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Chapter 2. Inventory of Existing Conditions

2.1. Introduction

This chapter documents the existing facilities, structure of operations, land use and zoning efforts by local jurisdictions, and other critical infrastructure supporting Cecil. The chapter further analyzes the existing environmental elements present at and around Cecil to support this summary of the Airport's and Spaceport's historical operating environment.

As used in this report, Cecil refers to the entire Cecil Airport facility, inclusive of the Cecil Spaceport. The "Spaceport" refers to Cecil Spaceport facilities and aerospace operations. The "Airport" refers to all other facilities and civil airport operations. Several Airport facilities are also used in support of aerospace operations (e.g., the airfield).

2.2. Background, Ownership, and Local Setting

Situated in northeast Florida, Cecil is a general aviation (GA) airport open to the public with a historic past as a military airfield. Cecil is located approximately 15 miles southwest from Jacksonville city center as depicted in Figure 2-1 and covers approximately 6,082 acres.¹ The airport elevation, defined as the highest point along the runways, is 79.6 feet. The Airport stands out from the other 128 public use airports in Florida due to a two-mile-long active runway and extensive maintenance, repair, and overhaul (MRO) facilities. Cecil has a Spaceport Territory with a license for Horizontal Takeoff Horizontal Launch (HTHL) operations.² Cecil resides in the Jacksonville metropolitan area, an active transportation hub, which has historically experienced annual growth year over year. Additionally, the geographic setting on the east coast of Florida provides an optimal space launch location for public and commercial space operations. Overall, Cecil is positioned within a market providing significant demand for both airport and spaceport facilities. The Jacksonville area is projected to see extended periods of growth into the future across a variety of sectors, and Cecil will continue to play a role in the region's continued growth.

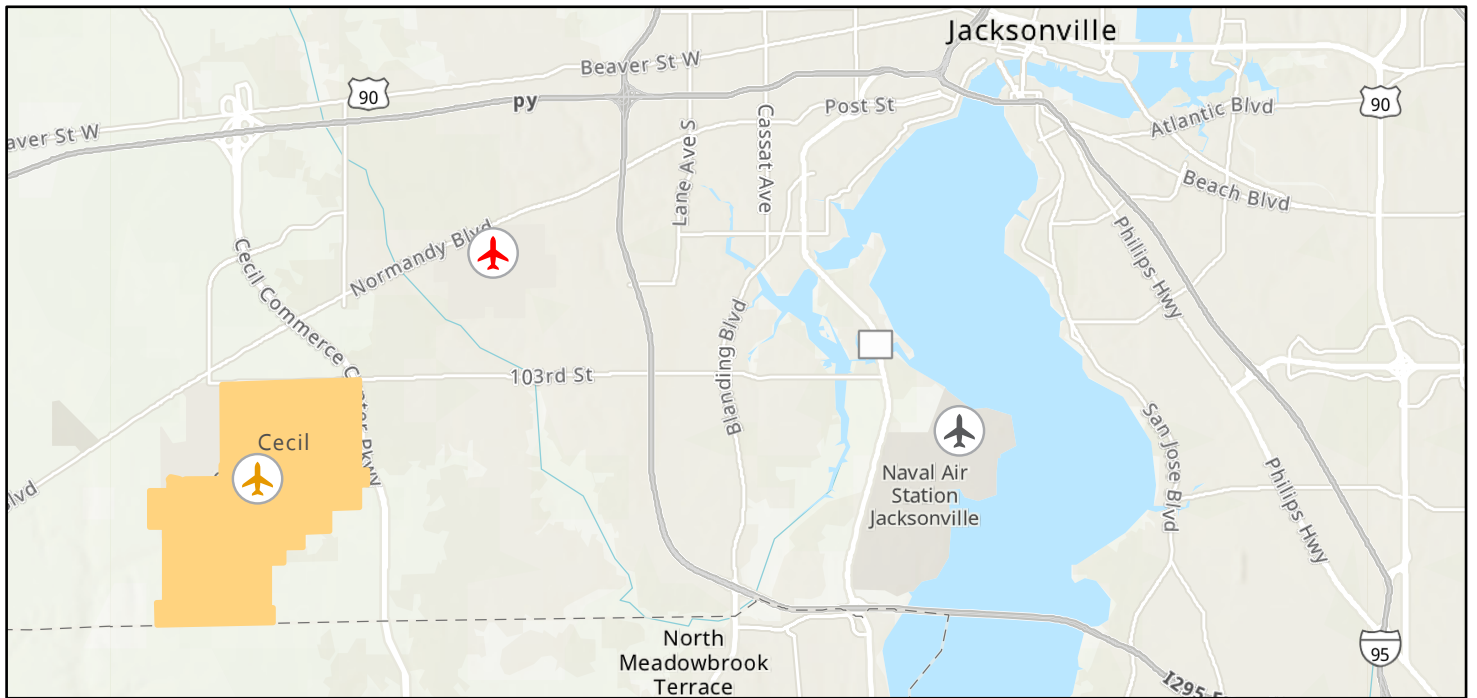
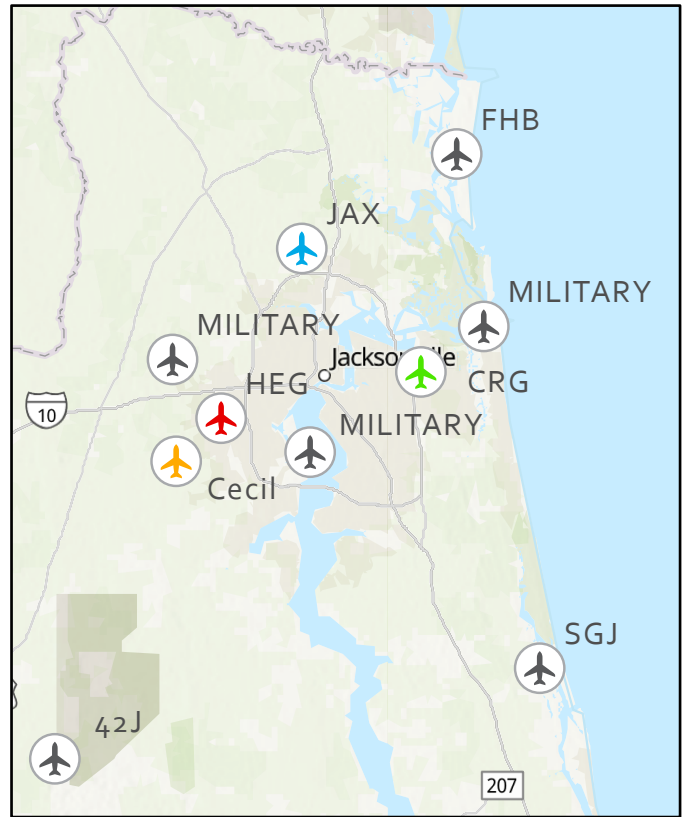
Cecil is owned and actively managed by the Jacksonville Aviation Authority (JAA). The JAA is an independent government agency that owns and operates four airports within the Jacksonville area, which are depicted in Figure 2-1 and discussed in the points below.

¹ Airport Data and Information Portal, Federal Aviation Administration, 2021.

² Florida Department of Transportation, 2035 FASP, 2017.



Figure 2-1 - Location Map



Legend

- | | | |
|--|--|--|
| Cecil | Fernandina Beach Municipal Airport FHB | Military Field |
| Keystone Heights Airport 42J | Herlong Recreational Airport HER | Northeast Florida Regional Airport SGJ |
| Fernandina Beach Municipal Airport FHB | Jacksonville International Airport JAX | |
| Cecil Property | | |



0 5 10 20 30 40 Miles

Cecil Airport and Spaceport Master Plan

- Jacksonville International Airport (JAX): JAX is the JAA's premier commercial hub airport within the region providing commercial flights to millions of passengers each year. JAX also supports commercial air cargo operations and has the Florida Air National Guard 125th Fighter Wing stationed on field, operating a fleet of F-15 military fighter aircraft.
- Jacksonville Executive at Craig Airport (CRG): CRG is a GA airport primarily serving corporate aviation operators and flight training at its airfield near the suburban business centers east of downtown Jacksonville.
- Herlong Recreational Airport (HEG): HEG is the JAA's main recreation GA airport located to the west of Jacksonville and is home to glider, hot air balloon, leisure, and sport aviation operations.
- Cecil Airport (VQQ): VQQ is positioned to become the regions primary aircraft MRO airport. Cecil also maintains a Federal Aviation Administration (FAA) Spaceport Launch Site license for HTHL vehicles and accommodates many military operations.

Within the Jacksonville area, there are two military bases and one supporting airstrip:

- Jacksonville Naval Air Station Towers Field (NIP or NAVJAX): To the east of Cecil, NIP is a strategic, active private military airfield for both the U.S Navy and its allies to base and operate military aerospace assets.
- Mayport Naval Station (NRB): The private military airfield of NRB is located northeast of downtown Jacksonville. NRB has one active runway and is primarily utilized by the U.S Navy for repair and basing of U.S Navy assets via the private port supplementing the airfield, which can harbor aircraft carrier-sized vessels.
- Whitehouse Naval Outlying Field (NEN): Private military field with minimal supporting facilities that is owned and operated by the U.S Navy. The airstrip is used to supplement the other U.S Navy bases within the area.



2.2.1. Airport Vision Statement and Strategic Goal

Since taking ownership of the facility in 1999, the JAA has been making strides to realize their vision for Cecil within the local region. Envisioned as the premier GA hub for maintenance and leisure civil aviation traffic of northeast Florida, Cecil continues to push toward that goal each year. With constant capital developments, expanding facilities, and the ability to serve a diverse mix of aircraft and aerospace operations, Cecil is well on its way to realizing the vision of the JAA. The JAA has laid out a three-tiered approach to the future:³

- **To sustain** and grow existing businesses at Cecil
- **To attract** new tenants, including business adjacencies
- **To develop** Cecil Airport as a logistics center

2.2.2. Airport History

Originally built as a U.S. Navy fleet training base in 1941, Cecil Field was named after U.S. Navy pilot Commander Henry Barton Cecil. The base was recognized as an important strategic airfield for the U.S. Military and upgraded from a training facility to a U.S. Navy master jet base that was operational from 1952 to 1999.⁴ At the tail end of the operational period, the U.S. Base Realignment and Closure (BRAC) Commission recommended Cecil Field to be decommissioned. From 1993 to 1999, the U.S. Navy worked to transition the field's ownership to the JAA and the City of Jacksonville. Celebrating 20 years as a civilian public-use airport in 2019, Cecil Airport, rebranded from Cecil Field in 2011, has pushed forward as a civil aviation airport serving the entire Southeast region.³

Between 2002 and 2021, thousands of square feet in new hangar space were added, along with expansive MRO and aircraft maintenance facilities, and JAA secured the East Coast's first FAA Commercial Space Launch license for HTHL vehicles for Cecil Spaceport. In recent years (2020-2021), the JAA constructed a new Airport Traffic Control Tower (ATCT) alongside an advanced mission control facility to support both Airport and Spaceport operations.

2.2.3. Capital Improvement and Grant History

The FAA, through its Airport Improvement Program (AIP), awards grants for the planning and development of airports within the National Plan for Integrated Airport Systems (NPIAS). Additional grants are awarded by the state through Florida Department of Transportation (FDOT) programs. As a BRAC airport, funding is also available through the FAA Military Airport Program (MAP) grant funding. MAP funding consists of separate AIP grant dollars set aside by the FAA to fund public-use projects at a total of 15 airports that are, or were, previously classified as military bases. This program only qualifies three GA airports, including Cecil Airport, and the remaining 12 are commercial service. All significant public grants awarded to Cecil are summarized in Table 2-1.

³ Cecil Field and Jacksonville Aviation Authority, *Development Strategy*, 2010.

⁴ Cecil Airport, *Airport History* webpage, Accessed 2021.



Table 2-1 - Cecil Capital Grant Summary

Grant Number	Fiscal Year	Project Description	Total Amount
Federal Aviation Administration AIP Funding			
023	2021	Update Airport Master Plan or Study	\$751,447
021	2019	Rehabilitate Runway and Install Airfield Guidance Signs	\$1,254,614
020	2016	Runway 09R/27L and 18L/36R Guidance System(s)	\$496,167
019	2014	Construct Taxiway E and E1	\$3,731,070
017	2013	Improve Airport Drainage	\$1,016,918
018	2013	Install Perimeter Fencing	\$1,083,020
016	2012	Complete Wildlife Hazard Assessment	\$44,847
020	2011	Improve Taxiway Drainage and Rehabilitate Taxiway D	\$379,994
014	2010	Rehabilitate Runway 18L/36R	\$4,785,415
013	2009	Rehabilitate Runway 09R/27L	\$823,306
011	2008	Rehabilitate Terminal Building (Americans with Disabilities Act [ADA])	\$275,050
012	2008	Extend Taxiway D and Rehabilitate Access Road and Terminal Parking Lot	\$2,267,337
010	2007	Improve Drainage and Rehabilitate Terminal and Building	\$4,017,900
008	2006	Construct Building (Rehabilitate H-67 Roof)	\$1,945,712
009	2006	Install Perimeter Fencing and Rehabilitate Fire Main Building and Taxiway	\$1,443,251
007	2005	Improve Drainage; Rehabilitate ATCT and Buildings 313, 312, and Fireloop; Demolish Building 214; Rehabilitate Taxiway Lights on B, C, and D; and Remove Obstruction (Refuelers)	\$3,153,730
005	2004	Install Misc. NAVAIDs, Install Runway 09R/27L and 18L/36R Lighting, and Rehabilitate Taxiway Lighting and Buildings	\$2,767,328
004	2003	Rehabilitate Runway 18L/36R Lighting, Rehabilitate Terminal Building, and Construct Apron	\$4,141,402
003	2002	Rehabilitate Runway Lighting and Building and Install Guidance Signage	\$2,568,965
002	2001	Rehabilitate Airfield Facilities	\$2,801,300
Subtotal			\$39,748,773
Florida Department of Transportation ACIP Funding			
423982	2013	Airport Capacity Project	\$2,500,000
425466	2014	Utilities and Infrastructure for Fire Main System Design and Rehabilitation	\$269,000
433710	2014	ATCT Design and Construction	\$3,500,000
425469	2012 -2015	Aviation Capacity Project	\$4,340,528



Grant Number	Fiscal Year	Project Description	Total Amount
425880	2011	Aviation Preservation Project	\$2,070,000
425170	2011	Aviation Capacity Project	\$6,000,000
427524	2012 – 2014	Roof Repairs on Buildings 67, 1823, and 824	\$3,426,100
427531	2013 – 2014	Airport Drainage Design and Construction	\$411,398
429098	2011	Aviation Revenue and Operational Improvements	\$3,008,046
438740	2016 – 2017	Cecil Field Eastside Utility Corridor Phase I Design and Construction	\$3,125,000
432024	2013	Maintenance Hangar 935 Design and Construction	\$20,000,000
432086	2012	Environmental Assessment Modification for Cecil Space Port Concept "Y" Vehicle	\$161,546
432143	2012	Cecil Spaceport Launch Sight Operator Licensing Modification	\$178,000
434751	2014	Hangar 67 Tail Slot Modification Design and Construction	\$500,000
433709	2014 - 2015	Hangar 955 Design and Construction	\$6,500,000
433944	2013 - 2014	Instrument Landing System (ILS) Purchase and Installation	\$1,200,000
432024	2013	Hangar 935 EDTF Design and Construction	\$7,000,000
434747	2016 - 2017	Airport Drainage Design and Construction	\$2,990,106
436699	2016	New Precision Approach Path Indicator (PAPI) and Runway End Identifier Lights (REILs) on Runway 18L/36R and 9R/27L	\$100,000
440040	2017	Aircraft Rescue and Fire Fighting (ARFF) Facility Design and Construction	\$2,039,391
440047	2017	Runway 09L/27R Design and Rehabilitation	\$1,200,000
N/A	2021	Approach Road Expansion	\$4,000,000
4440-1	2022	Freight Logistics and Passenger Operation Program – Runway 18R/36L Rehabilitation	\$5,625,000
Subtotal			\$80,144,115
Total			\$158,890,214

Sources: FAA, Airport Improvement Program, 2001 – 2021; FDOT, JACIP Online 6-Year Work Program Report, 2021.

2.3. Past Studies and Plans

JAA has undertaken numerous studies to understand the position and future planning of the Airport and Spaceport facilities. Each major study is summarized below, including the scope and timelines presented in each:

- 2008 Airport Master Plan:** The 2008 Airport Master Plan was Cecil's first master plan while being fully open to the public. The master plan, similar to this document, had a 20-year planning horizon touching on topics such as the Airport's existing inventory and forecasting and providing an FAA-approved Airport Layout Plan (ALP) drawing set.
- 2012 Spaceport Master Plan:** After obtaining a Commercial Launch Site Operator License through the FAA's Office of Commercial Space Transportation (FAA/AST) in January 2010, the 2012 Spaceport Master Plan focused on the anticipated demands for the Spaceport. The plan



documented basic elements needed for a Spaceport to become operationally useful and a description of a strategic business plan that charted future success over a 20-year timeframe.

- **2021 Spaceport Development Area Plan:** The purpose of the plan was to further elaborate on the facilities needed at the Spaceport and adjust for the now-known variables that the 2012 Spaceport Master Plan had not predicted. The plan evaluated potential Spaceport development areas with various layout options presented and prioritized development based on importance to a functional Spaceport. Additionally, the plan prepared a conceptual development aerospace area to supplement the overall report.

2.4. Airport Role

The National Airspace System (NAS) is the overall environment for the safe operation of aircraft that are subject to the FAA's jurisdiction.⁵ Included in the NAS are system components used and operated by the Department of Defense (DoD). Understanding the Airport's individual role within the greater system helps assess existing demand and plan for future improvements. This section outlines Cecil's roles as designated by the NPIAS, FDOT, and JAA.

2.4.1. National Plan of Integrated Airport Systems (NPIAS)

Due to the vast network of public-use airports in the U.S., the federal government is responsible for providing development and funding guidance for the country's airport system to meet the growing demand for civil aviation. Pursuant to Title 49 United States Code (U.S.C.), Section 47103, the FAA established the NPIAS to assist in programming federal funds that support aviation development.⁶ Last updated in 2021 for the planning period of 2021 to 2025, the NPIAS identifies 3,304 public-use airports that are considered significant to national air transportation and are, therefore, eligible to receive grants under the FAA's AIP.

In the most recent NPIAS published by the FAA for the period of 2021 – 2025, Cecil is identified as a public-use, GA Regional airport. The GA categorization is derived from the Airport's activity including no regularly scheduled commercial flights and servicing a wide range of GA, military, and civil maintenance operations. The Regional designation comes from the number and type of based aircraft at the Airport and the volume of flights. The Regional designation is the second highest designation within this category, with National being the highest. The designation of Regional was not forecasted to change in the NPIAS.

2.4.2. Florida Department of Transportation (FDOT)

FDOT has established the FDOT Aviation Office which ensures Florida maintains a cohesive and efficient airport system across the state. Major activities of this office include aviation system development, managing the state's aviation grant program, airport regulation, intergovernmental coordination, aviation outreach, and aviation emergency operations management.⁷ FDOT works to ensure that airports in the state are supported in a variety of ways. One example is the "United We Stand" specialized license plate Florida drivers can purchase, whose funds are used to conduct aviation security studies across the state to maximize safety within the transportation network. FDOT also funds statewide studies within their

⁵ FAA, Title 32 Code of Federal Regulations § 245.5, 2006.

⁶ FAA, National Plan of Integrated Airport Systems (NPIAS) Report, 2021.

⁷ FDOT, Aviation Office webpage, Accessed 2021.



aviation system development sector to outline the state's vision for individual airports and assess individual infrastructure needs.

2.4.2.1. Florida Aviation System Plan (FASP)

FASP is an effort by the FDOT Aviation Office to outline public-use airports across the state to direct specific state-funded development dollars. To be incorporated in the FASP, airports must follow *FDOT Procedure 725-040-210-f, New Public Airport Funding Eligibility*. The FASP 2035 identifies 129 airports across the Florida aviation system.⁸ FASP 2035 utilizes existing NPIAS classifications of airports.

2.4.2.2. Spaceport Integration

Additional support has been provided to Cecil by the state because of its designation as a Spaceport Territory in 2012 through State House Bill 59.⁹ This designation incorporates Cecil into system plans coordinated by FDOT Aviation and Spaceports offices, in partnership with Space Florida. The Florida Transportation Plan (FTP) makes a clear distinction between aviation and space operations. The plan includes mapping capital development efforts, particularly through the Spaceport Improvement Program (SIP). Cecil Spaceport and Cape Canaveral Spaceport are the only listed spaceports in the FTP with independent approved master plans. This further identifies the importance for Cecil Spaceport on a state level and ensures that potential future funding will be provided to maintain the Spaceport's facilities, separate from the Airport's. This funding is predicted to have areas of overlap benefiting the entirety of Cecil, such as the financial support granted to Cecil by the Department of Economic Opportunity in October 2021 to construct Approach Road, which is intended to service future Boeing facilities and be further developed as needed to provide more efficient access to the Spaceport development areas.

2.4.3. Jacksonville Aviation Authority (JAA)

The JAA has identified the role of Cecil as a local hub for aircraft MRO and maintenance facilities. The runway, taxiway, apron, and hangar facilities accommodate a variety of aircraft types including small GA, military aircraft, regional aircraft, and wide-body aircraft. Uniquely, Cecil is licensed for HTHL operations and provides facilities to accommodate future demand. FDOT published an economic impact study for the JAA in 2019 that reported Cecil having an economic impact of \$3 billion for the Northeast Florida region, representing half of the total economic impact of the entire JAA at \$6 billion.¹⁰ Additionally, the report highlighted that Cecil has created over 11,000 jobs with expectations to grow in the near future.

2.5. Airside Facilities

The term "airside" refers to the Aircraft Movement Area at Cecil. Aircraft Movement Areas consist of the runway and taxiway systems and are the controlled movement areas by the ATCT. These areas define "airside" within this report and fully encompass the infrastructure directly used by all aircraft or HTHL vehicles at Cecil.

Figure 2-2 below summarizes major airside facilities present at Cecil.

The Airport has two sets of active parallel runways. A taxiway/taxilane system connects all areas of the airfield and run the full length of the existing runways. Navigational Aids (NAVAIDs) have been installed

⁸ FDOT, 2035 FASP, 2017.

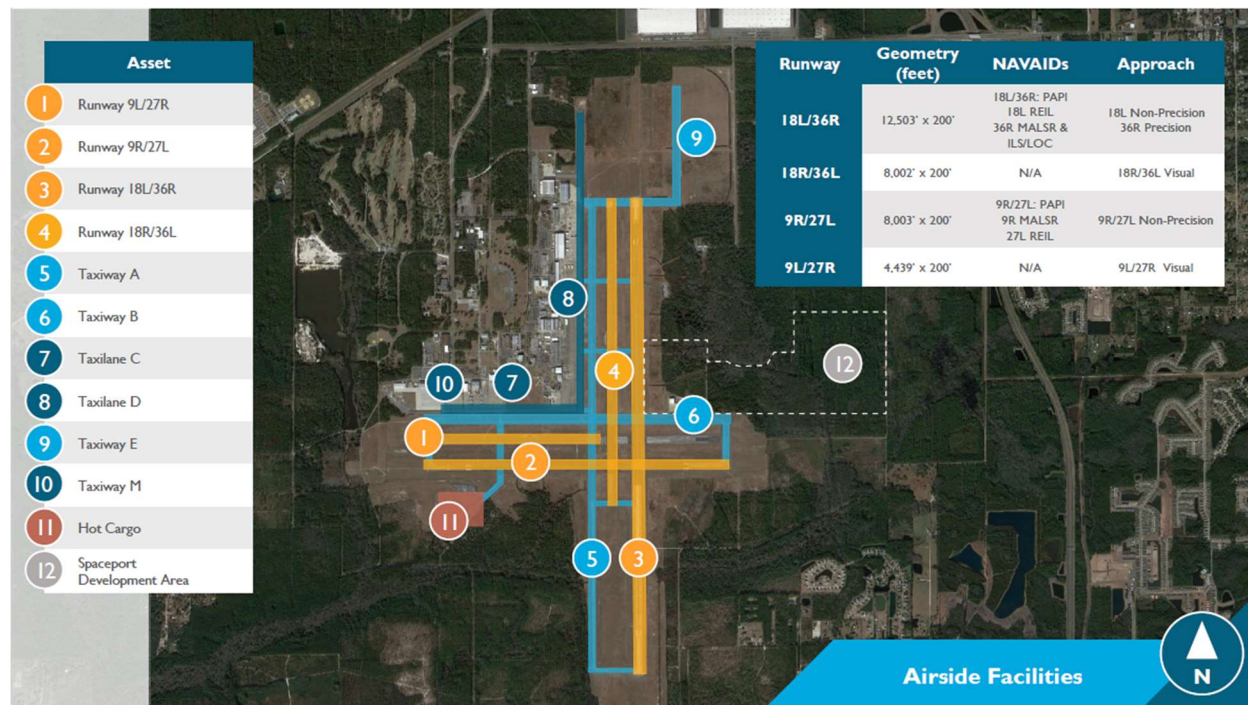
⁹ Space Florida, *Florida Spaceport System Plan 2018, 2018*.

¹⁰ FDOT, *Florida Statewide Economic Impact Study, 2019*.



on primary and secondary runways and the taxiway system to allow for efficient operations during reduced visibility conditions. The FAA has provided guidance when designing critical infrastructure. Key design criteria regarding various pieces of infrastructure at an airport are located within the FAA Advisory Circular (AC) 150/5300-13A, *Airport Design*, Change 1 (AC 150/5300-13A). This section will outline the existing airside facilities and summarize existing geometry and design standards for the taxiway and runway systems.

Figure 2-2 – Airside Facilities



Sources: FAA, *Airport Data and Information Portal*, Accessed October 2021; Jacksonville Aviation Authority, 2021; Kimley-Horn 2021.

2.5.1. Runways

As of 2021, of the four active runways at the Airport, Runway 18L/36R is the only runway historically eligible for any federal funding. Federal funding is only available for the northern 8,000 feet of Runway 18L/36R (approximately three quarters of the existing runway length). The remaining length of Runway 18L/36R, in addition to the three remaining active runways, is maintained through state and local funds. In the fall of 2021, Runway 18R/36L was 8,002 feet in length and 200 feet wide. During this Master Plan Update, Runway 18R/36L will be rehabilitated and the width of the runway is expected to be reduced to 150 feet. For the purposes of this Master Plan Update, Runway 18R/36L will reflect the reduced runway width of 150 feet. Both sets of parallel runways are orientated in a north-south and east-west configuration and can provide simultaneous, same-direction operations during visual flight conditions for all aircraft using the Airport. A summary of runway geometry, associated airfield lighting, and other critical elements is located in Table 2-2.

Table 2-2 – Runway Details

Runway Component	Runway 18L/36R		Runway 18R/36L		Runway 9R/27L		Runway 9L/27R	
	18L	36R	18R	36L	9R	27L	9L	27R
Runway Length	12,503'		8,002'		8,003'		4,439'	
Runway Width	200'		150'		200'		200'	
Paved Runway Shoulder Width	None	None	None	None	None	None	None	None
Pavement Type	Asphalt and Concrete		Asphalt and Concrete		Asphalt and Concrete		Asphalt and Concrete	
Pavement Markings and Condition	Precision in Good Condition	Precision in Good Condition	Precision in Fair Condition	Non-Precision in Fair Condition	Precision in Fair Condition	Non-Precision in Fair Condition	Basic in Good Condition	Basic in Good Condition
Edge Lights	High-Intensity Runway Lights (HIRLs)		None		HIRLs		None	
Runway Effective Gradient	0.06%		0.11%		0.19%		0.17%	
MALSR ¹	None	Yes	None	None	Yes	None	None	None
Runway End Identifier Lights (REILs)	Yes	None	None	None	None	Yes	None	None
Visual Approach Aids	PAPI 4-Box	PAPI 4 Box	None	None	PAPI 4-Box	PAPI 4-Box	None	None
Runway Centerline to Hold Position	250'		250'		250'		250'	
Runway Centerline to Parallel Taxiway Centerline	1,200' to Taxiway A		500' to Taxiway A		1,200' to Taxiway B		500' to Taxiway B	
Runway Centerline to Parallel Runway Centerline	700'		700'		700'		700'	

Notes: 1) Medium Intensity Approach Light System with Runway Alignment Indicator Lights (MALSR).

Sources: FAA, Airport Data and Information Portal, 2021; FAA, VQQ - 5010 Airport Master Record, 2021; JAA, Airport Layout Plan Set, 2008.



2.5.1.1. Runway 18L/36R

The Airport's main runway aligned in a north-south orientation, designated Runway 18L/36R, is a 12,503-foot by 200-foot runway. Runway 18L/36R is the active runway designated to accommodate Spaceport operations due to its length. Runway 18L/36R is paved with concrete and asphalt and rated in good condition.¹¹ Precision runway markings are in good condition along the runway. The runway is serviced via a full-length parallel taxiway, Taxiway A, located west of Runway 18R/36L. The taxiway provides direct access to Runway 18L/36R south of Runway 18R/36L; otherwise, aircraft using Runway 18L/36R will need to cross the parallel runway to reach Taxiway A. Runway 18L/36R has HIRLs installed along the runway edge to assist pilots during night operations or instrument meteorological conditions. Runway 18L is equipped with REILs. A 4-box PAPI system is located to the left of each runway approach end. Runway 36R has an ILS installed and in working condition. The Runway Design Code (RDC) is a D-IV-2400. Additional runway dimensions and criteria are located in Table 2-2.

2.5.1.2. Runway 18R/36L

Runway 18R/36L is an 8,002-foot long by 150-foot-wide paved runway, located west of and parallel to Runway 18L/36R. The recent pavement inspection for the asphalt and concrete runway determined the pavement condition to be rated at very poor. FDOT is funding a pavement rehabilitation project which will begin in 2022 with the adjusted scope to rehabilitate only the first 1,000-foot keel section (50 feet wide, 25 feet on either side of the runway centerline) for Runway 18R/36L, on both ends. The runway is serviced by a full-length paved parallel taxiway, Taxiway A, to the west. Runway 36L has non-precision markings in fair condition while Runway 18R has precision markings in fair condition. There are no runway lighting systems installed on Runway 18R/36L. The RDC is a D-IV-VIS. Additional dimensions are located in Table 2-2.

2.5.1.3. Runway 9R/27L

Runway 9R/27L is oriented east-west, measures 8,003 feet long by 200 feet wide, and intersects Runway 18L/36R and Runway 18R/36L. Runway 9R/27L is a paved asphalt and concrete runway in fair condition. The runway is supported by full-length Taxiway B to the north of 9L/27R, requiring aircraft utilizing Runway 9R/27L to cross the parallel runway to access Taxiway B. The Runway 9R end has precision markings in fair condition with the Runway 27L end having non-precision markings in fair condition. Runway 9R/27L has HIRL and REILs are present on the Runway 27L end. The historic RDC is a D-IV-4000. Additional dimensions are located in Table 2-2.

2.5.1.4. Runway 9L/27R

At 4,439 feet long by 200 feet wide, Runway 9L/27R is Cecil's shortest active runway. Historically, the runway was a full-length parallel to Runway 9R/27L; however, due to funding constraints, the runway was shortened by approximately 3,700 feet. Due to the decreased length of the runway, activity on the runway has been limited to GA training use. The pavement east of the approach end of Runway 27R is decommissioned and marked as blast pad. The runway also has an operational restriction to fixed wing aircraft with a maximum weight of 12,500 pounds. The active portion of the runway's asphalt and concrete pavement was reported in good condition. The previous ALP and Master Plan identified the runway with an RDC of D-IV-VIS; it should be noted that the runway designation was determined when the runway was at its prior length of 8,000 feet. At the conclusion of the first Technical Advisory Committee (TAC) meeting, it was established the runway operates for an RDC of B-II. Additional dimensions are located in.

¹¹ FDOT, *Statewide Airfield Pavement Management Program*, 2021



2.5.2. Runway Design Standards Overview

Airport design standards are defined in FAA AC 150/5300-13A. The standards relate to various airport infrastructure and their functions and cover a wide range of size and performance characteristics of aircraft anticipated to use an airport. Airport sponsors that accept federal AIP grants are required to adhere to FAA design standards or obtain approval for any modification of standards (MOS).

Design criteria directly associated with the runway system and its immediate area(s) are listed below. Dimensions for these areas are included in Table 2-3 and Table 2-4 below. While a summary of the Airport's existing design standards is presented in the tables below, a full analysis of required dimensional criteria associated with the Airport's existing and future cases are presented in the *Facility Requirements* Chapter (Chapter 4) of this Master Plan.

- **Runway Safety Area (RSA):** The RSA is an area immediately surrounding the active runway that is designed to reduce aircraft damage in the extent of a runway excursion or overshoot. The dimensions are centered on the runway centerline and must be cleared, graded, and free of hazardous surface variations. Additionally, the RSA must be free of objects, except objects exempt from this rule directly supporting aircraft air navigation or ground maneuvering. The FAA does not allow the RSA to have an MOS.
- **Runway Object Free Area (ROFA):** The ROFA is an area centered on the active runway centerline that is required to be clear of above-ground obstacles to maintain safe aircraft operations. Exemptions are made for critical navigation equipment and taxiing or holding aircraft.
- **Runway Obstacle Free Zone (ROFZ):** The ROFZ, centered on the runway centerline, is a three-dimensional volume of airspace running along the active runway and extending 200 feet beyond each end of the runway. The ROFZ must be clear of all objects, including aircraft, with the exemption of critical NAVAID equipment that must be located within the ROFZ.
- **Runway Protection Zone (RPZ):** The RPZ is a trapezoidal area extending beyond, and prior to, the active runway centerline. The RPZ's primary purpose is to enhance the safety within the immediate approach and departure end of the runway. This zone protects not only the aircraft operating within, but also any person or property within the zone. It is strongly recommended by the FAA that the airport maintain ownership of the land located within the RPZ. Unlike other listed areas, the RPZ bases its dimensions off visibility minimums for the runway. For this reason, RPZ dimensions are listed in Table 2-3.



Table 2-3 – Runway Design Criteria

<i>Item</i>	18L	36R	18R	36L	9R	27L	9L	27R
Runway Centerline to Aircraft Parking Area	1,450'		750'		1,550'		830'	
Runway Centerline to Helicopter Touchdown Pad	N/A		N/A		1,000'		300'	
RSA Width	500'		500'		500'		150'	
RSA Length Beyond Departure End	1,000'	1,000'	1,000'	1,000'	1,000'	1,000'	300'	300'
RSA Length Prior to Landing Threshold	600'	600'	1,000'	1,000'	600'	600'	300'	300'
ROFA Width	800'		800'		800'		800'	
ROFA Length Beyond Departure End	1,000'	1,000'	1,000'	1,000'	1,000'	1,000'	300'	300'
ROFA Length Prior to Threshold	600'	600'	1,000'	1,000'	600'	600'	300'	300'
ROFZ Width	400'		400'		400'		250'	
ROFZ Length Beyond Runway End	200'	200'	200'	200'	200'	200'	200'	200'

Sources: FAA, 150/5300-13A Airport Design, 2014; Jacksonville Aviation Authority, 2021; FAA 150/5390-2C Heliport Design, 2012.

Table 2-4 – Runway Protection Zones

	18L	36R	18R	36L	9R	27L	9L	27R
Approach Runway Protection Zone								
Length	1,700'	1,700'	1,700'	1,700'	1,700'	1,700'	1,000'	1,000'
Inner Width	500'	500'	500'	500'	500'	500'	500'	500'
Outer Width	1,010'	1,010'	1,010'	1,010'	1,010'	1,010'	700'	700'
Acres	29.456	29.456	29.456	29.456	29.456	29.456	13.770	13.770
Departure Runway Protection Zone								
Length	1,700'	1,700'	1,700'	1,700'	1,700'	1,700'	1,000'	1,000'
Inner Width	500'	500'	500'	500'	500'	500'	500'	500'
Outer Width	1,010'	1,010'	1,010'	1,010'	1,010'	1,010'	700'	700'
Acres	29.456	29.456	29.456	29.456	29.456	29.456	13.770	13.770

Sources: FAA, 150/5300-13A, Change 1, Airport Design, 2014; Jacksonville Aviation Authority, 2021.



2.5.3. Heliports

The Airport has two marked heliports: Heliport 1 on Taxiway B3 and Heliport 2 on Taxiway B2. The heliports are adjacent to the west ramp area which is the apron from which the U.S. Coast Guard (USCG) and Florida Army National Guard (FLARNG) operate. These tenants are the primary rotorcraft operators at the Airport. Heliports have unique design standards attributed to the areas of use due to the rotor wash safety areas, as documented within Table 2-5 below. Helicopters are more maneuverable than fixed-wing aircraft and will often utilize the same taxiway system via an operation known as air-taxi, in which the helicopter follows a taxi instruction by the ATCT while hovering above the taxiway. Helicopters will also frequently land and takeoff at the intersection of Taxiways B and M. This is not a designated heliport.

Table 2-5 – Heliport Design Criteria

<i>Heliports</i>	H1	H2
Touchdown and Liftoff Area (TLOF)	40' x 40'	40' x 40'
Final Approach and Takeoff Area (FATO)	70' x 70'	70' x 70'
Heliport Safety Area	90' x 90'	90' x 90'
Heliport Protection Zone (HPZ) – Length	280'	280'
HPZ – Inner Width	70'	70'
HPZ – Outer Width	200'	200'

Source: FAA, AC 150/5390-2C, 2012.

2.5.4. Taxiway System

The taxiway system at the Airport includes a full-length parallel taxiway supporting each set of parallel runways, one taxilane running parallel to both the north apron area and the west apron areas respectively, and a taxiway on the northeast side of the airfield. Taxiway A, aligned north-south, supports Runway 18L/36R and parallel Runway 18R/36L. Taxiway B, aligned east-west, supports Runway 9R/27L and parallel Runway 9L/27R. Each full-length taxiway has connector taxiways to/from the runways and apron areas. Table 2-6 summarizes the taxiway system. A connector taxiway from Taxiway B crosses both runways and extends further south beyond Runway 9R/27L to provide direct access to the hot cargo area and future rocket engine testing area. The portion of Taxiway B2 south of Runway 9R/27L is referred to as Taxiway B2 South by ATC. Taxiway B2 South is within the movement area; however, ATC and airport operations are working to modify this area to be non-movement area.



Table 2-6 – Taxiway Geometry

<i>Taxiway/Taxilane</i>	<i>Type</i>	<i>Taxiway Width (feet)</i>	<i>Lighting</i>
Taxiways			
A	Parallel	75	MITL
A1	Runway Entrance/Exit, Connector, and Crossover	150	MITL
A2	Runway Exit, Connector, and Crossover	75	MITL
A3	Runway Exit, Connector, and Crossover	75	MITL
A4	Runway Entrance/Exit, Connector, and Crossover	150	MITL
A5	Runway Entrance/Exit	150	MITL
B	Parallel	75	MITL
B1	Runway Entrance/Exit	150	MITL
B2	Runway Exit, Connector, and Crossover	75	MITL
B3	Runway Entrance/Exit, Connector, and Crossover	150	MITL
E	Parallel Taxiway	75	Reflectors
E1	Runway Entrance/Exit	75	Reflectors
M	Connector	75	MITL
Taxilanes			
C	Partial Parallel/Apron Edge	75	MITL
D	Partial Parallel/Apron Edge	75	MITL
D2	Apron Connector	75	MITL
D3	Apron Connector	75	MITL

Sources: FAA, VQQ Airport Diagram, 2021; Jacksonville Aviation Authority, 2021.

Taxilane D is on the eastern edge of the north apron and runs parallel with the north apron and Taxiway A, connecting with the Taxiway A and perpendicular Taxiway B. Taxilane D was physically extended to the north in 2008 to service future development. As of November 2021, Hangar 1005 was under construction, and, once completed, the northerly portion of Taxilane D will be opened for use. Taxilane C is on the southern edge of the west apron area and runs parallel with Taxiway B servicing the entire west apron and connects to Taxiway B. Taxiway E extends north-east from the approach end of Runway 18L and has reflectors along its full length. Taxiway E is presently closed to prevent aircraft from inadvertently ending up in an undeveloped area of the Airport. Taxiway E will serve the future Boeing facility. Taxiway M provides access from Taxiway B to the FLARNG area on the west ramp. For a comprehensive map of the taxiway system, refer to Figure 2-2.

2.5.5. Taxiway Design Standards Overview

The Taxiway Design Group (TDG) is defined in FAA AC 150/5300-13A and allows planners the ability to design taxiways and taxilanes based on the dimensions of the critical aircraft's main gear to main gear width and cockpit to main gear width. TDGs range from TDG 1 to TDG 7. The TDG classification also allows planners and airport owners to tailor individual taxiways to the aircraft using them. For example, areas that are only accessed by smaller GA aircraft do not have the same taxiway requirements as larger,



mainline air carrier aircraft. The TDG helps determine right-size infrastructure to those aircraft using the facility. The ARC noted in the 2008 ALP was a Boeing 767-400, which is a TDG 5 aircraft.

Similar to runways, taxiways have safety areas that are based on the critical aircraft. These dimensions are centered on the taxiway or taxilane centerline and are meant to facilitate safe and efficient operations. Taxiway design standards, such as Taxiway Safety Area (TSA) and Taxiway Object Free Area (TOFA) are determined through the critical aircraft's Aircraft Design Group (ADG).

Design criteria directly associated with the existing taxiway system are listed below. Dimensions for these areas are included in Table 2-6 below. As noted above, the TDG is a newer classification; therefore, previous taxiways projects were typically designed to ADG IV aircraft. As part of this airport Master Plan Update, appropriate design criteria will be determined for each taxiway (see Chapter 4).

- **Taxiway Safety Area (TSA)** – The TSA is defined by the area around a taxiway that encompasses an aircraft. Typically, this area will encompass the entire aircraft space, including wingtips. This area must be free of all objects apart from specific NAVAID equipment. The TSA is also applicable to taxilanes.
- **Taxiway Edge Safety Margin (TESM)** – The TESM is an area that is based from the outer edge of the landing gear with its nose gear and the taxiway pavement edges. Providing the TESM space for potential aircraft sway ensures safety during poor weather conditions or potential pilot error.
- **Taxiway Object Free Area (TOFA)** – The TOFA is an area designed to provide spacing between an active taxiway and the nearest fixed or movable object. The TOFA should be clear of all objects, with the exemption of critical NAVAID equipment.
- **Taxilane Object Free Area (TLOFA)** – The TLOFA is an area designed to provide spacing between an active taxilane and the nearest fixed or movable object, typically a hangar or an aircraft parking position. No objects, unless critical equipment for navigation purposes, are allowed within the area.
- **Distance to** – Distance to standards are an essential part of taxiway design and help planners ensure that operations can take place independent of other aircraft operations and airport infrastructure.

Except for Taxiway M, all taxiways meet ADG IV and TDG 5 standards. A security gate traverses Taxiway M to secure the USCG and FLARNG apron areas to prevent inadvertent civilian access. This gate limits the wingspan to ADG I aircraft (assuming taxiway separation standards).

Taxilane C also features a security gate which limits larger wingspan aircraft from using the taxilane to access the USCG and FLARNG aprons. This gate is used for enhanced security and is located on the lease boundary. To provide adequate taxilane wingtip clearance separations, aircraft wingspans on Taxilane C accessing the security gate are limited to approximately 64 feet.

Taxilanes D2 and D3 provide access to Flightstar Building 935 and Logistics Services International (LSI) Buildings 915 and 955, respectively. Taxilane D2 appears to meet ADG IV standards. Taxilane D3 is limited to aircraft with approximately 140-foot wingspans.



2.5.6. Airfield Pavement

Airfield pavement represents a significant capital investment at airports across the country. Pavement condition directly impacts the safety and efficiency of operations at an airport. As previously mentioned, the Airport has not historically received FAA AIP funding for runway projects outside of the northern 8,000 feet of Runway 18L/36R. For this reason, pavement must be maintained using state and local funds. FDOT recently conducted a pavement survey in 2021 as part of its statewide Airfield Pavement Management Program (APMP). The pavement survey was an in-depth analysis of existing pavement conditions. The condition report was accompanied by a rehabilitation plan that outlines capital cost estimates for replacement over a 20-year timeline. Cecil is responsible for the day-to-day pavement management such as fixing cracks, addressing weed growth, and other minor defects. Due to a prior construction project on Runway 9L/27R resulting in subpar results, weight restrictions are in place, limiting Runway 9L/27R to Single Wheel (SW) 12,500-pound aircraft.

A summary of the conditions reported in the FDOT study can be found in Figure 2-3. Conditions of pavement are reported in a Pavement Condition Index (PCI) number. PCI considers the severity of distress observed on pavement surfaces and provides a numerical value between 0 – 100 to the section of pavement being surveyed, with a value of 0 representing failed pavement conditions and 100 representing good pavement conditions. The Airport's runway system had a wide range of pavement conditions reported from the FDOT APMP survey.

- The runway system has a majority of pavement rated as fair or higher, with Runway 18R/36L having a very poor rating; however, the pavement rehabilitation projects underway are anticipated to help increase the pavement condition index for Runway 18R/36L.
- The taxiway system can be categorized in satisfactory condition.
- The apron system can be categorized in overall satisfactory condition, with some fair sections and some good sections. The north and west apron areas ranged between satisfactory and fair PCI ratings. The Spaceport apron space was rated in good condition.



Figure 2-3 Pavement Condition Survey



Source: FDOT, Pavement Management Study, 2021.

2.5.7. Navigational Aids

NAVAIDs, unlike airfield lighting, assist aircraft in different stages of flight navigating to and from the Airport. NAVAIDs are generally FAA-funded infrastructure and are serviced by FAA Technical Operations (FAA Tech Ops). During hours outside the operational schedule of ATCT, runway airfield lighting (HIRL, REIL, and Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights [MALSR]) can be controlled via Common Traffic Advisory Frequency (CTAF). HIRL and REIL systems are owned by the State. The following electronic and visual NAVAIDs are present at Cecil:

- **Automated Surface/Weather Observing System (AWOS)** – An AWOS generally provides an automated weather report at 20-minute intervals. These weather reports include information regarding ceiling and sky conditions, visibility, temperature, dew point, altimeter settings and wind speed, gusts, and direction. The Airport's AWOS is located south of Runway 27L and east of Runway 36R.
- **Very High Frequency Omnidirectional Range Tactical Air Navigation System (VORTAC)** – A VORTAC is two systems operating together: a co-located very high frequency (VHF) omnidirectional range (VOR) beacon and a tactical air navigation system (TACAN) beacon. The VORTAC provides compatible aircraft information to its retaliative position, allowing pilots to remain on course. The Craig VORTAC (CRG VORTAC) is located at Craig Airport, approximately 24 miles east of Cecil. CRG VORTAC is used for several instrument approach procedures at Cecil Airport.
- **Distance Measuring Equipment (DME)** – DME is a radio NAVAID that provides slant range information for the arriving aircraft to the NAVAID ground station.
- **Instrument Landing System (ILS)/Localizer (LOC)/Glide Slope Antenna (GS)** – An ILS offers horizontal and vertical guidance during the approach and landing phases of flight. In conjunction with the ILS, the LOC provides azimuth navigation information, and the GS provides vertical guidance to the arriving aircraft. Runway 36R is the only runway at Cecil with an ILS.
- **Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR)** – A MALSR is a form of an Approach Lighting System (ALS) meant to assist pilots transitioning from an instrument flight to visual flight during landing operations. A MALSR system is installed in the runway approach zones along the extended centerline. It consists of a combination of threshold lamps, steady burning light bars, and flashers, providing visual information to pilots on runway alignment, height perception, roll guidance, and horizontal references for Category I Precision Approaches. Runway 9R and Runway 36R have MALSR systems installed. The MALSR system is owned by the State.
- **Precision Approach Path Indicator (PAPI)** – A PAPI system is a series of either two or four light boxes that help a pilot maintain a correct approach angle. The Airport has a 4-light box PAPI system located to the left of each approach end for Runways 18L/36R and 9R/27L (a total of four PAPI Systems). All PAPIs installed at the Airport are owned by the state.
- **Runway End Identifier Lights (REIL)** – A REIL system consists of two synchronized flashing lights located to the left and right of a runway's approach end, indicating the landing threshold. Both sets of REILs are owned by the State (Runway 18L and 27L).
- **Airport Beacon** – The airport beacon is a rotating beacon that flashes alternate-colored lights to provide airport identification to pilots in the air during night or low visibility operations. The Airport



beacon is located atop the ATCT. The beacon flashes clear and green during the hours between sunset and sunrise, or in low-visibility conditions.

- **Compass Calibration Pad** – A compass calibration pad is a specifically constructed aircraft pad used to align an aircraft compass with the Earth's magnetic field. The Airport's compass calibration pad is located on the west apron space and is in working condition. The FAA must check and certify this NAVAID each year. The FLARNG ensures the compass calibration pad certification remains operational. While the compass calibration pad is available to the public, it is within the fenced apron area of the FLARNG. Military F-18s are the primary users of this NAVAID.
- **Wind Indicators** – Wind indicators, commonly referred to as windsocks or wind cones, provide pilots with information regarding wind direction and strength. The Airport has five wind indicators located on each end of Runway 18L/36R and Runway 9R/27L, with the primary wind indicator being located at mid-field near Taxiway A5.

2.5.8. Special Use Areas

With the variety of operations taking place at Cecil, it is important the Airport and Spaceport identify safety critical operational areas on the airfield to perform special operations. The following outlines the identified special use areas at Cecil:

- **Engine Run-ups** – MROs will conduct engine run-ups within their leased apron areas. High-power engine run-ups are not permitted on apron areas and are limited to five locations:
 - The first location on Taxiway A, between Taxiways A1 and A2.
 - The second high-power run-up is located on Taxiway B1, between Taxiway B and the hold line of Runway 9R/27L.
 - The third high-power run-up located on Taxiway A5, between Taxiway A and the hold line of Runway 18L/36R.
 - The fourth high-power run-up is co-located with the hot cargo ramp located south of Runway 9R/27L on Taxiway B2 South. This run-up location is sized to accommodate larger aircraft.
 - The fifth high-power run-up is located east of Runway 18L/36R, off Taxiway A2. The run-up area off Taxiway A2 is the only ramp used for military fighter jet engine high-power run-ups and is too small to accommodate any large aircraft.
- **Military Hot Fueling** – Military hot fueling is performed for military aircraft by Jacksonville Jetport, the Airport's Fixed-Base Operator (FBO). The location of the hot fueling is strictly limited to the area in front of Building 825. Three spaces are provided.
- **Military Hot Cargo** – Military hot cargo typically refers to live munitions. The area dedicated for processing these cargo types is located to the southwest of the airfield, on Taxiway B2 South provides access to the hot cargo pad south of Runway 9R/27L. There are also three arm/de-arm locations on the airfield.
 - Intersection of Taxiway A and A5
 - Intersection of Taxiway B and B1
 - Intersection of Taxiway B and B3



- **Spaceport Areas** – As will be discussed in greater detail in Section 2.9 of this chapter, there are two major special-use areas for Spaceport operations. The first is the rocket testing area located on the Spaceport Ramp. The second is the oxidizer loading area located to the south of the Spaceport apron on the decommissioned pavement for Runway 9L/27R.

2.6. Meteorological Conditions

Weather is constantly changing and can have a significant impact on operations at Cecil. This section outlines local weather patterns and events to provide data for later analyses in this Master Plan. Data used for this study will be from the Airport's AWOS and the local National Oceanic and Atmospheric Administration (NOAA) National Weather Service (NWS) forecast office in Jacksonville.

2.6.1. Local Climate

Located in the north-east corner of Florida, the City of Jacksonville experiences a variety of weather patterns, including hot and humid summers with high cloud coverage and average maximum high temperatures of 90 degrees Fahrenheit, to cool winters with temperatures nearing an average minimum low of 45 degrees Fahrenheit.¹² Florida's hurricane season is typically June to November.

Prevailing winds are those that blow predominantly from a specific direction. In an ideal setting, a runway is oriented so aircraft can take off and land into the wind. Therefore, the direction of the prevailing wind determines the preferred configuration and alignment of a given runway. Crosswinds, which are a component of wind that blows perpendicular to the runway centerline, are a limiting factor in whether an aircraft can safely take off or land. The FAA states that a crosswind runway should be considered when a runway orientation provides less than 95 percent wind coverage for its RDC.¹³ The allowable crosswind component based on Aircraft Allowable Crosswind (AAC) and ADG is shown in Table 2-7.

Table 2-7 – Aircraft Allowable Crosswind

Allowable Crosswind	Aircraft Approach Category - Airplane Design Group
10.5 knots	A-I and B-I
13 knots	A-II and B-II
16 knots	A-III, B-III, and C-I through D-III
20 knots	A-IV through D-VI, E-I through E-VI

Source: FAA Advisory Circular 150/5300-13A, Change 1, Airport Design, 2014.

With an existing AAC and ADG of D-IV-2400, Runways 18L/36R, 18R/36L, and 9R/27L should provide above a 95 percent coverage for a 20-knot crosswind component. As a B-II runway, Runway 9L/27R should provide 95 percent coverage for a 13-knot crosswind component. For the analysis in Table 2-8, the runway's true bearing was used; this affected Runway 18R/36L, as its true bearing is 179 degrees and 359 degrees.

¹² National Weather Service, National Oceanic and Atmospheric Administration Online Weather Data Portal, Accessed 2021.

¹³ Federal Aviation Administration, Advisory Circular 150/5300-13A, Change 1, Airport Design, 2014.



The crosswind analysis conducted for the existing runways at the Airport show that all runways exceed crosswind coverage requirements. The wind analysis conducted suggests that crosswind runways are not required at Cecil. However, based on conversations with Air Traffic Control (ATC) personnel and several operators, it was frequently noted that winds favor the 18/36 Runways approximately 70 percent of the time and the 9/27 Runways 30 percent of the time. Additional wind analysis will be performed as part of the *Facility Requirements* chapter (Chapter 4) of this report. Figure 2-4 identifies the wind roses used in the analysis.

Table 2-8 – Wind Coverage Results

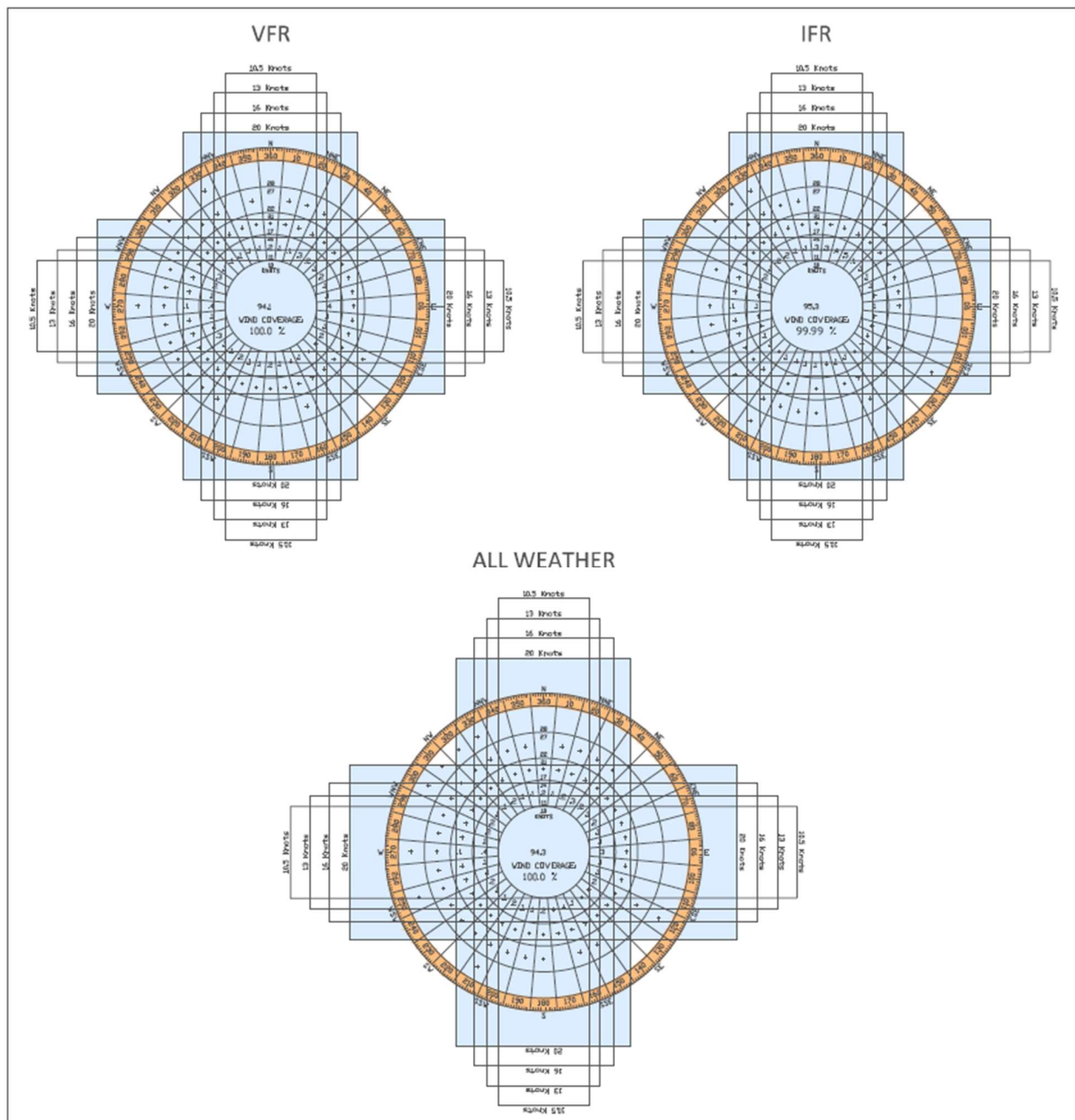
All Weather Conditions (2011 - 2020)				
Wind in Knots	10.5	13	16	20
Runway 18L/36R	97.16%	98.47%	99.66%	99.93%
Runway 18R/36L	97.15%	98.47%	99.66%	99.93%
Runway 9L/27R	97.82%	98.94%	99.82%	99.96%
Runway 9R/27L	97.82%	98.94%	99.82%	99.96%
Combined	99.79%	99.95%	99.99%	100.00%
Visual Flight Rules (VFR)				
Wind in Knots	10.5	13	16	20
Runway 18L/36R	96.91%	98.34%	99.66%	99.94%
Runway 18R/36L	96.90%	98.34%	99.66%	99.94%
Runway 9L/27R	97.90%	99.01%	99.85%	99.98%
Runway 9R/27L	97.90%	99.01%	99.85%	99.98%
Combined	99.80%	99.96%	99.99%	100.00%
Instrument Flight Rules (IFR)				
Wind in Knots	10.5	13	16	20
Runway 18L/36R	98.61%	99.22%	99.68%	99.90%
Runway 18R/36L	98.61%	99.22%	99.68%	99.90%
Runway 9L/27R	97.11%	98.41%	99.61%	99.87%
Runway 9R/27L	97.11%	98.41%	99.61%	99.87%
Combined	99.73%	99.89%	99.95%	99.99%

Notes: Runway 18R/36L has a true bearing of 179 degrees and 359 degrees; Runway 18L/36R has a true bearing of 180 and 360 degrees.

Sources: FAA, ADIP Wind Rose Generation Tool, Accessed 2021.



Figure 2-4 – Cecil Wind Roses



Sources: FAA, ADIP Wind Database, Accessed October 2021; Kimley-Horn, 2021.



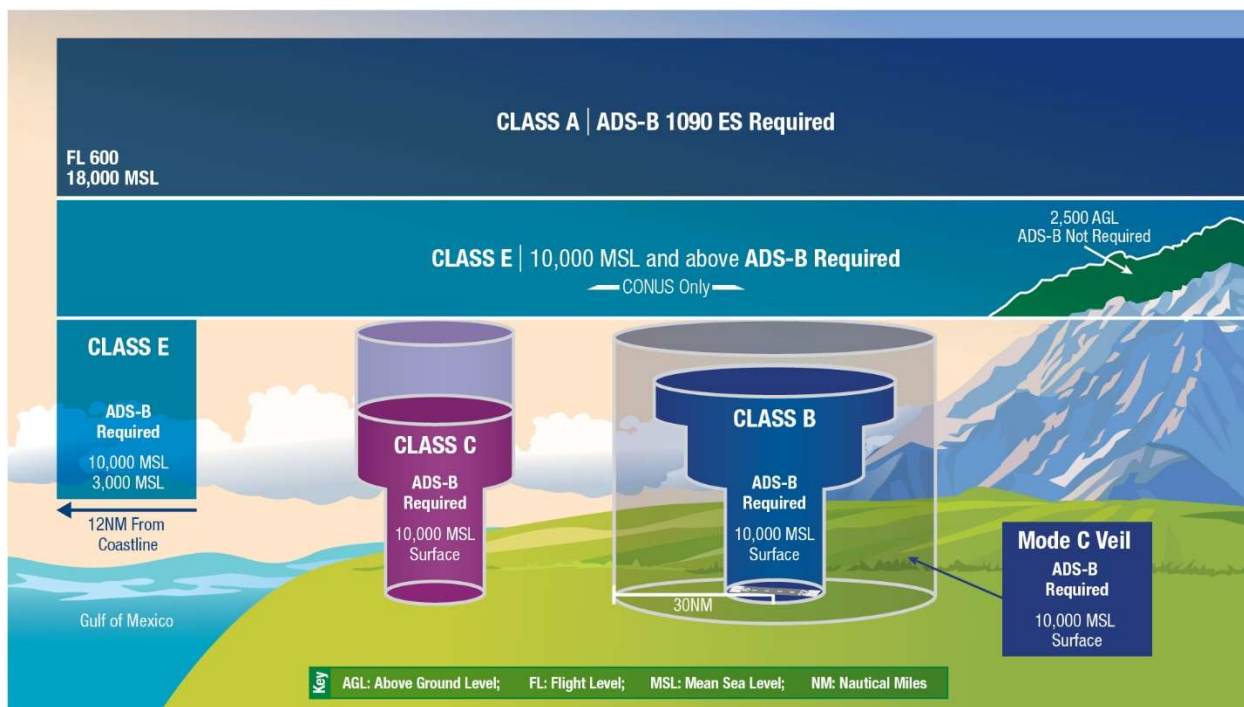
2.7. Airspace

Airspace is defined in three-dimensional volumes and organized by the FAA. Within the NAS, there are classifications for these volumes, facilities to help control and monitor traffic known as ATC facilities, and NAVAIDs. This section documents the surrounding airspace near Cecil and outlines specific operating procedures for aircraft landing and departing at Cecil. These data will be analyzed further in a later phase of this study to ensure the airspace system and procedures can accommodate existing and anticipated demands during the planning horizon.

2.7.1. Airspace Classification

Classification and active control help the NAS organize complex airspace. Restrictions on certain portions of airspace may include specific aircraft equipment, visibility minimums, cloud clearance, and/or procedures when operating inside them such as communication with ATC. These restrictions assist the NAS to operate at maximum levels of safety and efficiency. Figure 2-5 depicts controlled airspace (Classes A, B, C, D, and E) refers to airspace where ATC services are provided. Within uncontrolled airspace (Class G) ATC has no authority or responsibility to control. Special use designates airspace where certain activities occur or where limitations must be imposed. Other airspace refers to the remaining airspace not covered by the forementioned classifications.

Figure 2-5 – Airspace Classifications



Source: FAA, *FAA Handbook*, 2021.

Table 2-9 details the categories of airspace further and elaborates on the Airport's relationship to each category. In addition to the table, Figure 2-6 is the VFR sectional chart illustrating the NAS surrounding Cecil. It should be noted that there are published glider operation areas to the east of Cecil. This is inaccurate, as glider operations do not use the Airport and only operate out of Herlong. The Airport's



airspace categorization is dependent on the ATCT being active. During hours of ATCT operation, the airspace is a Class D, and it reverts to a Class G during the hours the ATCT is closed.

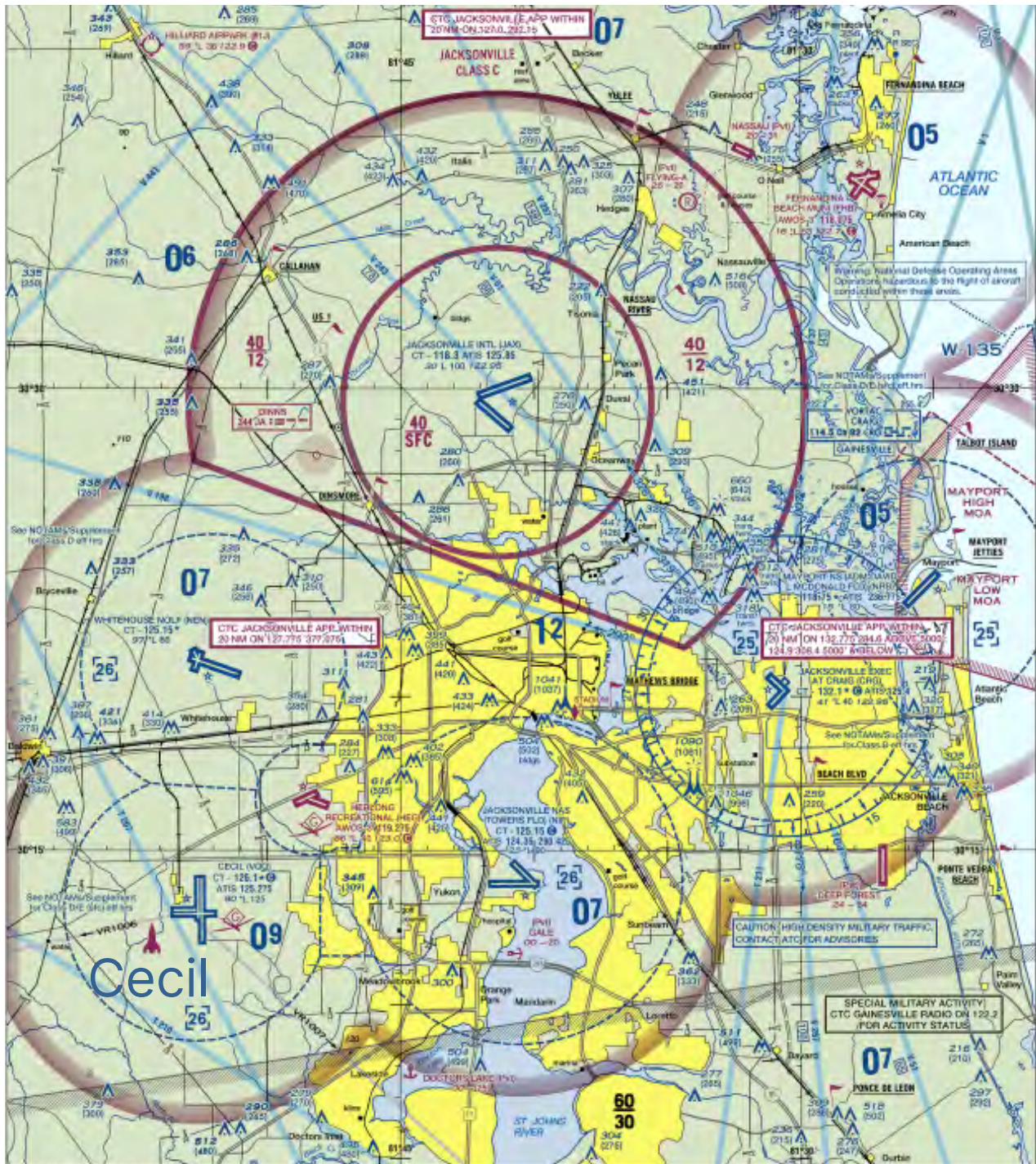
Table 2-9 – Airspace Classification

Classification of Airspace	Relationship to Cecil Airport
Class A	<p>Class A airspace is defined by Flight Level (FL) 600, or 18,000 feet Mean Sea Level (MSL). Strict equipment requirements are present when operating within this airspace.</p> <p>This airspace is located above the Airport and is accessed by long-range en-route aircraft.</p>
Class B	<p>Class B airspace is designated for large airport airspace located in a densely populated urban area. The airspace looks like an upside-down wedding cake. Equipment requirements are in place when operating in Class B.</p> <p>The nearest Class B airspace to the Airport surrounds Orlando International Airport, approximately 80 nautical miles to the south.</p>
Class C	<p>Class C airspace is defined by a medium-sized hub airport with an operational ATCT. Class C is a smaller volume of airspace than Class B. Equipment requirements are in place when operating in Class C.</p> <p>The nearest Class C airspace to the Airport is 14 nautical miles to the northeast surrounding Jacksonville International Airport. JAX's Class C airspace is modified due to nearby military facilities.</p>
Class D	<p>Class D airspace defines airspace near a regional hub airport with an active ATCT or a GA airport with an active ATCT. Class D requires two-way radio communication to be established before entering.</p> <p>Cecil Airport is designated as Class D airspace when the ATCT is active. The Airport's Class D airspace extends from the ground to 2,600 feet MSL.</p>
Class E	<p>Class E airspace begins under Class A at 10,000 MSL up to 18,000 MSL. When 12 nautical miles off the coastline, Class E typically drops to 3,000 MSL. Equipment requirements are in place when operating in Class E.</p> <p>During specific hours, Class E airspace, with a floor of 700 feet Above Ground Level (AGL), is in effect for the airspace around the Airport. Note that if Class D is in effect, Class E will start outside Class D.</p>
Class G	<p>Class G airspace makes up most of the airspace across the continental United States. Class G refers to airspace outside the above classifications and often has a variety of aircraft operating within it.</p> <p>Class G airspace is in effect at the Airport from the surface to 700 AGL when ATCT is not active.</p>

Sources: FAA, FAA Aeronautical Information Manual (AIM), 2021; Kimley-Horn, 2021.



Figure 2-6 - Jacksonville Area FAA Sectional



LEGEND

- Class C Airspace
- Class D Airspace
- Class E Airspace

Note: This figure is not for air navigation. This figure is not to scale.

Source: FAA, Sectional Aeronautical Chart, 2021.

2.7.2. Standard Operating Procedures

Most operations at Cecil are conducted under VFR conditions. These conditions require the aircraft to maintain visual separation from other aircraft and objects within the local airspace. Located in Class D airspace with an active ATC facility, aircraft are in communication with an ATC facility. Class D ATCT does not provide radar services; however, other ATC facilities servicing the local airspace will often provide radar vectors to aircraft operating within the airspace surrounding Cecil to adjust for other traffic, special operations areas, or weather. During VFR conditions, the parallel runways can support simultaneous, same-direction operations.

The Airport uses a standard left-rectangular traffic pattern for each runway. The traffic pattern at the Airport as described by the ATCT includes separate altitudes dependent on the aircraft. Entering the left traffic pattern, helicopters operate at 500-feet altitude, propeller planes fly at 1,000-feet altitude, and jets and military aircraft fly at 1,500-feet altitude.

2.7.3. Standard Arrival Procedures

Standard Terminal Arrival procedures (STARs) are used to efficiently direct aircraft arriving to the Airport during normal weather conditions. Cecil has three published STARs. The first is named the ALMA TWO arrival, directing aircraft traveling inbound from the north over central Florida toward Jacksonville Executive Airport. Radar vectors will then be given to direct the aircraft toward Cecil. The HOTAR ONE arrival is an Area Navigation (RNAV) Global Positioning System (GPS) procedure that offers guidance to aircraft inbound from the north near the coast of Florida. Arrivals will expect radar vectors to the final approach course. The final STAR published for the Airport is the POGIE TWO arrival, which directs aircraft inbound to the field from the south. As with the other two published approaches, pilots can expect radar vectors to final approach once near the airport.

2.7.4. Standard Departure Procedures

There are no published standard departure procedures for the Airport. Published in FAA's Takeoff Minimums, (Obstacle) Departure Procedures, and Diverse Vector Area (Radar Vectors) are close in obstacles for Cecil. These obstacles include trees present and notable for departing aircraft. During the interview with the ATCT manager, the tower has a standard departure for all runways which includes the following initial instructions: Turn to heading 270 degrees and climb to 2,000 feet.

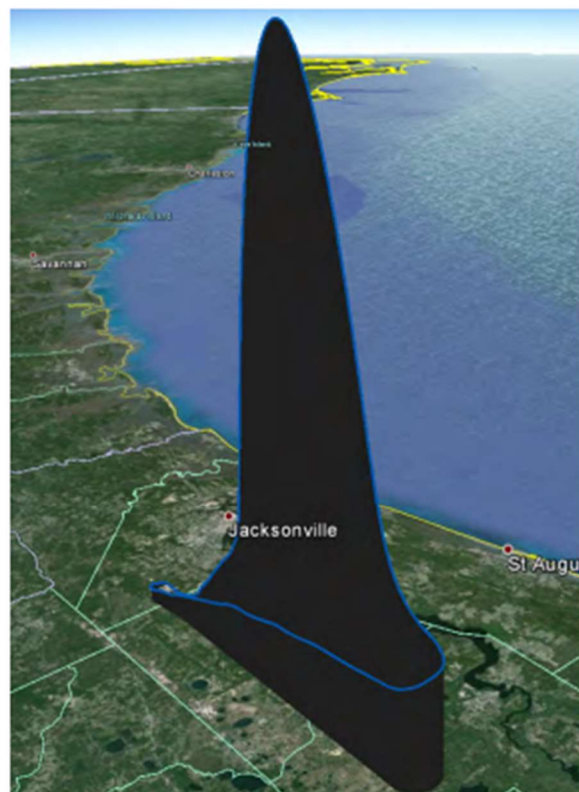
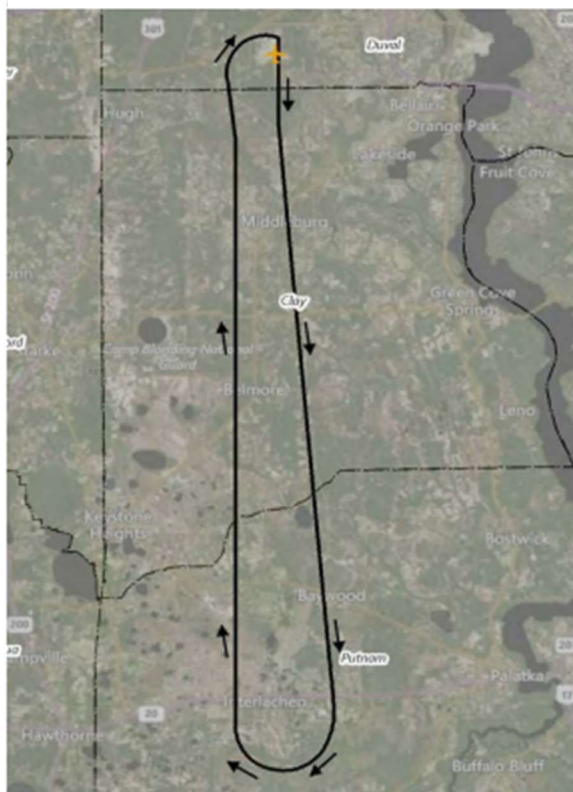
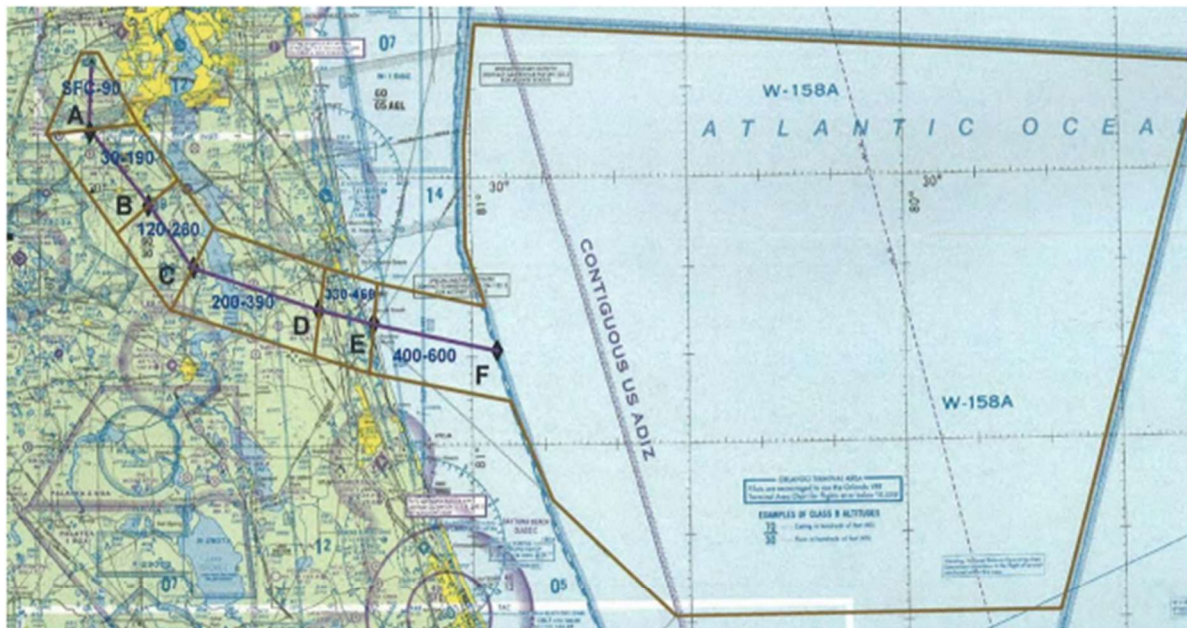
2.7.5. Special Operation Areas

The JAA, in conjunction with the FAA, has established a flight corridor and operating range to the west of the Spaceport. This corridor serves as one of the first overland flight corridors established in the State of Florida for the purpose of benefiting the future Commercial Space industry operations.¹⁴ The westerly corridor for suborbital flight can be seen in Figure 2-7, as well as the FAA approved corridor with the complimentary operating area. Cecil ATC has an approved Letter of Agreement (LOA) with Jacksonville Center for sub-orbital flights out of Cecil. This LOA will be used in the future as Spaceport operations increase through the growing activity in HTHL vehicles.

¹⁴ *Space Florida, Florida Spaceport System Plan, 2018.*



Figure 2-7 – Suborbital Flight Corridor



Source: Jacksonville Aviation Authority, 2021.



There is a published Military Training Routes (MTR) extending southeast from the Airport to the restricted airspace over Cape Canaveral. This route is used by FLARNG and other operators of military aircraft at the Airport. The nearest Military Operation Area (MOA) is located to the west of the Airport, with Restricted Airspace being located to the south over, and surrounding, Camp Blanding Joint Training Center.

Another important note is the general proximity of the Airport to both Herlong Recreation Airport and Jacksonville Naval Air Station. The Airport has seen an increase in small GA aircraft operations from Herlong in the recent years, reported anecdotally by the ATCT manger.

2.7.6. Instrument Flight Procedures

VFR and IFR present unique sets of procedures, criteria, and guidelines under which pilots operate. Instrument flight procedures aid pilots flying under IFR in determining their position, navigating between points, and approaching and departing an airport. This section describes existing IFR procedures at the Airport.

2.7.6.1. Instrument Approach Procedures

Cecil Airport has seven published Instrument Approach Procedures (IAP). These approaches are associated with the Runways 18L/36R and 9R/27L. Airport's with published IAPs see increased flight training traffic, as certification requires pilots to perform a set amount of IAPs. Circling options are normally provided on IAP charts to give pilots an alternative to the standard straight in approach. Circling approaches can be used by the pilot to land on the other runways, once the airport is in sight. Circling approaches have higher minima than straight-in approaches. Table 2-10 below details the published FAA IAP charts.

Table 2-10 - Instrument Approach Summary

Runway End		Procedure	Lowest Minima		Glideslope Angle	Threshold Crossing Height
		Aircraft Approach Category	Ceiling	Visibility		
18L	RNAV (GPS)	A through D	300 feet	1-mile	3.00°	50 feet
36R	ILS or LOC¹	A through E	200 feet	½ - mile	3.00°	49 feet
	RNAV (GPS)	A through D	200 feet	½ - mile	3.00°	49 feet
9R	RNAV (GPS)	A through D	300 feet	¾ - mile	3.00°	53 feet
27L	RNAV (GPS)	A through D	400 feet	1 - mile	3.00°	50 feet
	VOR	A through B	500 feet	1 - mile	3.00°	67 feet
		C through D	500 feet	1 3/8 - mile		
	TACAN	A through B	500 feet	1 – mile	2.97°	55 feet
		C through E	500 feet	1 3/8 - mile		

Note: ¹ This approach provides Category I (CAT I) minima.

Source: FAA, Airport Data and Information Portal, 2021.



2.7.6.2. Instrument Departure Procedures

Instrument departure procedures are preplanned IFR procedures that provide clearance from obstructions around the airport area to the en-route portion of the flight. Obstacle Departure Procedures (ODP) publication by the FAA identify obstacles for Runway 18L as a tree 1,499 feet from the departure end of the runway and 699 feet to the right (west) of the extended runway centerline. The height of the tree is listed as 34-feet AGL, or 113-feet MSL. No other obstructions are noted. The Airport does not have published instrument departure procedures or information aside from the notice of obstructions described above.

2.7.7. Noise Abatement Procedures

Cecil actively strives to be a good neighbor to surrounding communities and actively works with pilots, airport tenants, and members of the public to mitigate noise impacts. Mitigation measures include allotting designated daytime hours and locations for engine maintenance run-ups and standard departure procedures vector away from the more populous areas of Jacksonville. There are semi-frequent training operations by military operators based at the Airport.

Cecil has a dedicated portal on their website for local residents to file noise complaints. When received, the JAA investigates the noise complaint through a process that assesses the hour, estimated altitude, and other important factors of the case. The JAA will then conclude the investigation and follow-up with the person that filed the complaint.

2.8. Landside Facilities

Landside facilities, as defined in this report, support aspects of aviation that involve aircraft parking, aircraft servicing, passengers, pilots, and cargo. This section describes the major landside facilities and tenants at Cecil. Figure 2-8 and Figure 2-9 identify the buildings and their corresponding identification numbers at the Airport. These building numbers will be used to identify areas of operation for tenants throughout this study.



Figure 2-8 - Southern Buildings



Figure 2-9 - Northern Buildings



Source: Jacksonville Aviation Authority, 2021; Kimley-Horn, 2021.

2.8.1. Apron Areas

The apron areas at Cecil are broken into three separate areas: west apron, north apron, and the Spaceport apron. Most of the existing apron areas are leased to tenants to support their individual operations, and it was reported that the apron areas frequently reach capacity, particularly when larger aircraft are present. Figure 2-10 outlines the different apron lease areas and notes the expiration dates of each lease.

The largest apron space on the airfield is designated as the north apron. The north apron begins at the ARFF station and runs north to the full length of Taxilane D. With over 222,250 square yards of pavement space and Taxilane D supporting the full length of usable space, the north apron is essential to most of the Airport's operations. Boeing will be relocating to the north-east portion of the airfield adjacent to Taxiway E. This future apron space will be designed to accommodate Boeing's existing needs and able to be expanded in the future.

The second largest apron space is the west apron space that supports facilities and tenants west of the ARFF station and is serviced by Taxilane C. Notable tenants include the USCG HITRON and the FLARNG. FLARNG has fencing installed to prevent access onto their ramp and facilities located to the western-most side of the west apron. Gates span across Taxilane C and Taxiway M, both of which are presently left open until national security requires closure. A public use aircraft wash rack is available between the USCG, FLARNG, and U.S Customs at Hangar 14.

The Spaceport apron is the smallest apron area and is located to the northeast of midfield. There are no long-term leases associated with this apron. Rather, it is used by various independent companies and leased out on a short-term basis, as needed. Taxiway B connects to the Spaceport apron, providing airfield access.

Scattered across the various apron spaces, Airport users store overflowing equipment and aircraft parts on apron areas within their leaseholds. Storing this volume of equipment on the apron spaces further restricts the amount of aircraft parking available at the Airport.

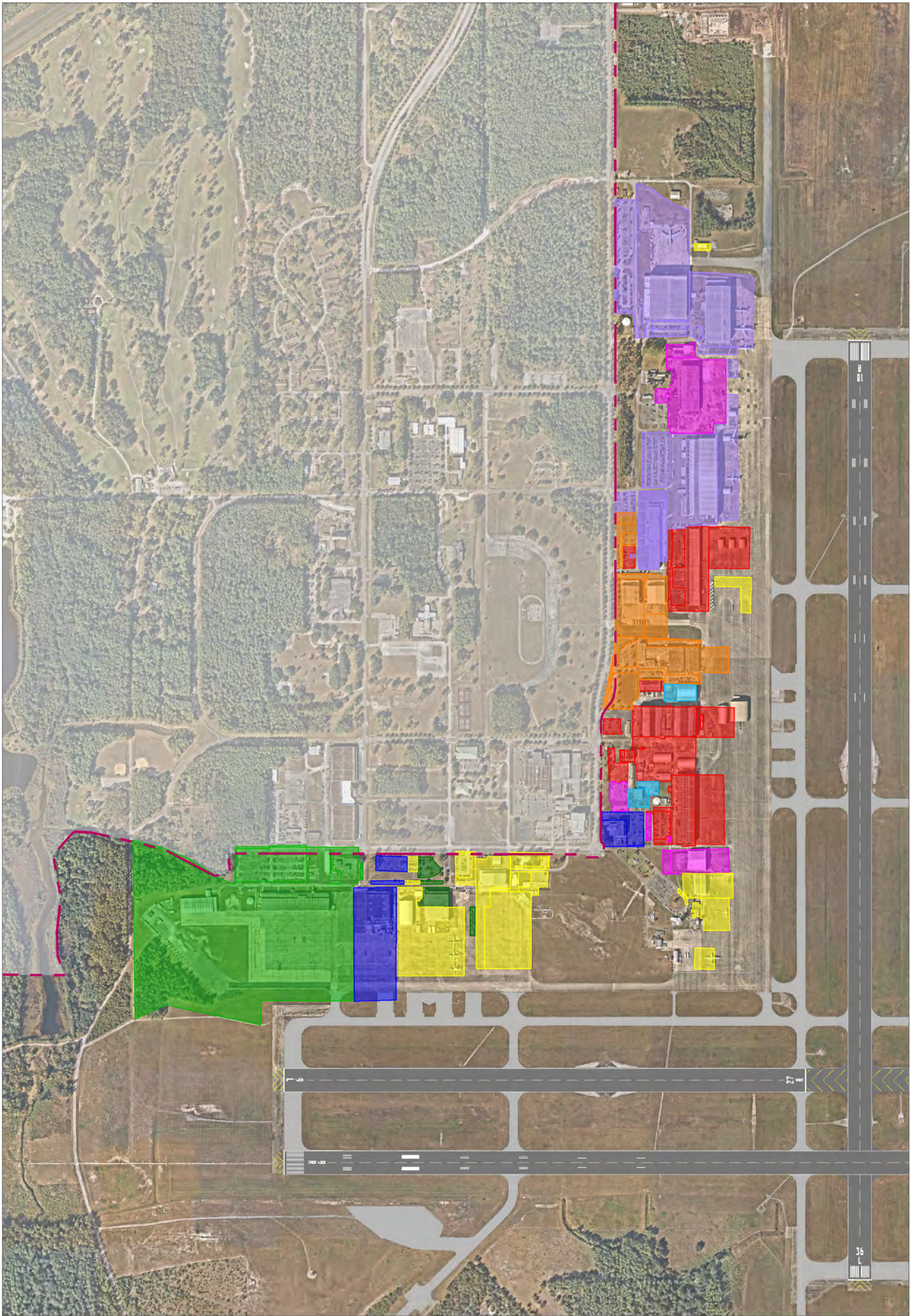
2.8.2. Aircraft Hangars and Parking

Aircraft parking at the Airport is primarily provided as open apron space in front of the MRO tenant's respective hangars. There is minimal hangar space dedicated solely for aircraft storage, due to many hangar spaces being utilized for MRO operations. Jacksonville JetPort (JJP) is the Airport's only FBO and has no short-term plans of providing based-aircraft storage solutions as a service; however, they do own and operate a large conventional hangar to accompany their operations which houses approximately six GA aircraft, such as a Gulfstream aircraft.

Other tenants at the Airport provide aircraft maintenance and do not offer transient aircraft parking areas. Aircraft undergoing maintenance at these facilities use the tenants' individual hangar spaces and the open pavement on the north apron area. Numerous fabric hangars have been constructed as a short-term solutions to meet hangar space demands, with the intent to remove a majority of them after Boeing relocates to their new facility on the northeast side of the airfield.



Figure 2-10 - Airport Apron Areas



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	Airport Property Boundary		FLARNG Leasehold		JJP Leasehold
	Runway Pavement		Flight Star Leasehold		LSI Leasehold
	Taxiway Pavement		FRCSE Leasehold		ManTech Leasehold
	Boeing Leasehold		FSCJ Leasehold		USCG Leasehold



Sources: Jacksonville Aviation Authority, 2021; Kimley-Horn 2021.

Florida State College at Jacksonville (FSCJ) is located near the USCG and utilizes a portion of the west apron space for tie-downs of their training aircraft. The west apron space adjacent to the FSCJ, near the fuel farm, is used for overflow aircraft parking and is leased by the FBO. During the tenant interviews conducted as part of the inventory data collection, it was regularly communicated that the existing apron areas frequently reach capacity; therefore, there is limited parking available at Cecil.

The Spaceport apron has a supporting fabric hangar space with a trailer providing office space and landside access via secure public roadways. There is a project underway to enclose the fabric hangar by adding a door, allowing vehicles stored within the hangar cover from the weather.

2.8.3. General Aviation Terminal and Airport Administration Facilities

The GA terminal is located in Building 82, occupied primarily by JJP. JJP services a variety of clients, but primarily focuses on fueling military operators. JJP has a broad range of amenities to those that use their service, including access to their terminal building such as internet, flight planning, pilot lounge, flight crew refreshments and lounge area, showers with toiletries, and assistance navigating the local Jacksonville area. JJP's operations and administration offices are attached to their terminal and part of the same building as the Cecil Airport Administration offices. The terminal is located by the ATCT at the south end of the north apron.

Airport and Spaceport personnel including maintenance and managing officers are also located here. Many of the tenants at the Airport have additional administrative offices connected to their respective hangar spaces.

2.8.4. Fixed-Based Operator (FBO)

JJP is the sole FBO at Cecil. The facilities and equipment at the Airport and JJP meet a diverse range of aerospace needs from a variety of airport users. JJP is certified to provide hot fueling, which allows them to fuel aircraft while the engines are still running. Three spaces near Building 825 are used for hot fueling. JJP provides military detachment training and support facilities that are frequently in use. These facilities include classrooms and flight preparation rooms large enough for 30 trainees. With the expansion of the Spaceport, JJP has specifically stated interest in providing propellant or other supporting services to Spaceport users via their extensive network of local commercial partners.

The FBO offers numerous amenities within their terminal and administrative office such as rental car coordination, Wi-Fi, a pilot lounge, a flight planning room, and coordination of catering services located. The FBO operates out of Building 925 and Building 82. The FBO sublets numerous parcels of apron and hangar space to other tenants such as one to Technical Air Support, Building 945.

JJP has expansion plans for future development at Cecil. This includes approximately 60,000 square feet of hangar space (inclusive of offices and shops) and approximately 160,000 square feet of apron space within the next couple of years. JJP also expressed interest in the existing Boeing facilities, once Boeing has transitioned to their new facility and vacated their existing leased buildings.

2.8.5. Transient Aircraft Facilities

Cecil's only FBO, JJP, has a business model focused on transient military operators that need fueling and other FBO services. Therefore, services to GA transient aircraft are somewhat limited. Aircraft fueling, access to pilot lounge and planning areas, catering services, and organizing car rentals are provided by



the FBO. The Airport's wide-ranging aircraft maintenance tenants provide repair and inspection services to complete teardowns; however, these are typically through exclusive contracts and services are not available for "walk-in" customers.

Overnight transient aircraft parking space is limited and coordinated with JJP and Airport operations. As discussed in the previous sections, there are minimal enclosed aircraft parking solutions at the Airport, with most parking available on open apron areas. JJP leases a large portion of the west apron closest to the fuel depot for overflow transient apron parking.

2.8.6. Military Areas and Facilities

The Airport's primary military ramps are located on the west apron space and occupied by FLARNG and the USCG HITRON.

- Florida Army National Guard (FLARNG): FLARNG has fully operational military offensive and defensive helicopters and bases 16 helicopters as of 2021. FLARNG property is fenced off from the public and has FLARNG military police on internal and external patrols ensuring the safety of their facilities. FLARNG expressed concerns with the existing inoperability of their airfield fencing as well as the limitations it poses on aircraft access to the ramp, such as limits on the HC-130 and similar aircraft that need additional separation space. Future plans are in place to increase the separation distance.
 - As the FLARNG apron is fenced, when a fighter jet needs to park for an extended period due to a maintenance issue, it is typically housed on FLARNG's apron.
 - The landside area directly north of the airside FLARNG property is used for land-based vehicle storage for FLARNG.
 - There is an old munition bunker within the FLARNG leasehold that FLARNG is in the process of recertifying for use.
 - FLARNG regularly conducts training operations in the southwest quadrant of the Airport. Some training operations conducted include sling load, hoist, and ramp and slope. FLARNG desires the ability to also conduct pinnacle landing trainings at Cecil.
- United States Coast Guard (USCG) – HITRON: The USCG HITRON operates a fleet containing helicopters and fixed-wing aircraft. The USCG HITRON conducts numerous operational flights over the Atlantic, most notably drug enforcement operations. Due to the nature of the operations, the Jacksonville Port Authority and the U.S Customs and Border Patrol have an office near the USCG HITRON that directly supports these operations.

Approximately 25 U.S Navy munition bunkers were constructed in the northeast quadrant of the Airport during its time as a military base. These areas have subsequently been decommissioned and are no longer in active use. The location and environmental impacts of these decommissioned facilities will be further discussed in the *Environmental Overview* section (Section 2.13) of this chapter.

FLARNG has long-term plans to demolish their existing hangar (Building 860) and build a new 47,000-square-foot hangar, 93,120 new Readiness Centers, and additional supporting administration buildings. FLARNG indicated their existing hangar and apron area are sufficient to meet their needs for the



foreseeable future. However, the growth between FLARNG, USCG, and the Fleet Readiness Center might warrant an expanded co-located facility.

Aside from the FLARNG and USCG, several other tenants at the Airport service or operate military aircraft to some capacity. As these other tenants are not branches of the DoD, they will be described in subsequent sections of this chapter.

2.8.7. Maintenance, Repair, and Overhaul (MRO)

The primary services provided at the Airport are centered around MRO operations. Each operator has reported strong growth in demand in recent years and most are looking to expand their physical presence at Cecil. Table 2-11 below outlines the existing MRO operating environment at the Airport and the aircraft being serviced on a regular basis. MRO operations are typically mid-to-long-term maintenance and thus require an aircraft to remain at the Airport for weeks to months at a time. For example, upgrades to be performed on the P-8 Poseidon aircraft will take approximately four months with a fully-staffed, large operational team.

The Boeing company has begun a transition to the northeast portion of the airfield from their existing location on the north apron. The move includes constructing a large new hangar to accommodate the growth in their MRO operations. The new facility will be able to accommodate up to eight Boeing P-8 Poseidon aircraft or 16 F-18s.

Table 2-11 – MRO Operators

MRO Operator	Buildings	Building/Hangar Space	Ramp Space	Representative Aircraft
Boeing	887, 1820, 312, 67, 825, 887, 825, 315, 67, 1823, 310	880,362 SF	1,186,066 SF	P-8 (military) F-18 (military)
Flight Star	905, 815, 504, 313, 935,	664,570 SF	669,698 SF	B767 (commercial) A320 (commercial)
Man Tech	887	6,438 SF	Numerous Fabric Hangars sublet	P – 8 (Military)
Pratt and Whitney	334, 339, 328	7,883 SF	Total Complex 51,125 SF	Commercial
Logistic Services International	915, 824, 955	219,092 SF	90,516 SF	Helicopters (military)
Technical Air Support	945-1, 945	25,000 SF	3,000 SF	F-5 (military)

Sources: Jacksonville Aviation Authority, 2021; FAA, Airport Layout Plan, 2008; Tenant Interviews, 2021; Kimley-Horn, 2021.

FlightStar Aircraft Services operate an extensive airframe maintenance, modification, and conversion operations. The MRO operator serves various passenger and cargo commercial carriers. The typical aircraft being serviced by FlightStar are Airbus, Boeing, Embraer, and McDonnell Douglas aircraft.

Tactical Air Support provide MRO services for Northrup F-5 aircraft. These light fighter aircraft are brought to the Airport via truck or cargo aircraft, such as C-130s, to be retrofitted with modern radar and avionics.



The primary clients of Tactical Air Support are military forces purchasing the retrofitted aircraft to act as adversarial forces during training exercises. Tactical Air Support expressed a desire to expand warehouse and office space. Warehouse space is located off airport property, approximately three miles to the east. Tactical Air Support also requires a paint booth for their operations and would seek to share a facility as opposed to building their own.

Man Tech, LSI, and Pratt and Whitney all provide various services under the MRO umbrella, such as engine testing and avionics retrofitting. As of November 2021, Man Tech is constructing Building 1005, a new hangar at the northerly end of Taxilane D. Man Tech and LSI continue to support various military clients and aircraft, while Pratt and Whitney continue to serve predominantly commercial clients. In addition to MRO operations, there are various aircraft maintenance training schools offering on-site technical training and classroom environments to their employees or local students. Notable training facilities are FSCJ and LSI.

2.9. Spaceport Facilities

The following section outlines the Spaceport-specific infrastructure and safety areas identified in previous studies such as the 2012 Spaceport Master Plan and the 2021 Spaceport Development Area Plan (SDP). Some of these areas have yet to be incorporated into existing operations at Cecil and are stated as such when applicable. Refer to 14 CFR Part 420 for additional definitions and general Spaceport regulations not covered within this section.

2.9.1. Launch Site Operator License Review

Regulated by the FAA via 14 CFR Part 420, there are only nine Launch Site Operator Licenses (LSOLs) for commercial HTHL spaceports across the country as of 2021. Effective January 11, 2015, the JAA was awarded a Spaceport Launch Site Operating License extending out to January 2025 for commercial HTHL Reusable Launch Vehicles (RLVs). The license can be further expanded in the future, as additional categories of HTHLs or RLVs become operational. In addition to the spaceport license held by Cecil, operators at the Spaceport must also hold an operator licenses and respective permits prior to commencing licensed activities.

The license process is an in-depth analysis of potential operations including outlining the various potential impact areas of an operation. The license represents interagency coordination within the area to support the operations – in the Spaceport’s case, the relationship between the Airport, ATCT, the JAA, the FAA, Jacksonville Center, Jacksonville Approach/Departure, and the U.S. Navy and its Fleet Area Control and Surveillance Facilities at Jacksonville (FASFACJAX). The primary criteria related to the approval of a spaceport license is an outlined map of flight corridors and the impacts to the communities within. The license also requires a detailed calculation of safety protocols and operational safety areas at the Spaceport, including an Explosive Site Plan.

2.9.2. Explosive Hazard Facilities and Site Plans

The LSOL under 14 CFR Part 420 requires Cecil to work with local agencies to develop an Explosive Hazard Site Plan (EHSP) that outlines potential hazard areas, their respective safety envelopes, and the anticipated emergency responses associated with each operation. Unlike conventional aircraft, launch vehicles use fuels and oxidizers as propellants which are highly flammable and hold explosive properties representing a significant safety risk. For this reason, an EHSP should identify each operation's



respective safety areas in a designated location at Cecil. The two primary operations requiring these declarations of safety areas pertain to rocket engine testing and oxidizer loading areas. The primary safety areas to be defined per operation are listed below:

- **Public Area Distance (PAD):** The minimum distance permitted between a public area and an explosive hazard facility, the PAD safety area has a 1,250-foot radius from the center point of the operational site.
- **Public Traffic Route Distance (PTRD):** The minimum distance permitted between a public highway or railroad line and an explosive hazard facility, the PTRD safety area has a 750-foot radius from the center point of the operational site.
- **Intraline Distance (ILD):** The minimum distance permitted between any two explosive hazard facilities in the ownership, possession, or control of one spaceport customer, the ILD safety area has a 559-foot radius from the center point of the operational site.

2.9.3. Oxidizer Loading Area

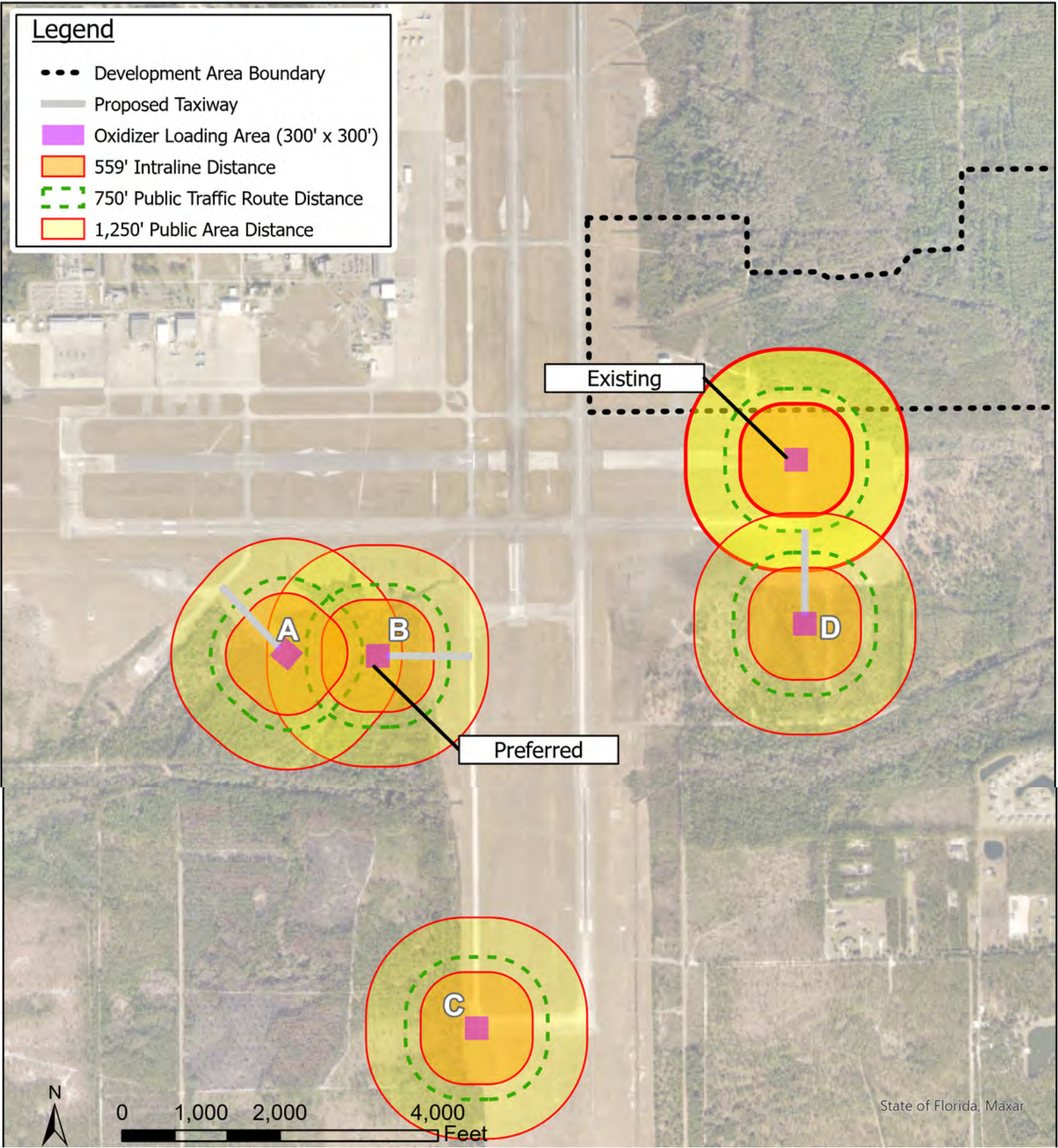
Oxidizer loading areas (OLAs) are important to plan for due to the operational impacts they have on surrounding areas. When the OLAs are active, meaning propellant is being loaded into a vehicle, surrounding buildings must be evacuated and no aircraft can operate in the adjacent airfield areas defined within the PAD safety area. Due to the large safety area needed for the OLA, it is advised to co-locate the OLA and rocket engine testing area. The OLA for the Spaceport is located on the no-longer-active portion of Runway 27R.

Within the SDP, the existing location of the OLA was identified to have a significant operational impact on future development and operations within the area. Both existing and proposed site areas and their respective safety areas, are shown in Figure 2-11. Due to the PAD safety area overlapping critical movement areas and future Spaceport development areas, the JAA in coordination with the SDP identified new proposed OLA locations off Taxiway A. The transition to the future Site B, which includes a taxiway connector and ramp space, will accompany future development efforts at the Spaceport. Proposed Site C identified within the SDP and Figure 2-11 shows a short-term transition area of OLA to mitigate impact on operations at the Airport during an active loading operation.

The preferred OLA location was vetted through a Safety Risk Management Panel and determined to have acceptable levels of risk.



Figure 2-11 - Possible Oxidizer Loading Areas



Source: Space Florida, 2021; Jacksonville Aviation Authority, Spaceport Development Plan, 2021.

2.9.4. Propellant Storage

For Spaceport operations, there are two types of propellant: solid and liquid. There are no permanent propellant storage solutions for either at the Spaceport; however, there is temporary storage solutions provided by an empty mobile trailer as identified in Table 2-12. Existing operations require the Spaceport user to transport, or organize the transport, of the propellant to the Spaceport. Once at the Spaceport, operators can use the Spaceport's temporary storage as needed.

Spaceport propellants are often oxidizing materials that readily give off oxygen or other oxidizing substances, making these substances and materials volatile. Safety areas are reduced in size for propellant storage areas when compared to the OLA and rocket engine testing as the propellants are not yet mixed. The storage areas and their respective safety envelopes at the Spaceport are listed in Table 2-12 below. Improved space refers to space that has existing infrastructure present.

Table 2-12 – Propellant Storage

Asset	Dimension	Improved Space	Unimproved Space
Liquid Oxidizer Storage	83 feet by 50 feet	4,152 square feet	N/A
Liquid Oxidizer Storage Area – PAD	100-foot radius	4,152 square feet	47,760 square feet
Liquid Propellant Storage	83 feet by 90 feet	7,470 square feet	N/A
Liquid Propellant Storage Area - ILD	100-foot radius	7,470 square feet	54,969 square feet
Solid Propellant Storage	25 feet by 50 feet	1,250 square feet	N/A
Solid Propellant Storage – PAD	255-foot radius	1,250 square feet	242,432 square feet
Mobile Propellant Trailer	400 Gallons	N/A	N/A
Mobile Liquid Oxygen Trailer	300 Gallons	N/A	N/A

Sources: Cecil Spaceport, Infrastructure webpage, Accessed 2021; Kimley-Horn, 2021; Spaceport Development Plan, 2021.

Supplemental facilities related to typical aircraft fueling exist for vehicles requiring traditional propellants such as AV Gas or Jet Fuel. The Airport's FBO JJP has expressed potential interest in expanding its services to provide propellant storage and sales in the future, although no plans have been undertaken as of 2021. Permanent propellant storage areas for liquid oxygen are not anticipated to be located at the Spaceport within the 20-year planning horizon. Hydrogen-based propellants are not expected to be used for the vehicles operating out of the Spaceport.

2.9.5. Rocket Engine Test Facilities

A typical rocket test requires a horizontal, appropriately rated, rocket test stand. The engine runs at various power levels to identify critical performance metrics such as burn rate, thrust produced, and overall efficiency of the engine. These tests are vital operations to launch operators as they can troubleshoot and alter aspects of the engine prior to production, saving capital and development time. Co-



location of the test pad with any proposed OLA would maximize the compatibility of the space but prevent simultaneous operations if only one location was selected. Rocket engine test facilities must also be designed to minimize damage to apron pavements. Figure 2-12 is a photo taken from a recent rocket engine testing operation at the Spaceport.

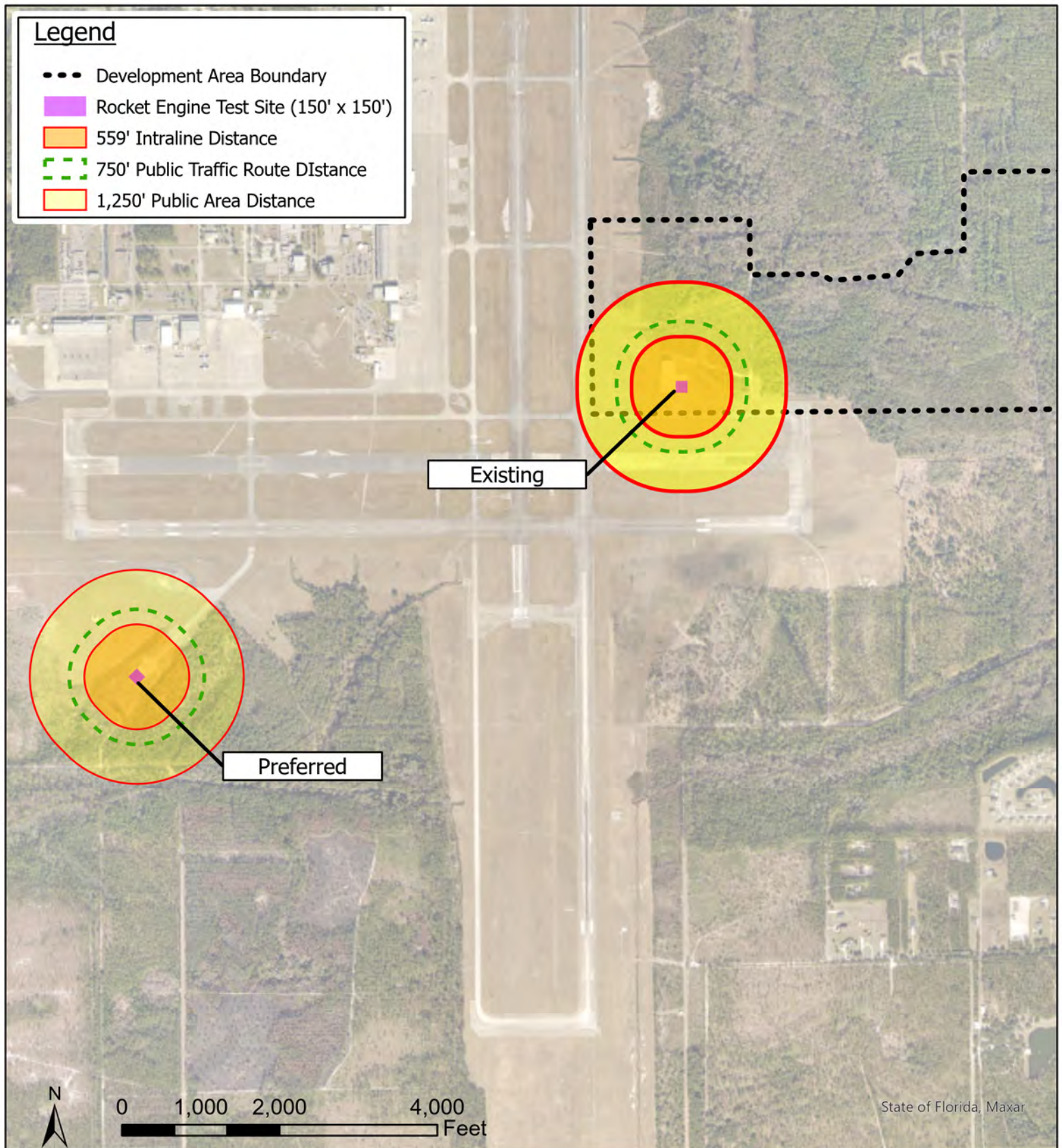
Figure 2-12 – Rocket Engine Testing



Source: Jacksonville Aviation Authority, Rocket Testing, 2021

Rocket engine testing facilities were identified as a top priority for short-term development within the SDP. These areas, similar to the OLAs, have significant operational impacts to the existing and future Spaceport areas, as well as the Airport's operations. The existing location and infrastructure present at the Spaceport were proposed to be relocated from the historical location on the Spaceport apron area to the hot cargo pad located to the southwest of Cecil's primary airfield. The location of both site areas shown in Figure 2-13.

Figure 2-13 - Rocket Engine Testing Areas

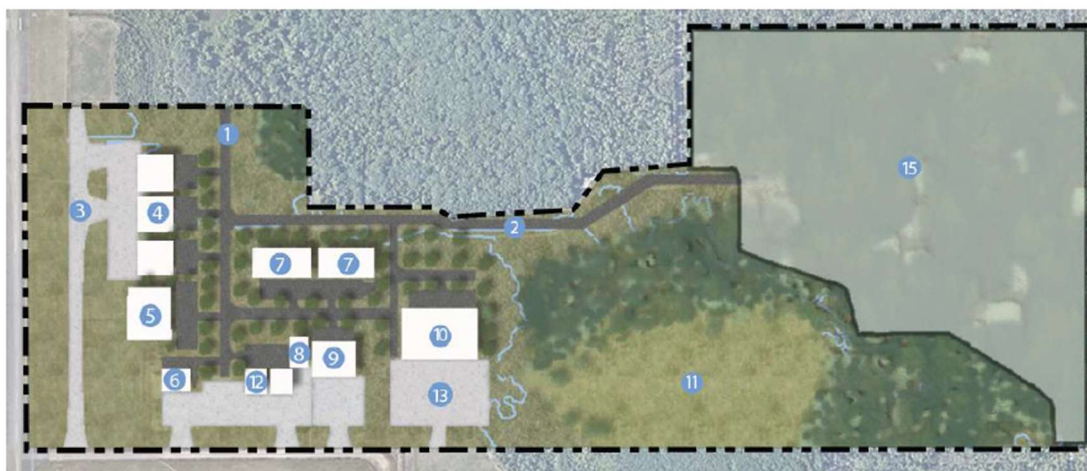


Source: Space Florida, 2021; Jacksonville Aviation Authority, Spaceport Development Plan, 2021.

2.9.6. Spaceport Development Area

Cecil Spaceport recently completed a Spaceport Development Area Plan (SDP)¹⁵ which presented projected landside and airside facility growth needs within an approximate 320-acre area north of Runway 27R. The SDP includes numerous enabling development projects that would help the Spaceport expand its reach and infrastructure to potential future Spaceport tenants. The area plans for the facilities to be built by both public and private entities, with the assumption that in the near term, the public-funded facilities could be used to alleviate some of the Airport's capacity constraints as the JAA markets the new facilities to future Spaceport users. Figure 2-14 depicts the final selected potential development layout of the Spaceport Development Area as defined in the SDP. The SDP is being integrated into this planning effort and additional details defined as appropriate in later sections. As will be elaborated on in the *Environmental Section* of this chapter, the Spaceport development area identified in the SDP is located on known wetland areas and floodplains, presenting future development challenges. The location was chosen despite these challenges due to the area's connectivity to the public access roads and alignment with short-term expansion on the northeast portion of the airfield. Additionally, Cecil noted their historical importance in planning around environmental areas with the potential to apply banked wetland and conservation credits toward these areas.

Figure 2-14 – Spaceport Development Layout



- | | |
|---------------------------------|--------------------------------|
| 1. Planned Roadway | 9. Small Hangar |
| 2. Proposed Access Road | 10. Medium Hangar |
| 3. Planned Taxiway | 11. Large Hangar |
| 4. Common Use Hangars | 12. Wetland |
| 5. Aerospace Terminal | 13. Airside Apron |
| 6. Existing Fabric Hangar | 14. Existing Runways |
| 7. Multi-use / Office Buildings | 15. Future Phased Improvements |
| 8. Payload Processing Facility | |

Note: Map not drawn to scale.

Source: Jacksonville Aviation Authority, 2021; Kimley-Horn, 2021; Spaceport Development Plan, 2021.

¹⁵ Kimley-Horn, 2021 Spaceport Development Plan, 2021.



2.9.7. Mission Control Center

Opened in July 2021, the Cecil Mission Control Center (MCC) is co-located in the same building as the new ATCT. This facility provides a centralized mid-field location with access to redundant utility infrastructure to an active Spaceport operation. The MCC provides an aerospace user with video, communications, telemetry connectivity, and VHF and S-Band frequencies for telemetry equipment.¹⁶ A “plug-and-play” interface is used, connecting the various utilities and support systems for the Spaceport operator. The MCC is a shared-use area and leased out on an as-needed basis, allowing various entities to operate out of the MCC on an annual basis. These facilities are critical to understanding why a sub-orbital operation succeeded or failed and provide the operator valuable information to improve operational efficiency for future launches and monitor active operations.

2.9.8. Spaceport Terminal

There is not a dedicated Spaceport terminal at Cecil. The existing mobile office building adjacent to the Spaceport fabric hangar is used as the Spaceport Terminal. A new terminal that has a visitor center would provide future Spaceport tenants an area where their clients could initially be processed and serve as a multi-tenant public-use facility. This facility may also provide the space needed to host community members and media during Spaceport operations. It is assumed that when operations start, public excitement and interest in the Spaceport will be at its peak, so a centralized public area to direct these groups would help the JAA and its partners manage these various events more safely and efficiently. From a variety of panel discussions within the SDP, the Spaceport Terminal was ranked lower than other facilities, such as payload loading facilities, additional office spaces, and vehicle testing areas.

2.10. Supporting Facilities

Supporting facilities are defined as infrastructure and services that assist users operating out of Cecil. These facilities are typically related to maintenance, emergency services, and infrastructure related to fueling or utilities. The section outlines these facilities and elaborates on their importance to Cecil.

2.10.1. Fuel Facilities

The fuel farm is located southeast of Building 10 off the west apron. JJP manages the fueling operations at the Airport. JJP stated they had sold approximately 6.3 million gallons of fuel during the year 2020, and as of the end of October 2021, projected approximately 7 million gallons of fuel will be supplied through the end of 2021. The fueling infrastructure at the Airport is summarized in Table 2-13. JJP has expressed the desire to expand the fuel farm toward the east, as existing fueling infrastructure is the absolute minimum to support the 20 fuel truck deliveries per night. JJP frequently parks the fueling trucks at various locations around the Airport to serve their clients. The main locations for fuel truck storage are JJP apron spaces, fuel farm open spaces, and the north apron rapid refueling area. Special fueling operations such as hot refueling is provided by JJP’s certified fueling staff as well as tanker refueling using simultaneous truck flowing operations.

As Cecil expands, so to do the needs of the tenants. With Boeing’s expansion toward the north-east portion of the airfield and existing challenges of fuel trucks accessing the northeast area of the Airport, consideration is being given to install a secondary fuel facility in the northeast quadrant of the Airport.

¹⁶ Cecil Spaceport, Infrastructure webpage, Accessed 2021.



Further analysis will be undertaken in the *Facility Requirements* chapter (Chapter 4) of this Master Plan Update.

Table 2-13 – Fueling Assets

Assets	Fuel Type
Tanks	
One 50,000-gallon Above Ground Tank	Jet A
Three 30,000-gallon Above Ground Tanks	Jet A Fuel
One Above Ground Tank	12,000 Gallons of Jet A Fuel
One Above Ground Tank	12,000 Gallons of 100LL
One Above Ground Tank	20,000 Gallons of Defuel/Refueler Tank
Trucks	
Seven Fueling Trucks	10,000 Gallon Capacity per Truck
One Fueling Truck	8,000 Gallon Capacity
Six Fueling Trucks	5,000 Gallon Capacity per Truck

Sources: Jacksonville Aviation Authority, 2021; Jacksonville JetPort, 2021.

2.10.2. Airport Maintenance

Cecil's maintenance team and their respective equipment reside in two primary locations: a medium-sized 5,500-square-foot workshop at the base of the ATCT near the ARFF station (Building 177) and an old shed (Building 595) to the north-east of the airfield used to store tools and equipment. Operations staff oversees daily airfield inspections to ensure lighting and visual aids are in working conditions, verify that pavement markings are clear and visible, and conduct a perimeter inspection of the fence lines.

Maintenance personnel work in unison with the Operations staff to perform minor rehabilitation efforts in the forms of crack sealing, painting airfield markings, NAVAID lighting replacements, and manage weed growth and wildlife activity. The Cecil Maintenance Manager indicated existing equipment has met historical needs. Maintenance equipment will continue to be updated as needed.

In addition to airfield assets and fencing, Cecil conducts general maintenance efforts to repair and restore roofing of most buildings and hangar spaces at Cecil. The roofing and water supply lines corresponding to tenant hangars is maintained by Cecil's maintenance personnel.

The Maintenance Manager indicated a need for additional space for the vehicle fleet, mower storage, and maintenance of equipment. A total of 10,000 square feet of maintenance area, inclusive of shops, was identified. Additionally, 10,000 square feet for a storage barn was identified as a need.



2.10.3. Aircraft Rescue and Firefighting

While Cecil is not a Part 139 airport, ARFF services are provided and support the frequent military operations occurring at Cecil. Two ARFF-trained firefighters are staffed 24/7. Supplemental fire staffing includes three structural firefighters at Fire Station 73 (on airport property near the intersection of Aviation Avenue and State Road 134), who will respond to structural fires or additional assistance as requested by Cecil. All the firefighters that would respond to an Airport emergency within the two stations are given ARFF training under National Fire Protection Association (NFPA) 1003 Standards. The immediate equipment accessible to Cecil related to firefighting efforts is summarized in Table 2-14.

Table 2-14 – Aircraft Rescue and Firefighting

Station + Personnel	Equipment	Capabilities
Station 56 – On Airport Four ARFF-Trained Firefighters 24/7	Amertek 2019 Oshkosh Striker 3000 2019 Oshkosh Striker 3000 2019 Chevrolet 2500 HD	<ul style="list-style-type: none"> • 100 gallons of water, 130 gallons of foam • 3,000 gallons of water, 300 gallons of ARFF foam, 450 pounds of Purple K • 3,000 gallons of water, 300 gallons of ARFF foam, 450 pounds of Purple K • 100 gallons of ARFF foam, 450 pounds of Purple K
Station 73 – Near Airport Five ARFF-Trained Firefighters 24/7 with One Active Paramedic	2017 Pierce 2018 Chevrolet Chassis	<ul style="list-style-type: none"> • 500 gallons of water, 20 gallons of foam • Advanced Life support (Ambulance)

Sources: Cecil Airport, Emergency Services webpage, Accessed 2021; Jacksonville Aviation Authority, 2021.

2.10.4. Utility Infrastructure

The utility network at an Airport is vital to ensuring operations at Cecil remain sustainable and can expand operational capacity. Cecil's staff have outlined their goal for the utility infrastructure is to be clean, reliable, redundant, expandable, and maintainable. This section will outline the existing utility infrastructure existing at or near Cecil.

- **Water:** Water services for Cecil is provided by two different high-capacity water treatment sites. Cecil is a part of the general Cecil Commerce Center water utility network which has a capacity flow of 75-million gallons a day. There are no capacity issues related to water supply at Cecil.
- **Fire Water:** Cecil maintains a dedicated fire water system that provides tenants access to highly pressurized water. There are two high-pressure pump stations supporting the fire water system. The individual tenant is responsible for adding whichever chemicals and flame retardants needed for their respective fire plans. Cecil's maintenance personnel are tasked with monitoring and upkeeping the system.
- **Sewer:** Sanitary sewer is provided by the local treatment plant that has an on-site 52-million-gallon-a-day treatment plant capacity.
- **Stormwater:** Located in Florida, Cecil experiences significant rain events; therefore, a complex stormwater management system is required to ensure the protection of life, property, and operational continuity. Cecil mitigates stormwater flowage using a system of underground pipes and ditches along the landside roadways to route water runoff. The airfield is graded and slopped to ensure pooling areas are not on pavement and flow into drainage ditches that route the water



away from the critical airfield areas. Cecil maintains a comprehensive Storm Water and Pollution Protection Plan (SWPPP).

- **Electricity:** Electricity is an essential utility for Cecil, and a disruption of this service during an operation can threaten both life and property. Cecil's electricity is provided by the Jacksonville Electric Authority (JEA). There is room for 2,600-plus megawatts of installed generating capacity with multiple feeds and dual substations that exist on-site.
- **Natural Gas:** Cecil has an existing 16-inch transmission line providing natural gas to Cecil and its users, running along the Cecil Commerce Center. TECO Gas provides natural gas service to Cecil. Natural gas is used to power various boiler systems
- **Communications:** Fiber-optic communication lines provide a high-speed, reliable bandwidth connection to Cecil. These communication lines are available to most Airport users and plugs directly into the ATCT and MCC infrastructure.

2.11. Land Use and Zoning

Proper land use planning and zoning is important in positioning an Airport to meet the future demand growth of a community in a manner that is compatible with the community. Aircraft noise is an important consideration in land use planning and zoning. Section 2.13.2 documents existing noise contours for Cecil. This section will outline existing zoning and land use planning efforts undertaken by the local communities and will identify incompatible land use areas in the immediate area of Cecil.

2.11.1. Existing Land Use

Cecil Airport is located within Duval County. Clay County begins on Cecil's southern property line; therefore, zoning and land use planning was analyzed for both counties. The City of Jacksonville plays a major role within the local regions zoning and infrastructure planning efforts and will also be taken into consideration.

The JAA owns all lands within the existing RPZs. This is important in that it provides JAA full control of land uses within these critical safety areas. Cecil's immediate boundaries are all zoned within the FAA's recommended standards except for the western Rural Residential zoned area that abuts Cecil's property line. Land to the north, not abutting the Airport, is zoned for residential single-family housing, but is not located within the RPZ or on the immediate property line. In addition to the federal guidance by the FAA to zoning jurisdictions the state of Florida's Statute 333 related to airport zoning further outlines the importance to zone in accordance with Cecil's critical safety areas, not just the direct operational areas. The statute further identifies what aeronautical use is and the concerns related to obstructions near the Airport's operational areas. Existing zoning and associated map, Figure 2-15, is contained in the following section.

2.11.2. Zoning

Zoning is the intentional act of dividing land areas up and restricting the function of that specific area of land. Zoning is done through the local town or city's zoning boards and is typically out of the direct control of an airport owner and is not something the FAA can regulate. The JAA, City of Jacksonville, and Duval County have aligned goals when it comes to the zoning of Cecil surrounding areas. This relationship helps Cecil continue to expand without hindering operations or negatively impacting communities. Under Part 10 Subpart A of Chapter 656 of the Jacksonville Florida Code of Ordinances, the code establishes



Cecil Airport and Spaceport Master Plan

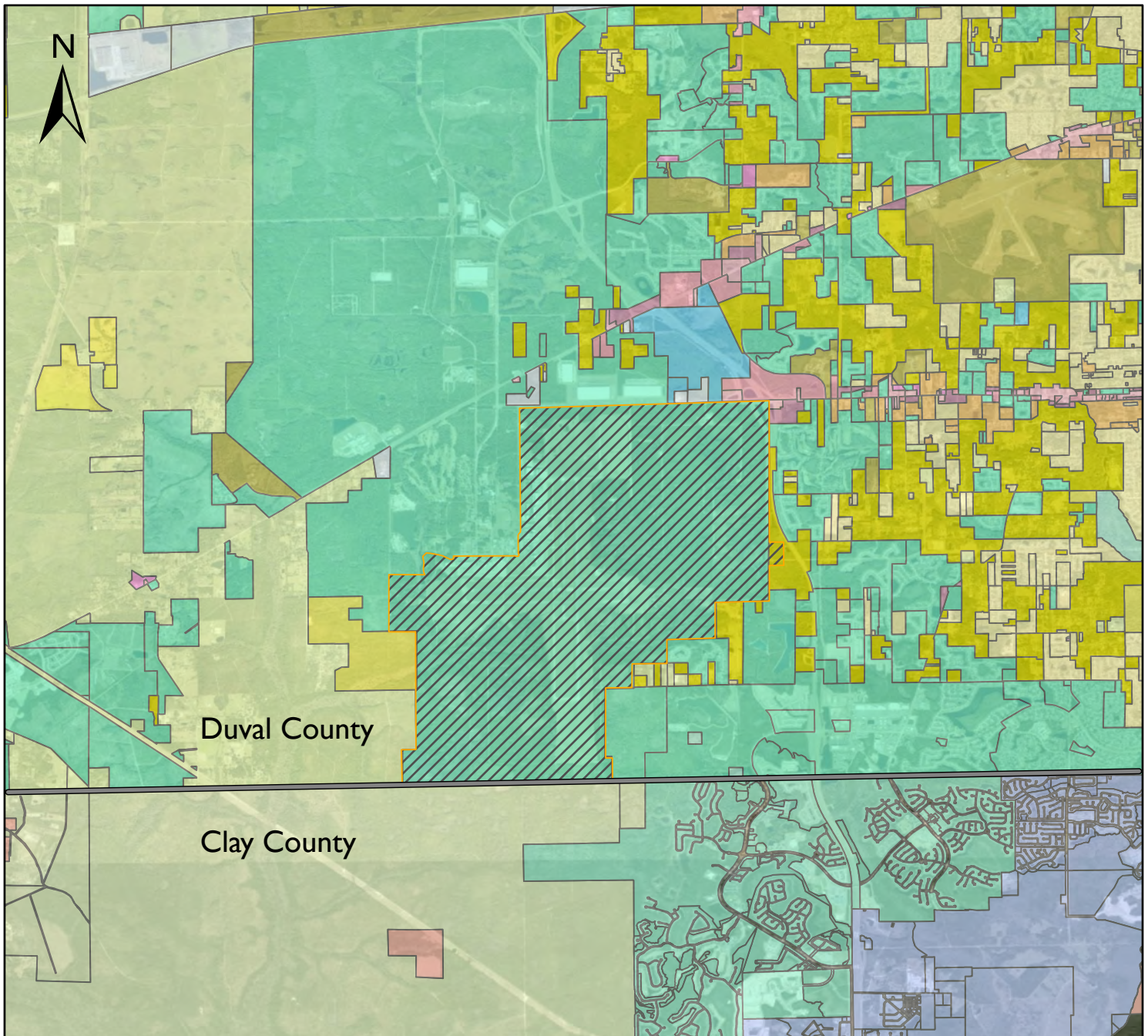
that the areas immediately surrounding an airport environment are required to be zoned properly to ensure the safety and the wellbeing of the general public so as to not expose community members to substantial noise levels or adverse effects from critical navigational aid lighting for aircraft. The Airport is explicitly cited within this code. Much of the land surrounding Cecil is either zoned for industrial, commercial, agricultural, conservation, or recreation open space uses.

Duval County has zoned the areas to the north as commercial use, the areas to the northeast as industrial use and the areas to the west as public building facilities or agricultural use. The immediate Airport's property is zoned for mixed use, which encompasses the existing airfield extending up and to the northwest to encompass the land to Cecil Field Gym and Recreation Center.


Clay County has zoned the area as predominantly agricultural use, apart from the southwest area in relation to Cecil zoned for residential use south of a small portion of incompatible land area zoned as rural residential by Duval County, as shown in Figure 2-15. This area is where the County has envisioned growth stemming from increased operations at Cecil; however, there is intent by both counties to limit the amount of housing in these areas and centralize future high-density residential areas further east.



Figure 2-15 - Existing Land Use






















Legend

 Cecil Property





Duval County

Zoning

 Agricultural	 Water
 Central Business District	 Public Buildings and Facilities
 Commercial Community/General	 Planned Unit Development
 Commercial Neighborhood	 Residential High Density
 Commercial	 Residential Low Density
 Commercial/Residential/Office	 Residential Medium Density
 Conservation	 Residential Housing Opportunity
 Industrial Business Park	 Single-Family Residential
 Industrial Heavy	 Rural Residential
 Industrial Light	

Clay County

Zoning

 Agricultural/Residential District
 Agricultural
 Commercial Planned Unit Development
 Planned Unit Development

Sources: City of Jacksonville, GIS Portal, Accessed December 2021; Clay County, GIS Portal, Accessed December 2021; Jacksonville Aviation Authority, Kimley-Horn, 2021.

0 1.5 3 4.5 Miles

2.11.3. Land Use Planning

Duval County plays a proactive role in planning for future growth around the local airports. Unlike other airports within Duval County, Cecil has a substantial amount of land owned directly by JAA and is located in a more rural part of the county. With the high-frequency military operations and future spaceport operations, this extra land helps provide a buffer to the surrounding community and provides opportunities for revenue generation to support Cecil's operations, development, and maintenance.

The City of Jacksonville Community Planning Division completed the City of Jacksonville 2030 Comprehensive Plan in 2021 that contains future infrastructure projects, land use adjustments, and potential funding sources for the City.¹⁷ This plan was separate from the larger Florida Growth Management Act that requires counties and municipalities to plan for the future growth within their local communities. The JAA keeps close relations with the county and the City of Jacksonville to align all entities future interests and manage the sustainable growth of Cecil.

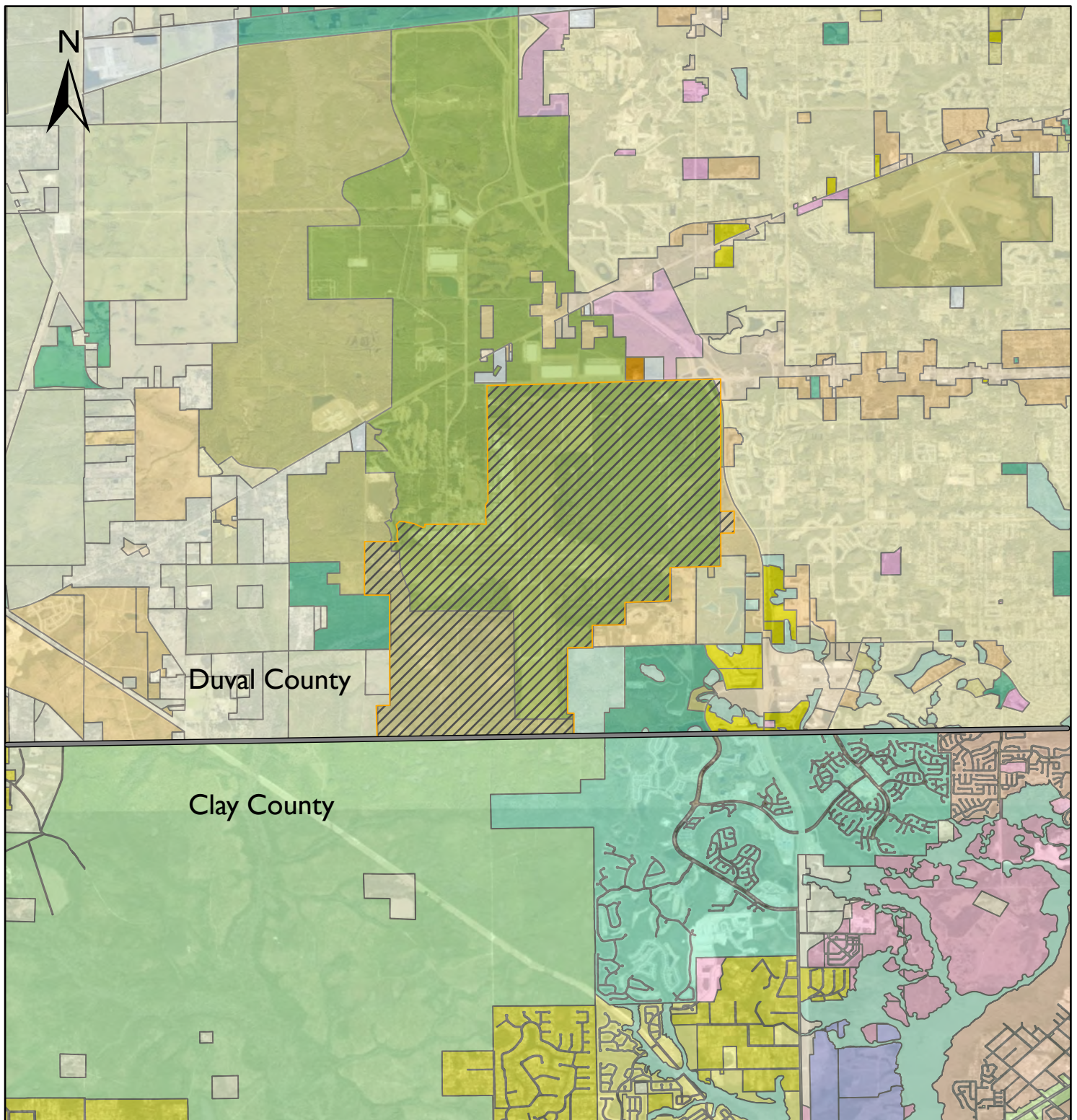
Clay County updated the Branan Field area Master Plan, extending growth projections out to the 2040s. Through this, the County seeks to actively monitor the growth of the Airport and the surrounding Cecil Commerce Center. As growth continues, the County is planning to expand residential and commercial growth in their north-central communities. Overall, the County is positioning to leverage growth induced by Cecil and the Cecil Commerce Center.

Future land use maps for the two controlling jurisdictions are shown in Figure 2-16 below.

¹⁷ City of Jacksonville, *City of Jacksonville 2030 Comprehensive Plan*, 2021.



Figure 2-16 - Future Land Use



Legend

Cecil Property

Future Land Use Duval County

- | | |
|------------------------------|--|
| Agriculture/Farming | Medium Density Residential |
| Business Park District | Multi Use |
| Community General Commercial | Neighborhood Commercial |
| Conservation | Public Buildings and Facilities |
| High Intensity | Recreation and Open Space |
| Low Density Residential | Residential/Professional/Institutional |
| Light Industrial | Rural Residential |

Future Land Use Clay County

- | | |
|---------------------------|--------------------------|
| Agricultural | Economic/Cultural Area |
| Community Commercial | Planned Community |
| Master Planned Community | Residential Preservation |
| Multi Use | Rural Residential |
| Waters | Urban Center |
| Residential Single-Family | |

0 1.5 3 4.5 Miles

Sources: City of Jacksonville, GIS Portal, Accessed December 2021; Clay County, GIS Portal, Accessed December 2021; Jacksonville Aviation Authority, Kimley-Horn, 2021.

2.12. Surface Transportation

Surface transportation is vital to providing connectivity with an airport to local industries and communities. The JAA actively participates in the roadway development projects and planning efforts through coordination with the City of Jacksonville's Transportation Planning Division. The City of Jacksonville is striving to become one of the world's first "Smart Cities". This includes outfitting numerous roadways with smart sensors, autonomous vehicle assistance, and other new technologies.

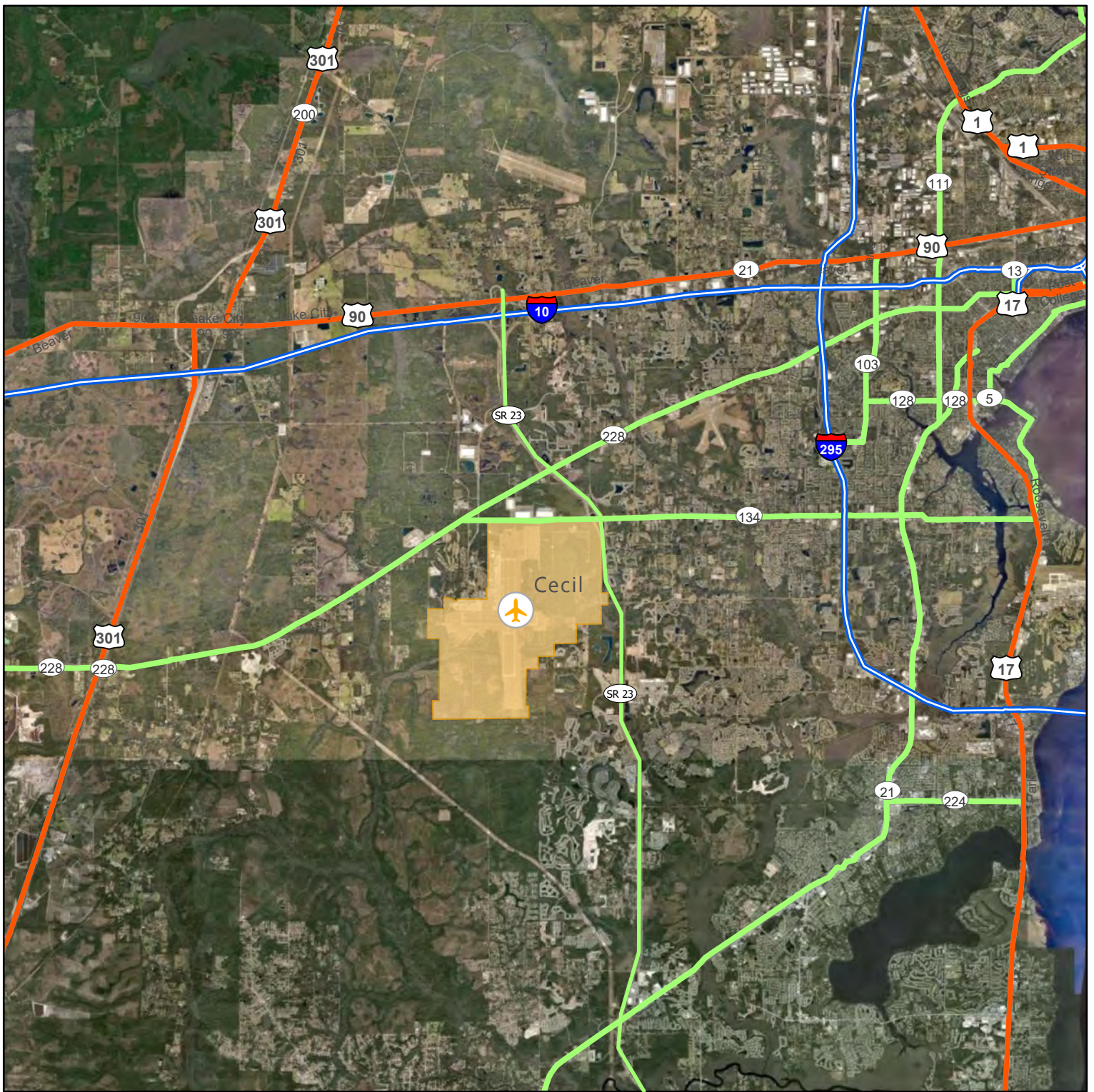
2.12.1. Major and Regional Roadways

Major roadway infrastructure providing access to Cecil is depicted in Figure 2-17 and described below. These roadways are integral in the local economy as expansive fulfillment centers to the north of Cecil utilize these regional and national roadways daily.

- **State Road (SR) 23:** SR 23 is also known as the First Coast Expressway. SR 23 is a north/south divided, tolled highway that connects to SR 228 to the northeast of Cecil and SR 21 to the south. Both SR 23 and SR 228 have signage indicating Cecil's location. SR 23 also connects to SR 134, which provides access to Aviation Way, the main road used to access Cecil. SR 23 continues north, connecting with US Interstate 10 (I-10) and US Highway 90. SR 23 is near the eastern edge of Cecil's property.
- **SR 134:** SR 134 is an east/west highway that provides access to Cecil and Amazon's fulfillment center to the northeast of Cecil. SR 134 connects with US Highway 301 to the west and SR 23. SR 134 is located near the northern boundary line of Cecil's property.
- **US I-295:** I-295 is the loop highway for Jacksonville. I-295 is approximately 6.5 miles east of Cecil and can be accessed directly via SR 134 or SR 228.
- **US I-10:** I-10 connects Jacksonville to Los Angeles, CA running east/west. I-10 connects Jacksonville with Florida's capital, Tallahassee. I-10 is located approximately four miles north of Cecil and is easily accessible via SR23. I-10 can also be accessed to the west of Cecil via US Highway 301.
- **SR 228:** Connecting to SR 134, SR 228 is a major connecting roadway to downtown Jacksonville. The roadway terminates at I-10 just outside the downtown Jacksonville area. It also serves as a connector to the US Highway 301 to the west. SR 228 is approximately two miles north of Cecil and provides access to Cecil via POW-MIA Memorial Parkway.
- **US Highway 301:** Running north/south eight miles to the west of Cecil, US Highway 301 provides a major connecting regional highway to the Jacksonville area from Gainesville, FL. Traveling northbound, the highway parallels the coastline and continues past the Carolinas.




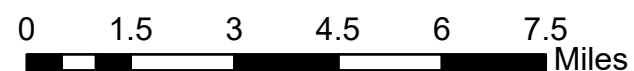
Figure 2-17 - Major Regional Roadways



Legend

Major Regional Roads

- Limited Access
- Highway
- Major Road
- Local Road
-  Cecil
- Cecil Property



2.12.2. Local and Airport Access Roadways

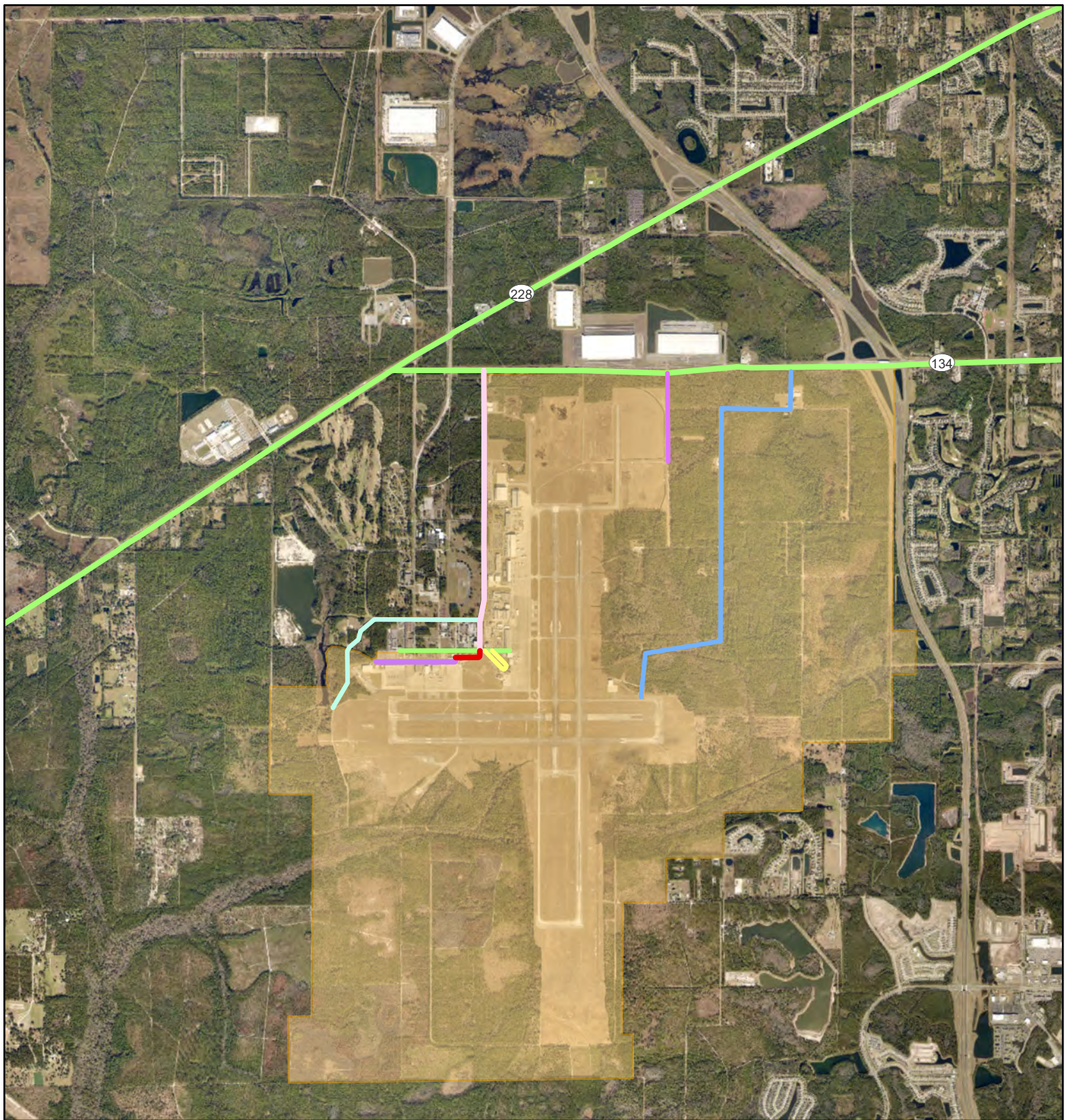
A comprehensive local roadway system gives Airport users the ability to transition from major roadways to Cecil or its supporting facilities. The local roadways connecting to Cecil exist only to the north side of Cecil property. The main local roads are described in the points below and in Figure 2-18.

- **10th Street and Approach Road:** The local roads connecting to the Spaceport facilities to the northeast side of Cecil are narrow, winding roads that connect to SR 134. 10th Street connects to Range Street which terminates at SR 134 near the Amazon fulfillment center. Approach Road connects directly to Florida 134 to the east of 10th Street. These roads are not open to the public.
 - **Approach Road** will soon be expanded by a new, dual-lane paved road as part of a Spaceport initiative that received state funding. The grant was announced by the Florida Governor on November 4, 2021. In addition to providing an improved roadway and alignment to the Spaceport, Approach Road will serve the new Boeing facility. The intersection with SR 134 may require signalization to help the flow of traffic, particularly during peak hours.
- **Aviation Avenue:** Aviation Avenue is a three lane, north/south road that provides ground access to the north apron tenants. Aviation Avenue terminates at Crossover Street which allows access to JJP, Airport Administration Offices, ATCT, and MCC via Simpson Way. The roadway also connects to the various east/west roads supporting other commercial facilities throughout the Cecil Commerce Center area.
- **Aerospace Way:** Aerospace Way is an east/west roadway and provides ground access to the west apron tenants. Aerospace Way can be accessed from SR 134 or SR 228 via POW-MIA Memorial Highway.
- **Crossover Street:** An east/west road, Crossover Street provides connectivity between Aviation Avenue and POW-MIA Memorial Highway. Aerospace Way can also be accessed via north/south roads Cargo Hold Way and Authority Avenue. Crossover Street leads directly to a secured airport gate and provides access to Building 1820. Crossover Street connects with Simpson Way.
- **Simpson Way:** This is a one-way loop road providing ground access to the ARFF, Airport Maintenance, MCC, ATCT, Airport Administration Building, and JJP (inclusive of JJP's terminal facility). Simpson Way loops around automobile parking for these facilities.
- **Lake Fretwell Street:** Lake Fretwell Street is an east/west road providing connectivity between Aviation Way and POW-MIA Memorial Highway and continues west of POW-MIA Memorial Parkway, providing access to Lake Fretwell Park. The road then loops around the westerly end of the 9/27 Runways. The road south of Lake Fretwell Park is gated and closed to the public. This road provides potential ground access to the southwest quadrant of Cecil.

There is limited to no access to Cecil from the south. Several small roads on airport property are present, none of which are accessible to the public, that provides access to the southeastern quadrant of Cecil. Most of these are unpaved dirt roads. The City of Jacksonville has a planned road extension from the Copper Ridge Development which will ultimately connect with the Cecil Connector. These plans will be further analyzed within the Alternatives Chapter of this Master Plan Update.



Figure 2-18 - Local Roadways



Legend

	Cecil Property		Simpson Way
	Major Road		10th Street
	Aeronautical Cir		Approach Road
	Aerospace Way		Crossover Street
	Aviation Ave		Lake Fretwell Street



0 1.5 Miles



2.12.3. Vehicle Service Roads

Once within the security gate, a primary service road wraps along the exterior of the movement areas, providing airfield access throughout the entire airfield. Much of this road is either dirt or has had a chip seal treatment. The road is not smooth, nor is designed to accommodate larger, heavier vehicles. The road also runs along both apron areas, and in these areas, it is paved.

There presently is not a need for tenants or users to use the service road beyond the limits of the apron. With the relocation of Boeings facilities to the northeast, additional vehicle traffic, such as fuel trucks, will require a route to get from existing facilities to the new facilities. Provisions for a paved service road within the security fence may be necessary in the future.

2.12.4. Public Transit Connectivity

The Jacksonville Transportation Authority (JTA) operates the Green Line 30 bus route that connects through the local roadways to Cecil and extends east to I-295. This line services the distribution centers to the north of Cecil, as well as Cecil and FSCJ Cecil Center Campus. The terminus near I-295 connects with the JTA line Commonwealth/Lane, which provides service to downtown Jacksonville. These connections allow a rider to travel to/from Cecil and downtown using only two bus lines. At the downtown endpoint of the Commonwealth/Lane route, a transit user would have additional access to the main transport center of Jacksonville, including bus and train transit hubs. The transit center in downtown Jacksonville is an extensive system that offers connection lines via various modes of transportation in and around the city or out to the coastal beaches.

2.12.5. Rail Connectivity

There is no direct rail access from Cecil to the rail network surrounding Jacksonville; however, using the major roadways around Cecil the rail hubs of Jacksonville are easily within reach of Cecil. The rail hubs are located 13 miles from Cecil.

The rail system centered downtown provides direct line access to routes reaching all parts of the country. JAXPORT operates these railways and has over \$1.8 billion dollars in future development planned to upgrade systems it operates. Jacksonville sees 40 daily trains operating on two Class I railroad companies (CSX and Norfolk Southern) and along with the regional railroad company, Florida East Coast Railway. Additionally, JAXPORT operates two Intermodal Container Transfer Facilities (ICTF), one of which is an on-dock facility. The on-dock rail system ranks as one of the nation's highest weight-bearing capacity docks.

2.12.6. Jacksonville Deep Water Port Connectivity

JAXPORT is undergoing a \$484-million-dollar project to deepen the port to accommodate all large cargo ships for the new fully loaded New Panamax class vessels. This will help JAXPORT capture significant sea-cargo operations wanting to off-load to land or air-based transportation. There are four existing deep-water marine terminals servicing dozens of global ocean carrying companies. Access to/from JAXPORT and Cecil is possible via several State Road and Interstate connections; a convenient and direct route is not available.



2.12.7. Automobile Parking

Most Airport tenants have dedicated parking lots for employees and guests adjacent to their operations. A total of approximately 5,000 parking spaces¹⁸, including adequate ADA parking spaces, was observed from tenant lease information. These lots provide direct access to facilities through gated entry points or administrative buildings. Through discussions with Airport Management and tenants, it was noted that existing parking facilities are generally adequate and at times nearing capacity. During special events, parking demands may exceed capacity, particularly in localized areas (e.g., if the USCG has a special exercise bringing in additional staff, there may be overflow in adjacent automobile parking areas). Cecil's large business park area provides adequate additional parking locations during extreme peaks. However, as development expands within this area, overflow parking options may become limited.

2.13. Environmental Overview

2.13.1. Air Quality

This section is forthcoming.

2.13.2. Noise

This section is forthcoming

2.13.3. Endangered and Threatened Species

Florida is one of the most diverse wildlife habitats in the world, with dense forests to swamp lands in the Everglades, and protecting these natural habitats is essential to maintaining a healthy and cohesive local ecosystem. The U.S. Fish and Wildlife Service (USFWS) is the government agency tasked with mapping species population status within the various ecosystems across the country and the Florida Fish and Wildlife Conservation Commission (FWC) is the corresponding state agency within Florida. Florida is part of the Southeast Region of the USFWS; the North Florida Ecological Services Office in Jacksonville is the nearest USFWS office. The Endangered Species Act of 1973 helps provide strong federal legal framework for conservation and protection efforts of those species whose populations are below sustainable levels. The USFWS identifies the status of a species as "Endangered" once the observed population reaches a critically low level that may result in extinction. Extinction is the term used to describe a species that is no longer in existence. An USFWS identification of "Threatened" applies when a species population is under a healthy level with a trending pattern to be categorized as "Endangered" in Duval County. Table 2-15 outlines the species tracked by FWS and identified as either Candidate, Threatened, or Endangered. The table further identifies common habitats used by the federally listed species as well as state protected species as described in the Florida Natural Areas Inventory (FNAI) and listed by the FWC.

¹⁸ Jacksonville Aviation Authority, 2021.



Table 2-15 – Endangered Species in Duval County

Species	Status	General Habitat
Mammals		
West Indian Manatee	Federally Threatened	Marine, brackish, and freshwater systems in coastal and riverine areas.
Birds		
Eastern Black Rail	Federally Threatened	Fresh and saltwater marsh areas.
Florida Scrub-Jay	Federally Threatened	Sand pine and scrubby flatwood areas, along dunes and sandy deposits along rivers.
Red Knot	Federally Threatened	Migratory high-arctic birds; when in Florida they use sand beaches, saltmarshes, lagoons, mudflats, and mangrove swamps as wintering habitats.
Red-cockaded Woodpecker	Federally Endangered	Mature pine forest areas.
Wood Stork	Federally Threatened	Mixed hardwood swamps, sloughs, mangroves, and cypress domes/strands in Florida.
Reptiles		
Eastern Indigo Snake	Federally Threatened	Pine flatwoods, hardwood forests, and areas surrounding cypress swamps.
Gopher Tortoise	State Threatened Federal Candidate	Dried sandy soils commonly found in longleaf pine sandhills, scrub, dry prairies, and coastal dunes.
Green Sea Turtle	Federally Threatened	Subtropical regions of the Atlantic Ocean and Gulf of Mexico inside nearshore waters. Coastal sandy shores used for nesting.
Hawksbill Sea Turtle	Federally Endangered	Subtropical regions of the Atlantic Ocean and Gulf of Mexico inside nearshore waters. Coastal sandy shores used for nesting.
Leatherback Sea Turtle	Federally Endangered	Open-water regions of the Atlantic Ocean and Gulf of Mexico. Coastal sandy shores used for nesting.
Loggerhead Sea Turtle	Federally Threatened	Subtropical regions of the Atlantic Ocean and Gulf of Mexico inside nearshore waters. Coastal sandy shores used for nesting.
Suwannee Alligator Snapping Turtle	Federally Proposed Threatened	Only found in the Suwannee River Basin in northern Florida.
Amphibians		
Frosted Flatwoods Salamander	Federally Threatened	Longleaf pine flatwoods with scattered wetlands or wiregrass floor.



Species	Status	General Habitat
Insects		
Monarch Butterfly	Federal Candidate	Open fields and meadows.
Flowering Plants and Flora		
Chapman Rhododendron	Federally Endangered	Wet, mesic, or dry scrubby flatwoods bordering bay swamps.
Purple Honeycomb-Head	State Endangered	Wet pine flatwoods and savannas, seepage slopes, pitcherplant bogs, and wet ditches.
Florida Toothache Grass	State Endangered	Sandhills and dry pinelands.
Piedmont Jointgrass	State Threatened	Dry woodlands.
Giant Orchid	State Threatened	Sandhill, scrub, pine rocklands.
Variable-leaf Crownbeard	State Endangered	Mesic flatwoods and dry woods.

Sources: U.S Fish and Wildlife Services, *Endangered Species Database*, Accessed November 2021; Florida Fish and Wildlife Conservation Commission, *Species Database*, Accessed November 2021; Florida Natural Areas Inventory, *Florida Biodiversity Matrix*, Accessed December 2021.

Notable protected species that are not documented as active within the local area but are likely to, or known to, reside within the local environments domain as identified by the FNAI within the Duval County area are listed below:¹⁹

- **Florida Black Bear:** Mammal residing in forested areas supporting the varied seasonal diet of a black bear. Forested wetlands are the primary habitat for the Florida Black Bear.
- **Black Creek Crayfish:** Crustacean with known habitat of small, swift moving, and sand-bottomed streams.
- **Bald and Golden Eagle:** Bald and golden eagles along with their respective nesting areas are protected by federal law through the Migratory Bird Treaty Act and the Eagle Act. Eagle nesting occurs high-up in old-growth trees alongside coastlines, lakes, rivers, or other bodies of water that supply adequate food sources.

Cecil maintains a mowed airfield in accordance with the approved wildlife mitigation plan and actively maintains developed area to reduce wildlife activity. Due to the condition of these developed areas, it is unlikely that any of the listed species within this section would be affected by the implementation of Cecil's projects since they are proposed on already developed land areas. However, land areas

¹⁹ Florida Natural Areas Inventory, *Florida Biodiversity Matrix*, Accessed December 2021.



surrounding Cecil that have not been developed may require additional research and analysis to ensure there are no impacts to these protected species.

2.13.3.1. Conservation Areas for Wildlife

Conservation areas such as wildlife refuges, protected parks and forests, or mountains and wilderness areas are owned and operated by local, state, and national entities depending on the underlying environmental asset. Below is an inventory of conservation areas pertaining to wildlife near Cecil:²⁰

- **Local:** Abutting Cecil to the south and to the west, local conservation lands are preserved by Duval County/City of Jacksonville under the conservation land name Cecil Field Conservation Corridor. The protected area hosts wooded forest, community recreation areas, healthy wildlife population, and natural streams throughout its nearly 6,000 acres. Branan Field is also a notable local conservation area that provides more than 3-miles of trails, recreation spaces, and mature pine flatwoods that have been rehabilitated by the FWC.
- **State:** Adjacent to the local conservation area, Jennings State Forest extends the protected area over 25,000 acres to the southwest. Jennings State Forest is the closest state-owned conservation area to Cecil, approximately 5-miles from Cecil. Residents travel to Jennings State Forest to recreate, camp, and connect with the state forest.
- **National:** Twenty-five miles to the northwest of Cecil resides Osceola National Forest maintained by the USFS a part of the U.S. Department of Agriculture (USDA). Osceola National Forest hosts flatwoods and swamps for visitors to recreate, fish, and hunt. The U.S. Naval Base to the east and a small airstrip to the north are owned and operated by the U.S. Navy and are identified as federal conservation areas.

There is one known conservation easement to the southeast of Cecil, encompassing approximately 130 acres, identified as Oakleef Plantation owned by the Florida Fish and Wildlife Conservation Commission.²¹

2.13.4. Soils

Soil compositions and slopes often dictate the development or use the underlying land has to a local community. Information was gathered from the USDA – Natural Resources Conservation Service soil survey database to assess the historical composition and slopes of the soil surrounding Cecil. To provide a comprehensive understanding of the soil composition at and around the immediate Airport, the Airport's property plus a 1/3-mile buffer from the Airport's property was analyzed. Most soils, not including the developed land area, are representative of sandy soils. Sandy soils are known for their poor drainage, resulting in the soil being dry most the year and low in nutrients. The data analyzed is summarized in Figure 2-19 below.²²

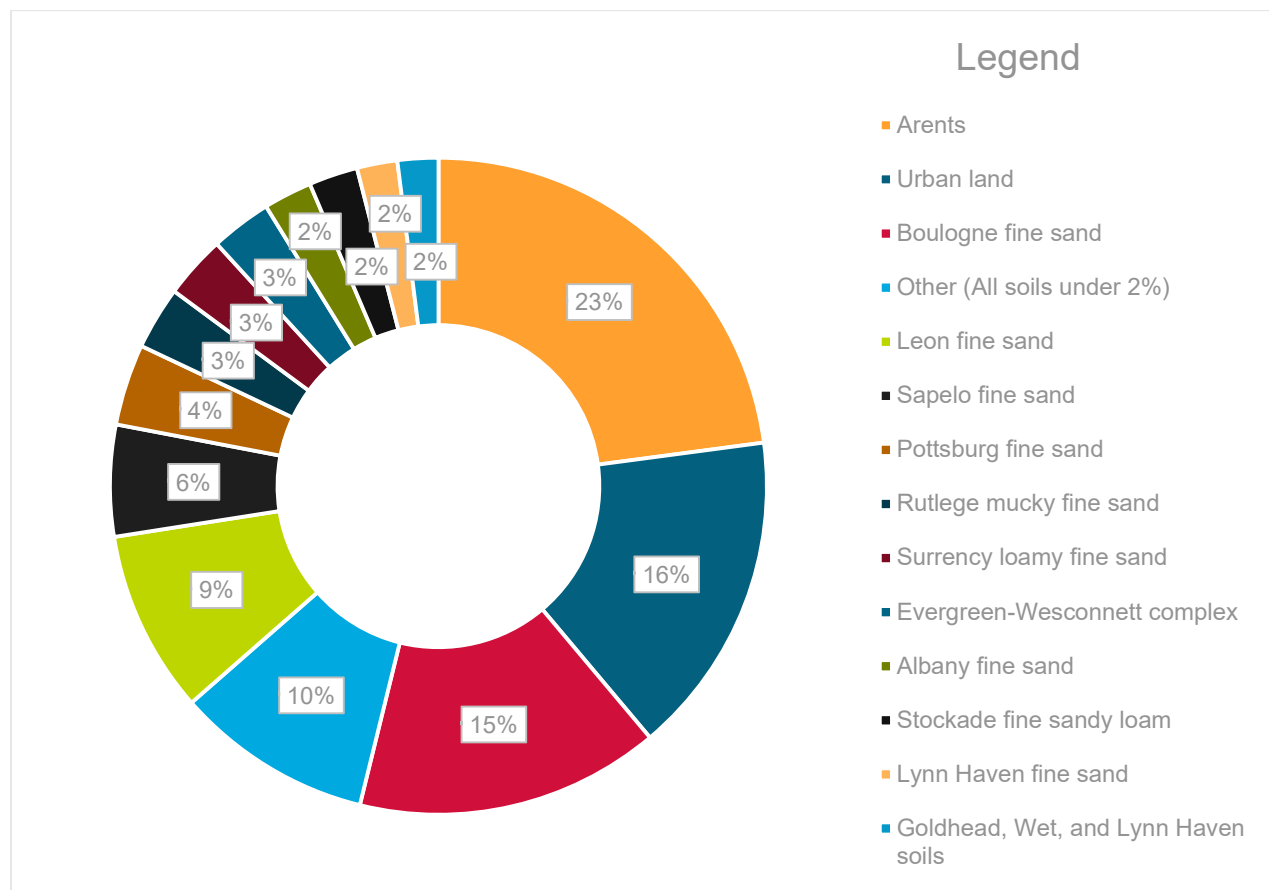
²⁰ City of Jacksonville, JAX GIS - Duval Maps, Accessed November 2021.

²¹ National Conservation Easement Database, Interactive Map, Accessed 2021.

²² USDA Natural Resources Conservation Service, Soil Survey Interactive GIS Mapping Tool, Accessed 2021.



Figure 2-19 – Soil Composition Percentages Near the Airport



Sources: USDA Natural Resources Conservation Services, Soil Mapper GIS Tool, Accessed December 2021.

2.13.5. Farmlands

Active farmland near Cecil is summarized below. Because no farmland property abuts Cecil's property, impacts to these areas due to Airport operations is anticipated to include potential minimal noise disturbance but no direct impacts.

- **Cattle:** Cattle grazing is one of the primary farming disciplines undertaken by Florida farmers. Seven miles to the north, north of I-10, large private farmland is home to herds of cattle for dairy farming. The approximate area of grazing land is 350,000 square yards.²³
- **Produce:** There are scattered small land lots used for minor agricultural farming efforts to the west. These pieces of land include small fields of produce that supply grown crops to the immediate local markets. The sizes of each individual field is approximately 1.25 acres.²⁴

Typical soil compositions preferred for farming and agricultural use fall under the loam soil classification. Loam soil consists of roughly equal parts sand, silt, and clay. Crops tend to perform best within loam soil

²³ Google Earth and NearMap Satellite Imagery, Accessed November 2021.

²⁴ Ibid.

as chances of over hydration or flooding is minimal due to the ability for water to flow in and around the soil base as well as the underlying soil being able to retain nutrients without becoming worked. For this reason, the soils near Cecil are ill suited for agricultural farming.

Farmlands of Unique Importance present across the state of Florida were analyzed based on the University of Florida GeoPlan Center's published 2019 map and resulted in identifying no Farmlands of Unique Importance on or near Cecil. Farmlands of Unique Importance are not identified on a national scale and are based on local microclimate areas. These areas are also named under the broadened term "Prime Farmland."

2.13.6. Coastal Resources

Due to the geographic location of Cecil, located approximately 30 miles inland from the coast, Cecil does not reside in, nor impact, any protected areas within the USFWS Coastal Barrier Resource System (CBRS), as observed in the USFWS CBRS Mapper.²⁵

2.13.7. Water Resources

2.1.1.1. Stormwater Management

Regulating and controlling the Waters of the U.S., the Environmental Protection Agency (EPA) established the National Pollutant Discharge Elimination System (NPDES) which regulates the pollutant discharges into Waters of the U.S. via a permitting process. The permit documents procedures, monitoring efforts, and reporting requirements pertaining to the permit holder seeking to allow pollutants into the Waters of the U.S. The state of Florida has full EPA approval to issue NPDES permits. Cecil also maintains a Storm Water Mitigation Plan, which consists primarily of using various drainage basins across the airfield, along with proper pavement grading, to prevent water accumulation on aircraft movement areas.

Drainage basins are areas of land in which precipitation is collected and flows or drains into a common outlet such as a lake, river, or bay. Drainage basins are identified in Figure 2-20. The drainage basins and topography of the local land area influence the watershed area, identified as a large area of land that drains water into a specific body of water. The area surrounding Cecil on all sides flows into the lower St. Johns River to the east. The St. Johns River is the largest river in the state of Florida flowing north and spans over 300 miles.²⁶

2.1.1.2. Floodplains

Floodplains, or flood hazard areas, are defined within a Special Flood Hazard Area (SFHA) by the Federal Emergency Management Agency (FEMA). SFHA indicates an area that has a flood hazard of a one-percent chance of being equaled or exceeded in any given year. The 1-percent annual chance flood is commonly referred to as the 100-year floodplain and has been identified by FEMA as the base flood for floodplain management purposes.²⁷ These areas experience above average exposure to water accumulation and are labeled by FEMA as Zones starting with the letter A. Zones identified by shading and the letter X are identified as flood zones with moderate flood risk and are captured within the 500-

²⁵ USFWS, *Coastal Barrier Resource System Mapper*, Accessed November 2021.

²⁶ St. Johns Riverkeeper, *Our River* webpage, Accessed November 2021.

²⁷ Federal Emergency Management Agency, *Flood Insurance Interactive GIS Mapping Tool*, Accessed November 2021.

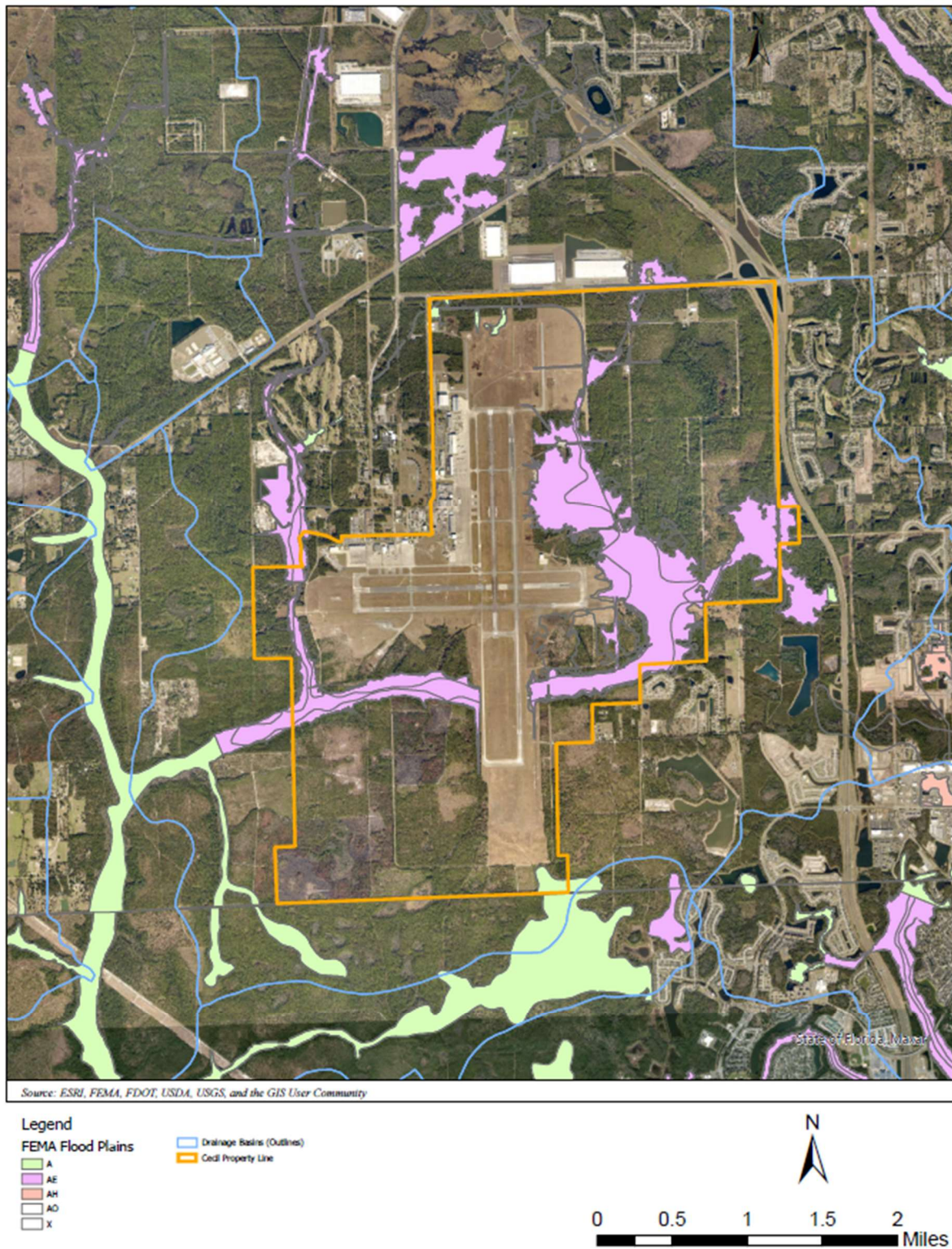


year floodplain. An unshaded X denotes areas in which there are minimal flood hazards, due to elevation or other influencing factors.

Construction and development within floodplains should be avoided to prevent structural damage from flooding or inability to operate during a flood event. Cecil is located on an area that has Flood Zone AE identification to the east and west of Cecil's airfield and Zone A to the south. The AE and A categories are grouped within the 100-year floodplain and represents potential constraints on development within these areas. The AE 100-year floodplain is located within the proposed development area identified in the SDP. The SDP concluded that any development would avoid impacting these areas due to cost and environmental impacts associate with an impactful project. Floodplains on the official Flood Insurance Rate Mapping (FIRM) GIS map supported by FEMA around Cecil are shown in Figure 2-20.



Figure 2-20 – Floodplains and Drainage Basins



Source: FEMA, Insurance Floodplains GIS, 2021; USFWS, Flood Basins GIS, 2021; Jacksonville Aviation Authority, 2021.



2.13.7.1. Wetlands and Waters of the U.S.

Wetlands are critical ecological, economical, and social areas within a local region. The USFWS is tasked with managing the National Wetland Inventory (NWI), a database mapping known wetland areas across the country and establishing rehabilitation efforts as necessary. Impacts to wetlands and the Waters of the U.S may require a Section 404 permit with the U.S. Corps of Engineers (USACE) and a Section 401 permit with the state Department of Environmental Protection (DEP). Therefore, the EPA has delegated Wetlands to FDEP. Additional coordination with local, state, and federal environmental agencies may also be required.

Figure 2-21 identifies all known wetland areas and known bodies of water including stream, lakes, and ponds on and near Cecil. Key findings are discussed below:

- **Freshwater Forested or Shrub Wetlands:** Freshwater forested and shrub wetlands are the predominate type of wetland throughout various areas of Cecil's property. These areas are often vegetated with trees and shrubs.²⁸
- **Emergent Wetlands:** Scattered small areas of emergent wetlands were also identified throughout the site. Emergent wetlands are broadly categorized by vegetation growth for most the growing season and areas are usually dominated by perennial plants. Common names attributed to these areas are marshes, meadows, or slough.²⁹
- **Lakes and Freshwater Ponds:** Lake Fretwell is located immediate west of Cecil and is a part of Fretwell Park. Rowell Creek supplies the lake and the surrounding wetlands with freshwater. Various ponds natural and manmade are scattered across the local area further supplementing and sustaining the other wetland ecosystems nearby.

The potential expansion efforts to the northeast of center field identified within the SDP are located on and near identified wetlands. Actual development within these areas will require additional survey of the area; however, the analysis performed within the SDP concluded that the anticipated improvements would result in potential impacts, therefore to the extent possible, Cecil will work to avoid potential impacts to these areas. If an impact is necessary, proper permits, license, and approval will be obtained. Cecil may be able to obtain credits from wetland or stream banks, or conservation banks, to mitigate remaining impacts. These credits are awarded under formal agreements and contracts with regulatory agencies. Impacts to aquatic resources are regulated and approved by the U.S Army Corps of Engineers (USACE) and EPA approval, while impacts to listed species and their habitats are regulated and approved by the USFWS and National Marine Fisheries Service (NMFS). These federal agencies are responsible for determining the appropriate form and amount of compensatory mitigation required.³⁰

²⁸ USFWS, *Classification of Wetlands Scrub-Shrub Wetland*, Accessed 2021.

²⁹ USFWS, *Classification of Wetlands Emergent Wetland*, Accessed 2021.

³⁰ *Wetland and Conservation Credits 101*, Westervelt Ecological Services, 2018.



Figure 2-21 - National Wetlands Inventory



Legend

	Cecil Property Line		Freshwater Forested/Shrub Wetland
National Wetlands Inventory			Freshwater Pond
	Freshwater Emergent Wetland		Lake
			Riverine



0 0.75 1.5 2.25 3 Miles

Impaired Waterbodies managed by the EPA under the Clean Water Act (CWA) Section 303(d) and are documented via the EPA's Environmental Justice Screening and Mapping Tool (EJSCREEN). Impaired Waters represent bodies of water that do not meet water quality standards for one or more EPA tracked pollutants. The Impaired Waters surrounding Cecil are documented in Figure 2-22. The impaired section of water to the west is identified as the Yellow Water Creek and is impaired for both Fish and Wildlife Propagation – Freshwater and Recreation uses.³¹ To the east, the Ortega River and Little Black Creek are both impaired for Fish and Wildlife Propagation – Freshwater and Recreation uses. Little Black Creek has Fecal Coliform Total Maximum Daily Load (TMDL) limits as published by the state and the EPA in a MyWaterWay health report.³²

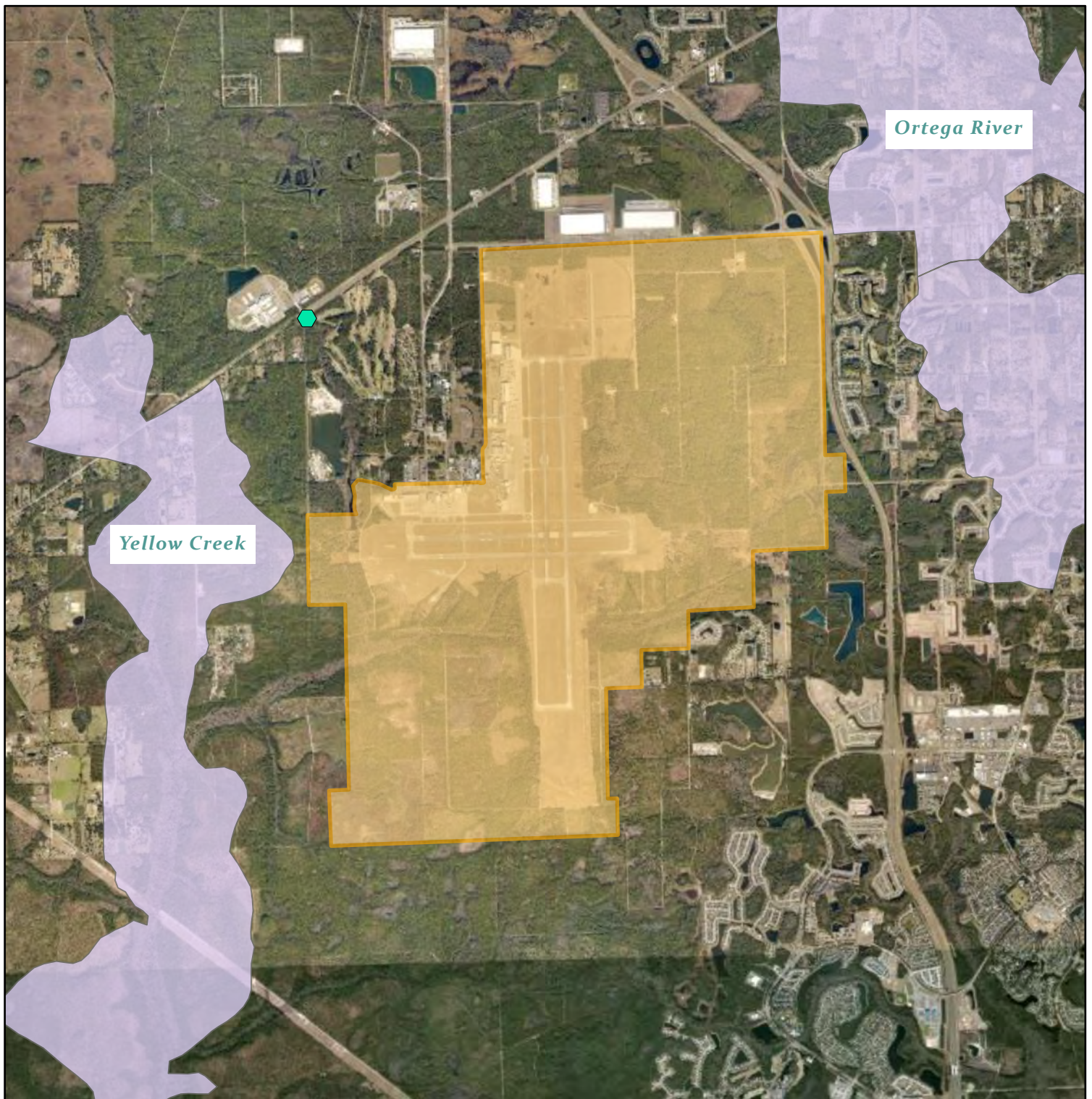
Additionally, Figure 2-22 highlights a “Superfund” area to the northwest, in which government trust funds are used to remedy past releases of hazardous substances. The Superfund Amendments and Reauthorization Act of 1986 (SARA) reauthorized the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) to continue cleanup efforts and instituted additional enforcement tools to the EPA.

³¹ FEMA, *My Waterway GIS Database - Yellow Water Creek*, Accessed 2021.



³² FEMA, *My Waterway GIS Database – Little Black Creek & Ortega River*, Accessed 2021.



Figure 2-22 - Impaired Waters and Superfund Location



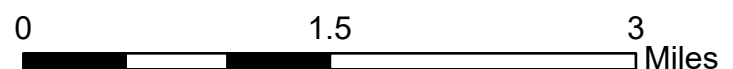
Legend

-  Superfund (NPL)
-  Cecil Property Line

Impaired Waters

Type

-  Stream



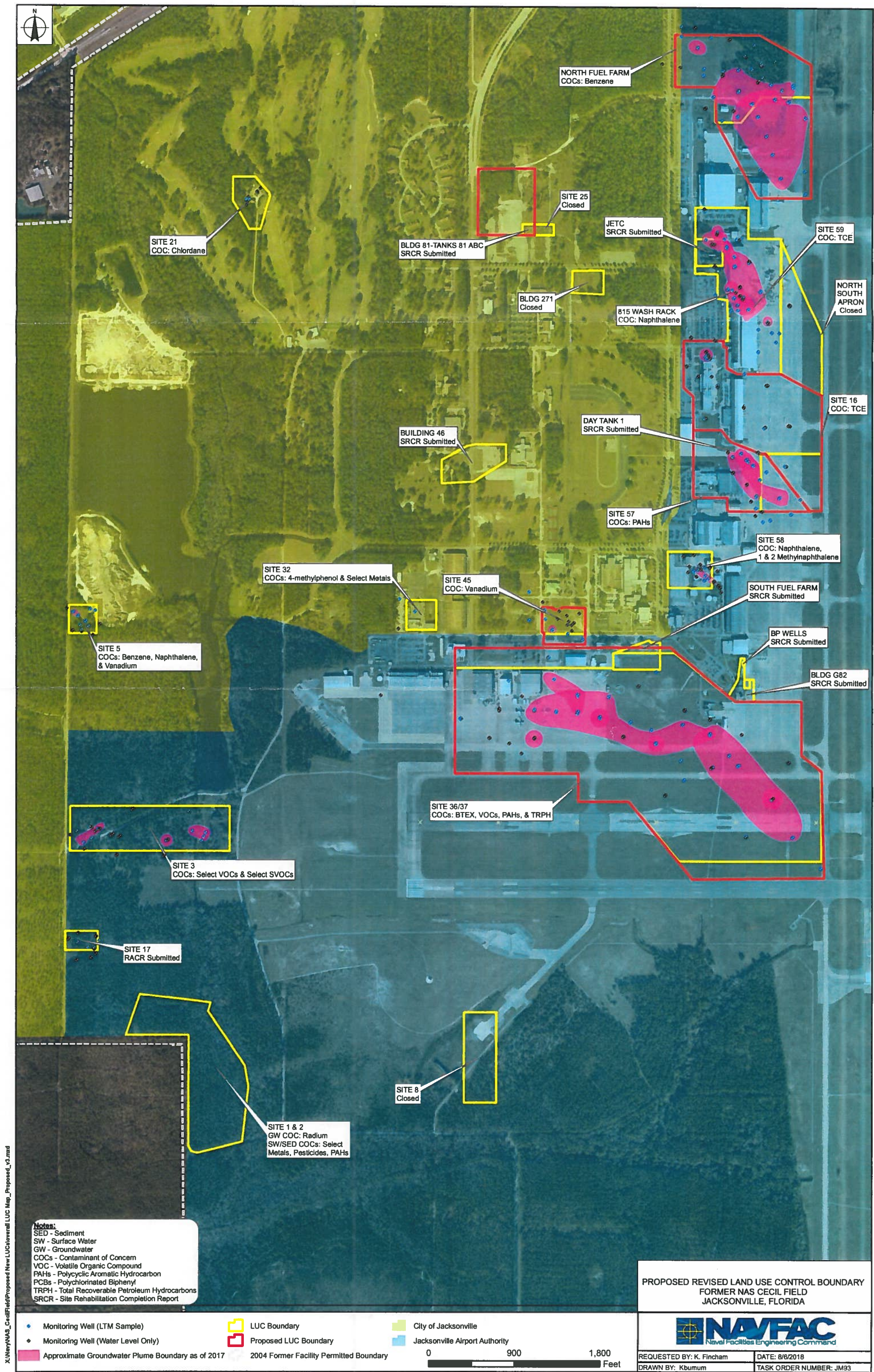
2.13.8. Hazardous Materials

The Airport was recently surveyed by the Naval Facilities Engineering Systems Command (NAVFAC) to identify previously used areas by the U.S. Navy. Military operations typically result in heavy operational use of the respective areas and thus tend to have a greater impact on the local environment than other operations. Modern environmental protections and regulations were not present during periods of active operation of the old U.S. Navy Master Jet Base; therefore, identification of used areas by the U.S. Navy helps the Airport and its tenants identify areas that may need additional analysis if development was to occur within the area. Figure 2-23 is the final survey report conducted by NAVFAC in 2019 regarding PER/Polyfluoroalkyl Substances near the Airport, detailing all the U.S. Navy's use areas, as well as which operations were taking place to outline the potentially hazardous areas on and off Cecil. At fueling locations proper national fire protection policies are followed to ensure safe operations. Fuel spills are reported to the Airport and either the FBO, the Airport, or the fire department will place absorbent. Jet fuel, which is the predominant fuel used at the Airport, is more hazardous than AVGAS.

In addition to identified hazardous materials, the Cecil Commerce Center and supporting airfield have been historically designated as a Brownfield Area by the FDEP. A Brownfield Area is defined as an area in which development has previously occurred and is no longer in use. These areas have the potential presence of hazardous substances, pollutants, or contaminants.



Figure 2-23 - U.S. NAVFAC Hazardous Study



2.13.9. Community and Recreational Resources

Community resources and recreation areas are essential to a local communities' health and happiness. These areas may often be noise sensitive, and therefore, are particularly important to identify when located near an airport. A two-mile radius from Cecil's center was analyzed for this section and include neighborhoods, churches, schools, recreation areas such as parks or greenways, and other resources within the local community that serve the public. The findings are documented within Table 2-16.

Note in addition to the table below, low-density and medium-density residential neighborhoods were identified near Cecil. These areas have been previously discussed, namely within the land use and zoning sections of this Chapter.

Table 2-16 – Community Resources Near Cecil

Asset	Type	Location Distance in Relation to Airport Center	Services Provided To
Cecil Gym and Fitness Center	Recreation	One Mile Northwest	Public
POW/MIA Memorial and Museum	Museum	One Mile Northwest	Public
Chapel of High Speed	Worship	One Mile Northwest	Public
Cecil Pines Adult Living Community	Residential Housing	One Mile Northwest	Private
New World Sports Complex	Recreation	One Mile Northwest	Private
Community Football Field	Recreation	Two Miles Northwest	Public
Jacksonville Equestrian Center	Recreation	Two Miles Northwest	Public
Florida State College at Jacksonville Cecil Center Campus	Education	Two Miles Northwest	Public
Community Baseball Field	Recreation	One Mile West	Public

Sources: Google Earth, Satellite Imagery, Accessed November 2021; NearMap, Satellite Imagery, Accessed November 2021; EPA, Environmental Justice Screening Tool, Accessed November 2021; Kimley-Horn, 2021.

Inventory of low-income housing and minority communities using the EPA's EJSCREEN was captured within a two-mile radius from Cecil's center. No resources or special case areas were identified.

U.S Census data was analyzed to provide additional background information about the incomes and demographics of Duval County, of which Cecil and interested areas reside, is presented in Table 2-17. The census block group containing Cecil is further identified within Table 2-17 to analyze the specific economic and demographic conditions within the study area. Economic impacts of Cecil to the local area have been discussed in earlier sections of this chapter and are further expanded upon in the *Socioeconomic* section in the Forecasts of Aviation and Aerospace Demand chapter (Chapter 3).



Table 2-17 – Low-income and Demographic Summary Near Cecil

Category	Duval County	Census Block Group
Demographics	Population of 936,186	Population of 2,499
White	60.6%	60.3%
Black or African American	30.8%	32.1%
American Indian or Alaskan Native	0.5%	4.4%
Hispanic or Latino	10.5%	0%
Asian	5.0%	0%
Two or More Races	3.6%	3.2%
Economics		
Median Household Income	\$55,807	\$47,439
Persons in Poverty	13.5%	None
Minority-Owned Firms	36.81%	N/A
Low-Income Resources Near Cecil		
Low Income Housing	Subsidized Housing	Subsidized Housing

Sources: U.S Census Bureau, U.S Census Survey(s), 2019 – 2020; Reno Gazzet Journal, 2019 American Community Survey Data, 2020; EPA, EJSCREEN GIS Mapping Tool, Accessed November 2021.

2.13.10. Historic, Cultural, and Archeological Resources and Section 106

A query of the Florida Master Site File, managed by Florida's State Historic Preserving Office (SHPO), was performed to assess and inventory the nearest historic, cultural, and archeological resources within a 2-mile buffer of Cecil. The database lists assets under the National Register of Historic Places (NRHP) as well as eligibility to receive funding or identification under Florida SHPO. The Advisory Council on Historic Preservation (ACHP), an independent federal agency, oversees the National Historic Preservation Act (NHPA). Section 106 of the NHPA and NEPA work in unison to protect historic resources as both identify the underlying asset as properties of concern to a local community. Impacts under Section 106 are defined as both physical impacts or visual impacts. Physical impacts include soil alterations or other factors directly altering the physical environment of a preserved asset.

Based on a letter received from the Florida SHPO on December 7, 2021, two resources were identified as potential areas of interest: Hysler Cemetery and Lake Newman, both of which are located outside of Cecil's property to the northwest. Hysler Cemetery, located one mile northwest from the perimeter of Cecil, was established in approximately 1881 and is not listed as having been SHPO evaluated; therefore, no status is given, in addition to not being included on the NRHP. Similarly, Lake Newman, located outside Cecil's property to the northwest, is not listed on the NRHP and has no existing SHPO evaluation.

2.13.11. Section 4(f) Resources

Section 4(f) of the Department of Transportation Act of 1966 protects specially designated properties including public-owned parks, recreation areas, wildlife refuges, and historic sites. The requires federally funded projects to avoid impacts to these resources unless no other alternative exists. There are potential Section 4(f) resources near Cecil. Located to the immediate west and south, as described Section 2.13.3.1, the County of Duval and City of Jacksonville own the protected area known as the Cecil Field



Conservation Corridor. The protected area has community recreation areas for hiking or biking, sports fields, and provides protected habitat for wildlife. To the south of the County-owned conservation area, the DEP's Division of Land Management owns over 25,000 acres of protected state forest. The area is used by local residents for outdoor recreation activities such as camping or hiking and provides additional protected area for local wildlife. Future development or growth in operations that may impact these areas require additional proposed projects total estimated impact to the protected areas and coordination with state environmental agencies for further assessment.

2.13.12. Section 6(f) Resources

Section 6(f) of the Department of Transportation Act of 1966 pertains to properties that have been purchased or improved by the Land and Water Conservation Fund (LWCF). The nearest Section 6(f) funded area as identified by the Land and Water Conservation Fund Coalition is the Rails and Trails Park, a state and local assistance program area located 7-miles to the north, north of I-10.³³ In 1990, the City of Jacksonville applied to the DEP to acquire the land associated to Rails and Trails Park along the abandoned railroad corridor to preserve it as a recreational outdoor space for hiking, biking, and various other outdoor activities.³⁴ To the south, the Jennings State Forest receives funds under the Northeast Florida Timberlands name.

³³ *The Land and Water Conservation Fund Coalition, LWCF GIS Database, Accessed 2021.*

³⁴ *City of Jacksonville, Department of Parks and Recreation Database, Accessed 2021.*

