capacity result in unacceptable delays."

4.4.1 Capacity Factors

Fundamental to any airfield, capacity analysis entails the following eight factors:

Characteristics

The configuration and number of runways, parallel taxiways, and exit taxiways have a direct influence on an airfield's ability to accommodate several types of aircraft in a given period. The type of navigational aids, lighting, radar, and other instrumentation is extremely important to runway capacity, particularly during inclement weather.

Runway Use - Configuration

At airports equipped with two or more runways, it is not uncommon for more than one configuration to be used under normal operating conditions. Inadequate runway instrumentation and poor visibility may also require changes in runway use. Ultimately, the airfield should use a configuration that affords the highest hourly capacity, however, due to varying conditions, this configuration cannot be used 100 percent of the time. The airport's estimated Annual Service Volume (ASV) becomes a function of the time period is used on an average annual basis.

Meteorological Conditions

Runway capacity is highest during good weather when visibility is at its best and visual flight rules (VFR) are in effect. When visibility and ceilings are below specific minimums (3 miles visibility and 1,000-foot

ceiling), instrument flight rules are imposed resulting in greater separations between aircraft and longer runway occupancy times. Meteorological factors such as fog, intense storms, strong crosswinds, and excessive water on the runways have a major impact on runway capacity and may even cause a closure of the airfield at times.

Aircraft Fleet Mix Index

The fleet mix affects airfield capacity because an aircraft's size, weight, approach speed, and braking ability affect the length of time the aircraft occupies the runway and the manner in which air traffic control personnel direct activity. Individual aircraft operating at the airport are differentiated into categories based on weight (A, B, C and D), which in turn are utilized to estimate the overall "mix index" for the airport. Larger aircraft (C and D) require more airspace, thus decreasing capacity to some degree.

Taxiway configuration

Similar to runways, taxiways can restrict the level of traffic and airfield may accommodate. Proper placement of exit taxiways based on the airport's fleet mix can reduce runway occupancy times and preserve optimum capacity levels

"Touch and Go" Operations

Practice landings and takeoffs are normally associated with pilot training and may significantly affect runway capacity. A runway will typically be able to accommodate more of these type operations is a given time period than the normal landing and takeoff activity.

Arrival/Departures

The percentage of the time that a runway is used for landings will also have a significant impact on capacity. Since departures can be handled typically at a faster rate than landings, runway capacity will be reduced when arrival demand increases.

Airspace

The location of the airport with respect to neighboring airports and various natural and made-made obstructions (trees, towers, buildings, etc.) may restrict the way in which aircraft arrive and depart from an airport. Operations at one airport can conflict with operations at another, thereby causing the capacity of both airports to suffer.

4.4.2 Annual Service Volume (ASV)

The determination of the ASV is simplified by identifying one of the several runway configurations applicable to the airport. Utilizing the airport's estimated aircraft mix index, which is the percentage of the airport's Class C aircraft plus three times the percentage of Class D aircraft, it is possible to identify an approximate optimal operational limit for the airfield. Class C aircrafts are defined as large aircraft over 12,500 lbs but less than 300,000 lbs while Class D aircrafts exceed over 300,000 lbs. As the weight category of the aircraft increases, particularly as the mix between large and heavy aircraft increases, the wake turbulence separation standards increase. Therefore, the capacity of the airfield decreases. The purpose of this preliminary analysis, FTY typically operates as a "intersection runway" configuration. The calculated aircraft mix index using 2019 operational estimates is approximately 68 percent. **Table 4-3**, shows the hourly capacity and the annual serve volume for a "intersecting runway" configuration. The row highlighted in orange shows the hourly capacity. FTY's theoretical ASV is 225,000 operations. The ASV

does not indicate a point of absolute stand-still for the airfield; however, it does represent the point at which operational delay for each aircraft operation will increase exponentially.

Table 4-3: Mixed Index vs. Annual Service Volume (ASV)

Runway Configuration	Mix Index	Hourly Capacity Operations/Hour		Annual Service Volume (ASV)
		VFR	IFR	
	0 to 20	98	59	230,000
	21 to 50	77	57	200,000
	51 to 80	77	56	215,000
	81 to 120	76	59	225,000
	121 to 180	972	60	265,000

Source: Adapted from AC 150/5060-5 Change 2

According to Chapter 3, *Forecast*, FTY may see approximately 65,935 annual operations by the end of the 20-year study period. The ASV of an airport is used primarily as a tool in the airport planning process to identify the need for advanced planning of airfield capacity relief. Airport capacity may be affected by the following factors: runway configuration, aircraft mix index, taxiway configuration, airfield operational characteristics, and prevailing meteorological conditions. By comparing existing and projected annual operations (demand) to the ASV (capacity), the planning, design, and construction of the new facilities may by timed more effectively. Towards, this effort, the following guidelines are typically utilized during master planning:

- 60 percent ASV – This level of activity is considered the threshold at which planning for capacity improvements should begin.

- 80 percent ASV – This level of activity is considered the threshold at which planning for capacity improvements should be complete and construction of these capacity enhancing improvements should be initiated.

- 100 percent ASV – This constitutes the total number of operations that the facility is capable of accommodating. In order to avoid extensive delays, capacity-enhancing improvements should be completed prior to this point.

Based on the forecast versus the calculated ASV, an ASV is highly dependent on current aviation activity percent of the activity and layout of the airfield. The current operation level estimated for FTY represents 26.73 percent of the airfield's ASV. By the end of the planning period, total annual operations are expected to represent 29.30 percent of the airfield's ASV. In terms of annual operations, FTY should not experience airfield capacity concerns during the planning period.

4.4.3 Aircraft Delay

It should be noted that actual capacity enhancements should not be implemented prior to a detailed examination of aircraft delay, which normally becomes a factor when the airfield reached 80 percent of

its estimated ASV. Since the calculated ASV is well below 80 percent, no significant aircraft delay is expected over the planning period.

4.4.4 Hourly Capacity

Utilizing similar planning guidelines, long-range hourly VFR and IFR capacities were determined for FTY. Depending on the runway use configuration, "intersecting runway," the hourly capacity is estimated to be 76 and 59 operations under VFR and IFR weather minima, respectively. These long-range estimates assume arrivals equal departures, full length parallel taxiway capability is provided, no airspace conflicts exist, and the airport is equipped with at least one precision instrument approach. This hourly capacity appears sufficient for operations at FTY over the planning period.

4.5 Airfield Protection Areas

The runways, taxiways and aircraft parking aprons at FTY were analyzed for compliance with FAA design standards and the ability to handle existing and forecast levels of demand. The FAA provides guidelines for airfield design standards in AC 150/5300-13B, *Airport Design*. These include numerous safety area and separation standards that must be followed to ensure that aircraft have adequate wingtip-to-wingtip clearances, overrun protection, and obstruction-free movement areas. **Table 4-4** and **Table 4-5** summarize the airfield design standards for existing conditions at FTY, with non-standard or non-preferential conditions identified in red. Although many of the airfield design standards are self-explanatory, important features such as the Runway Safety Area (RSA), Runway Object Free Area (ROFA), and Runway Protection Zone (RPZ) may require further definition. These important features are discussed below and illustrated in **Figure 4-1**.

4.5.1 Runway Safety Area (RSA)

The RSA is a rectangular surface that is centered on the runway. The FAA states that RSAs shall be: "1) cleared and graded and have no potentially hazardous ruts, humps, depressions, or other surface variations; 2) drained by grading or storm sewers to prevent water accumulation; 3) capable, under dry conditions, of supporting snow removal equipment, aircraft rescue and firefighting equipment, and the occasional passage of aircraft without causing structural damage to the aircraft; and 4) free of objects, except for objects that need to be located in the RSA because of their function."

Runway 14-32 RSA

The RSA for Runway 14-32 is based upon a RDC of A-I Small VIS. The required RSA dimensions for this runway are 120 feet in width and 240 feet in length beyond each runway end. The existing RSA for Runway 14-32 is deficient on the approach end of Runway 14-32. Prior to the approach end of Runway 14, the RSA measures 180 feet. A deficiency of 60 feet.

Table 4-4: Evaluation of Existing Airfield Design Standards (8-26)

Design Standard	Required Dimension		Runway 8 Evaluation	Runway 26 Evaluation
Runway Design Code (RDC)	D-III			
RW Approach Visibility Minimums	½ -Mile Minimum	1-Mile Minimum	½ - Mile	1- Mile
Runway (RW) Width	100 Feet		Meets Standard	
RW Safety Area (RSA) Width	500 Feet		Extends over public roads Incompliant grading	
RSA Length Beyond RW End	1,000 Feet			
RW Object Free Area (ROFA) Width	800 Feet		Extends over public roads	
ROFA Length Beyond RW End	1,000 Feet			
RW Obstacle Free Zone (ROFZ) Width				
ROFZ Length Beyond RW End	200 Feet			
RW Protection Zone (RPZ) Inner Width	1,000 Feet	500 Feet	Meets Standard	
RPZ Outer Width	1,750 Feet	1,010 Feet	Meets Standard	
RPZ Length	2,500 Feet	1,700 Feet	Meets Standard	
RPZ Notes	N/A	N/A	N/A	N/A
RW Blast Pad Width	200 Feet		N/A	
RW Blast Pad Length	200 Feet			
RW Shoulder Width	25 Feet		Meets Standard	
Taxiway (TW) Width (TDG-2A)	35 Feet		Meets Standard	
TW Safety Area (TSA) Width	118 Feet		Meets Standard	
TW Object Free Area (TOFA) Width	171 Feet		Meets Standard	
Taxilane (TL) Object Free Area Width	158 Feet		Meets Standard	
TW Shoulder Width (TDG-2A)	15 Feet		N/A	
RW Centerline to Parallel TW Centerline	400 Feet		Meets Standard	
RW Centerline to Holdline	250 Feet		Meets Standard	
RW Centerline to Aircraft Parking Area	500 Feet		Meets Standard	
TW Centerline to Parallel TW/TL Centerline	152 Feet		Meets Standard	
TW Centerline to Fixed or Movable Object	93 Feet		Meets Standard	
TL Centerline to TL Centerline	140 Feet		N/A	
TL Centerline to Fixed or Movable Object	81 Feet		Meets Standard	
Runway Line of Sight	Clear RVZ and 5 ft Above Centerline LOS		Central Apron within RVZ. Minor Above Runway Centerline LOS violations 1 ft or less.	
Source: FAA AC 150/5300-13B, Michael Baker International, 2021.				

Table 4-5: Evaluation of Existing Airfield Design Standards (Runway 14-32)

Design Standard	Required Dimension		Runway 14 Evaluation	Runway 32 Evaluation
Runway Design Code (RDC)	A-I Small			
RW Approach Visibility Minimums	Visual			
Runway (RW) Width	60 Feet		100 Feet	
RW Safety Area (RSA) Width	120 Feet		Runway 14 RSA Length Beyond RW End is non compliant by approximately 80 feet	
RSA Length Beyond RW End	240 Feet			
RW Object Free Area (ROFA) Width	250 Feet		Meets Standard	
ROFA Length Beyond RW End	240 Feet			
RW Obstacle Free Zone (ROFZ) Width	N/A	N/A	N/A	
ROFZ Length Beyond RW End	200 Feet			
RW Protection Zone (RPZ) Inner Width	250 Feet		Meets Standard	
RPZ Outer Width	450 Feet		Meets Standard	
RPZ Length	1,000 Feet		Meets Standard	
RPZ Notes	N/A	N/A	N/A	N/A
RW Blast Pad Width	80 Feet		N/A	
RW Blast Pad Length	60 Feet			
RW Shoulder Width	10 Feet		Meets Standard	
Taxiway (TW) Width (TDG-1A) (See note)	25 Feet		Meets Standard	
TW Safety Area (TSA) Width	49 Feet		Meets Standard	
TW Object Free Area (TOFA) Width	89 Feet		Meets Standard	
Taxilane (TL) Object Free Area Width	79 Feet		Meets Standard	
TW Shoulder Width (TDG-1A)	10 Feet		N/A	
RW Centerline to Parallel TW Centerline	150 Feet		Meets Standard	
RW Centerline to Holdline	125 Feet		Hold line should relocate 25 additional feet from Runway 14-32	
RW Centerline to Aircraft Parking Area	125 Feet		Meets Standard	
TW Centerline to Parallel TW/TL Centerline	152 Feet		Meets Standard	
TW Centerline to Fixed or Movable Object	44.5 Feet		Meets Standard	
TL Centerline to TL Centerline	64 Feet		N/A	
TL Centerline to Fixed or Movable Object	39.5 Feet		Meets Standard	
Runway Line of Site	Clear RVZ and 5 ft Above Centerline LOS		Central Apron within RVZ.	

Source: FAA AC 150/5300-13B, Michael Baker International, 2021.
Note: Taxiway Design Standards listed are for the critical aircraft of Runway 14-32, which has a TDG of 1A. Portions of taxiways associated with this runway are also utilized by TDG2 aircraft.

Runway 8-26 RSA

The RSA for Runway 8-26 is based upon a RDC of D-III Lower Than ¾ Mile. The required RSA dimensions for this runway are 500 feet in width and 1,000 feet in length beyond each runway end. However, beyond both ends of Runway 8-26, the RSAs extend over roads (M.L.K Jr. Drive NW to the west and Fulton Industrial Blvd to the east). In addition, portions of the Runway 8-26 RSA that is perpendicular to the runway centerline along the northside do not meet the grading requirements for appropriate design standards. Further, drainage structures within the Runway 8-26 may be potentially hazardous due to ruts and depressions of the ground in the vicinity of these structures. According to AC 150/5300-13B, *Airport Design*, keeping negative grades to the minimum practicable contributes to the effectiveness of the RSA.

As part of this master plan update, alternatives for bringing the RSA into compliance will be explored in the next chapter.

4.5.2 Runway Object Free Zone (ROFA)

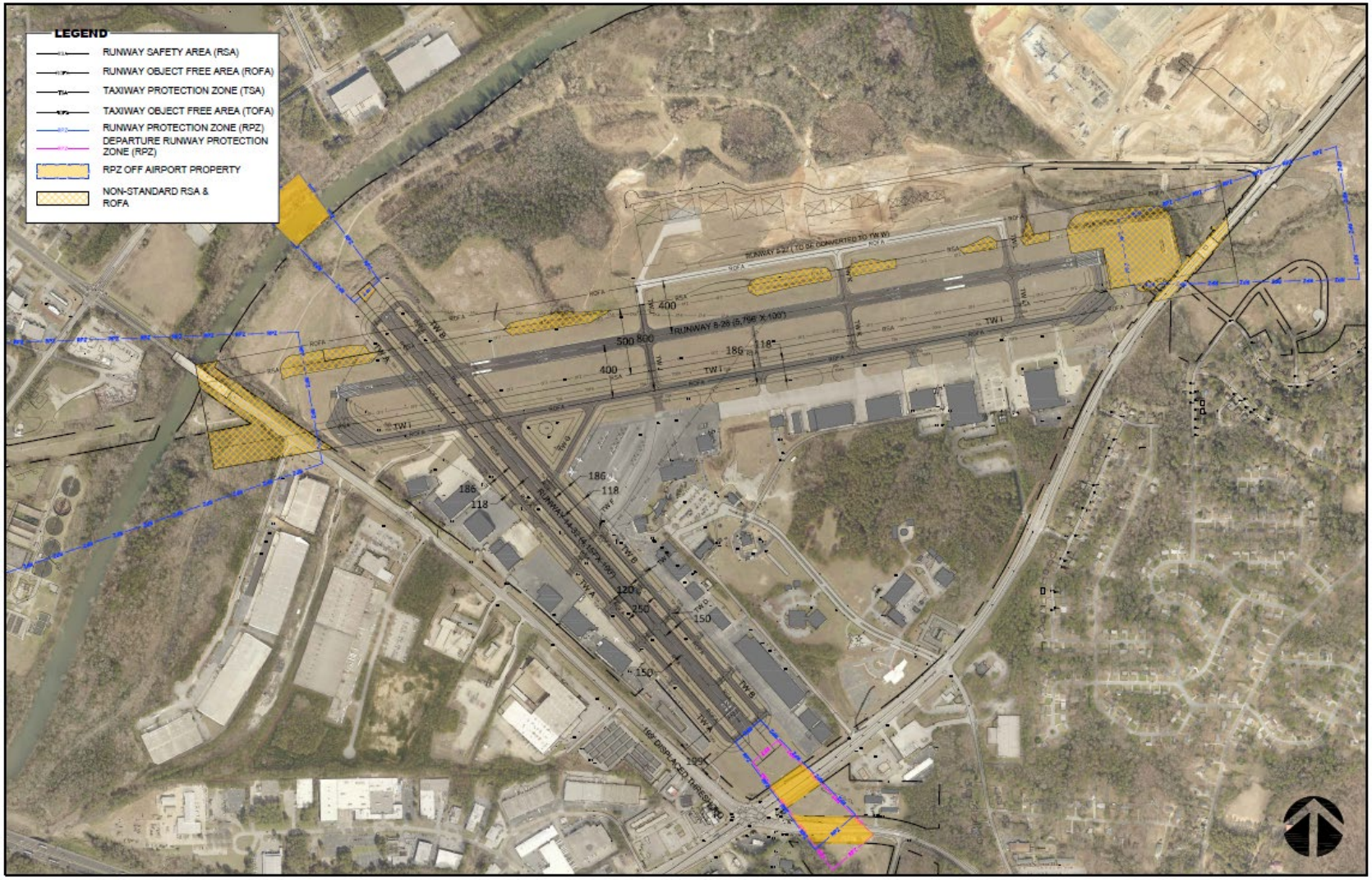
The ROFA must be clear of ground objects protruding above the RSA edge elevation and is a rectangular surface that is centered on the runway. The ROFA is intended to "enhance the safety of aircraft operations by having the area free of objects, except for objects that need to be located in the ROFA for air navigation or aircraft ground maneuvering purposes." As shown on **Figure 4-1**, the ROFAs beyond each end of Runway 8-26 are non-compliant because they extend off the airport property and over roads. Alternatives for improving the noncompliant ROFAs will be examined in conjunction with the RSA alternatives in the next chapter.

4.5.3 Runway Protection Zone (RPZ)

RPZs are trapezoidal-shaped areas centered on the extended runway centerline and beginning 200 feet beyond the physical ends of the runway or displaced threshold. The RPZ's function is to enhance the protection of people and property on the ground. Although development within the RPZ is not prohibited, the FAA provides guidelines for introduction of new or modified uses within the RPZ. In FAA's September 27, 2012 Memorandum *Interim Guidance on Land Uses Within a Runway Protection Zone,* the following land uses are discouraged within RPZ's:

- Buildings and structures (Examples include, but are not limited to: residences, schools, churches, hospitals or other medical care facilities, commercial/industrial buildings, etc.),
- Recreational land use (Examples include, but are not limited to: golf courses, sports fields, amusement parks, other places of public assembly, etc.),
- Transportation facilities. (Examples include, but are not limited to: Rail facilities - light or heavy, passenger or freight),
- Public roads/highways, Vehicular parking facilities,
- Fuel storage facilities (above and below ground),
- Hazardous material storage (above and below ground),
- Wastewater treatment facilities, and
- Above-ground utility infrastructure (i.e. electrical substations), including any type of solar panel installations.

Figure 4-1: Airfield Design Standards Analysis



Source: Michael Baker Internationals, 2021.

Figure 4-1 displays the existing RPZs at FTY. RPZ dimensions are prescribed in FAA AC 150/5300-13B, *Airport Design*. Their dimensions are a function of Aircraft Approach Category and lowest instrument approach visibility minimums.

Runway 8-26 RPZ

Runway 8 lowest visibility minimums are ½ mile and the aircraft approach category is D. The RPZ begins 200-feet prior to the pavement edge and measures 1,000 feet inner width, 1,750 feet outer width and is 2,500 feet in length.

MLK Jr. Dr. crosses through portions of the Runway 8 RPZ and several industrial uses including a Cobb County Water Treatment Plant are also found within the RPZ. Based upon the current Exhibit A Airport Property Map, FTY either owns or has control through easements of Runway 8 runway protection zone. There are no planned changes to the RPZ dimensions.

Runway 26 lowest visibility minimums are 1 mile, and the aircraft approach category is D. The RPZ begins 200-feet prior to the pavement edge and measures 500 feet inner width, 1,010 feet outer width and 1,700 feet in length. The previous FTY ALP depicts a larger RPZ should the airport install a precision instrument approach to this runway end.

With the exception of Fulton Industrial Blvd., both the existing and future Runway 26 RPZ (as presently depicted) are contained within airport property.

Runway 14-32

Runway 14 is the crosswind runway designed for aircraft ranging up to the ARC B-I Small category. Both runways have visual approaches only.

For Runway 14, the RPZ begins 200 feet past the end of the runway pavement and extends to a length of 1,000 feet. The inner width of the RPZs are 250 feet, while the outer widths are 450 feet.

For Runway 32, both an Approach and Departure RPZ are required since the landing threshold is not the same as the pavement edge. In this case, both RPZ dimensions are the same; however, the Approach begins 200 feet from the landing threshold markings and the Departure RPZ begins 200 feet from the pavement edge.

Runway 14 includes a small portion of M.L.K Jr Dr. and Fulton Industrial Blvd to the south while Runway 32 expands over the Chattahoochee River to the north. Both runway ends do not have any incompatible land uses such as places of assembly or residence since the majority of the RPZ is owned by the Airport.

4.6 Runway Length Analysis

The runway length analysis analyzed requirements of the critical aircraft using criteria outlined in FAA AC No. 150/5325-4A, *Runway Length Requirements for Airport Design*. The final recommended runway length is the longest resulting length based on criteria for regular use.

- Existing Recommended Takeoff Length: 6,100 ft
- Future Recommended Takeoff Length: 6,600 ft
- Existing/Future Recommended Landing Length: 6,120 ft
- Ultimate Runway Length: 7,000 ft

Refer to **Appendix A** for full runway analysis.

4.7 Runway Width

Runway 8-26

The width of the runway is a function of the RDC for each runway. Runway 8-26 is currently and forecast to remain RDC D-III. The runway width design standard for RDC D-III is 100 feet for airports serving airplanes with a MTOW of 150,000 pounds or less.

Runway 14-32

The existing width of Runway 8-26 is 100 feet wide which exceeds the design standard width for RDC A/B-I Small of 60 feet. Due to installation of runway lighting and drainage structure, the runway width should be maintained at its present width until the pavement reaches the end of its useful life.

4.8 Pavement Strength

Runway 8-26

One of the most important features of airfield pavement is its ability to withstand repeated use by the most weight-demanding aircraft operating at the airport. The current weight bearing capacity for Runway 8-26 is 105,000 pounds single-wheel loading (S), 121,000 pounds dual-wheel loading (D) and 198,000 dual tandem wheel loading (DT). For example, S indicates an aircraft with a single wheel on each landing gear. The strength ratings of a runway do not preclude operations by aircraft that weigh more; however, frequent activity by heavier aircraft can shorten the useful life of that pavement. The strength rating for Runway 8-26 meets the requirements of the more demanding aircraft however, a Pavement Classification Number described below should be prepared.

Runway 14-32

Runway 14-32 is strength rated at 30,000 pounds (S). The strength of this runway should be adequate through the long-term planning period; however, frequent use of this runway by large business jets such as the G-550/600 or Global Express would require increased pavement strength up to 90,000 (DT). The actual pavement strength requirements will be evaluated on a project-by-project basis as rehabilitation becomes necessary and is determined during the design phase through a review of recent and anticipated aircraft activity.

Taxiway System

Documentation of taxiway pavement strength does not exist. It is recommended that a pavement strength analysis be conducted on the taxiway system. The taxiway system should be evaluated to ensure

that common taxiway routes by heavy aircraft provide sufficient pavement strength for the critical aircraft and similar demanding aircraft.

Aprons and Taxilanes

Georgia Department of Transportation GDOT, conducted a Pavement Management Study in 2019 in which identified areas on the airfield where pavement condition needs repair. The Main Terminal Apron is highlighted as having a PCI between 40 and 55. Considering the number of heavy itinerant aircraft operating at FTY, it is recommended that a pavement rehabilitation project be conducted on the itinerant public-use apron serving the two airport FBOs.

Pavement Classification Number

FAA AC No 150/5335-5C, *Standardized Method of Reporting Airport Pavement Strength – PCN,* outlines methods of standardized reporting of airport runway, taxiway and apron pavement strength to meet International Civil Aviation Organization (ICAO) standards. The standardized method, known as the Aircraft Classification Number – Pavement Classification Number (ACN-PCN) method, has been developed and adopted as an international standard and has facilitated the exchange of pavement strength rating information. This method of reporting applies to pavements with bearing strength of 12,500 pounds or greater.

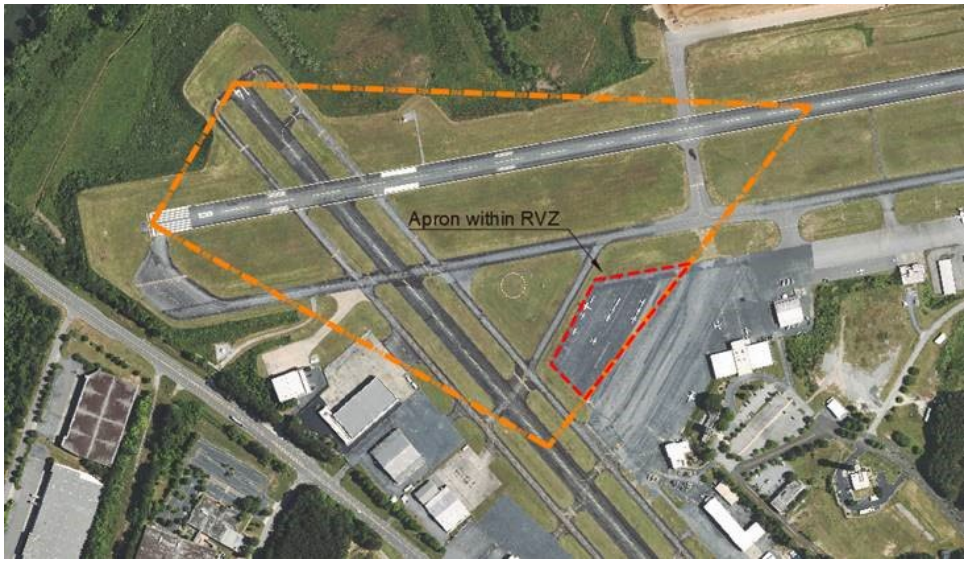
FTY does not currently report an ACN-PCN number on FAA Form 5010. An ACN-PCN analysis is recommended as part of a pavement strength study for runways, taxiways and public-use aprons.

4.9 Line of Sight

FAA AC No 150/5300-13B, Airport Design presents criteria regarding the minimum line of sight along and between two or more runway configurations. The following criteria define the light of sight requirements for FTY.

The Runway Visibility Zone (RVZ) line of sight is depicted in **Figure 4-2.** The RVZ defines a safety area for the line-of-sight requirement between runways in accordance with FAA Design Standards. The runway grade needs to be graded and objects need to be sited so there will be an unobstructed line of sight from any point 5 feet above one runway centerline to any point 5 feet above an intersecting runway centerline within the RVZ. A clear line of sight between the ends of intersecting runways is recommended. The RVZ between the existing Runway 8 and 14 ends in encroached by transient aircraft parked on the Terminal Apron. This encroachment is depicted **Figure 4-2**. This concern is mitigated by the operations of the air traffic control tower which provides takeoff and landing clearance to each runway.

Figure 4-2: Runway Visibility Zone (RVZ)



In addition to evaluating line of sight standards between intersecting runways, each individual runway was evaluated to determine if the longitudinal grade meets the 5-foot visibility requirement along the individual runway centerline. Runway 14-32 fully meets this requirement. Runway 8-26 has a few locations where the tolerance is approximately 4 to 4.5 feet.

4.10 Taxiway and Taxilane System Geometry

Taxiways provide airfield and terminal access and enhance the operational capacity of the airport by minimizing runway occupancy. An effective taxiway system provides for the orderly movement of aircraft and enhances operational efficiency and safety by reducing the potential for congestion, runway crossings, and pilot confusion. The existing taxiway system at FTY consists of, at minimum, one full-length parallel taxiway for both runways (Runway 14-32 is served by two parallel taxiways) with multiple connector taxilanes. The system of taxiways and taxilanes at FTY provides access to the runways, aircraft parking areas, aprons, and hangars. The design standards for the separation between runways and parallel taxiways are a function of the critical aircraft and the lowest instrument approach visibility minimums. The taxiway separation standard for Runway 8-26 which has is RDC D-III with ½-mile visibility minimums is 400 feet from the runway centerline to the parallel taxiway centerline. This standard applies to parallel Taxiway I. With regards to the parallel taxiway A and B, the separation standards for Runway 14-32 with a RDC of B-I Small and visual-only approaches, the necessary separation is 150 feet, which has been met.

All taxiways require a designated width of Taxiway Safety Area (TSA) and Taxiway Object Free Area (TOFA) centered on the taxiway centerline. The standards are based on the critical aircraft, which was previously identified as the Gulfstream 500/600 series aircraft that falls into the Taxiway Design Group (TDG) 2B category and requires a 35-foot taxiway width. The TDG standards are based on the Main Gear Width (MGW) and the Cockpit to Main Gear (CMG) distance of the critical design aircraft expected to use those taxiways. Different taxiway and taxilane pavements can and should be designed to the most appropriate TDG design standards based on usage. All taxiways either meet or exceed taxiway width, TSA, and TOFA requirements. However, several taxiway intersections do not meet the turn radius dimensions required

in FAA AC 150/5300-13B, *Airport Design*. These intersections should be individually reviewed to determine correct TDG 2B dimensions.

It is also important to note that at the time of this study aeronautical development is in the process of being constructed north of decommissioned Runway 9-27 now Taxiway W. Due to the development of the North Terminal Area on the north side of Runway 8-26 there will be an increase in movements across the active runway as aircrafts will be forced to cross Runway 8-26 (via Taxiway J and K) midfield. The FAA advises that airports limit runway crossings (especially within the middle third of the runway). Therefore, it is recommended that this be remedied through extending Taxiway W into a full parallel taxiway to support primary Runway 8-26 and provide access to the North Terminal Area.

4.11 Airfield Lighting, Marking and Signage

The following sections describe the requirements for airfield lighting, markings, signage, and navigational aids at FTY.

4.11.1 Airfield Lighting and Signage

The airfield lighting at FTY consists of High Intensity Runway Lights (HIRLs) along the edges of Runways 8-26 and Medium Intensity Runway Lights (MIRL) on Runway 14-32. Most taxiways on the airfield are equipped with Medium Intensity Taxiway Lights (MITLs) to permit night activity on that runway. The existing airfield lighting (runway lighting, taxiway lighting) serving Runway 8-26 was upgraded in 2021 to LED lighting due to the age of the existing incandescent lighting. There are no current plans to update Runway 14-32 at this time.

Airfield signage compliments pavement marking by providing locational and directional information for pilots and ground vehicle operators maneuvering on an airfield. Signage at the airfield include runway hold position signs, taxiway locations signs, as well as destination location signs. Airfield signage should be maintained properly across the planning period, including eventual upgrade to LED style lighting to reduce energy and maintenance costs.

4.11.2 Airfield Marking

Pavement markings are designed according to the FAA AC 150/5340-1L, Standards for Airport Markings. All of 8-26 and associated runway hold markings were repainted in 2020. All runway ends markings that are consistent with the approach procedures that are currently available. The taxiways at FTY are equipped with centerline stripes and holding position markings. Runway 8-26 taxiway holding position markings are in compliance with the designated RDC of D-III however, Runway 14-32 which has RDC of A-I Small has holding position markings that are located approximately 100 feet from the runway centerlines and should be corrected to 125 feet wherever possible.

4.12 Navigational Aid System

The term NAVAIDS generally refers to ground- or satellite-based equipment that is able to communicate position information, approach guidance, and surface weather conditions to aircraft while in-flight. This includes all non-precision and precision instrument approach procedures to runways, as well as weather equipment. NAVIDS are visual or electronic devices that provide information or position data to aircraft

in flight to ground-based equipment that the pilot can see while in-flight to determine the correct approach slope to a runway and also wind conditions. This section will address the potential need for enhanced facilities in the future. The key objective is to enhance operational flexibility and safety at the Airport during all weather conditions, while being cognizant of the cost/benefit relationship of each potential improvement option.

As mentioned in Chapter 2, the following instrument approaches are provided at FTY are shown in **Table 4-6.** Through discussions with airport tenants, improved minimums and vertically guided approaches are needed to support operations to Runway 26. A GPS LPV approach is recommended for Runway 26.

Table 4-6: Airport Approaches

Runway	Approach	Lowest Visibility Minimums	Vertical Guidance
Runway 8	ILS or LOC	½ mile	Yes
Runway 8	RNAV (RNP)	1 ¼ mile	Yes
Runway 8	RNAV (GPS) LPV	½ mile	Yes
Runway 26	RNAV (GPS) LP	1 mile	No
Source: Airnav.com, 2021.			

Runway 14-32 exclusively provides visual approach capabilities. There are currently no published instrument approaches to secondary Runway 14-32, and no procedure is recommended for the runway at the time due to suitability of the primary runway for instrument approaches.

Vertical Glide Slope Indicator

Visual Glide Slope Indicators (VGSIs) provide pilots with a visual reference of the preferred glide slope angle during visual approach to a runway. VGSIs come in the form of Visual Approach Slope Indicators (VASI) and Precision Approach Path Indicators (PAPI). VASI equipment is obsolete and is being phased out at airports. For Runway 8-26, a VASI is installed on Runway 26 and no form of VGSI is installed on Runway 8. For Runway 14-32, a PAPI is installed on Runway 14. The VASI installed on Runway 26 and should be replaced by a PAPI. A PAPI should also be considered for Runway 8.

Beacon

FTY is equipped with a rotating beacon, located directly west of Aviation Circle. The beacon provides for rapid identification of the airport with a rotating light that is green on one side and white on the opposite side. The beacon was recently refurbished and should be maintained through the planning period.

Wind Cone and Segmented Circle

The wind cone provides visual surface wind direction and velocity information to pilots. The wind cone and segmented circle at FTY is located between Taxiway B, G and I and is illuminated at night for visibility. No improvements are recommended to the wind cone other than routine maintenance and inspection.

4.13 General Aviation Facilities

Landside facilities are those necessary for the handling of aircraft and passengers while on the ground. These facilities provide the essential interface between the air and ground transportation modes. The capacity of the various components of each element was examined in relation to projected demand to identify future landside facility needs. This includes components for general aviation needs such as:

- Aircraft Storage
- Tiedowns and Aprons
- Auto Parking and Access

4.13.1 Aircraft Storage Requirements

Hangar demand and requirements are determined by taking into account the Airport's existing and forecast based aircraft mix and storage preferences. Currently at FTY, the majority of aircraft are stored in hangar facilities. Today the trend in general aviation aircraft, whether single-engine or more sophisticated aircraft and subsequently, more expensive aircraft such as jets; many aircraft owners prefer enclosed hangar space to outside tie-downs. This pattern is expected to continue throughout the planning horizon.

For the purposes of evaluating the existing capacity of the hangar storage at the airport, there are 23 separate hangar facilities at the Airport providing approximately 657,624 square feet of hangar, maintenance, and office space. At the time of this study the hangar capacity is near capacity with only the occasional vacancy. Based on the aviation forecast presented in Chapter 3, there will be 137 based aircraft at Fulton County Airport by the end of the planning period (40 net additional based aircraft). Of these 40, it is expected that single engine aircraft numbers will decline, while multi-engine, jet and helicopter numbers will increase. As stated in the forecast, over the next 20 years, there will be demand for 42 additional jet aircraft, 3 multi-engine aircraft and 3 helicopters. Single-engine aircraft will decline by approximately 6 airplanes.

Hangar storage in the metropolitan Atlanta region is in high demand. Any general aviation airport that can provide additional storage capacity will see immediate interest from aircraft owners and operators. This has clearly been the case with the construction of the North Terminal Area at FTY. As part of the master plan, all options to provide additional hangar storage space should be considered with a preference for meeting the based aircraft demand shown in the aeronautical forecast.

4.13.2 Tie-Down and Apron Requirements

The aircraft parking apron is an expanse of paved area intended for aircraft parking and circulation. Typically, a main apron is centrally located near the airside entry point, such as the terminal building or FBO facility. Ideally, the main apron is large enough to accommodate transient airport users as well as a portion of locally based aircraft. Often, smaller aprons are available adjacent to FBO hangars and at other locations around the airport.

At FTY, the main based aircraft and itinerant apron is shared by both Signature and Hill Aircraft FBOs. Considering the based aircraft forecast in chapter three, and project itinerant operations, the existing apron appears overstressed at times to handle itinerant operations. The FBO aprons often reach capacity during major events being held in downtown Atlanta such as sporting events and major conventions. To

accommodate surge capacity, Runway 14-32 is often closed to accommodate additional parking. The alternatives analysis should seek to identify additional itinerant parking locations for use during peak periods. Further, as part of a pavement strength analysis, the apron should be evaluated structurally to ensure that the pavement adequately supports visits by more demanding heavier aircraft.

4.13.3 Auto Parking and Access

Most auto parking at FTY is designed and maintained by individual airport tenants. No major concerns related to auto parking have been expressed by airport stakeholders. Parking requirements for future facility depend on the intended use of the facility.

The primary access to Airport Administration, ATCT and FBOs is Aviation Circle. Tenants in the North Terminal Area are provided access via newly constructed Sandy Creek Road. Tenants along the south border of the airport access their facilities using South Airport Road. Interstate access to FTY is convenient to both I-20 and I-285 via Fulton Industrial Boulevard.

Stakeholders have commented that beautification projects should be considered along the major access points to and from FTY. The Airport has recently completed extensive landscaping improvements along Aviation Circle which is the primary route traveled by itinerant visitors to the Atlanta area using FTY. Further, streetscaping should be considered along the borders of FTY leading to and from the Interstate and along MLK Jr. Boulevard. Many of these improvements and considerations are already underway by the Fulton Industrial Boulevard Community Improvement District (CID).

4.14 Airport Support Facilities

Support facilities are those airport features that are not necessarily specific to aircraft operations, movement, and storage, but which are vital to ensuring the efficiency, safety, and efficiency of aircraft activity. For FTY, the existing support facilities consist of the FBO terminal area, airport administration building, airport fueling facilities, air traffic control facilities and customs facilities. A review of FTY's existing support facilities is presented in the following sections.

4.14.1 Fixed Based Operator (FBO)

Hill Aircraft and Signature Flight Support are the two FBOs at FTY, providing traditional FBO services including a terminal, maintenance, car rentals and a variety of pilot and aircraft amenities. Requirements for individual airport businesses such as FBO's are determined by the leaseholder themselves. In addition to the existing FBOs, plans for a third FBO on the North Terminal Area are in the works.

4.14.2 Airport Administration Building

The airport administration building is located on the terminal apron between the two FBOs and along the entrance road to FTY. Because the building occupies a prime location, there may be opportunities to renovate, rebuild the Administration Building or repurpose the space with a facility that may provide additional lease revenue for the airport. Both the apron frontage and the location may be attractive features for a potential tenant to develop a facility such as a hangar where the airport administration

building is currently located. Therefore, opportunities for potentially relocating the airport administration building should be discussed in order for the airport to better utilize the area.

4.14.3 Aircraft Fueling Facilities

As mentioned in Chapter 2, there are several on-airport fueling facilities at FTY, including the tenant's private self-fueling station adjacent to designated corporate hangars and fueling at both Hill Aircraft and Signature Flight Support FBOs. The Hill Aircraft full-service fueling facilities include three underground tanks, a single 12,000-gallon AvGas tank and two 12,000-gallon JetA tanks. Signature Flight Support fueling station include two above ground 20,000-gallon JetA tanks and a single above ground AvGas 15,000-gallon tank. As mentioned, several tenants housed at FTY are equipped with their own fueling facilities with tank size dependent on individual preferences and needs.

4.14.4 Air Traffic Control (ATCT)

As described in Chapter 2, the existing ATCT was constructed between 1992-1993 and is located off Aviation Cir before Aero Dr NW and adjacent to the administration building. The ATCT is in operation 24 hours a day and satisfies the current and anticipated future requirements.

Based on information obtained from ATCT staff, although there are no known hot spots located on the airfield, there are currently several line-of-sight issues present at the Airport. It should be noted that certain presence of tall trees on and near the airfield may act as an obstruction causing limited visibility for ATC personnel view of aircrafts operating in the following areas:

- East side of Taxiway I on Runway 26 runup area,
- South portion of Signature Flight Support (FBO) ramp area adjacent to Runway 32, and
- Portion of the Main Ramp between Hill and Signature Flight Support

There are no plans to relocate or rebuild, it is suggested that the necessary trees be trimmed or removed. In addition, with potential plans of extending Runway 26, the airport should carefully consider the ATCT line of sight requirements.

4.14.5 Aircraft Rescue and Firefighting (ARFF)

As mentioned in Chapter 2, Inventory as of this writing, a full renovation of the ARFF facility is being planned in the near term. Because FTY is a general aviation airport, not a certificated commercial service airport under 14 CFR Part 139, the airport is not required to provide ARFF services or facilities.

4.14.6 U.S. Customs and Border Protection Facility

Feedback from airport stakeholders has indicated the demand for a U.S. Customs and Border Protection (USCBP) Facility to be constructed onsite for the processing of international arrivals. Currently, U.S. Customs officials located at ATL meet arriving aircraft on an on-call basis at FTY. Establishing a permanently staffed facility at FTY would better serve international arrivals and provide valuable support to FBO and airport tenants that support or conduct international operations. USCBP official have also

expressed mutual interest in such a facility. As part of the master plan, a potential site for this facility should be considered.

4.15 Summary

The following table presents a summary of the recommended facility requirements. Several improvements are necessary to bring the airport in compliance with safety and design standards in addition to other improvements to attract new tenants and airport related businesses. Chapter 5, Alternative Development will identify alternatives to meet these requirements. Ultimately, the facility requirements will transform into the ALP and an airport capital improvement plan for the 20-year planning period. **Table 4-7** provides a summary of the facility requirements that will be evaluated in the alternative development.

Table 4-7: Requirement/Need

Category	Requirement/Need
Airfield Capacity	- Operations are project to be well below 60% and 80% capacity planning thresholds.
Runway 8-26	- Evaluate Runway Extension
Runway 14-32	- Primary runway (8-26) provides sufficient crosswind coverage
Taxiway System	- Extend Taxiway W into a full parallel taxiway to support North Terminal Area - TDG 2B Improvements to intersections - Pavement strength analysis needed
Airfield Standards	- Evaluate RSA deficiencies for both Runway 14-32 and 8-26
Pavement Strength	- Conduct a pavement strength analysis and ACN-PCN analysis - Study pavement strength for critical aircraft on taxiways and aprons.
Lighting	- Upgrade runway and taxiway edge lighting to LED - Upgrade airfield signage to LED
Marking	- Relocate Runway 14-32 holdlines from 100 feet to 125 feet
Visual and Navigational Aids	- Vertically-guided LPV approach to Runway 26 - Lower instrument approach minimums to Runway 26 - Replace Runway 26 VASI with PAPI - Install PAPIs to Runway 8
Hangar Storage	- Consider future storage improvements to accommodate demand for 40 additional based aircraft, primary jet and multiengine.
Apron Space	- Add additional capacity for itinerant parking during surge events - Evaluate suitability of pavement strength for itinerant parking
Administration Building	- Major renovation
ARFF	- Major renovation
Fuel Storage	- Ensure fuel availability in North Terminal Area to avoid unnecessary runway crossings
U.S. Customs and Border Protection Facility	- Reserve a potential site for this facility
Source: Michael Baker International, 2021	

AIRPORT ALTERNATIVES

FULTON COUNTY

Michael Baker
INTERNATIONAL

Chapter 5 – Airport Alternatives

5.1 Introduction

The airport alternatives, development and analysis component of this Master Plan Update considers the facility requirements determined in the previous section, accepted airport standards, and the ultimate goals of Fulton County Executive Airport, to produce long-range development concepts. This process is iterative in nature in that it includes evaluation, in some cases, of multiple alternatives in an effort to identify the best overall improvement program for the airport. Once the long-range development program has been determined, short-range improvements can be readily implemented in the Capital Improvement Plan without jeopardizing the ultimate concept. The program will evaluate how to best expand and improve existing airport facilities in terms of overall efficiency and aesthetic quality, meeting demand and airport's goals and visions while also accommodating the logical and efficient development of a future expanded airport facility. The goal of this alternatives analysis is to optimize on-airport land use, maximize the capacity and economic viability of the existing facilities, and identify the facilities and practical stages of future development. Although the projects outlined in this chapter are designed to meet demand over the next 20 years, they provide growth opportunities beyond the planning period. The following key areas will be addressed in this section of the report.

- Airfield Development Options
- General Aviation Improvements
- Support Facilities.

5.1 Airfield Development Options

Analysis of airfield development alternatives focused on several key concerns identified in the Inventory and Facility Requirements chapters:

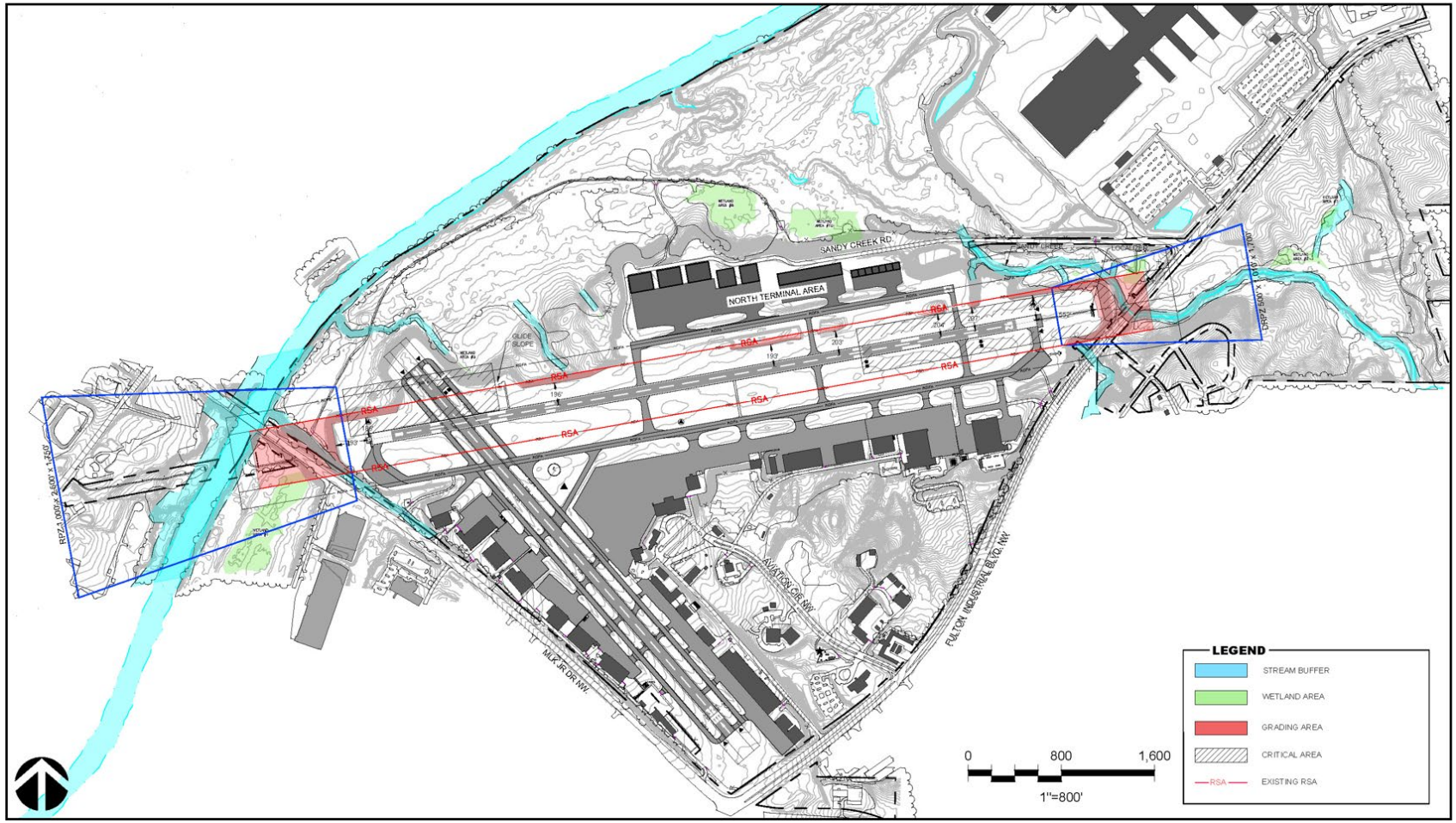
- Runway 8-26
    - Address Runway 8-26 RSA deficiencies to the maximum extent possible without reducing the required runway length.
    - In the near term, support airport user needs by providing a runway length of 6,100-foot primary runway (Runway 8-26) while preserving long term options for up to 7,000-foot runway length.

- Runway 14-32
    - The wind analysis presented in previous chapters determines the runway does not meet requirements as crosswind runway according to historical weather data. This designation eliminates the likelihood of federal participation in the preservation and maintenance of the runway. The runway is underutilized, and alternate uses should be considered as the runway nears the end of its useful life.
    - Runway 14-32 is also not necessary to provide added operational capacity at the airport. Runway 8-26 sufficiently provides future capacity for growth of operations.

5.1.1 Runway 8-26 Alternatives

As shown in, **Figure 5-1** the existing Runway 8-26 layout does not meet FAA criteria for RSA standards. Areas not only beyond the end of the runway but along the sides of the runway have inadequate RSA's. RSA's are necessary to protect the occasional off-runway excursion by aircraft, allow access by fire and rescue equipment and must be free of ruts and objects that may cause structural damage to an aircraft. Potential improvements to the RSA's at FTY are complicated by the proximity of Fulton Industrial Boulevard to the east and Martin Luther King Jr Drive to the west. Several methods to address the inadequate RSA should be considered, including constructing standardized RSA, use of declared distances and/or use of Engineering Material Arresting System (EMAS). Whichever alternative is selected, it needs to support the runway length requirements of the critical aircraft, the Gulfstream 550/650 to a minimum recommended length of 6,100 feet in the near term while preserving future land use that protects up to a 7,000 ft runway length in the ultimate term. Provided suitable length will support the most demanding transient users. Above all, existing airport users have expressed the need to avoid any improvement option that degrades their current operational capabilities by shortening available takeoff and landing lengths. More detail of user runway length requirements is found in the *Runway Length Analysis Report*.

Figure 5-1: Existing Runway 8-26 Deficiencies



Source: Michael Baker International, 2022.

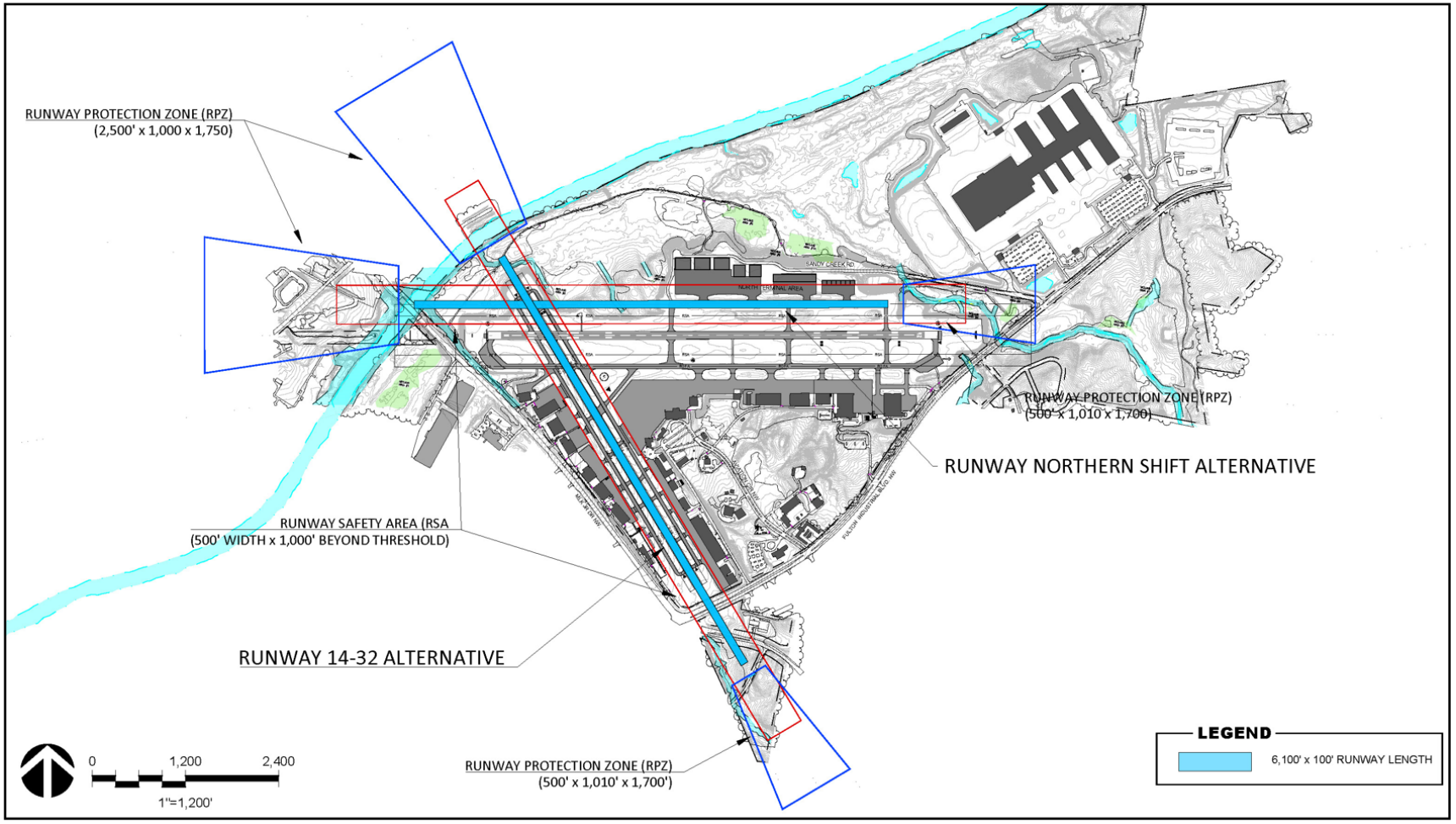
5.1.2 Alternatives Considered but Eliminated

Two runway improvement options were reviewed and quickly eliminated from consideration. Depicted on **Figure 5-2**, these options include:

- Runway Shift Alternative - Shifting Runway 8-26 north to create adequate space for RSA's beyond each runway end.
- Runway 14-32 Alternative - Converting Runway 14-32 into the Primary Runway.

Neither option appears to adequately address the concerns of providing full size RSA's and runway length. The Runway Shift Alternative encroaches on the North Terminal Area development, the Chattahoochee River Floodplain and the UPS Sorting Facility. The Runway 14-32 Alternative is impractical due to the proximity of Fulton Industrial Boulevard, Chattahoochee River and RSA/ROFA impacts to existing airport ramps and tenant facilities.

Figure 5-2: Alternatives Considered but Eliminated



Source: Michael Baker International, 2022.

5.1.3 Alternatives Considered

To address the noted RSA deficiencies for Runway 8-26, eight (8) alternatives were evaluated. These options consider a number of methods to meet the current demands of critical aircraft, including:

- Pavement Extension - Extend one or both ends of the runway to meet the overall runway length requirement.
- Application of Declared Distances – The distances the airport owner declares available for a powered aircraft's takeoff run, takeoff distance, accelerate-stop distance, and landing distance requirements. With reductions to accelerate-stop and landing distances, suitable RSA can be achieved. The distances are:
    - Takeoff Run Available (TORA) - The runway length declared available and suitable for ground run of an aircraft taking off;
    - Takeoff Distance Available (TODA) – The TORA plus the length of any remaining runway or clearway beyond the far end of the TORA; the full length of TODA may need to be reduced because of obstacles in the departure area;
    - Accelerate-Stop Distance (ASDA) – the runway plus stopway length declared available and suitable for the acceleration and deceleration of an aircraft aborting a takeoff; and
    - Landing Distance Available (LDA) – the runway declared available and suitable for landing an aircraft
- Engineered Materials Arresting System (EMAS) – In cases where a standard RSA cannot be constructed, EMAS provides a level of safety that is equivalent to an RSA built to dimensional standards. Engineered materials are defined as, high energy absorbing materials of selected strength, which will reliably and predictably crush under the weight of an aircraft.

The alternatives considered are:

- Alternative 1 – RSA Improvements Only
- Alternative 2 – Extend West 278', Connect Parallel Taxiways
- Alternative 3 – Extend West 278', Extend East 537', Relocate Localizer
- Alternative 4 – EMAS on East Side Only
- Alternative 5 – EMAS on Both Ends
- Alternative 6 – EMAS on West Side Only
- Alternative 7 – EMAS on East Side with 278' Extension West
- Alternative 8 – Non-Standard EMAS on Both Ends with 303' Extension East

Alternative 1 – RSA Improvements Only

Alternative 1 as detailed in **Table 5-1** and illustrated in **Figure 5-3** is considered the "No Build Option." This alternative would address the RSA deficiencies using fill and grading where possible and Declared Distances to the extent necessary. Along the sides of the runway, the portions of the RSA not meeting standard would be filled as will be the case for other alternatives. To ensure the necessary RSA dimensions beyond (and prior) to each runway end, Runway 8 landing threshold would be displaced 307' to the east to provide 600' of safety area prior landing. Runway 26 would be displaced 48' west to also provide 600' of RSA prior to landing. Displacing the threshold of Runway 8 would likely require relocating the ILS glideslope. As described in **Table 5-1**, this alternative maintains the existing takeoff distance (TORA/TODA) of 5,797' but reduces available landing distance (LDA) to 5,042'/5,042' for Runway 8/26 respectively. The ASDA would be reduced to 5,349'/5,090' for Runway 8/26 respectively.

Advantages

- Lowest cost option

Disadvantages

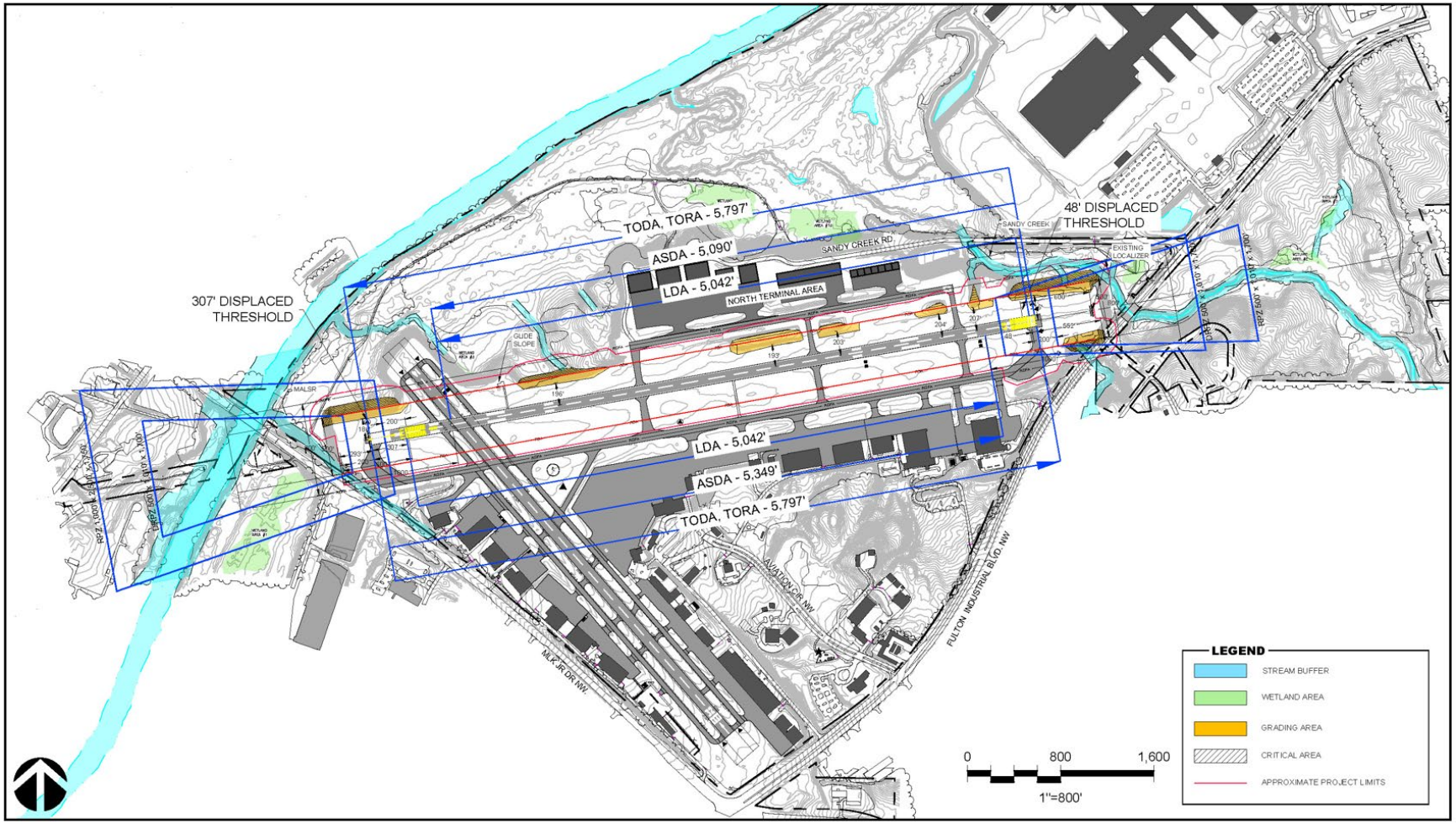
- Reduces existing landing length by 755' each end
- Reduced ASDA
- Glideslope and possible ALS relocation
- Impacts tenants who purchased aircraft based on existing lengths
- Does not meet the recommended takeoff or lengths in Appendix A – Runway Length Justification Study

Table 5-1: Alternative 1 – RSA Improvements Only

Factor (ft)	Runway 8	Runway 26
RSA Prior to Pavement Edge	293	552
RSA Beyond Runway Pavement Edge	552	293
Proposed Displaced Threshold	307	48
Proposed Runway Pavement Added	0	0
Proposed EMAS Bed	N/A	N/A
Proposed EMAS Lead-in	N/A	N/A
Proposed ASDA	5,349	5,090
Resulting RSA Prior to Landing	600	600
Resulting RSA Beyond Runway End	1,000	1,000
Takeoff Distance Available (TORA/TODA)	5,797	5,797
Landing Distance Available (LDA)	5,042	5,042
Impact to Existing Takeoff Distance of 5,797'	0	0
Impact to Existing Landing Distance of 5,797'	(755)	(755)
Meets Appendix A Recommended Takeoff Distance of 6,100'?	(303)	(303)
Meets Appendix A Recommended Landing Distance of 6,120'?	(1,078)	(1,078)
Cost Estimate (2022 Dollars)	$4,475,197	

Source: Michael Baker International, 2022.

Figure 5-3: Alternative 1



Source: Michael Baker International, 2022.

Alternative 2 – Extend West 278', Connect Parallel Taxiways

Alternative 2 contains the same displaced threshold corrections as Alternative 1 but the runway pavement is extended 278' to the west. Taxiways are constructed to the Runway 6 takeoff end. The additional pavement increases takeoff run available to 6,075' but maintains identical reduced landing distances (5,042'/5,042') as Alternative 1. A benefit of this alternative is by constructing additional pavement for takeoff, the ASDA for eastbound takeoffs would increase to 5,627' although the westbound ASDA would remain 5,090'. Alternative 2 is illustrated in **Figure 5-4** and detailed in **Table 5-2**.

Advantages

- Increases takeoff length available (TORA/TODA) by 278'
- Increases ASDA for eastbound takeoffs due to added pavement length

Disadvantages

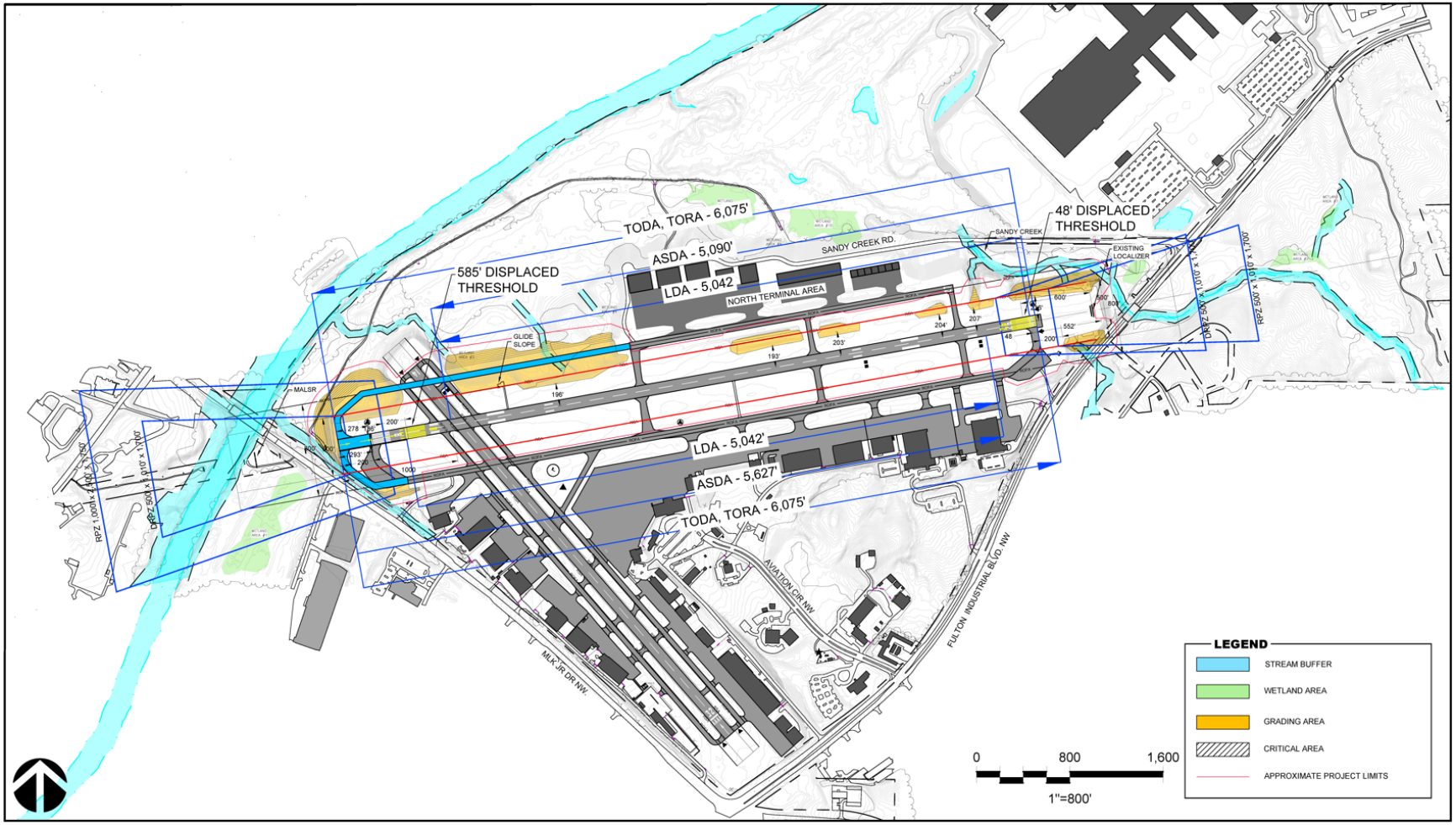
- Landing distances, no better than Alternative 1, reduced by 755' with 307' and 48' Displaced Thresholds
- Costly taxiway construction
- May require glideslope and ALS relocation
- Impacts tenants who purchased aircraft based on existing lengths
- Does not meet the recommended takeoff or lengths in Appendix A – Runway Length Justification Study

Table 5-2: Alternative 2 – Extend West 278'

Factor (ft)	Runway 8	Runway 26
RSA Prior to Pavement Edge	15	552
RSA Beyond Runway Pavement Edge	552	15
Proposed Displaced Threshold	585	48
Proposed EMAS Bed	N/A	N/A
Proposed EMAS Lead-in	N/A	N/A
Proposed Runway Pavement Added	278	0
Proposed ASDA	5,627	5,090
Resulting RSA Prior to Landing	600	600
Resulting RSA Beyond Runway End	1,000	1,000
Takeoff Distance Available (TORA/TODA)	6,075	6,075
Landing Distance Available (LDA)	5,042	5,042
Impact to Existing Takeoff Distance of 5,797'	278	278
Impact to Existing Landing Distance of 5,797'	(755)	(755)
Meets Appendix A Recommended Takeoff Distance of 6,100'?	(25)	(25)
Meets Appendix A Recommended Landing Distance of 6,120'?	(1,078)	(1,078)
Cost Estimate	$15,613,110	

Source: Michael Baker International, 2022.

Figure 5-4: Alternative 2



Source: Michael Baker International, 2022.

Alternative 3 – Extend West 278', Extend East 537', Relocate Localizer

Alternative 3 as detailed in **Table 5-3** and illustrated in **Figure 5-5** builds upon Alternative 2 by also extending pavement towards the east to the furthest extent possible which is 537'. Taxiways are constructed to the new ends of Runway 8 and 6. By doing so, the localizer antenna for the ILS must be relocated across Fulton Industrial Boulevard. As with Alternatives 1 and 2, the landing distance is reduced by 755' but takeoff distance available in each direction is improved by 815' to 6,612'. The existing glideslope and ALS may need to be relocated. Constructing additional pavement for takeoff in both directions, the ASDA for each direction increases to 5,627'.

Advantages

- Provides the most runway pavement and longest takeoff lengths within the confines of airport property
- Meets recommended takeoff length in Appendix A – Runway Length Justification Study

Disadvantages

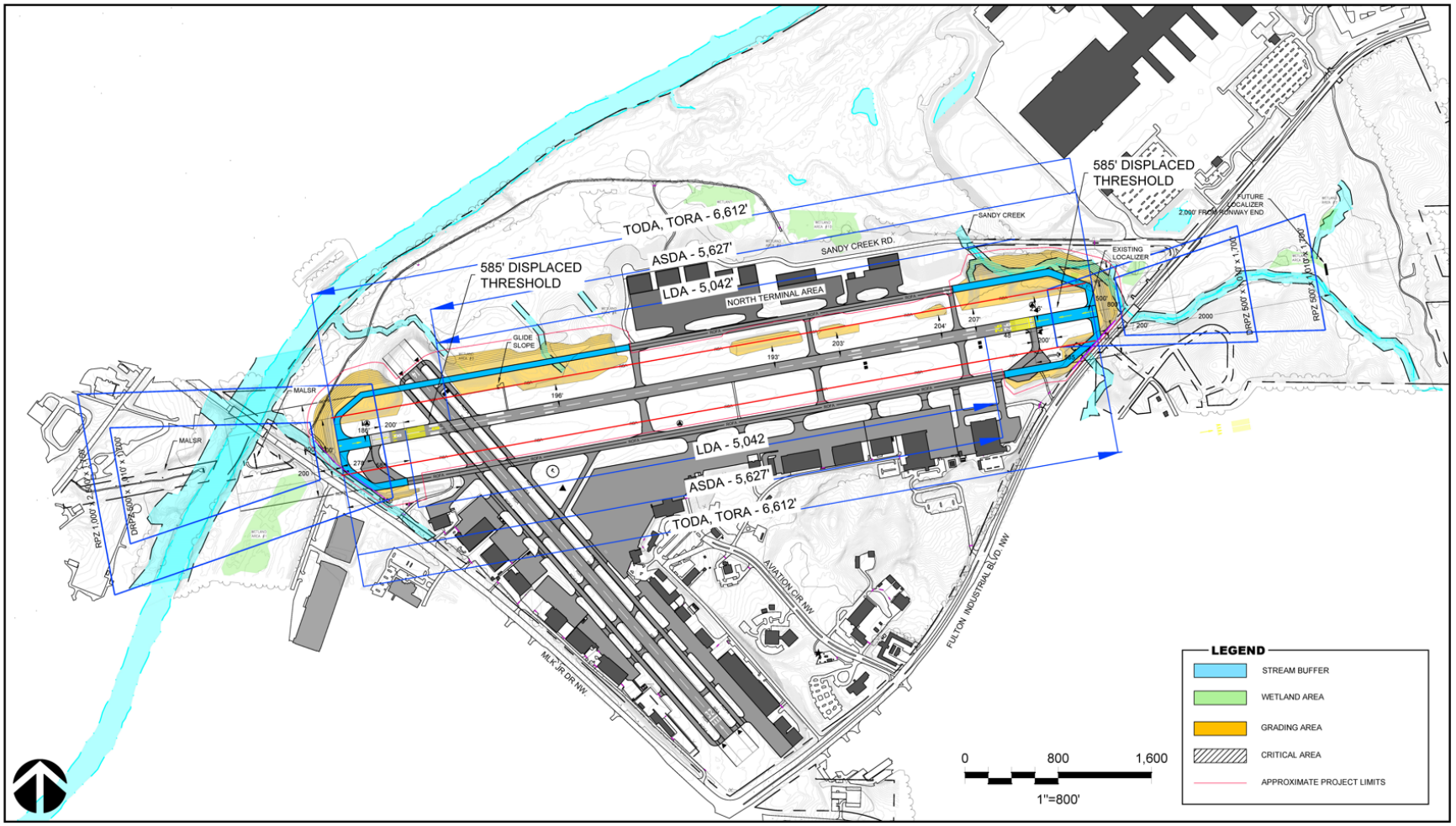
- Relies on Declared Distances with steep elevation drop-offs beyond each runway end pavement edge
- Costly taxiway construction
- May require glideslope and ALS relocation
- Requires localizer to be relocated across FIB is costly and would require feasibility study
- Effective landing distances no better than Alternative 1 and 2
- Impacts tenants who purchased aircraft based on existing lengths
- Does not meet the recommended landing length in Appendix A – Runway Length Justification Study

Table 5-3: Alternative 3 – Extend West 278' and 537' East

Factor (ft)	Runway 8	Runway 26
RSA Prior to Pavement Edge	15	15
RSA Beyond Runway Pavement Edge	15	15
Proposed EMAS Bed	N/A	N/A
Proposed EMAS Lead-in	N/A	N/A
Proposed Displaced Threshold	585	585
Proposed Runway Pavement Added	278	537
Proposed ASDA	5,627	5,627
Resulting RSA Prior to Landing	600	600
Resulting RSA Beyond Runway End	1,000	1,000
Takeoff Distance Available (TORA/TODA)	6,612	6,612
Landing Distance Available (LDA)	5,042	5,042
Impact to Existing Takeoff Distance of 5,797'	815	815
Impact to Existing Landing Distance of 5,797'	(755)	(755)
Meets Appendix A Recommended Takeoff Distance of 6,100'?	512	512
Meets Appendix A Recommended Landing Distance of 6,120'?	(1,078)	(1,078)
Cost Estimate	$27,643,737	

Source: Michael Baker International, 2022.

Figure 5-5: Alternative 3



Source: Michael Baker International, 2022.

Alternative 4 - EMAS on East Side Only

Alternative 4 as detailed in **Table 5-4** and depicted on **Figure 5-6** considers the use of standard EMAS within the confines of existing airport property. By installing a full EMAS on the east runway end, penalties incurred by Declared Distances in that direction are reduced (LDA and ASDA) providing more operational capability of the runway. With some grading required, a full 600' EMAS bed could be constructed on the east runway end. The existing localizer antennae would need to be relocated to the rear of the bed. The landing threshold for Runway 6 would still require a 311' Displaced Threshold and may require the ILS glideslope antennae to be relocated. By constructing this alternative, a full ASDA for takeoff towards the east is a achievable.

Advantages

- Provides full EMAS beyond runway end of most utilized takeoff direction
- Eliminates need for Declared Distances in eastbound operations

Disadvantages

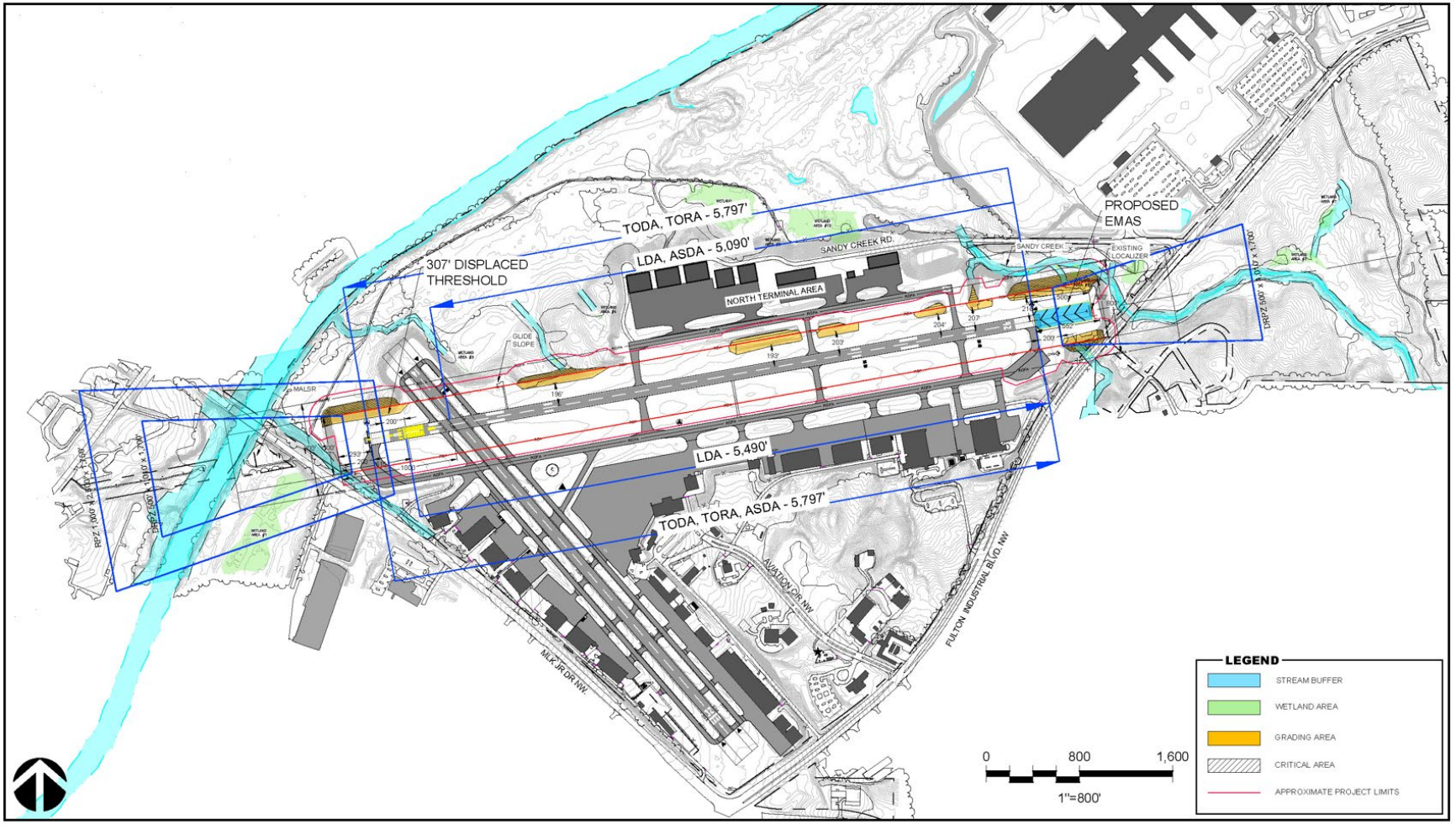
- Runway 6 still requires a Displaced Threshold (311')
- May require glideslope and ALS relocation
- Localizer adjustment
- Impacts tenants who purchased aircraft based on existing lengths
- Does not meet the recommended takeoff or lengths in Appendix A – Runway Length Justification Study

Table 5-4: Alternative 4 – EMAS on East Side Only

Factor (ft)	Runway 8	Runway 26
RSA Prior to Pavement Edge	293	EMAS
RSA Beyond Runway Pavement Edge	EMAS	293
Proposed EMAS Bed	N/A	300
Proposed EMAS Lead-in	N/A	300
Proposed Displaced Threshold	307	0
Proposed Runway Pavement Added	0	0
Proposed ASDA	5,797	5,090
Resulting RSA Prior to Landing	600	EMAS
Resulting RSA Beyond Runway End	EMAS	1,000
Takeoff Distance Available (TORA/TODA)	5,797	5,797
Landing Distance Available (LDA)	5,490	5,090
Impact to Existing Takeoff Distance of 5,797'	0	0
Impact to Existing Landing Distance of 5,797'	(307)	(707)
Meets Appendix A Recommended Takeoff Distance of 6,100'?	(303)	(303)
Meets Appendix A Recommended Landing Distance of 6,120'?	(630)	(1,030)
Cost Estimate	$15,477,940	

Source: Michael Baker International, 2022.

Figure 5-6: Alternative 4



Source: Michael Baker International, 2022.

Alternative 5 – EMAS on Both Ends

Alternative 5 as detailed in **Table 5-5** and illustrated in **Figure 5-7** adds a full-size 600' (300' lead-in, 300' bed) EMAS to both runway ends. Given the confines of space on the west end of the runway, a 300' displaced threshold would be necessary to build a full 600' EMAS assuming a 300' lead-in of pavement prior to the 300' bed. This lead-in could still be utilized for takeoff runs to the east. The displaced threshold however would likely require relocation of the ILS glideslope antennae. All Declared Distances are restored with the exception of landing distance to Runway 8.

Advantages

- Provides full EMAS to each end
- Eliminates need for Runway 26 Displaced Threshold
- Restores full Declared Distances with the exception of LDA Runway 8

Disadvantages

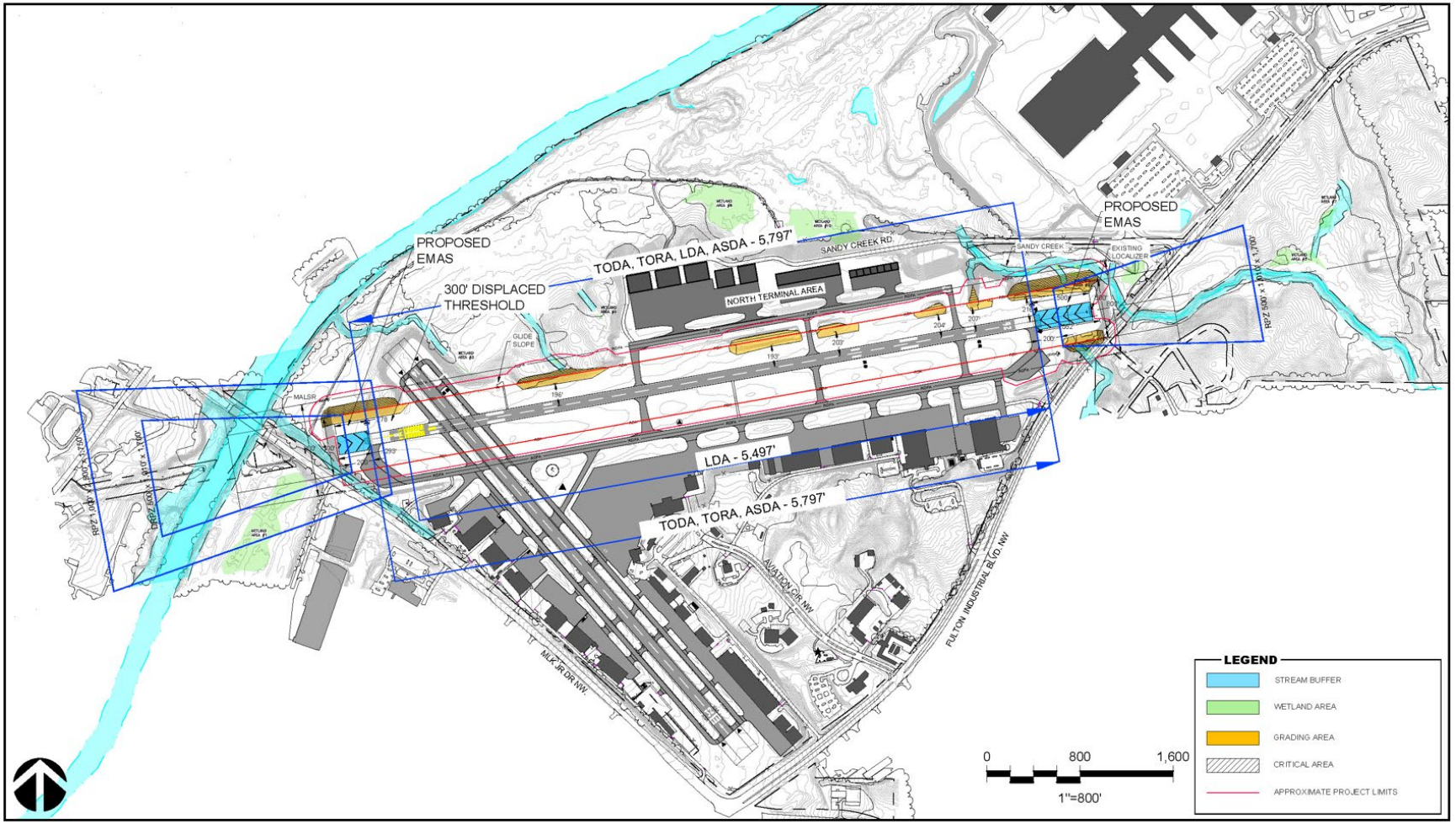
- Requires Displaced Threshold to Runway 8 (300')
- May require glideslope relocation
- Localizer Adjustment
- Impacts tenants who purchased aircraft based on existing lengths
- Does not meet the recommended takeoff or lengths in Appendix A – Runway Length Justification Study

Table 5-5: Alternative 5 – EMAS on Both Ends

Factor (ft)	Runway 8	Runway 26
Existing RSA Prior to Threshold	EMAS	EMAS
RSA Beyond Runway Pavement Edge	EMAS	EMAS
Proposed EMAS Bed	293	300
Proposed EMAS Lead-in	See Note 1	300
Proposed Displaced Threshold (See Note 1)	300	300
Proposed Runway Pavement Added	0	0
Proposed ASDA	5,797	5,797
Resulting RSA Prior to Landing	EMAS	EMAS
Resulting RSA Beyond Runway End	EMAS	EMAS
Takeoff Distance Available (TORA/TODA)	5,797	5,797
Landing Distance Available (LDA)	5,497	5,797
Impact to Existing Takeoff Distance of 5,797'	0	0
Impact to Existing Landing Distance of 5,797'	(300)	0
Meets Appendix A Recommended Takeoff Distance of 6,100'?	(303)	(303)
Meets Appendix A Recommended Landing Distance of 6,120'?	(623)	(323)
Cost Estimate	$22,738,702	

Note 1: EMAS Lead-in also used as 300' Displaced Threshold.
Source: Michael Baker International, 2022.

Figure 5-7: Alternative 5



Source: Michael Baker International, 2022.

Alternative 6 – EMAS on West Side Only

Alternative 6 as detailed in **Table 5-6** and illustrated in **Figure 5-8** considers only EMAS on the west runway end. This alternative would still require Displaced Thresholds on each end for a standard sized EMAS but would eliminate several Declared Distance penalties for TORA, TODA and ASDA for westbound operations.

Advantages

- Eliminates Declared Distances in westbound operation
- Avoids impacting the localizer

Disadvantages

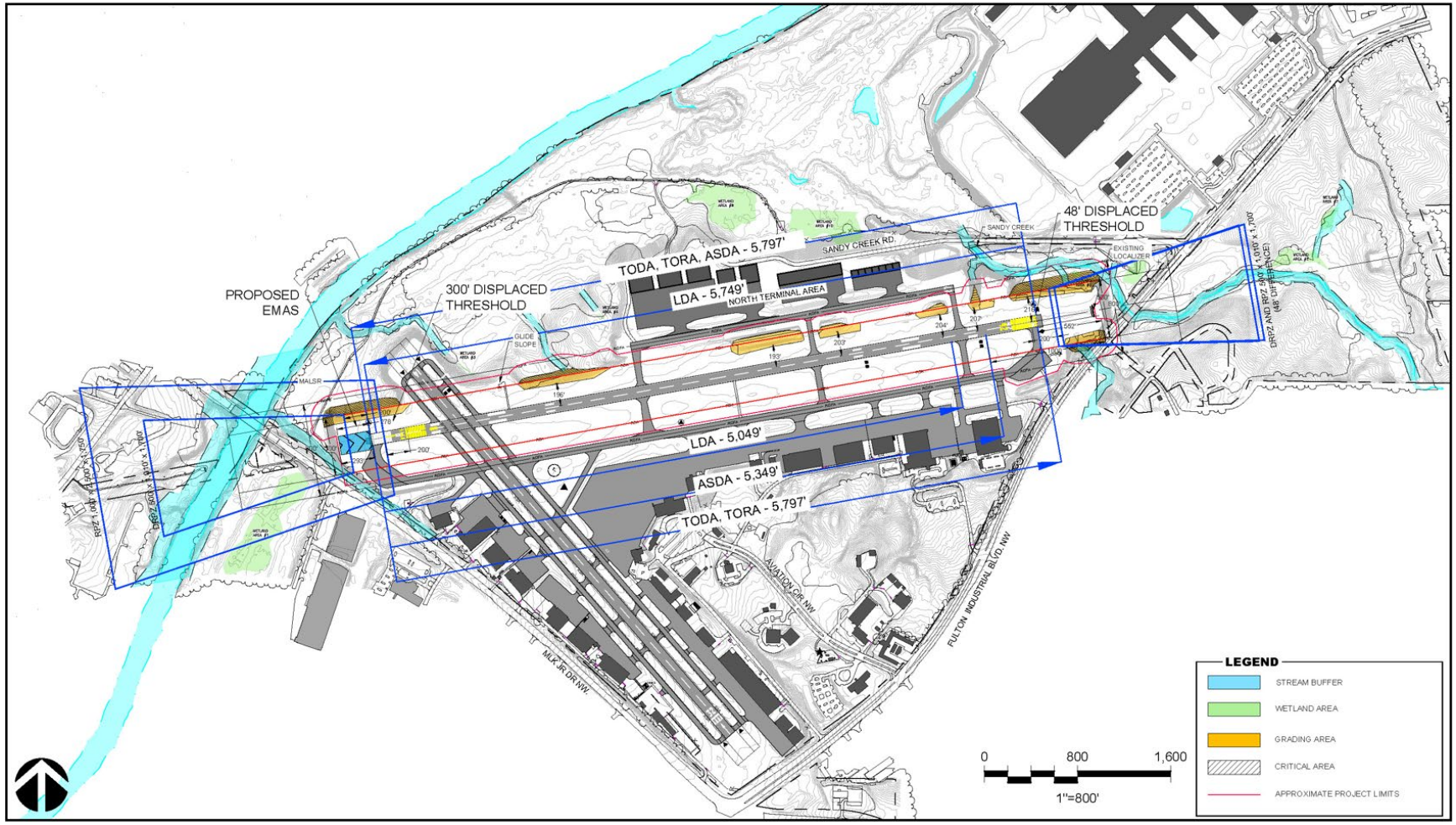
- 300’ Displaced Threshold to Runway 8
- 48’ Displaced Threshold to Runway 26
- May require glideslope relocation
- Impacts tenants who purchased aircraft based on existing lengths
- Does not meet the recommended takeoff or lengths in Appendix A – Runway Length Justification Study

Table 5-6: Alternative 6 – EMAS on West Side Only

Factor (ft)	Runway 8	Runway 26
Existing RSA Prior to Threshold	EMAS	552
RSA Beyond Runway Pavement Edge	552	EMAS
Proposed EMAS Bed	293	N/A
Proposed EMAS Lead-in	See Note 1	N/A
Proposed Displaced Threshold (See Note 1)	300	48
Proposed Runway Pavement Added	0	0
Proposed ASDA	5,349	5,797
Resulting RSA Prior to Landing	EMAS	600
Resulting RSA Beyond Runway End	1,000	EMAS
Takeoff Distance Available (TORA/TODA)	5,797	5,797
Landing Distance Available (LDA)	5,049	5,749
Impact to Existing Takeoff Distance of 5,797'	0	0
Impact to Existing Landing Distance of 5,797'	(748)	(48)
Meets Appendix A Recommended Takeoff Distance of 6,100'?	(303)	(303)
Meets Appendix A Recommended Landing Distance of 6,120'?	(1,071)	(371)
Cost Estimate	$11,737,052	

Note 1: EMAS Lead-in also used as Displaced Threshold.
Source: Michael Baker International, 2022.

Figure 5-8: Alternative 6



Source: Michael Baker International, 2022.

Alternative 7 – EMAS on East Side with 278' Extension West

Alternative 7 as detailed in **Table 5-7** and illustrated in **Figure 5-9** considers a 278' runway extension (as a displaced threshold) to the west side of Runway 8-26 and full EMAS to the east side. Taxiways would be constructed to meet the proposed runway extension. The benefit of this alternative is it provides additional takeoff length towards the east which is the most often direction of used. The localizer would be adjusted to accommodate the proposed EMAS.

Advantages

- Increases eastbound takeoff distance by 278'
- Increases eastbound ASDA
- Eliminates need for Runway 26 Displaced Threshold

Disadvantages

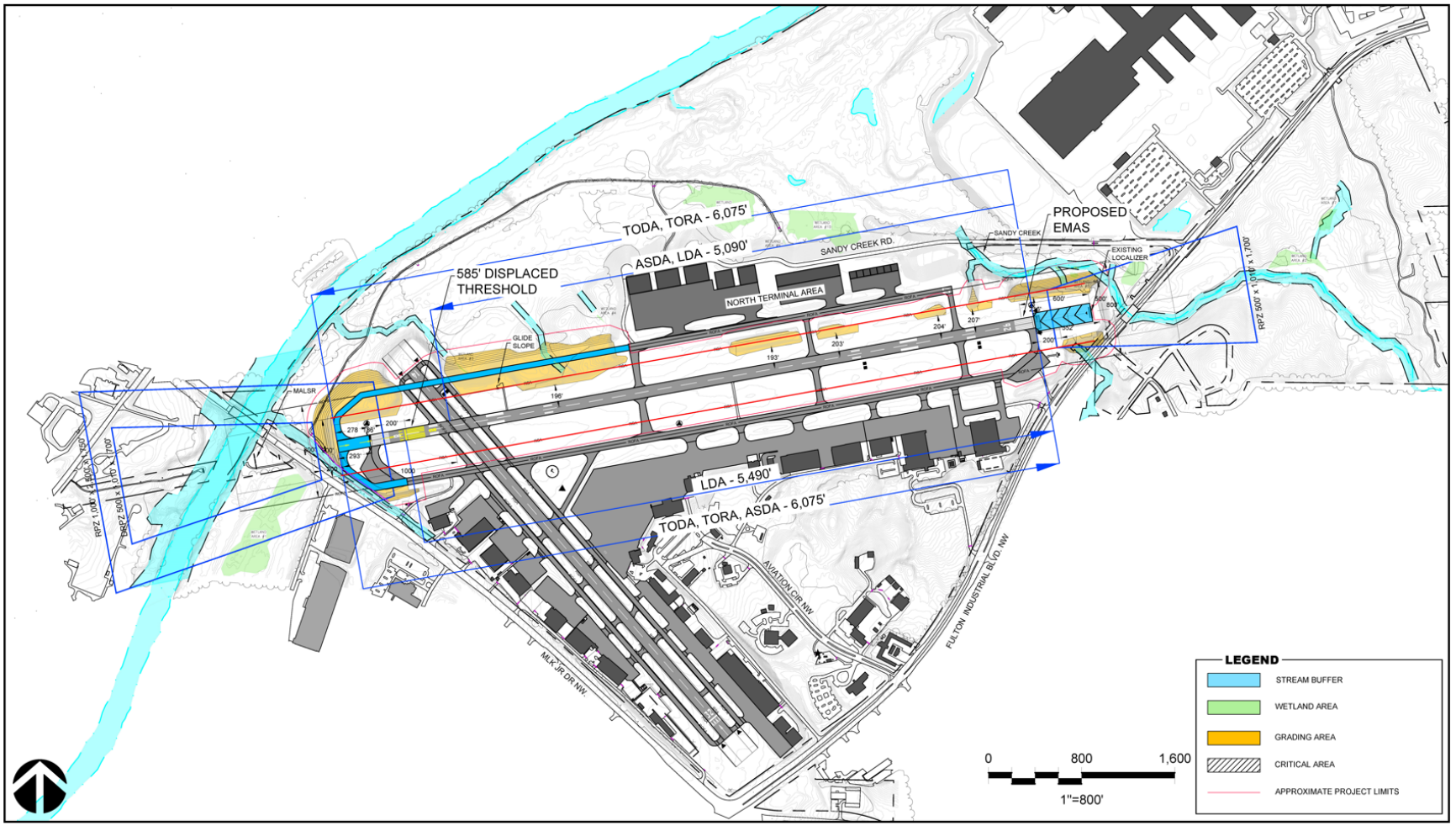
- Requires Displaced Threshold Runway 6 (585' which includes 278' extension)
- May require glideslope relocation
- Localizer adjustment
- Impacts tenants who purchased aircraft based on existing lengths
- Does not meet the recommended takeoff or lengths in Appendix A – Runway Length Justification Study

Table 5-7: Alternative 7 – EMAS on East Side with 278' Extension West

Factor (ft)	Runway 8	Runway 26
Existing RSA Prior to Threshold	293	EMAS
RSA Beyond Runway Pavement Edge	EMAS	293
Proposed EMAS Bed	N/A	300
Proposed EMAS Lead-in	N/A	300
Proposed Displaced Threshold	585	0
Proposed Runway Pavement Added	278	0
Proposed ASDA	6,075	5,090
Resulting RSA Prior to Landing	600	EMAS
Resulting RSA Beyond Runway End	EMAS	1,000
Takeoff Distance Available (TORA/TODA)	6,075	6,075
Landing Distance Available (LDA)	5,490	5,090
Impact to Existing Takeoff Distance of 5,797'	278	278
Impact to Existing Landing Distance of 5,797'	(307)	(707)
Meets Appendix A Recommended Takeoff Distance of 6,100'?	(25)	(25)
Meets Appendix A Recommended Landing Distance of 6,120'?	(630)	(1,030)
Cost Estimate	$11,737,052	

Source: Michael Baker International, 2022.

Figure 5-9: Alternative 7



Source: Michael Baker International, 2022.

Alternative 8 – Non-Standard EMAS Both Ends with 30' Lead-in Extension East

Alternative 8 as detailed in **Table 5-8** and illustrated in **Figure 5-10** considers use of nonstandard EMAS at each runway end including a 304' EMAS lead-in extension to the east runway end. The nonstandard EMAS to the west allows the current threshold to remain in place which avoids relocating the ILS glideslope. The EMAS to the east allows the opportunity to gain 304' of runway length if constructed to full runway strength while also providing the benefit of EMAS. A taxiway extension would be necessary to utilize the benefits of the 304' extension. While the 304' extension is depicted as a lead-in/Displaced Threshold, preliminary obstruction analysis indicated it could be converted to full use. If cost is prohibitive, the taxiway extension could be a phased improvement in the future. By employing nonstandard EMAS designs, the airport is able to achieve a runway length that supports the unmet needs of the critical aircraft, while also providing an adequate level of safety in the event of an overshoot or undershoot. A safety analysis prepared by the EMAS vendor is included in **Appendix B – EMAS Performance Assessment**.

Advantages

- Eliminates all Declared Distances and remedial Displaced Thresholds
- The 304' extension could be improved to full use non-Displaced Threshold
- Provides cost effective runway length improvements within confines of roadways
- Meets recommended takeoff length in Appendix A – Runway Length Justification Study

Disadvantages

- Nonstandard EMAS
- Localizer adjustment
- Requires taxiway extension to receive 304' takeoff benefit in westbound direction (included in cost estimate below).

Table 5-8: Alternative 8 – EMAS on East Side with 278' Extension West

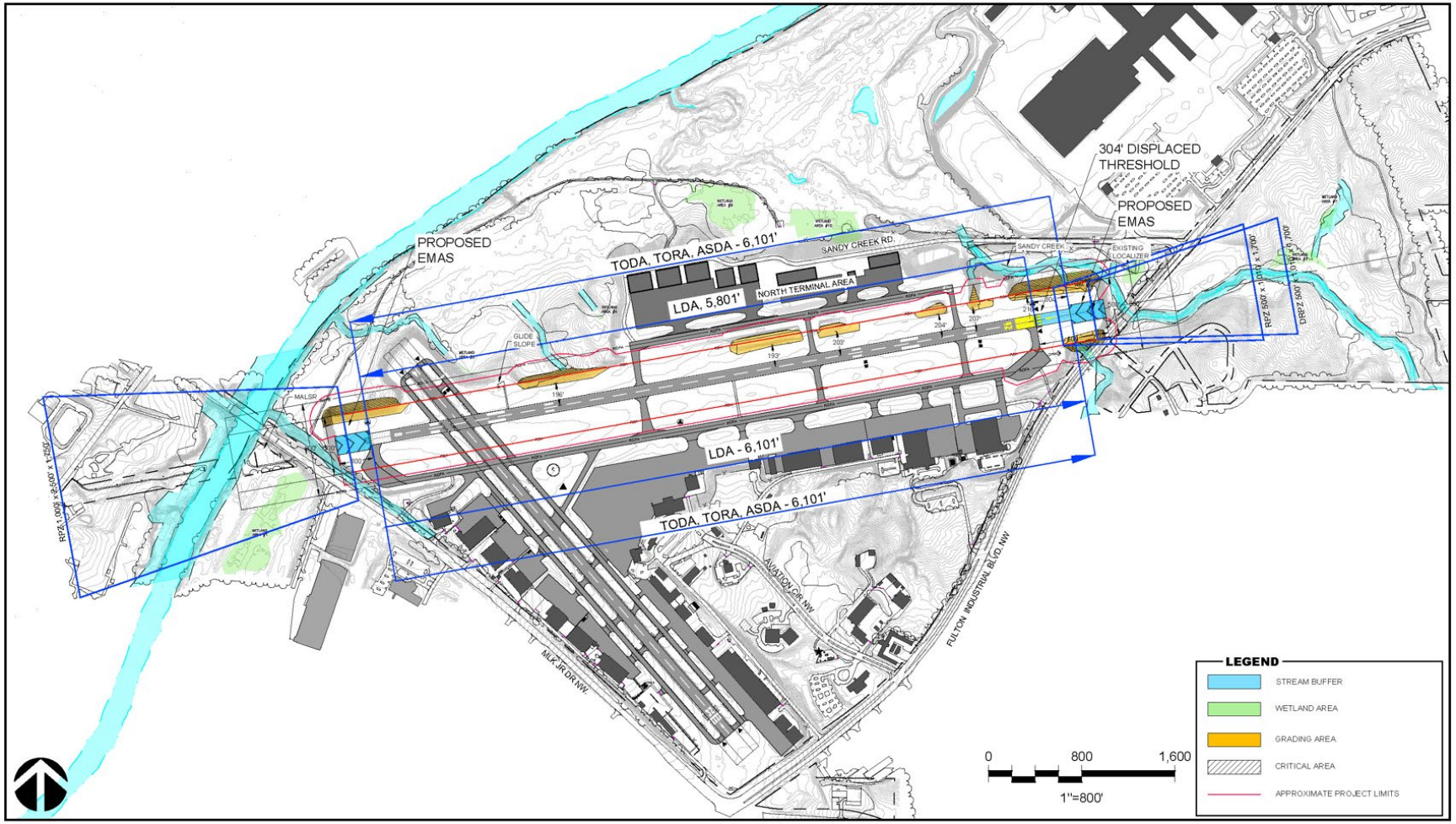
Factor (ft)	Runway 8	Runway 26
Existing RSA Prior to Threshold	EMAS	EMAS
RSA Beyond Runway Pavement Edge	EMAS	EMAS
Proposed EMAS Bed	255	251
Proposed EMAS Lead-in	35	35
Proposed Displaced Threshold	0	304
Proposed Runway Pavement Added	0	304
Proposed ASDA	5,797	5,797
Resulting RSA Prior to Landing	EMAS	EMAS
Resulting RSA Beyond Runway End	EMAS	EMAS
Takeoff Distance Available (TORA/TODA)	6,101	6,101
Landing Distance Available (LDA)	6,101	5,797
Impact to Existing Takeoff Distance of 5,797'	304	304
Impact to Existing Landing Distance of 5,797'	304	0
Meets Appendix A Recommended Takeoff Distance of 6,100'?	1	1
Meets Appendix A Recommended Landing Distance of 6,120'? See Note 1.	(19)	(323)
Cost Estimate	$13,344,052	

Note 1: Displaced Threshold could be eliminated to increase landing distance of Runway 26 by 304'.

Note 2: Taxiway extension not included in cost estimate. Phase 1 taxiway extension would cost $2 million.

Source: Michael Baker International, 2022.

Figure 5-10: Alternative 8



Source: Michael Baker International, 2022.

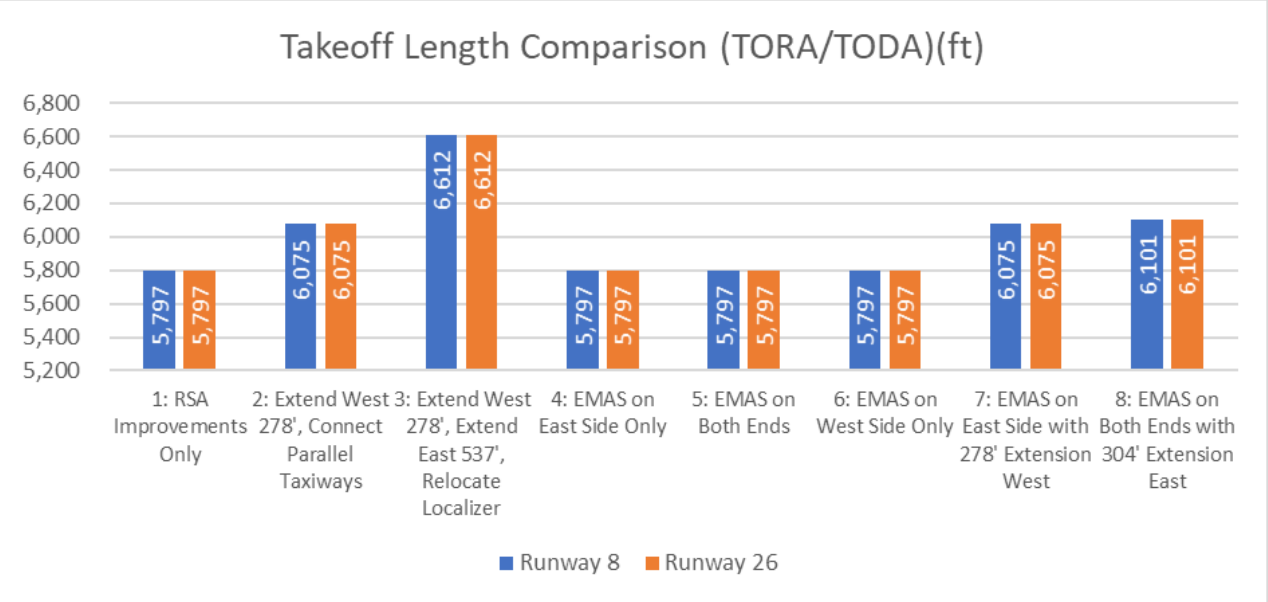
5.1.4 Summary of Alternatives

Based upon the *Runway Length Analysis Report*, the recommended near-term runway length for Runway 8-26 is 6,100' for both landing and takeoff. The following charts provide a summary of the most critical distances considered.

Takeoff Length Comparison

Figure 5-11 compares the takeoff length available for each runway end. Alternative 3 provides the longest runway length at 6,612'. Alternatives 1 to 7 all result in takeoff lengths less than what is justified in the Runway Length Justification Report in Appendix A. At 6,101' in each direction, Alternative 8 provides the best balance of takeoff lengths of all the alternatives and fully meets the current demands of the critical aircraft.

Figure 5-11: Takeoff Length Comparison

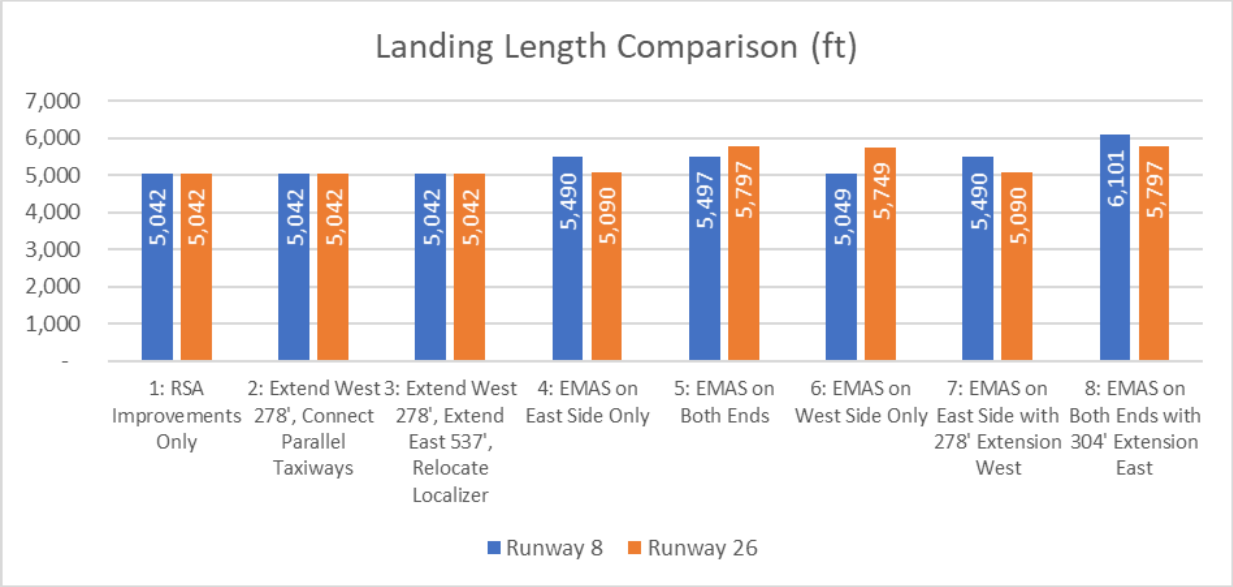


Source: Michael Baker International, 2022.

Landing Length Comparison

Figure 5-12Figure 5-12 compares the landing length of each runway end of Runway 8-26. Landing lengths shown include the results of Displaced Thresholds and RSA reductions for safety factors. Alternatives 1 to 7 all provide lengths that are less than the current published length of 5,979'. Beginning with Alternative 4, benefits of EMAS are seen for each alternative. As shown in the chart, Alternative 8 provides the longest landing lengths of any alternative.

Figure 5-12: Landing Length Comparison

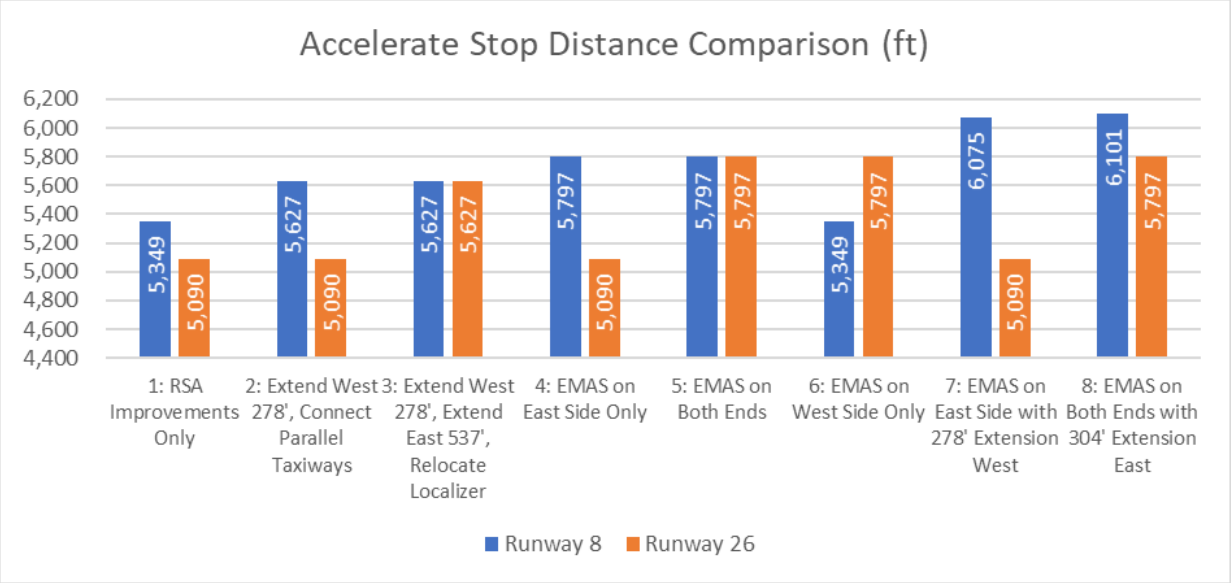


Source: Michael Baker International, 2022.

Accelerate Stop Distance Available

Figure 5-13, compares the ASDA for each alternative. As noted previously ASDA is the distance provided for an aborted takeoff with safety factors included. Alternative 8 provides the longest ASDA of all lengths of all alternatives evaluated. Should a connecting taxiway be extended with the proposed 304' extension to Alternative 8, the ASDA for Runway 26 would increase to 6,101.

Figure 5-13; Accelerate Stop Distance Comparison



Source: Michael Baker International, 2022.

Runway Length Objective

Appendix A – Runway Length Justification Study provides the approved runway length objective for near term implementation at FTY that will support the existing requirements of the Critical Aircraft including demand of both local and itinerant users. These lengths are 6,100' for takeoff and 6,120' for landing. As shown in **Table 5-9**, the alternative that most meets this objective is Alternative 8. Alternative 8 would completely satisfy the recommended takeoff distance and nearly meet the landing objective. If the proposed 304' Displaced Threshold was instead constructed full use, the landing distance provided for both Runway 8 and 26 would be 6,100'.

Table 5-9: Comparison of Runway Length Objectives

Meeting Justified Runway Length Objective of 6,100' Takeoff and 6,120' Landing					
		Takeoff Distance		Landing Distance	
	Alternative	Runway 8	Runway 26	Runway 8	Runway 26
1	RSA Improvements Only with Displaced Thresholds	(303)	(303)	(1,078)	(1,078)
2	Extend West 278', Connect Parallel Taxiways	512	512	(1,078)	(1,078)
3	Extend West 278', Extend East 537', Relocate Localizer	(303)	(303)	(1,078)	(1,078)
4	EMAS on East Side Only	(303)	(303)	(630)	(1,030)
5	EMAS on Both Ends	(303)	(303)	(623)	(323)
6	EMAS on West Side Only	(303)	(303)	(1,071)	(371)
7	EMAS on East Side with 278' Extension West	(25)	(25)	(630)	(1,030)
8	Non-Standard EMAS on Both Ends with 304' Extension East	1	1	(19)	(323)
Note: Landing Distance for Alternative 8 would be improved by 304' if proposed Displaced Threshold is constructed full use.					
Source: Michael Baker International, 2022.					

Preliminary Cost Estimate Comparison

For comparative purposes, preliminary cost estimates were prepared for the improvements outlined in Alternatives 1-8. **Table 5-10** presents the estimates along with the maximum pavement length of each alternative and the magnitude of displaced threshold in each alternative. Displaced thresholds noted in table may include added length as a result of pavement extensions. The Displaced Threshold for Alternative 8 could likely be removed pending obstruction removal and approval of EMAS design.

Table 5-10: Preliminary Cost Comparison

Alt.	Description	Pavement Length (ft)	Runway 8 Displaced Threshold (ft)	Runway 26 Displaced Threshold (ft)	Construction Estimate
1	RSA Improvements Only with Displaced Thresholds	5,797	307	48	$4,475,197
2	Extend West 278', Connect Parallel Taxiways	6,075	585	48	$15,613,110
3	Extend West 278', Extend East 537', Relocate Localizer	6,612	698	537	$27,643,737
4	EMAS on East Side Only	5,797	311	0	$15,477,940
5	EMAS on Both Ends	5,797	300	0	$22,738,702
6	EMAS on West Side Only	5,797	300	48	$11,737,052
7	EMAS on East Side with 278' Extension West	6,075	585	0	$26,613,110
8	Non-Standard EMAS on Both Ends with 303' Extension East with Taxiway Extension	6,101	0	304/0	$15,344,052

1. 0' Displacement if associated taxiway is extended.

Source: Michael Baker International, 2022.

5.1.5 Preferred Runway 8-26 Alternative

The preferred runway improvement alternative for near term phasing is **Alternative 8**. Alternative 8 was selected because this improvement resolves the immediate RSA deficiencies while preserving and enhancing existing runway length to meet the demands of the critical aircraft. The alternative avoids causing *remedial* Displaced Thresholds to the existing airfield which would greatly impair the runway length requirements and haul length needs of the critical aircraft. The alternative does not require the relocation of the ILS glideslope antennae or ALS. Airport tenants have provided input that any reduction in length would greatly impact their activities since many have selected aircraft models based upon the current published lengths at FTY. The preferred alternative, including potential phased taxiway improvements, is provided in **Figure 5-14**. While detailed engineering estimates will be necessary during design phase, the initial estimates and potential phasing of improvements are as follows:

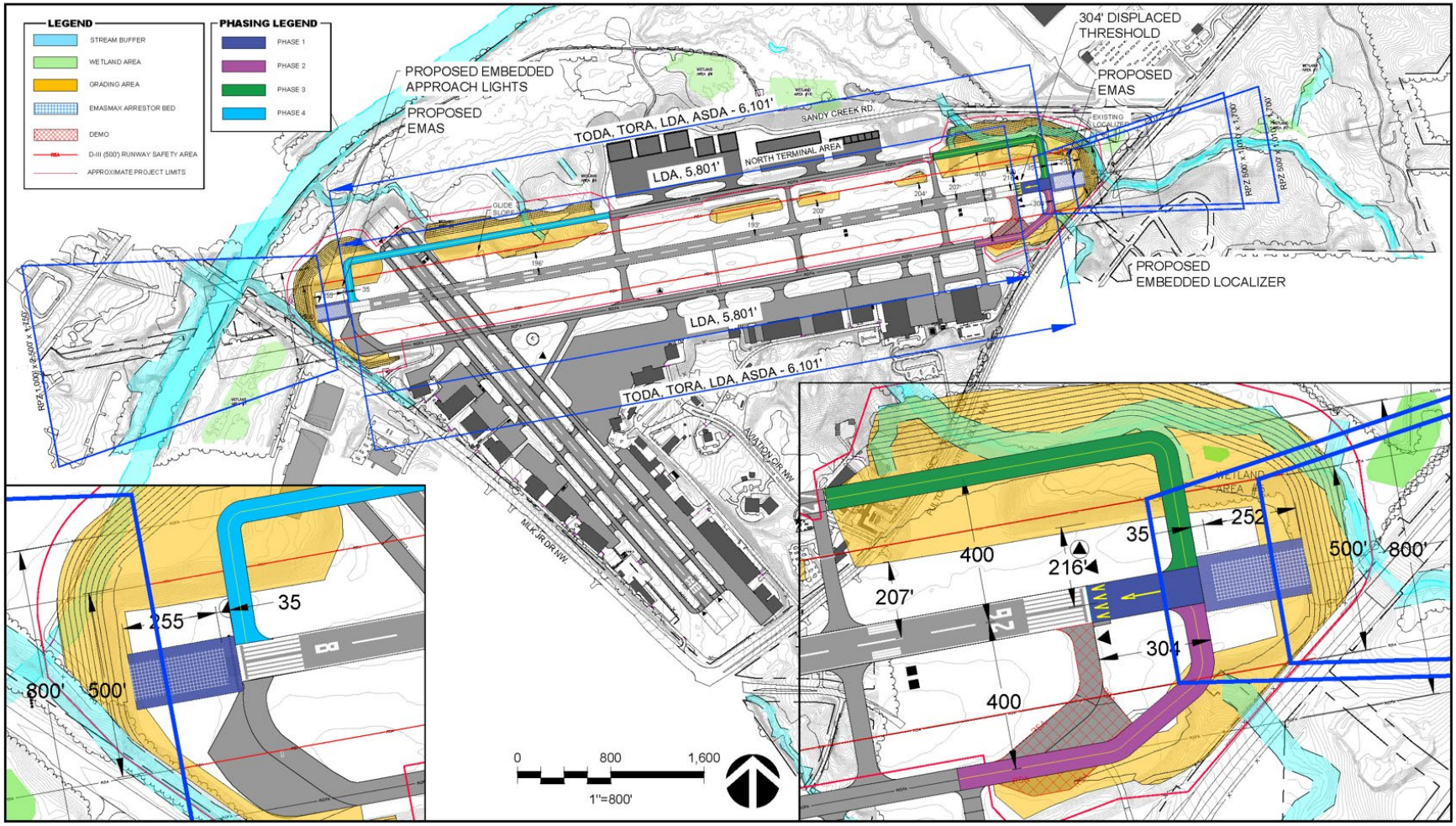
- Phase 1: Construct Runway 8 and Runway 26 EMAS (near term) - $13.4 million
- Phase 2: Connect Taxiway I Runway 26 (near term) - $2.0 million
- Phase 3: Connect Taxiway W Runway 26 (intermediate term) - $7.7 million
- Phase 4: Connect Taxiway W to Runway 8 (long term) - $10.5 million

Depending on funding availability, constructing Phase 1 and 2 would be ideal since Phase 2 provides the added benefit of the 304' extension prior to the EMAS bed.

Non-Standard EMAS Safety Assessment

The preferred alternative includes non-standard EMAS options. A preliminary performance and cost estimate for the non-standard EMAS was prepared by the EMAS vendor to assess the safety benefits of the proposed improvements. This report is included in **Appendix A**. A fleet mix corresponding to the approved Master Plan forecast was used in the evaluation, including the G550/650 critical aircraft. The evaluation considered stopping performance based upon MTOW and MLW of the fleet mix. Since the *Runway Length Analysis Report* determined the most demanding takeoff weight falling into the FAA definition of *Substantial Use* is less than MTOW, the MTOW numbers provide the most conservative safety assessment of stopping power of the EMAS installation. Based on this assessment, the Runway 26 Departure End would be expected to provide a maximum stopping performance of 63 knots or higher. The Runway 8 Departure End would be expected to provide a maximum performance of 64 knots or higher.

Figure 5-14: Preferred Alternative with Phasing

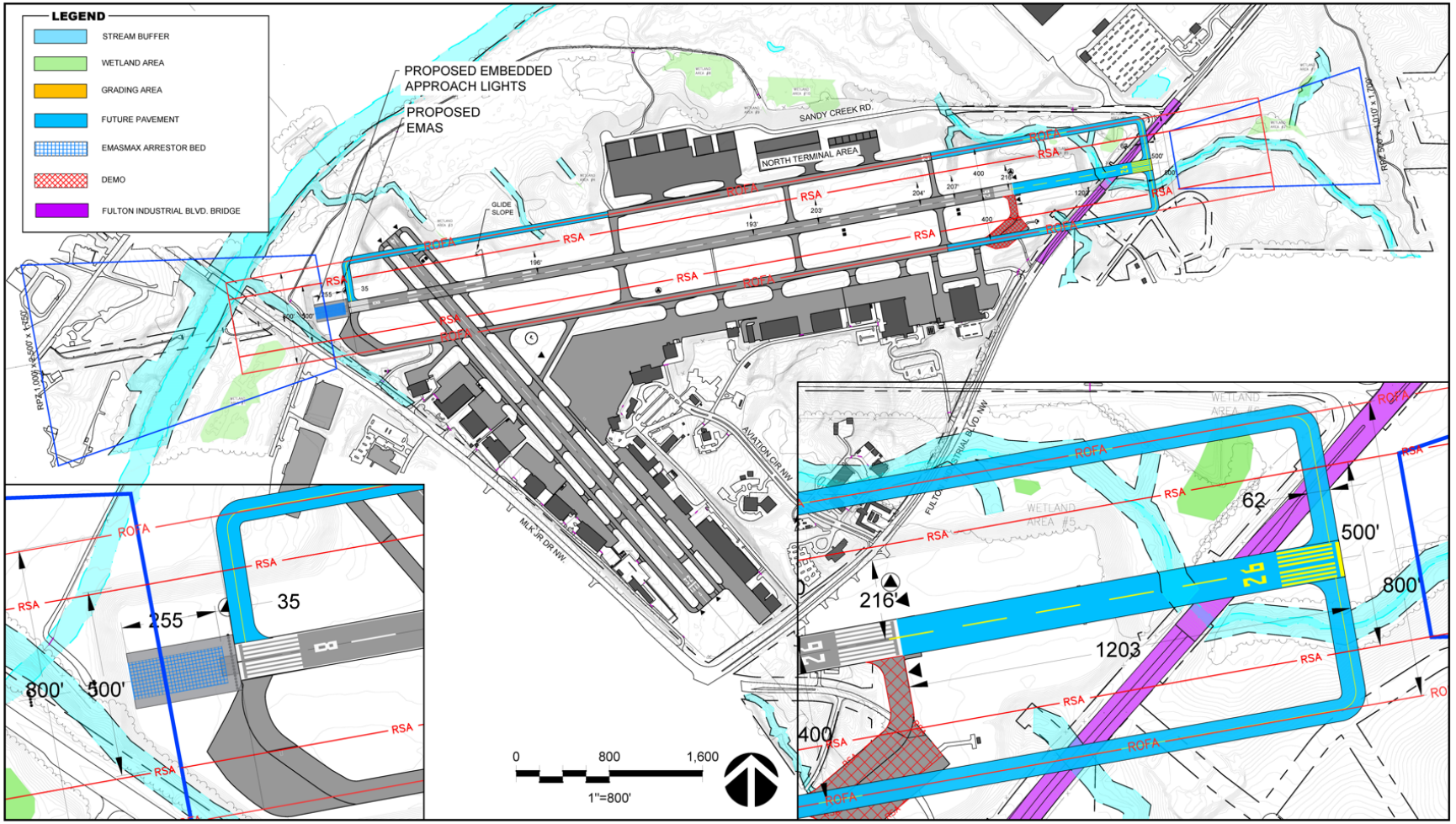


Source: Michael Baker International, 2022.

5.2 Ultimate Runway 8-26 Extension

To preserve options for runway length needs that exceed the preferred alternative, an ultimate runway extension will be depicted on the ALP to preserve land use and airspace protection. As shown in, the ultimate runway will extend 1,203' east and cross Fulton Industrial Boulevard (FIB). Due to the proximity of the Chattahoochee River and the existing approach lighting system, there are no realistic options to extend west. Preliminary evaluation indicates the extension may require lowering of the FIB road elevation approximately 5 feet to meet height clearance requirements of automotive traffic on FIB. Significant grading of airport land east of FIB would be necessary and the ILS localizer would be relocated. The proposed EMAS bed in the initial improvement would be eliminated and based on timing of the improvement would be assumed to have reached the end of its useful life. A preliminary evaluation of obstructions shows that the extension would likely be constructed as a displaced threshold if obstruction clearance was not resolved prior to construction. Depicting the extension will help to protect from additional encroachment by obstructions. While not in the immediate plans, this ultimate option will allow FTY to maintain compatible land use planning and remain flexible should the demands of the critical aircraft change during or beyond the planning period. The ultimate Runway 8-26 extension is shown in **Figure 5-15**.

Figure 5-15: Ultimate 1,203-Foot Runway 26 Extension (7,000 ft)



Source: Michael Baker International, 2022.

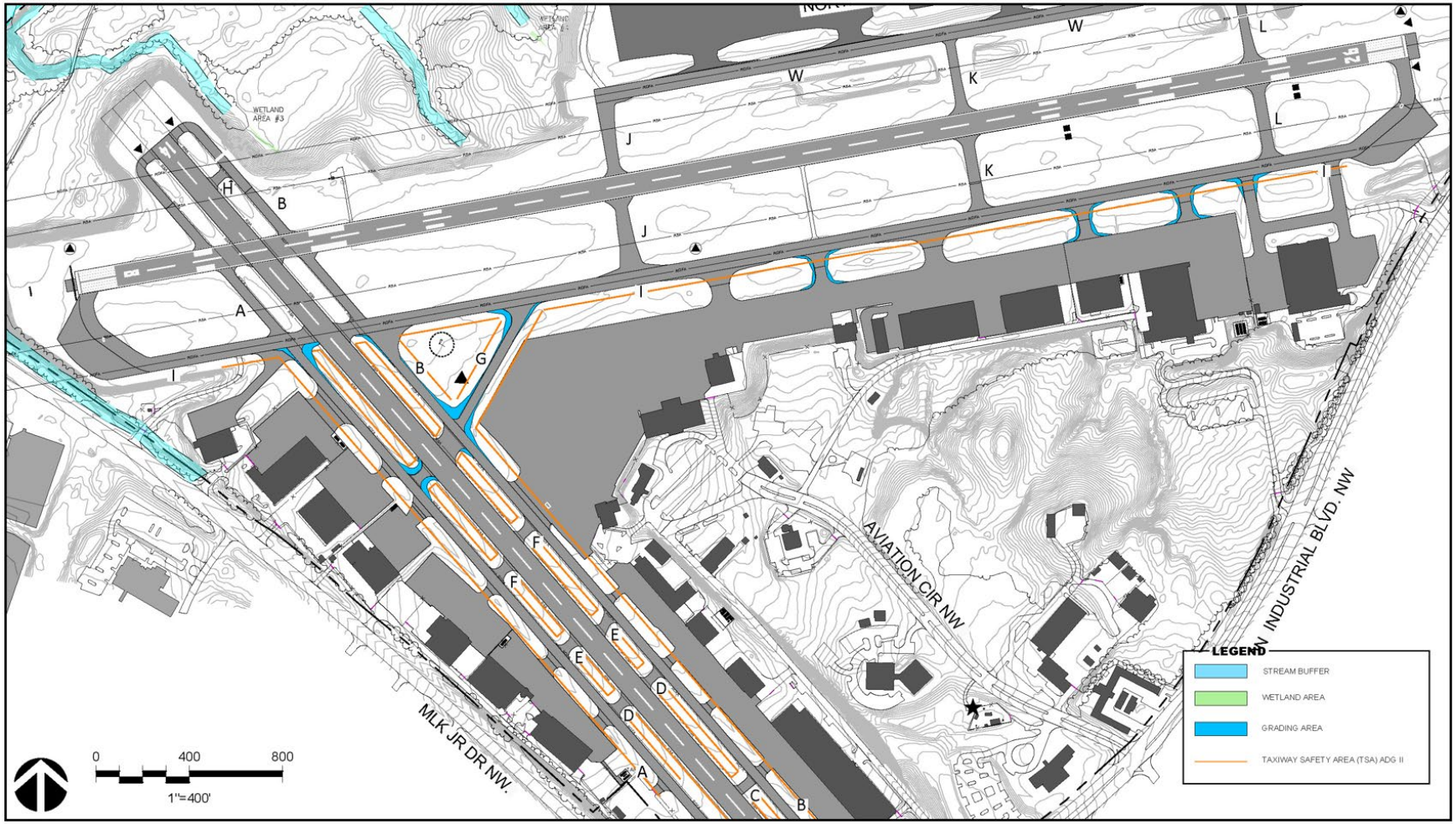
5.3 Runway 14-32 Closure

With regards to Runway 14-32, this master plan provides the consideration for future closure of the secondary runway. As mentioned in Chapter 4, Facility Requirements, less than 1 percent of airport operations utilize Runway 14-32. Primarily the runway is utilized for helicopter training activities. The master plan has prepared preliminary plans for reuse of the runway as a taxiway and an area for corporate development. These potential improvements are described in Section 5.6.

5.4 Taxiway Design Group Improvements

Taxiway design standards are based upon the Taxiway Design Group (TDG) of the critical aircraft or most demanding aircraft using the individual taxiway. For FTY, the majority of taxiways serving Runway 8-26 are utilized by the G550/650 critical aircraft, a TDG 2B Aircraft. Input from numerous airport users have identified several intersections that require tight maneuvering by larger aircraft. These intersections were evaluated for TDG 2B taxiway filet geometry and recommendations for taxiway filet improvements are provided in **Figure 5-16**. These filet improvements will be incorporated into the overall development plan depicted on the ALP.

Figure 5-16: Taxiway Design Group Improvements



Source: Michael Baker International, 2022.

5.5 Vertiport Options

"Vertiports" are platforms used by next generation electric aircraft for vertical takeoff and landing (eVTOL). They are not only intended to serve as stations, but also as a component of bigger multifunctional hubs for renewable energy, data, and public amenities. Vertiports are made up of an operating platform for rotorcraft maneuvers which may have neighboring buildings which houses supporting technical equipment (such as charging infrastructure). There are several different kinds of vertiports, from previous heliports that have been modified with electricity-charging equipment to specifically designed standalone vertiports.

Vertiports are designed to be a component of both new and current hubs. The vertiports may be added into already-existing hubs without significantly straining the system. Vertiports can be added to vast number of settings such as schools/universities, healthcare institutions, transit stations, or airports without the need to build much ground infrastructure such as rail tracks. The incorporation of vertiports into the urban environment is seen as a new mode option to expand the throughput for mass transit hubs as well as a premium alternative for businesses or users who need to get from one part of a city to another quickly or for airport links (especially in cities with no fast transport connections between the city and the airport). They can deliver demand-responsive services and significantly improve the client experience when equipped with the proper data analytics and technology.

At FTY, the most likely vertiport use-case will be serving those eVTOL aircraft much like traditional aircraft are served today. These aircraft will require electricity, maintenance, passenger amenities, pilot services, parking and storage. It's possible a vertiport may opt for lease to build areas in available areas as a standalone facility in similar fashion as corporate tenants, however future eVTOL aircraft will also demand services from the FBO providers at FTY, therefore the central apron may be the best location to consider accommodation of these operations.

The design aircraft used for the vertiport planned at FTY is the Mobi eVTOL. According to FAA's Engineering Brief #105, Vertiport Design, the landing and takeoff area and associated safety areas are based on the controlling dimensions of the design VTOL aircraft displayed in **Figure 5-17**. The controlling area for Mobi eVTOL is 40 feet. The area intended for airplane takeoff and landing is known as a "pad" and is made up of three parts. The region where an aircraft lands and/or lifts off is known as the touchdown and lift-off field (TLOF). The final approach and take-off area (FATO) is a defined area over which the pilot completes the final phase of the approach in the form of hovering or landing. Lastly, the safety area (SA) encases both the TLOF and FATO and lowers the risk of harm to aircraft from unintentionally veering from the FATO.

Figure 5-18, displays three potential vertiport landing pad locations for FTY within the Main Terminal Apron. While each option has its merits, Option 1 provides a location within the Main Terminal Ramp that is less utilized by fixed wing aircraft when compared to Option 2 and 3.

Figure 5-17: eVTOL Pad

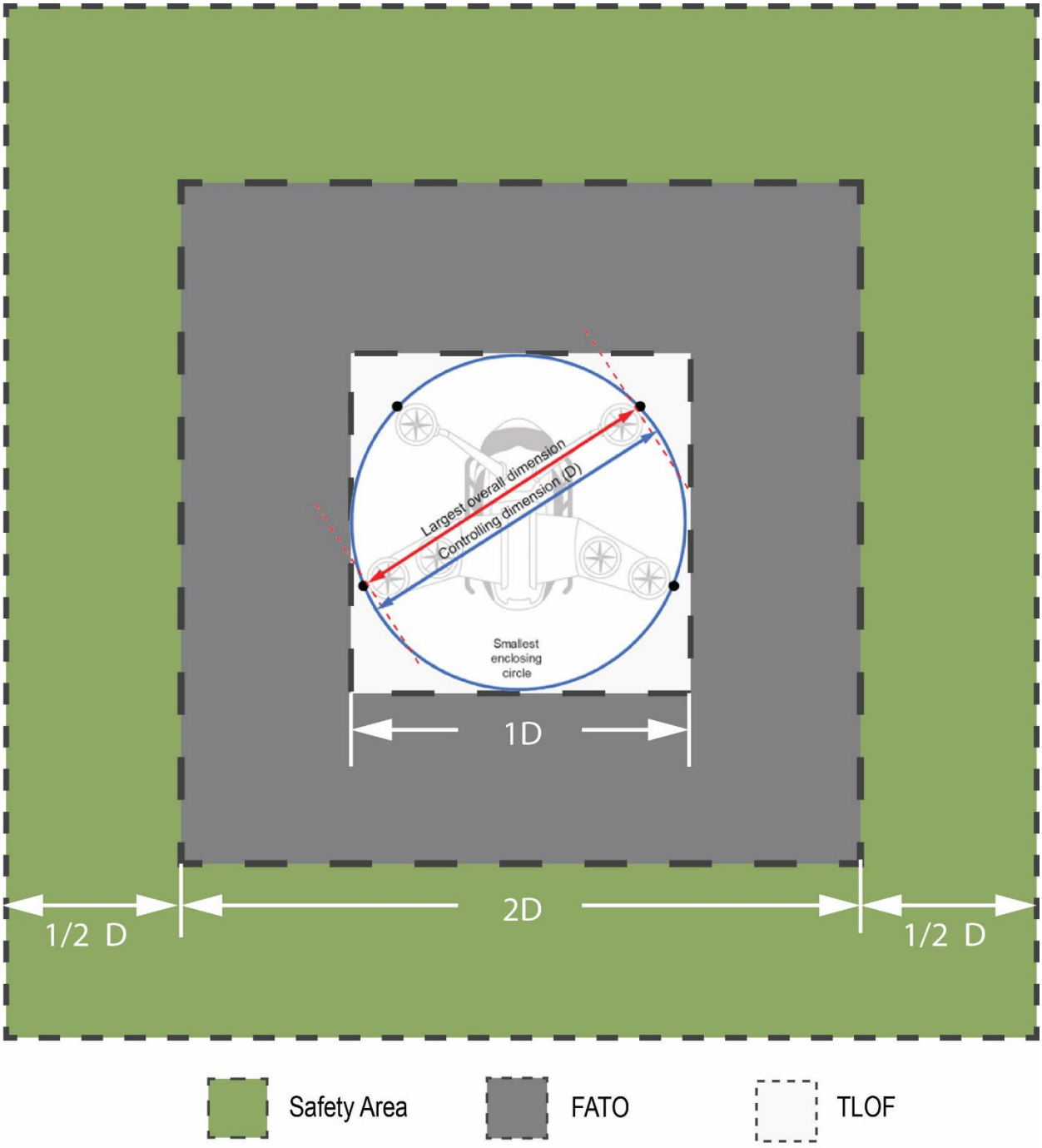
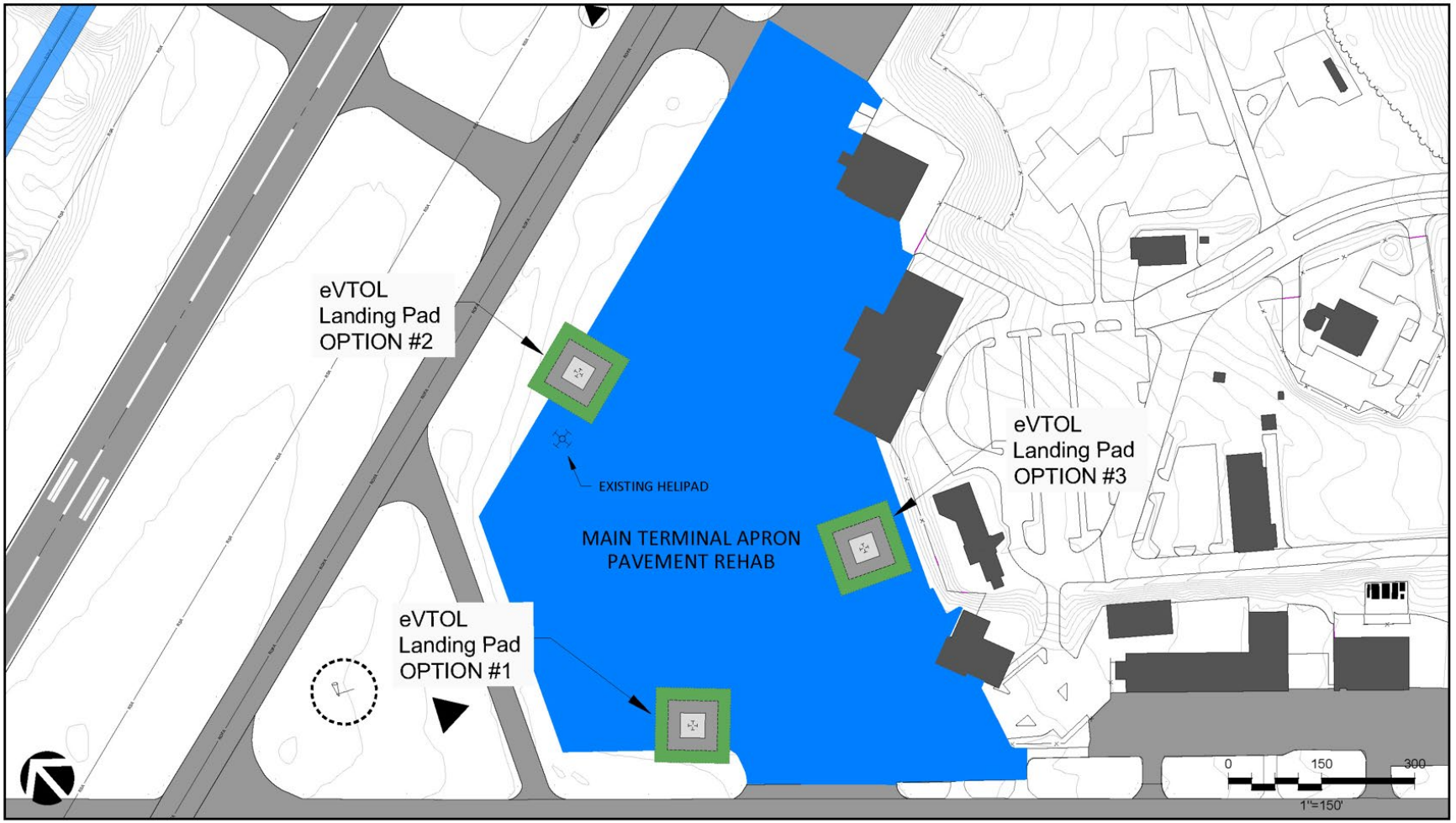


Figure 5-18: Potential Vertiport Options



Source: Michael Baker International, 2022.

5.6 Recommended Landside Development

The overall objective of the landside development at the Airport is the provision of facilities which are conveniently located and accessible to the community and which accommodate the specific requirements of airport users. The concepts for landside development at the FTY are presented below and shown in **Figure 5-19** through **Figure 5-23**.

Administration Building

As mentioned in Chapter 1, the airport's original terminal building has deteriorated over the years. Because of the deteriorating condition of the building, airport management offices are located adjacent to the ATCT and directly south of the original Airport Administration Building. Within this study, plans to demolish the current Administration Building in order to construct a new Administration Building within the existing footprint are in place.

ARFF Building

As previously stated, a full renovation of the ARFF facility is being planned during the time of this study. In the immediate future the airport ARFF and administration functionalities will be housed under one roof. A portion of the building is set for airport administrative purposes within the newly renovated ARFF Building until the proposed Administration Building completes construction. Proposed ARFF building architectural rendering is shown in **Figure 5-19**.

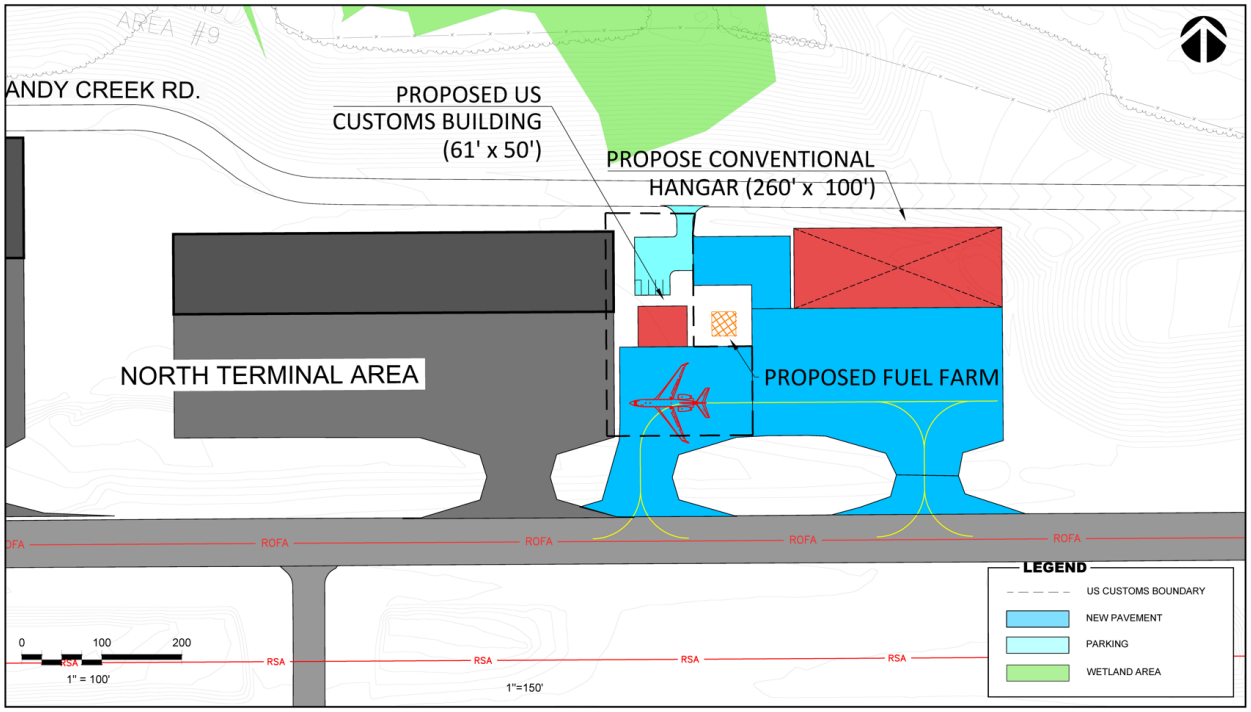
Figure 5-19: ARFF Building Entrance and Rear

Source: Goodes Van Slyke, 2022.

US Customs Facility

A dedicated US Customs Facility is under design to support existing activity and continued growth of international operations at FTY. The selected location for the future facility is located in the North Terminal Area shown in **Figure 5-20**.

Figure 5-20: Proposed US Customs Facility



Source: Michael Baker International, 2022.

5.7 Additional Landside Storage Capacity

Runway 14-32 does not meet crosswind runway justification or support operational capacity criteria and therefore ranks low for investments in maintenance and improvements. To better service FTY and its users, a plan to repurpose the area for aircraft storage is examined. The proposed hangar size is sufficient to accommodate the wingspans of aircraft expected to operate at FTY.

Alternative 1 – Maximize Aircraft Storage

Alternative 1 shown in **Figure 5-21** depicts a total of eight 100’ by 125’ hangars with administration space aligned down Runway 32 and Taxiway A amounting to a total of 40,982 SY of potential leasable space. Direct access to parking is provided for four of the hangars position on Taxiway A. Taxiway B is reconfigured and shifted east towards the Main Terminal Apron. An additional taxilane is built to provide circulation and access. Space for potential flight school is provided southeast of the proposed hangars. To eliminate pilot confusion outstanding pavement will be removed.

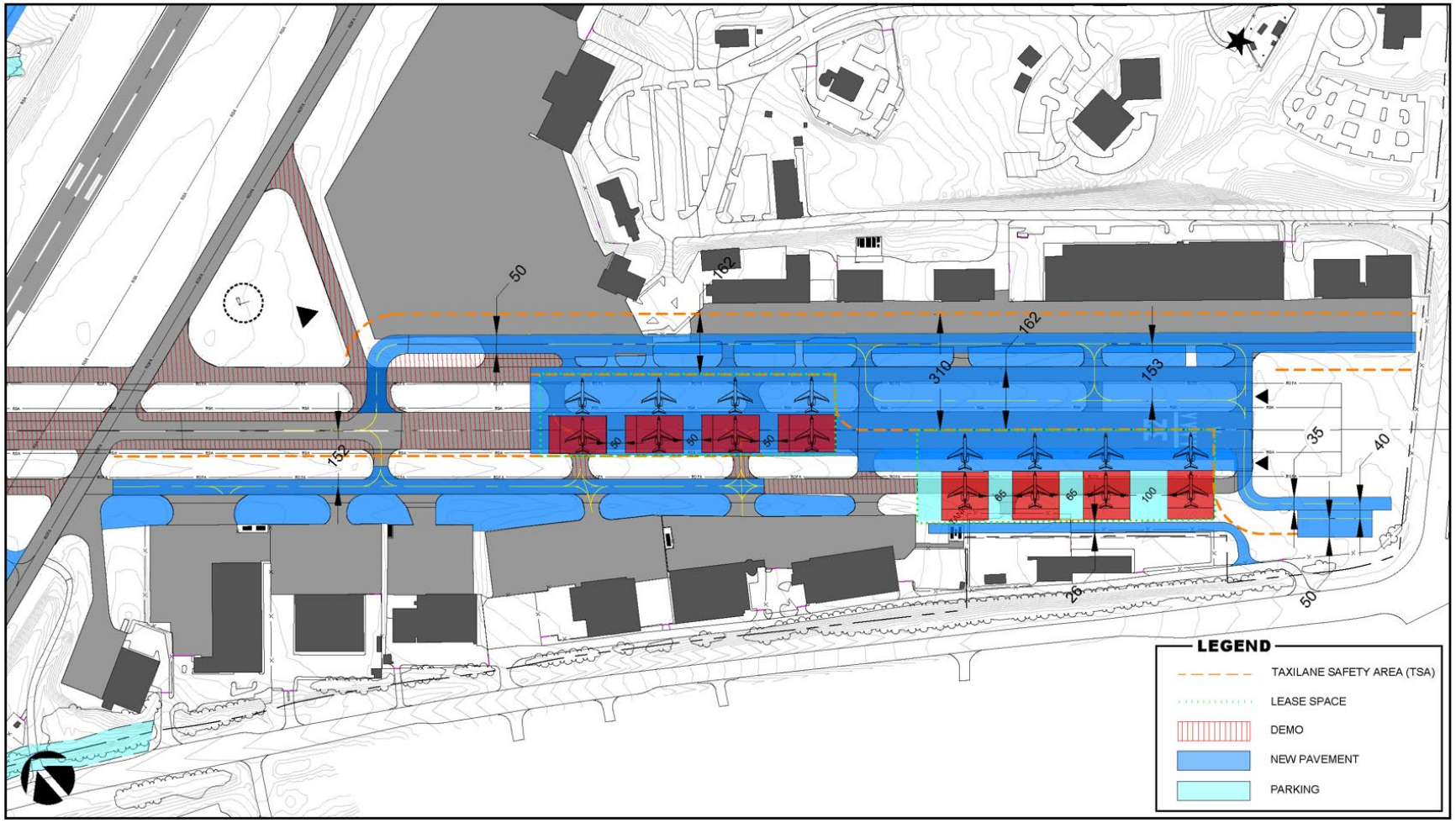
Advantages

- Provides the most hangar storage capacity.

Disadvantages

- No automobile access to four of the hangars.
- Limited tenant parking.

Figure 5-21:Runway 14-32 Corporate Development Concept Alternative 1



Source: Michael Baker International, 2022.

Alternative 2 – Increase Ramp Space

Alternative 2 shown in **Figure 5-22** depicts a total of four 100' by 125' hangars with administration space aligned on Taxiway A, totaling 20,370 SY of potential leasable space. Direct access to parking is provided. This alternative looks at maintaining much of existing Runway 32 pavement by converting it into a TDG 2B taxilane. Portions of Taxiway B is planned to be reconfigured and shifted east towards the Main Terminal Apron. An additional taxilane is built to provide circulation and access. Space for potential flight school is provided southeast of the proposed hangars Taxiway A is rehabilitated and joins the new taxilane west of the proposed hangars.

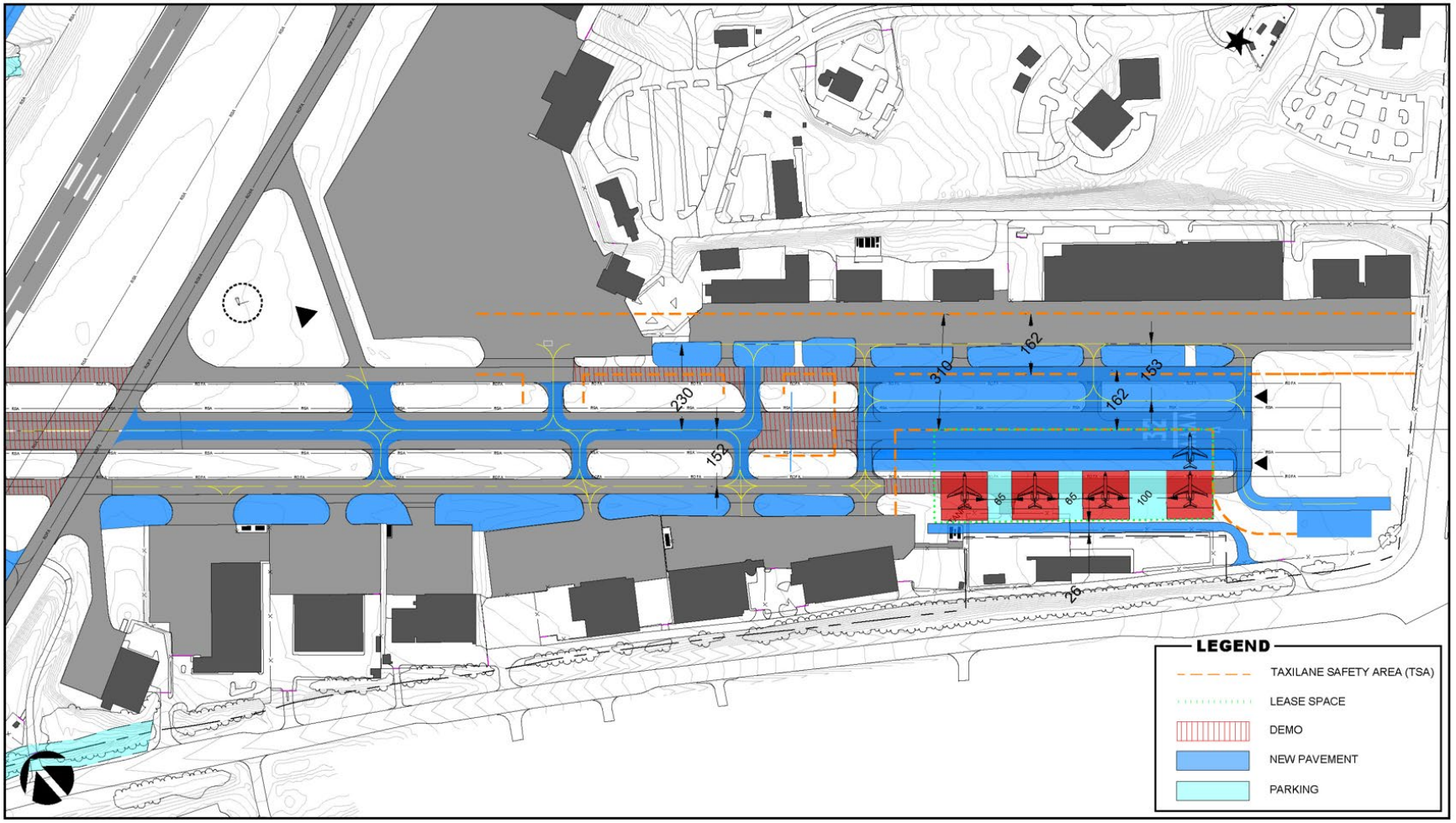
Advantages

- Repurposes much of Runway 32 pavement

Disadvantages

- Provides the least amount of hangar capacity
- Odd circulation

Figure 5-22: Runway 14-32 Corporate Development Concept Alternative 2



Source: Michael Baker International, 2022.

Alternative 3 – Preferred Alternative

Alternative 3 shown in **Figure 5-23** depicts a total of six 100' by 125' hangars with administration space aligned on Taxiway A as well as within a portion of Runway 32 RPZ amounting to 24,341 SY of potential leasable space. Direct access to parking is provided to four of the hangars. Similar to Alternative 2, this alternative looks at maintaining much of existing Runway 32 pavement by converting it into a TDG 2B taxilane Portions of Taxiway B is converted to a taxilane while portions of Taxiway A is closed. An additional taxilane is planned to allow for access to the hangars within Runway 32 RPZ. Space for potential flight school is provided southeast of the proposed hangars.

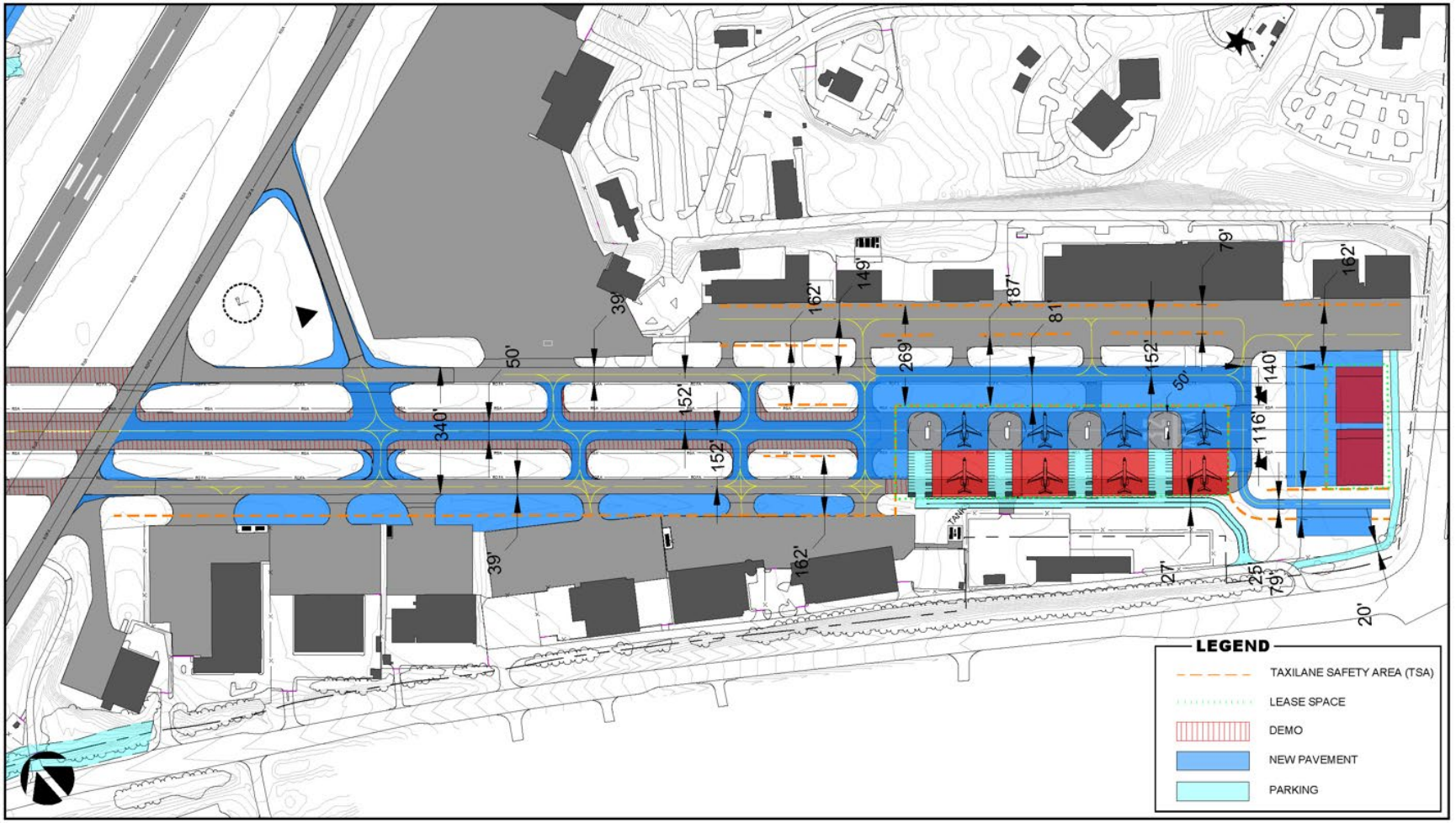
Advantages

- Repurposes much of Runway 32 pavement
- Better aircraft circulation

Disadvantages

- Less hangar space compared to Alternative 1

Figure 5-23: Preferred Runway 14-32 Corporate Development Concept



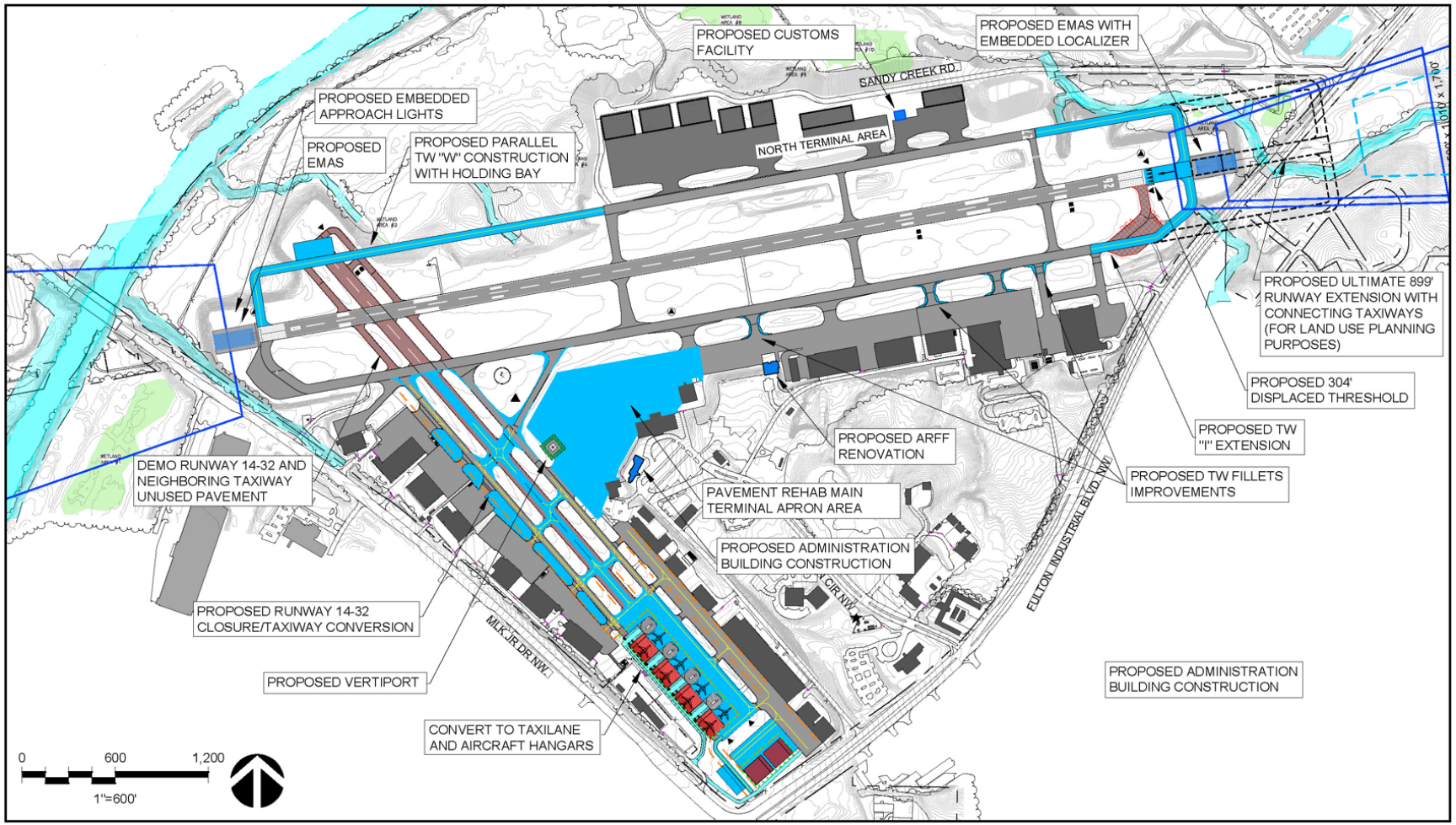
Source: Michael Baker International, 2022.

5.8 Preferred Development Concept

Numerous development considerations related to both the airside and landside have been presented. On the airside, the major improvements are related to airfield include runway safety area improvements, geometry improvements, taxiway extension and potential repurposing of Runway 14-32. The alternatives presented focused on meeting future facility needs at the airport while maintaining operational efficiency and safety standards. **Figure 5-24** presents the overall preferred airport development concept for the twenty-year planning period and beyond. This concept will be carried forward into the ALP and Master Plan CIP. The major projects identified on the concept include:

- Runway 8-26 RSA Improvements
- Runway 8 EMAS with 304' Lead-in Extension
- Runway 26 EMAS
- Taxiway (TDG 2B) Improvements
- Proposed Runway 14-32 Conversion
- North Terminal Area Improvements
- Main Terminal Apron Pavement Rehab
- Proposed Vertiport
- Support Facilities: ARFF, Customs

Figure 5-24: Preferred Development Concept



Source: Michael Baker International, 2022.

AIRPORT LAYOUT PLAN

FULTON COUNTY

Michael Baker
INTERNATIONAL

Chapter 6 Airport Layout Plan

6.1 Introduction

The ALP represents a group of drawings that serve as the primary tool to guide growth at the airport throughout the 20-year planning period and beyond. The ALP set was reduced from its full-size of 24" x 36" to be incorporated in this chapter for easy reference. The drawings in this ALP set include:

- Title Sheet,
- Airport Data Sheet,
- Existing Conditions Drawing,
- Airport Layout Drawing,
- Basing Area Plan – Central Area,
- Basing Area Plan – South Quadrant,
- Basing Area Plan – North Terminal Area,
- Airport Airspace Drawings (3),
- Inner Portion of Approach Surface Drawings (4),
- Runway Departure Surface Drawings,
- Airport Land Use Drawing, and
- Airport Property Inventory Map – Exhibit A.

6.2 Title Sheet

This sheet serves as the ALP Drawing Set cover sheet and provides information to include the official airport name, airport owner, associated city and state and the party responsible for preparing the ALP set. An index of drawings, graphic representations of the airport location and the airport vicinity are also presented on the title sheet. Approval blocks are provided for the Airport Sponsor and Federal Aviation Administration.

Refer to **Drawing 1** in the ALP Drawing Set provided at the end of this chapter.

6.3 Airport Data Sheet

The Airport Data Table provides basic airport data and key planning criteria for initial and ultimate timeframes. This table includes airport elevation, airport reference point, airport reference code, NAVAIDS, design aircraft and taxiway lighting. The table provides the mean maximum temperature of the hottest year for the airport site, which is utilized in runway length analysis. The table also includes designated roles within the state and federal aviation systems.

The Runway Data Table provides details related to the initial and ultimate runway and associated facilities. The table includes runway length/width, wind coverages, runway design code, critical aircraft, true bearing, effective gradient, runway lighting, pavement strength, and surface composition. The table also provides FAA design criteria for each runway based upon planned instrument approaches and weather minimums, including approach slopes, runway design code, approach reference code, departure and reference code. The table provides dimensions of safety elements, including RSA, OFA, OFZ, and RPZ.

The Declared Distance Table provides information pertaining to specific lengths of runway that are published for aircraft operations, specifically when taking off or landing.

Two wind roses are presented to demonstrate crosswind coverages of each runway end in All-Weather and IFR conditions. Ten years of weather data is collected from a weather station located at FTY for period of 2010-2019.

Refer to **Drawing 2** in the ALP Drawing Set provided at the end of this chapter.

6.4 Existing Conditions Drawing

The Existing Conditions Drawing is a graphical representation, to scale, of the current conditions of existing airport facilities at Fulton County Executive Airport – Charlie Brown Field. This drawing is similar to the Airport Layout Drawing however it does not depict proposed improvements. The intent of this drawing is to provide a less cluttered depiction of existing facilities than that of the ALP.

Refer to **Drawing 3** in the ALP Drawing Set provided at the end of this chapter.

6.5 Airport Layout Drawing

The Airport Layout Plan Drawing (ALP) depicts all existing and planned future airport facility developments as proposed within the 20-year Airport Master Plan. To facilitate the review of planned facility improvements, separate ALPs depict existing/future and ultimate conditions respectively. Only the Future ALP is accepted, conditionally approved and retained on-file by the FAA for future (i.e. FAA) funding authorization and/or participation. The ALP provides informational and dimensional data to demonstrate conformance with current and applicable FAA airport design standards as prescribed in FAA AC 150/5300-13B, *Airport Design*. Denoted or depicted ALP information includes, but is not limited to: runways, taxiways, airfield lighting, visual and electronic navigational aids, terminal facilities, hangars, other non-aviation or support buildings, aircraft parking areas, automobile and truck parking, and airport access elements, as well as general, aerial photogrammetric mapping and geodetic survey source notes.

Refer to **Drawing 4** in the ALP Drawing Set provided at the end of this chapter.

6.6 Basing Area Plans

The Terminal Area Plans provide greater details of the main basing areas at a scale of 1”=100’. Due to the location of facilities, the basing area plan is separated into Central Area, South Quadrant, and North Terminal Area drawings.

Refer to **Drawings 5-7** in the ALP Drawing Set provided at the end of this chapter.

6.7 Airport Airspace Drawings

These six sheets incorporate a graphic representation of the imaginary surfaces surrounding the airport as described within 14 CFR Part 77, Safe, Efficient Use, and Preservation of Navigable Airspace. The imaginary surfaces are established in relation to the airport elevation, the runway ends, runway end elevations, and define those areas where the height of objects should be regulated for the safe operation of aircraft. Imaginary surfaces include the following: Approach Surface, Transitional Surface, Horizontal Surface and Conical Surface. The size of each imaginary surface is based on the runway category and type of existing, or planned approach, whichever is the most demanding. Elevations of the Part 77 surfaces described in the drawing are based upon an airport elevation of 841.1 ft AMSL.

Obstruction data for these drawings are based on obstruction analysis prepared by Woolpert, Inc, initially done in 2020 at an accuracy of 1-foot vertically, 3-feet horizontally. Each obstruction is identified in the Obstruction Data Table. The table also includes the following: location (lat/long), type, city, height AGL, height AMSL, existing obstruction lighting, markings, FAA Aeronautical Study Number, amount of penetration, source of data and proposed action. Several obstructions noted in the table will need to be evaluated by the FAA to determine if the obstruction requires lighting, marking, lowering or removal.

Each drawing identifies the boundaries of 14 CFR Part 77 Approach Surfaces, Threshold Siting Surfaces (as defined in Table 3-4 of FAA AC 150/5300-13) and the associated slopes related to each surface. The dimensions of these surfaces are dependent upon the type of instrument approaches planned to each runway end and the visibility minimums planned for that approach.

The drawings also provide the boundaries of the initial and ultimate runway protections zones. The dimensions of the RPZs are based upon the lowest visibility minimums of the planned instrument approaches and the approach category of the critical aircraft. The RPZ function is to enhance the protection of people and property on the ground. Where practical, airport owners should own the property under the runway approach and departure areas to at least the limits of the RPZ. It is desirable to clear the entire RPZ of all above ground objects. Where this is impractical, airport owners, at a minimum, should maintain the RPZ clear of all facilities supporting incompatible land activities. See FAA Memorandum, *Interim Guidance on Land Uses Within a Runway Protection Zone*, dated 9/27/2012, for guidance on incompatible activities.

Refer to **Drawings 8-10** in the ALP Drawing Set provided at the end of this chapter.

6.8 Inner Portion of the Approach Surface Drawings

The Inner Portion of the Approach Drawings depict natural and man-made features in the vicinity of and along the inner approach path to each runway end. The large-scale plan and profile views facilitate the identification of potential obstructions that lie within areas that should be free of objects that may preclude safe aircraft operations. The purpose of the drawing is also to identify land where acquisition or easements may be required. Obstructions identified in these drawings were obtained from an aeronautical survey that was captured in September 2020. In the future, additional field surveys at regularly scheduled intervals should be conducted to ensure clear approaches.

Each drawing identifies the boundaries of 14 CFR Part 77 Approach Surfaces, Threshold Siting Surfaces (as defined in Section 3.6 of FAA AC 150/5300-13B) and the associated slopes related to each surface. The dimensions of these surfaces are dependent upon the type of instrument approaches planned to each runway end and the visibility minimums planned for that approach.

The Obstruction Data Tables identify each obstruction by number, type of obstruction, top elevation of the object, amount of penetration and proposed action. In the plan view, obstructions are identified using symbols representing the type of surface that is penetrated (Part 77 or Threshold Siting). Trees that will likely grow into the surfaces in the future are also identified. While all existing and future obstructions should be removed if possible, Threshold Siting penetrations are critical because not removing these penetrations may result in a displaced landing threshold. In the future, additional field surveys should be performed at regularly scheduled intervals to ensure clear approach and departure surfaces.

The drawings also provide the boundaries of the initial and ultimate runway protections zones. The dimensions of the RPZs are based upon the lowest visibility minimums of the planned instrument approaches and the approach category of the critical aircraft. The RPZ function is to enhance the protection of people and property on the ground. Where practical, airport owners should own the property under the runway approach and departure areas to at least the limits of the RPZ. It is desirable to clear the entire RPZ of all above ground objects. Where this is impractical, airport owners, at a minimum, should maintain the RPZ clear of all facilities supporting incompatible land activities. See FAA Memorandum, *Interim Guidance on Land Uses Within a Runway Protection Zone*, dated 9/27/2012, for guidance on incompatible activities.

Separate drawings are provided for each runway end.

Refer to **Drawings 11-14** in the ALP Drawing Set provided at the end of this chapter.

6.9 Departure Surface Drawings

The Runway Departure Surface Drawing consists of large-scale plan views of the departure surfaces for Runway 8-26 at FTY. The Departure Surface Drawing depicts the ground contours along the extended runway centerline plus any significant natural or non-natural objects located along the extended runway centerline and also provides a top elevation for those objects. Commonly shown objects include buildings, roads, ditches, and trees. Surface penetration and disposition information is included in the associated obstruction data tables.

Refer to **Drawings 15** in the ALP Drawing Set provided at the end of this chapter.

6.10 Airport Land Use Drawing

The land use drawing depicts existing land uses for off-airport property in the vicinity of the airport and proposed land uses within the airport property. The purpose of this plan is to provide land use compatibility guidance for municipalities within the vicinity of the airport in order to ensure compatibility with projected airport operations Where conflicts are apparent and an incompatibility exists, mitigations measures are recommended.

Refer to **Drawings 16** in the ALP Drawing Set provided at the end of this chapter.

6.11 Airport Property Map – Exhibit A

Often referred to as “Exhibit A,” the airport property map documents the current and future airport boundary in a graphical and tabular form. It serves as a record of property transactions for grant evaluation purposes and to analyze future aeronautical use of land acquired with federal funds.

The drawing depicts the planned initial and ultimate boundary lines overlaid onto current and future airport facilities. Data tables provide a parcel numbering system, grantor, proposed property interest (fee simple, easement), type of conveyance, date of acquisition and purpose of acquisition. The tables also provide the deedbook and page that the transaction is recording at the courthouse and FAA grant number (if applicable). Any existing or future easements encumbered on the property should be recorded on this drawing. As land is acquired, the drawing should be updated frequently. An up-to-date Exhibit A is normally required to be attached to future FAA grant agreements.

Refer to **Drawing 17** in the ALP Drawing Set provided at the end of this chapter.

Figure 6-1: Title Sheet

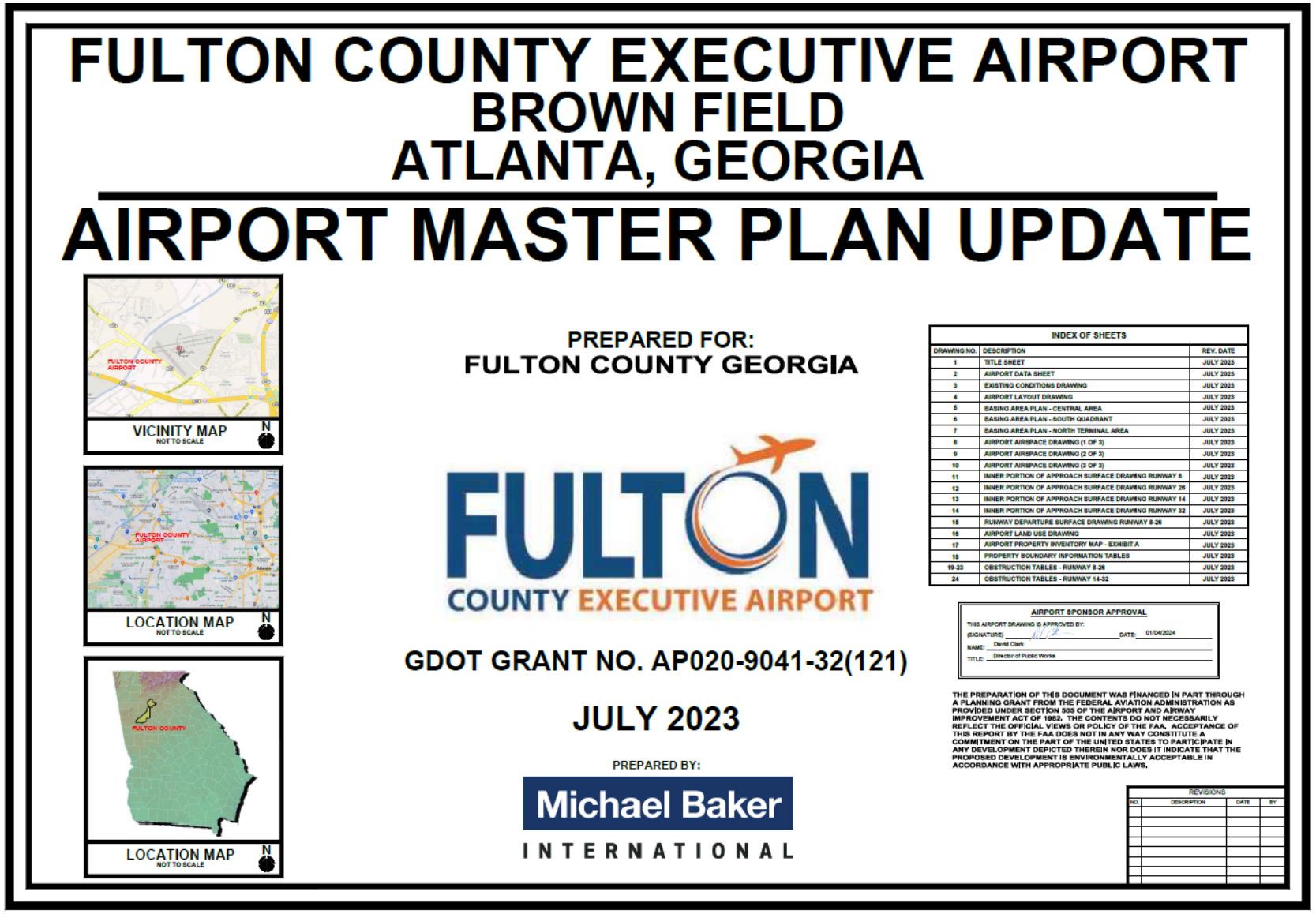
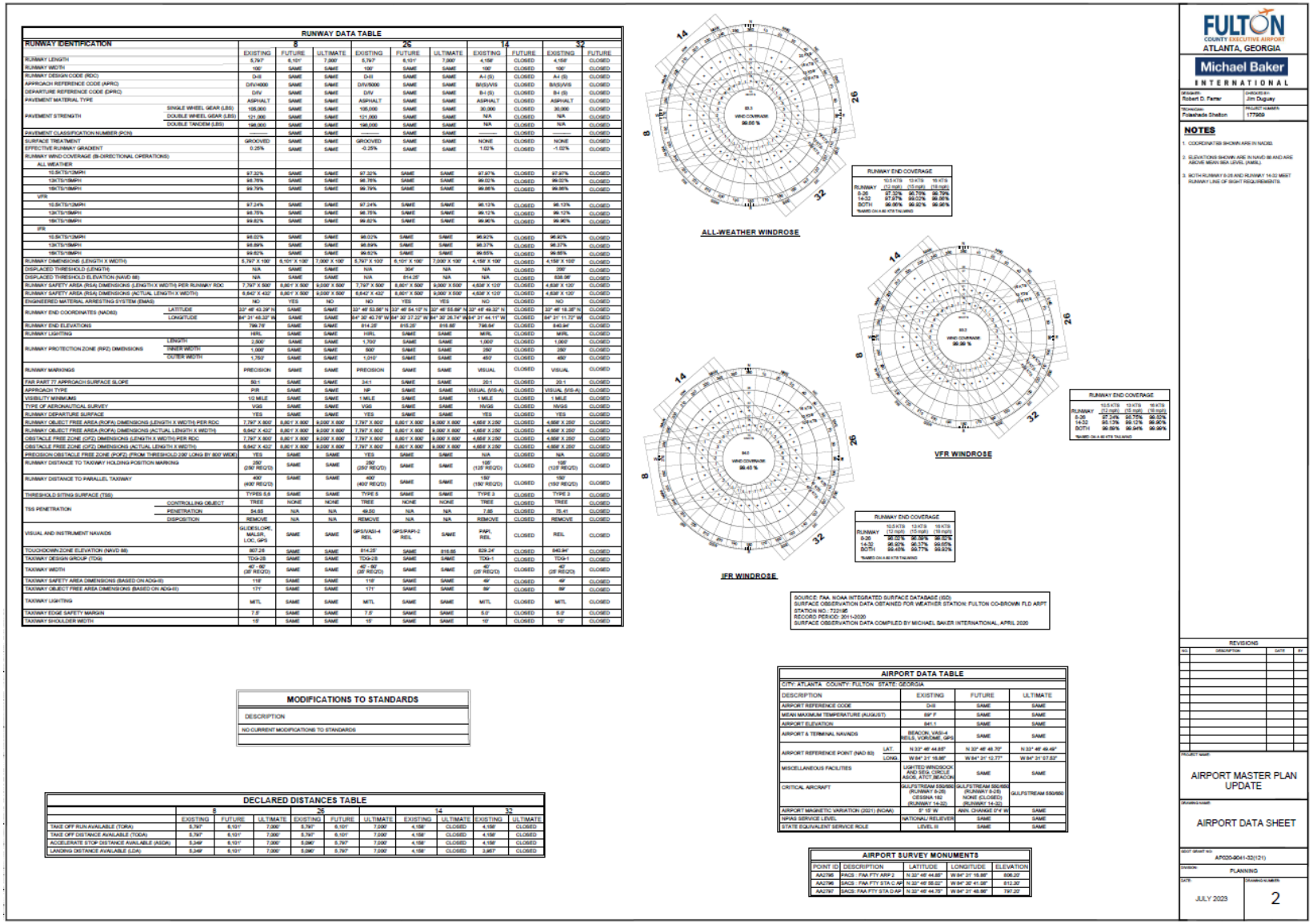


Figure 6-2: Airport Data Sheet



RUNWAY DATA TABLE

RUNWAY IDENTIFICATION		8			26			14		32	
		EXISTING	FUTURE	ULTIMATE	EXISTING	FUTURE	ULTIMATE	EXISTING	FUTURE	EXISTING	FUTURE
RUNWAY LENGTH		5,797	6,101'	7,000'	5,797	6,101'	7,000'	4,158'	CLOSED	4,158'	CLOSED
RUNWAY WIDTH		100'	SAME	SAME	100'	SAME	SAME	100'	CLOSED	100'	CLOSED
RUNWAY DESIGN CODE (RDC)		D-III	SAME	SAME	D-III	SAME	SAME	A-I (S)	CLOSED	A-I (S)	CLOSED
APPROACH REFERENCE CODE (APRC)		D/V/4000	SAME	SAME	D/V/5000	SAME	SAME	B/(S)/VIS	CLOSED	B/(S)/VIS	CLOSED
DEPARTURE REFERENCE CODE (DPRC)		D/V	SAME	SAME	D/V	SAME	SAME	B-I (S)	CLOSED	B-I (S)	CLOSED
PAVEMENT MATERIAL TYPE		ASPHALT	SAME	SAME	ASPHALT	SAME	SAME	ASPHALT	CLOSED	ASPHALT	CLOSED
PAVEMENT STRENGTH	SINGLE WHEEL GEAR (LBS)	105,000	SAME	SAME	105,000	SAME	SAME	30,000	CLOSED	30,000	CLOSED
	DOUBLE WHEEL GEAR (LBS)	121,000	SAME	SAME	121,000	SAME	SAME	N/A	CLOSED	N/A	CLOSED
	DOUBLE TANDEM (LBS)	196,000	SAME	SAME	196,000	SAME	SAME	N/A	CLOSED	N/A	CLOSED
PAVEMENT CLASSIFICATION NUMBER (PCN)		———	SAME	SAME	———	SAME	SAME	———	CLOSED	———	CLOSED
SURFACE TREATMENT		GROOVED	SAME	SAME	GROOVED	SAME	SAME	NONE	CLOSED	NONE	CLOSED
EFFECTIVE RUNWAY GRADIENT		0.28%	SAME	SAME	-0.28%	SAME	SAME	1.02%	CLOSED	-1.02%	CLOSED
RUNWAY WIND COVERAGE (BI-DIRECTIONAL OPERATIONS)											
ALL WEATHER											
10.5KTS/12MPH		97.32%	SAME	SAME	97.32%	SAME	SAME	97.97%	CLOSED	97.97%	CLOSED
13KTS/15MPH		98.76%	SAME	SAME	98.76%	SAME	SAME	99.02%	CLOSED	99.02%	CLOSED
18KTS/18MPH		99.79%	SAME	SAME	99.79%	SAME	SAME	99.86%	CLOSED	99.86%	CLOSED
VFR											
10.5KTS/12MPH		97.24%	SAME	SAME	97.24%	SAME	SAME	96.13%	CLOSED	96.13%	CLOSED
13KTS/15MPH		98.75%	SAME	SAME	98.75%	SAME	SAME	96.12%	CLOSED	96.12%	CLOSED
18KTS/18MPH		99.82%	SAME	SAME	99.82%	SAME	SAME	99.96%	CLOSED	99.96%	CLOSED
IFR											
10.5KTS/12MPH		96.02%	SAME	SAME	96.02%	SAME	SAME	96.82%	CLOSED	96.82%	CLOSED
13KTS/15MPH		96.89%	SAME	SAME	96.89%	SAME	SAME	96.37%	CLOSED	96.37%	CLOSED
18KTS/18MPH		99.82%	SAME	SAME	99.82%	SAME	SAME	99.85%	CLOSED	99.85%	CLOSED
RUNWAY DIMENSIONS (LENGTH X WIDTH)		5,797 X 100'	6,101' X 100'	7,000' X 100'	5,797 X 100'	6,101' X 100'	7,000' X 100'	4,158' X 100'	CLOSED	4,158' X 100'	CLOSED
DISPLACED THRESHOLD (LENGTH)		N/A	SAME	SAME	N/A	304'	N/A	N/A	CLOSED	290'	CLOSED
DISPLACED THRESHOLD ELEVATION (NAVD 88)		N/A	SAME	SAME	N/A	814.25'	N/A	N/A	CLOSED	838.06'	CLOSED
RUNWAY SAFETY AREA (RSA) DIMENSIONS (LENGTH X WIDTH) PER RUNWAY RDC		7,797 X 500'	8,801' X 500'	9,000' X 500'	7,797 X 500'	8,801' X 500'	9,000' X 500'	4,638' X 120'	CLOSED	4,638' X 120'	CLOSED
RUNWAY SAFETY AREA (RSA) DIMENSIONS (ACTUAL LENGTH X WIDTH)		6,642' X 432'	8,801' X 500'	9,000' X 500'	6,642' X 432'	8,801' X 500'	9,000' X 500'	4,638' X 120'	CLOSED	4,638' X 120'	CLOSED
ENGINEERED MATERIAL ARRESTING SYSTEM (EMAS)		NO	YES	NO	NO	YES	YES	NO	CLOSED	NO	CLOSED
RUNWAY END COORDINATES (NAD83)	LATITUDE	33° 46' 43.29" N	SAME	SAME	33° 46' 52.06" N	33° 46' 54.10" N	33° 46' 55.89" N	33° 46' 49.32" N	CLOSED	33° 46' 18.38" N	CLOSED
	LONGITUDE	84° 31' 48.32" W	SAME	SAME	84° 32' 43.78" W	84° 30' 37.22" W	84° 32' 26.74" W	84° 31' 44.11" W	CLOSED	84° 31' 11.72" W	CLOSED
RUNWAY END ELEVATIONS		799.78'	SAME	SAME	814.25'	815.25'	815.89'	798.84'	CLOSED	840.94'	CLOSED
RUNWAY LIGHTING		HIRL	SAME	SAME	HIRL	SAME	SAME	MIRL	CLOSED	MIRL	CLOSED
RUNWAY PROTECTION ZONE (RPZ) DIMENSIONS	LENGTH	2,500'	SAME	SAME	1,700'	SAME	SAME	1,000'	CLOSED	1,000'	CLOSED
	INNER WIDTH	1,000'	SAME	SAME	500'	SAME	SAME	250'	CLOSED	250'	CLOSED
	OUTER WIDTH	1,750'	SAME	SAME	1,010'	SAME	SAME	450'	CLOSED	450'	CLOSED
RUNWAY MARKINGS		PRECISION	SAME	SAME	PRECISION	SAME	SAME	VISUAL	CLOSED	VISUAL	CLOSED
FAR PART 77 APPROACH SURFACE SLOPE		50:1	SAME	SAME	34:1	SAME	SAME	20:1	CLOSED	20:1	CLOSED
APPROACH TYPE		PIR	SAME	SAME	NP	SAME	SAME	VISUAL (VIS-A)	CLOSED	VISUAL (VIS-A)	CLOSED
VISIBILITY MINIMUMS		1/2 MILE	SAME	SAME	1 MILE	SAME	SAME	1 MILE	CLOSED	1 MILE	CLOSED
TYPE OF AERONAUTICAL SURVEY		VGS	SAME	SAME	VGS	SAME	SAME	NVGS	CLOSED	NVGS	CLOSED
RUNWAY DEPARTURE SURFACE		YES	SAME	SAME	YES	SAME	SAME	YES	CLOSED	YES	CLOSED
RUNWAY OBJECT FREE AREA (ROFA) DIMENSIONS (LENGTH X WIDTH) PER RDC		7,797' X 800'	8,801' X 800'	9,200' X 800'	7,797' X 800'	8,801' X 800'	9,200' X 800'	4,858' X 250'	CLOSED	4,858' X 250'	CLOSED
RUNWAY OBJECT FREE AREA (ROFA) DIMENSIONS (ACTUAL LENGTH X WIDTH)		6,642' X 432'	8,801' X 800'	9,200' X 800'	7,797' X 800'	8,801' X 800'	9,200' X 800'	4,858' X 250'	CLOSED	4,858' X 250'	CLOSED
OBSTACLE FREE ZONE (OFZ) DIMENSIONS (LENGTH X WIDTH) PER RDC		7,797' X 800'	8,801' X 800'	9,200' X 800'	7,797' X 800'	8,801' X 800'	9,200' X 800'	4,858' X 250'	CLOSED	4,858' X 250'	CLOSED
OBSTACLE FREE ZONE (OFZ) DIMENSIONS (ACTUAL LENGTH X WIDTH)		6,642' X 432'	8,801' X 800'	9,200' X 800'	7,797' X 800'	8,801' X 800'	9,200' X 800'	4,858' X 250'	CLOSED	4,858' X 250'	CLOSED
PRECISION OBSTACLE FREE ZONE (POFZ) (FROM THRESHOLD 200' LONG BY 800' WIDE)		YES	SAME	SAME	YES	SAME	SAME	N/A	CLOSED	N/A	CLOSED
RUNWAY DISTANCE TO TAXIWAY HOLDING POSITION MARKING		250' (240' REQ'D)	SAME	SAME	250' (250' REQ'D)	SAME	SAME	150' (125' REQ'D)	CLOSED	150' (125' REQ'D)	CLOSED
RUNWAY DISTANCE TO PARALLEL TAXIWAY		400' (400' REQ'D)	SAME	SAME	400' (400' REQ'D)	SAME	SAME	150' (150' REQ'D)	CLOSED	150' (150' REQ'D)	CLOSED
THRESHOLD SITING SURFACE (TSS)		TYPES 5,6	SAME	SAME	TYPE 5	SAME	SAME	TYPE 2	CLOSED	TYPE 2	CLOSED
TSS PENETRATION	CONTROLLING OBJECT	TREE	NONE	NONE	TREE	NONE	NONE	TREE	CLOSED	TREE	CLOSED
	PENETRATION	54.65	N/A	N/A	49.50	N/A	N/A	7.85	CLOSED	75.41	CLOSED
	DISPOSITION	REMOVE	N/A	N/A	REMOVE	N/A	N/A	REMOVE	CLOSED	REMOVE	CLOSED
VISUAL AND INSTRUMENT NAVAIDS		GLIDESLOPE, MALSR, LOC, GPS	SAME	SAME	GPS/VASI-4 REIL	GPS/RAPI-2 REIL	SAME	PAPI, REIL	CLOSED	REIL	CLOSED
TOUCHDOWN ZONE ELEVATION (NAVD 88)		807.28	SAME	SAME	814.25'	SAME	815.89	828.24'	CLOSED	840.94'	CLOSED
TAXIWAY DESIGN GROUP (TDG)		TDG-2B	SAME	SAME	TDG-2B	SAME	SAME	TDG-1	CLOSED	TDG-1	CLOSED
TAXIWAY WIDTH		40' - 60' (35' REQ'D)	SAME	SAME	40' - 60' (35' REQ'D)	SAME	SAME	40' (35' REQ'D)	CLOSED	40' (35' REQ'D)	CLOSED
TAXIWAY SAFETY AREA DIMENSIONS (BASED ON ADG-II)		118'	SAME	SAME	118'	SAME	SAME	49'	CLOSED	49'	CLOSED
TAXIWAY OBJECT FREE AREA DIMENSIONS (BASED ON ADG-III)		171'	SAME	SAME	171'	SAME	SAME	89'	CLOSED	89'	CLOSED
TAXIWAY LIGHTING		MITL	SAME	SAME	MITL	SAME	SAME	MITL	CLOSED	MITL	CLOSED
TAXIWAY EDGE SAFETY MARGIN		7.5'	SAME	SAME	7.5'	SAME	SAME	5.0'	CLOSED	5.0'	CLOSED
TAXIWAY SHOULDER WIDTH		15'	SAME	SAME	15'	SAME	SAME	10'	CLOSED	10'	CLOSED

ALL-WEATHER WINDROSE

RUNWAY END COVERAGE

RUNWAY	10.5 KTS (12 mph)	13 KTS (15 mph)	18 KTS (18 mph)
8-26	97.32%	98.76%	99.79%
14-32	97.97%	99.02%	99.86%
BOTH	96.99%	98.82%	99.96%

*BASED ON A 90 KTS TAILWIND

VFR WINDROSE

RUNWAY END COVERAGE

RUNWAY	10.5 KTS (12 mph)	13 KTS (15 mph)	18 KTS (18 mph)
8-26	97.24%	98.75%	99.82%
14-32	96.13%	96.12%	99.96%
BOTH	96.89%	98.84%	99.99%

*BASED ON A 90 KTS TAILWIND

IFR WINDROSE

RUNWAY END COVERAGE

RUNWAY	10.5 KTS (12 mph)	13 KTS (15 mph)	18 KTS (18 mph)
8-26	96.02%	96.89%	99.82%
14-32	96.82%	96.37%	99.85%
BOTH	99.45%	99.77%	99.93%

*BASED ON A 90 KTS TAILWIND

SOURCE: FAA, NOAA INTEGRATED SURFACE DATABASE (ISD)
SURFACE OBSERVATION DATA OBTAINED FOR WEATHER STATION: FULTON CO-BROWN FLD ARPT
STATION NO.: 722195
RECORD PERIOD: 2011-2020
SURFACE OBSERVATION DATA COMPILED BY MICHAEL BAKER INTERNATIONAL, APRIL 2020

MODIFICATIONS TO STANDARDS

DESCRIPTION
NO CURRENT MODIFICATIONS TO STANDARDS

DECLARED DISTANCES TABLE

	8			26			14		32	
	EXISTING	FUTURE	ULTIMATE	EXISTING	FUTURE	ULTIMATE	EXISTING	ULTIMATE	EXISTING	ULTIMATE
TAKE OFF RUN AVAILABLE (TORA)	5,797	6,101'	7,000'	5,797	6,101'	7,000'	4,158'	CLOSED	4,158'	CLOSED
TAKE OFF DISTANCE AVAILABLE (TODA)	5,797	6,101'	7,000'	5,797	6,101'	7,000'	4,158'	CLOSED	4,158'	CLOSED
ACCELERATE STOP DISTANCE AVAILABLE (ASDA)	5,349'	6,101'	7,000'	5,040'	5,797'	7,000'	4,158'	CLOSED	4,158'	CLOSED
LANDING DISTANCE AVAILABLE (LDA)	5,349'	6,101'	7,000'	5,040'	5,797'	7,000'	4,158'	CLOSED	3,957'	CLOSED

AIRPORT DATA TABLE

CITY: ATLANTA COUNTY: FULTON STATE: GEORGIA

DESCRIPTION	EXISTING	FUTURE	ULTIMATE
AIRPORT REFERENCE CODE	D-III	SAME	SAME
MEAN MAXIMUM TEMPERATURE (AUGUST)	89° F	SAME	SAME
AIRPORT ELEVATION	841.1	SAME	SAME
AIRPORT & TERMINAL NAVAIDS	BEACON, VASI-4 REILS, VOR/DME, GPS	SAME	SAME
AIRPORT REFERENCE POINT (NAD 83)	LAT: N 33° 46' 44.85" LONG: W 84° 31' 16.86"	N 33° 46' 48.70" W 84° 31' 12.77"	N 33° 46' 49.49" W 84° 31' 07.83"
MISCELLANEOUS FACILITIES	LIGHTED WINDSOCK AND SEG. CIRCLE, ASOS, ATCT/BEACON	SAME	SAME
CRITICAL AIRCRAFT	GULFSTREAM 550/650 (RUNWAY 8-26) DESIGN-II (RUNWAY 14-32)	GULFSTREAM 650/650 (RUNWAY 8-26) NONE CLOSED) (RUNWAY 14-32)	GULFSTREAM 550/650
AIRPORT MAGNETIC VARIATION (2021) (NOAA)	5° 13' W	ANN. CHANGE 0°4' W	SAME
NPIAS SERVICE LEVEL	NATIONAL/ RELIEVER	SAME	SAME
STATE EQUIVALENT SERVICE ROLE	LEVEL III	SAME	SAME

AIRPORT SURVEY MONUMENTS

POINT ID	DESCRIPTION	LATITUDE	LONGITUDE	ELEVATION
AA2796	FACS - FAA FTY ARP 2	N 33° 46' 44.85"	W 84° 31' 16.86"	836.22'
AA2795	SACS - FAA FTY STA C AP	N 33° 46' 55.02"	W 84° 30' 41.58"	812.30'
AA2797	SACS: FAA FTY STA D AP	N 33° 46' 44.75"	W 84° 31' 46.86"	797.20'

FULTON COUNTY EXECUTIVE AIRPORT
ATLANTA, GEORGIA
Michael Baker INTERNATIONAL

DESIGNED: Robert D. Ferrer | CHECKED BY: Jim Duguay
TECHNICIAN: Folashade Shelton | PROJECT NUMBER: 177959

NOTES
1. COORDINATES SHOWN ARE IN NAD83.
2. ELEVATIONS SHOWN ARE IN NAVD 88 AND ARE ABOVE MEAN SEA LEVEL (AMSL).
3. BOTH RUNWAY 8-26 AND RUNWAY 14-32 MEET RUNWAY LINE OF SIGHT REQUIREMENTS.

REVISIONS

NO.	DESCRIPTION	DATE	BY

PROJECT NAME: AIRPORT MASTER PLAN UPDATE
DRAWING NAME: AIRPORT DATA SHEET
AIRPORT GRANT NO: AP020-9041-32(121)
DIVISION: PLANNING
DATE: JULY 2023
DRAWING NUMBER: 2

Figure 6-3: Existing Conditions Drawing

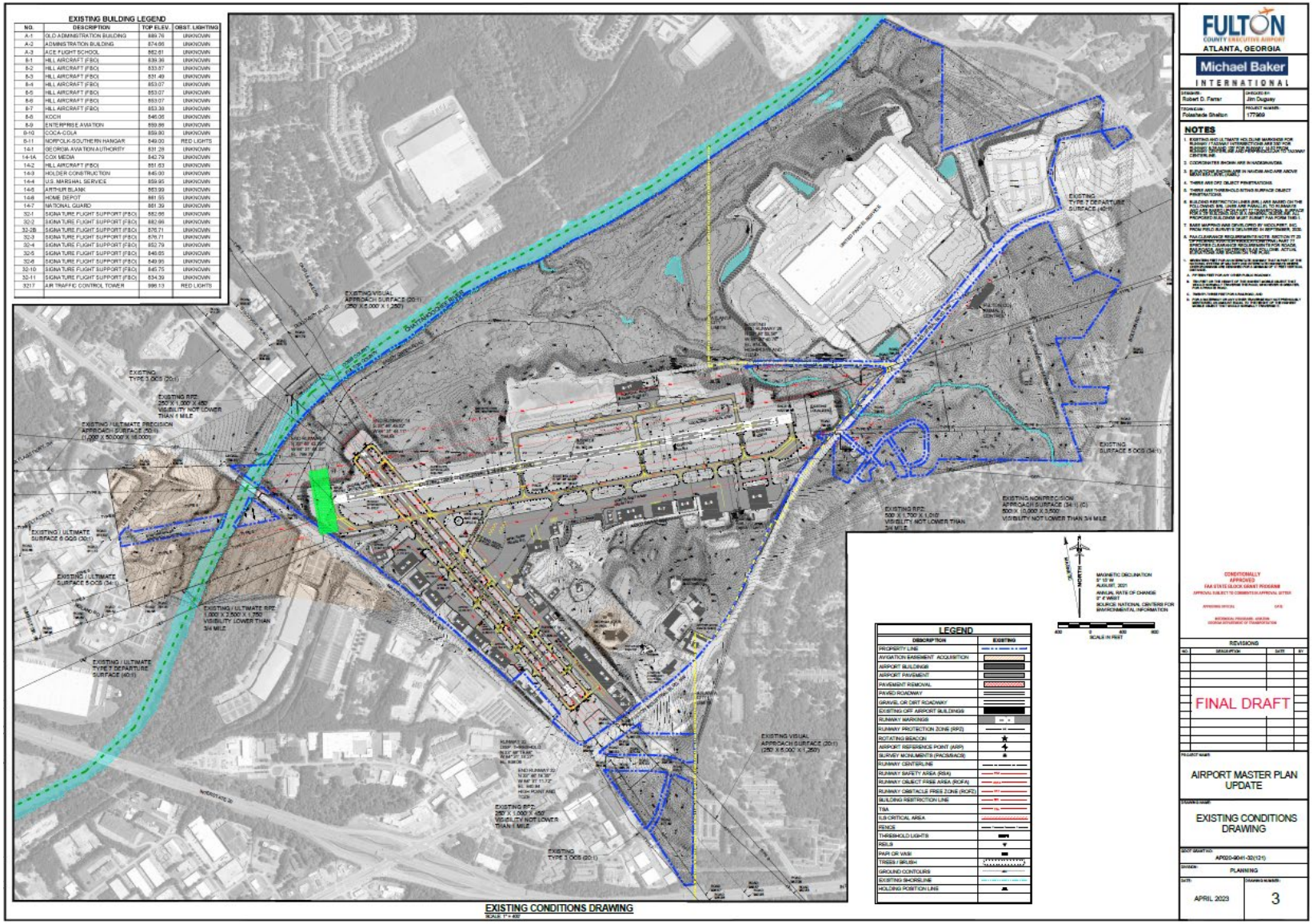


Figure 6-4: FTY Airport Layout Drawing

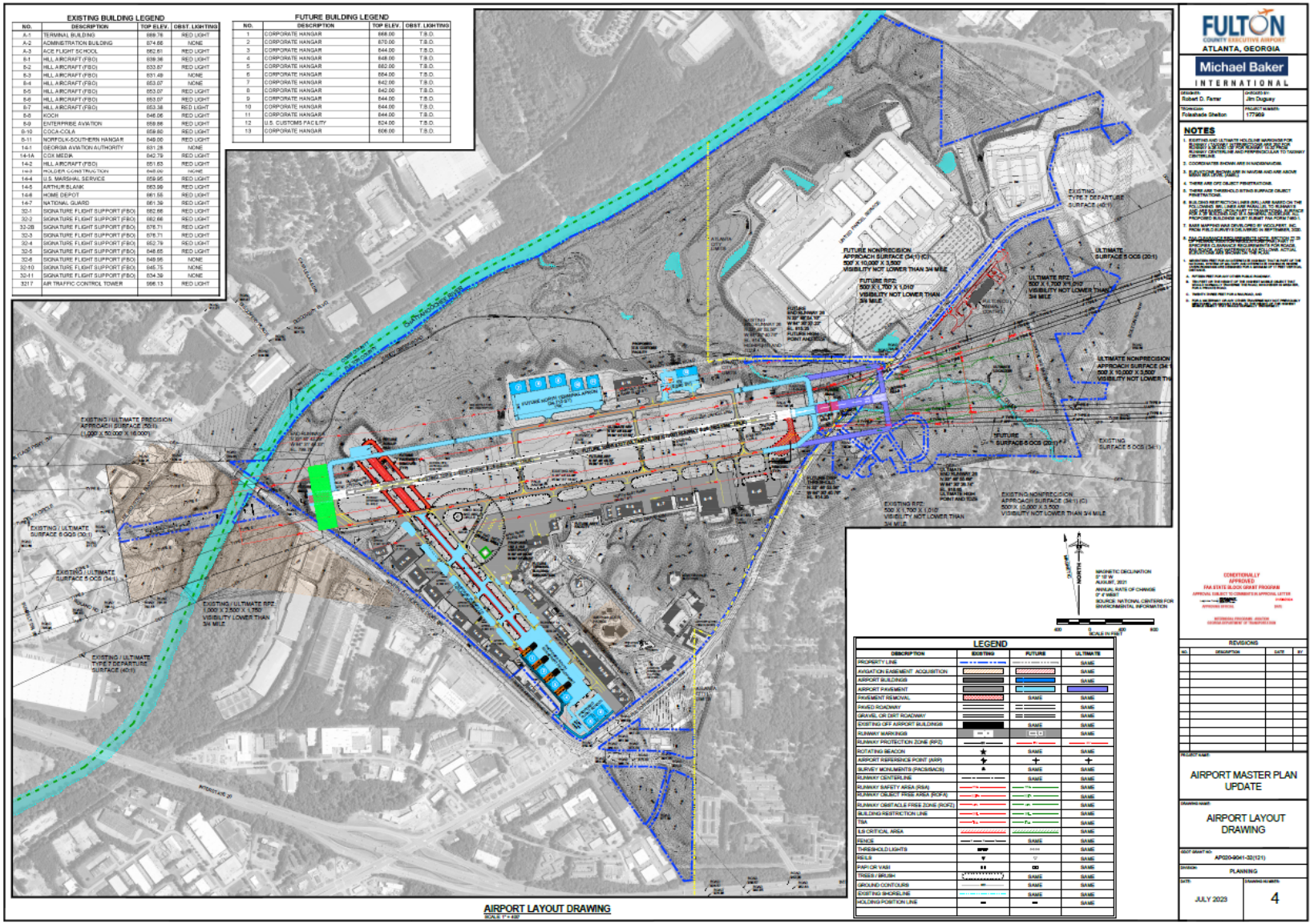


Figure 6-5: Basing Area Plan - Central Area

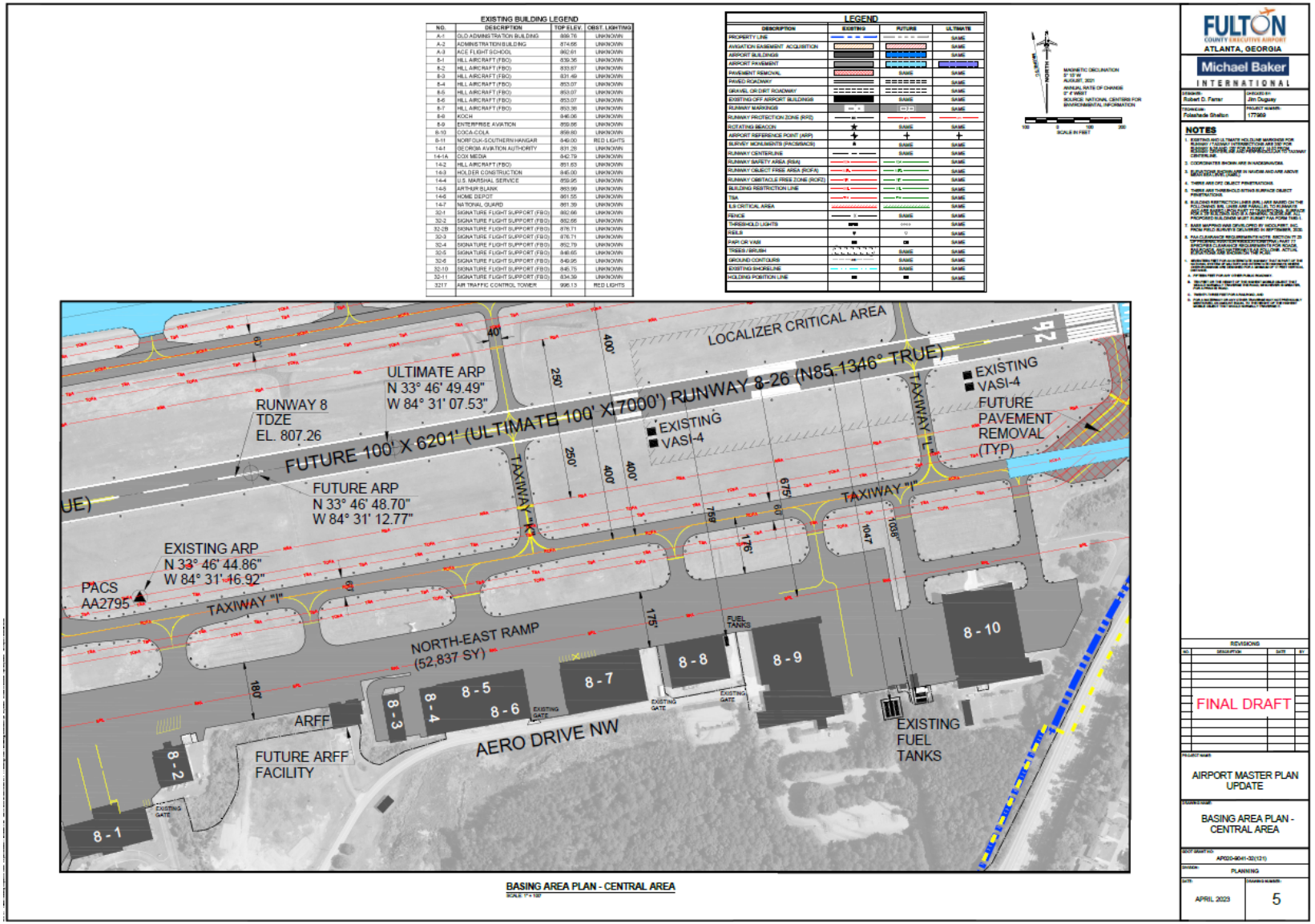


Figure 6-6: Basing Area Plan - South Quadrant

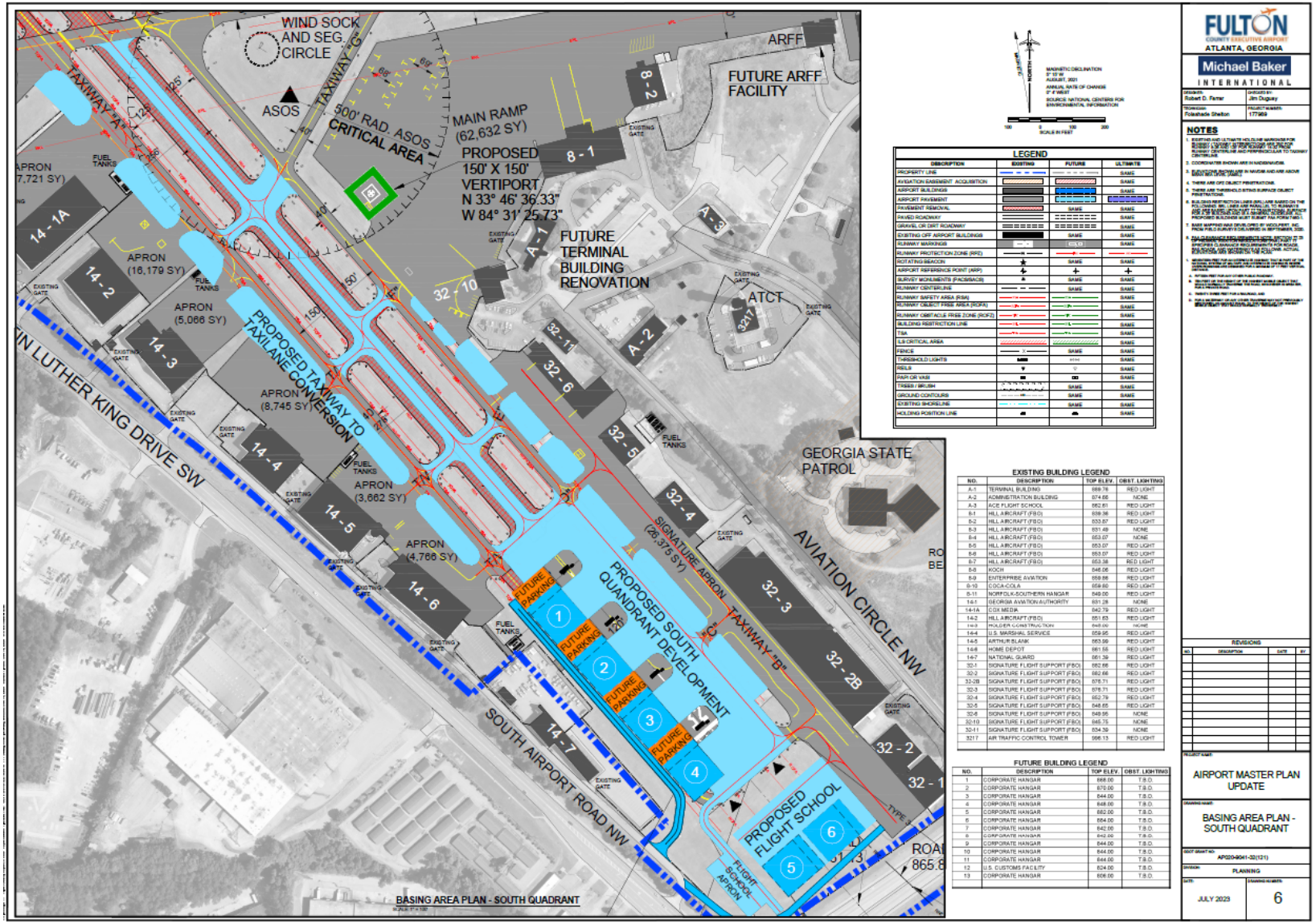


Figure 6-7: Basing Area Plan - North Terminal Area

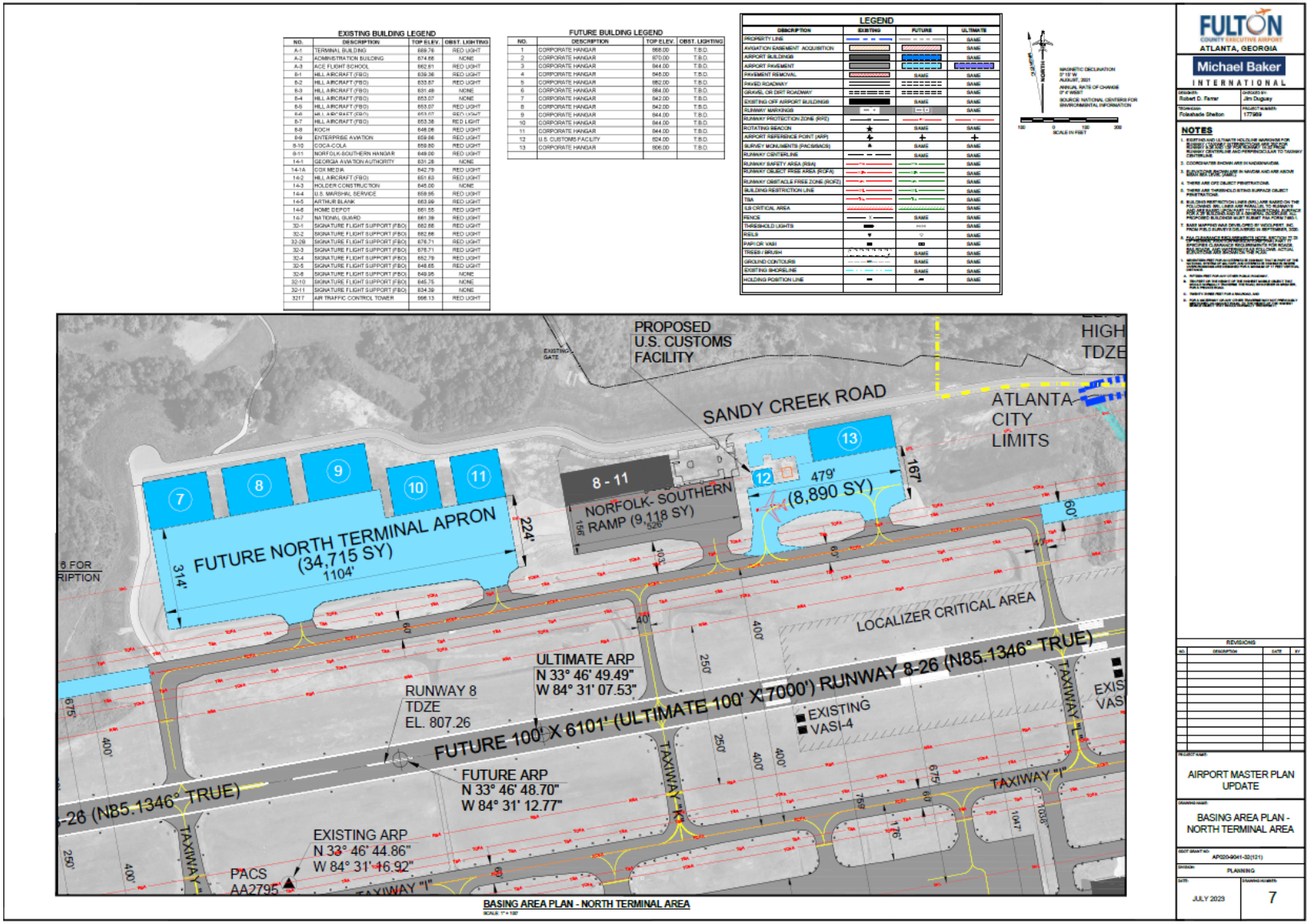


Figure 6-8: Airport Airspace Drawing (1 of 3)

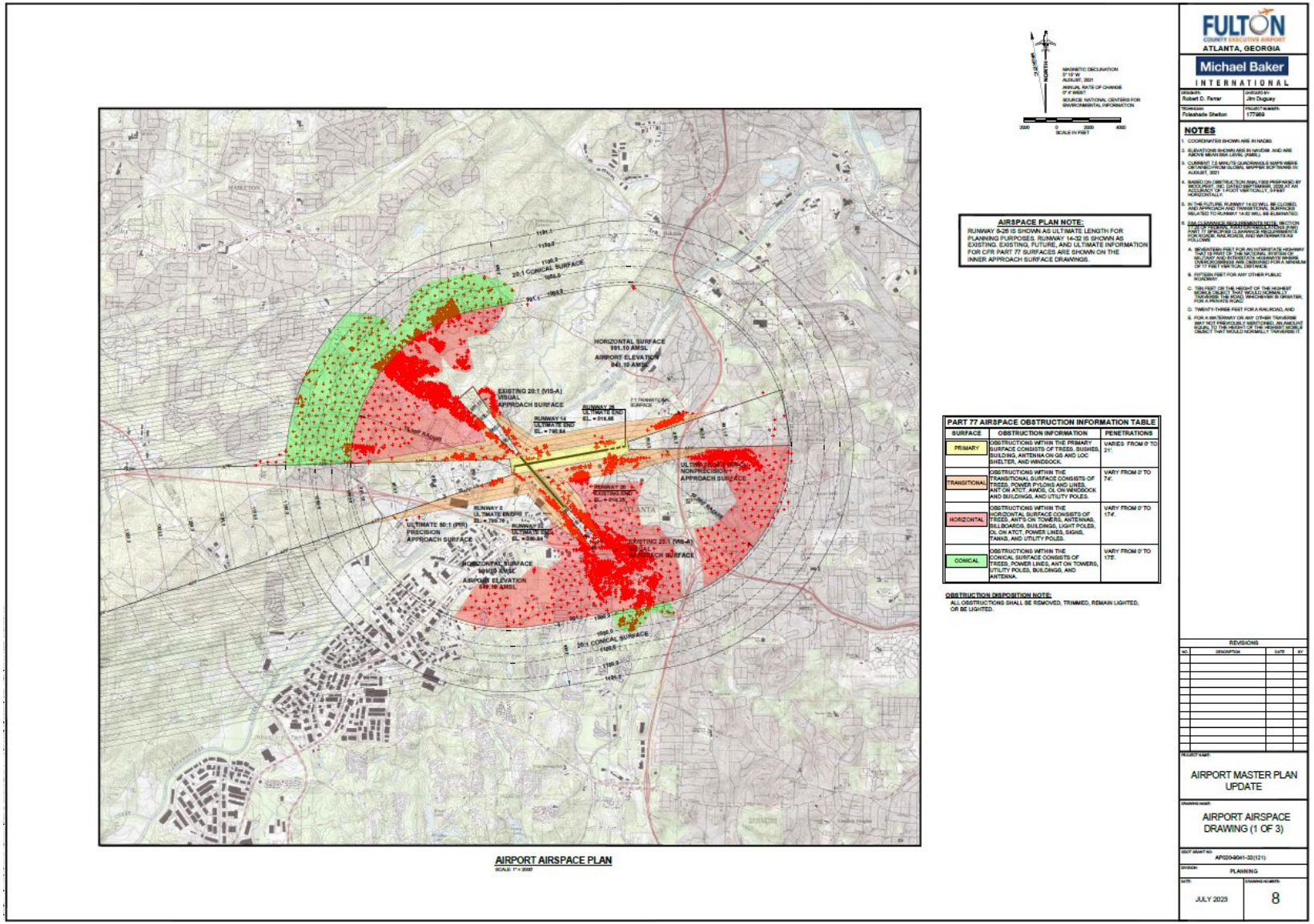


Figure 6-9: Airport Airspace Drawing (2 of 3)

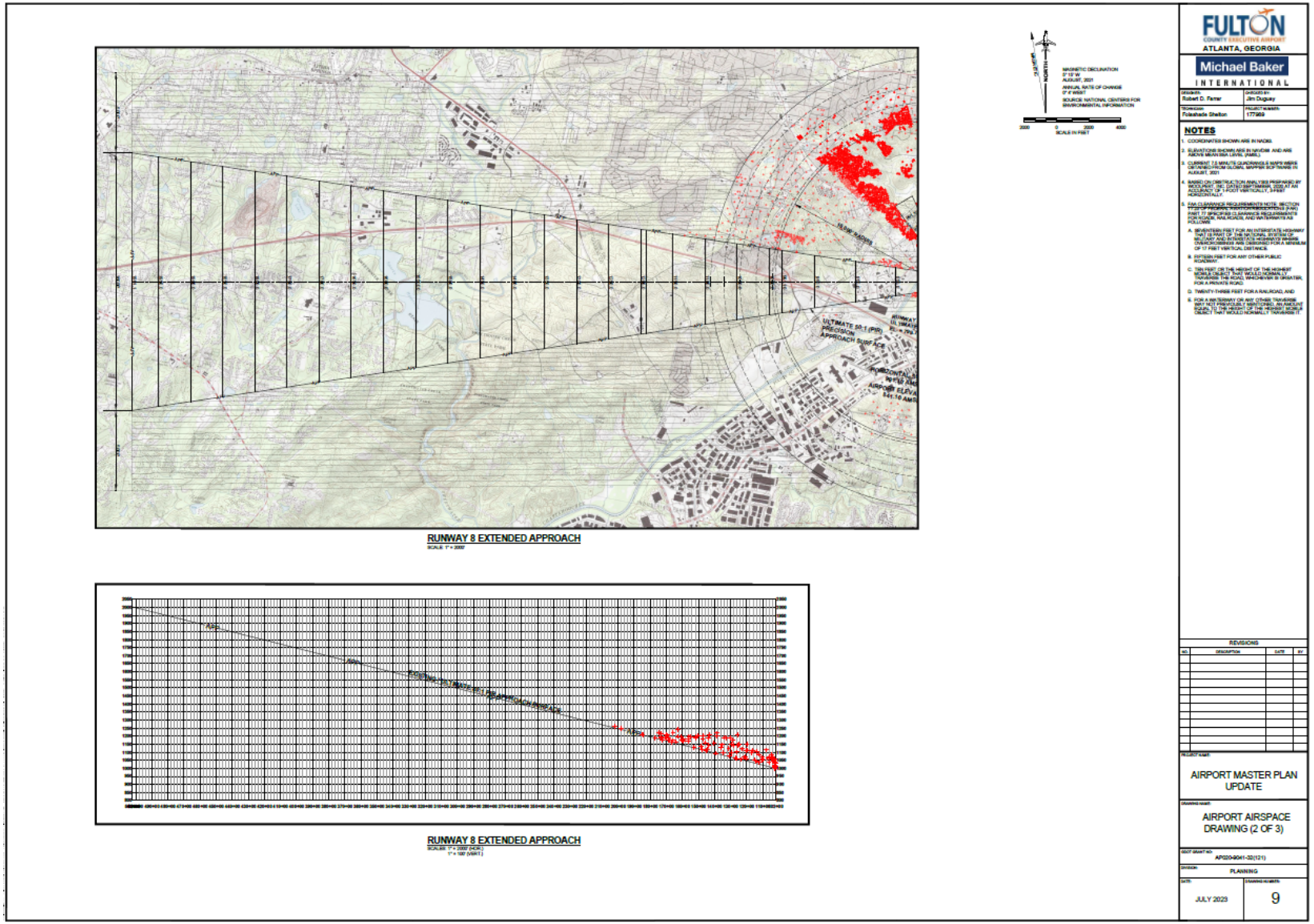


Figure 6-10: Airport Airspace Drawing (3 of 3)

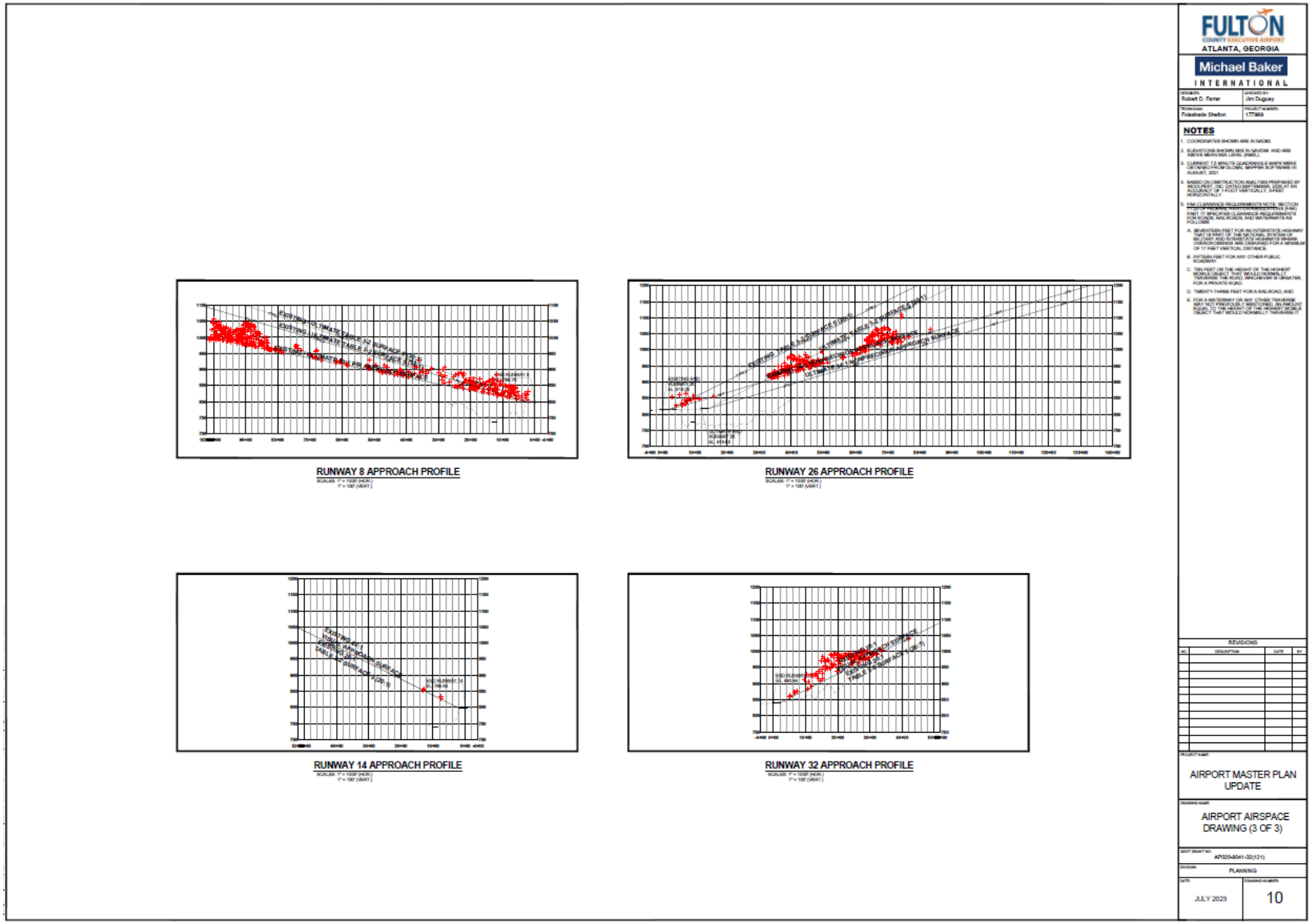


Figure 6-11: Runway 8 Approach Drawing

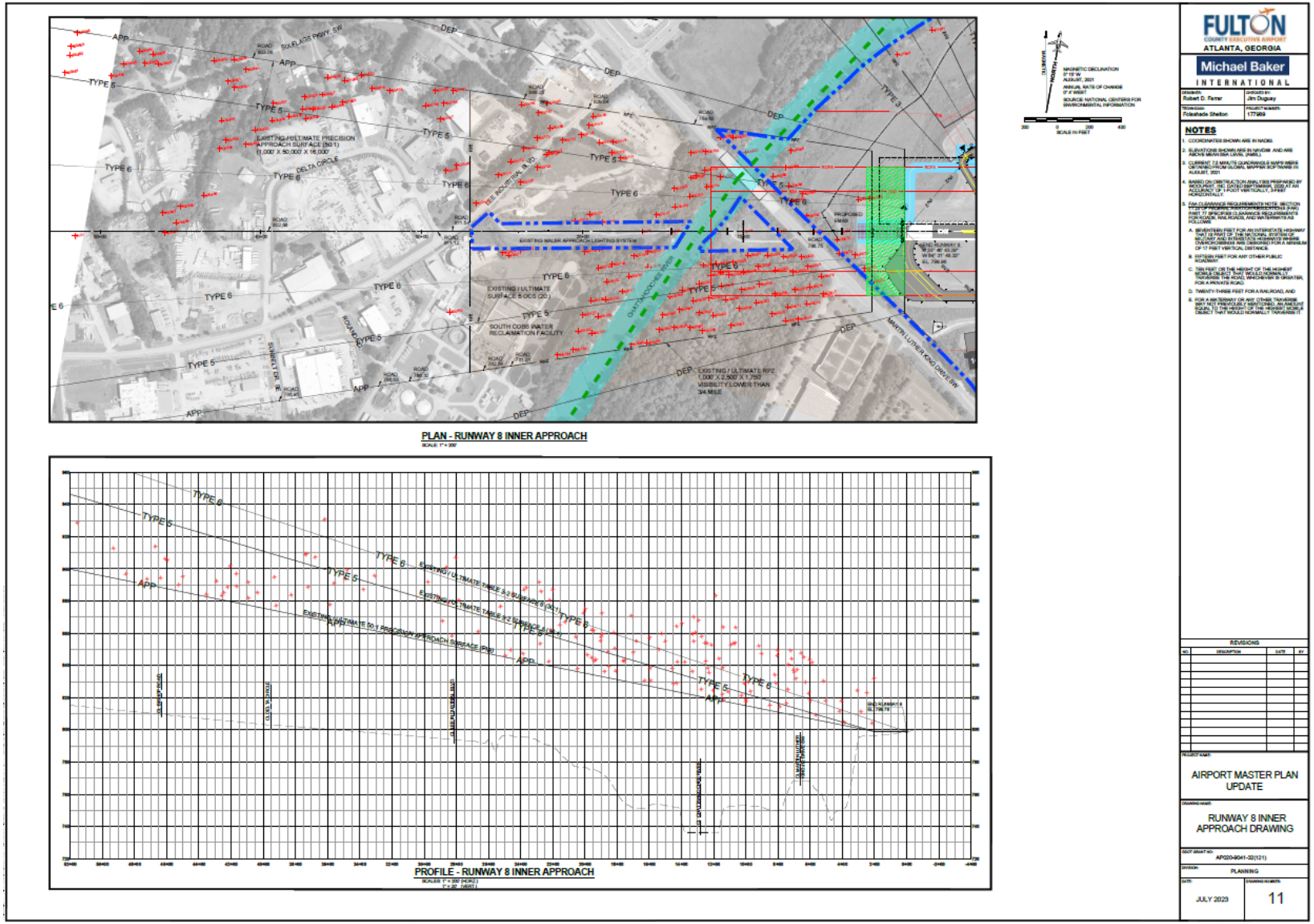


Figure 6-12: Runway 12 Inner Approach Drawing

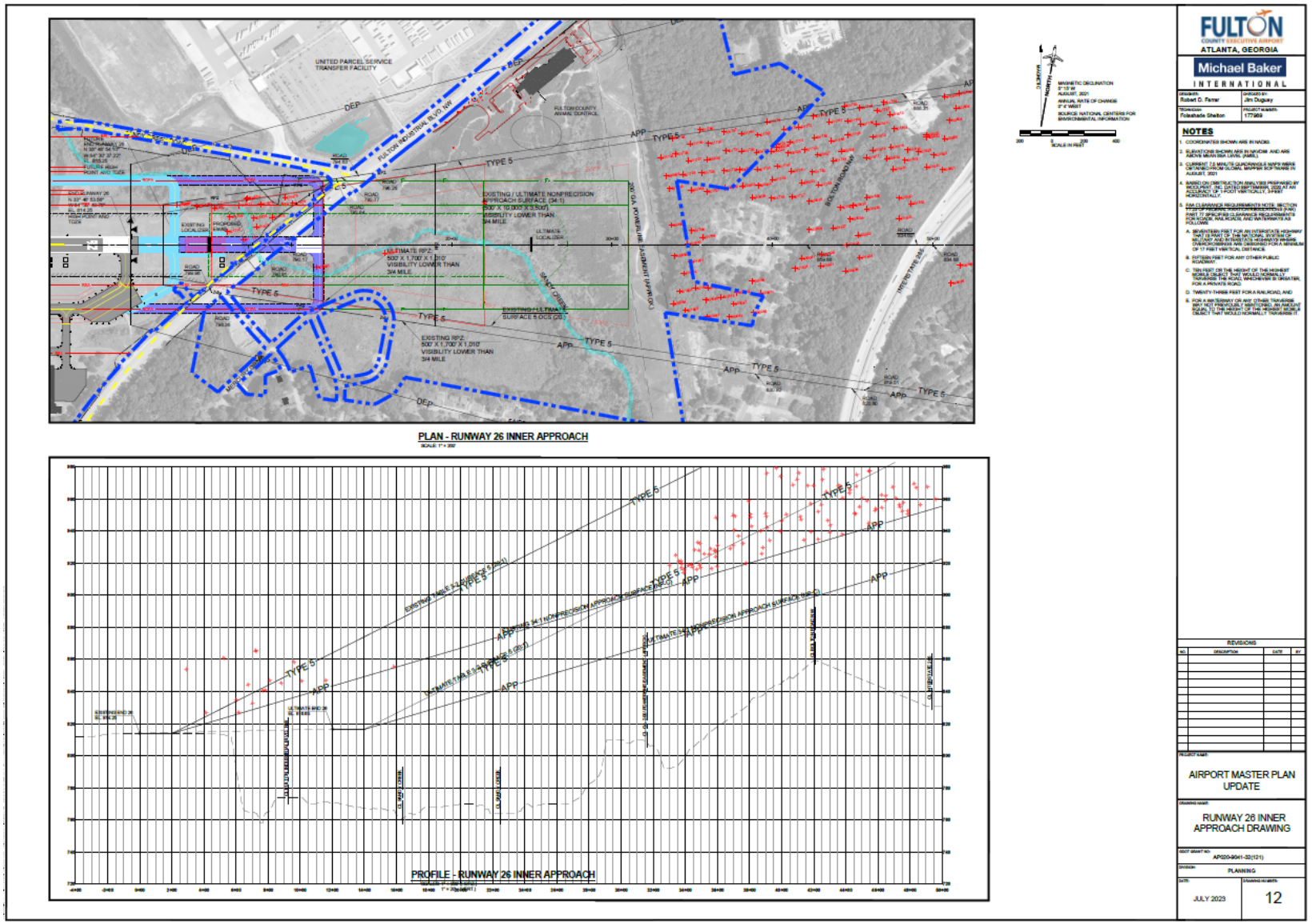


Figure 6-13: Runway 14 Inner Approach Drawing

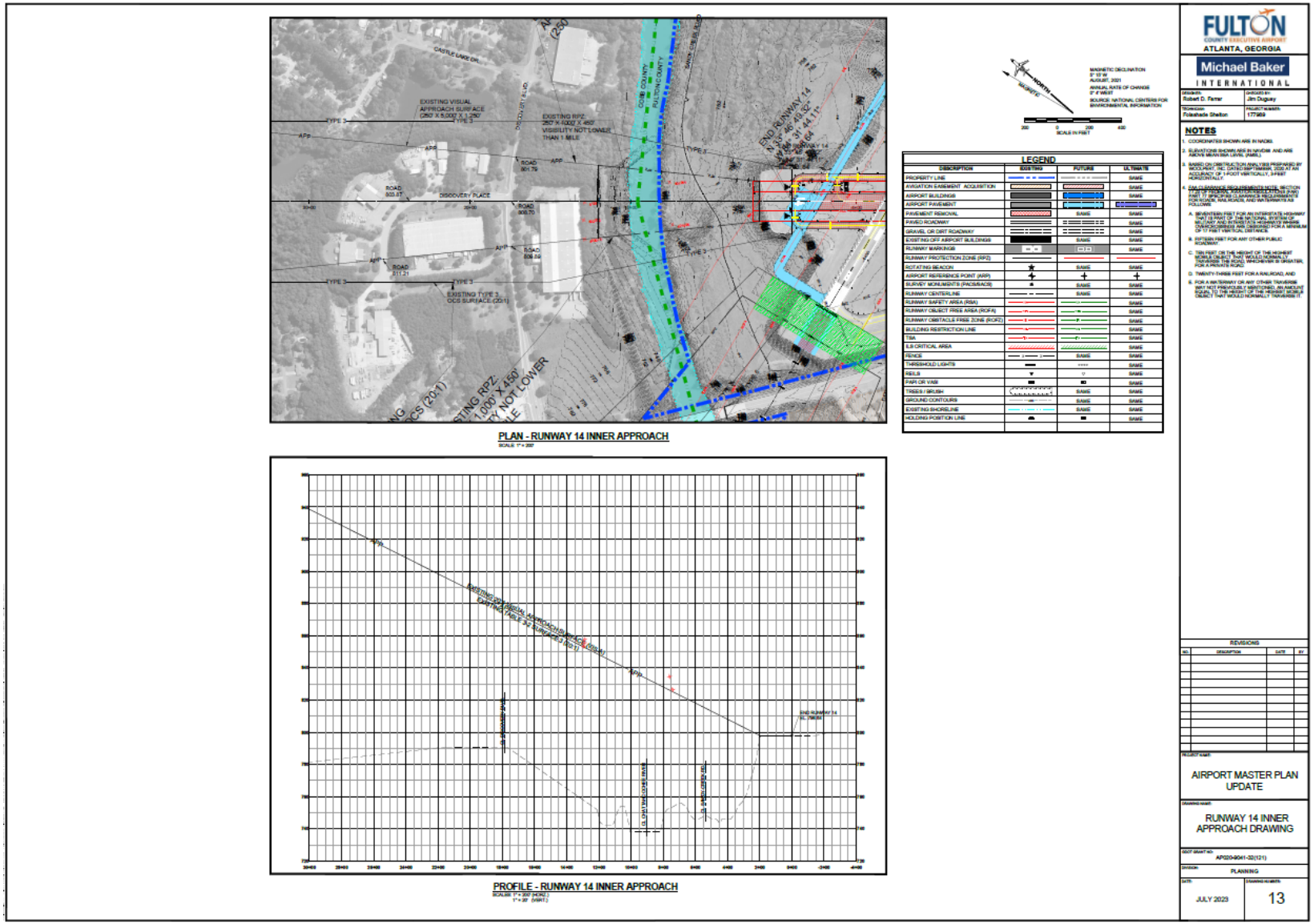


Figure 6-14: Runway 32 Inner Approach Drawing

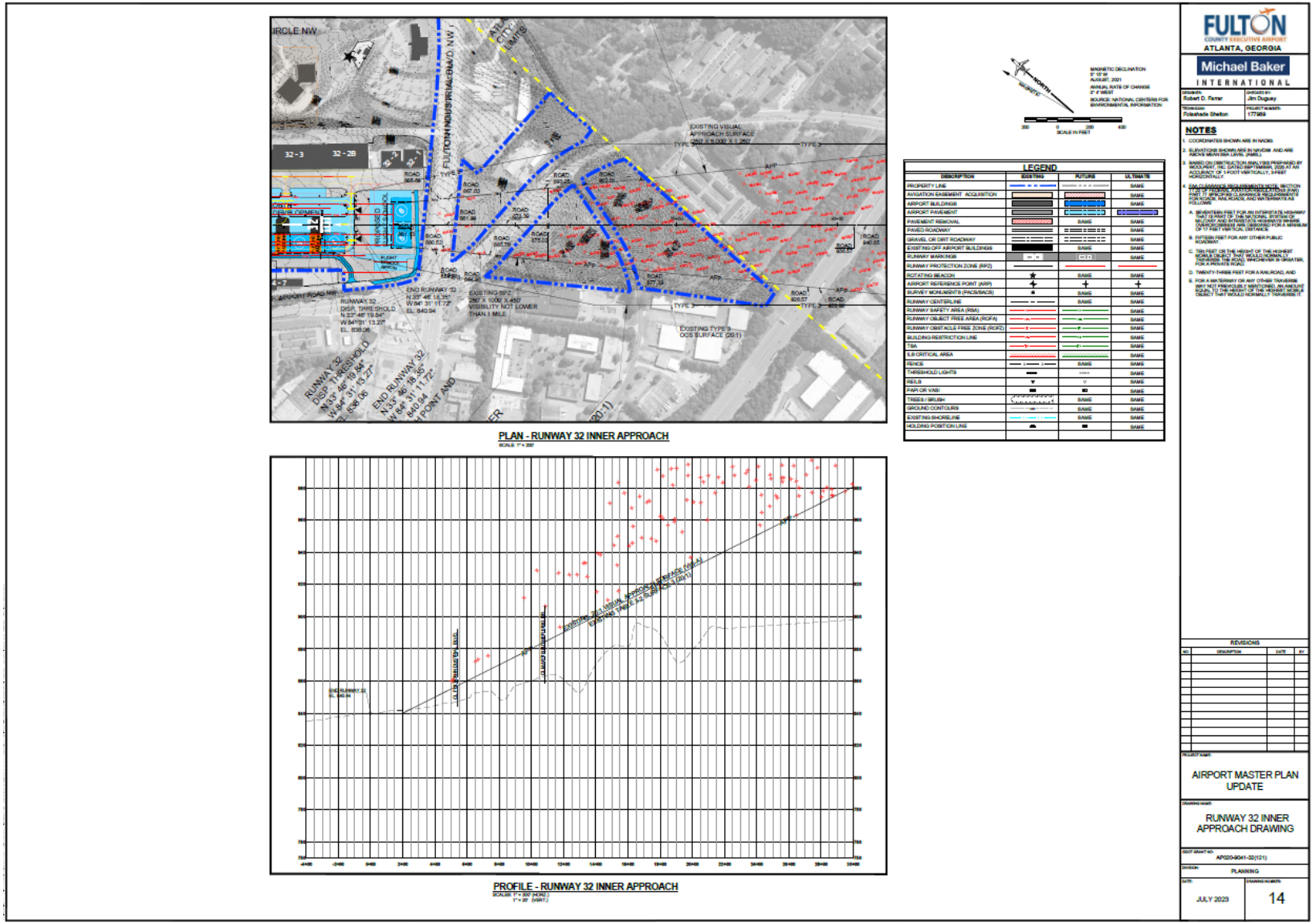


Figure 6-15: Runway 8-26 Departure Surface

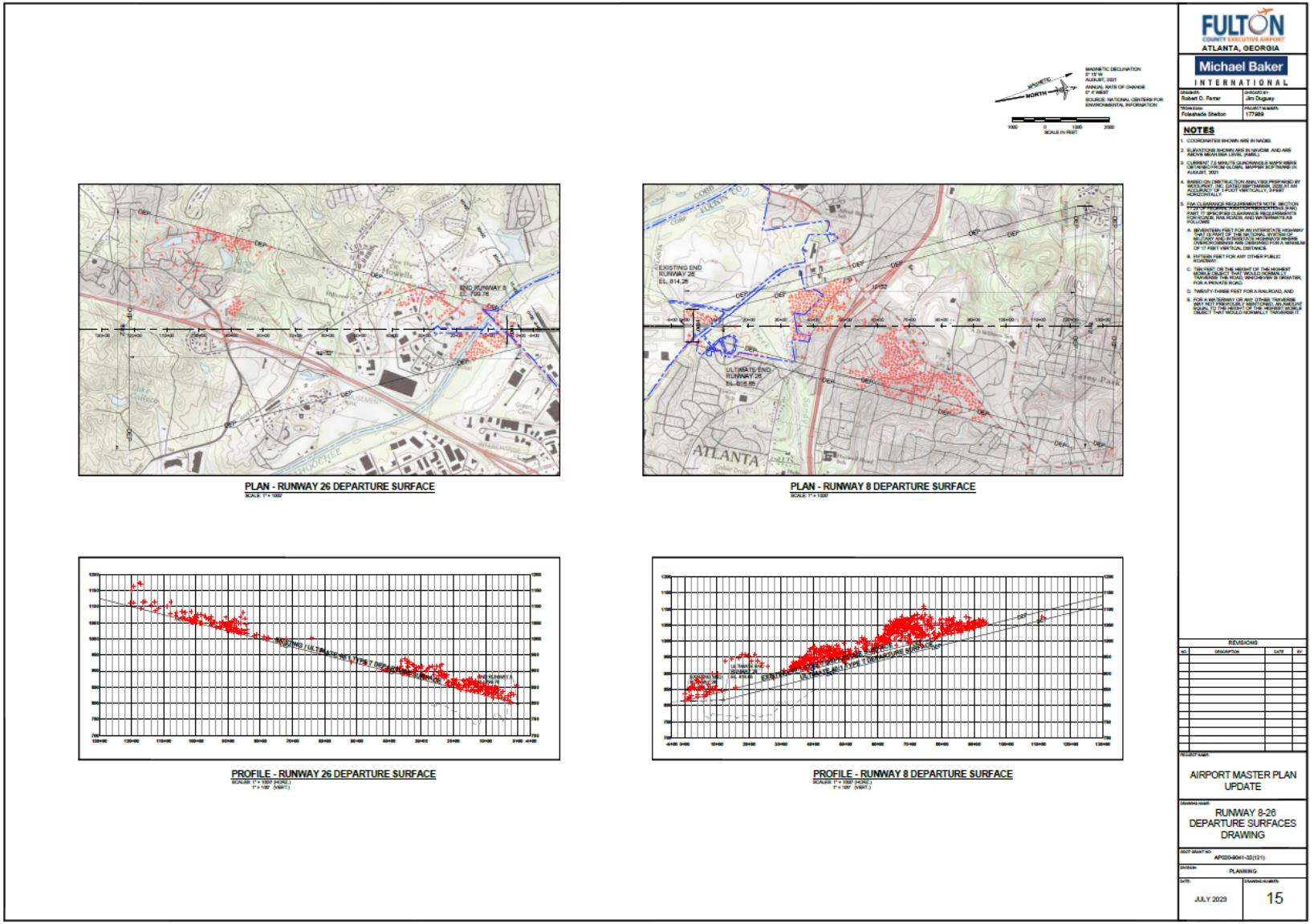


Figure 6-16: Airport Land Use Drawing

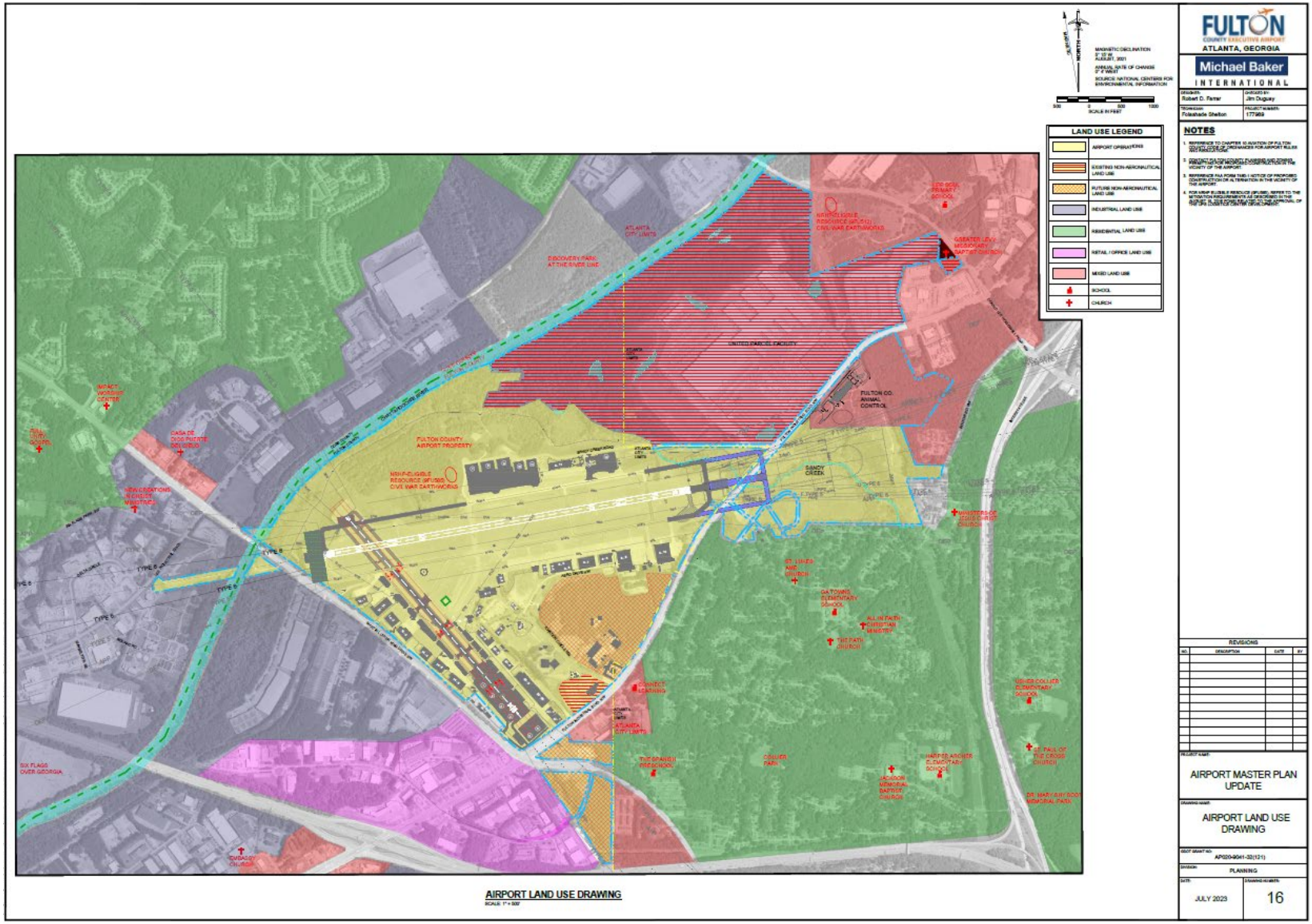
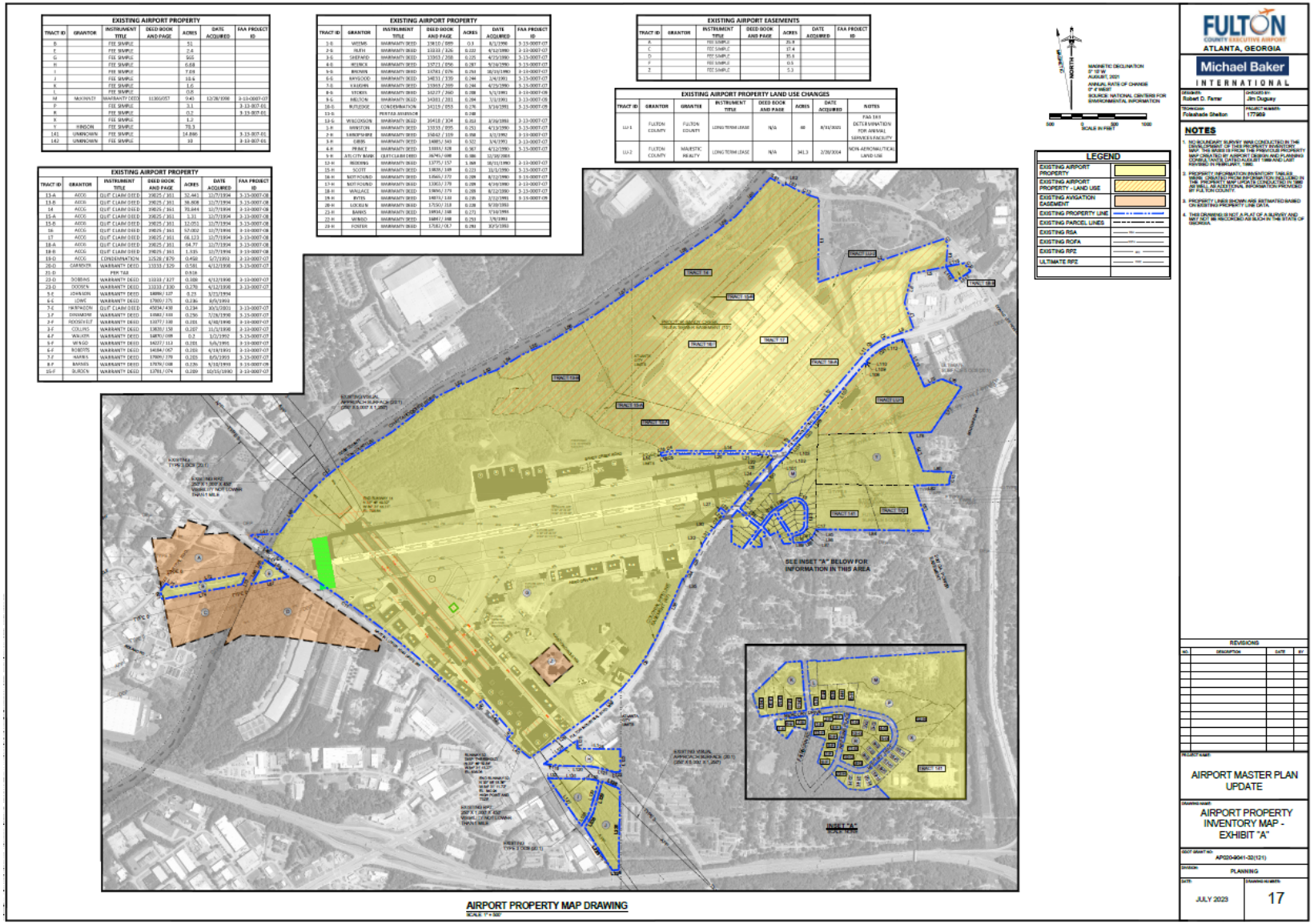


Figure 6-17: Airport Property Map Drawing – Exhibit "A"



CAPITAL IMPROVEMENT PLAN

FULTON COUNTY

Michael Baker
INTERNATIONAL

Chapter 7 – Capital Improvement Plan

7.0 Introduction

The final chapter of a master plan is intended to provide guidance on what will be required to demonstrate the airport sponsor's ability to fund the projects in the master plan. A more general discussion of the funding of medium and long-term projects is more reasonable because of the uncertainty of future Federal and State funding and possible shifts in the overall importance of those projects in reaction to aviation demand at the airport and changes in the economic climate in a community. FTY's ability to fund the recommended projects is a major consideration in preparing the Capital Improvement Plan (CIP). The recommended development plan for Fulton County Executive Airport/Charlie Brown Field Airport is based on the facility requirements as presented in Chapter 4.

7.1 Implementation Plan

Future airport development at FTY as included in this Airport Master Plan and covers a 20-year planning period. Development items are grouped into three phases:

- Phase I, Short-term (1-5 years)
- Phase II, Intermediate-term (6-10 years)
- Phase III, Long-term (11-20 years)

The refined development costs contained in this chapter are based on the proposed improvements as shown on the Airport Layout Plan and are included for each item in the financial development plan. The phasing of projects assists the airport sponsor in budgetary planning for future construction projects. **Table 7-1** and **Table 7-2** outlines the 20-year financial development plan. **Figure 7-1**provides a graphical summary of the proposed phasing plan.

7.2 Funding Sources

Potential funding sources for the development plan identified in Chapter 5, Airport Recommended Development, provides the basis for financial analysis. Funding comes from the FAA and local entity contributions. This section will identify and quantify the expected sources of capital funds. As previously indicated, FAA funds represent the majority of expected capital; however, a number of sources are identified and indicated below.

7.2.0 Federal Aviation Administration

The FAA's Airport Improvement Program (AIP) is the primary source of funding for airport capital projects for NPIAS airports. As discussed in Chapter 1, Inventory, FTY is included in the NPIAS as a general aviation airport and is eligible for AIP funding. AIP grants currently cover up to 95% of an eligible project's cost. Eligible projects include airport planning, airfield improvement, and some terminal area development. The three major categories of funding for commercial airports include entitlement grant, discretionary grant programs and Passenger Facility Charge (PFC) programs.

FTY is eligible to receive nonprimary entitlement funding at $1,000,000 per fiscal year. Further, each annual nonprimary entitlement grant can be held for up to three years and enable the airport to use up to $3,000,000 in nonprimary entitlement grants for one project. Nonprimary entitlements are based upon

the level of funding allocated by Congress each year, but for the purpose of this report, it is assumed this entitlement of $1,000,000 will continue throughout the planning period.

Discretionary grants above the annual nonprimary entitlement grant of $1,000,000 are available to FTY for specific projects for which enhance safety, security, and capacity. The FAA has established the national priority system for the award process of AIP discretionary grants, and each project must show proper justification in accordance with the system. The FAA AIP discretionary grants typically fund 90-95% of the total project cost.

In addition to traditional AIP funding sources, the Coronavirus Aid, Relief, and Economic Security (CARES) Act (H.R. 748, Public Law 116-136), signed into law on March 27, 2020, included $10 billion in funds to be awarded as economic relief to eligible U.S. airports affected by the prevention of, preparation for, and response to the COVID-19 pandemic.

The CARES Act provided funds to increase the federal share to 100 percent for Airport Improvement Program (AIP) and supplemental discretionary grants already planned for fiscal year 2020.

Additionally, the CARES Act provided new funds distributed by various formulas for all airports that are part of the national airport system. This includes all commercial service airports.

In 2021, Congress passed the Bipartisan Infrastructure Law (BIL), a five-year $25 billion dollar investment in the national airport system by improving air traffic facilities, airport infrastructure and airport terminals. Project normally considered eligible for AIP or PFC funding can be considered for BIL funding.

7.2.1 State Funding

GDOT operates the Georgia Airport Aid Program (GAAP) for the purpose of providing funding for planning, capital improvements, maintenance, and approach aids to 103 publicly owned airports in Georgia. As federally funded projects are typically funded at 90% by the FAA, GDOT funding assistance is usually 5% with a 5% local match. Further, some airport projects not eligible for or not included in FAA AIP funding may be funded by GDOT at 75% or 100%. With respect to funding priority, all projects funded by the FAA which are eligible for state funding assistance are given the highest priority for GAAP funds. However, for federally funded projects, general aviation airport projects are given priority for state funding assistance over the commercial service airport projects because general aviation airports typically generate less local revenue and are thus more dependent upon state funding assistance.

7.2.2 Local Funding

The remainder of the project costs after FAA and GDOT funds are granted for FTY are the responsibility of Fulton County Board of Commissioners, the owner and operator of the airport. The airport is overseen by Fulton County, an enterprise fund within Fulton County Government. As an enterprise fund, the Airport Division generates its own revenue for use in operations, maintenance and capital improvements at FTY. Local funds are typically those generated from leases, fuel sales, and other sources of airport income. Additional funds are sometimes obtained from other sources including the use of Special Purpose Local Option Sales Tax (SPLOST) or for large, costly projects, it may be necessary to consider long-term debt,

normally in the form of a loan or an airport revenue bond. Historically, the Airport Division has not used SPLOST or long-term debt to fund projects.

7.2.3 Private Funding

At FTY, significant private investment may be required for the successful implementation of some of the recommended projects. Typically, a private developer will lease land on a long-term basis in order to construct airport businesses. FTY will still hold authority for approval of private development plans on airport property. Common areas for private investment include projects such aircraft storage hangars, specialized general aviation businesses, as well as fixed-base operations.

7.2.4 Cost Estimates and Phasing

Each of the project costs shown are estimated planning figures in 2022 dollars. The costs are an estimated total figure which includes items such as design, engineering, planning, grading, supplies, construction and associated utilities. These costs should be used for planning purposes only and detailed cost estimates should be obtained prior to implementation of each project. Recommended improvements for the short term and intermediate term with the associated costs and funding sources are displayed in **Table 7-1** and **Table 7-2**. A graphical depiction of the proposed phasing plan is depicted in **Figure 7-1**.

Table 7-1: Near-Term Capital Improvement Plan

Near Term Airport Capital Improvement Plan (ACIP) 2024-2028					
2024					
Project	**Source**	**Total Cost**	**FAA Funds**	**State Funds**	**Local Funds**
Airport Terminal Improvement - Terminal Building (Design and Construction)	FEDERAL-BIL	$ 6,500,000	$ 6,175,000	$ 325,000	$ -
Airport Customs Facility Improvements (Design & Construction)	FEDERAL-BIL	$ 2,500,000	$ 2,250,000	$ 125,000	$ 125,000
Taxiway Pavement TDG2 Improvements (Design)	FEDERAL-BIL	$ 100,000	$ 90,000	$ 5,000	$ 5,000
Main Ramp Pavement Rehabilitation (Design)	FEDERAL	$ 104,714	$ 94,243	$ 5,236	$ 5,236
Runway 8-26 EMAS Both Ends (Environmental & Permitting)	FEDERAL	$ 320,000	$ 304,000	$ 16,000	$ -
Runway 8-26 EMAS Both Ends (Design)	FEDERAL	$ 300,000	$ 285,000	$ 15,000	$ -
Stormwater Pollution Prevention Plan (SWPPP) Update	FEDERAL	$ 15,000	$ 14,250	$ 750	$ -
FY 24-26 DBE Update	FEDERAL	$ 15,000	$ -	$ -	$ 15,000
Repair Taxiway 'I' (East Area) (Design & Construction)	FEDERAL	$ 200,000	$ 180,000	$ 10,000	$ 10,000
Runway/Taxiway Painting Preventative Project, Including Signage Upgrade.	LOCAL	$ 200,000	$ -	$ -	$ 200,000
Aircraft Rescue & Firefighting (ARFF) Facility Improvements - Phase III (Construction)	LOCAL	$ 2,500,000	$ -	$ -	$ 2,500,000
Acquire Aircraft Rescue & Firefighting (ARFF) Vehicle [Index B] & associated Gear/Equipment	LOCAL	$ 1,000,000	$ -	$ -	$ 1,000,000
		$ 13,754,714	**$ 9,392,493**	**$ 501,986**	**$ 3,860,236**

Source: Michael Baker International, 2022.

Table 7-1: Near-Term Capital Improvement Plan (continued)

Near Term Airport Capital Improvement Plan (ACIP) 2024-2028					
2025					
Project	**Source**	**Total Cost**	**FAA Funds**	**State Funds**	**Local Funds**
Taxiway Pavement TDG2 Improvements - Construction	FEDERAL-BIL	$ 1,215,000	$ 1,093,500	$ 60,750	$ 60,750
Runway 8-26 EMAS (Both Ends) - Construction	FEDERAL	$ 13,400,000	$ 12,730,000	$ 670,000	$ -
Main Ramp Pavement Rehabilitation - Construction	FEDERAL	$ 4,800,000	$ 4,320,000	$ 240,000	$ 240,000
FY 24-26 DBE Update - Reimbursement	FEDERAL	$ 500,000	$ 475,000	$ 25,000	$ -
Taxiway "I" Extension ton Runway 26 - (Environmental & Permitting)	FEDERAL	$ 130,000	$ 117,000	$ 6,500	$ 6,500
Runway/Taxiway Painting Preventative Project	LOCAL	$ 50,000	$ -	$ -	$ 50,000
Runway Length Analysis Study - Reimbursement	FEDERAL	$ 38,500	$ 34,650	$ 1,925	$ 1,925
		$ 20,133,500	**$ 18,770,150**	**$ 1,004,175**	**$ 359,175**
2026					
Project	**Source**	**Total Cost**	**FAA Funds**	**State Funds**	**Local Funds**
Taxiway A & B Airfield Lighting & Signage Rehabilitation, including Vault Improvements - Phase 2 (Design)	FEDERAL	$ 101,300	$ 91,170	$ 5,065	$ 5,065
Taxiway "I" Extension to Runway 26 (Design)	FEDERAL	$ 212,500	$ 191,250	$ 10,625	$ 10,625
Main Entrance/Business Park - Site Development to Pad Ready - (Design)	LOCAL	$ 1,500,000	$ -	$ -	$ 1,500,000
Runway 32 -RPZ - Site Development to Pad Ready (Design)	LOCAL	$ 80,000	$ -	$ -	$ 80,000
		$ 1,893,800	**$ 282,420**	**$ 15,690**	**$ 1,595,690**

Source: Michael Baker International, 2022.

Table 7-1: Near-Term Capital Improvement Plan (continued)

Near Term Airport Capital Improvement Plan (ACIP) 2024-2028					
2027					
Project	**Source**	**Total Cost**	**FAA Funds**	**State Funds**	**Local Funds**
Taxiway "I" Extension to Runway 26 (Construction)	FEDERAL	$ 2,000,000	$ 1,800,000	$ 100,000	$ 100,000
Taxiway A & B Airfield Lighting & Signage Improvements, including Vault Improvements - Phase 2 (Construction)	FEDERAL	$ 1,013,000	$ 911,700	$ 50,650	$ 50,650
Runway/Taxiway Painting Preventative Project	LOCAL	$ 50,000	$ -	$ -	$ 50,000
		$ 3,063,000	**$ 2,711,700**	**$ 150,650**	**$ 200,650**
2028					
Project	**Source**	**Total Cost**	**FAA Funds**	**State Funds**	**Local Funds**
Taxiway "W" Extension to Runway 26 (Design, Environmental, Permitting)	FEDERAL	$ 450,000	$ 405,000	$ 22,500	$ 22,500
South Quadrant Area (Closed Runway 14-32) Site Development to Pad Ready (Design)	LOCAL	$ 1,540,000	$ -	$ -	$ 1,540,000
Airfield Pavement Rehabilitation (Unspecified)	FEDERAL	$ 500,000	$ 450,000	$ 25,000	$ 25,000
Runway/Taxiway Painting Preventative Project (Unspecified)	LOCAL	$ 50,000	$ -	$ -	$ 50,000
		$ 2,540,000	**$ 855,000**	**$ 47,500**	**$ 1,637,500**
5-Year (2024-2028) Total CIP		**$ 41,385,014**	**$ 32,011,763**	**$ 1,720,001**	**$ 7,653,251**

Table 7-2:Intermediate and Long-Term Capital Improvement Plan

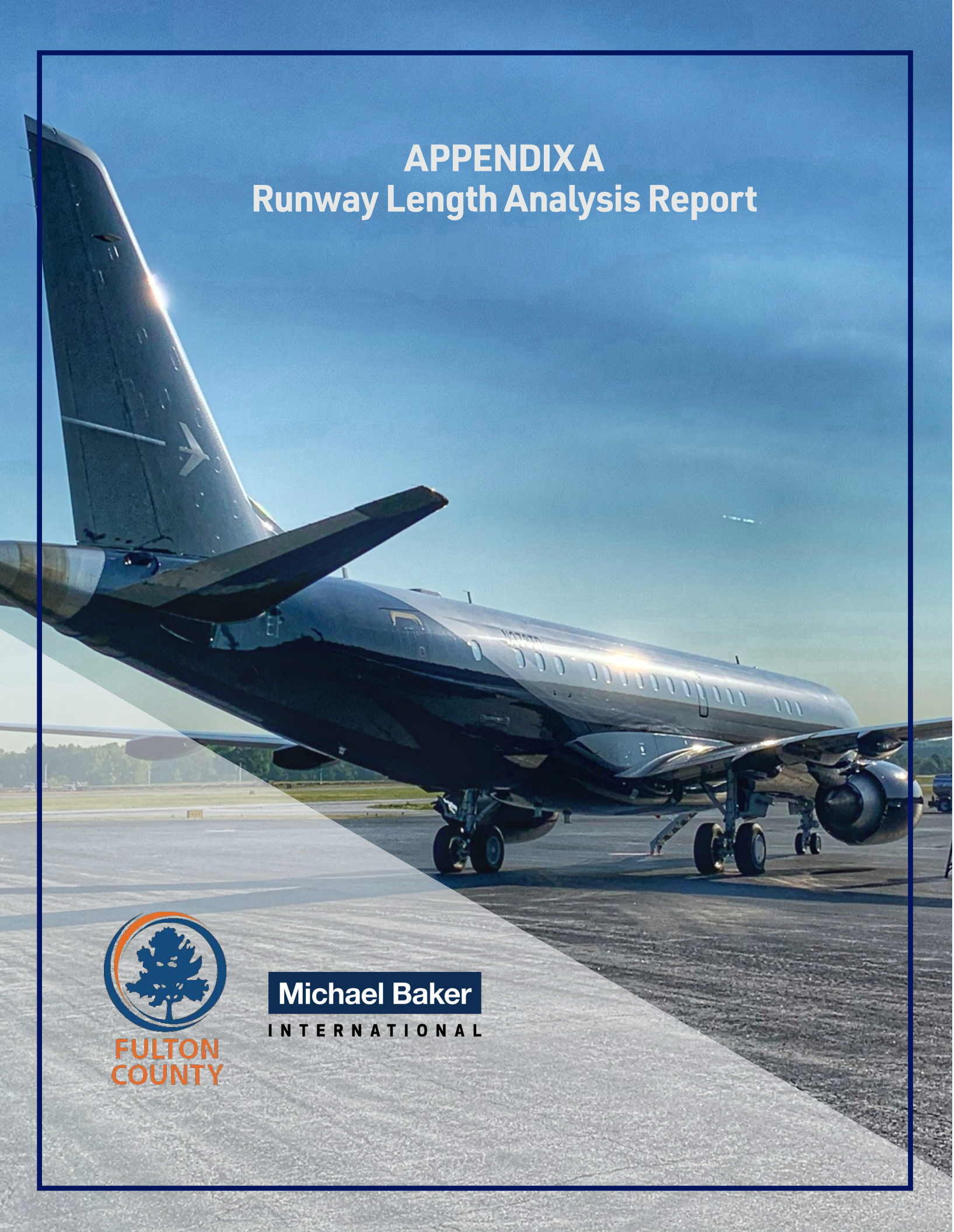
Intermediate Airport Capital Improvement Plan (ACIP) 2029-2033					
Project	**Source**	**Total Cost**	**FAA Funds**	**State Funds**	**Local Funds**
South Quadrant Area - Site Development to Pad Ready (Construction)	LOCAL	$ 15,400,000	$ -	$ -	$ 15,400,000
Vertiport Parking Improvements (Main Ramp)	FEDERAL	$ 250,000	$ 225,000	$ 12,500	$ 25,000
Runway 32 -RPZ - Site Development to Pad Ready (Construction)	LOCAL	$ -	$ -	$ -	$ -
Airfield Pavement Rehabilitation (Unspecified)	FEDERAL	$ 2,500,000	$ 2,500,000	$ 2,500,000	$ 2,500,000
Taxiway "W" Extension to Runway 26 (Design and Construction)	FEDERAL	$ 7,700,000	$ 6,930,000	$ 385,000	$ 385,000
Intermediate (2029-2033) Total CIP		**$ 25,850,000**	**$ 9,655,000**	**$ 2,897,500**	**$ 18,310,000**
Long Term 2034-2043					
Project	**Source**	**Total Cost**	**FAA Funds**	**State Funds**	**Local Funds**
Connect Taxiway "W" to Runway 8	FEDERAL	$ 10,500,000	$ 9,450,000	$ 525,000	$ 525,000
Airfield Pavement Rehabilitation (Unspecified)	FEDERAL	$ 5,000,000	$ 4,500,000	$ 250,000	$ 250,000
Replace all VASI and REILS	FEDERAL	$ 250,000	$ 225,000	$ 12,500	$ 12,500
Long Term (203x-204x) Total CIP		**$ 15,750,000**	**$ 14,175,000**	**$ 787,500**	**$ 787,500**
Ultimate (Beyond 20yrs)					
Runway 26 1,203' Ultimate Extension (7,000')	FEDERAL	$ 45,000,000	$ 40,500,000	$ 2,250,000	$ 2,250,000
Ultimate Term (> 20 Years) Total CIP		**$ 45,000,000**	**$ 40,500,000**	**$ 2,250,000**	**$ 2,250,000**
Total ACIP Costs All Phases		**$ 127,985,014**	**$ 96,341,763**	**$ 7,655,001**	**$ 29,000,751**

Source: Michael Baker International, 20202.

Figure 7-1: Capital Improvement Phasing Plan

Near Term Airport Capital Improvement Plan (ACIP) 2024-2028	
2024	
Proj. ID	**Project**
1	Airport Terminal Improvement - Terminal Building (Design and Construction)
2	Repair Taxiway 'I' (East Area) (Design & Construction)
3	Runway/Taxiway Painting Preventative Project, Including Signage Upgrade.
4	Aircraft Rescue & Firefighting (ARFF) Facility Improvements - Phase III (Construction)
2025	
Proj. ID	**Project**
5	Taxiway Pavement TDG2B Improvements - Construction
6	Runway 8-26 EMAS (Both Ends) - Construction
7	Main Ramp Pavement Rehabilitation - Construction
8	Runway/Taxiway Painting Preventative Project
2026	
Proj. ID	**Project**
9	Main Entrance/Business Park - Site Development to Pad Ready - (Design)
2027	
Proj. ID	**Project**
10	Taxiway "I" Extension to Runway 26 (Construction)
11	Taxiway A & B Airfield Lighting & Signage Improvements, including Vault Improvements - Phase 2 (Construction)
12	Runway/Taxiway Painting Preventative Project
2028	
Proj. ID	**Project**
13	Runway/Taxiway Painting Preventative Project (Unspecified)
	5-Year (2024-2028) Total CIP
Intermediate Airport Capital Improvement Plan (ACIP) 2029-2033	
Proj. ID	**Project**
14	South Quadrant Area - Site Development to Pad Ready (Construction)
15	Vertiport Parking Improvements (Main Ramp)
16	Runway 32 -RPZ - Site Development to Pad Ready (Construction)
17	Taxiway "W" Extension to Runway 26 (Design and Construction)
	Intermediate (2029-2033) Total CIP
Long Term 2034-2043	
Proj. ID	**Project**
18	Connect Taxiway "W" to Runway 8
19	Replace all VASI and REILS
Ultimate (Beyond 20yrs)	
Proj. ID	**Project**
20	Runway 26 1,203' Ultimate Extension (7,000')
	Ultimate Term (> 20 Years) Total CIP
	Total ACIP Costs All Phases

Source: Michael Baker International, 2022.



APPENDIX A
Runway Length Analysis Report

FULTON COUNTY

Michael Baker
INTERNATIONAL

Runway Length Analysis Report

DRAFT

September 2022

Prepared by Michael Baker International

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1.1 Introduction

The following Runway Length Justification Report has been prepared for Fulton County Executive Airport – Charlie Brown Field (FTY) and provides an analysis of the existing and future runway length requirements of the airport using Federal Aviation Administration (FAA) guidelines and input from airport stakeholders. The report is presented in the following subsections:

- Description of Existing Airport Facilities,
- Summary of Master Plan Aeronautical Forecast,
- Summary of Critical Aircraft Analysis,
- Runway Length Analysis, and
- Supporting Documentation.

1.2 Description of Airport Facilities

FTY is located within the metropolitan area of Atlanta, Georgia. The 10-county region consists of the counties in Georgia identified in **Figure 1**. These counties include Cherokee, Clayton, Cobb, DeKalb, Douglas, Fayette, Fulton, Gwinnett, Henry and Rockdale. Data from Atlanta Regional Commission (ARC) show that in 2020 the region accounted for a population of 4,692,000 people which makes up 44 percent of the state's population. This thriving area is the economic power-center of not only the Southeastern U.S. but an international city with demands for a robust general aviation and commercial airport transportation system.

The FAA classifies FTY as a General Aviation - Reliever Airport. Totaling 985 acres, the airport grounds are situated in the west-central portion of Fulton County bordering the city limits of Atlanta. The airport is conveniently located 1.5 miles north of U.S. Interstate 20 (I-20), 3.5 miles from the junction of (I-20) and U.S. Interstate (I-285) junction and 6 miles west of downtown Atlanta. Due to its prime location and convenient access, FTY sees a significant amount of business travel to and from its facility.

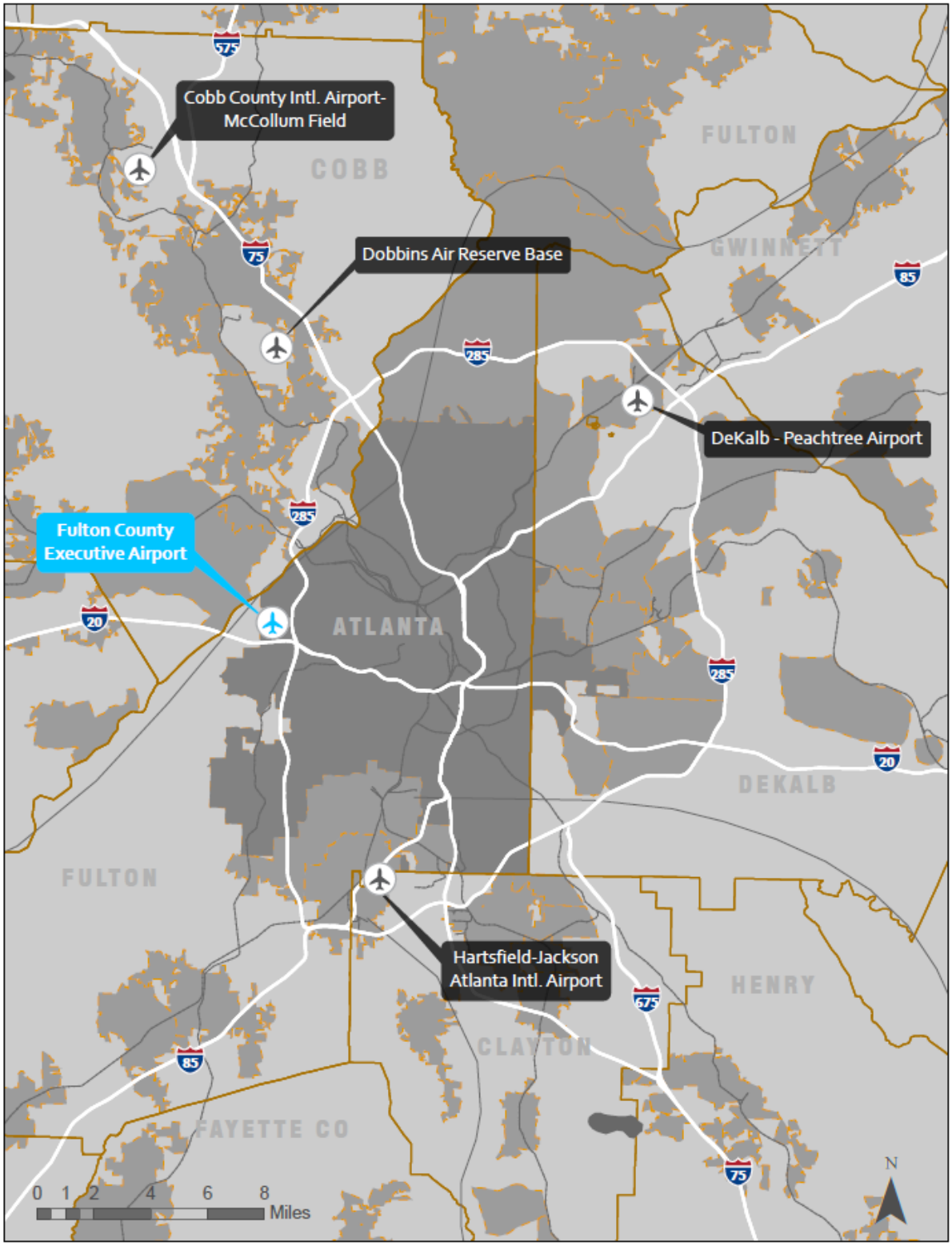
FTY has a two-runway configuration. Runway 8-26 is the primary runway measuring 5,797' x 100'. The runway provides a precision Instrument Landing System (ILS) to Runway 8 with approach lighting. Runway 14-32 is the secondary runway measuring 4,158' x 100' with visual approaches. The airport operates a twenty-four-hour Air Traffic Control Tower (ATCT) within Class D controlled airspace and below Hartsfield-Jackson Atlanta International Airport (ATL) Class B controlled airspace.

FTY is home to several corporate flight departments including Coca Cola, Cox Enterprises, Home Depot, Enterprise Aviation, Koch, Norfolk Southern, INPO and Arthur Blank. Two Fixed Base Operators (FBOs): Signature Flight Support and Hill Aircraft provide services to the public, including terminal facilities, fuel, maintenance, hangar storage and passenger amenities.

Recent improvements at FTY include the construction of the North Terminal Area (NTA). This area of expansion is located north of Runway 8-26 and has attracted several new aeronautical tenants based at the field. Other major improvements underway include construction of an Aircraft Rescue and Fire Fighting (ARFF) Station as well as a dedicated U.S. Customs Facility. **Figure 2** depicts the existing facilities at FTY.

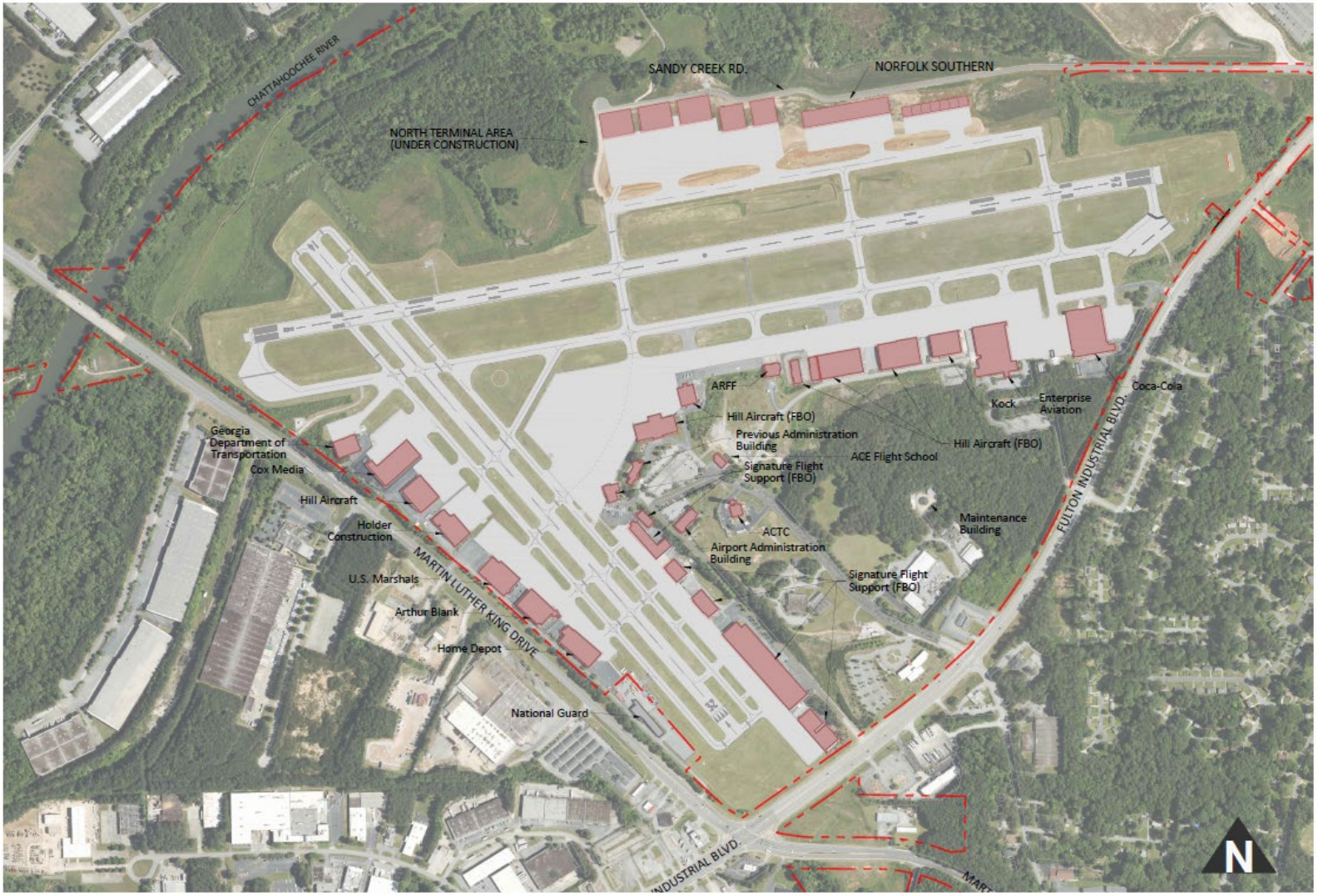
In 2020, the airport logged 60,156 takeoffs and landings. During the same year, it reported 97 based aircraft including 46 jet aircraft. FTY ranks in the top ten busiest general aviation airports in Georgia.

Figure 1: Regional Location



Source: Michael Baker International, 2022.

Figure 2: Existing Facilities



Source: Michael Baker International, 2022.

1.3 Summary of Aeronautical Forecast

As part of the 2022 Airport Master Plan Update, aeronautical forecasts were prepared, submitted, and reviewed by the Georgia Department of Transportation (GDOT) Aviation Programs. These forecasts were approved by GDOT on April 22, 2021, and provided in **Attachment A**.

Projections of aviation activity for FTY were prepared for the 20-year planning horizon including the near-term (+5 Years), Intermediate-term (+10 Years), and long-term (+20 Years) timeframes. Existing conditions are considered 2020 (utilizing 2019 total counts) with the base year of the forecast beginning in 2021. The forecast planning horizons correspond to the following years:

- Existing Conditions – 2020
- Base Year - 2021
- Near Term – 2025
- Intermediate Term – 2030
- Long Term – 2040

1.3.1 Operations Forecast

Operational forecasts were prepared for various categories of aeronautical activity which include air carrier, air taxi, general aviation, and military activity. Operations forecasts were further divided into itinerant and local operations. Several influencing factors were reviewed in the determination of applicable growth trends, and the FAA Terminal Area Forecast (TAF) Average Annual Growth Rate (AAGR) of 0.46 percent was found consistent with expected operational growth at the airport considering local trends that appear favorable to modest operational growth as facility improvements and services attract new based aircraft and greater itinerant operations. The approved operations forecast is presented in **Table 1.**

Table 1: Preferred Operations Forecast

Preferred Operations Forecast									
Year	Itinerant					Local			
	Air Carrier	Air Taxi	GA	Military	**Total**	Civil	Military	**Total**	**Total Operations**
2020*	0	5,475	31,011	40	36,526	23,630	0	23,630	60,156
2021	0	5,500	31,154	40	36,694	23,739	0	23,739	60,433
2025	0	5,602	31,731	40	37,373	24,179	0	24,179	61,551
2030	0	5,732	32,467	40	38,240	24,740	0	24,740	62,979
2035	0	5,865	33,221	40	39,126	25,314	0	25,314	64,440
2040	0	6,001	33,992	40	40,034	25,902	0	25,902	65,935
AAGR 2020-2040	**0.00%**	**0.46%**	**0.46%**	**0.00%**	**0.46%**	**0.46%**	**0.00%**	**0.46%**	**0.46%**

Source: FAA TAF and Michael Baker International, 2022.

1.3.2 Instrument Operations Forecast

At FTY, Instrument Flight Rule (IFR) operations generally consists of approaches and departures by aircraft filing flight plans with the FAA, which included a total of 12,692 operations in 2020 or 21.61 percent of all operations. For this forecasting effort, it was assumed that instrument operations would increase at an average growth rate of 0.3 percent per year in accordance with the FAA's forecast of IFR GA aircraft at en

route traffic control centers from the FAA Aerospace Forecast. As shown in **Table 2,** this forecast results in instrument operations increasing from 12,692 operations in 2020 to 13,476 operations by 2040.

Table 2: Instrument Operations Forecast (2020-2040)

Year	IFR	Total	% Total
2020	12,692	60,156	21.10%
2021	12,730	60,433	21.06%
2025	12,884	61,551	20.93%
2030	13,078	62,979	20.77%
2035	13,275	64,440	20.60%
2040	13,476	65,935	20.44%
AAGR 2020-2040	**0.30%**	**0.46%**	**-0.16%**

Source: Michael Baker International, 2022.

1.3.3 Based Aircraft Forecast

In determining an accurate based aircraft projection, a composite forecast of based aircraft was determined using projections from the 2020-2040 FAA Aerospace Forecast, and reasonable projection assumptions for each aircraft type.

The total number of based aircraft forecast through the planning period was further evaluated to consider the projected aircraft types expected to base at the airport. Projections generally examine market conditions and demand for various aircraft types as they relate to local influences and general increases in the pilot population. According to the FAA Aerospace Forecast estimates, the general aviation fleet will decline from an estimated 212,335 aircraft in 2019 to 210,380 in 2040. However, most growth is expected in several sectors including turbine-powered aircraft, rotorcraft and sport/experimental aircraft. Although single-engine aircraft exclusively are expected to see a -1.0 percent decline, experimental aircraft will increase 0.9 percent while light sport aircraft will increase by 3.3 percent. The jet industry is expected to witness an annual increase of 2.6 percent. Driven by these factors, the FAA Aerospace Forecast assumes that business use of general aviation aircraft will expand at a more rapid pace than that for personal. As a result, FTY is expected to see an increase in the number of corporate jets based at the airport, whereas traditional single piston aircraft are projected to see a slight declining share of total based aircraft.

Using individual growth rates by aircraft type found in the 2020-2040 FAA Aerospace Forecast, based aircraft at FTY are expected to grow by 1.73 percent annually throughout the planning period as shown in **Table 3**. With the ongoing construction of the North Terminal Area, it is anticipated airport growth will be higher than the national average for the first 5 years as new corporate tenants move to the airport. Assuming additional hangars will be built within the initial 5 years, the growth rate is 2.53 percent. Subsequently, the remaining 15 years for based aircraft will grow at the national rate of 1.73 percent.

Table 3: Based Aircraft Forecast (2020-2040)

Year	Single Engine	Multi-Engine	Jet	Heli	Total
2020	39	6	46	6	97
2021	39	6	49	6	99
2025	37	7	60	7	110
2030	35	7	68	7	117
2035	34	8	77	8	126
2040	32	9	88	9	137
AAGR 2020-2025	-1.00%	1.80%	5.34%	1.80%	2.53%
AAGR 2025-2030	-1.00%	1.80%	2.60%	1.80%	1.34%
AAGR 2030-2040	-1.00%	1.80%	2.60%	1.80%	1.53%
AAGR 2020-2040	**-1.00%**	**1.80%**	**3.28%**	**1.80%**	**1.73%**

Source: Michael Baker International, 2022.

1.4 Summary of Existing and Future Critical Aircraft Determination

As part of the approved aeronautical forecast, the existing and future critical aircraft were determined and approved by GDOT in their April 22, 2021 letter to the airport sponsor. According to FAA AC No. 150/5000-17, *Critical Aircraft and Regular Use Determination*, the critical aircraft is the most demanding aircraft type, or grouping of aircraft with similar characteristics, that make *regular use* or anticipated to use the make regular use of the airport. The most demanding aircraft is outlined in terms of Aircraft Approach Speed (AAC), wingspan, tail height which comprises the Aircraft Design Group (ADG) and/or weight. "Regular use" is defined as 500 annual operations, including both itinerant and local operations but excluding touch-and-go operations. An operation is either a takeoff or landing of an aircraft.

1.4.1 Existing Critical Aircraft

The identification of an airport's Critical Aircraft is a critical aspect of airport planning and design for federally obligated airports. It sets dimensional requirements on an airport, such as the separating distance between taxiway and runways, size of certain areas protecting the safety and of aircraft operations and recommended runway length. An accurate critical aircraft determination helps to ensure the proper design of airport facilities and appropriate federal investments in airport facilities. The general criteria for evaluating Critical Aircraft include identifying the most demanding AAC, ADG, Maximum Takeoff Weight (MTOW) and Taxiway Design Group (TDG). The combination of AAC and RDC formulate the Runway Design Code (RDC) for each runway. Refer to FAA Advisory Circular (AC) No. 105/5300-13B, Airport Design for detailed descriptions of these criteria.

Counts of the more demanding aircraft with at least 500 operations are presented in **Table 4.**

Table 4: Aircraft Operations Greater Than or Equal to 500 (Nov 18-Nov 19)

Aircraft	Total Operations	AAC	ADG	Max Takeoff Weight (MTOW)	Taxiway Design Group (TDG)
Pilatus PC-12	633	A	I	10,450	1A
Raytheon/Beech Beechjet 400/T-1	1,124	B	I	N/A	N/A
Beech Super King Air 350	628	B	II	16,500	2
Beech 200 Super King	624	B	II	12,500	2
Cessna Citation CJ3	510	B	II	17,110	1B
Cessna Citation II/Bravo	610	B	II	11,850	2
Cessna Citation V/Ultra/Encore	586	B	II	16,630	1A
Cessna Excel/XLS	1,859	B	II	20,000	1B
Cessna Citation Latitude	809	B	II	30,800	1B
Embraer Phenom 300	571	B	II	17,968	1B
Dassault Falcon 2000	876	B	II	41,000	1B
Dassault Falcon 900	810	B	II	49,000	1B
BAe HS 125/700-800/Hawker 800	1,166	C	I	28,000	1B
Bombardier (Canadair) Challenger 300	957	C	II	38,850	1B
Bombardier Challenger 600/601/604	690	C	I	41,100	1B
Gulfstream G150	689	C	II	26,100	1B
Gulfstream G280	985	C	II	39,600	1B
Bombardier Learjet 35/36	513	D	I	18,000	N/A
Gulfstream 400	665	D	II	74,600	2
Gulfstream 500/600	**1,020**	**D**	**III**	**92,000**	**2**

AAC – Aircraft Approach Category
ADG – Aircraft Design Group
Source: FAA Traffic Flow Management System Counts (TFMSC), Michael Baker International, 2021.

Based on 2018-2019 IFR data, a period which suggests normal pre-COVID operations at the airport, the most demanding aircraft observed is the Gulfstream 500/600 series which corresponds to an RDC of D-III with a TDG of 2. This designation is appropriate for the primary runway, Runway 8-26.

For Runway 14-32, the previous Airport Layout Plan (ALP) lists the Cessna 182 and Beech 36 as the most demanding aircraft utilizing the runway. Based on a discussion with the ATCT Manager, Runway 14-32 is primarily utilized by small fixed-wing airplanes and training helicopters. There is no evidence of more demanding operations. Therefore, the Cessna 182 is the designated critical aircraft for Runway 14-32. The Cessna 182 falls into the RDC of A-I Small Aircraft with a TDG of 1A.

1.4.2 Future Critical Aircraft

The future critical aircraft is based on a GDOT-approved forecast and any changes to the existing critical aircraft must be supported by credible sources. As previously noted, the airport is adding additional corporate tenants within the NTA basing area, constructing a modern ARFF facility and U.S. Customs

Facility within the near-term planning period. These tenants, along with existing tenants are expected to operate a similar class and size aircraft as the Gulfstream 500/600 series aircraft. Therefore, the Gulfstream 500/600, a RDC D-III airplane should be considered as the future critical aircraft for planning purposes. This designation is appropriate for the primary runway, Runway 8-26 and the taxiway system that serves this runway. Runway 14-32, there are no expectations that the existing critical aircraft will change; therefore, the Cessna 182 is the designated critical aircraft for this runway and its associated taxiways.

1.5 Runway Length Analysis

A runway length analysis was prepared to determine the length requirements of the primary runway, Runway 8-26. This analysis is intended to demonstrate the needs of the critical aircraft based on common operational conditions with input from airport users. Runway length requirements were evaluated using the approved critical aircraft in accordance with FAA AC No. 150/5325-4B, *Runway Length Requirements for Airport Design*. Airport stakeholders were consulted on their existing and future runway length needs based upon current operational limitations and haul lengths of the most demanding users.

Common data in this analysis are:

- Existing Runway Length: 5,797 ft
- Runway Elevation: 814.1 ft[1]
- Runway Gradient: +/- .25%
- Runway Elevation Difference: 14.2 ft
- International Standard Temperature (ISA) at 814 ft Pressure Altitude: 15 – [(height/1000) x 2] °C which equals 15-[(814/1000) x 2] which equals 13.4° C (56.1° F)
- Mean Maximum Temperature of Hottest Month: 89.5° F (31.9° C) which equals +18.5 °C ISA
- Average 12-Month Mean Maximum Temperature: 72.4° F (22.3°C) which equals +8.9°C ISA
- Critical Aircraft: Gulfstream 500/600 Series Aircraft

1.5.1 Haul Length Analysis

Haul lengths represent the common distances various aircraft, including the critical aircraft fly to their desired destination in terms of nautical miles (nm). Haul lengths are important to consider because they influence the amount of fuel required to reach the destination and thus affect weight of the aircraft on takeoff at FTY. Weight is a key factor in runway length requirements. To examine the most demanding haul lengths at FTY, tenant operations of the critical aircraft were consulted, and international operations found in FAA TFMSC data were reviewed for the G500/600 series aircraft.

International Haul Lengths

FAA TFMSC data for calendar year 2019 was sorted by international operations, destination, and filtered for critical aircraft. Only reported Gulfstream 4/5/6 aircraft types were considered. In total, 77 international departures were identified. Most distant destinations included Istanbul Sabiha Gokcen International Airport at 5,035 nm and Domodedovo International Airport (Moscow) at 4,695 nm. The

[1] This represents the highest elevation of Runway 8-26, actual airport elevation is 841.1 ft.

most frequent international destinations were several airports in London, England at a range of 3,673 nm. A breakdown of international haul lengths is provided in

User Unmet Needs Survey for Haul Length

To further clarify haul length needs of the critical aircraft, an Unmet Needs Survey was conducted during the Airport Master Plan to collect stakeholder input of airport needs. An initial survey was sent to all airport tenants with demanding aircraft operations. A follow-up survey was collected from frequent based operators of the individual critical aircraft to evaluate their haul length requirements assuming adequate runway length was provided. These follow-up tenants conduct both domestic and international flights and represent the more demanding operators at FTY. **Table 5** summarizes the input received from the follow-up surveys. Existing annual departures were reported in increments of 500 nm. Projected annual departures were calculated using the FAA national projected growth rate of jet operations of 2.3% over the planning period. Since substantial use is defined as 500 itinerant operations, essentially 250 landings and 250 departures, any haul length that did not received a top down, longest-to-shortest cumulative count of 250 operations was excluded. Using these criteria, the existing haul length requirement for takeoff calculations is 3,000 nm and the project haul length for future operations during the planning period is 3,500 nm. It is also important to note that FTY tenants' tanker as much fuel onboard for their operations since as a based tenant, purchasing fuel at FTY is considerably less expensive than fuel purchased at away airports.

Table 5: Haul Length Requirements of Frequent Operators of Critical Aircraft at FTY

Distance to Destination (NM)	Existing		Projected	
	Number of Annual Departures	Substantial Use Departures Above This Haul Length?	Number of Annual Departures	Substantial Use Departures Above This Haul Length?
0-500	576	Yes	887	Yes
500-1,000	334	Yes	514	Yes
1,000-1,500	86	Yes	132	Yes
1,500-2,000	129	Yes	199	Yes
2,000-2,500	15	Yes	23	Yes
2,500-3,000	24	No	37	Yes
3,000-3500	92	No	142	No
3,500-4,000	42	No	65	No
4000+	43	No	66	No
TOTAL	**1,341**		**2,086**	

Source: Follow-up Unmet Needs Survey of Based Tenants with Significant Gulfstream 500/600 Operations.

Materials collected from the Airport Tenant Runway Length Survey are provided in **Attachment A**.

1.5.2 Runway Length Analysis

According to FAA AC No. 150/5325-4A, *Runway Length Requirements for Airport Design*, the critical aircraft establishes the runway length requirements at an airport. Guidance stated in *Table 1-1* of the AC recommends the runway length calculation be based upon the individual aircraft rather than a family grouping of aircraft. The guidance states if the MTOW of the critical aircraft is greater than 60,000 lbs, individual flight planning charts for the critical aircraft should be consulted. The *FAA Aircraft Characteristic Database Version 2* lists the Gulfstream 500/600 series aircraft have a Maximum Takeoff Weight (MTOW)

of 91,000 pounds (lbs) and 99,600 lbs respectively. Also, certain variants of these aircraft exceed 105,000 lbs. Individual takeoff and landing charts using the *Gulfstream 650ER Flight Planning Manual* are consulted below.

Takeoff Length Required

Takeoff length required was reviewed using the *Gulfstream 650ER Flight Planning Manual*. The following variables were considered in the calculation.

- Mean Maximum Temperature of Hottest Month: 89.5° F (31.9° C) which equals +18.5 °C ISA
- Average 12-Month Mean Maximum Temperature: 72.4° F (22.3° C) which equals +8.9° C ISA
- Maximum Payload and Passengers
- IFR and Alternate Airport Fuel Reserve
- Takeoff Weight Based on Haul Lengths in 500 nm Increments up to MTOW
- Flaps 20°, Wet and Slippery Runway
- Fuel Burn: 3,074 lbs/hr
- Average Enroute Cruise Speed: 566 kts

Figures 3 and **4** provide the takeoff length required at estimated takeoff weights for haul lengths ranging from 500 nm to 4,000+ nm. **Figure 3** calculates (follow red arrow) these lengths using Mean Maximum Temperature of Hottest Month. **Figure 4** calculates (follow blue arrow) these lengths using Average 12-Month Mean Maximum Temperature.

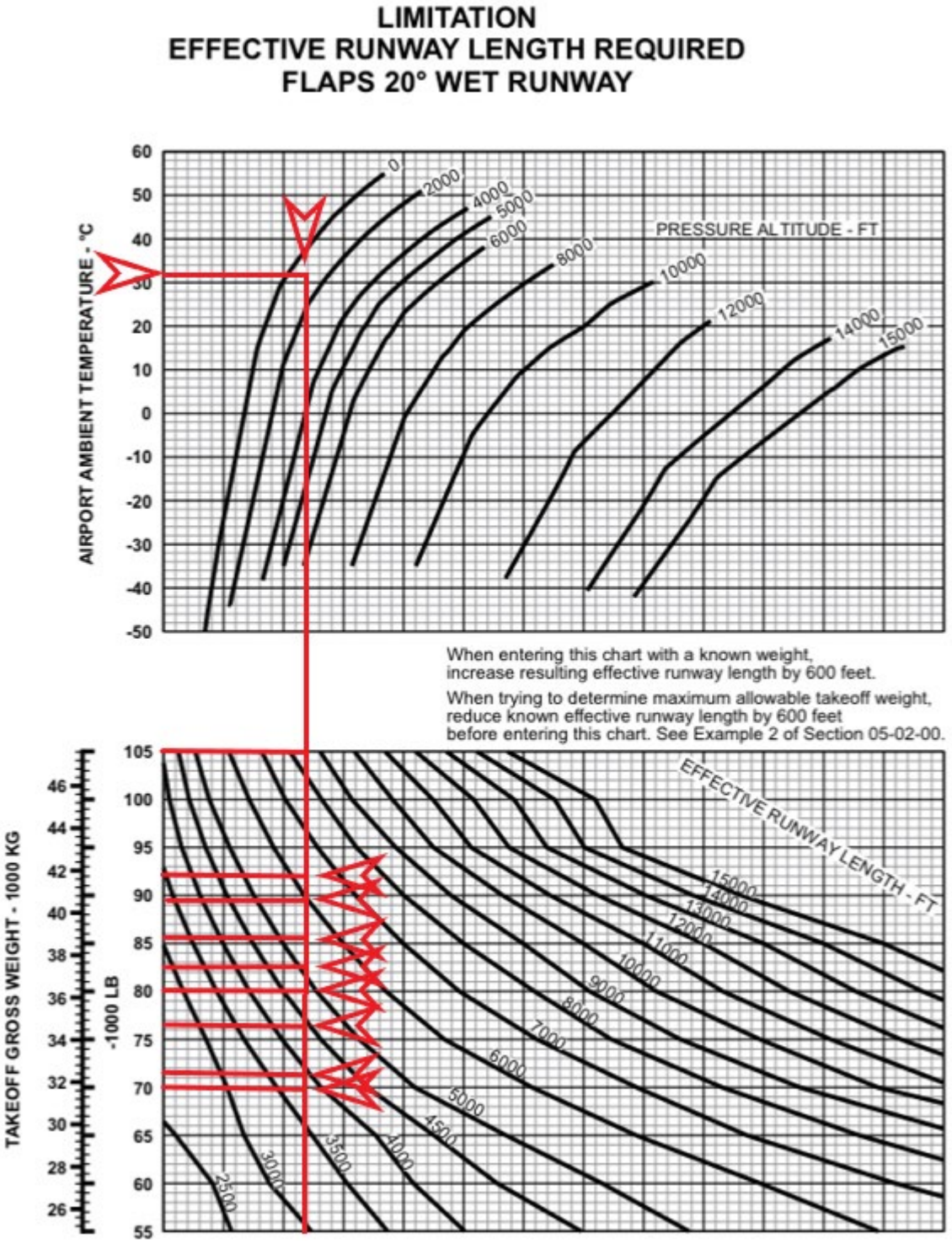
Table 6 summarizes the effective runway length calculated in the previous mentioned figures using variables of aircraft weight and air temperature. Based upon the haul length analysis, the existing requirement is 3,000 nm with a runway length of 5,700 ft/6,100 ft wet/dry and a projected requirement of 6,100 ft/6,600 ft wet dry at a range of 3,500 nm.

Table 6: Runway Length Requirements Based on Takeoff Weight

Takeoff Weight by Range		Required Takeoff Length (ft)	
Range (nm)	Takeoff Weight (lbs)	Average Temperature (22.3° ºC)	Mean Max Temperature of Hottest Month (31.9°C)
500	70,000	4,200	4,400
1,000	73,000	4,400	4,600
1,500	77,000	4,800	5,050
2,000	80,000	5,150	5,500
2,500	83,000	5,500	5,700
3,000	**86,000**	**5,700**	**6,100**
3,500	**89,000**	**6,100**	**6,600**
4,000	92,000	6,550	6,850
MTOW	105,000	8,600	9,000

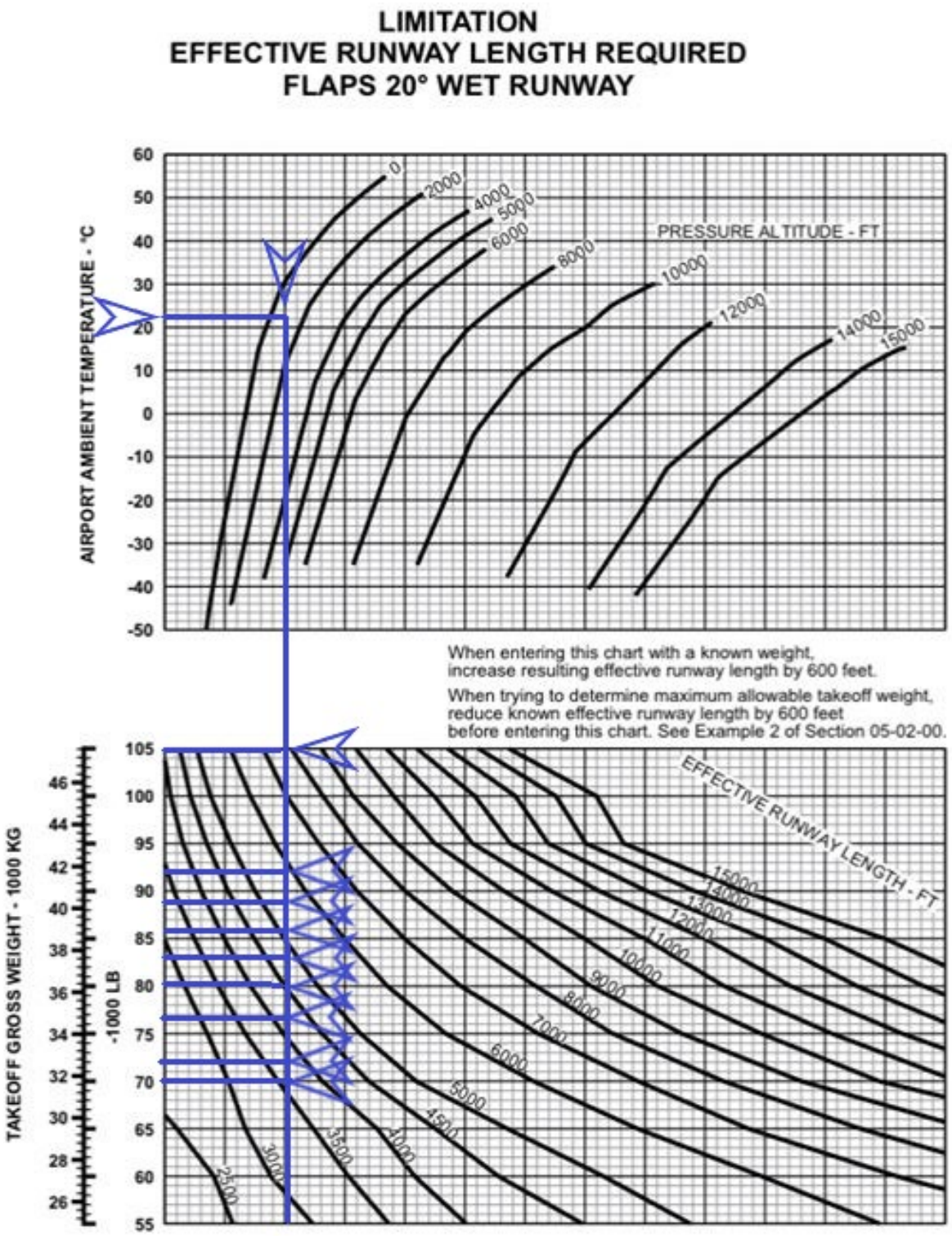
Note: Lengths adjusted by +600 based on instructions in chart. Takeoff weight by range estimated using stated fuel burn and cruise speed assumptions.
Source: *Gulfstream 650ER Flight Planning Manual* plus takeoff weight calculations by Michael Baker International, 2022.

Figure 3: Runway Length Planning Chart – Based on Haul Lengths and Mean Maximum Temperature



Source: *Gulfstream 650ER Flight Planning Manual* and analysis by Michael Baker International, 2022.

Figure 4: Runway Length Planning Chart – Based on Haul Lenghts and Average Temperature



Source: *Gulfstream 650ER Flight Planning Manual* and analysis by Michael Baker International, 2022.

Landing Length Required

Using the standard landing distance chart found in the *Gulfstream 650ER Flight Planning Manual*, the landing length requirements of the critical aircraft were evaluated. Landing lengths were calculated for both average monthly mean maximum temperature and mean maximum temperature of the hottest month. The following variables were considered in the calculations:

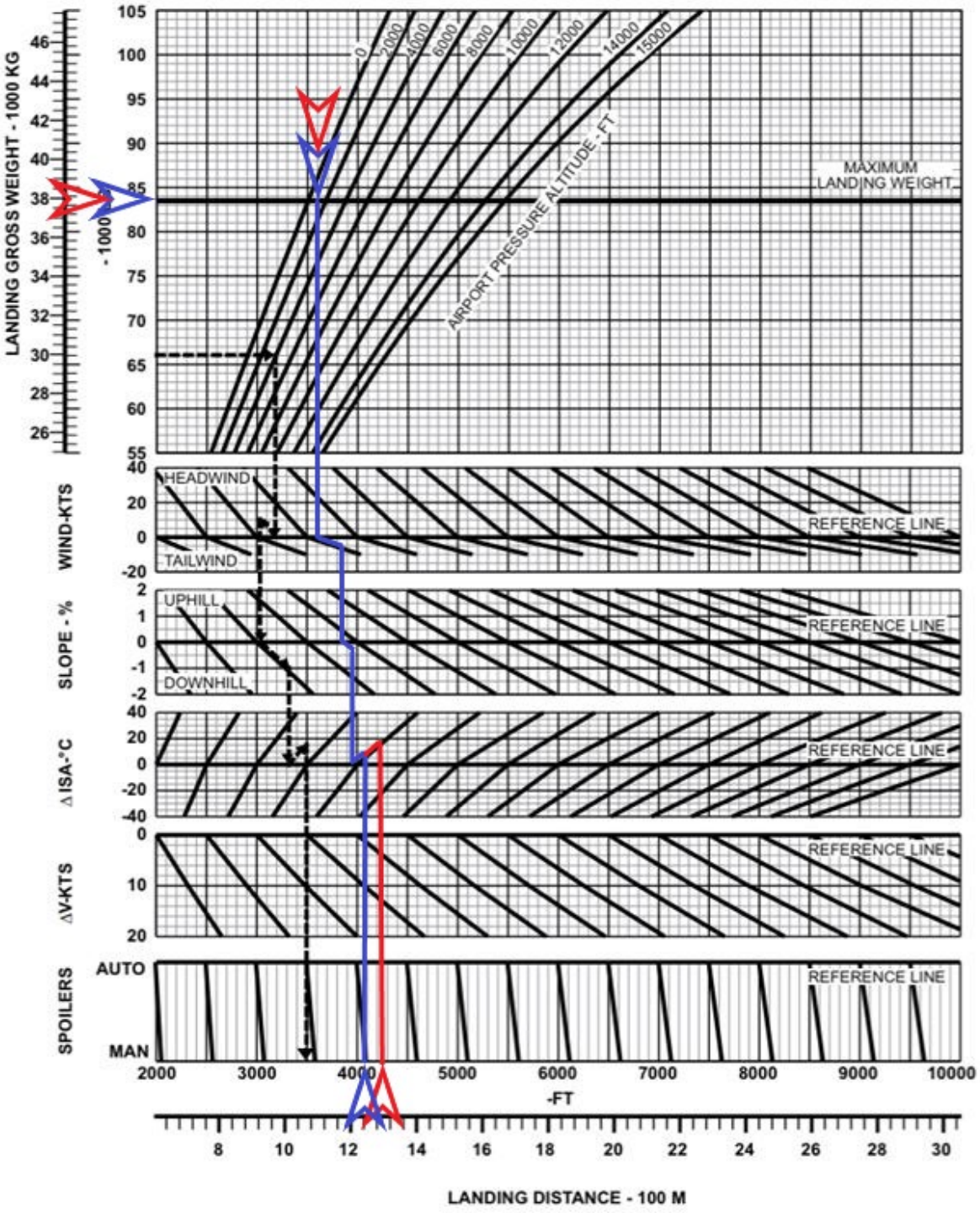
- Maximum Landing Weight (MLW) of 83,500 lbs
- Wind: 5 kts Tailwind
- Slope/Runway Gradient: .25% Downhill
- Temperature: Mean Maximum of the Hottest Month (+18.5^{o}C) and Average Monthly Mean Maximum Temperature (+8.9^{o}C)
- Spoilers: Auto Deployed
- Flaps: Normal Landing Configuration
- Threshold Crossing Height: 50 ft
- Approach Angle: 3^{o}
- Approach Speed: Normal V^{ref}
- Operating Status: Part 91, Part 135

Figure 5 presents the results of the runway length analysis for both Mean Maximum Temperature of the Hottest Month (follow blue arrow) and the Average Mean Maximum Monthly Temperature (follow red arrow). The Mean Maximum of the Hottest Month landing distance was found to be 4,250 ft. The Average Monthly Mean Maximum landing distance was found to be 4,100 ft. These lengths must be adjusted for operational factors described in the following paragraph.

Adjustments to Landing Length for Operational Factors

According to the manufacturer, Gulfstream Aerospace, the calculation of landing distance requires an operational factor adjustment based upon the operational status of the aircraft. Operational status refers to the regulations the aircraft crew are operating under. These regulations fall into Federal Aviation Regulations (FAR) Part 121, Part 135, and Part 91. Subsets of these regulations include non-Eligible On Demand (EOD), Part 135 EOD and Part 91K. EOD refers to specific regulations pertaining to on-demand charter operations. Part 91 "K" refers to fractional ownership arrangements. Most aircraft at FTY operate under Part 91 or Part 135 regulations which are related to private ownership and charter activities. The airport does not serve Part 121 operations which involve scheduled air carriers. As shown in **Table 7**, Gulfstream Aerospace recommends adjusting landing length requirements by a factor up to 1.92 for Part 135 non-EOD and up to 1.44 for all other operational status.

Figure 5: Manufacturer's Landing Distance Chart - G650ER



Source: *Gulfstream 650ER Flight Planning Manual*.

Table 7: Manufacturer Recommended Factor Adjustments for Landing Length

Operating Status	Dry Runway	Wet/Slippery Runway
Part 135 non-EOD & Part 121	1.67	1.92
Part 135 EOD and Part 91K	1.25	1.44
Part 91	1.00	1.44

Source: *Gulfstream 650ER Flight Planning Manual.*

Table 8 provides the adjusted landing length when accounting for operational factors. Considering the activities at FTY, Part 91 and Part 135 operational factors should be applied. Using a 1.44 as the most demanding operational factor for activity at FTY, and assuming wet/slippery conditions, the minimum recommended landing length at FTY is 5,904 ft on an average day (72.4° F) and 6,120 ft during the mean high temperature (89.5° F) of the hottest month.

Table 8: Landing Length Adjusted for Operational Factors

	Dry Runway (ft)		Wet/Slippery Runway (ft)	
Operating Status	Mean Max Temp 89.5° F	Average Temp 72.4° F	Mean Max Temp 89.5° F	Average Temp 89.5° F
Part 135 non-EOD & Part 121	7,098	6,847	8,064	7,488
Part 135 EOD and Part 91K	5,313	5,125	**6,120**	**5,904**
Part 91	4,250	4,100	**6,120**	**5,904**

Source: *Gulfstream 650ER Flight Planning Manual.*

1.6 Conclusion

The runway length analysis analyzed requirements of the critical aircraft using criteria outlined in FAA AC No. 150/5325-4A, *Runway Length Requirements for Airport Design*. The final recommended runway length is the longest resulting length based on criteria for regular use.

- Existing Recommended Takeoff Length: 6,100 ft (Reference **Table 6**)
- Future Recommended Takeoff Length: 6,600 ft (Reference **Table 6**)
- Existing/Future Recommended Landing Length: 6,120 ft (Reference **Table 8**)

Attachment A
Supporting Documentation

FTY AIRPORT USER UNMET NEEDS SURVEY – Runway Length Needs

Dear Airport Tenant, FTY is currently preparing a master plan that could include a runway extension. As an operator of more demanding aircraft at FTY, we are seeking information related your operations that will assist us in providing justification to the FAA for funding of the runway extension.

How do airport planners calulate runway length? Planners choose the single aircraft, or grouping of aircraft with similar operational requirements, know as the "Critical Aircraft", these aircraft have the longest runway length requirement that makes regular use of the runway.

The critical aircraft is the most demanding aircraft type, orgrouping of aircraft with similar physical and operational characteristics, that make regular use of an airport. Regular use is 500 annual operations, excluding touch-and-go operations. The critical aircraft determines theapplicable design standards for facilities on the airport including individual runway lengths, etc."

Airport User Name: ___The Coca-Cola Company_____

Survey Contact Person: (Name and Title):_Stephanie Hartsfield Dir, Client Support Services_

Phone: _470-403-7345_

Email: _sthartsfield@coca-cola.com_

Q1. What operating rules do you typically fly under? (Part 91, 135, etc)

___Part 91_____

Q2. Please provide a list of your aircraft currently based at FTY. (Turbine-powered only)

FAA ID	Make	Model	MTOW
N886RW	Gulfstream	G600	94,600
N959RW	"	"	"
N982RW	"	"	"

Q3. Using 2019 data (pre-COVID) Please estimate the number of annual departures that fall into the following stage lengths. VERY IMPORTANT: Include the haul length for the ultimate destination if the flight were non-stop from FTY rather than stopping for fuel due to unmet runway length needs at FTY:

Distance to Destination (NM)	**Number of annual departures**	**Takeoff Length For this Stage Length**
	Information below is based on using 3 G550s	***This data gathered using current W&B parameters, and hypothetical "worst case" scenarios (AFM Performance, Ch 5)**
0-500	**164**	**5500 (w/ limited fuel load)**
500-1,000	**41**	
1,000-1,500	**13**	
1,500-2,000	**49**	
2,000-2,500	**13**	**6000 (w/ highest temp, wt, flaps 10)**
2,500-3,000	**20**	
3,000-3500	**12**	
3,500-4,000	**36**	
4000+	**40**	**7133 (w/ max fuel load)**
TOTAL	**388**	

If possible provide flight logs demonstrating operations data and copies of takeoff charts. FTY needs this information to justify federal funding for the proposed extension.

*We utilize a weight and balance program called iPreFlight Genesis powered by Aircraft Performance Group (APG). Because the calculations are based on the current usuable runway length, it forces us to make adjustments to the flight planning details to stay within weight and balance limits. The planned takeoff weight is adjusted to ensure that takeoff limits can be met (e.i. reduced fuel onboard, increased taxi out fuel, runway choice, etc.).

Q4. Please estimate the number of takeoffs and landings during a typical non-Covid year in which the existing runway length does not satisfy your operations requirements. Examples include:

- Carrying less payload than desired
- Making an intermediate fuel stop rather than proceeding directly
- Staging operations from other airports
- Rescheduling the trip
- Fly commercial instead

FAA ID	Make	Model	# of takeoffs and/or landings per year	Runway Length Needed
N886RW	Gulfstream	G600	1-2	>5797
N959RW	Gulfstream	G600	1-2	>5797
N982RW	Gulfstream	G600	1-2	>5797
		2019 were G550s		Typically under 5000’
			It is our ramp weight, or t/o weight.	

Q5. Questions on landing length requirements.

Please provide the maximum landing length of your most demanding aircraft and approximate number of annual landings. Below are guidelines provided by AOPA for calulating safety landing distance although you may use your own criteria.

FAA ID	Make	Model	Landing Distance
Various	Gulfstream	G600	7100’, in a worst case scenario

https://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/safo/all_safos/media/2019/SAFO19001.pdf

https://nbaa.org/aircraft-operations/safety/in-flight-safety/runway-safety/best-practices-calculating-runway-landing-distance/

Thank you for your valuable assistance. Please return this survey to:

jduguay@mbakerintl.com by May 27, 2022.

We may reach out to you for further information. If you have any questions, please call Jim Duguay at 678-463-4530.

FTY AIRPORT USER UNMET NEEDS SURVEY – Runway Length Needs

Dear Airport Tenant, FTY is currently preparing a master plan that could include a runway extension. As an operator of more demanding aircraft at FTY, we are seeking information related your operations that will assist us in providing justification to the FAA for funding of the runway extension.

How do airport planners calulate runway length? Planners choose the single aircraft, or grouping of aircraft with similar operational requirements, know as the "Critical Aircraft", these aircraft have the longest runway length requirement that makes regular use of the runway.

The critical aircraft is the most demanding aircraft type, orgrouping of aircraft with similar physical and operational characteristics, that make regular use of an airport. Regular use is 500 annual operations, excluding touch-and-go operations. The critical aircraft determines theapplicable design standards for facilities on the airport including individual runway lengths, etc."

Airport User Name: Cox Enterprises, Inc.

Survey Contact Person: (Name and Title): David Small, Director of Flight Coordination

Phone: 404-358-7978

Email: Dave.Small@coxinc.com

Q1. What operating rules do you typically fly under? (Part 91, 135, etc)

Part 91

Q2. Please provide a list of your aircraft currently based at FTY. (Turbine-powered only)

FAA ID	Make	Model	MTOW
N1040	Gulfstream	G650ER	103,600 lbs
N1540	Gulfstream	G280	39,600 lbs
N1620	Gulfstream	G280	39,600 lbs
N1640	Gulfstream	G280	39,600 lbs
N1040C	Pilatus	PC-24	18,300 lbs

Q3. Using 2019 data (pre-COVID) Please estimate the number of annual departures that fall into the following stage lengths. VERY IMPORTANT: Include the haul length for the ultimate destination if the flight were non-stop from FTY rather than stopping for fuel due to unmet runway length needs at FTY:

Distance to Destination (NM)	Number of annual departures	Takeoff Length For this Stage Length
0-500	**412**	**3,598**
500-1,000	**293**	**4,693**
1,000-1,500	**73**	**5,284**
1,500-2,000	**80**	**5,475**
2,000-2,500	**2**	**5,525**
2,500-3,000	**4**	**5,657**
3,000-3500	**0**	
3,500-4,000	**6**	**5,700**
4000+	**3**	**5,786**
TOTAL	**873**	

If possible provide flight logs demonstrating operations data and copies of takeoff charts. FTY needs this information to justify federal funding for the proposed extension.

Q4. Please estimate the number of takeoffs and landings during a typical non-Covid year in which the existing runway length does not satisfy your operations requirements. Examples include:

- Carrying less payload than desired
- Making an intermediate fuel stop rather than proceeding directly
- Staging operations from other airports
- Rescheduling the trip
- Fly commercial instead

FAA ID	Make	Model	# of takeoffs and/or landings per year	Runway Length Needed
N1040	**Gulfstream**	**G650ER**	**102 / 28**	**6640'**
N1540	**Gulfstream**	**G280**	**200**	
N1580	**Gulfstream**	**G280**	**190**	
N1640	**Gulfstream**	**G280**	**6**	
N1040C	**Pilatus**	**PC-24**	**47**	

N1040 had a total number of take offs of 102 but 28 were runway limited.

We normally are faced with less payload/fuel to make departure performance #'s.

Q5. Questions on landing length requirements.

Please provide the maximum landing length of your most demanding aircraft and approximate number of annual landings. Below are guidelines provided by AOPA for calulating safety landing distance although you may use your own criteria.

FAA ID	Make	Model	Landing Distance
N1040	**Gulfstream**	**G650ER**	**8250 ft (80%, Auto brakes low)**

https://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/safo/all_safos/media/2019/SAFO19001.pdf

https://nbaa.org/aircraft-operations/safety/in-flight-safety/runway-safety/best-practices-calculating-runway-landing-distance/

Thank you for your valuable assistance. Please return this survey to:

jduguay@mbakerintl.com by May 27, 2022.

We may reach out to you for further information. If you have any questions, please call Jim Duguay at 678-463-4530.

Cox Enterprises, Inc.
Supplement 1

How would a loss of 300 feet of usable runway at FTY impact your operations?

As an operator of one of the largest based aircraft at FTY, our desire is not to lose any usable pavement but gain runway to help provide a better safety margin for our longer missions from home base. Previous data is all operations that have been adjusted because of the current length of 5,797'.

Data provided in our tenant survey included missions planned on taking the most fuel, payload out of FTY safely. Many times, this required us to stop enroute to uplift additional fuel so to make our destination. With a long-haul aircraft, we are limited on weight departing out of FTY because of the shorter runway rather than any other factor such as crew duty time.

If we were limited to FTY by a displaced threshold of say 300 feet, I would say that any operation of 2000 nm or greater would be impacted. According to our data provided in Q3 of tenant questionnaire, this would be roughly **95 trips during a year**.

We adhere to the industry safety standards such as using NBAA IFR reserves and 80% landing factor with autobrakes set at low.

FTY AIRPORT TENANT UNMET NEEDS SURVEY

Tenant Name: _INPO_____

Survey Contact Person: (Name and Title): _Ben Brewer, Chief Pilot_____

Phone: _770-644-8853_____

Email: _brewerbt@inpo.org_____

Q1. Please provide a list of your aircraft currently based at FTY. (Turbine-powered only)

FAA ID	Make	Model	MTOW
N1VM	Falcon	2000LX	43,000

Q2. Please estimate the percentage of your annual departures that fall into the following stage lengths:

Distance to Destination (NM)	Percentage of your annual operations
0-500	**50%**
500-1,000	**32%**
1,000-1,500	**10%**
1,500-2,500	**4%**
2,500-3,500	**2%**
3,500-4,500	**2%**
4,500+	
TOTAL	**100%**

Q3. Please estimate the number of takeoffs and landings per year in which the existing runway length does not satisfy your operations requirements. Examples include:

- **Carrying less payload than desired**
- **Making an intermediate fuel stop rather than proceeding directly**
- **Staging operations from other airports**
- **Rescheduling the trip**
- **Fly commercial instead**

FAA ID	Make	Model	# of takeoffs and/or landings per year
N1VM	Falcon	2000LX	4

Q4. Giving consideration to the operations listed in Q3, what runway length would adequately meet the needs of these aircraft? Please include in your calculation any safety factors such as temperature, atmospheric, wet conditions and accelerate-stop distance.

7/20/2021 - 7,236 feet
Temp: 27 C
Altimeter: 30.00
Runway Condition: Wet

Q5. For future planning, are there additional aircraft make and models not listed in Q3 that you would consider operating at FTY if there was suitable runway length? Please provide aircraft models and estimate annual takeoffs and landings.

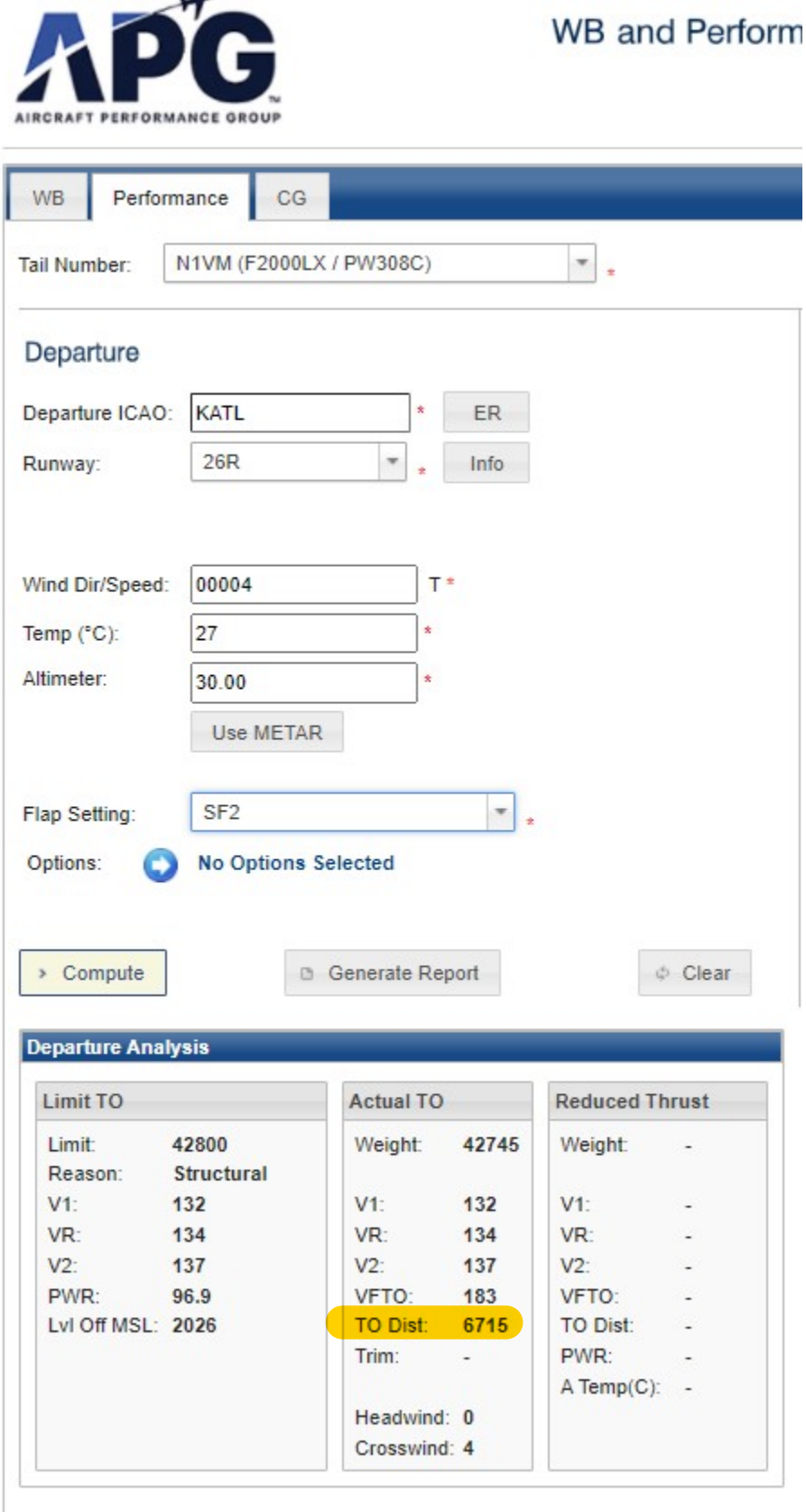
N/A

Q6. Please provide a copy of your aircraft's takeoff and landing chart that helps demonstrate the need for longer runway length based on payload, temperature atmospheric pressure, wet conditions. If your manuals are digital, a screenshot is fine.

Thank you for your valuable assistance. Please return this survey to:

jduguay@mbakerintl.com

If you have any questions, please call Jim Duguay at 678-463-4530.


APG
AIRCRAFT PERFORMANCE GROUP
WB and Perform
WB
Performance
CG
Tail Number:
N1VM (F2000LX / PW308C)
Departure
Departure ICAO:
KATL
ER
Runway:
26R
Info
Wind Dir/Speed:
00004
T
Temp (°C):
27
Altimeter:
30.00
Use METAR
Flap Setting:
SF2
Options:
No Options Selected
Compute
Generate Report
Clear
Departure Analysis
Limit TO
Limit: 42800
Reason: Structural
V1: 132
VR: 134
V2: 137
PWR: 96.9
Lvl Off MSL: 2026
Actual TO
Weight: 42745
V1: 132
VR: 134
V2: 137
VFTO: 183
TO Dist: 6715
Trim: -
Headwind: 0
Crosswind: 4
Reduced Thrust
Weight: -
V1: -
VR: -
V2: -
VFTO: -
TO Dist: -
PWR: -
A Temp(C): -

Dry Runway.

APG
AIRCRAFT PERFORMANCE GROUP

WB and Perform

WB | Performance | CG

Tail Number: N1VM (F2000LX / PW308C) *

Departure

Departure ICAO: KATL * ER

Runway: 26R * Info

Wind Dir/Speed: 00004 T *

Temp (°C): 27 *

Altimeter: 30.00 *

Use METAR

Flap Setting: SF1 *

Options: WET RWY

Compute | Generate Report | Clear

Departure Analysis

Limit TO		Actual TO		Reduced Thrust	
Limit:	42800	Weight:	42745	Weight:	-
Reason:	Structural				
V1:	124	V1:	124	V1:	-
VR:	140	VR:	140	VR:	-
V2:	142	V2:	142	V2:	-
PWR:	96.9	VFTO:	183	VFTO:	-
Lvl Off MSL:	2026	TO Dist:	7236	TO Dist:	-
		Trim:	-	PWR:	-
				A Temp(C):	-
		Headwind:	0		
		Crosswind:	4		

FTY AIRPORT TENANT UNMET NEEDS SURVEY

Tenant Name: The Home Depot

Survey Contact Person: (Name and Title): Bill McBride, Sr. Director, Aviation

Phone: 770-384-3827

Email: bill_mcbride@homedepot.com

Q1. Please provide a list of your aircraft currently based at FTY. (Turbine-powered only)

FAA ID	Make	Model	MTOW
N707WB	**Dassault**	**F900EX EASy**	**49,000 lbs.**
N83HD	**Dassault**	**F900LX**	**49,000 lbs.**
N84HD	**Dassault**	**F200LX**	**42,800 lbs.**
N87HD	**Dassault**	**F2000LXS**	**42,800 lbs.**

Q2. Please estimate the percentage of your annual departures that fall into the following stage lengths:

Distance to Destination (NM)	Percentage of your annual operations
0-500	**26**
500-1,000	**32**
1,000-1,500	**9**
1,500-2,500	**29**
2,500-3,500	**4**
3,500-4,500	
4,500+	
TOTAL	**100%**

Q3. Please estimate the number of takeoffs and landings per year in which the existing runway length does not satisfy your operations requirements. Examples include:

- **Carrying less payload than desired**
- **Making an intermediate fuel stop rather than proceeding directly**
- **Staging operations from other airports**
- **Rescheduling the trip**
- **Fly commercial instead**

We estimate 75 takeoff/landings per year are affected by runway length. This is not a current performance metric, actual data is not tracked nor is it recorded when aircraft are swapped due to mission profile, payload, weight or fuel reserves. We are fortunate to operate a fleet so trips are shifted to another aircraft because we CAN, however let me be clear for this "unmet needs survey" - we routinely work through Airport RWY/weather/fleet capability restrictions.

FAA ID	Make	Model	# of takeoffs and/or landings per year
N707WB	Dassault	F-900EX EASy	15
N83HD	Dassault	F-900LX	15
N86HD	Dassault	F-2000LX	30
N87HD	Dassault	F-2000LXS	15

Q4. Giving consideration to the operations listed in Q3, what runway length would adequately meet the needs of these aircraft? Please include in your calculation any safety factors such as temperature, atmospheric, wet conditions and accelerate-stop distance.

6,850, supporting documentation outlining the calculations and conditions (note RWY length and obstacle restriction impact to fuel available, which ultimately impacts payload and trip execution) for The Home Depot Falcon 900 and Falcon 2000 equipment, is highlighted on the attached deck pages

Q5. For future planning, are there additional aircraft make and models not listed in Q3 that you would consider operating at FTY if there was suitable runway length? Please provide aircraft models and estimate annual takeoffs and landings.

Dassault Falcon 6X or the 8X. Annual operations (takeoffs & landings) estimated at approximately 150.

Q6. Please provide a copy of your aircraft's takeoff and landing chart that helps demonstrate the need for longer runway length based on payload, temperature atmospheric pressure, wet conditions. If your manuals are digital, a screenshot is fine. See attached deck pages, advise if more data is needed.

Thank you for your valuable assistance. Please return this survey to:

jduguay@mbakerintl.com

If you have any questions, please call Jim Duguay at 678-463-4530.

Fulton County Airport (KFTY) Required Runway Analysis

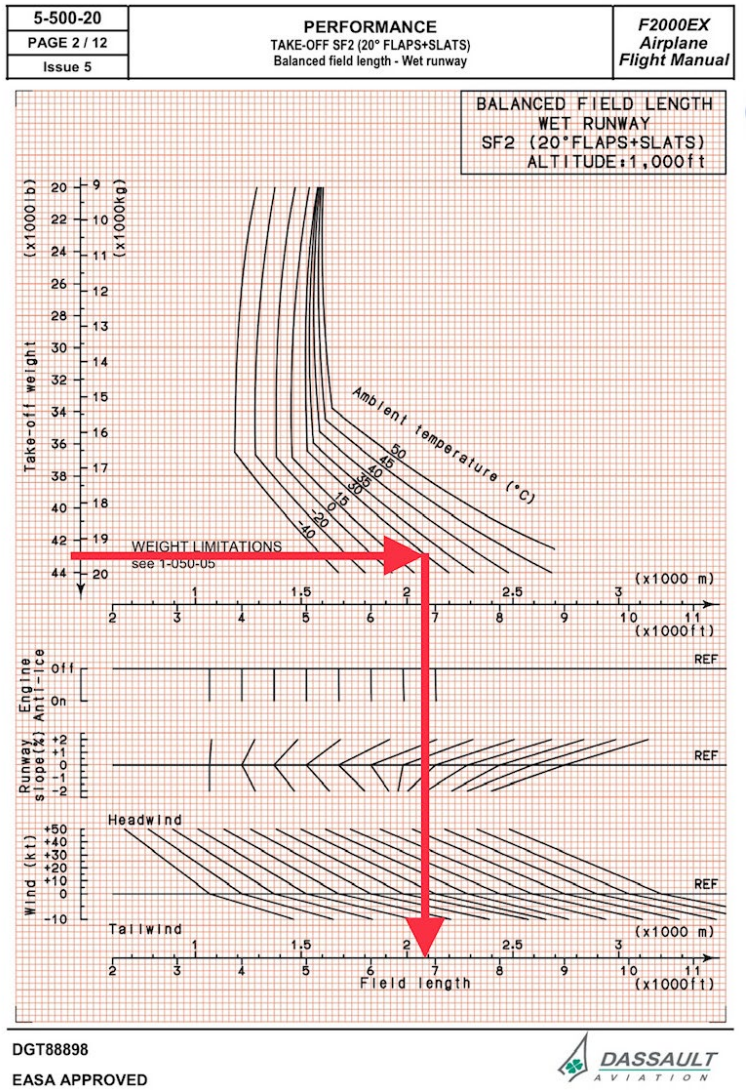
The Home Depot Aviation

Falcon 2000LX: N86HD

Completed by Terry Ickes, July, 2021

N86HD – Falcon 2000LX Required Runway – Atlanta, GA

- Conditions:
  - Atlanta, Georgia (1,000’ Elevation Chart)
    - Maximum Takeoff Weight: 42,800#
    - Temperature: 30*C
    - Wet Runway
- Runway Required
  - 6,800 feet
  - Structural Aircraft Limitation
- Data Source
  - Dassault Falcon 2000EX/LX Airplane Flight Manual (AFM)



N86HD – Falcon 2000LX Required Runway – Atlanta Hartsfield Airport, Atlanta, GA

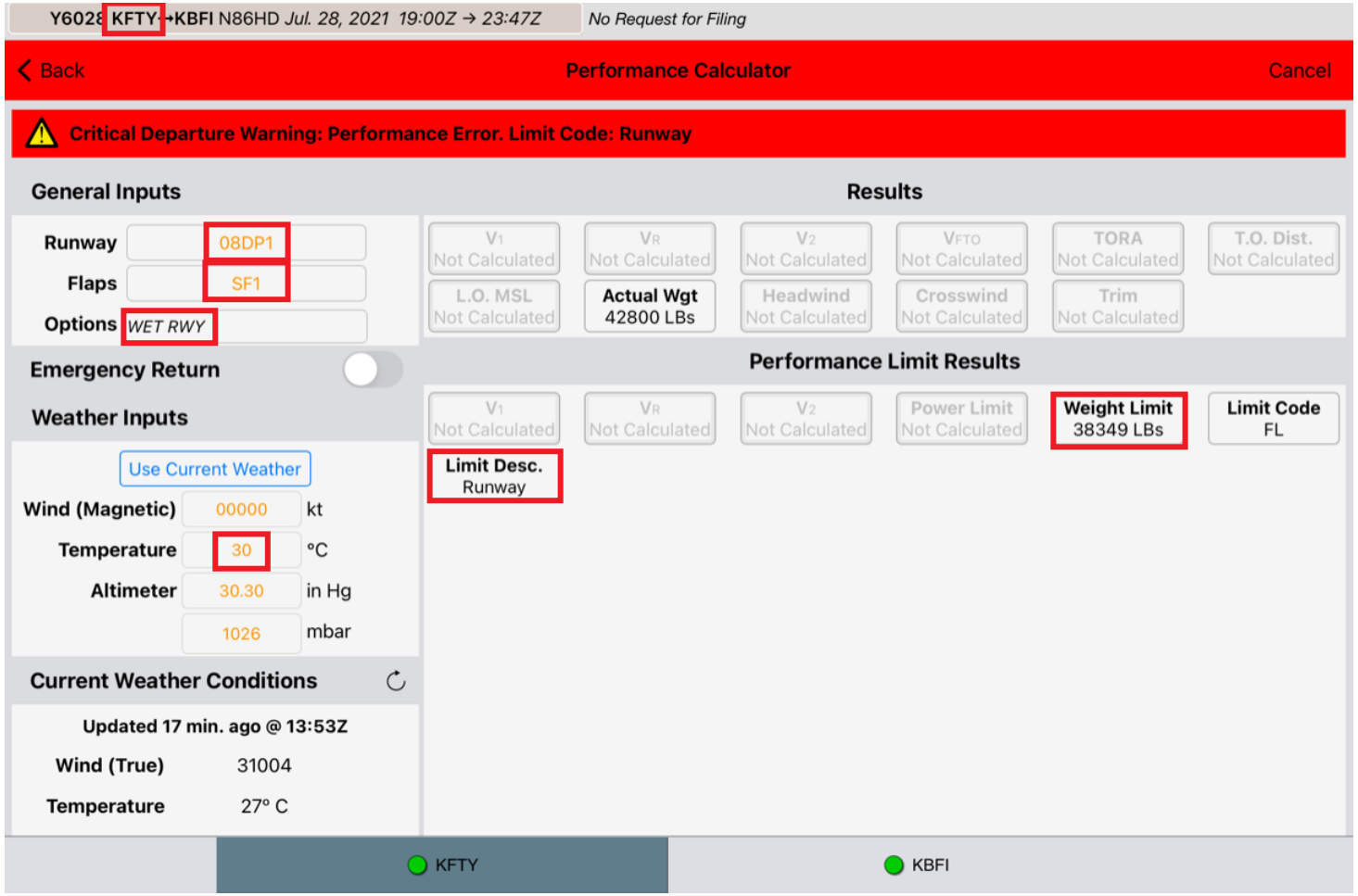
- Conditions:
  - Atlanta Hartsfield Airport (KATL)
    - Maximum Takeoff Weight: 42,800#
    - Temperature: 30*C
    - Wet Runway
- Runway Required
  - 6,846 feet
  - Structural Aircraft Limitation
- Data Source
  - ARINC Direct Flight Planning App
  - Aircraft Performance Group (APG) data

N86HD – Falcon 2000LX Takeoff Weight Limit – Fulton County Airport (KFTY) – Runway 26

- Conditions:
  - Fulton County Airport (KFTY)
    - Runway 26
    - Temperature: 30*C
    - Wet Runway
    - Flaps 20* (SF2)
- Weight Limited due to Runway Length
  - Structural Aircraft Limit 42,800 pounds
  - Runway 26 Limit Weight 39,778 pounds
  - 3,022 pounds unavailable at takeoff
- Data Source
  - ARINC Direct Flight Planning App
  - Aircraft Performance Group (APG) data

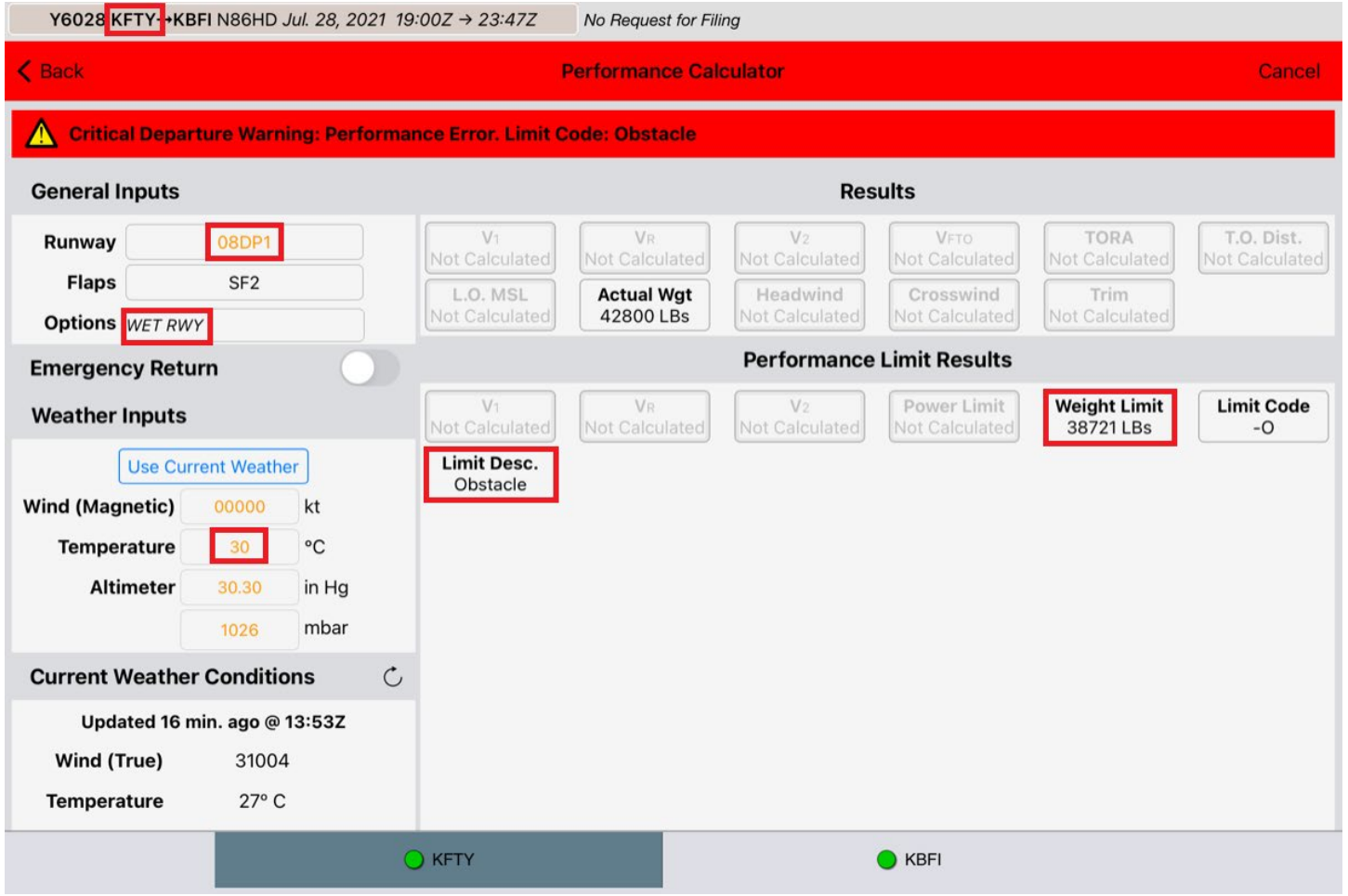
N86HD – Falcon 2000LX Takeoff Weight Limit – Fulton County Airport (KFTY) – Runway 8

- Conditions:
  - Fulton County Airport (KFTY)
    - Runway 8
    - Temperature: 30*C
    - Wet Runway
    - Flaps 10* (SF1)
- Weight Limited due to Runway Length
  - Structural Aircraft Limit 42,800 pounds
  - Runway 8 Limit Weight 38,349 pounds
  - 4,451 pounds unavailable at takeoff
- Data Source
  - ARINC Direct Flight Planning App
  - Aircraft Performance Group (APG) data



N86HD – Falcon 2000LX Takeoff Weight Limit – Fulton County Airport (KFTY) – Runway 8

- Conditions:
  - Fulton County Airport (KFTY)
    - Runway 8
    - Temperature: 30*C
    - Wet Runway
    - Flaps 20* (SF2)
- Weight Limited due to Obstacle
  - Structural Aircraft Limit 42,800 pounds
  - Runway 8 Limit Weight 38,721 pounds
  - 4,079 pounds unavailable at takeoff
- Data Source
  - ARINC Direct Flight Planning App
  - Aircraft Performance Group (APG) data



Fulton County Airport (KFTY) Required Runway Analysis

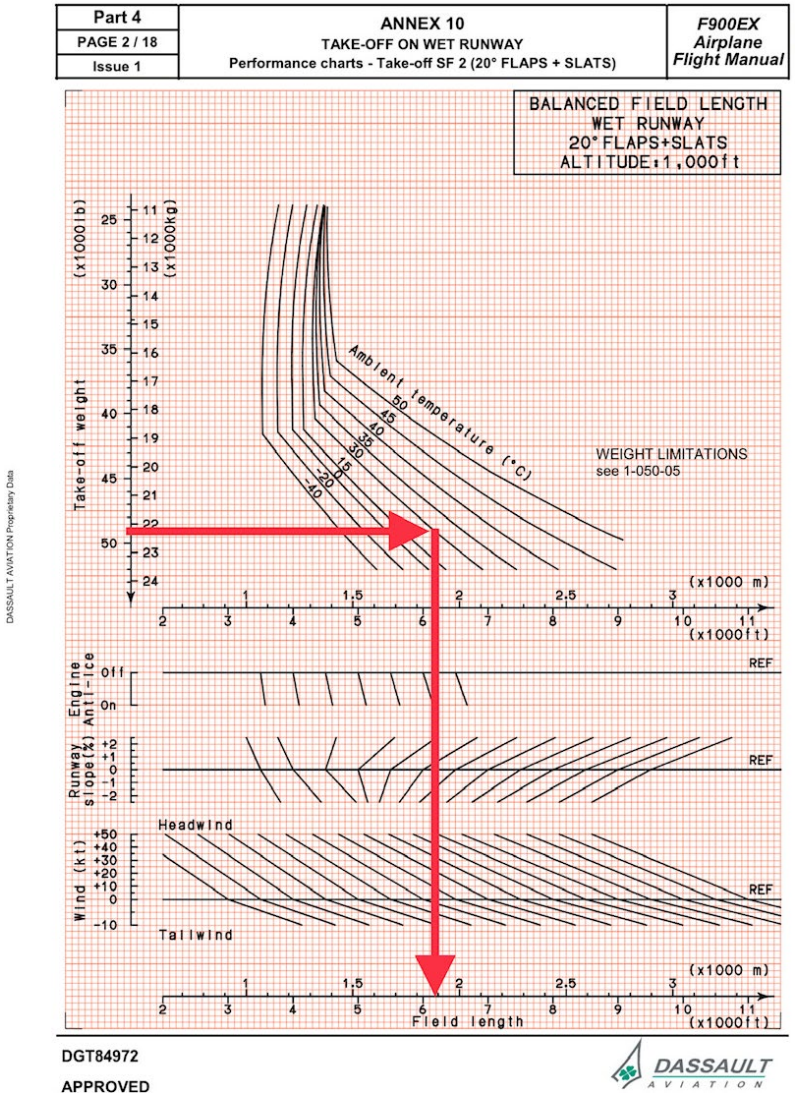
The Home Depot Aviation

Falcon 900LX: N83HD

Completed by Terry Ickes, July, 2021

N83HD – Falcon 900LX Required Runway – Atlanta, GA

- Conditions:
  - Atlanta, Georgia (1,000’ Elevation Chart)
    - Maximum Takeoff Weight: 49,000#
    - Temperature: 30*C
    - Wet Runway
- Runway Required
  - 6,250 feet
  - Structural Aircraft Limitation
- Data Source
  - Dassault Falcon 900LX Airplane Flight Manual (AFM)

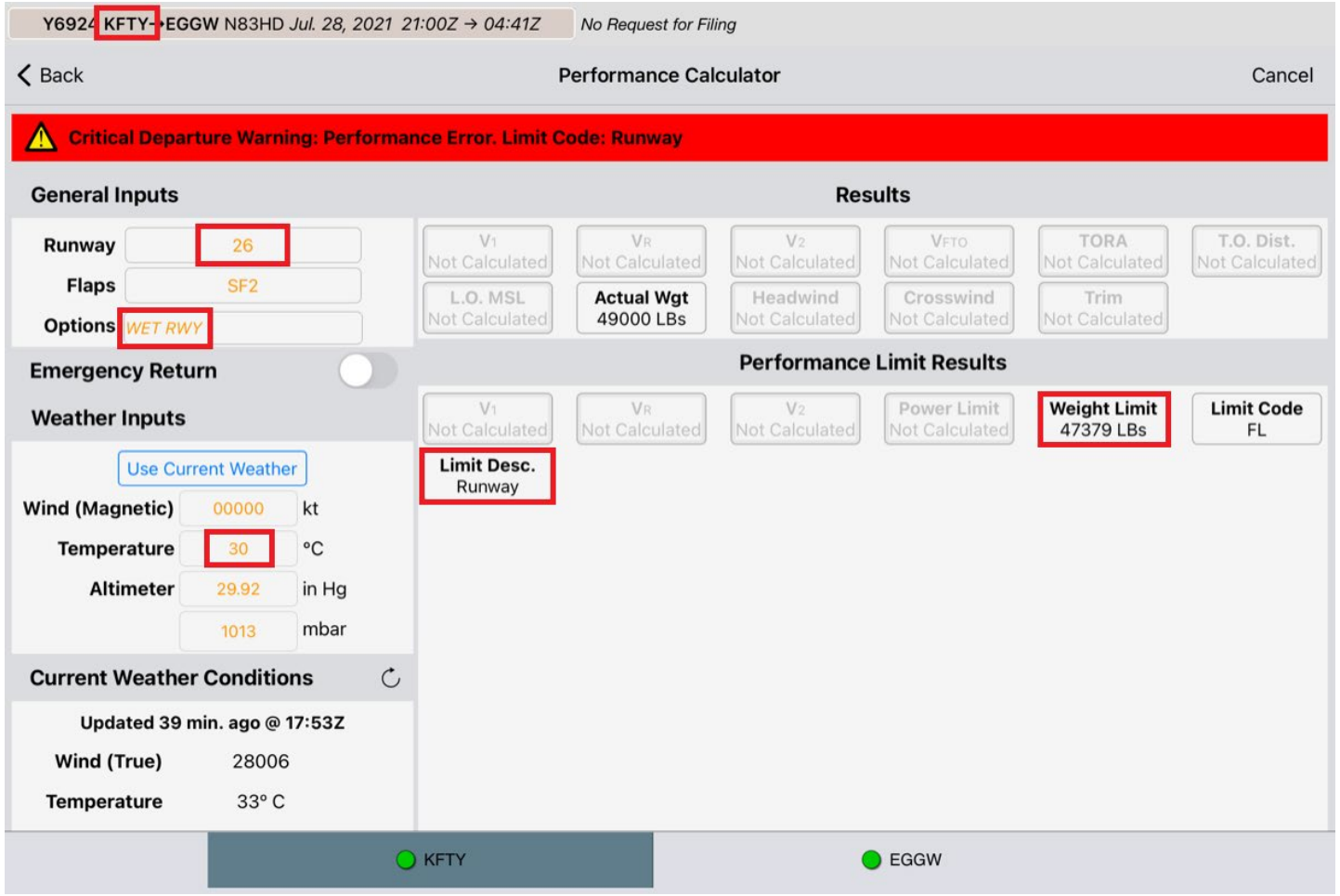


N83HD – Falcon 900LX Required Runway – Atlanta Hartsfield Airport, Atlanta, GA

- Conditions:
  - Atlanta Hartsfield Airport (KATL)
    - Maximum Takeoff Weight: 49,000#
    - Temperature: 30*C
    - Wet Runway
- Runway Required
  - 6,273 feet
  - Structural Aircraft Limitation
- Data Source
  - ARINC Direct Flight Planning App
  - Aircraft Performance Group (APG) data

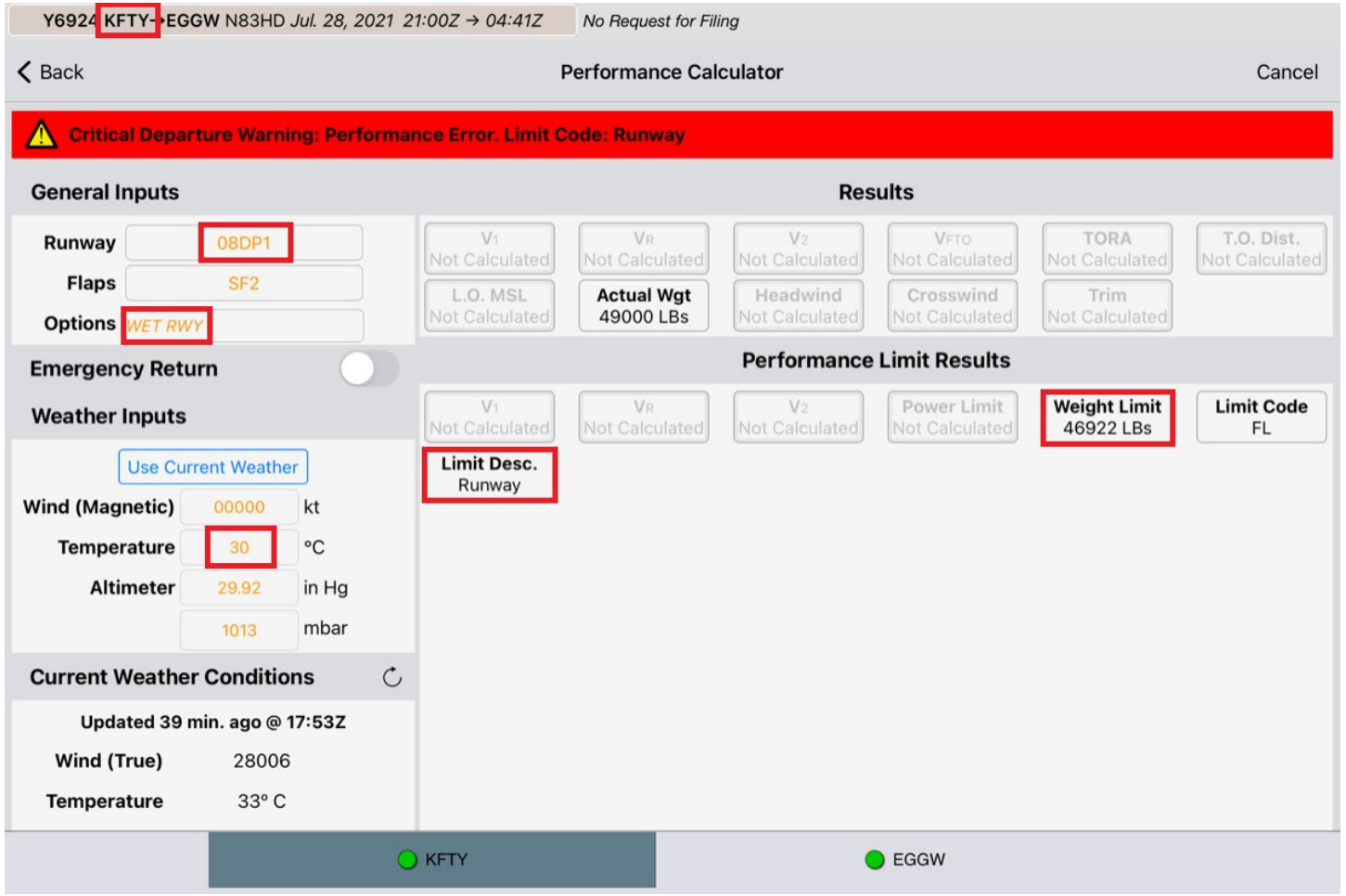
N83HD – Falcon 900LX Takeoff Weight Limit – Fulton County Airport (KFTY) – Runway 26

- Conditions:
  - Fulton County Airport (KFTY)
    - Runway 26
    - Temperature: 30*C
    - Wet Runway
    - Flaps 20* (SF2)
- Weight Limited due to Runway Length
  - Structural Aircraft Limit 49,000 pounds
  - Runway 26 Limit Weight 47,379 pounds
  - 1,621 pounds unavailable at takeoff
- Data Source
  - ARINC Direct Flight Planning App
  - Aircraft Performance Group (APG) data



N83HD – Falcon 900LX Takeoff Weight Limit – Fulton County Airport (KFTY) – Runway 8

- Conditions:
  - Fulton County Airport (KFTY)
    - Runway 8
    - Temperature: 30*C
    - Wet Runway
    - Flaps 20* (SF2)
- Weight Limited due to Runway Length
  - Structural Aircraft Limit 49,000 pounds
  - Runway 8 Limit Weight 46,922 pounds
  - 2,078 pounds unavailable at takeoff
- Data Source
  - ARINC Direct Flight Planning App
  - Aircraft Performance Group (APG) data



FTY AIRPORT TENANT UNMET NEEDS SURVEY

Tenant Name: Cox Enterprises, Inc.

Survey Contact Person: John Hatfield, Vice President – Aviation

Phone: 678-645-4961

Email: John.Hatfield@coxinc.com

Q1. Please provide a list of your aircraft currently based at FTY. (Turbine-powered only)

FAA ID	Make	Model	MTOW
N1040	**Gulfstream**	**650ER**	**103,600**
N1540	**Gulfstream**	**280**	**39,600**
N1580	**Gulfstream**	**280**	**39,600**
N1640	**Gulfstream**	**280**	**39,600**
N1040C	**Pilatus**	**PC-24**	**18,300**

Q2. Please estimate the percentage of your annual departures that fall into the following stage lengths:

Distance to Destination (NM)	Percentage of your annual operations
0-500	**45%**
500-1,000	**32%**
1,000-1,500	**10%**
1,500-2,500	**10%**
2,500-3,500	**1%**
3,500-4,500	**1%**
4,500+	**1%**
TOTAL	**100%**

Q3. Please estimate the number of takeoffs and landings per year in which the existing runway length does not satisfy your operations requirements. Examples include:

- **Carrying less payload than desired**
- **Making an intermediate fuel stop rather than proceeding directly**
- **Staging operations from other airports**
- **Rescheduling the trip**
- **Fly commercial instead**

FAA ID	Make	Model	# of takeoffs and/or landings per year
N1040	Gulfstream	650ER	102
N1540	Gulfstream	280	200
N1580	Gulfstream	280	190
N1640	Gulfstream	280	6
N1630	Gulfstream	280	202
N1620	Gulfstream	280	188
N1040C	Pilatus	PC-24	47

Q4. Giving consideration to the operations listed in Q3, what runway length would adequately meet the needs of these aircraft? Please include in your calculation any safety factors such as temperature, atmospheric, wet conditions and accelerate-stop distance.

An additional 500'- 700' of pavement at KFTY would eliminate 75% of our transient fuel uploads as we could tanker more fuel from home base. This would increase fuel flow fees to FTY and save us ~$150,000 annually in higher fuel prices. In addition, any extension significantly improves our safety margins for takeoff and landing performance.

Q5. For future planning, are there additional aircraft make and models not listed in Q3 that you would consider operating at FTY if there was suitable runway length? Please provide aircraft models and estimate annual takeoffs and landings.

As our company continues to grow and we evaluate the most efficient means to transport our employees, we could explore adding a regional jet type aircraft to our operation. (EMB-145, CRJ900, etc).

Q6. Please provide a copy of your aircraft's takeoff and landing chart that helps demonstrate the need for longer runway length based on payload, temperature atmospheric pressure, wet conditions. If your manuals are digital, a screenshot is fine.

Thank you for your valuable assistance. Please return this survey to:

jduguay@mbakerintl.com

If you have any questions, please call Jim Duguay at 678-463-4530.

Russell R. McMurry, P.E., Commissioner
One Georgia Center
600 West Peachtree NW
Atlanta, GA 30308
(404) 631-1990 Main Office

October 10, 2022

Mr. David Clark, Public Works Director
Fulton County
3977 Aviation Circle
Atlanta, GA 30336

RE: Fulton County Executive Airport – Charlie Brown Field (FTY) Runway Length Justification

Dear Mr. Clark,

The Georgia Department of Transportation (Department), in coordination with the Federal Aviation Administration (FAA), has completed a review of the *Runway Length Analysis Report* for Fulton County Executive Airport – Charlie Brown Field (FTY). We concur the methodology in the report complies with FAA Advisory Circular 150/5324-4B *Runway Length Requirements for Airport Design.* The Department concurs with and approves the justification for a 6,100' runway length for Runway 8/26. The Department also accepts a 6,600' ultimate runway length in the ALP for planning and airspace protection purposes.

Please note the Department and FAA concurrence with the justified length does not commit federal funding to the project. With discretionary funding requests planned, the Department and FAA must still review and concur with the preferred alternative and scope of the project. Additionally, any future federal funding is subject to congressional authorization and appropriation.

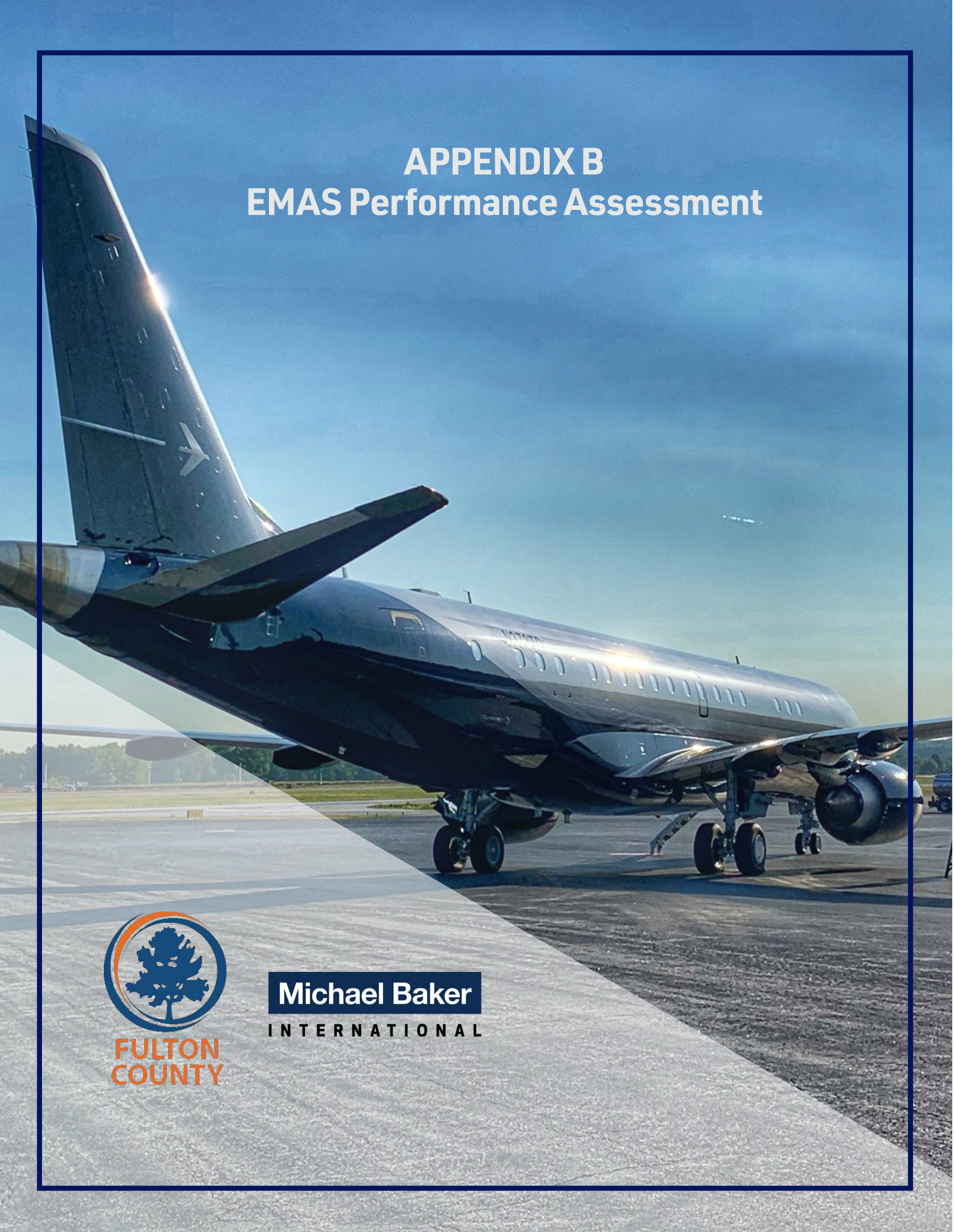
If you have any questions or would like to discuss this determination, please contact me at 404-631-1332 or mgiambrone@dot.ga.gov.

Sincerely,

Michael Giambrone
Aviation Planning Manager

Attachment: *FTY Runway Length Analysis Report*

cc: Jonathan Gauthier, FTY
Willie Franklin, FTY
Jim Duguay, Michael Baker Intl.
Charles Adeogun, Michael Baker Intl.
Joseph Robinson, FAA ATL ADO
GDOT Aviation



APPENDIX B
EMAS Performance Assessment

FULTON COUNTY

Michael Baker
INTERNATIONAL

Preliminary Performance & Cost Estimates for EMASMAX

FTY – Fulton County Airport
Runway 8-26 (duel EMAS)

REVISED BY: Trip Thomas, Regional Sales Director

NOVEMBER 8, 2022
REV 2.0

RUNWAY SAFE EMASMAX®

ENGINEERED TO PROTECT.

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info@runwaysafe.com
www.runwaysafe.com

Airport: **Fulton County Airport (FTY)**

Location: **Atlanta, Georgia**

Runway: **Runway 8-26 Departure Ends**
Runway Dimensions: **5,796' X 100'**

Elevation: **RWY 8-26 Departure El. = 841 'MSL**

RWY 8 Departure End: 290ft. RSA with -2% slope

Objective:	Maximize stopping within the 290ft length parameter. All aircraft can be stopped within the system at minimum performance of 64 knots or higher.			
Cost Estimate:	$**4.7** Million for EMAS materials and Runway Safe onsite support, excluding site preparation & locally contracted installation (*Cost estimate based on 2022 dollars) – Rough Order of Magnitude (ROM)			
Size & Strength:	**255ft arrestor bed setback 35ft from runway end (290ft total)**			
Performances:	**Aircraft Model**	**Runway exit speed @ MTOW (kt)**	**Runway exit speed @ 80% MLW**	**Remarks**
	Embraer Phenom-300	70+	70	
	Hawker-800	70+	70+	
	Challenger-604	70+	70+	
	Falcon-900	70+	64	
	G-650	67	70+	
Notes:	(1) EMAS performances were derived from an FAA validated computer program.			
	(2) Based on design case poor braking (0.25 braking coefficient) and no reverse thrust between runway end and EMAS (Setback).			
	(3) Actual performances may be better due to availability of braking and reverse thrust.			
	(4) Aircraft weight reflects MTOW			
	(5) Where complete AC data is not available, modeling was done using data from similar AC.			

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RWY 26 Departure End: 286ft. RSA with -2% slope

Objective:	Maximize stopping within the 286ft length parameter. All aircraft can be stopped within the system at maximum performance of 63 knots.			
Cost Estimate:	$4.6 Million for EMAS materials and Runway Safe onsite support, excluding site preparation & locally contracted installation (*Cost estimate based on 2022 dollars) – Rough Order of Magnitude (ROM)			
Size & Strength:	**50 strength, 251ft arrestor bed setback 35ft from runway end (286ft total)**			
Performances:	**Aircraft Model**	**Runway exit speed @ MTOW (kt)**	**Runway exit speed @ 80% MLW**	**Remarks**
	Embraer Phenom-300	70+	70	
	Hawker-800	70+	70+	
	Challenger-604	70+	70+	
	Falcon-900	70+	63	
	G-650	67	70+	
Notes:	(1) EMAS performances were derived from an FAA validated computer program.			
	(2) Based on design case poor braking (0.25 braking coefficient) and no reverse thrust between runway end and EMAS (Setback).			
	(3) Actual performances may be better due to availability of braking and reverse thrust.			
	(4) Aircraft weight reflects MTOW			
	(5) Where complete AC data is not available, modeling was done using data from similar AC.			

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Pricing:

The above Rough Order of Magnitude (ROM) pricing is provided as a courtesy to Michael Baker International as an indication of potential pricing as it relates to the purchase of EMASMAX beds for the Runway 8-26 Departure Ends. Its purpose is to assist the consultant and the airport (FTY) in moving forward with airport design and improvement projects determination.

Summary:

Runway 8 Departure End (26 numbered end)

The preliminary modeling for the 50 strength EMASMAX on Runway 8 Departure End system will have a 35-foot-long setback with a 255-foot long EMASMAX bed, with the RSA grade set at -2.00%. The results show all aircraft will have a minimum predicted performance of 64 knots or greater, depending on the specific aircraft.

Runway Safe requires a minimum setback (start of EMAS bed from runway threshold) of 35 feet due to heavy jet blast. Please see the "Typical EMAS Configuration" graphics on the back pages.

Runway 26 Departure End (8 numbered end)

The preliminary modeling for the 50-strength EMASMAX Runway 26 Departure End system represents a 35-foot-long setback with a 251-foot EMAS bed, with the RSA grade set at -2.00%. The results show all aircraft will have a minimum predicted performance of 63 knots or greater, depending on the specific aircraft.

When reviewing the potential use of EMAS systems the FAA first looks for a maximum performance of 70 knots. As can be seen in both EMASMAX systems come very close to a full 70 knot performance EMAS system.

Although neither of the above proposed EMAS systems are standard EMAS, defined by the FAA as a 600ft RSA, for undershoot protection, with a 70 knot EMAS bed at the back, they do provide an appreciable increase in safety for each runway end and the flying public using Fulton County Airport.

Should the option for the installation of EMAS beds at FTY be determined as the best course of action the next step would be for Runway Safe to enter into a sub-consultant agreement for EMAS bed configuration work. Through this process pricing will be finalized with the submission of Runway Safe's formal proposal to FTY after our Preliminary Performance Report (PPR) has been submitted and a final EMAS bed configuration has been determined including FAA approval of RSA designs (including EMAS).

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The pricing given is a rough order of magnitude (ROM). The fleet mix, RSA lengths and slopes were provided to Runway Safe Inc. by Michael Baker International and not final.

Runway Safe recommends the implementation of this EMAS design proposal and stands ready to respond to any questions, comments or further adjustments needed to implement the full site designs for this project.

Typical EMAS Configuration

Picture 1 – A Typical plan view of greenEMAS

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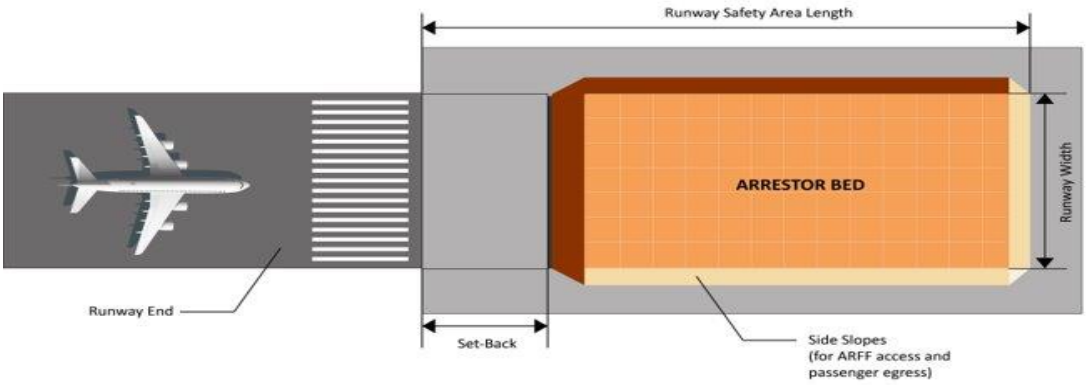
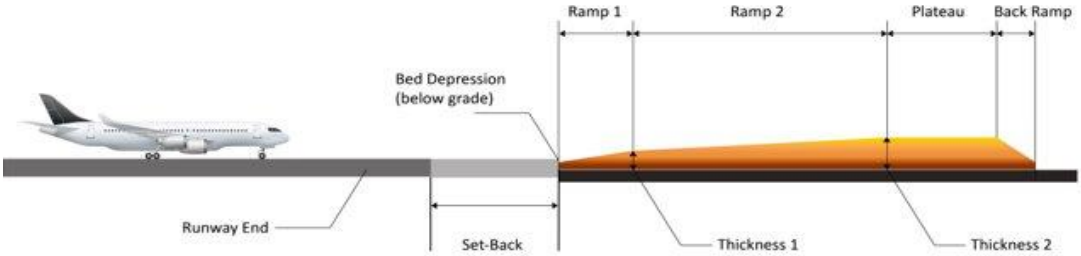
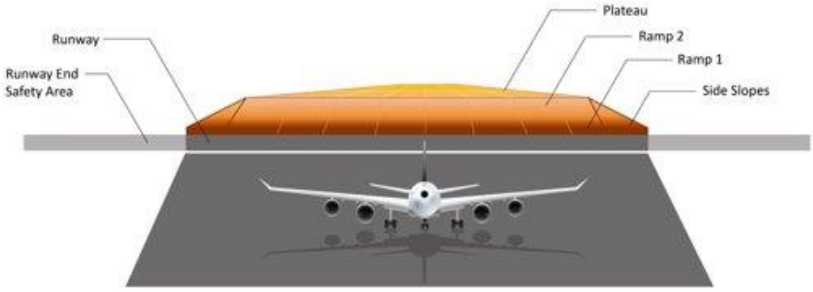


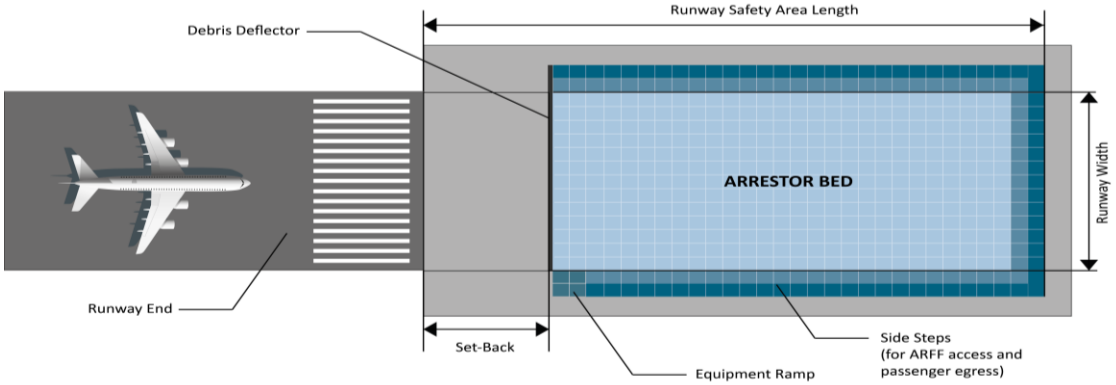
Picture 2 – A Typical elevation view of greenEMAS



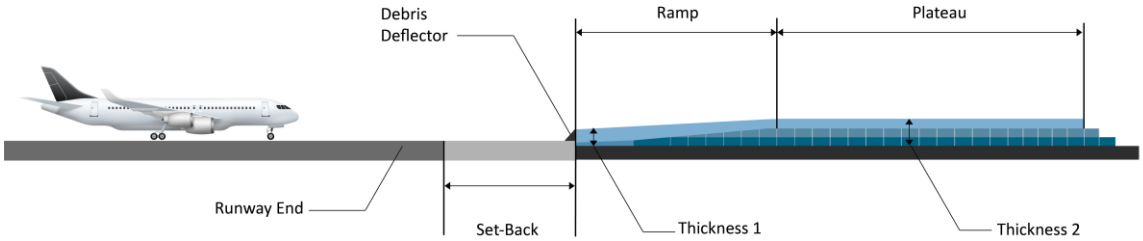
Picture 3 – A Typical elevation front view of greenEMAS



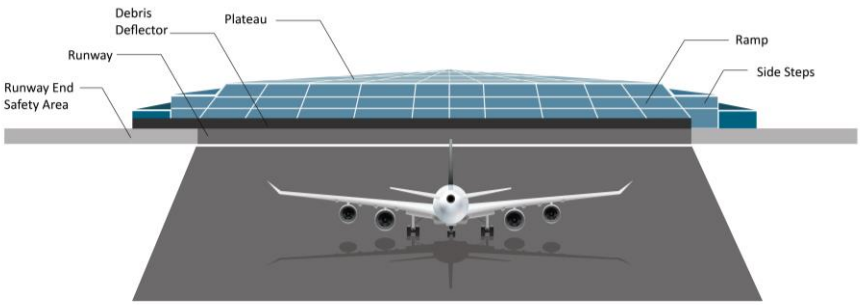
Picture 4 – A Typical plan view of EMASMAX®



Picture 5 – A Typical elevation view of EMASMAX®



Picture 6 – A Typical elevation front view of EMASMAX®



Michael Baker
INTERNATIONAL

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