TRI-COUNTY AIRPORT

Master Plan Update
3rd Draft Report

Prepared for:

The Tri-County Airport Authority

Prepared by:

AVCON

with:

AECOM

JANUARY 2021

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AVCON, INC.
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AVCON, INC. Project No.: 2018.0268.03

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SECTION 1.0 INVENTORY

1.1 INTRODUCTION

This Master Plan Update presents the vision of the Tri-County Airport Authority for the future development of Tri-County Airport (the Airport) during the next 20 years and was prepared in accordance with guidelines established by the Federal Aviation Administration (FAA) as presented in their guidance document Advisory Circular (AC) 150/5070-6B, *Airport Master Plans*. The plan consists of two primary elements: this report and a separate set of drawings referred to as the Airport Layout Plan (ALP) drawing set. The ALP drawing set depicts (to scale) the development proposed and described in this report.

The Master Plan Update report consists of the following elements:

- **Existing Conditions** – this section provides a text and graphical description of existing facilities at the Airport.
- **Forecasts** – this section presents estimates of future levels of aircraft operations and based aircraft that are used to project the need for future facilities.
- **Facility Requirements** – this section conducts an assessment of the ability of existing airport facilities to meet projected levels of demand and then describes the facilities needed to meet any identified shortfalls in existing capacity.
- **Alternatives Development and Evaluation** – this section develops and presents alternatives for providing the airport facilities identified as being needed to meet future levels of demand and provides an evaluation of each alternative. This section concludes with the identification of recommended alternatives.
- **Airport Layout Plans (ALP)** – this section describes the ALP drawing set that consists of large scale (30-inch by 42-inch) drawings that present the recommended alternative as well as airspace, land use, and property drawings specified by the FAA.
- **Facilities Implementation Plan** – this section identifies and describes each element of the recommended development plan, as well as other projects needed to meet operational demand during the next 20 years. It also provides an estimated cost for each project and provides a recommended phasing plan. The resulting capital improvement plan provides the basis for implementing the vision proposed by the master plan.
- **Financial Feasibility Analysis** – this section identifies potential funding sources, reviews potential revenue enhancement opportunities and develops a financial feasibility plan that presents potential funding amounts by source.

Data presented in this section of the Airport Master Plan Update was collected through an on-site visit and interviews, and a review of existing documents and studies. Data was also obtained from secondary sources at the federal, state, regional, and local level.

1.2 AIRPORT OWNERSHIP AND OPERATION

Tri-County Airport is owned and operated by the Tri-County Airport Authority. The Authority was created in 1969 by the state of Florida to provide aviation services for the Holmes, Jackson and Washington County area of the Florida panhandle. The Authority consists of fifteen members from Holmes, Jackson and Washington counties. Five members are appointed by each county commission.

1.3 AIRPORT LOCATION, AND CLASSIFICATION

The Airport is located in the Florida panhandle approximately 90 miles northwest of Tallahassee and 100 miles northeast of Pensacola (see **Figure 1.3-1**). The closest cities are Bonifay and Chipley which are both located approximately 6 miles from the Airport. Tri-County Airport is situated on the boundary of Holmes, Jackson and Washington Counties, approximately six miles northeast of Bonifay and approximately six miles northwest of Chipley.

The Airport is classified in the FAA's most recent National Plan of Integrated Airport Systems 2019-2023 (NPIAS) as a "Local/Basic" airfield. The NPIAS defines "Local" airports as a critical component of the general aviation system, providing communities with access to local and regional markets. Local airports are typically located near larger population centers, but not necessarily in metropolitan areas. They also accommodate flight training and emergency services. The NPIAS defines "Basic" airports as fulfilling the principal role of a community airport providing a means for private general aviation flying, linking the community with the national airport system, and making other unique contributions.

SOURCE: ESRI, DATA AND MAPS 10.6, 2018.

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LOCATION MAP

FIGURE 1.3-1

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1.4 AIRSIDE FACILITIES

This section provides a discussion of the Airport's existing facilities. Airside facilities typically include the system of runways, taxiways, navigational aids, weather reporting aids, and where available, air traffic control facilities. Airfield facilities are described first, followed by a discussion of landside facilities. **Figure 1.4-1** depicts the major airfield components described in this section.

1.4.1 RUNWAYS

The Airport has one runway (1-19) oriented in a north/south direction. **Table 1.4-1** provides details regarding physical and operational characteristics of the runway.

TABLE 1.4-1
EXISTING RUNWAY DATA

Item	Runway 1	Runway 19
Runway Length (feet)	5,398	
Runway Width (feet)	75	
Airport Elevation (feet)	85	
Pavement Type	Asphalt	
Pavement Strength (1,000 lbs.) Single Wheel	30.0	
Runway Marking	Non-Precision	Non-Precision
Runway Lighting	MIRL	
Approach Aids	PAPI	PAPI
Instrument Approach	None	RNAV / GPS
Lowest Visibility Minimums		
Decision Height (feet, AGL)	N/A	495
Runway Visual Range (miles)	N/A	1

Sources:
[1] Airport Master Record, Form 5010 (9/13/2018)
[2] Airport/Facility Directory SE, 21 May 2020 to 163 July 2020.
Compiled by: AECOM, 2020.

Acronyms:
AGL – Above Ground Level
MIRL – Medium Intensity Runway Lights
PAPI – Precision Approach Path Indicator
RNAV – Area Navigation
GPS - Global Positioning System

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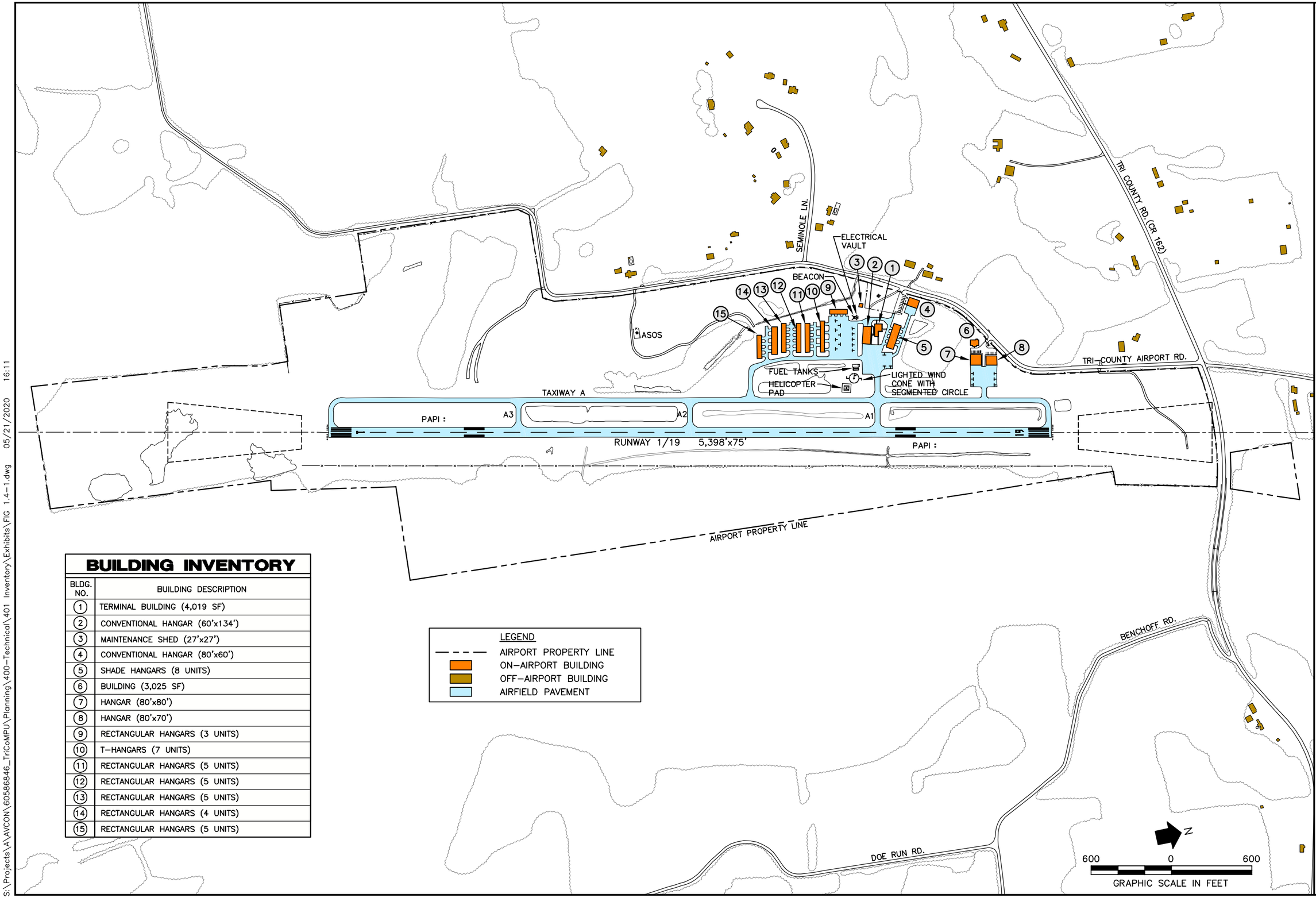

BUILDING INVENTORY

BLDG. NO.	BUILDING DESCRIPTION
1	TERMINAL BUILDING (4,019 SF)
2	CONVENTIONAL HANGAR (60'x134')
3	MAINTENANCE SHED (27'x27')
4	CONVENTIONAL HANGAR (80'x60')
5	SHADE HANGARS (8 UNITS)
6	BUILDING (3,025 SF)
7	HANGAR (80'x80')
8	HANGAR (80'x70')
9	RECTANGULAR HANGARS (3 UNITS)
10	T-HANGARS (7 UNITS)
11	RECTANGULAR HANGARS (5 UNITS)
12	RECTANGULAR HANGARS (5 UNITS)
13	RECTANGULAR HANGARS (5 UNITS)
14	RECTANGULAR HANGARS (4 UNITS)
15	RECTANGULAR HANGARS (5 UNITS)

LEGEND

- AIRPORT PROPERTY LINE
- ON-AIRPORT BUILDING
- OFF-AIRPORT BUILDING
- AIRFIELD PAVEMENT

EXISTING FACILITIES

FIGURE 1.4-1

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1.4.2 TAXIWAYS

The Airport has a parallel taxiway with several connecting taxiways that provide access to Runway 1-19, and the Airport's landside facilities. **Table 1.4-2** provides a list of taxiways at the Airport along with their description and width.

TABLE 1.4-2
EXISTING TAXIWAYS

Designation	Description	Width (ft.)
A	Parallel to Runway 1-19 and entrances to both runway ends	35
A1	Connecting Parallel Taxiway A to Runway 1-19	35
A2	Connecting Parallel Taxiway A to Runway 1-19	35
A3	Connecting Terminal/Apron Area to Runway 1-19	35

Note: All taxiways have medium intensity taxiway lighting.
Compiled by: AECOM, 2018.

1.4.3 HELIPAD

A helipad is located immediately west of Taxiway A and approximately 180 feet south of Taxiway A3. The pad has a length and width of 65 feet.

1.4.4 APRONS

Two General Aviation (GA) aprons are located on the west side of the Airport. The apron east of the terminal provides three tie-down positions on asphalt pavement. This apron supports local and itinerant aircraft. A second apron is located south of the GA terminal and primarily supports based aircraft. It consists of approximately 1,500 square yards and has 11 marked tie-down positions. Both of these aprons have asphalt pavement and have access taxilanes between them to the nearby rectangular hangars and T-hangars.

1.4.5 PAVEMENT CONDITIONS

Pavement conditions at the Airport were formally assessed in 2019 through the Statewide Airfield Pavement Management Program District 3 Report by Kimley Horn and Associates, Inc. with Airfield Pavement Management Systems, LLC and AVCON, Inc. The study assessed pavements associated with runways, taxiways, and aprons. Pavement conditions were classified on the basis of visual observations and ranked from 0 to 100. Pavement failure is rated as 0, while pavements in excellent condition are rated up to 100. Pavements are assigned maintenance classifications ranging from preventative maintenance, to major rehabilitation, to reconstruction based upon their Pavement Condition Index (PCI) number. Thus, the report provides a roadmap to airport management regarding pavement maintenance activities.

Figure 1.4-2 provides a copy of the 2017 Existing Condition PCI map from the study. As the figure indicates, the majority of the Airport's pavements are in good condition. The northernmost portion of Taxiway A, connector Taxiway A3, the aircraft parking apron south of the terminal and the northernmost hangar taxilane are rated as being in satisfactory conditions, while the majority of Taxiway connector A1 is rated as being in fair condition. One segment of pavement is rated as being in very poor condition. That segment includes the taxilane leading to the conventional hangar located closest to Tri County Airport Road.

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NORTH

GRAPHIC SCALE IN FEET
0 100 200 400

TRI COUUNTY AIRPORT RD.

4125 PCI = 86
4120 PCI = 85
4115 PCI = 75
4130 PCI = 92
4110 PCI = 34
AP
4105 PCI = 88
4103 PCI = 89
120 PCI = 94
TW A
130 PCI = 100
115 PCI = 94
TW A
110 PCI = 82
125 PCI = 100
305 PCI = 76
TW A3
205 PCI = 86
TW A2
RW 01-19
105 PCI = 64
TW A1
01
19
6115 PCI = 93
6110 PCI = 100
6105 PCI = 100
108 PCI = 100

LEGEND

RW 13-31 — TYPICAL RUNWAY BRANCH ID
TW A — TYPICAL TAXIWAY BRANCH ID
AP S — TYPICAL APRON BRANCH ID

- PCI 86–100 GOOD
- PCI 71–85 SATISFACTORY
- PCI 56–70 FAIR
- PCI 41–55 POOR
- PCI 26–40 VERY POOR
- PCI 11–25 SERIOUS
- PCI 0–10 FAILED

"SECTION NO."
"PCI NO."

Source: FDOT Statewide Airfield Pavement Management Program Distrct 3 Report, November 2019.

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AIRFIELD PAVEMENT CONDITION INDEX

FIGURE 1.4-2

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1.4.6 AIRFIELD LIGHTING

1.4.6.1 RUNWAY AND TAXIWAY LIGHTING

Airfield lighting is necessary at airports that accommodate operational activity during nighttime hours and low visibility weather conditions. It allows pilots to identify the Airport from the air and also helps them maneuver safely on the ground during low visibility conditions.

Runway 1-19 is equipped with Medium Intensity Runway Lights (MIRL). These lights enable aircraft operations during nighttime and poor visibility conditions. Pilots can operate the runway and taxiway lighting by using a pilot controlled lighting system. This lighting system is operated through the Common Traffic Advisory Frequency (CTAF), frequency 122.8 MHz. The pilot simply clicks the aircraft's microphone three times on the CTAF frequency to control the runway lighting system. The Airport's taxiways are equipped with Medium Intensity Taxiway Lights (MITLs). Both the runway and taxiway lighting systems have limited reliability with intermittent outages. There is one electrical vault located near the rotating beacon.

Photo 1 - Taxiway Lights
Source: AECOM (2018)

1.4.6.2 AIRPORT SIGNAGE

Lighted airfield signs are installed along the runway and taxiways. The signs are in good condition.

Photo 2 - Airside Signage
Source: AECOM (2018)

1.4.7 NAVIGATIONAL AIDS

Navigational aids (NAVAIDs) consist of visual aids and electronic aids. Visual aids at the Airport consist of a rotating beacon and Precision Approach Path Indicators (PAPI) at both ends of the runway.

Rotating beacons help indicate the location and presence of an airport at night and during adverse or instrument weather conditions. The tower is equipped with an optical rotating system that projects two beams of light, one green and one white, 180 degrees apart. The beacon is continuously operated during nighttime hours and when the airfield is under instrument conditions. It is located south of the airport terminal building and it is in good condition.

In addition to the rotating beacon, visual aids are provided on each runway. Both ends of the runway are equipped with 2-box PAPI lights. PAPIs provide vertical course guidance to pilots through the use of red and white lights that are visible to pilots when an aircraft is on final approach.

Photo 3 - Existing Rotating Beacon
Source: AECOM (2018)

1.4.8 TAKEOFF AND LANDING AIDS

1.4.8.1 WIND INDICATORS

The purpose of a segmented circle is to help pilots locate the wind cone while in-flight and to identify any special traffic patterns that may exist at the Airport. The segmented circle encompasses 360 degrees similar to a compass, and where applicable, traffic pattern and landing strip indicators are provided outside the circle to denote the established traffic patterns. Standard

Photo 4 - Segmented Circle collocated with a lighted Wind Cone
Source: AECOM (2018)

left-hand traffic patterns exist for both ends of the runway. The segmented circle and main wind cone are located to the northwest of the helipad. The wind cone is illuminated.

1.4.8.2 AUTOMATED SURFACE OBSERVING SYSTEM (ASOS)

An Automated Surface Observing System, (ASOS) is located on the west side of the airfield and consists of an array of collocated instruments. ASOS updates local meteorological observations every minute, 24 hours a day, every day of the year. The ASOS detects and measures meteorological conditions, disseminating hourly and special observations. Additionally, the ASOS routinely and automatically provides computer-generated voice observations directly to aircraft in the vicinity of airports. The ASOS observes, formats, archives and transmits observations automatically and transmits a special report when conditions exceed preselected weather element thresholds.

The ASOS operates on a frequency of 133.525 and the phone number is 1-850-547-1431. The Airport ASOS routinely reports the following weather elements:

- Sky condition,
- Visibility,
- Barometric Pressure: (i.e., sea-level pressure and local altimeter setting),
- Ambient temperature,
- Dew point temperature,
- Wind direction,
- Density altitude.

Photo 5 - ASOS
Source: AECOM (2018)

1.4.9 INSTRUMENT APPROACHES

As of November 2018, there was only one published instrument approach at the Airport. The procedure consists of a RNAV (GPS) approach to Runway 19. **Table 1.4-3** provides the details of this approach procedure.

TABLE 1.4-3
PUBLISHED INSTRUMENT APPROACH PROCEDURE

Approach Procedure	Height Above Touchdown (ft.)	Visibility (Statue Miles)
RNAV (GPS) Runway 19	495	1

Source: FAA, Digital Terminal Procedures, Southeast-3, October 11, 2018.
Compiled by: AECOM, 2018.

Acronyms:
RNAV – Area Navigation
GPS – Global Positioning System

1.4.10 AIRSPACE AND AIR TRAFFIC CONTROL

Airspace in the U.S. is categorized as follows: controlled, uncontrolled, special use and other. A description of each category and its relation to the Airport is provided in the following paragraphs.

1.4.10.1 CONTROLLED AIRSPACE

Controlled airspace consists of Classes A, B C, D, and E. These airspace classes have varying dimensions, purposes, and requirements. A generic view of these airspace classes and their relationship to each other is provided in **Figure 1.4-3**.

Class A airspace includes all airspace overlying the 48 contiguous states and Alaska out to 12 miles from the coast and encompasses all airspace from 18,000 feet mean sea level (MSL) to 60,000 feet MSL. Aircraft flying in Class A airspace must operate under instrument flight rules.

There is no Class B, C or D airspace in the vicinity of the Airport. A clearance from air traffic control is required prior to entering Class B airspace and aircraft must be properly equipped with a transponder that has altitude reporting capability and pilots must have proper certifications. Class C airspace require two-way radio communications prior to entry and an aircraft must be properly equipped with a transponder that has altitude reporting capability. Class D airspace does not have specific pilot certification requirements, and aircraft must be equipped with two-way communication capability.

Class E airspace includes all the airspace that is not classified as A, B, C, or D. Class E airspace has no special restrictions regarding pilots or aircraft equipment. However, it is controlled airspace which means that aircraft operating inside it must maintain VFR requirements and can be provided with air traffic control services. The airspace above the surface of Tri-County Airport is Class E airspace.

SOURCE: PILOT'S HANDBOOK OF AERONAUTICAL KNOWLEDGE (FAA-H-8083-25B).

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AIRSPACE PROFILE VIEW

FIGURE 1.4-3

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Class G airspace includes all airspace below 14,500 feet MSL, not otherwise classified as controlled. There are no entry or clearance requirements for Class G airspace, even for IFR operations. Class G airspace is typically the airspace very near the ground (1,200 feet or less), beneath Class E airspace and between Class B, C and D cylinders around towered airstrips. Radio communication is not required in class G airspace, even for IFR operations. Class G is completely uncontrolled.

VFR visibility requirements in Class G airspace are 1 mile by day, and 3 miles by night, for altitudes below 10,000 feet MSL but above 1,200 feet above ground level (AGL). Beginning at 10,000 feet MSL, 5 miles of visibility are required, day and night. Cloud clearance requirements below 10,000 feet MSL are to maintain an altitude that is 500 feet below, 1,000 feet above, 2,000 feet horizontal; at or above 10,000 feet MSL, they are 1,000 feet below, 1,000 feet above, and 1 mile laterally. By day at 1,200 feet AGL and below, aircraft must remain clear of clouds, and there is no minimum lateral distance.

It should be noted that there are certain exceptions where Class G extends above 1,200 feet AGL. This is usually either over mountainous terrain, or over very sparsely populated areas.

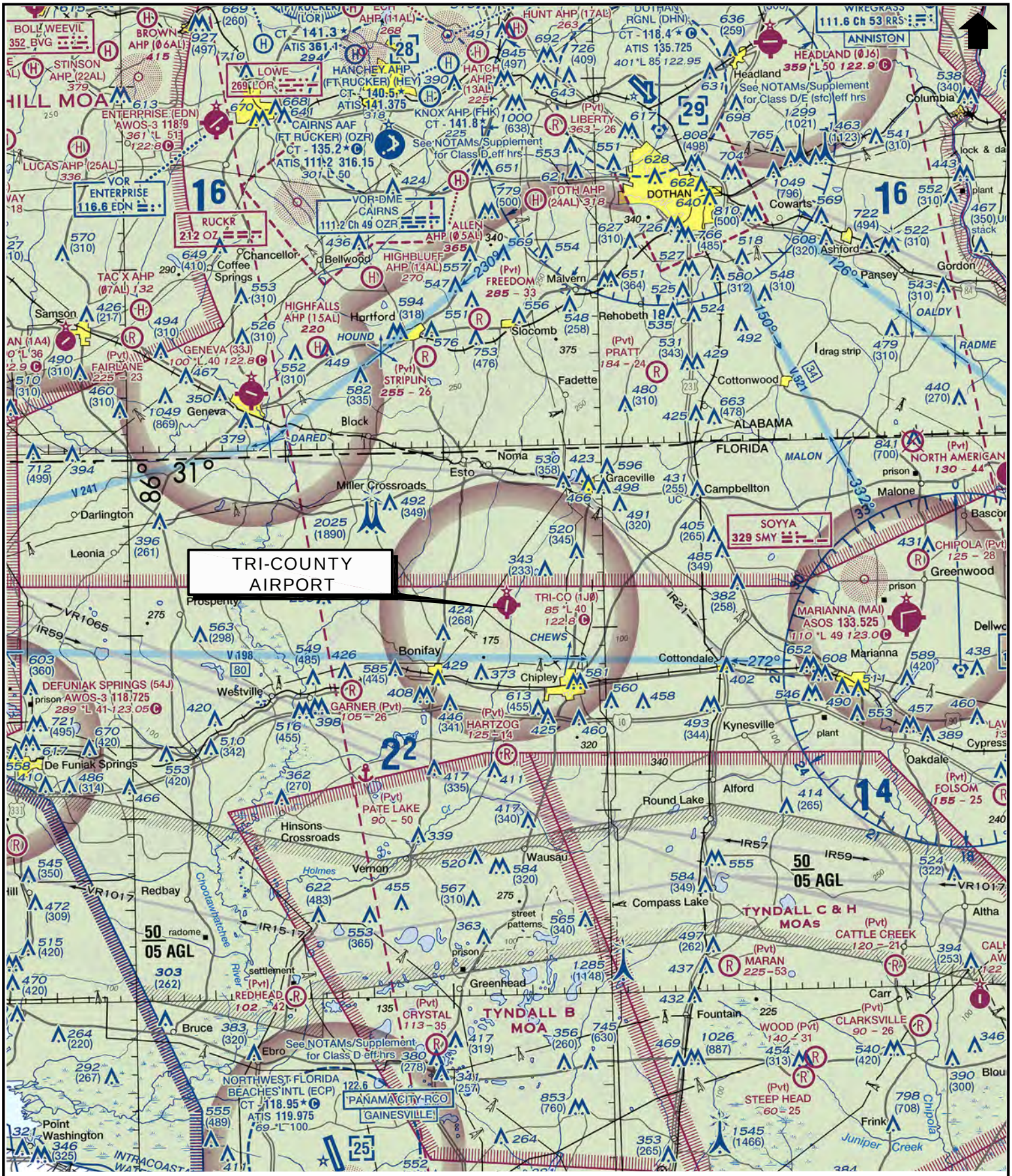
1.4.10.2 UNCONTROLLED AIRSPACE

Class G airspace is uncontrolled. It consists of all airspace that is not classified as A, B, C, D, or E. Pilots flying within Class G airspace have the responsibility to see and avoid other aircraft. No air traffic control services are available in Class G airspace. **Figure 1-4-4** depicts the airspace surrounding the Airport.

1.4.10.3 SPECIAL USE AIRSPACE

Special use airspace consists of airspace wherein activities must be confined because of their nature, or wherein limitations are imposed upon aircraft operations that are not part of those activities or both. Special use airspace consists of Prohibited and Restricted Areas, Warning Areas, Military Operations Areas (MOAs), Alert Areas, and controlled Firing Areas.

There is a significant amount of special use airspace in the vicinity of the Airport. The special use airspace includes several MOAs including Eglin C located immediately north of the airfield, the Tyndall B, C and H MOAs located south of the airfield and the combination of Eglin E MOA Eglin/Valparaiso Restricted Area 2914A located approximately 60 miles southwest of the airfield.



SOURCE: NEW ORLEANS SECTIONALAERONAUTICAL CHART, FEDERAL AVIATION ADMINISTRATION, NOVEMBER 2018.

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SECTIONAL AERONAUTICAL CHART

FIGURE 1.4-4

1.4.10.4 OTHER AIRSPACE

Other airspace includes military training routes, temporary flight restrictions, parachute jump aircraft operations areas, published visual flight rules (VFR) routes, terminal radar service areas, and national security areas. Military training routes located in the vicinity of the Airport include IR21 which is located north and east of the Airport, as well as VR1065 and IR59 which are located south and west of the Airport. Civilian aircraft are not prohibited from flying within a military training route; however, extreme vigilance should be exercised by pilots when conducting flight through or near these routes.

Temporary flight restrictions can be implemented for a variety of reasons to ensure the safety of persons and property in the air and on the ground. Temporary flight restrictions are implemented via notice to airmen (NOTAM).

Parachute jump areas are listed in the FAA's Chart Supplement. A review of the current facility directory indicates there are no jump areas in the vicinity of the Airport.

Published VFR routes are established transitioning around, under and through complex airspace such as Class B airspace. No published VFR routes are located in the vicinity of the Airport.

Due to FAA rulemaking procedures, Terminal Radar Service Areas (TRSAs) do not fit into any of the defined U.S. airspace classes. They are areas were pilots can request additional radar services. No TRSAs exist in the vicinity of the Airport.

National Security Areas consist of airspace established for the purpose of increased security and safety of ground facilities. No National Security Areas exist in the vicinity of the Airport.

1.5 LANDSIDE FACILITIES

The Airport's landside facilities consist of areas necessary for the movement of passengers and automobiles, and parking and storage of aircraft. Examples of these facilities include the terminal building, public parking lots, access roads, hangars, and airport support facilities.

1.5.1 TERMINAL BUILDING

The Charles Anderson terminal building is located just inside the Airport's main gate. It consists of a one-story masonry and metal roof structure that provides space for a pilot's lounge, restrooms, a conference room, kitchen/break room and airport management offices. The structure provides approximately 4,000 square feet of space. The structure was expanded to its current size in 2006. The facility is in good condition.

Photo 6 - Terminal Building
Source: AECOM (2018)

1.5.2 HANGARS

There are currently four conventional hangars, one row of shade hangars, one row of T-hangars and four rows of rectangular hangars at the Airport. An additional row of rectangular hangars is planned for construction in 2019-2020.

Two of the conventional hangars are located at the north end of the Airport on a land lease and are privately owned by an airport tenant. These hangars (**Photo 11**) provide approximately 5,600 and 6,400 square feet of storage space. They are steel-frame structures with metal siding and are in good condition. These hangars have an apron of approximately 3,500 square yards with six tie downs.

- A conventional hangar is also located west of the shade hangars immediately east of Tri-County Airport Road. This facility provides approximately 4,800 square feet of storage space. This hangar is in good condition. It is owned by the Airport Authority.
- The last conventional hangar is located immediately south of the terminal building. The structure is divided into two sections with one facing west and the other facing east. The portion facing west is currently occupied, while the section facing east is unoccupied due to drainage and flooding problems in the structure. The facility provides approximately 8,000 square feet of storage space. This facility is the oldest of the hangars at the airport and is also owned by the Airport Authority.
- In addition to these conventional hangars, the Airport also has a row of shade hangars and several rows of rectangular hangars and one row of T-hangars. These facilities are described in the following paragraphs.
  - The row of shade hangars is located north of the terminal building and provides space for eight aircraft (four on each side). Only two aircraft are currently stored in this facility. The remainder of the facility is being used to park and store the Airport's fuel trucks and airport maintenance equipment such as mowers and aircraft tugs. The shade hangar is owned by Airport Authority.
- The Airport has five rows of rectangular hangars of various sizes. All of these hangars are owned by the Airport Authority. **Table 1.5-1** lists the specifics regarding these facilities.

TABLE 1.5-1
EXISTING RECTANGULAR HANGARS

Description	Number of Units
Four Unit Row of Rectangular Hangars	4
Five Unit Row of Rectangular Hangars	5
Five Unit Row of Rectangular Hangars	5
Five Unit Row of Rectangular Hangars	5
Eight Unit Row of T-Hangars	8
Three Unit Row of Rectangular Hangars	3
Proposed Four Unit Row of Rectangular Hangars	4
Total Number of Units	**30 Existing 34 Future**

- The T-hangar south of the based aircraft apron has 8 units (4 units on either side) and is owned by Airport Authority.

Photo 7 - Hangars
Source: AECOM (2018)

1.5.2.1 AIRPORT MAINTENANCE

There is one metal-sided shed, approximately 8 feet by 8 feet, used to store airport support equipment located west of the terminal buildings. The equipment include: a tractor used for mowing and other small equipment.

Photo 8 - Maintenance Building and Airport Equipment
Source: AECOM (2018)

1.5.2.2 FUEL FARM

The Airport's fuel farm is located southeast of the terminal building and west of Taxiway A (see Figure 1.4-1). Aircraft access to the fuel farm is provided via Taxilane A2 and the transient aircraft apron. The fuel farm is owned and operated by the Airport Authority.

Photo 9 - Fuel Farm
Source: AECOM (2018)

Photo 10 - MoGAS Tank
Source: AECOM (2018)

The fuel farm contains two storage tanks for aviation fuels. The first tank has a capacity of 12,000 gallons and stores Jet-A. The second tank has a capacity of 10,000 gallons and stores AvGas (100 octane low lead). A 24-hour self-fueling system is located next to the 100 LL tank. The fuel farm also has a small MoGAS tank for fueling airport vehicles and mowers. This tank is located inside a block wall containment area that previously contained larger aviation fuel tanks. No containment system exists for the current aviation fuel tanks. However, the tanks are surrounded by security fencing.

In addition to the tanks for storage of aviation fuels, the Airport Authority operates two fuel trucks, one with 100LL AvGas and one with Jet A. Each fuel truck has a capacity of 750 gallons.

1.5.2.3 OTHER AIRPORT TENANTS

There is a ground lease agreement between the Airport and Baptist College which operate two large box hangars and an apron with six tie downs.

Photo 11 - Lease Tenants
Source: AECOM (2018)

1.5.2.4 AIRPORT ACCESS

Access to the Airport is provided via Tri-County Airport Road from County Road 162. Tri-County Airport Road is a two-lane undivided roadway that also provides access to residential areas west of the Airport. A short stretch of unnamed road provides access to the terminal area and leads to a secure key-pad access controlled gate that is located just west of the terminal building. The general public does not currently have access through the gate to the terminal area.

1.5.2.5 AUTOMOBILE PARKING FACILITIES

There are approximately 12 parking spaces located on the north side of the unnamed access road just outside of the entrance gate. The paved parking area is in fair condition.

1.6 WEATHER REPORTING AND WIND COVERAGE

Meteorological data is used in several elements of the master planning process. Temperature is used as a factor in determining runway length requirements, while the prevalence of ceiling and horizontal visibility data is used as a factor in determining airfield capacity. Likewise, wind data is used as a factor in determining the adequacy of the number and orientation of existing runways. Therefore, this section presents meteorological data that will be used in subsequent sections of the Master Plan Update.

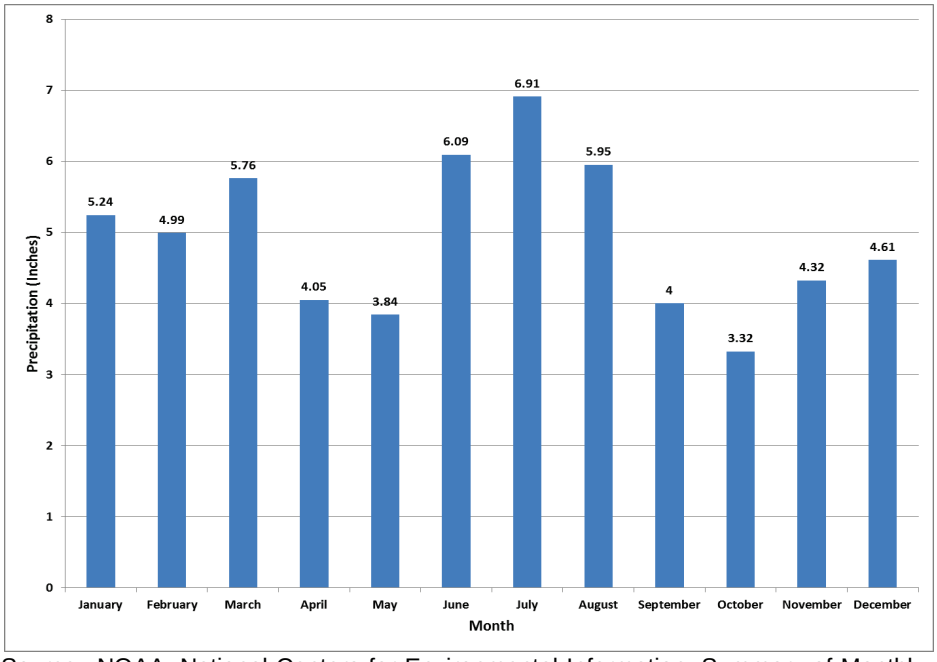
Temperature and precipitation data for the Airport were analyzed using the National Oceanic and Atmospheric Administration's (NOAA's) "Climatography of the United States Report No. 81" for Chipley, Florida (the closest weather station) which encompasses a 30-year period from 1981 through 2010. Cloud ceiling, horizontal visibility and wind data at the Airport were assessed using hourly observations collected by the National Centers for Environmental Information for the years 2008 through 2010 and 2012 through 2017.

Photo 12 - Fuel Trucks
Source: AECOM (2018)

1.6.1 TEMPERATURE AND PRECIPITATION

The mean maximum temperature at Chipley, FL ranges from a low of 62.5 degrees in January to a high of 93.1 degrees in July. The mean minimum temperature ranges from a low of 38.8 degrees in January to a high of 72.6 degrees in July. Precipitation levels vary through the year with October being the driest month with an average rainfall of 3.3 inches. July is the wettest month with an average rainfall of 6.9 inches. The mean annual rainfall is 59 inches. **Figure 1.6-1** presents average monthly rainfall at the observation station from 1981 through 2010.

FIGURE 1.6-1
AVERAGE MONTHLY RAINFALL



Source: NOAA, National Centers for Environmental Information, Summary of Monthly Normals 1980 – 2010.

1.6.2 CEILING AND HORIZONTAL VISIBILITY

The FAA has defined certain limits associated with cloud ceiling height and horizontal visibility limits as "visual" and "instrument" meteorological conditions. These limits affect flight operations by establishing certain rules and procedures for pilots, aircraft, and air traffic control. Pilots must adhere to visual flight rules (VFR) during visual meteorological conditions (VMCs) and instrument flight rules (IFRs) during instrument meteorological conditions (IMCs).

- VMCs are defined as periods when the cloud ceiling is greater than 1,000 feet above ground level and horizontal visibility is greater than 3 statute miles.
- IMCs are defined as periods when the cloud ceiling is less than 1,000 feet and/or horizontal visibility are less than 3 statute miles.

Weather data obtained from the National Centers for Environmental Information for the Airport extended over a 9-year period from 2008 through 2010 and 2012 through 2017 (data for 2011 was missing) and included 112,669 weather observations. This data was analyzed for cloud ceiling height and horizontal visibility, as well as wind direction and velocity. The analysis calculated that VMCs prevail at the Airport 81 percent of the time, while IMCs prevail the remaining 19 percent of the time. **Table 1.6-1** lists these conditions along with their respective ceiling heights and horizontal visibilities.

TABLE 1.6-1
WEATHER CONDITIONS, MINIMUMS AND OCCURRENCES

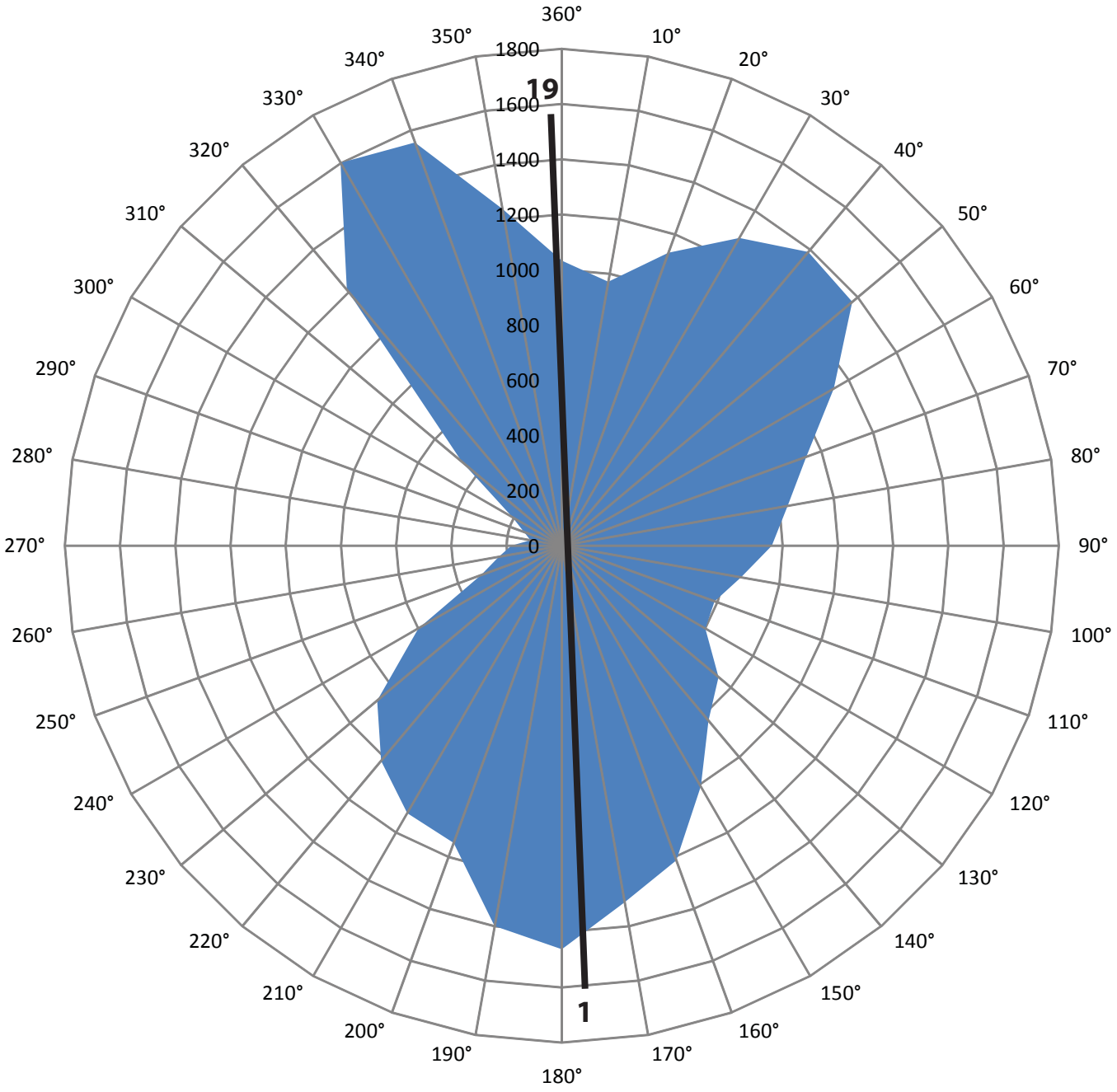
Weather Condition	Lowest Minimums		Occurrence (%)
	Cloud Ceiling (ft.)	Horizontal Visibility (Miles)	
VMC	1,000	3 miles	81%
IMC	0 feet	0 mile	19%
Total			**100%**

Source: NOAA, National Centers for Environmental Information, Integrated Surface Database, 2018.
Compiled by: AECOM, 2018.

1.6.3 WIND ANALYSIS

Figure 1.6-2 illustrates the number of annual wind observations recorded from each direction during all-weather conditions. As the figure indicates, the highest numbers of wind observations are from the northeast, south-southwest and northwest. The figure also indicates that the Airport's runway orientation of 1-19 is well aligned with prevailing wind directions.

Figure 1.6-3 illustrates the number of annual wind direction observations during IMCs. As the figure indicates, winds during IMCs are primarily from the same directions as during all-weather conditions, with a slightly higher number of observations from the northeast.



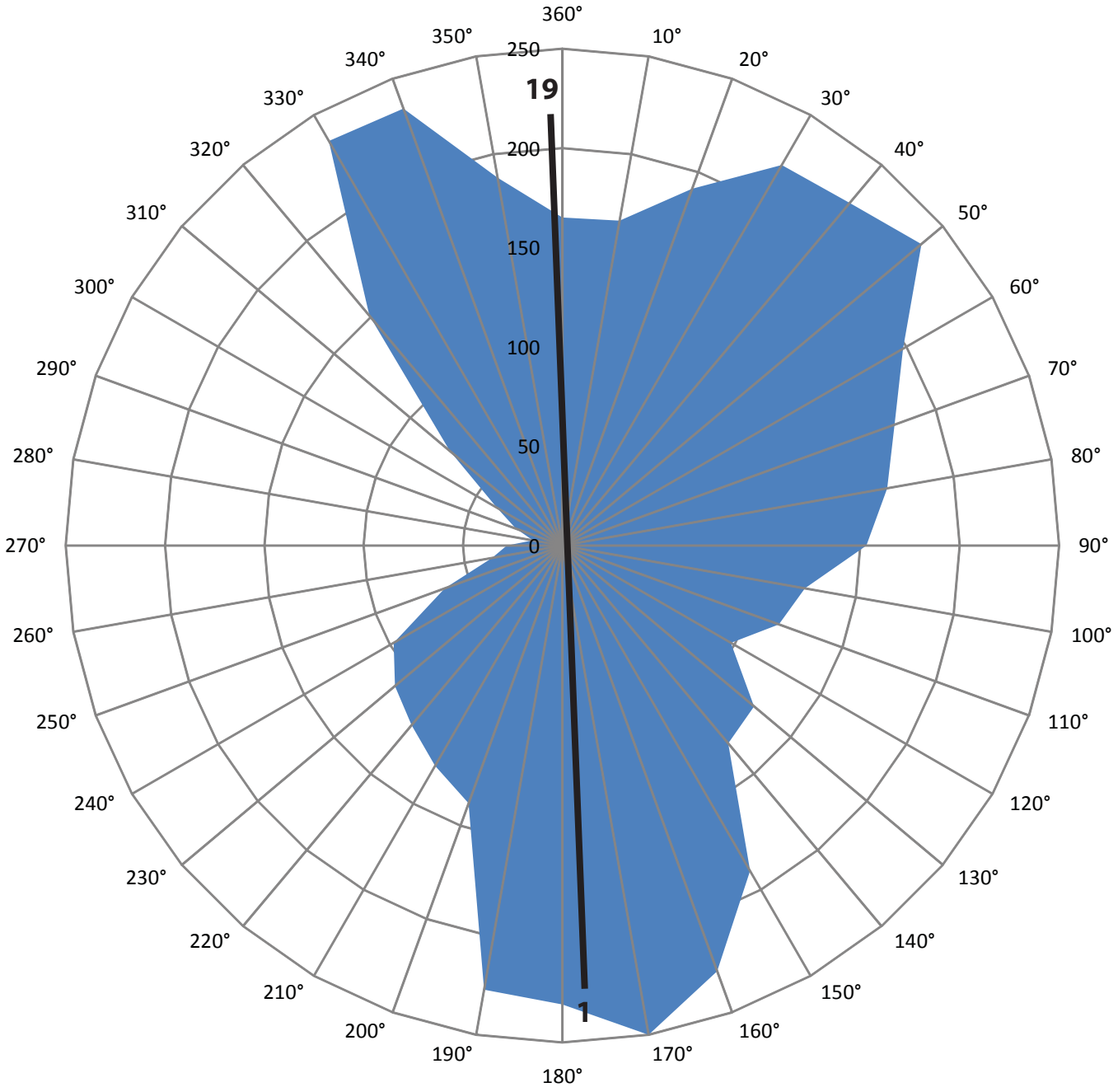
Source: NOAA, National Center for Environmental Information Integrated Surface Database, 2018.
Station: WBAN 63871
Period: 2008 - 2010 and 2012 - 2017
Wind Data: Runway 1-19; True Bearing 9.6632 / 189.6643

Lmre: R fgq ep_n fga bcngarq r f c l s k `cp md ug l b m `qcp t_rgm l q pcampbcb dpm k c_af am k n_qq f c_bg l e &cvajsbg l e a_j k am l bgrgm l q' bspg l e r f c ncpgmb g l bga_rcb,

TRI-COUNTY AIRPORT
MASTER PLAN UPDATE

ANNUAL ALL WEATHER WIND PERSISTENCY CHART

FIGURE 1.6-2



Source: NOAA, National Center for Environmental Information Integrated Surface Database, 2018.
Station: WBAN 63871
Period: 2008 - 2010 and 2012 - 2017
Wind Data: Runway 1-19; True Bearing 9.6632 / 189.6643

Note: This graphic depicts the number of wind observations recorded from each compass heading (excluding calm conditions) during the period indicated.

TRI-COUNTY AIRPORT
MASTER PLAN UPDATE

ANNUAL IMC WIND PERSISTENCY CHART

FIGURE 1.6-3

An analysis of the wind coverage provided by the existing Runway 1-19 was conducted. Wind coverage indicates the percentage of time that crosswind components are within an acceptable range and is typically based on the total number of weather observations during a typical 10-year period. Crosswind components are defined as the wind that occurs at a right angle to the runway centerline. It is desirable to minimize crosswind components by having a runway system that is aligned with the prevailing wind patterns. This is because maximum aircraft performance is achieved when taking off and landing directly into the wind. Crosswind operations are less desirable due to higher demands on aircraft performance and pilot workload.

Crosswind components of 10.5 and 13 knots were used for analyzing the runway system at the Airport. These components were used because they are the velocities associated with various sizes of aircraft that operate at the Airport. However the crosswind component for aircraft in Runway Design Codes B-II is 13 knots. Therefore, the 13 knot crosswind component during all-weather conditions is the critical value for the purpose of this analysis. Wind observations for the period January 2005 through December 2014 were used for this analysis.

FAA guidelines recommend that an airport's runway system provide wind coverage of 95 percent. If wind coverage is less than 95 percent, then FAA guidelines recommend the construction of a crosswind runway be considered. **Table 1.6-2** indicates that the existing runway provides wind coverage greater than 95 percent during all-weather conditions with a crosswind component of 13 knots. In fact, Runway 1-19 provides greater than 95 percent coverage even with a smaller crosswind component of 10.5 knots.

TABLE 1.6-2
RUNWAY WIND COVERAGE

Condition	Crosswind Component	Runway 1-19
All-Weather Conditions	10.5 Knots	99.65
	13 Knots	99.91
Instrument Meteorological Conditions	10.5 Knots	99.49
	13 Knots	99.81

Source: NOAA, National Centers for Environmental Information, Integrated Surface Database, 2018.
Compiled by: AECOM, 2018.

An examination of the analysis reveals that the runway's wind coverage also exceeds 95 percent during IMC at the 13 knot crosswind component level. Therefore, the Airport's existing runway meets FAA criteria for wind coverage.

1.7 AIRPORT UTILITIES

Electricity, refuse, telephone, and internet services are available at the Airport. Water is obtained through on-airport wells. Waste water from the terminal building is currently handled through a septic system. No sewer service is currently available.

1.8 AIRPORT FENCING AND SECURITY

The Airport has a security fence around the airside and the landside facilities. The chain-link fence and gates that surrounds the Airport prevents unauthorized access to the Airport.

Photo 13 - Airport Existing Fence
Source: AECOM (2018)

1.9 EMERGENCY SERVICES

Fire protection and emergency response services are provided by a mutual agreement between the three counties (Holmes, Jackson and Washington).

SECTION 2.0 FORECASTS OF AVIATION ACTIVITY

2.1 INTRODUCTION

This chapter presents aviation activity forecasts for aircraft operations, aircraft fleet mix and based aircraft. These forecasts will be used in subsequent sections of this Master Plan Update to assess the ability of existing facilities to accommodate existing and future levels of demand. The forecasts will also be used to assess the proper timeframe for recommended projects shown on the ALP.

2.2 REVIEW OF HISTORICAL AVIATION ACTIVITY

This section reviews historical levels of aircraft operations and based aircraft as derived from the FAA Terminal Area Forecast (TAF) and the Florida Aviation System Plan (FASP). The FDOT's FASP *Forecast of General Aviation Based Aircraft and General Aviation Operations*, was adopted for the purpose of this Master Plan Update. The FASP is the FDOT's official forecast of aviation activity for Florida airports and is used for the budgeting and planning needs of the FDOT.

2.2.1 HISTORICAL ANNUAL AIRCRAFT OPERATIONS

The FAA defines an aircraft operation as either a landing or a takeoff. Historical annual aircraft operations at the Airport between 1996 and 2015 are summarized in this section. **Table 2.2-1** presents historical annual aircraft operations as recorded by the TAF and the FASP. Historical values extend through 2016 for the TAF and 2015 for the FASP. The values presented are estimates rather than actual recorded values, because the airport does not have a control tower and therefore, there is no system for recording the actual number of aircraft operations. Nonetheless, recent estimates indicate that the airfield is experiencing approximately 28,000 annual operations.

TABLE 2.2-1
HISTORICAL AIRCRAFT OPERATIONS (1996-2015)

Year	Aircraft Operations	Aircraft Operations
	FAA TAF	FDOT FASP
1996	28,376	28,376
2000	28,376	28,376
2005	28,376	28,376
2010	28,376	28,376
2004	28,376	28,376
2005	28,376	28,376
2006	28,376	28,376
2007	28,376	18,100
2008	28,376	18,100
2009	28,376	28,376
2010	28,376	28,376
2011	28,376	28,376
2012	28,376	28,376
2013	28,376	28,376
2014	28,376	28,376
2015	28,376	28,376
2016	28,376	
Average Annual Growth Rate		
1996-2016	0%	0%

Source: FAA Terminal Area Forecast, January 2018 and Florida Aviation System Plan, 2016.
Note: TAF values are for fiscal years.

2.2.2 HISTORICAL ANNUAL BASED AIRCRAFT

Table 2.2-2 presents historical based aircraft data from the TAF and the FASP. As was the case for aircraft operations, there are variations between each source regarding the estimated values for each year. Historical values are provided in the TAF through 2016 and in the FASP through 2015. Airport Authority records indicate that there are 39 aircraft based at the Airport as on November 2018 including one non-operational aircraft.

TABLE 2.2-2
HISTORICAL BASED AIRCRAFT (2001-2016)

Year	FAA TAF	FDOT FASP
2001	6	6
2002	6	6
2003	6	13
2004	18	13
2005	18	13
2006	18	14
2007	18	20
2008	13	24
2009	11	38
2010	11	25
2011	11	25
2012	11	25
2013	24	24
2014	24	41
2015	19	24
2016	44	
2018 (Actual)	39	
AAGR	**14.2%**	**10.4%**

Source: FAA Terminal Area Forecast, January 2018 and Florida Aviation System Plan, 2016.
Note: TAF values are for fiscal years. AAGR=Average Annual Growth Rate.

2.3 FORECAST OF AVIATION DEMAND

The forecasts of aircraft operations and based aircraft presented in the FDOT's FASP were adopted for use in this Master Plan Update.

The number of aircraft operations and aircraft based at an airport are typically used to determine the number and size of facilities needed to accommodate existing and future demand for tie-downs and aircraft storage.

2.3.1 FORECAST OF ANNUAL AIRCRAFT OPERATIONS

The FDOT's forecast of aircraft operations extends to 2035 and is summarized in **Table 2.3-1** and illustrated in **Figure 2.3-1**. The 2018 FAA's TAF is included for comparison purposes. However, the FAA TAF does not project any growth in aircraft operations and therefore, was not used for the purposes of this MPU. The FASP projects that annual aircraft operations will increase from approximately 29,000 to over 36,000 in 2037. This growth represents an average annual growth

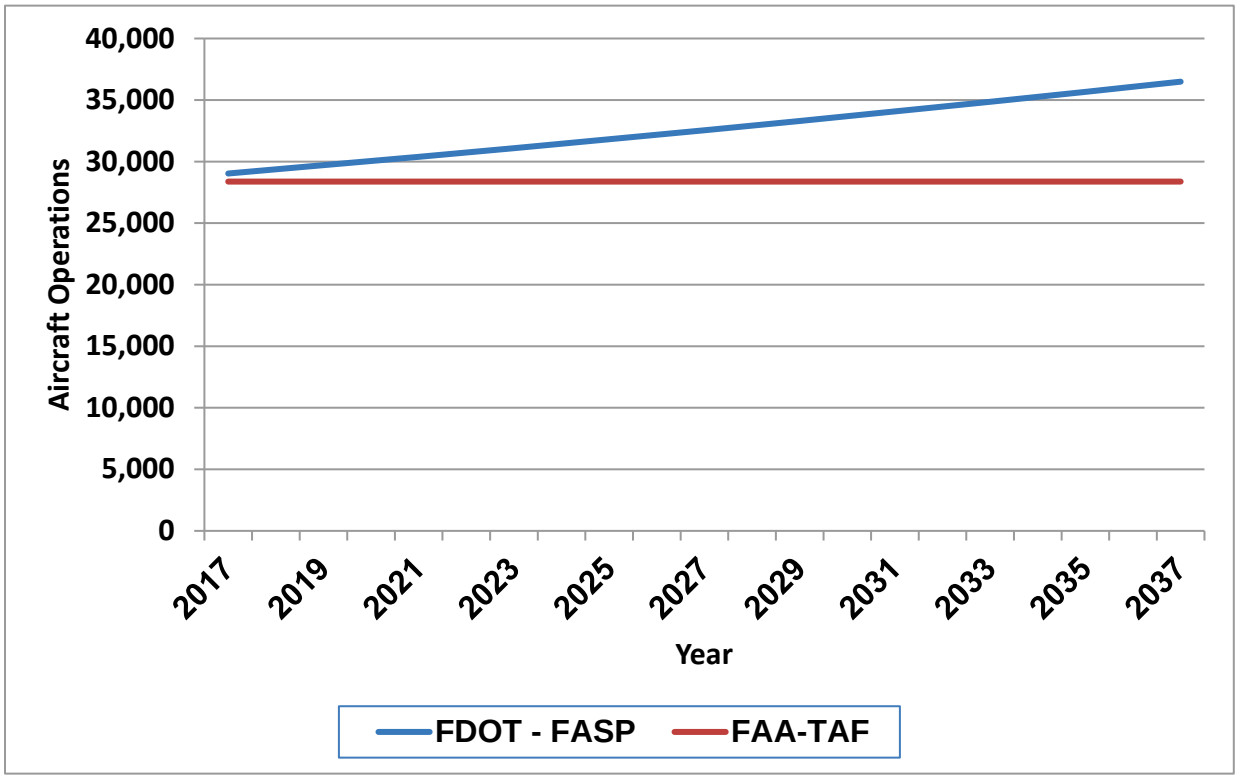
rate of approximately 1.1 percent. The FASP value for 2037 was derived by applying the average annual growth rate to the value for 2035, which is the last year presented in the FASP.

TABLE 2.3-1
ANNUAL AIRCRAFT OPERATIONS (2016-2038)

Year	FAA TAF	FASP
2017	28,376	29,032
2022	28,376	30,741
2027	28,376	32,549
2032	28,376	34,464
2037	28,376	36,493
AAGR	0%	1.1%

Source: FAA Terminal Area Forecast, January 2018 and Florida Aviation System Plan, 2012. Note: TAF values are for fiscal years. AAGR=Average Annual Growth Rate.

FIGURE 2.3-1
ANNUAL AIRCRAFT OPERATIONS (2017-2037)



Source: AECOM, 2018.

2.3.2 AIRCRAFT LOCAL/ITINERANT OPERATIONAL SPLIT

Aircraft operations are categorized as either local or itinerant as described below.

- Local operations include aircraft operating in the local traffic pattern or within sight of the airport, or aircraft known to be departing or arriving from flight in local practice areas, or aircraft executing practice instrument approaches at the Airport.
- Itinerant operations include aircraft that, arrive from outside the airport area, or departs and leaves local airspace.

The FDOT's FASP does not provide a breakdown between local and itinerant operations. Therefore, the breakdown provided by the FAA's TAF was applied on a percentage basis to the FDOT forecast of total operations and is shown in **Table 2.3-2**. For the purposes of developing forecasts of future general aviation aircraft operations at the Airport, the itinerant/local operational split was held constant throughout the 20-year forecast period. Descriptions of each category of operations are provided in the following paragraphs.

2.3.3 AIR TAXI OPERATIONS

Air taxi activity includes operations regulated by the FAA under Federal Aviation Regulations (FAR) Part 135 such as on-demand passenger service (charter and fractional), small parcel transport (cargo), and air ambulance activity.

2.3.4 GENERAL AVIATION OPERATIONS

General Aviation (GA) includes a diverse range of aviation activities including all segments of the aviation industry, except for commercial air carriers and military. GA includes common activities such as pilot training, recreational flying, agricultural applications, medical support, and other business and corporate uses. GA aircraft can range from small glider and single-engine aircraft to large turboprop and jet powered aircraft.

2.3.5 MILITARY OPERATIONS

A variety of military operations occur at Tri-County Airport. Fort Rucker, a U.S. Army post located north of Daleville, Alabama, serves as a primary flight training base for Army Aviation and provides graduate level training using the AH-64D Apache Longbow and OH-58D Kiowa helicopters, combat and night operational training, using the OH-58, UH-1, and UH-60 helicopters, and flight training using the CH-47 Chinook helicopter and C-12 Huron aircraft. These aircraft frequently visit Tri-County Airport for the purpose of flight training.

TABLE 2.3-2
ITINERANT / LOCAL AIRCRAFT OPERATIONS FORECAST

Year	Itinerant				Local			Total Itinerant and Local Operations
	Air Taxi	General Aviation	Military	Total Itinerant	General Aviation	Military	Total Local	
2017	112	7,626	20,000	27,738	1,294	0	1,294	29,032
2022	133	9,069	20,000	29,202	1,539	0	1,539	30,741
2027	156	10,595	20,000	30,751	1,798	0	1,798	32,549
2032	180	12,212	20,000	32,392	2,072	0	2,072	34,464
2037	205	13,925	20,000	34,130	2,363	0	2,363	36,493

Source: AECOM.

2.4 BASED AIRCRAFT FORECAST

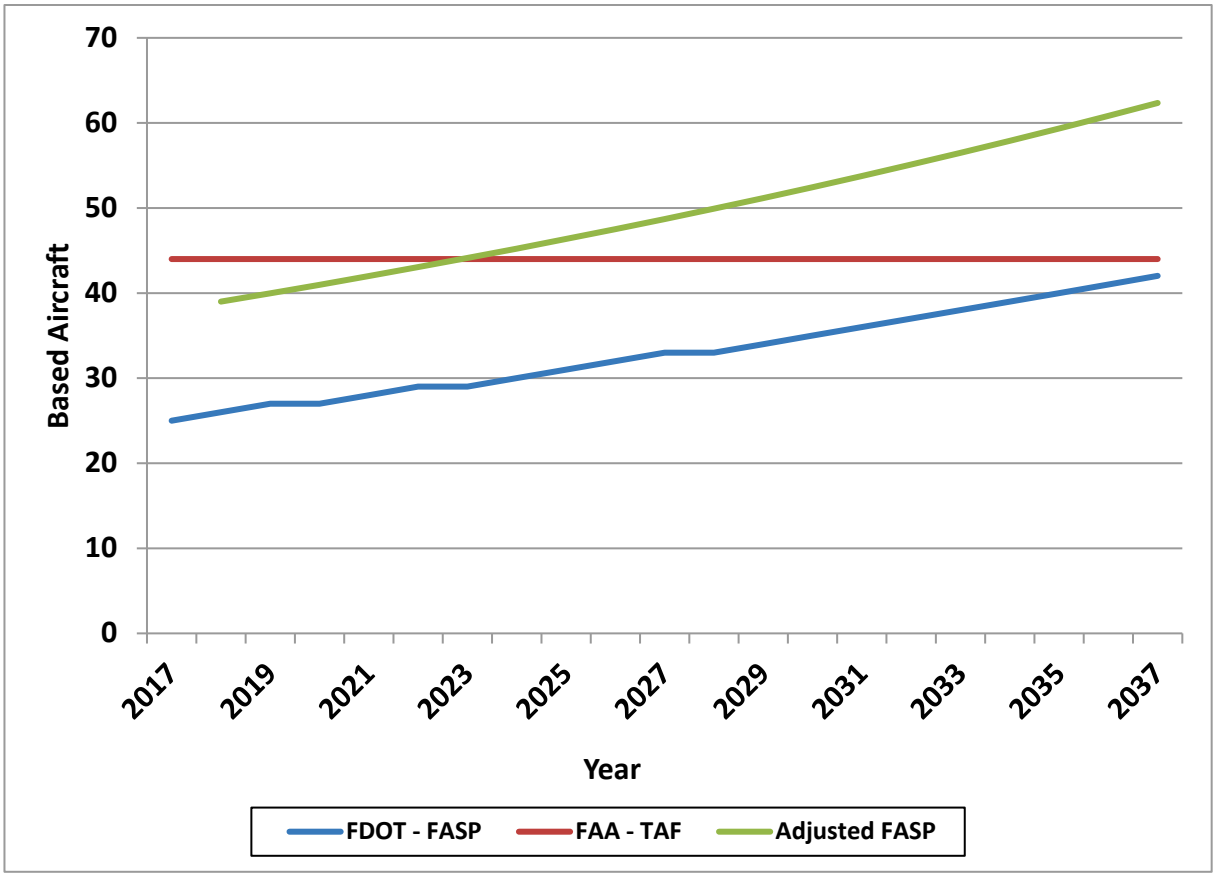
Forecasts of based aircraft are used to estimate existing and future demand for the number and size of aircraft hangars and tie-down aprons. The FAA's TAF and FDOT's FASP projections for based aircraft at the Airport are presented in **Table 2.4-1**. The TAF does not forecast any growth and maintains the number of based aircraft at 44. By comparison, the FASP projects that based aircraft will increase from 25 to 42 by the year 2037. Neither forecast is realistic because the current number of aircraft based at the Airport is 39. Therefore, rather than using the FASP as presented, its average annual growth rate was applied to the current number of aircraft at the Airport to derive a realistic projection of based aircraft in future years. The adjusted forecast is also presented in Table 2.4-1 and illustrated in **Figure 2.4-1.** The average annual growth rate of 2.5 percent yields a forecast of 62 based aircraft in 2017.

TABLE 2.4-1
FORECAST OF BASED AIRCRAFT (2017-2037)

Year	FAA TAF	FDOT FASP	Adjusted FASP
2017	44	25	NA
2022	44	29	43
2027	44	33	49
2032	44	37	55
2037	44	42	62
AAGR	0%	2.5%	2.5%

Source: FAA Terminal Area Forecast, January 2018 and Florida Aviation System Plan, 2012.
Note: TAF values are for fiscal years. AAGR=Average Annual Growth Rate.
FASP value for 2037 was extrapolated from the 2035 value, which is the last year of the forecast. The AAGR of 2.5 percent is for 2016 to 2035 values presented in the forecast.

FIGURE 2.4-1
FORECAST OF BASED AIRCRAFT (2017-2037)



Source: AECOM, 2018.

2.5 FORECAST OF AIRCRAFT FLEET MIX

Fleet mix refers to the distribution of aircraft types in terms of categories such as single-engine, multi-engine, jets, etc. Aircraft fleet mix is an important factor when assessing the types of landside facilities needed such as the size and type of hangars, as well as the geometric standards that need to be applied to future airfield development. Larger aircraft generally require wider pavements and greater separations between pavements to ensure safe operations with adequate wingtip clearances.

The assessment of fleet mix begins with a review of the existing mix of based aircraft. The existing based aircraft fleet mix consists of 34 single-engine and 4 multi-engine aircraft and 1 turboprop. No jet, rotorcraft, gliders or ultra-lights are currently based at the Airport. On a percentage basis, the existing fleet mix is approximately 87 percent single-engine and 3 percent turboprop multi-engine.

Forecasts of future aircraft fleet mix often apply the national growth rates as specified in the FAA's Aerospace Forecast. However, a review of that document indicates that negative growth rates are projected for fixed wing single-engine and multi-engine aircraft, while positive growth rates are projected for other categories such as turboprops, jets, rotorcraft, experimental and light sport aircraft.

The negative growth rates do not match the historical positive growth of single-engine and multi-engine based aircraft at the Airport. Consequently, it was deemed more appropriate to maintain the current fleet mix percentages of single-engine (87 percent), multi-engine (10%) and turboprop (3 percent) aircraft for planning purposes. **Table 2.5-1** presents the estimated aircraft fleet for the 20-year forecast period.

TABLE 2.5-1
FORECAST OF BASED AIRCRAFT BY FLEET MIX

Year	Single-Engine	Multi-Engine	Turbo Prop	Jets	Rotor	Ultra-Light	Gliders	Total
2017	34	4	1	0	0	0	0	39
2022	37	5	1	0	0	0	0	43
2027	43	5	1	0	0	0	0	49
2032	48	6	1	0	0	0	0	55
2037	54	6	2	0	0	0	0	62

Source: Compiled by AECOM, 2018
Notes: Forecast based on 2018-based aircraft information provided by Tri-County Airport and forward-looking changes in fleet mix developed by AECOM for this forecast.
Rotor - represents helicopters (rotorcraft).

2.6 CRITICAL AIRCRAFT

The design of airport facilities including runways, taxiways and other facilities is based upon the identification of a critical aircraft. The FAA defines the critical aircraft as the most demanding aircraft type, or grouping of aircraft with similar characteristics, that make regular use of the Airport. "Regular Use" is defined as 500 annual operations, including itinerant and local operations, but excluding touch and go operations. Touch and go operations consist of an aircraft landing followed immediately by a takeoff without stopping for the purpose of flight training.

Limited data exists regarding the historical number of aircraft operations by aircraft type. This is because there is no air traffic control tower and no other entity exists to record the number of type of aircraft operations. Aircraft types are not recorded for fuel sales.

The only documented source of aircraft operations by type is the FAA's Traffic Flow Management System Counts (TFMSC). That database records operation counts by airport including aircraft type. It includes data for aircraft operations conducted under Instrument Flight Rules that are captured by the FAA's enroute computers, but excludes all VFR operations and some enroute IFR operations. While TFMSC reliably captures the vast majority of IFR traffic and some VFR traffic, it has several limitations and challenges. First, due to limited radar coverage and

incomplete messaging, TFMSC may exclude certain flights that do not enter the enroute airspace and other low-altitude flights. Consequently, the actual number of operations by a particular type or category of aircraft may be higher than indicated by TFMSC.

For the purpose of this Master Plan Update, TFMSC data was reviewed for 2008 through 2017. The data indicates that less than 1,000 operations were recorded every year. Larger aircraft with higher numbers of operations include the Beech King Air and the Cessna Citation II. No single aircraft, or group of similar aircraft, were recorded in the system counts as having conducted 500 annual operations. However, that does not mean that such operations did not occur. It only means such operations were not recorded by the TFMSC system.

Consultation with airport management indicated that the Cessna 172 is the most common aircraft type operating at the Airport and most likely conducts more than 500 operations per year. Larger aircraft such as the Beech King Air and the Cessna Citation are the most common types of turboprop and jet operations, but do not likely conduct more than 500 annual operations per year.

As a result of damage sustained at other airports from Hurricane Michael, the Airport now supports a skydiving operator that operates a Beech King Air. It is likely that operations associated with this business will generate 500 annual operations in the near future. Therefore, the Cessna 172 is the Airport's existing critical aircraft and the Beech King Air is forecast to be the future critical aircraft.

2.7 OPERATIONAL PEAKING CHARACTERISTICS

Aircraft activity varies throughout the year, from day to day and throughout each hour of the day. The facility requirements needed to meet operational demand is typically based on accommodating levels of peaking activity. Consequently, estimates of peaking activity is needed to plan future facilities. Therefore, this section presents forecasts of peak month, average day peak month and peak hour for aircraft operations. Definitions of these peaking factors are presented below:

- **Peak Month** – The month when the highest number of aircraft operations occur.
- **Average Day, Peak Month** – The average day during the peak month (i.e., the monthly value divided by 31 days).
- **Peak Hour** – The hour with the highest number of aircraft operations during the peak month.

2.7.1 PEAKING OF AIRCRAFT OPERATIONS

No data exists to determine the actual peaking characteristics of aircraft operations at the Airport. Consequently, peaking characteristics were estimated using assumptions based on typical industry standards. Peak month operations are estimated to account for 11 percent of annual operations. Average Day Peak Month (ADPM) aircraft operations are estimated to be 1/30th of monthly operations. Peak Hour operations are estimated to be 10 percent of daily operations.

The resulting forecast of ADPM in five year increments through the forecast period is presented in **Table 2.7-1**.

TABLE 2.7-1
SUMMARY OF PEAKING FORECASTS FOR AIRCRAFT OPERATIONS

Year	Annual Aircraft Operations	Peak Month Operations (11 Percent)	ADPM Operations (30 Days)	Peak Hour Operations (10 Percent)
2017	29,032	3,193	106	10
2022	30,741	3,381	112	11
2027	32,549	3,580	119	11
2032	34,464	3,791	126	12
2037	36,493	4,014	133	13

Source: AECOM, 2018.

2.8 COMPARISON TO FAA TAF

FAA Advisory Circular 150/5070-6B, Airport Master Plans specifies that the forecast section of a Master Plan Update should include a comparison between the recommended forecast and the FAA's TAF to determine if the recommended forecast is "consistent" with the TAF. Guidance provided in the Advisory Circular specifies that the FAA will find the recommended forecast to be consistent if the forecast differs by less than 10 percent in the 5-year period and less than 15 percent in the 10-year period. However, the guidance also specifies that these guidelines are applicable to general aviation airports that have 100,000 or more operations or 100 based aircraft. Tri-County Airport will not exceed either of those applicability thresholds. Therefore, a comparison is provided for information purposes only.

The comparison of the recommended forecast to the TAF is presented in **Table 2.8-1**. The comparison indicates that the recommended forecast is 8 percent higher than the TAF in the five-year period and 14.7 percent higher than the TAF in the 10-year period.

TABLE 2.8-1
COMPARISON OF RECOMMENDED FORECAST AND FAA TAF

Year	Recommended Forecast	FAA TAF	Recommended Forecast vs. FAA TAF (%)
Total Operations			
2017	29,032	28,376	2.3%
2022	30,741	28,376	8.3%
2027	32,549	28,376	14.7%
2032	34,464	28,376	21.5%
2037	36,493	28,376	28.6%

Source: AECOM, 2018.
Note: FAA TAF data is on a U.S. Government FY basis (October through September)

Since the FAA TAF does not project any increase in annual operations at the Airport, the forecasts presented in this report are 8.3% above the TAF in the 5-year period and just under 15% in the 10-year period. Therefore, the 5-year and the 10-year forecasts are considered consistent with the TAF.

2.9 SUMMARY OF FORECASTS

Table 2.9-1 presents a consolidated summary of all the forecasts presented on the preceding pages. These forecasts will be used in subsequent sections as the basis for planning all facility improvements.

TABLE 2.9-1
FORECAST SUMMARY

	Base Year	Forecast Level of Aviation Activity				Average Annual Compound Growth Rates			
Years	**2017**	**2022**	**2027**	**2032**	**2037**	**2017- 2022**	**2022- 2027**	**2027- 2032**	**2032- 2037**
Itinerant									
Air Taxi	112	133	156	180	205	5.0%	3.2%	2.9%	2.6%
General Aviation	7,626	9,069	10,595	12,212	13,925	5.1%	3.2%	2.9%	2.7%
Military	20,000	20,000	20,000	20,000	20,000	0.0%	0.0%	0.0%	0.0%
Local									
General Aviation	1,294	1,539	1,798	2,072	2,363	5.1%	3.2%	2.9%	2.7%
Military	0	0	0	0	0	--	--	--	--
Total Operations	29,032	30,741	32,549	34,464	36,493	1.6%	1.1%	1.1%	1.2%
Peak Day Operations	10	11	11	12	13	1.9%	0.0%	1.8%	1.6%
Based Aircraft									
Single-Engine	34	37	43	48	54	1.7%	3.1%	2.2%	2.4%
Multi-Engine	4	5	5	6	6	4.6%	0.0%	3.7%	0.0%
Turboprop	1	1	1	1	2	0.0%	0.0%	0.0%	14.9%
Rotorcraft	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%
Jets	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%
Others	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%
Total Based Aircraft	**39**	**43**	**49**	**55**	**62**	**2.0%**	**2.5%**	**2.5%**	**2.5%**

Source: AECOM, 2018.

SECTION 3.0 FACILITY REQUIREMENTS

3.1 INTRODUCTION

This section assesses Tri-County Airport's facility requirements on the basis of the forecasts of demand present in **Section 2.0**, as well as consultation with Airport management. The capacities of specific Airport facilities such as the airfield, terminal area facilities, support facilities, access and parking are assessed to determine if they are capable of accommodating projected levels of demand and whether improvements are needed to correct any existing deficiencies. If deficiencies are identified, this section provides a determination regarding the approximate size and timing of new facilities or facility improvements.

3.2 AIRFIELD CAPACITY ANALYSIS

A demand/capacity analysis for the existing airfield was conducted using the methodology contained in the Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5060-5, *Airport Capacity and Delay*, commonly referred to as the FAA's "handbook methodology." This methodology uses a series of tables, graphs and equations to calculate an airfield's hourly and annual capacity. The following paragraphs provide a discussion of the handbook methodology and present the analysis results.

The handbook methodology describes how to measure an airfield's hourly capacity and its annual capacity, which is referred to as Annual Service Volume (ASV). Hourly capacity is defined as the maximum number of aircraft operations that can be accommodated by the airfield system in one hour. It is used to assess the airfield's ability to accommodate peak hour operations.

ASV is defined as a reasonable estimate of an airport's annual capacity. It accounts for differences in runway use, aircraft fleet mix, weather conditions and other factors that are encountered during a one year period.

As the number of annual operations increases and approaches an airport's ASV, the average delay incurred by each operation increases. When annual operations are equal to the ASV, average delay per aircraft operation can be up to four minutes depending upon the aircraft fleet mix using the Airport. When the number of annual aircraft operations exceeds the ASV, moderate to severe congestion will occur and average delay per aircraft operation will increase exponentially. ASV is used to assess the adequacy of the airfield design, including the number and orientation of runways.

The calculation of an airfield's hourly capacity and ASV depends upon a number of factors including the following items:

- **Meteorological Conditions** – The percentage of time that the cloud ceiling or horizontal visibility are below certain minimums.

- **Aircraft Fleet Mix** – The percentage of operations conducted by aircraft within certain weight, engine, and wake turbulence[1] classifications.
- **Runway Use** – The percentage of time each runway use configuration is used.
- **Percent Touch-and-Go** – The percent of touch-and-go operations in relation to total aircraft operations.
- **Percent Arrivals** – The percent of aircraft arrivals in relation to aircraft departures.
- **Exit Taxiway Locations** – The number and locations of exit taxiways for landing aircraft.

3.2.1 METEOROLOGICAL CONDITIONS

Meteorological conditions have a significant effect upon runway use, which, in turn, affects airfield capacity. During Visual Meteorological Conditions (VMC), runway use is greatly influenced by the direction of prevailing winds. During Instrument Meteorological Conditions (IMC), runway use is dictated by a combination of prevailing winds and the type and availability of instrument approach procedures. Operational factors, such as airspace constraints, runway length, and noise abatement considerations, may also affect runway use. Consequently, airfield capacity is typically higher during VMC than IMC. Therefore, it is important to properly identify the percentage of time that an airfield operates in each condition.

Historical data regarding the percentage of time that the Airport experiences VMC versus IMC was obtained from the on-airport AWOS and is presented in **Section 1.7**. The meteorological data indicates that VMC conditions occur approximately 81 percent of the time and IMC the remaining 19 percent of the time. These percentages were used for this airfield capacity analysis.

3.2.2 AIRCRAFT FLEET MIX

Variations in aircraft weights and approach speeds affect an aircraft's wake turbulence generation, which, in turn, affects the spacing of aircraft on final approach. Greater spacing requirements between aircraft lower the arrival capacity of a runway system. Therefore, if an airport is serving an aircraft fleet mix that has a high percentage of aircraft with greater separation requirements, it will have a lower capacity.

The handbook methodology defines aircraft fleet mix as the percentage of operations conducted by each of four classes of aircraft. **Table 3.2-1** summarizes representative aircraft types in each classification.

[1] Wake turbulence consists of a vortex of air that is created behind the wingtip of an aircraft as it flies through the air. Wake turbulence can be hazardous if flown through. Proper separation of in-trail aircraft by air traffic control is used to avoid wake turbulence.

TABLE 3.2-1
AIRCRAFT CLASSIFICATIONS

Class	Aircraft Type	
Class A	**Small Single-Engine (Gross weight 12,500 pounds or less)**	
Typical Aircraft	Cessna 172/182	Mooney 201
	Beech, Bonanza	Piper Cherokee/Warrior
Class B	**Small, Twin-Engine (Gross weight 12,500 pounds or less)**	
Typical Aircraft	Beech Baron	Mitsubishi MU-2
	Cessna 402	Piper Navajo
	Beech King Air	Cessna Citation I
	Beechcraft 99	Phenom 100
Class C	**Large Aircraft (Gross weight 12,500 pounds to 300,000 pounds)**	
Typical Aircraft	Airbus A320/A321	Boeing MD-80
	Boeing 737	Boeing 757
	Canadair CRJ-700	Embraer 190
	DeHavilland DASH-8	Saab 340
	Gulfstream 650	Falcon 900
Class D	**Large Aircraft (Gross weight more than 300,000 pounds)**	
Typical Aircraft	Boeing 767	Airbus A330 & A350
	Boeing DC-10 / MD-11	Boeing 777 & 787

Source: AECOM, 2019 and FAA AC 150/50605, *Airport Capacity and Delay*.

Aircraft fleet mix at the Airport during 2018 was estimated using data from the FAA's Traffic Flow Management System Counts (TFMSC). Based on the data, it is estimated that Class A and Class B comprise almost 100 percent of aircraft operations and Class C aircraft comprise less than 1 percent of aircraft operations. No Class D aircraft operations occur at the Airport.

The FAA's handbook methodology uses the term "Mix Index" to describe an airport's fleet mix. The FAA defines the Mix Index as the percentage of Class C operations plus three times the percentage of Class D operations. By applying this calculation to the fleet mix percentages for the Airport, a Mix Index of 0 percent is obtained per the following equation:

Class C Operations (<1%) + (3 * Class D Operations (0%)) = Mix Index (0%)

3.2.3 RUNWAY USE

Runway use has a significant effect on airport capacity, especially at airports where one operational configuration provides greater or less capacity than another. However, in instances where runway operational configurations are similar, it is reasonable to group them together. The FAA handbook methodology recommends that operational configurations used less than 2 percent of the time be credited to another runway use configuration.

For the purpose of this capacity analysis, a single runway configuration was used and assessed. This operational configuration accounts for all aircraft operations that occur at the Airport.

3.2.4 TOUCH-AND-GO OPERATIONS

A touch-and-go operation occurs when an aircraft lands and takes-off without making a full stop. These operations are usually conducted by student pilots for the purpose of practicing landings. Touch-and-go operations do not occupy a runway for as much time as a full-stop landing or an aircraft departure. Therefore, airfields with a high percentage of touch-and-go's normally accommodate a greater number of aircraft operations within a given period.

According to the FAA's Terminal Area Forecast local aircraft operations (which are usually comprised entirely of touch-and-go's) accounted for five percent of all airport operations during 2017. For the purpose of this airfield capacity analysis, a touch-and-go value of zero percent was assumed because an extremely high hourly capacity base is derived using higher percentages with the aircraft fleet mix presented in **Section 3.2.2**.

3.2.5 PERCENTAGE ARRIVALS

The percentage of aircraft operations that are arrivals has an important influence on a runway's hourly capacity. For example, a runway used exclusively for arrivals has a different capacity than a runway used exclusively for departures or a runway used for a mixture of arrivals and departures. In general, the higher the percentage of arrivals, the lower the hourly capacity of a runway. This is because arrivals usually have greater separations between aircraft and longer runway occupancy times than departures.

The percentage of arrivals typically varies throughout the day. Consequently, there is no required procedure for stating what percentage of arrivals should be used in capacity analyses. Some analyses use the percentage of arrivals during the peak hour, others use the most conservative percentage, while others use 50 percent and some calculate capacity using a range of arrivals and then show a range of resulting capacities. For this analysis, capacities were calculated using 50 percent arrivals because no hourly counts of aircraft operations exist.

3.2.6 EXIT TAXIWAY LOCATIONS

Exit taxiways affect airfield capacity because their location influences an aircraft's runway occupancy time. The longer an aircraft remains on a runway, the lower the runway's capacity. When exit taxiways are properly located, landing aircraft can quickly exit the runway, thereby lowering occupancy times and increasing the runway's capacity.

According to the capacity tables, exit taxiways for a runway having a Mix Index of 0 to 20 percent should be in the range of 2,000 to 4,000 feet from the runway's threshold for maximum effectiveness at reducing runway occupancy time. **Table 3.2-2** presents the number of exit taxiways located within these ranges at the Airport.

TABLE 3.2-2
NUMBER OF EXIT TAXIWAYS IN OPTIMAL LOCATIONS

Runway	Number of Exit Taxiways Between 2,000 and 4,000 feet
1	1
19	1

Source: AECOM, 2019.

3.2.7 HANDBOOK METHODOLOGY CAPACITIES

3.2.7.1 Hourly Airfield Capacity

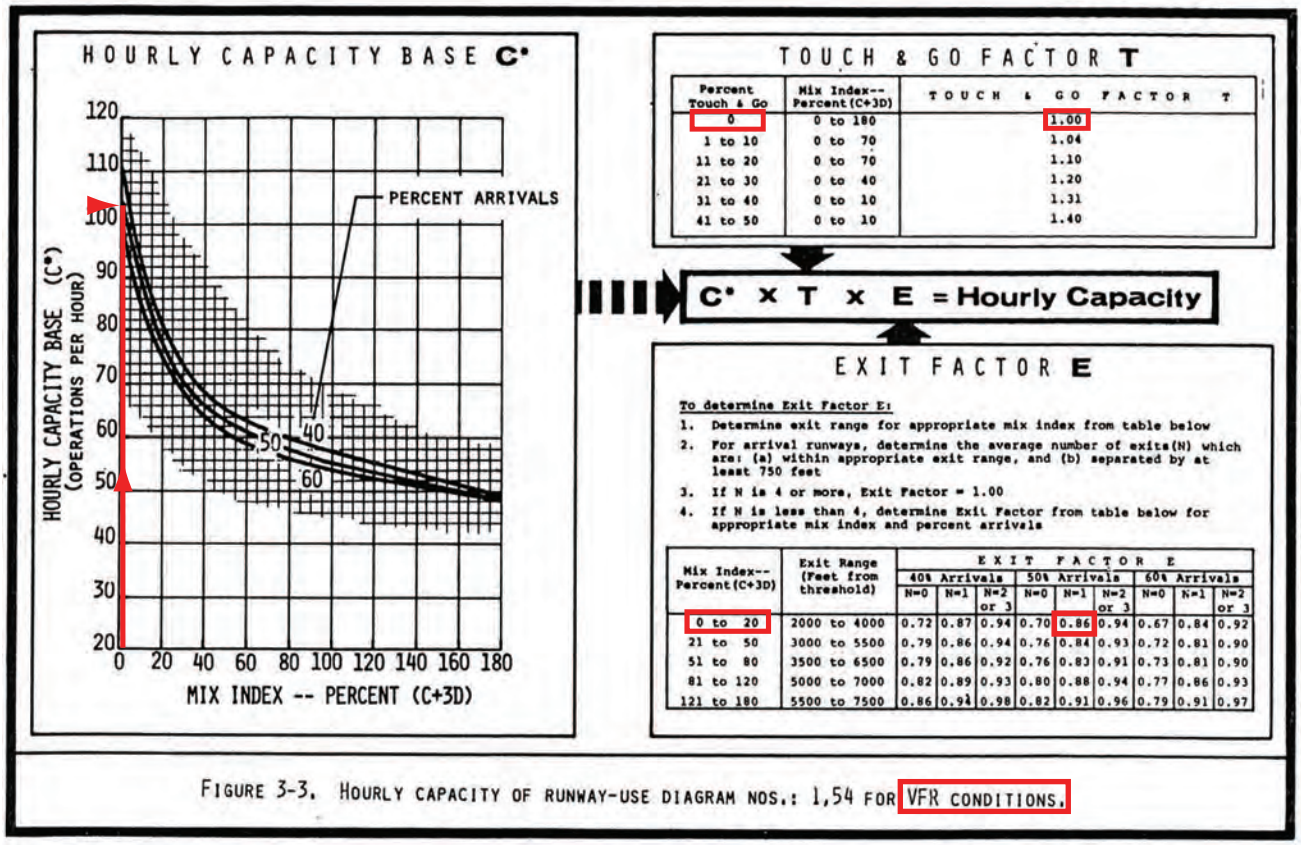
The airfield's hourly and annual capacities were calculated using the preceding information and the FAA's handbook methodology. Hourly capacity values were determined using the following equation:

Hourly capacity of the runway component = C * T * E

Where: C = Base Capacity
T = Touch-and-Go Factor
E = Exit Factor

The base capacity value (C), the touch-and-go factor (T), and the exit factor (E) are derived from the hourly airfield capacity graphs contained in the handbook methodology. Graphs for the existing airfield during VMC and IMC are shown on **Figure 3.2-1**.

Using the data presented in the preceding paragraphs and the graphs, hourly capacity values of 89 operations during VMC and 59 operations during IMC were derived. **Table 3.2-3** provides a comparison of these capacities to the projected number of peak hour aircraft operations. As the table indicates, forecasted peak hour aircraft operations are significantly lower than the airfield's VMC or IMC capacity range during the study period. Therefore, the existing airfield will have sufficient capacity to accommodate peak hour operations without incurring delay.



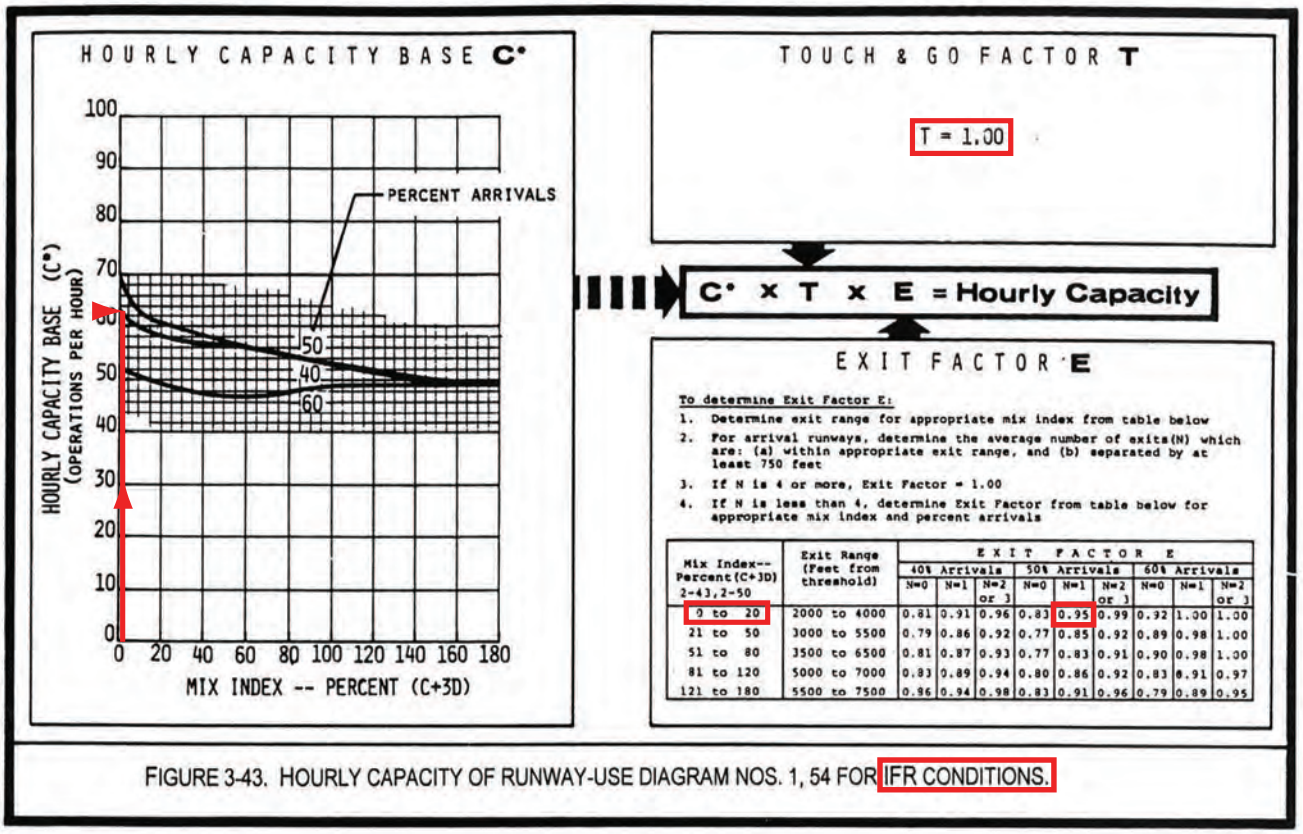
Percent Touch & Go	Mix Index--Percent (C+3D)	TOUCH & GO FACTOR T
0	0 to 180	1.00
1 to 10	0 to 70	1.04
11 to 20	0 to 70	1.10
21 to 30	0 to 40	1.20
31 to 40	0 to 10	1.31
41 to 50	0 to 10	1.40

To determine Exit Factor E:

1. Determine exit range for appropriate mix index from table below
2. For arrival runways, determine the average number of exits(N) which are: (a) within appropriate exit range, and (b) separated by at least 750 feet
3. If N is 4 or more, Exit Factor = 1.00
4. If N is less than 4, determine Exit Factor from table below for appropriate mix index and percent arrivals

Mix Index--Percent (C+3D)	Exit Range (Feet from threshold)	EXIT FACTOR E								
		40% Arrivals			50% Arrivals			60% Arrivals		
		N=0	N=1	N=2 or 3	N=0	N=1	N=2 or 3	N=0	N=1	N=2 or 3
0 to 20	2000 to 4000	0.72	0.87	0.94	0.70	0.86	0.94	0.67	0.84	0.92
21 to 50	3000 to 5500	0.79	0.86	0.94	0.76	0.84	0.93	0.72	0.81	0.90
51 to 80	3500 to 6500	0.79	0.86	0.92	0.76	0.83	0.91	0.73	0.81	0.90
81 to 120	5000 to 7000	0.82	0.89	0.93	0.80	0.88	0.94	0.77	0.86	0.93
121 to 180	5500 to 7500	0.86	0.94	0.98	0.82	0.91	0.96	0.79	0.91	0.97

FIGURE 3-3. HOURLY CAPACITY OF RUNWAY-USE DIAGRAM NOS.: 1,54 FOR VFR CONDITIONS.



To determine Exit Factor E:

1. Determine exit range for appropriate mix index from table below
2. For arrival runways, determine the average number of exits(N) which are: (a) within appropriate exit range, and (b) separated by at least 750 feet
3. If N is 4 or more, Exit Factor = 1.00
4. If N is less than 4, determine Exit Factor from table below for appropriate mix index and percent arrivals

Mix Index--Percent (C+3D) 2-43, 2-50	Exit Range (Feet from threshold)	EXIT FACTOR E								
		40% Arrivals			50% Arrivals			60% Arrivals		
		N=0	N=1	N=2 or 3	N=0	N=1	N=2 or 3	N=0	N=1	N=2 or 3
0 to 20	2000 to 4000	0.81	0.91	0.96	0.83	0.95	0.99	0.92	1.00	1.00
21 to 50	3000 to 5500	0.79	0.86	0.92	0.77	0.85	0.92	0.89	0.98	1.00
51 to 80	3500 to 6500	0.81	0.87	0.93	0.77	0.83	0.91	0.90	0.98	1.00
81 to 120	5000 to 7000	0.83	0.89	0.94	0.80	0.86	0.92	0.83	0.91	0.97
121 to 180	5500 to 7500	0.96	0.94	0.98	0.83	0.91	0.96	0.79	0.89	0.95

FIGURE 3-43. HOURLY CAPACITY OF RUNWAY-USE DIAGRAM NOS. 1, 54 FOR IFR CONDITIONS.

Source: FAA AC 150/5060-5, *Airport Capacity and Delay* and AECOM, 2019.

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AIRFIELD CAPACITY GRAPHS

FIGURE 3.2-1

TABLE 3.2-3
HOURLY CAPACITIES FOR THE EXISTING AIRFIELD

Year	Hourly Capacity		Estimated VMC Peak Hour Aircraft Operations
	VMC	IMC	
2017	89	59	10
2022			11
2027			11
2032			12
2037			13

Source: AECOM, 2019 and FAA AC 150/5060-5, *Airport Capacity and Delay*.
Note: Estimated peak hour operations were obtained from the Peaking Forecast contained in **Section 2.0**, Aviation Forecast.

3.2.7.2 Annual Airfield Capacity

An airfield's annual capacity, or ASV, is calculated by determining the following three items:

- The airfield's weighted hourly capacity (Cw),
- The daily demand ratio (D), and
- The hourly demand ratio (H).

The airfield's weighted hourly capacity (Cw) is calculated via a formula that considers the hourly capacity values during visual and instrument conditions, as well as the percentage of time that each weather condition occurs. The weighted hourly capacity of the Airport's airfield is calculated to be 67 operations. This capacity value is only used for calculating ASV. It does not have any other use and should not be compared to hourly levels of demand.

The daily demand ratio (D) is calculated by dividing the annual number of aircraft operations by the average daily operations during the peak month. This calculation used forecast data for calendar year 2017 and results in a daily demand factor of 274 (29,032 annual operations/106 average daily demand during the peak month). This value is slightly lower than the range of daily demand ratios (i.e., 280 to 310) listed in the FAA's handbook methodology as being typical for an airport with a Mix Index between 0 and 20. As previously noted, the Mix Index for the Airport is estimated to be less than 1.

The hourly demand ratio (H) is calculated by dividing the average daily operations during the peak month by the average peak hour operations during the peak month. This calculation used forecast data for calendar year 2017 and results in a daily demand factor of 10 (106 average day, peak month operations/10 average peak hour demand during the peak month). This value is within the range of demand ratios (i.e., 7 to 11) listed in the FAA's handbook methodology as being typical for an airport with a Mix Index between 0 and 20 and was used for the purpose of this analysis. **Table 3.2-4** presents the calculated ASV for the Airport.

TABLE 3.2-4
ESTIMATED ASV

Weighted Hourly Airfield Capacity (CW[1])	Daily Demand Ratio (D)	Hourly Demand Ratio (H)	ASV
67	274	10	183,596

Sources: AECOM, 2019 and FAA AC 150/5060-5, *Airport Capacity and Delay*.
Notes: [1] The CW is a weighted value that considers hourly capacities during VMC and IMC. Therefore, it should not be compared to the hourly capacities presents in the "Hourly Airfield Capacities" table.

The estimated ASV using this methodology, approximately 184,000 annual operations, is identical to the value presented by the Florida Department of Transportation (FDOT) in the *Florida Aviation System Plan Demand Capacity Analysis Summary* for Tri-County Airport.

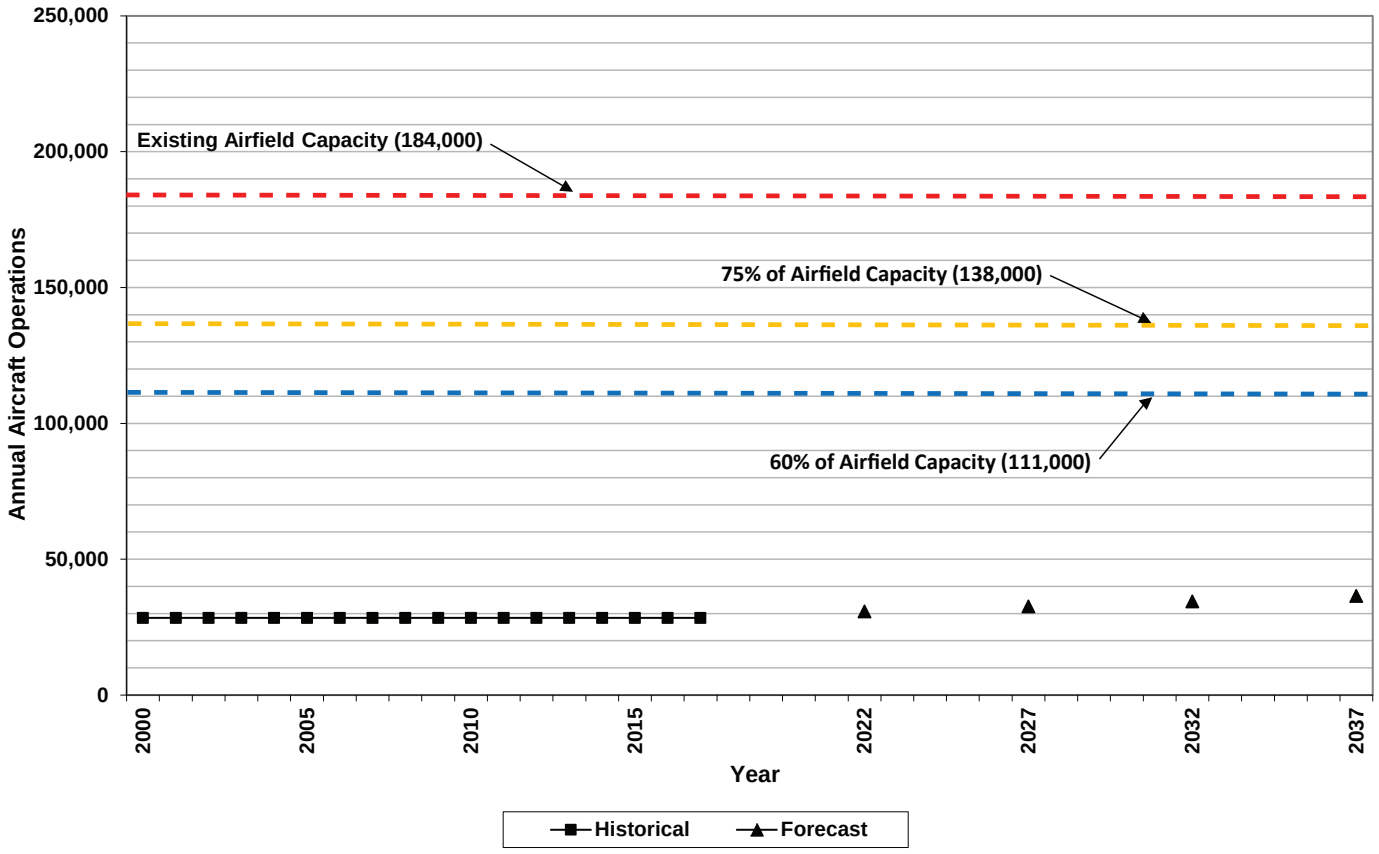
Table 3.2-5 and **Figure 3.2-2** provide a comparison of the aircraft operations forecast to the existing airfield's ASV. As the tables indicates, aircraft operations in 2017 consumed approximately 16 percent of available capacity. Projected levels of aircraft operations in 2037 will consume 20 percent of capacity.

TABLE 3.2-5
COMPARISON OF BASE FORECAST TO ASV

Year	Forecast of Aircraft Operations	Estimated ASV	Forecast Operations as a Percentage of ASV
2017	29,032	183,596	16%
2022	30,741	183,596	17%
2027	32,549	183,596	18%
2032	34,464	183,596	19%
2037	36,493	183,596	20%

Source: AECOM, 2019 and FAA AC 150/5060-5, *Airport Capacity and Delay*.

FAA Order 5090.3C, *Field Formulation of the National Plan of Integrated Airport Systems (NPIAS)*, specifies that airport sponsors should begin planning capacity improvements when annual aircraft operations are between 60 to 75 percent of annual capacity. The preceding table indicates that the Airport will not reach 60 percent of capacity during the study period. Therefore, no increase of airfield capacity will be needed during the study period.



Source: AECOM, 2019.

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AIRCRAFT OPERATIONS VERSUS ASV

FIGURE 3.2-2

3.3 AIRFIELD FACILITY REQUIREMENTS

Airfield facility requirements include all items needed to ensure safe and efficient operation of aircraft at the Airport. This includes runways and taxiways, as well as their associated geometric clearances. It also includes items such as aircraft parking aprons, navigational aids, etc. The following paragraphs provide a discussion of these items, as well as the associated FAA design criteria.

The FAA established airfield design criteria to ensure the safety and efficiency of airfield operations. These standards specify the dimensional and separation requirements for existing and proposed facilities based upon the types of aircraft expected to operate at the Airport.

3.3.1 DESIGN AIRCRAFT

The design aircraft is defined by the FAA as the most demanding aircraft (in terms of approach speed, tail height, wingspan, and dimensions of the aircraft undercarriage) that is likely to use the Airport on a regular basis. Since one type of aircraft may be more demanding than another, in terms of these items, the design aircraft may be a composite of various aircraft rather than one specific aircraft.

These items are grouped and defined by the FAA according to three parameters. The first parameter is the Aircraft Approach Category which groups aircraft according to their approach speed. The Aircraft Approach Category is based on the landing speed of the aircraft, which is defined as 1.3 times the stall speed of the aircraft. **Table 3.3-1** provides a listing of these categories.

TABLE 3.3-1
AIRCRAFT APPROACH CATEGORY

Aircraft Approach Category	Approach Speed
A	Approach speed less than 91 knots
B	Approach speed 91 knots or more, but less than 121 knots
C	Approach speed 121 knots or more, but less than 141 knots
D	Approach speed 141 knots or more, but less than 166 knots
E	Approach speed 166 knots or more

Source: FAA AC 150/5300-13A, *Airport Design*.

The second parameter is the Airplane Design Group. This parameter addresses two elements: an aircraft's tail height and an aircraft's wingspan; both measured in feet. Airplane Design Groups are defined in **Table 3.3-2**.

TABLE 3.3-2
AIRPLANE DESIGN GROUP

Group	Tail Height (feet)	Wingspan (feet)
I	Less than 20	Less than 49
II	20 to less than 30	49 to less than 79
III	30 to less than 45	79 to less than 118
IV	45 to less than 60	118 to less than 171
V	60 to less than 66	171 to less than 214
VI	66 to less than 80	214 to less than 262

Source: FAA AC 150/5300-13A, *Airport Design*.

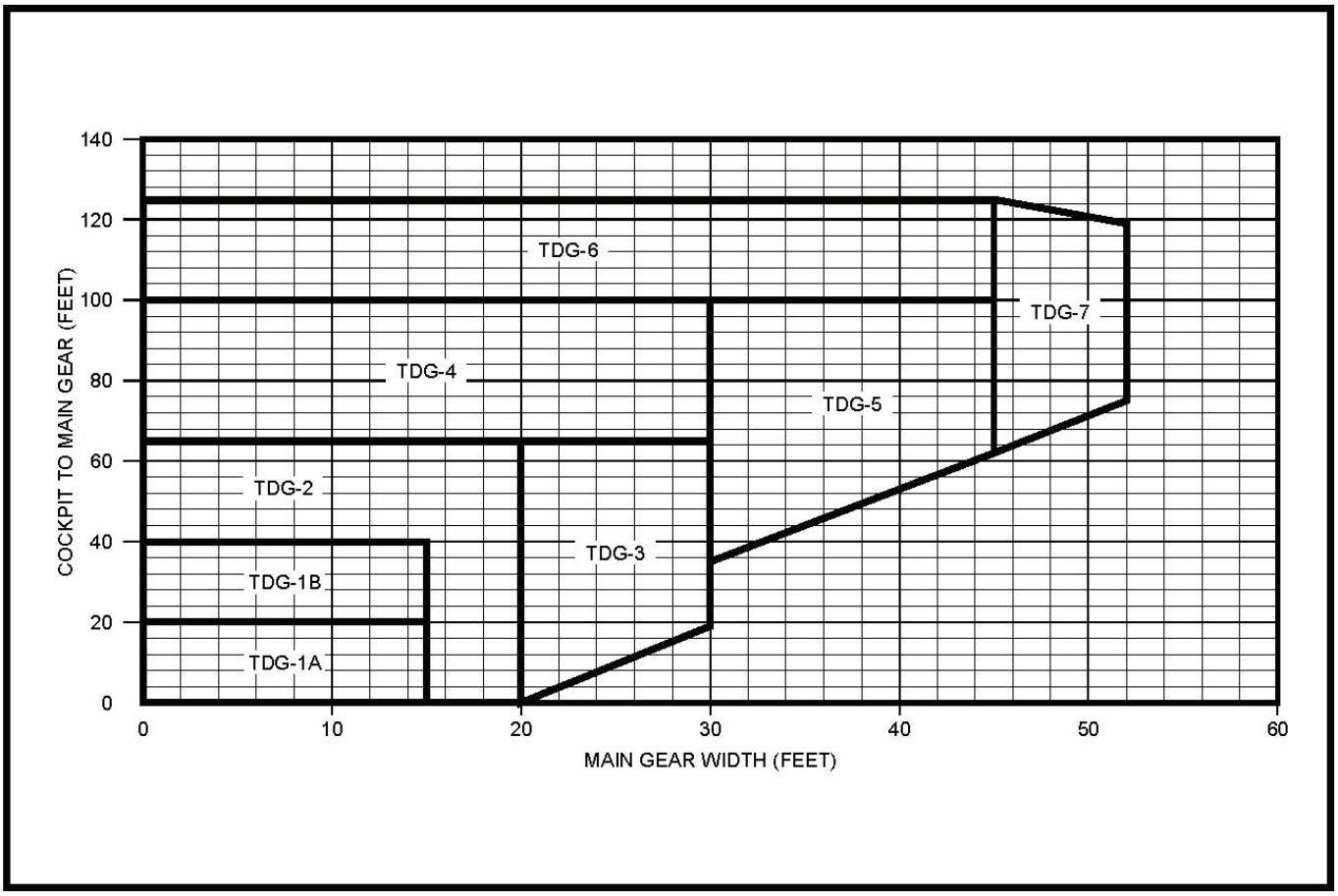
The third and final parameter is the Taxiway Design Group. This parameter is based upon the undercarriage dimensions of the aircraft, specifically the main gear width and its distance from the cockpit. Unlike the Aircraft Approach Category and the Airplane Design Group, the Taxiway Design Groups cannot be shown in a table format. **Figure 3.3-1** provides an illustration that defines the range of each Taxiway Design Group.

Although FAA criteria are based upon these three parameters, aircraft weight and length of haul should also be considered when assessing the adequacy of pavement strength and runway length requirements, respectively.

3.3.1.1 Existing and Future Design Aircraft

FAA design standards specify that runway length requirements are to be based upon the most demanding aircraft or group of aircraft that are anticipated to use the airport on a regular basis. FAA Order 5090.3C *Field Formulation of the National Plan of Integrated Airport Systems (NPIAS)* defines the critical aircraft (also called the design aircraft) as the single aircraft or composite of the most demanding characteristics of several aircraft that make substantial use of the airport. "Substantial use" of a general aviation airport is defined as 500 or more annual itinerant operations. The most demanding aircraft with 500 annual itinerant operations at the Airport will be identified as the design aircraft.

As documented in **Section 2.7** the Cessna 172 is the Airport's existing critical aircraft and the Beech King Air B200 is forecast to be the future critical aircraft. Data for these aircraft are shown in **Table 3.3-3.**



Source: FAA AC 150/5300-13A, *Airport Design.*

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TAXIWAY DESIGN GROUPS

FIGURE 3.3-1

TABLE 3.3-3
EXISTING AND FUTURE DESIGN AIRCRAFT DATA

	Aircraft	Approach Speed (knots)/ (Category)	Tail Height (ft)/ (Design Group)	Wing Span (ft)/ (Design Group)	Taxiway Design Group	Maximum Takeoff Weight (lbs.)
Existing	Cessna 172	62 (A)	8.9 / I	36.08 (I)	1A	2,550
Future	Beech King Air B200	103 / (B)	14.9 / II	54.5 / (II)	2	12,500

Source: FAA Aircraft Characteristics Database v2, October, 2018 and Raytheon Beech Super King Air B200 Aircraft Handbook, May 2000.

3.3.2 RUNWAY DESIGN CODE AND AIRPORT REFERENCE CODE

The FAA has established design standards for the planning and design of runway facilities. These standards are described in FAA AC 150/5300-13A, *Airport Design*. This AC provides criteria for specifying a Runway Design Code (RDC) and an Airport Reference Code (ARC). The RDC and the ADC are used to determine which design standards are applicable to the airport's facilities.

The RDC is comprised of the Aircraft Approach Category and the Airplane Design Group (described earlier) and the runway's visibility minimums. These minimums are expressed in feet of Runway Visibility Range (RVR) as shown in **Table 3.3-4.**

TABLE 3.3-4
VISIBILITY MINIMUMS

RVR (feet)	Flight Visibility Category (Statute miles)
VIS (visual)	Visual approaches only
5000	Not lower than 1 mile
4000	Lower than 1 mile, but not lower than ¾ mile
2400	Lower than ¾ mile, but not lower than ½ mile
1600	Lower than ½ mile, but not lower than ¼ mile
1200	Lower than ¼ mile

Source: FAA AC 150/5300-13A, *Airport Design*.

The lowest published visibility minimum on either end of Runway 1-19 is 1 mile which places it in the 5000 RVR category. The Cessna 172 is the Airport's existing critical aircraft and the Beech King Air B200 is forecast to be the future critical aircraft. Therefore, the Airport's existing RDC is A-I-5000 and the Airport's future RDC will be B-II-5000. The latter should be used for planning future facilities associated with Runway 1-19.

The Airport Reference Code is determined by the runway with the highest RDC minus the visibility minimum. Therefore the Airport's existing reference code is A-1 (small) and will increase to a B-II (small) in the future. The "small" designation indicates that the critical aircraft has a maximum

takeoff weight (MTOW) of 12,500 pounds or less. The MTOW of the Beech King Air B200 is exactly 12,500 pounds.

3.3.3 NUMBER OF RUNWAYS

The number of runways required is typically dependent on a number of factors including wind coverage, capacity requirements, and less frequently, environmental factors. The wind coverage analysis provided in **Section 1.7** indicated that Runway 1-19 provides coverage that exceeds the minimum requirement of 95 percent with a crosswind component of 10.5 knots. Furthermore, the airfield capacity assessment determined that the existing runway will provide sufficient capacity to accommodate all projected aircraft operations throughout the study period without incurring excessive delay. Therefore no additional runways are required during the planning period.

3.3.4 RUNWAY LENGTH REQUIREMENTS

The purpose of a runway length analysis is to determine if the existing runway length is adequate to serve the needs of all existing and future aircraft operating at the Airport. The FAA specifies that the AC 150/5325-4B, *Runway Length Requirements for Airport Design* must be used to identify the runway lengths required to accommodate aircraft that regularly use the Airport. The FAA defines "regular use" as 500 annual itinerant operations.

3.3.4.1 Methodology

The referenced AC provides runway length curves for the weight and characteristics of the design aircraft or a group of critical design aircraft under consideration. Most aircraft currently operating at the Airport are in the A-I and A-II reference code and have maximum takeoff weights of 12,500 pounds or less. There also fewer numbers of operations by larger aircraft such as multi-engine piston, turboprop and small business jets. The Beech King Air B200 is projected to be the future critical aircraft and therefore was selected as being the representative design aircraft for assessing runway length requirements.

All AC at the Airport, identified through the use of the TFMSC data, are under 60,000 pounds MTOW. Therefore, according to the AC, when the MTOW of listed airplanes is 60,000 pounds or less, the recommended runway length is determined according to a *family grouping of airplanes* having similar performance characteristics and operating weights. This would be aircraft 12,500 pounds or less for the Airport.

The AC provides runway length curves for determining the runway length requirements of aircraft that have maximum takeoff weights of 12,500 pounds or less with approach speeds of 50 knots or more and having less than 10 passenger seats. The curves are subdivided into "95 percent of the fleet" or "100 percent of the fleet" categories. These categories are based on an airport's location and type of population it serves.

Tri-County Airport serves small population centers such as Bonifay and Chipley as well as semi-rural communities in Holmes, Washington and Jackson counties. Therefore, the "95 percent of

the fleet" category was used for the analysis. Using an input of 91 degrees Fahrenheit (i.e., the mean maximum temperature of the hottest month) results in a runway length requirement of 3,150 feet (see **Figure 3.3-2**). Certain aircraft, especially small business jets that conduct less than 500 annual operations, require longer runway lengths.

3.3.4.2 Recommended Runway Length

The existing runway length of 5,398 feet provides sufficient length to accommodate all existing and future aircraft projected to regularly use the Airport. Consequently, no additional runway length will be required during the study period.

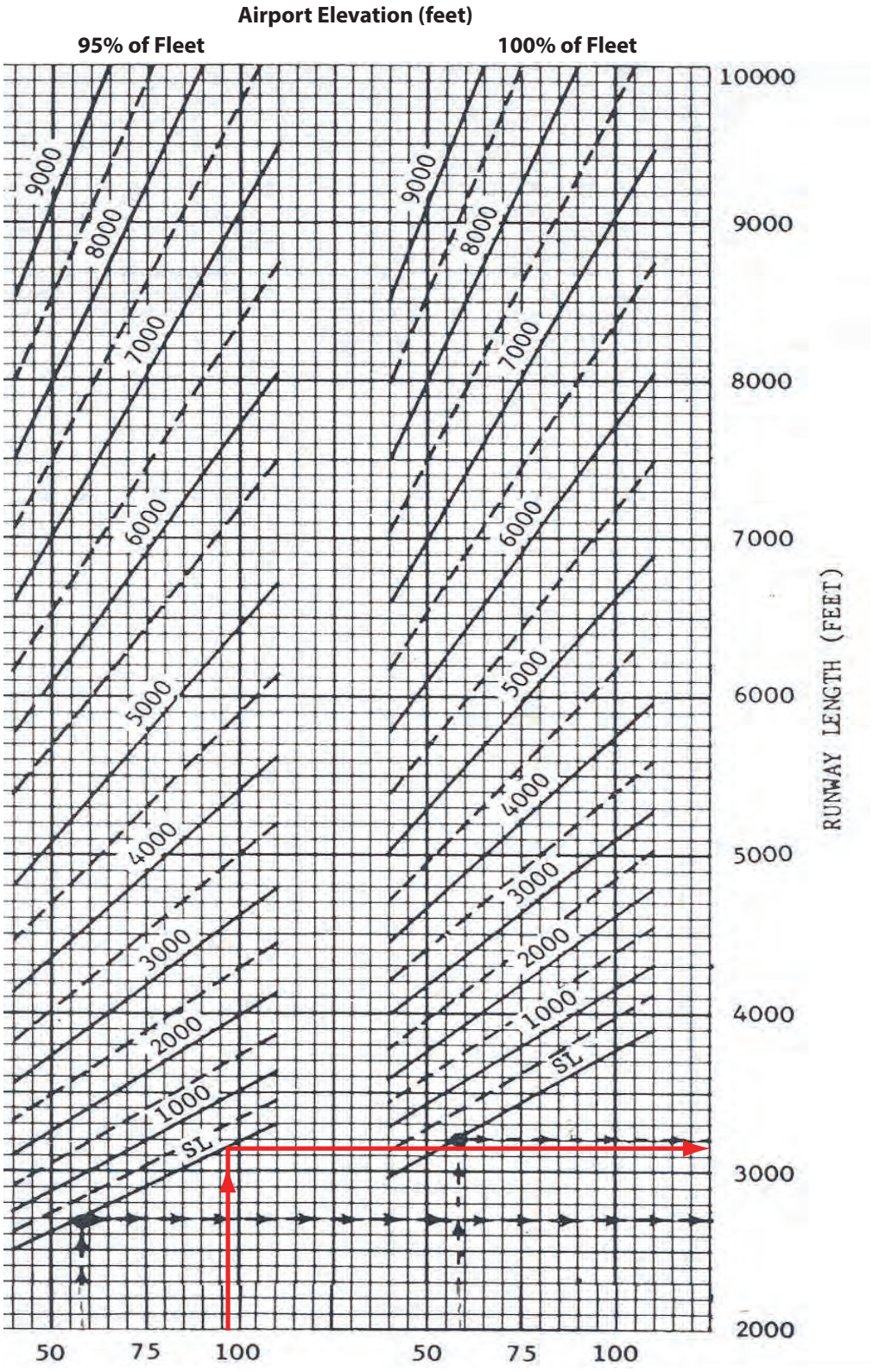
3.3.5 RUNWAY WIDTH

Runway 1-19 currently has a width of 75 feet. This width exceeds the current design standard of 60 feet for the existing Design Group A-1 but meets the future design standard for runways accommodating B-II (small) aircraft with visibility minimums not lower than 1 mile. Therefore, no change to runway width is required during the planning period.

3.3.6 RUNWAY PAVEMENT STRENGTH AND CONDITION

The FAA 5010 Form for Tri-County Airport indicates that Runway 1-19 was designed to accommodate a maximum gross weight of 30,000 pounds for aircraft with a single wheel configuration. A review of historical aircraft operational data revealed that essentially all aircraft operating at the Airport have maximum takeoff weights of less than 30,000 pounds. Therefore, the Runway 1-19 pavement strength should be maintained at 30,000 pounds for the duration of the study period.

The existing runway pavement condition was last assessed in 2015 through the statewide airfield pavement management program and the pavement condition index map is presented in **Section 1.3.** Unfortunately, that map presents pavement conditions prior to the runway's extension and repaving. Therefore, an accurate visual representation of runway pavement conditions will not be available until the next pavement management report is published. However, given the last repaving occurred within the last few years, it is unlikely that another rehabilitation of Runway 1-19 pavement will be needed during the next 10 years.



Source: FAA AC 150/5325-4B and AECOM, 2019.

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RUNWAY LENGTH CURVES (SMALL AIRCRAFT <10 SEATS)

FIGURE 3.3-2

3.3.7 RUNWAY SHOULDERS

FAA design standards specify that runways should have shoulders that "provide resistance to blast erosion and accommodate the passage of maintenance and emergency equipment and the occasional passage of aircraft veering from the runway." The design standard for shoulders on runways serving aircraft in Design Code B-II is 10 feet. The design standard recommends turf shoulders adjacent to runways accommodating ADG-II aircraft. Runway 1-19 meets this standard.

3.3.8 BLAST PAD

Blast pads are paved areas beyond runway ends that provide protection from blast erosion associated with jet aircraft operations. The design standard for runways serving A/B-I (small) is width of 80 feet and a length of 60 feet, while the design standard for runway serving B-II (small) aircraft is a width of 95 feet and a length of 150 feet.[2] Runway 1-19 does not currently have blast pads. Therefore, blast pads should be constructed the next time the runway is rehabilitated or reconstructed.

3.3.9 GEOMETRIC REQUIREMENTS

While there are many geometric requirements associated with runways, this section addresses the geometric requirements associated with the following items:

- Runway Safety Areas (RSA)
- Runway Object Free Areas (ROFA)
- Obstacle Free Zones (OFZ), and
- Runway Protection Zones (RPZ)

3.3.9.1 Runway Safety Areas

Runway safety areas (RSAs) are defined by the FAA as "surfaces surrounding a runway that are prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway." RSAs consist of a relatively flat graded area free of objects and vegetation that could damage aircraft. According to FAA guidance, the RSA should be capable, under dry conditions, of supporting aircraft rescue and firefighting equipment and the occasional passage of aircraft without causing structural damage to the aircraft. The RSA must be cleared, graded and have no surface variations that could be potentially hazardous. The RSA must also be drained by grading or storm sewers to prevent water accumulation. Longitudinal and transverse grades within the RSA must meet specific requirements. **Table 3.3-5** presents the FAA design standards for the RSA on Runway 1-19.

[2] These dimensions are applicable to runways with visibility minimums of not lower than 1 mile.

TABLE 3.3-5
RUNWAY SAFETY AREA REQUIREMENTS FOR RUNWAY 1-19

Condition	Design Code	Runway Safety Area Item	Dimension (ft)
Existing	A-I (small)	Length Beyond Departure End	240
		Length Prior to Landing Threshold	240
		Width	120
Future	B-II (small)	Length Beyond Departure End	300
		Length Prior to Landing Threshold	300
		Width	150

Source: FAA AC 150/5300-13A, *Airport Design*.

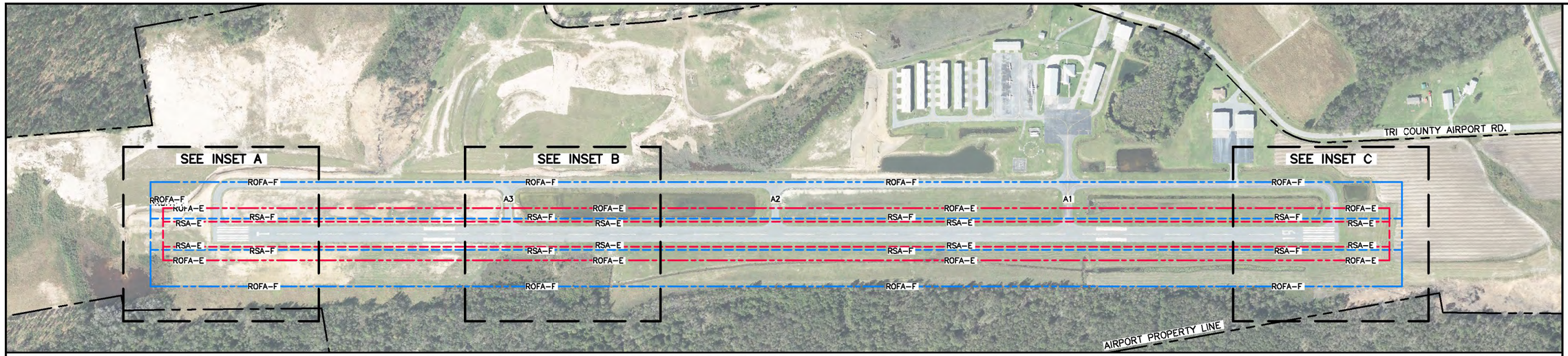
Based on a review of aerial photography and ground contours (see Inset B on **Figure 3.3-3**), it appears that a small portion of the water retention pond located between taxiways A2 and A3 is located within the RSA for existing conditions and is definitely located within the RSA for future conditions. Water retention ponds need to be removed from the RSA in order for it to meet design standards. This pond should also be modified to ensure it meets the requirements of FAA AC 150/5200-33B, *Hazardous Wildlife Attractants on or Near Airports.*

The RSA requirements for "future conditions" are also not met due to agricultural land uses beyond the north end of the runway (see Figure 3.3-3). The southern limit of the agricultural area will need to be moved north to remove this land use from the future RSA.

The Alternatives section of this study presents recommendations for resolving the existing and future RSA deficiencies in accordance with FAA guidance specified in FAA Standard Operating Procedure 8.00, *Runway Safety Area Determination* and FAA Advisory Circular Order 5200.8, *Runway Safety Area Program*.

3.3.9.2 Runway Object Free Areas

In addition to the RSA, a Runway Object Free Area (ROFA) is also defined around runways in order to enhance the safety of aircraft operations. The FAA defines the ROFA as an area cleared of all objects except those that are related to NAVAIDs and aircraft ground maneuvering. However, unlike the RSA, there is no physical component to the ROFA. Thus, there is no requirement to support an aircraft or emergency response vehicles. **Table 3.3-6** presents the FAA design standards for the Runway 1-19 ROFA, while Figure 3.3-3 provides an illustration of the required dimensions versus existing conditions.



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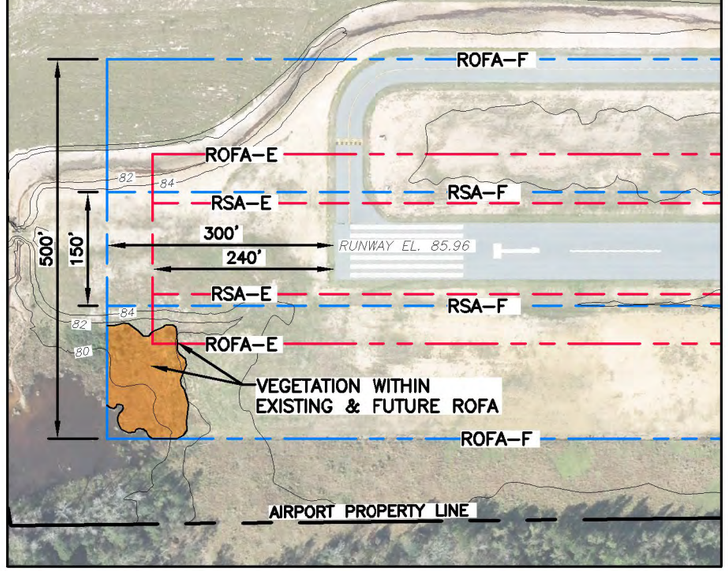
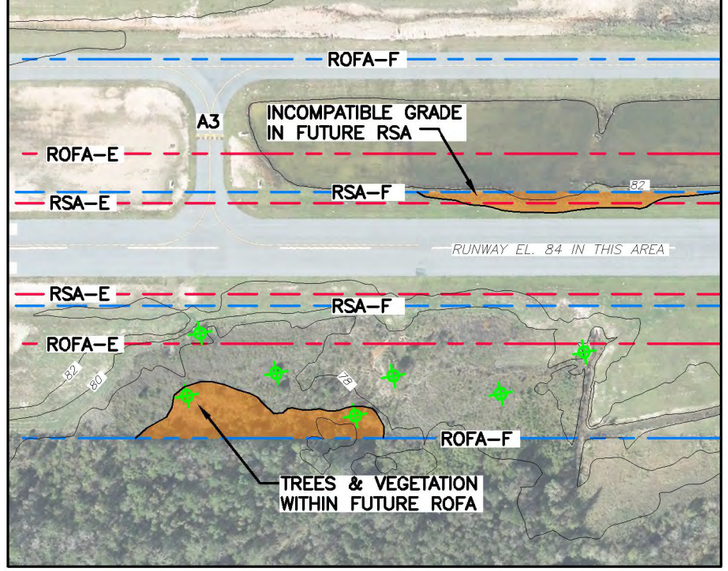
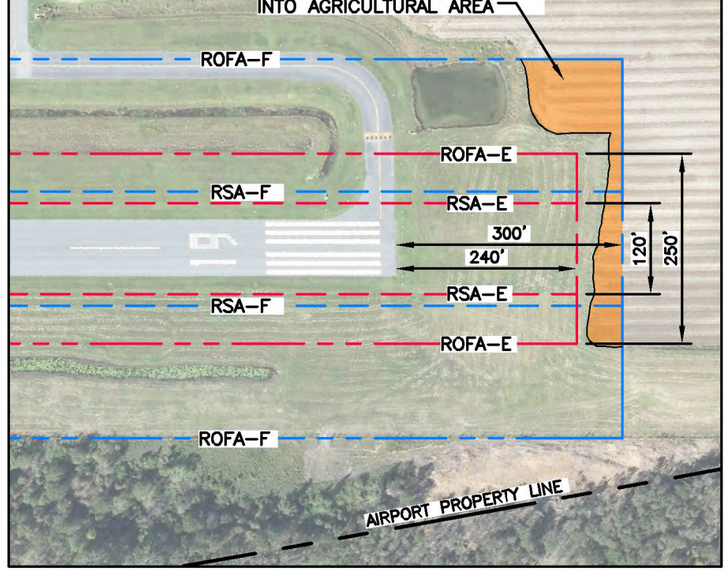


INSET A



INSET B



INSET C

LEGEND

- INCOMPATIBLE AREAS WITHIN EXISTING/FUTURE RSA & ROFA
- SURVEYED TREE OBSTRUCTIONS
- RSA–E — EXISTING RUNWAY SAFETY AREA
- RSA–F — FUTURE RUNWAY SAFETY AREA
- ROFA–E — EXISTING RUNWAY OBJECT FREE AREA
- ROFA–F — FUTURE RUNWAY OBJECT FREE AREA

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TRI-COUNTY AIRPORT
MASTER PLAN UPDATE

RUNWAY SAFETY / OBJECT FREE AREAS

FIGURE 3.3-3

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TABLE 3.3-6
RUNWAY OBJECT FREE AREA REQUIREMENTS FOR RUNWAY 1-19

Condition	Design Code	Runway Object Free Area	Dimension (ft)
Existing	A-I (small)	Length Beyond Runway End	240
		Length Prior to Landing Threshold	240
		Width	250
Future	B-II (small)	Length Beyond Runway End	300
		Length Prior to Landing Threshold	300
		Width	500

Source: FAA AC 150/5300-13A, *Airport Design*.

The portion of the existing ROFA on the east side of the runway, across from Taxiway A3, does not meet FAA design standards due to vegetation. Vegetation removal is needed to bring this area into compliance. Additional vegetation removal will be required in the same area to bring the future ROFA into compliance. A project to implement vegetation removal is therefore recommended and will be included in the Facilities Implementation Plan.

The portion of the future ROFA on the approach end of Runway 19 also will not meet FAA design standards due to agricultural land uses previously described for the RSA. This area can be brought into compliance by reducing the limits of agricultural land use. A modification to, or termination of, the existing farming lease is therefore recommended.

3.3.9.3 Obstacle Free Zones

The OFZ is a clearing standard that precludes aircraft and other object penetrations, except for frangible navigational aids that need to be located in the OFZ due to their function. The OFZ is based on the size of aircraft using the runway and approach minimums. **Table 3.3-7** shows the required dimensions of the existing and future OFZ for Runway 1-19. Runway 1-19 does not meet the OFZ design standard due to a vegetative obstruction on the east side of the runway across from connector Taxiway A3. The recommended action for resolution of this deficiency is vegetation removal as recommended in the preceding paragraph. A project to implement this recommendation will be included in the Facilities Implementation Plan.

TABLE 3.3-7
OBSTACLE FREE ZONE REQUIREMENTS FOR RUNWAY 1-19

Condition	Design Standard	Runway Obstacle Free Zone	Dimension (ft)
Existing	A-I (small)	Length (beyond end of runway)	200
		Width	250
Future	B-II (small)	Length (beyond end of runway)	200
		Width	250

Source: FAA AC 150/5300-13A, *Airport Design*.

3.3.9.4 Runway Protection Zones

The RPZ is a defined area on the ground that is located prior to a runway's landing threshold and beyond the runway end that should be cleared of incompatible objects and activities. Its purpose is to enhance the safety and protection of people and property on the ground. This is accomplished through airport owner control of property within the limits of the RPZ. FAA design standards recommend that airport owners exercise control through property acquisition, but in cases where that is not possible the design standard recommends that airport owners maintain the RPZ clear of incompatible land uses and activities through zoning or other types of land use controls. **Table 3.3-8** presents the dimensions of the existing and future RPZs on Runway 1-19. The size of the RPZ will not change with the increase in Design Code.

TABLE 3.3-8
RUNWAY PROTECTION ZONES FOR RUNWAY 1-19

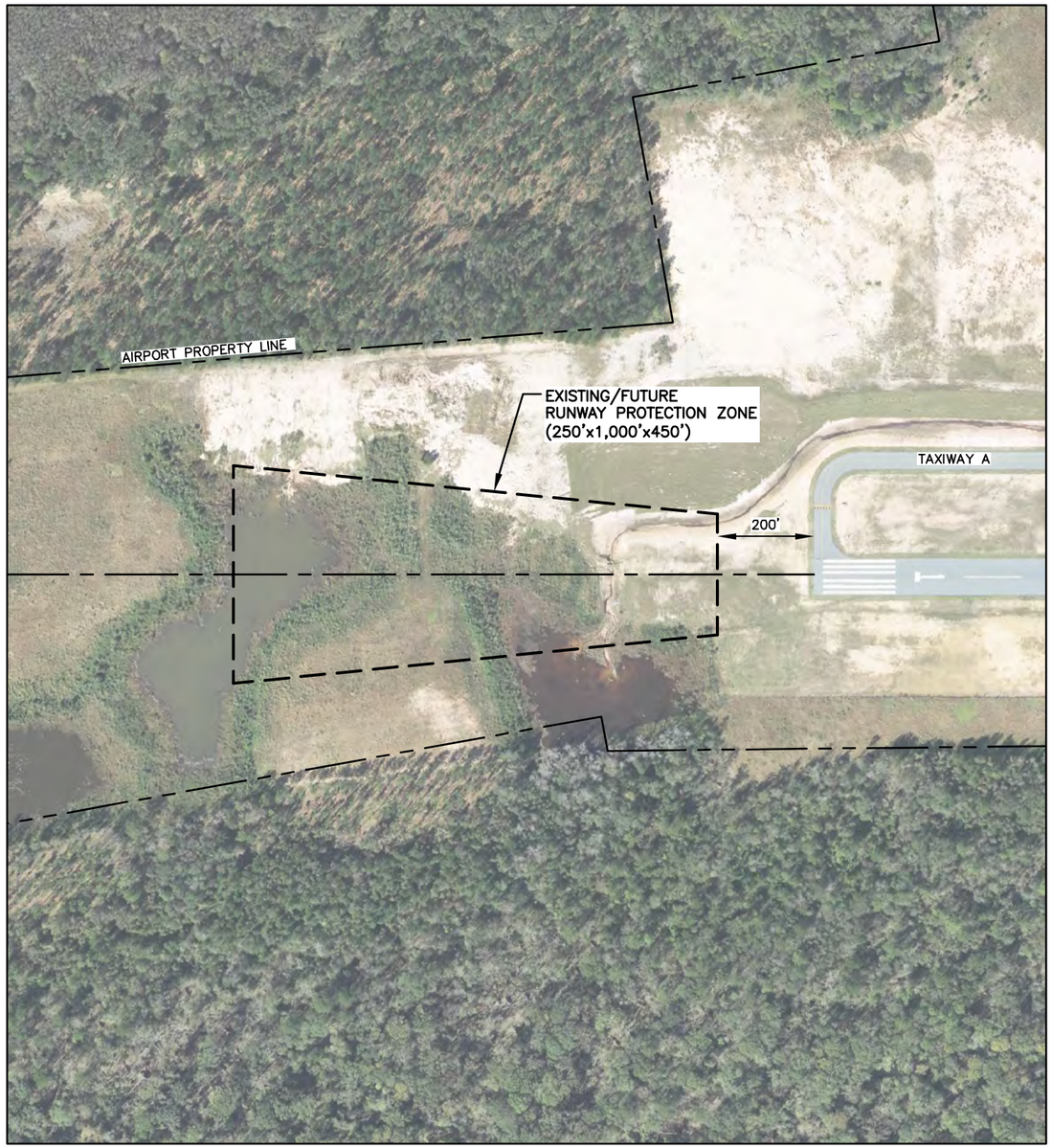
Condition	Design Code	Item	Dimension (ft)
Existing	A-I (small)	Length	1,000
		Inner Width	250
		Outer Width	450
Future	B-II (small)	Length	1,000
		Inner Width	250
		Outer Width	450

Source: FAA AC 150/5300-13A, *Airport Design*.

The existing and future RPZ on the approach end of Runway 19 extends off Airport property, but ends just short of Tri-County Road (CR 162) (see **Figure 3.3-4**). The RPZs (existing and future) on the approach end of Runway 1 will remain on Airport property. Current land uses with these RPZs meet the FAA's land use guidelines.

3.3.10 TAXIWAYS

Taxiways accommodate the movement of aircraft from parking aprons, hangars, and terminals to the runways and vice versa. In order to provide for the efficient movement of aircraft, it is desirable to have a parallel taxiway and several exit taxiways associated with each runway. The recommended width for taxiways is specified by Taxiway Design Groups which are derived from a combination of undercarriage gear width and the distance from the cockpit to main gear. Figure 3.3-1, shown previously, presents the basis for Taxiway Design Groups.



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Source: AECOM, 2019.

TRI-COUNTY AIRPORT
MASTER PLAN UPDATE

RUNWAY PROTECTION ZONES

FIGURE
3.3-4

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The existing design aircraft for Runway 1-19 is the Cessna 172. It is a TDG 1A aircraft. The future design aircraft is a Beech King Air B200 which is a TDG 2 aircraft. Taxiway design requirements associated with these two TDGs are presented in **Table 3.3.9**. The table also presents the dimensional requirements for Taxiway Safety Areas and Taxiway Object Free Areas which are based on Airplane Design Groups.

TABLE 3.3-9
TAXIWAY DESIGN REQUIREMENTS

Taxiway Design Group		
Item	**1A**	**2**
Taxiway Width (ft)	25	35
Taxiway Shoulder (ft)	10	15
Airplane Design Group		
Item	**I**	**II**
Taxiway Safety Area (ft)	49	79
Taxiway Object Free Area (ft)	89	131

Source: FAA AC 150/5300-13A, *Airport Design*.

The required width for taxiways serving Design Group 1A aircraft is 25 feet, while the required width for taxiways serving aircraft in TDG 2 is 35 feet. Taxiway A and all exit taxiways currently have widths of 35 feet and therefore meet future requirements. Taxiway A provides access along the entire length of Runway 1-19 and the five exit/connector taxiways maximize the efficient flow of aircraft. No additional taxiways are needed to facilitate aircraft taxiing to and from Runway 1-19.

In addition to examining compliance with taxiway width, an examination of the Airport's compliance with the design standard for taxiway fillets was also conducted. **Figure 3.3-5** presents a comparison of Taxiway A and its connections to Runway 1-19, as well as its connections to hangar/apron areas. The figure indicates that the existing pavement is less than the fillet requirements for Taxiway Design Group 2 (shown in blue shading).

It should be noted that Taxiway Design Group 2 includes significantly larger commuter and air carrier aircraft that do not, and will not, operate at the Airport. For example, the Boeing 717 and DC-9, as well as the ATR-42, are included in Taxiway Design Group 2. The inclusion of these aircraft (which have significantly longer cockpit to main gear distances than the types of general aviation aircraft that operate at Tri County Airport) in the Taxiway Design Group 2 standard results in much larger fillets.

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SEMINOLE LN.

TRI COUNTY AIRPORT RD.

ASOS

35'

TAXIWAY A

PAPI

A3

35'

A2

35'

RUNWAY 1–19 – 5,398'x75'

A1

40'

TAXIWAY A

19

PAPI

AIRPORT PROPERTY LINE

LEGEND

FAA DESIGN STANDARD FOR EDGE OF PAVEMENT

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TRI-COUNTY AIRPORT

MASTER PLAN UPDATE

TAXIWAY FILLET REQUIREMENTS

FIGURE 3.3-5

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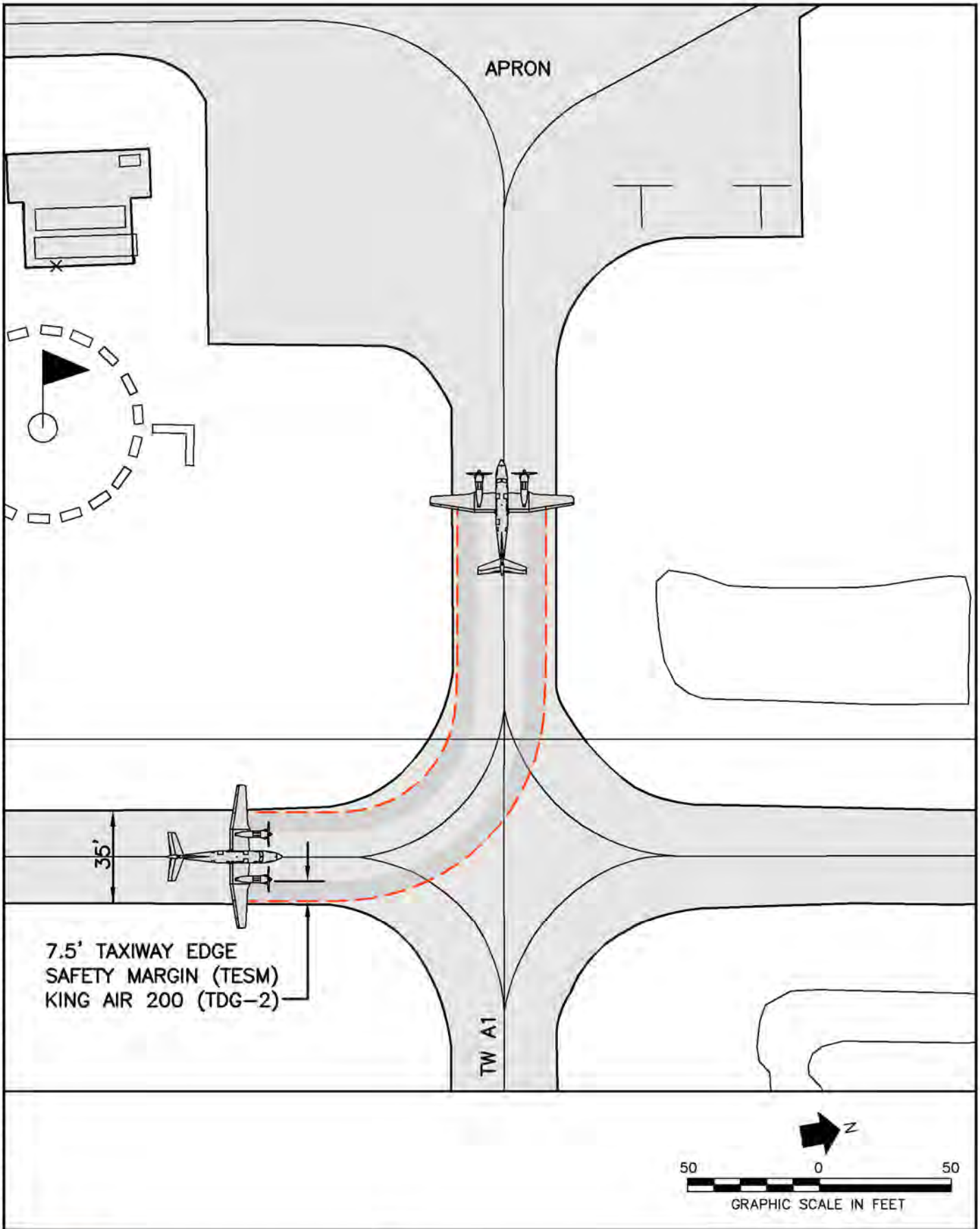

TRI-COUNTY AIRPORT
MASTER PLAN UPDATE

TAXIWAY GEOMETRY COMPLIANCE

FIGURE 3.3-6

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Therefore, an assessment was conducted to determine if the existing taxiway pavement geometry at intersections complies with taxiway edge safety margin requirements. Figure 3.3-6 presents a comparison of the existing Taxiway A pavement edges and the required 7.5 foot safety margin from the outside of the main gear wheels to the pavement edge. A Beech King Air (the future design aircraft) was used for the analysis. The assessment revealed that the existing pavement geometry provides the required safety margin. The pavement geometry at other taxiway intersections is the same as the intersection shown in the figure. Considering the magnitude of the difference between the pavement area needed to meet the Taxiway Design Group 2 fillet requirements versus the existing taxiway pavement, it is recommended that this issue be reevaluated at the time of the next taxiway pavement rehabilitation project.

Additional taxiways will be required to serve future development areas. The need for these taxiways will be determined and described in the Alternatives section.

Taxilane pavements will also require rehabilitation during the planning period in accordance with the Airport's pavement management plan. The 2015 FDOT Statewide Airfield Pavement Management Program for District 3 indicates that the taxilane from the apron to the north side of the shade hangars and the conventional hangar have a Pavement Condition Index (PCI) of 67 and are classified as being in "fair" condition. This pavement section will require rehabilitation in the short to intermediate term. Although the pavement management study indicates other pavement needs, primarily for the runway, they were addressed through recent pavement improvements which extended and rehabilitated the existing runway. The next FDOT airfield pavement management study will reflect that completed work.

3.3.11 HOLDING BAYS

Holding bays provide space for an aircraft awaiting a departure clearance or conducting an engine run-up to move off the taxiway and provide sufficient space for another aircraft to proceed to the runway for take-off. This reduces delays when an aircraft is conducting engine run-ups or is being held for air traffic control reasons.

There are no holding bays currently located on Runway 1-19. AC 150/5300-13A recommends that holding bays be provided when runway operations reach a level of 30 per hour. **Section 2.0** indicates that peak hour aircraft operations on Runway 1-19 are not projected to reach that level during the planning period. Therefore, the construction of holding bays is not recommended.

3.3.12 PAVEMENT MARKINGS

Runway 1-19 currently has non-precision instrument runway markings on both ends of the runway. These markings meet FAA design standards for Runway 19, which has a non-precision approach, and exceed the design standard for Runway 1 which has only a visual approach. Therefore, no changes to runway markings are required.

Taxiway A and the exit/connector taxiways to Runway 1-19 have yellow centerline markings that meet the design standard. No additional taxiway markings are required.

Taxiway A and the exit/connector taxiways also have holding position markings that denote where aircraft are required to hold before proceeding onto Runway 1-19. These markings meet design standards. However, all of these marking are located at a distance of 150 feet from the centerline of Runway 1-19. The design standard is 125 feet. No change is required since the existing markings are greater than the minimum required distance.

Regular maintenance of pavement markings (i.e., remarking) will be required during the study period to maintain them in good condition. Pavement remarking should be programmed for every five to eight years but may need to be undertaken more often if fading or other forms of deterioration makes markings difficult to see.

3.3.13 NAVIGATIONAL AIDS

3.3.13.1 PAPI

The Airport has Precision Approach Path Indicators (PAPI) on both ends of Runway 1-19. While these units are currently in good condition, improvements to the airfield's electrical system are needed to ensure their reliability. Interim improvements to the Airport's electrical system are scheduled to occur in 2019.

3.3.13.2 Wind Sock/Segmented Circle

The Airport's primary wind sock and segmented circle meets current design standards. No improvements are required.

3.3.13.3 Signage

Existing airfield signage consists of internally illuminated signs along Runway 1-19, Taxiway A and the exit/connector taxiways. These signs are in good condition and meet design standards. Future signage requirements will be dictated by proposed development.

3.3.14 AIRFIELD LIGHTING

Runway 1-19 is equipped with Medium Intensity Runway Lights (MIRL). Both ends of Runway 1-19 also have threshold lights.

Taxiway A and connectors to Runway 1-19 are equipped with Medium Intensity Taxiway Lights. The Airport's rotating beacon is in good condition.

The primary issue related to airfield lighting is the reliability of electrical service. An electrical system assessment is being conducted in early 2019 and will determine the extent of the improvements that need to be made.

3.3.15 TERMINAL AREA FACILITIES

3.3.15.1 Hangars

Existing hangar storage capacity at the Airport is summarized in **Table 3.3-10**. Depending on the number of aircraft stored in the conventional hangars, there is storage capacity for approximately 42 to 48 aircraft and there were 39 aircraft based at the Airport at the end of 2018. However, there are a number of caveats that apply to these values.

First, the hangar count includes the shade ports that are not fully occupied or being used for purposes other than storing aircraft. Second, it includes space in the conventional hangar located south of the terminal building. As noted in **Section 1**, the eastern half of this hangar suffers from storm water flooding problems and is not currently used for aircraft storage. Third, it included hangars units 30 to 33 which are not yet occupied (as of early 2019).

Subtracting the shade ports (that do not provide adequate wind protection during severe weather events) and the eastern half of the conventional hangar south of the terminal, results in an existing hangar capacity of 33 to 37 aircraft. Consequently, the existing hangars have the ability to store nearly all the aircraft currently based at the Airport.

TABLE 3.3-10
HANGAR FACILITIES

Designation	Type of Hangar	Aircraft Capacity
1-4	Rectangular	4
5-9	Rectangular	5
10-14	Rectangular	5
15-19	Rectangular	5
20-22	Rectangular	3
23-29	T-Hangars	7
30-33	Rectangular	4
None	Shade Ports	8[1]
None	Conventional (south of terminal)	2 to 6[2]
None	Conventional (west of shade ports)	1[3]
Total		**42 to 48**

Source: AECOM, 2019.
Notes: [1.] Although the shade hangars have capacity to accommodate 8 aircraft parking positions, several spaces are currently used for parking fuel trucks and storing airport maintenance equipment.
[2] The number of aircraft that can be stored in the conventional hangars depends on the size of the aircraft. Therefore, the values indicated for aircraft capacity are estimates of the likely upper and lower range.
[3] This hangar currently stores one Beech King Air turboprop.

Future demand for storage hangars is typically dependent upon the number and types of aircraft expected to be based at the Airport, as well as local climatic conditions, airport security, owner

preferences and other site-specific factors. Typical planning factors assume that 100 percent of high-performance aircraft owners and 80 to 90 percent of small single-engine and twin-engine owners prefer to store their aircraft in hangars. The actual percentage of aircraft stored in hangars varies from one airport to another and is highly dependent on hangar rents and availability. Current storage methods at the Airport suggest that nearly all aircraft owners prefer to store their aircraft in hangars.

The forecast presented in **Section 2** projects that the number of aircraft based at the Airport will increase to 62 by 2037. The forecast also indicates that the majority of this growth will be generated by single-engine aircraft. Multi-engine and turboprop aircraft are projected to experience limited growth. This has implications for the types of hangars that may be needed in the future. In essence, the forecast indicates that there will likely be greater demand for rectangular and T-hangars that can provide the security and convenience typically desired by owners of small single-engine aircraft. **Table 3.3-11** presents a comparison of the based aircraft forecast and the resulting demand for hangars.

TABLE 3.3-11
ESTIMATED HANGAR DEMAND [1]

Hangar Requirements	2017	2022	2027	2032	2037
Forecast of Based Aircraft	39	43	49	55	62
Estimated Number of Aircraft Requiring Hangar Space [1]	36	40	45	51	57

Source: AECOM, 2019.
Notes: [1] Assuming that 90 percent of small single-engine and 100 percent of larger aircraft owners desire hangar space.

Table 3.3-12 provides a comparison between the estimated number of aircraft that require hangar space and the estimated capacity of existing hangar space.

TABLE 3.3-12
HANGAR SPACE REQUIREMENTS [1]

Hangar Requirements	2017	2022	2027	2032	2037
Estimated Number of Aircraft Requiring Hangar Space	36	40	45	51	57
Existing Enclosed Hangar Spaces [1]	37				
Estimated Hangar Space Requirements	0	3	8	14	20

Source: AECOM, 2019.
Notes: [1] Not including the 8 shade ports or the eastern half of the conventional hangar south of the terminal building.

The assessment indicates a future demand for up to 20 additional hangar spaces based on the forecast of based aircraft. Consultation with the Airport Authority revealed that as of September 2018 there were no entries on the Airport's waiting list for hangar space. Therefore, the assessment appears to be correct in terms of current demand.

Suitable locations and space will be identified in the Alternatives section for the construction of up to 20 additional aircraft hangars. This will ensure that the Airport is positioned to accommodate

growth that could be realized from aircraft owners not currently based at the Airport and ensure that there is a plan to accommodate growth that exceeds what is projected by the forecast. Hangar construction should be undertaken only when demand exists, when a positive return on investment is projected and as funding becomes available.

3.3.15.2 Apron

Aircraft aprons should be provided for based aircraft that are not stored in hangars and for itinerant aircraft visiting the Airport. A total of 14 aircraft tie-down positions are currently marked on the aprons located east and south of the terminal building. Consultation with the Airport Authority indicated that the existing aprons are not designated for based aircraft versus itinerant aircraft operations. Apron spaces are used as needed. Visual observations and consultation with the Airport Authority indicated that most of these tie-downs are not currently being used for based aircraft.

Future demand for apron to accommodate based aircraft and itinerant aircraft operations can be calculated using standard planning formulas, but should be confirmed based upon site specific factors. The following tables and paragraphs presents an estimate of future apron requirements based upon the forecast of itinerant aircraft operations and the use of planning factors.

Although nearly all aircraft at the Airport are currently based in hangars, apron space should be provided for aircraft owners that may prefer to use tie-downs. On the basis of the assumptions used to calculate hangar space, it is estimated that no more than 10 percent of single engine based aircraft owners would desire tie-down space.

Table 3.3-13 presents an estimate of potential demand for tie-downs by based aircraft and the resulting apron space requirement. The analysis uses a space allocation factor of approximately 200 square yards per tie-down space which is sufficient to accommodate small twin-engine or large single engine aircraft. This equates to the sample tie-down area provided in the Transportation Research Board (TRB) Airport Cooperative Research Program (ACRP) Report 113: *Guidebook on General Aviation Facility Planning*. (i.e., a depth of 66 feet and a length of 264 feet, per ten tie-down positions). This space calculation does not include associated taxilanes.

Table 3.3-14 presents an estimate of the demand for tie-down space and resulting apron requirements for itinerant aircraft operations. These requirements were calculated using the methodology presented in Appendix C of the ACRP Report 113. The methodology applies the estimated percentage of itinerant operations to one-half of total annual operations and then divides that value by 365 days to derive a typical daily value for itinerant operations. A concurrent use factor is then applied to estimate the percentage of aircraft that are likely to be on the apron at the same time.

TABLE 3.3-13
APRON REQUIREMENTS FOR BASED AIRCRAFT

Year	Single-Engine Piston Aircraft	Percent Desiring Tie-Downs	Number of Tie-Down Spaces Required	Apron Space Requirement @200SY / Tie-Down
2017	34	10%	3	600
2022	37	10%	4	800
2027	43	10%	4	800
2032	48	10%	5	1,000
2037	54	10%	5	1,000

Source: AECOM, 2019.

TABLE 3.3-14
APRON REQUIREMENTS FOR ITINERANT AIRCRAFT OPERATIONS

Year	Annual Aircraft Operations	Estimated Itinerant Operations @ 50%	Estimated Itinerant Arrivals / 365 days	Itinerant Tie-Down Requirement[1]	Apron Space Requirement @200 SY / Tie-Down
2017	29,032	14,516	20	10	2,000
2022	30,741	15,371	21	11	2,200
2027	32,549	16,275	22	11	2,200
2032	34,464	17,232	24	12	2,400
2037	36,493	18,247	25	12	2,400

Source: AECOM, 2019.
Notes: [1] Concurrent use factor indicates the percent of itinerant aircraft operations that are likely to be parked on the apron at the same time.

Table 3.3-15 combines the estimates of tie-down spaces and apron space for based aircraft and itinerant aircraft operations. The table indicates that projected tie-down requirements will increase to 17 spaces during the study period. This is only three more than the existing 14 spaces. The requirement for tie-down apron will increase to approximately 3,400 square yards of apron.

TABLE 3.3-15
TOTAL TIE DOWN AND APRON REQUIREMENTS

Year	Tie-Down Requirements			Apron Space Requirement (SY)		
	Based Aircraft	Itinerant Operations	Total	Based Aircraft	Itinerant Operations	Total
2017	3	10	13	600	2,000	2,600
2022	4	11	15	800	2,200	3,000
2027	4	11	15	800	2,200	3,000
2032	5	12	17	1,000	2,400	3,400
2037	5	12	17	1,000	2,400	3,400

Source: AECOM, 2019.

3.3.15.3 Terminal

Facility requirements for terminal space were determined by applying the planning factors contained in ACRP Report 113. This document specifies that a space allocation of up to 150 square feet per peak hour passenger should be used to attain an estimate of the appropriate size of a general aviation terminal. **Table 3.3-16** presents the resulting space estimate based on this methodology.

TABLE 3.3-16
ESTIMATED TERMINAL SPACE REQUIREMENTS

Year	Peak Hour Operations	Peak Hour Passengers[1]	High Space Requirement (150 SF / Pass.)
2017	10	25	3,750
2022	11	28	4,200
2027	11	28	4,200
2032	12	30	4,500
2037	13	33	4,950

Source: AECOM, 2019.
Notes: [1] Using a factor of 2.5 passengers per peak hour operation and rounding up.

As the table indicates, the current space requirement on the basis of these factors is approximately 4,000 square feet (which is the same size as the existing terminal) and is projected to increase to approximately 5,000 square feet by 2037.

Consultation with the Airport Authority indicted that the primary need in the terminal is the lack of septic capability/capacity to accommodate a full-service kitchen. The lack of hot-food preparation capability is a major disadvantage for the Airport in terms of serving itinerant Airport users. Food service at the terminal would attract additional Airport users and would facilitate fuel sales that

would, in turn, improve the financial self-sufficiency of the Airport. The Alternatives section will explore options for providing food service capabilities at the Airport.

3.3.15.4 Parking

Adequate vehicle parking areas are required to provide convenient and efficient access to Airport facilities. A methodology similar to that used for estimating terminal requirements was used to estimate existing and future parking requirements. This methodology estimates the required number of parking spaces on the basis of peak hour aircraft operations and the amount of office space in the terminal building. ACRP Report 113 recommends that the number of parking spaces be calculated using local parking requirements or through a planning factor of 2.5 spaces per peak hour operation and one (1) space per 200 SF of office space or a minimum of 5 spaces. For the purposes of this analysis, the 2.5 factor was reduced to 2 given the preponderance of small aircraft at the Airport and it was assumed that 600 square feet of the existing terminal is dedicated to office space. The guidance also recommends that a minimum of 5 spaces be allocated for office space, but this minimum was disregarded for the purpose of this assessment. **Table 3.3-17** presents the resulting estimate of automobile parking requirements.

TABLE 3.3-17
ESTIMATED PARKING REQUIREMENTS

Year	Peak Hour Operations	Parking Space Requirement[1]	Estimated Office Space Parking Requirement[2]	Total Parking Spaces Required
2017	10	20	3	23
2022	11	22	3	25
2027	11	22	3	25
2032	12	24	3	27
2037	13	26	3	29

Source: AECOM, 2019.
Notes: [1] Assumes 2 spaces per peak hour passenger.
[2] Based on 1 space per 200 square feet of office space.

There are approximately 12 parking spaces just outside the Airport entrance gate. Visual observations and consultation with the Airport Authority indicates that this parking is rarely full and is sufficient for existing needs. This is primarily due to the fact that most airport users drive to their hangar and many peak hour aircraft operations are itinerant rather than local. Therefore, there is not a corresponding automobile parking requirement associated with peak hour aircraft operations.

Therefore, although planning factors indicate a requirement for significantly more automobile parking, on-site conditions do not confirm this need. Parking requirements will be reconsidered in conjunction with proposed development in the Alternatives section.

3.3.16 SUPPORT FACILITIES

3.3.16.1 Aircraft Rescue and Fire Fighting (ARFF)

There are no firefighting capabilities currently located on the Airport. Fire protection and emergency response services are provided by a mutual agreement between the three counties (Holmes, Jackson and Washington). Consultation with the Airport Authority indicated that improvements to fire protection capabilities are desired at the Airport. Potential actions include:

- The construction of water tanks and pumps that could be accessed by surrounding fire departments, or
- The construction of a fire station at the airfield in conjunction with use by surrounding county firefighting authorities through a revised or updated mutual aid agreements.

Options for implementing these actions will be explored in the Alternatives section.

3.3.16.2 Fueling

Long-term fuel sales records for the Airport are not available. However, monthly records were obtained for December 2017 through November 2018. The data indicates that monthly fuel volumes varied significantly by season. For example, Jet-A sales ranged from a low of just over 200 gallons in September and October to levels ten times higher in March and May.

Jet-A sales were nearly double Avgas sales for the 12-month period. Existing fuel storage facilities consist of one 12,000 gallon tank for Jet-A and one 10,000 gallon tank for 100 octane low-lead (100LL) Avgas. The data indicates that fuel storage is significantly less than current capacity and results in very high numbers of days storage.

Current fuel storage capacity is four times peak month fuel sales for Jet-A and ten times peak month sales for Avgas. Consequently, fuel storage is more than adequate to accommodate existing and future demand through the study period. **Table 3.3-18** presents the monthly fuel sales data and the resulting days of storage capability based on existing facilities.

TABLE 3.3-18
FUEL SALES AND DAYS STORAGE

Month	Jet-A	100LL
December 2017	192	341
January 2018	343	351
February 2018	1,511	871
March 2018	2,850	957*
April 2018	2,006	619
May 2018	2,931*	797
June 2018	641	735
July 2018	827	481
August 2018	742	431
September 2018	237	750
October 2018	224	669
November 2018	2,513	916
12-Month Total	**15,017**	**7,941**
ADPM**	98	32
Existing Storage Capacity	12,000	10,000
Days Storage	123	313

Source: Tri-County Airport Authority, 2019.
Notes: * Peak Month
** ADPM: Average Day Peak Month

3.3.16.3 Maintenance Equipment Storage

As described in the Inventory section, there is currently one small shed (approximately 8 feet by 8 feet) for the storage of airport maintenance equipment. However, the shed does not provide complete weather protection and is too small to accommodate all of the Airport's maintenance equipment. As noted in the Inventory section, some maintenance equipment is currently stored in the shade hangars. The construction of an appropriated sized maintenance building that could provide weather protection for all the Airport's maintenance equipment, such as tractors, mowers and supplies storage should be considered. Alternatives for addressing this need will be addressed in the Alternatives section.

3.3.17 ROADWAY AND AIRPORT ACCESS

Access to the Airport occurs via Tri-County Road and Tri-County Airport Road. While this access provides an acceptable level of service in terms of capacity for existing and future traffic volumes, certain improvements are desirable. Improved signage on Tri-County Road would improve the ease of access for pilots and passengers. It is recommended that roadway signage improvements be considered.

Furthermore, the existing Airport entrance road ends at a vehicle gate with keypad access. No pedestrian gate is provided. Consequently the general public does not have any method of actually accessing the GA terminal. The Alternatives section will examine options for providing the public with access to the terminal building.

3.3.18 PERIMETER FENCING

The Airport currently has six-foot chain link fencing with three strands of barbed wire on top around the majority of the Airport. However, aerial mapping and a perimeter boundary survey conducted as part of this study confirmed that the southern portion of the Airport does not have perimeter security fencing. Security fencing should be provided around the entire perimeter of the Airport for security and wildlife control purposes. The current version of the FAA published *Chart Supplement*[3] notes "deer occasionally on runway." This represents a safety hazard that could be mitigated by the completion of perimeter fencing.

The Airport Authority has not yet conducted a Wildlife Hazard Assessment. It is recommended that one be included in the Facilities Implementation Plan. The plan would provide justification for the installation of fencing for the purpose of mitigating wildlife hazards.

3.3.19 STORMWATER MANAGEMENT

There are numerous stormwater detention ponds at the Airport. Figure 3.3-7 highlights the size and location of these ponds in relation to the airfield. These ponds do not comply with the recommended maximum 48-hour detention period specified in FAA AC 150/5200-33B, Hazardous Wildlife Attractants on or Near Airports. Consequently, these ponds remain wet for extended periods and are attractants for wildlife including birds and alligators.

The current version of the FAA published Chart Supplement notes "alligators occasionally on runway". A storm water master plan should be conducted to assess options for reducing the number of ponds and reducing wildlife habitat hazards.

3.3.20 AIRPORT SECURITY REQUIREMENTS

The Transportation Security Administration (TSA) publication *Security Guidelines for General Aviation Airport Operators and Users* documents actions that airport owners can take to improve the security of facilities. One portion of the document is dedicated to recommended actions for infrastructure. Suggestions from that portion of the document are summarized below.

- **Hangars** – the document notes that all aircraft hangars should be locked and numbered for easy identification and emergency response. All hangars at the Airport currently have locks and are numbered. No action is required for this item.

[3] FAA Chart Supplement Southeast US, 3 JAN 2019 to 28 FEB 2019

S:\Projects\A\AVCON\60586846_TriCoMPU\Planning\400-Technical\403 Facility Requirements\Figures\FIG 3.3-7.dwg 06/03/2019 15:00

FIGURE 3.3-7

STORMWATER DETENTION PONDS

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- **Intrusion Detection System** – the document does not provide a recommendation regarding installation of a system, but notes that they can replace the need for and cost of personnel. The Airport does not currently have an intrusion detection system and one is not recommended for the Airport given the lack of staff to adequately monitor it as well as the expense of the system.
- **Fencing** – the document notes the importance of fencing for defining the limits of the Airport and providing a deterrence to unauthorized entry. The preceding section noted the existing deficiency of existing perimeter fencing at the Airport and recommends improvements for security, safety and wildlife management reasons.
- **Vehicle Gates** – there are currently gates at several points along the Airport perimeter fence. These gates provide access to tenants, Airport users and emergency response vehicles. The guidance provides recommendations regarding proper lighting, self-closure and limiting ground clearance to no more than 4 to 6 inches. The guidance notes that tailgating (where an unauthorized vehicle follows an authorized vehicle) is the primary concern. The guidance notes that signage providing instruction to the lead vehicle is an appropriate measure.
- **Pedestrian Gates** – pedestrian gates are currently located adjacent to the main vehicle gate and between the automobile parking area and the hangar at the north end of the terminal area. These gates are manually operated and are secured via key locks. TSA guidelines note that pedestrian gates can be secured via padlocks or an electrical, mechanical or keypad system.
- **Lighting** – the guidelines note that protective lighting provides a degree of protection from theft, vandalism or other illegal activities. Lighting is currently provided via mast light poles in the terminal area.
- **Signage** – the TSA guidelines note that signage provides a deterrent to unauthorized entries by providing a warning of consequences for violations. The guidelines suggest the use of signs along fence lines gates and other highly visible points. Visual inspection of the fence line along Tri-County Road revealed a lack of this type of signage. A signage program should be considered to comply with these recommendations.
- **Tenant Facilities** – TSA guidance primarily refers to the best security practices of the National Business Aviation Association. The practices include the following:
  - Ensure facility perimeter security with effective fencing, lighting, security patrols (as appropriate), gates, and limited access areas
  - Ensure street-side gates and doors are closed and locked at all times
  - Require positive access control for all external gates and doors
  - Close and lock hangar doors when that area is unattended
  - Secure key storage areas (food and liquor, parts and tools, etc.)
  - Use an access control management system for keys and passes

- Confirm the identity and rightful presence of each passenger, vendor, and visitor prior to allowing access to facilities and aircraft
- Use a government issued photo ID to verify identity of any visitor or vendor
- Escort all visitors on the ramp and in the hangar area
- Post emergency numbers prominently around facility
- Ensure easy access to phones or "panic buttons" in various facility locations (break room, hangar bay, etc.)
- Confirm security of destination facilities
- Be aware of your surroundings and do not be complacent—challenge strangers

- **Fueling Facilities** - the document recommends the use of security fencing, lighting and access control to properly secure these facilities. The fuel farm at the Airport has fencing but it is only located on the east side of the Jet-A fuel tank and essentially provide no security. Consideration could be given to a fencing project to completely enclose the fuel farm area, however, modifications to the fuel farm including fueling controls would be needed in order for this to be viable. The existing farm does have pole lighting for proper illumination.

Several security related improvements could be considered including the installation of security related signage and the installation of additional fencing around the fuel storage.

3.4 SUMMARY OF FACILITY REQUIREMENTS

The primary findings of the analyses presented on the preceding pages are summarized below.

3.4.1 AIRFIELD

- The existing airfield provides sufficient hourly and annual capacity to meet projected aircraft operations throughout the study period.
- The Cessna 172 and the Beech King Air B200 are the existing and future design aircraft for Runway 1-19.
- Future facilities associated with Runway 1-19 should be designed to meet and protect distances to accommodate Runway Design Code B-II small standards.
- A single runway is sufficient to meet all operational requirements. The existing runway length, width and strength are also sufficient to meet all operational requirements.
- Blast pads should be provided on each end of Runway 1-19 whenever the runway is rehabilitated.
- Improvements to the existing and future RSA are needed to bring them into compliance with FAA design standards for grading and drainage. Specifically, the area between connector Taxiways A2 and A3 on the west side of the runway requires fill and the water detention pond needs to be modified or removed.

- Removal of vegetative obstructions are needed in the "existing" ROFA and OFZ (on the east side of the runway across from Taxiway A3) to bring these areas into compliance with design standards.
- Additional taxiways should be considered in conjunction with alternatives for additional hangar development.

3.4.2 TERMINAL AREA AND SUPPORT FACILITIES

- Up to 20 T-hangars will be required during the study period to accommodate demand from based aircraft owners that desire storage space at the Airport.
- Up to 3 more tie-down spaces will be required to meet demand for based aircraft and itinerant operations.
- Up to 1,000 square feet of additional GA Terminal space will be needed to meet future demand.
- Options for providing hot food service in the terminal are desired by the Airport Authority to improve the desirability of the Airport and to encourage additional fuel sales.
- Although demand for additional automobile parking was calculated based upon planning factors, visual observations and consultation with the Airport Authority indicated that existing parking is sufficient. This is partially due to most tenants parking vehicles in their hangars. Parking requirements will be considered in conjunction with alternatives.
- The Authority is interested in exploring additional options for ARFF facilities and services in conjunction with surrounding fire districts.
- No expansion of fueling facilities is required to meet projected demand.
- The construction of a small maintenance building is needed to provide proper storage for Airport equipment and supplies.
- The installation of an Airport sign is needed at the intersection of Tri-County Road and County Road 162 (Tri-County Road) to provide heightened visibility and awareness of the Airport.
- Improvements to Airport access are needed to enable the public to access the terminal.
- The completion of perimeter fencing is needed for security purposes and the mitigation of existing wildlife hazards.
- A storm water master plan is needed to examine options for reducing the number of storm water detention ponds on the airfield.
- A variety of security improvements could be considered such as additional signage and security fencing.

SECTION 4.0 ALTERNATIVES

4.1 INTRODUCTION

This section identifies and analyzes alternatives for providing the facility requirements identified in **Section 3**. Alternatives are presented on the following pages using a combination of text and figures. Advantages and disadvantages associated with alternatives are identified where necessary to assess the relative merits of each option. Preferred alternatives are identified for inclusion on the Airport Layout Plan and the Facilities Implementation Plan presented in subsequent sections of the Master Plan.

4.2 AIRFIELD ALTERNATIVES

4.2.1 RUNWAY 1-19

The Facility Requirements section determined that Runway 1-19 provides adequate capacity to accommodate existing and projected aircraft operations without incurring delay. It also determined that the runway's length, width and strength are adequate to accommodate all existing and projected aircraft operations. Therefore, there is no need to explore alternatives for Runway 1-19.

The Facility Requirements section also noted certain conditions associated with Runway 1-19 that do not meet current FAA design standards. These issues include the need for blast pads on both ends of the runway, as well as the removal of stormwater retention ponds located inside the existing and future Runway Safety Area (RSA), and the removal of vegetative obstructions from the existing and future Runway Object Free Area (ROFA) and Obstacle Free Zone (OFZ).

These conditions should be addressed through specific capital improvements. Blast pads that meet design standards should be constructed on both ends of Runway 1-19 in conjunction with the next runway pavement rehabilitation. Grading improvements needed to remove existing stormwater detention ponds from the existing and future RSA should be undertaken in conjunction with an obstruction removal project to eliminate vegetative obstructions located inside the ROFA and OFZ. Projects will be included in the Facilities Implementation Plan to address these items. No alternatives need to be explored for these actions.

4.2.2 TAXIWAYS

The Facility Requirements section noted that the existing taxiway fillets do not meet the FAA's Taxiway Design Group 2 design standard, even though they do meet the required taxiway edge safety margin of 7.5 feet for the design aircraft (i.e., Beech King Air B200). Two alternatives were identified to address this issue. Alternative 1 is to construct pavement fillets in accordance with the Taxiway Design Group 2 geometric requirements. Alternative 2 is to leave taxiway pavements as they currently exist.

Alternative 1 requires a capital improvement project consisting of new pavement construction, taxiway lighting relocation, signage relocations, as well as grading to achieve proper drainage.

Alternative 2 would not require any construction and therefore would not have any implementation costs.

It is recommended that a decision on the preferred alternative be deferred until such time as rehabilitation of taxiway pavements is required, because there will be a significant cost differential between these two alternatives and available funding will likely be the deciding factor between these two alternatives. Therefore, the Authority, in conjunction with their engineering consultant, the FAA and the FDOT, should decide the preferred alternative based on the design aircraft operating at that time. For this Master Plan Update, the construction of pavement fillets in accordance with the Taxiway Design Group 2 geometric requirements will be shown on the ALP and included in the capital improvement plan.

4.2.3 NAVIGATIONAL AIDS

The Facility Requirements section did not identify a need for any improvements to navigational aids. Therefore, no alternatives are needed for that element.

4.3 TERMINAL AREA ALTERNATIVES

4.3.1 DEVELOPMENT CONSTRAINTS

The Facility Requirements section identified a variety of improvements that are needed in the terminal area. Prior to developing alternatives for various landside facilities, an assessment was conducted of the various environmental, topographical and regulatory constraints that may influence where future development should be located. Environmental constraints at the Airport primarily consist of wetlands and floodplains, while regulatory constraints primarily consist of compliance with FAA design standards that limit the location and height of facilities. **Figure 4.3-1** presents a development constraints map that provides a visual representation of these constraints.

Wetlands are depicted on the map with a diagonal cross hatch pattern while floodplains are depicted using a blue shading. Wetlands were field verified by Energy and Environment, LLC (E&E) in 2019 while data on floodplains was obtained from Federal Emergency Management Agency Digital Flood Insurance Rate Maps (FEMA DFIRM, 2019).

A significant portion (32%) of airport property is wetlands and an even greater percentage (57%) of airport property is located within the floodplain. Nearly all airport property east of Runway 1-19 is within wetlands and/or floodplains and therefore is less suitable for future development.

Topographical constraints on the Airport consist of steep grades where significant earthwork would be needed to make the area suitable for development. These areas are shown with tan shading on the constraints map. Although appropriate grading could make these areas suitable for development, costs would be incurred in conjunction with undertaking the required earthwork.

TRI COUNTY AIRPORT RD.

SEMINOLE LN.

TRI COUNTY RD. – CR 162

TRI COUNTY AIRPORT RD.

HICKSHILL RD.

AIRPORT PROPERTY LINE

BRL

BRL

BRL

BRL

ASOS

TAXIWAY A

BRL

BRL

AIRPORT PROPERTY LINE

BENCHOFF RD.

LEGEND

- FLOODPLAINS
- WETLANDS/OTHER SURFACE WATERS
- UNSUITABLE GRADES
- GEOMETRIC CLEARANCES

N

600 0 600

GRAPHIC SCALE IN FEET

SOURCES:
FLOODPLAINS: FEMA DFIRM, 2019
WETLANDS: E&E, 2019
BASE MAP: WOOLPERT, 2018

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DEVELOPMENT CONSTRAINTS MAP

FIGURE 4.3-1

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FAA design standards define a Building Restriction Line (BRL) that identifies areas that are suitable for the construction of airport facilities. The BRL at the Airport is located 495 feet from the centerline of Runway 1-19 and is shown on the constraints map with a red dashed line. Other design standard constraints shown on the map include a 500-foot clearance radius around the Automated Surface Observing System, (ASOS) site, as well as the 40:1 Departure Surface and Runway Protection Zones (RPZs) at each end of the runway. The 500-foot radius around the ASOS should be kept clear of structures or vegetation that could interfere with accurate wind measurements. Likewise, structures should not be located within the RPZs and should not exceed departure surface elevations.

The net result of applying these environmental, topographical and regulatory constraints is a greatly reduced area of airport property that could be developed in accordance with design standards and without incurring the costs associated with environmental mitigation or earthwork. The most obvious area suitable for development is in the southwest corner of airport property, west of the BRL. Roadway access could be provided to this area without crossing wetlands or floodplain. However, wetland impacts would be incurred with the construction of taxilane access. Other potential development sites include the area west of the existing terminal area and redevelopment within the existing terminal area.

4.3.2 HANGARS AND APRONS

4.3.2.1 Hangars

The Facility Requirements section identified a future need for up to 20 additional rectangular or T-hangars. Three potential sites for future hangar development were identified and are shown in **Figure 4.3-2.**

Site 1 is located immediately south of the terminal building where an existing dual-bay conventional hangar is located. This facility is the oldest hangar on the airfield and the bay facing east suffers from drainage problems due to its lower elevation. This area could be redeveloped for new hangars by demolishing the existing facility and improving site drainage. Provisions would need to be made for tenants that currently occupy the hangar during the redevelopment process.

Site 2 is located immediately west of the rectangular hangars. This area would require significant environmental mitigation because it is mostly wetlands and is located within the floodplain. Site 3 is located in the southwest corner of the airfield and is mostly free of environmental constraints.

The following paragraphs discuss potential hangar development at these sites. Factors such as environmental constraints, access to utilities, services and roadway are discussed for each site.

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POTENTIAL HANGAR DEVELOPMENT SITES

SITE 3
IN SOUTHWEST
CORNER

SITE 2
WEST OF
TERMINAL AREA

SITE 1
EXISTING TERMINAL AREA

TRI COUNTY AIRPORT RD.

SEMINOLE LN.

TRI COUNTY RD. – CR 162

40:1 DEPARTURE SURFACE

AIRPORT PROPERTY LINE

BRL

ASOS

TAXIWAY A

HICKSHILL RD.

BENCHOFF RD.

LEGEND

- FLOODPLAINS
- WETLANDS/OTHER SURFACE WATERS
- UNSUITABLE GRADES
- GEOMETRIC CLEARANCES

N

600 0 600

GRAPHIC SCALE IN FEET

SOURCES:
FLOODPLAINS: FEMA DFIRM, 2019
WETLANDS: E&E, 2019
BASE MAP: WOOLPERT, 2018

FIGURE
4.3-2

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Site 1

Two alternatives were prepared for Site 1. The first alternative (see **Figure 4.3-3)** proposes the construction of a single-bay 70 by 70-foot conventional hangar at the west end of the site along with an apron of equal size on the east side of the hangar. The second alternative (see **Figure 4.3-4**) proposes the construction of a double-bay conventional hangar at Site 1 with only enough new apron to connect the hangars to existing apron. This alternative would provide two 70 by 70-foot bays for aircraft storage and could accommodate larger aircraft that cannot be stored in the small rectangular hangars.

The primary strategy of providing larger hangars at Site 1 is to replace the existing hangar that has passed its useful life and to address flooding problems that limits the overall use of the facility while also maintaining the ability to capture larger monthly revenues associated with storage for larger aircraft. The facilities are not capable of accommodating 20 aircraft and therefore, would need to be constructed in conjunction with other hangar projects to fully meet the facility requirements for 20 aircraft. However, this alternative provides an option for accommodating larger size aircraft.

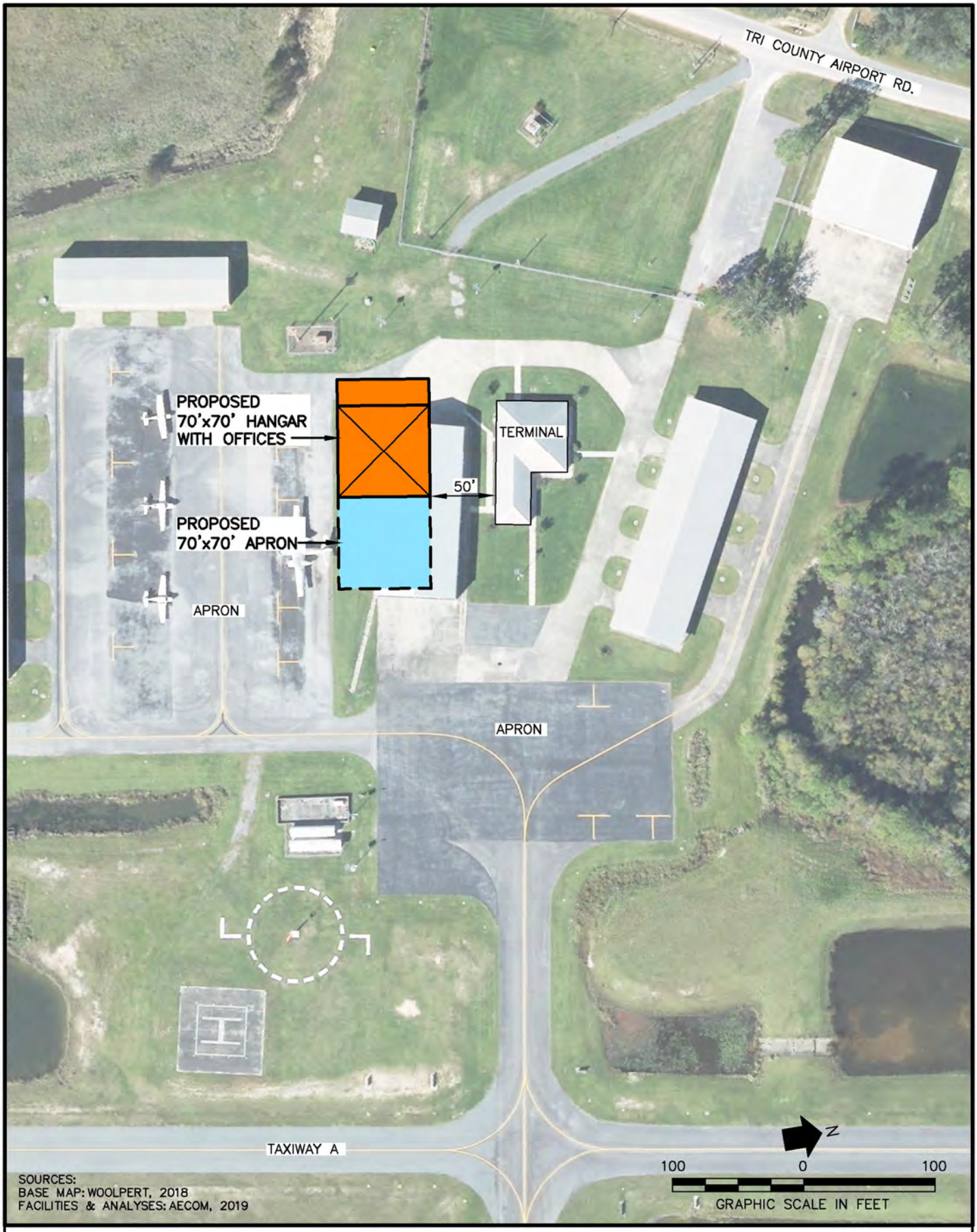
Site 1 is located in the floodplain, but does not contain any wetlands. The site is also constrained by the presence of the tie-down apron to the south, the terminal to the north and public apron to the east. However, this site already has easy access to utilities and is close to all existing pilot services. Vehicle access to this site could be provided via the main airport gate or via new roadway access from the west in conjunction with terminal improvements.

Site 2

Figure 4.3-5 depicts the construction of four rows of rectangular hangars west of the existing rectangular hangars. This alternative would provide the 20 hangar spaces specified in the Facility Requirements section.

This alternative uses existing taxilanes to minimize pavement and maintains existing taxi patterns. The northernmost hangar is placed in a north-south orientation rather than an east-west orientation to fit within the available airport property. The alternative would require the relocation of an existing drainage ditch along with the construction of culverts for taxilane overpasses.

The Site 2 alternative is desirable for future development from the perspectives of easy access to existing utilities, shorter vehicle access and pilot convenience to terminal area facilities such as fueling. However, there are significant environmental constraints associated with this area including the presence of wetlands and the floodplain. It is estimated that 3.7 acres of wetlands would be impacted by this alternative. Assuming a mitigation cost of $75,000 per wetland credit, the cost of wetland mitigation at this site would exceed $200,000. Additional mitigation costs would be incurred for floodplain compensation. In conclusion, Site 2 would incur significant costs for environmental mitigation and permitting. This process would also extend the timeline for any development at this site.



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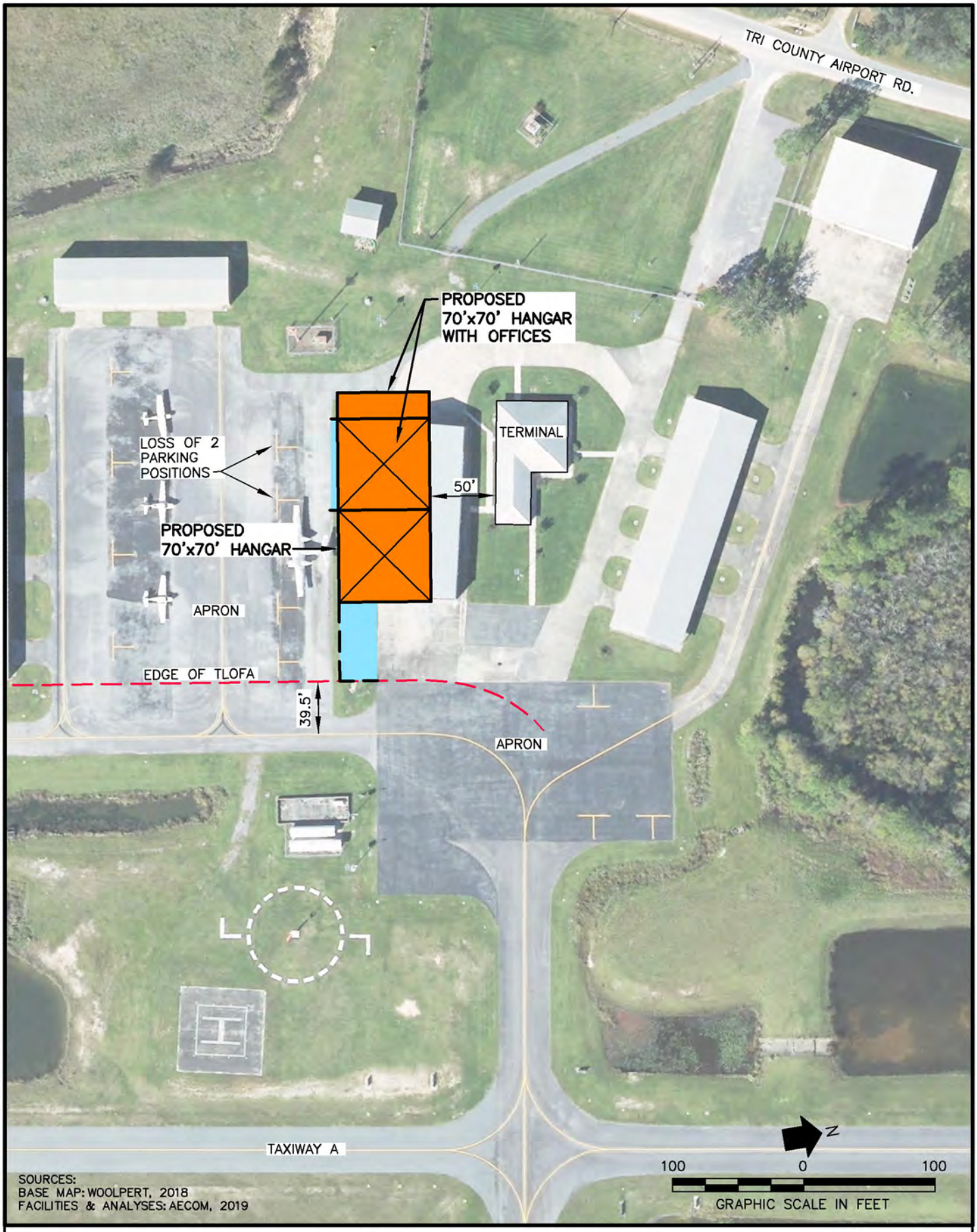
SINGLE BAY HANGAR AT SITE 1

FIGURE 4.3-3



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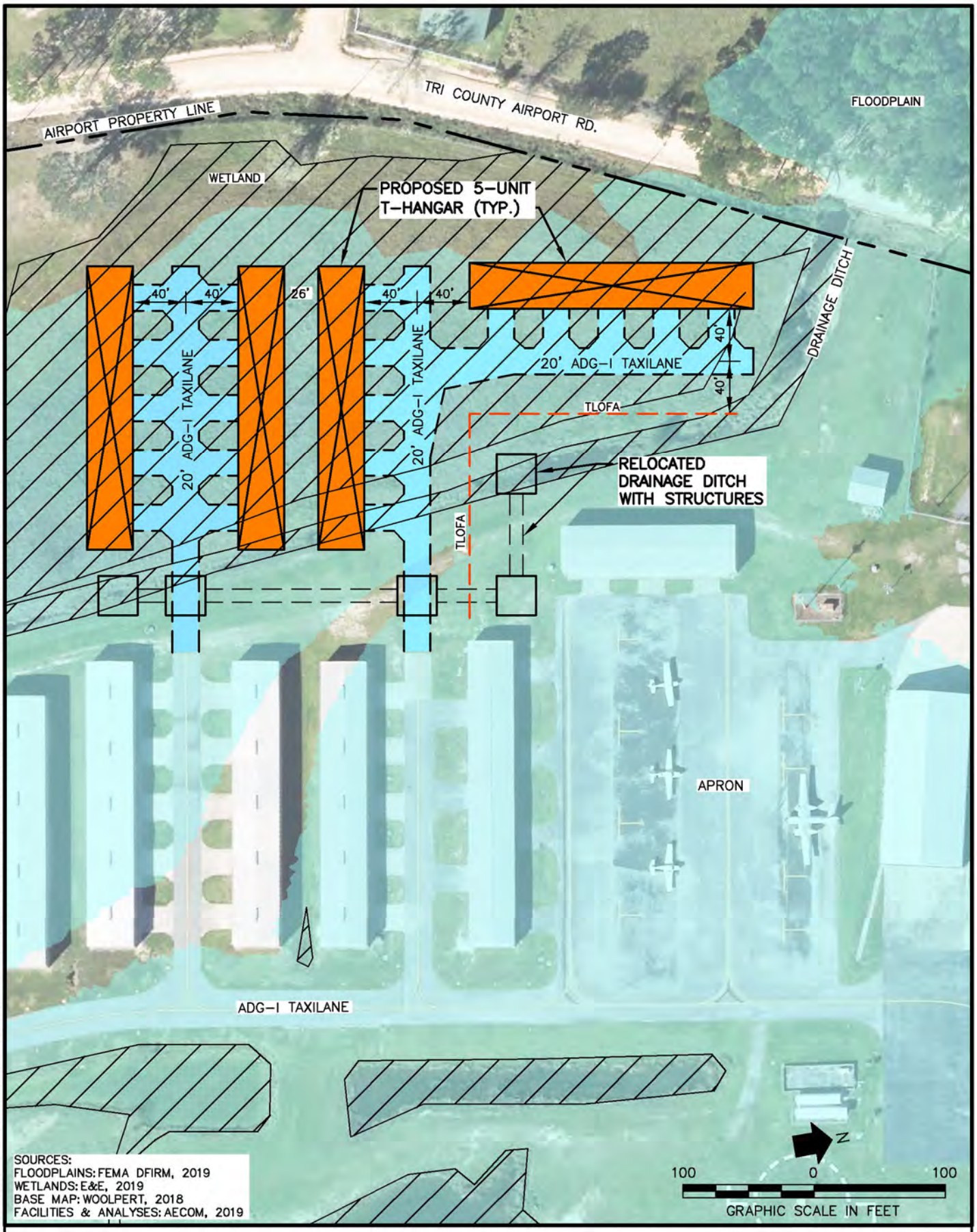
TRI-COUNTY AIRPORT
MASTER PLAN UPDATE

DOUBLE BAY HANGAR AT SITE 1

FIGURE 4.3-4



S:\Projects\A\AVCON\60586846_TriCoMPU\Planning\400-Technical\403 Facility Requirements\Figures\FIG 4.3-5.dwg 08/09/2019 8:19

TRI-COUNTY AIRPORT
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HANGAR DEVELOPMENT AT SITE 2

FIGURE 4.3-5

Site 3

Figure 4.3-6 depicts the construction of four rows of rectangular hangars at Site 3 along with potential roadway access to Tri County Airport Road and taxilane access to Taxiway A. Like the alternative for Site 2 this alternative is also capable of providing the 20 hangar spaces specified in the Facility Requirements section. The figure also shows how the rest of the site could be developed in the future with a combination of additional rectangular and conventional hangars.

Unlike Site 2, Site 3 could be developed in a manner that mostly avoids environmental impacts to wetlands and the floodplain. A small area of disturbance would be required to an upland cut drainage ditch where the proposed taxilane would connect to Taxiway A.

Site 3 is not as desirable as sites 1 and 2 in terms of proximity to utilities and roadway access. Utility services would need to be established in the area and the construction of a new road would be needed to provide access from Tri County Airport Road. Furthermore, Tri County Airport Road is not currently paved beyond the entrance to the existing terminal area. Therefore, paving this road would improve access to Site 3. Funding for paving Tri County Airport Road would not be FAA or FDOT eligible because the road is not located on Airport property. Consequently, funding would need to be sought from other funding programs.

Site 3 is not as desirable as Site 1 and 2 in terms of pilot convenience because no facilities are located in the southwest corner of the Airport. Therefore, pilots will need to taxi to the existing hangar area to obtain fuel and use services located in the terminal. The establishment of Wi-Fi internet service would greatly improve the desirability of Site 3 from a pilot's perspective.

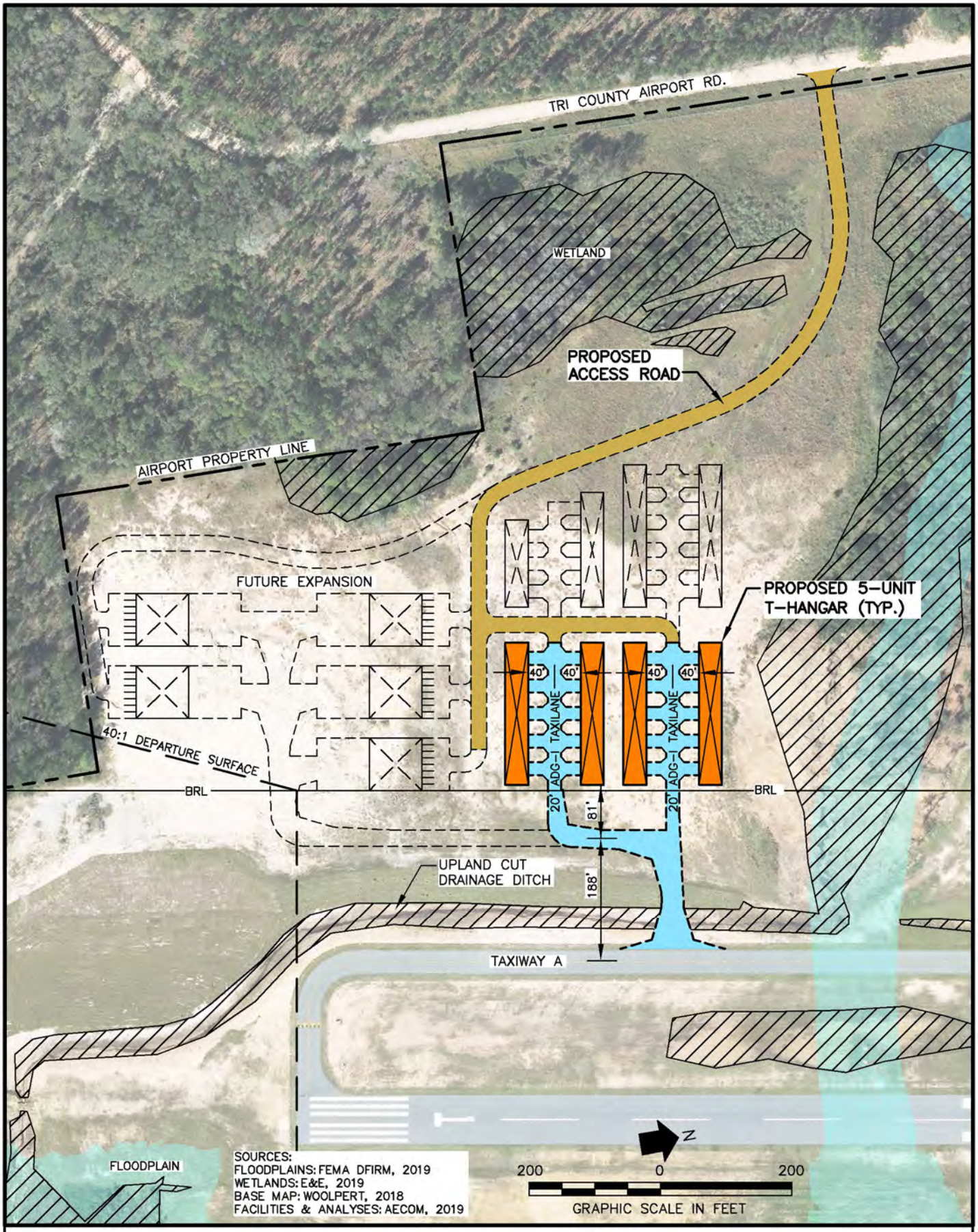
4.3.2.2 Preferred Alternative

All three sites and all the hangar alternatives were presented to members of the Tri-County Airport Authority at meetings on June 24th and August 2nd, 2019. The Airport Authority indicated that hangar development in the existing terminal area (Site 1) and the southeast corner of airport property (Site 3) is desired over development to the west (Site 2). The Airport Authority indicated a desire to redevelop Site 1 to bring it up to modern standards, conditions and functionality, while Site 3 is desired for the ability to accommodate the balance of needed development while also accommodating other potential aviation related development. The significant environmental costs and time required for mitigation make Site 2 less desirable for future development.

4.3.2.3 Aprons

The Facility Requirements section identified a future need for up to three additional tie-down spaces. Alternative locations for providing additional ramp area include the existing terminal area and the area in the southwest corner of the Airport. However, in addition to constructing new apron, there is also an option of reconfiguring the existing apron to gain additional tie-downs spaces.

Figure 4.3-7 shows how the existing apron could be reconfigured to increase the number of aircraft tie-downs and bring its two taxilanes into compliance with FAA design standards for Object Free Areas. The required Taxilane Object Free Area (TLOFA) for aircraft in Design Group I is 39.5 feet. Neither of the existing taxilanes provide that amount of clearance.



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TRI-COUNTY AIRPORT
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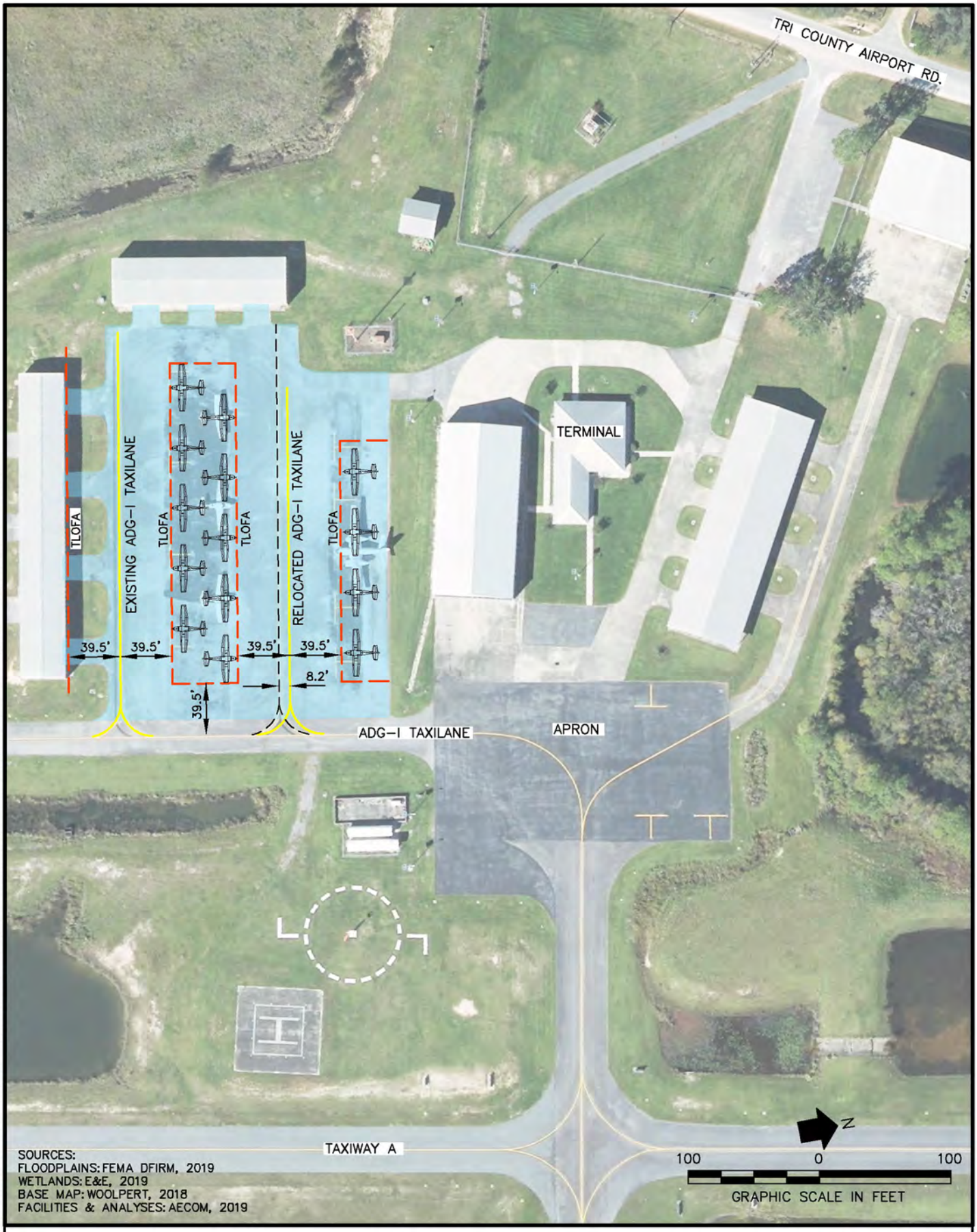
HANGAR DEVELOPMENT AT SITE 3

FIGURE 4.3-6



SOURCES:
FLOODPLAINS: FEMA DFIRM, 2019
WETLANDS: E&E, 2019
BASE MAP: WOOLPERT, 2018
FACILITIES & ANALYSES: AECOM, 2019

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APRON RECONFIGURATION

FIGURE
4.3-7

The taxilane located closest to T-Hangars 23 to 29 provides only 29 feet of clearance to the first row of tie-downs. Likewise, the taxilane located between the rows of tie-downs provides only 34 to 36 feet of clearance.

It is proposed that the existing apron be remarked and the existing tie-down anchors be relocated to provide the required clearance from each taxilane centerline. It is also proposed that the layout of the tie-downs be changed to increase the number of tie-downs available. The types of aircraft currently using these tie-downs are far smaller than the existing tie-down layout. Changing the tie-down layout would improve the efficiency of the existing apron and potentially defer the need to construct additional apron while also achieving compliance with the design standard.

If the existing apron reaches capacity in the future, then the construction of additional apron should be considered. **Figure 4.3-8** shows an alternative for the construction of additional apron on the north side of the taxiway leading to the terminal. Space for three to four aircraft tie-downs could be provided in this area. Space for four tie-downs can be achieved with Design Group I clearances, while space for three tie-downs can be achieved with clearances for Design Group II aircraft. Modifications to existing drainage features in this area would be required in conjunction with the construction of apron in this area.

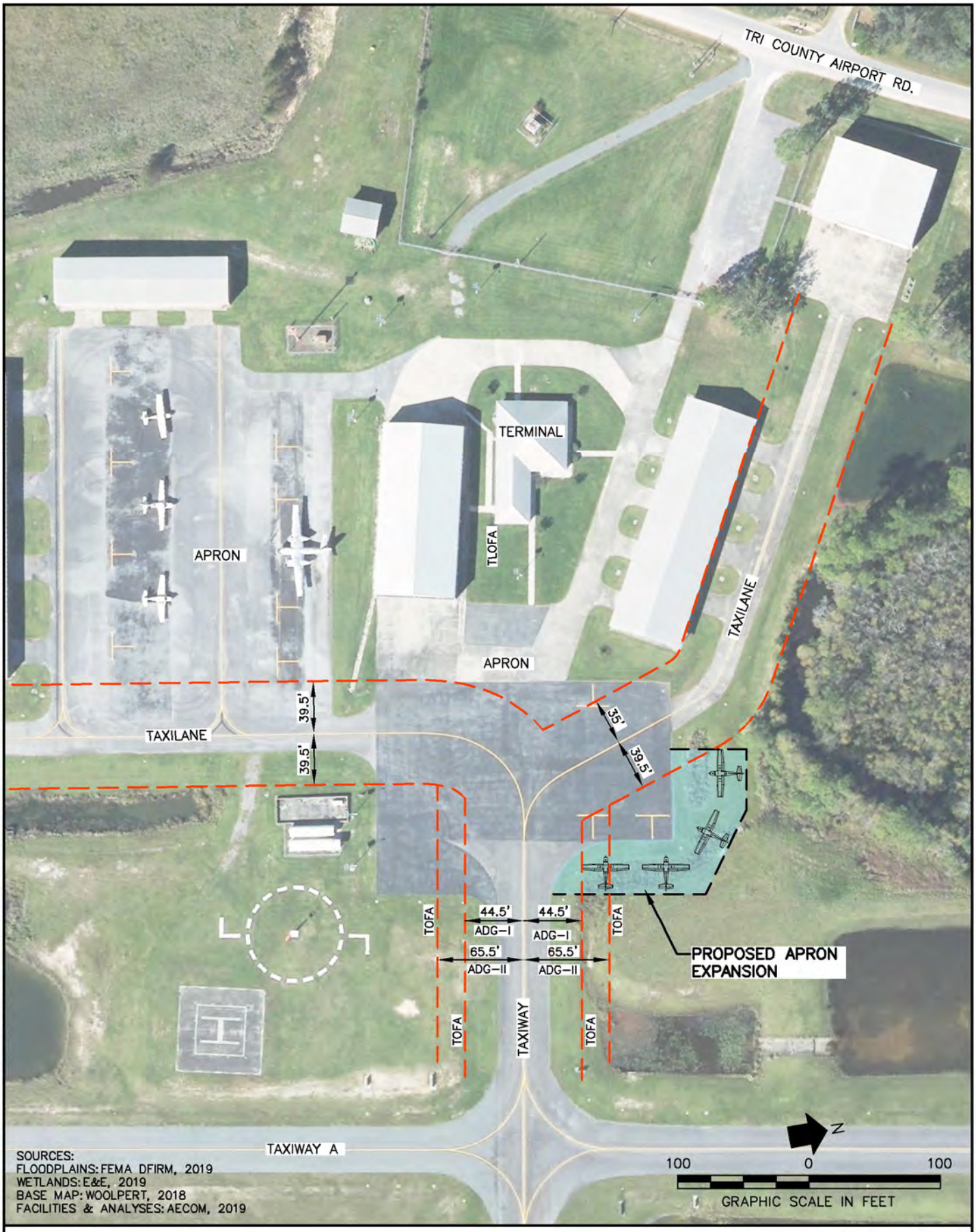
4.3.2.4 Preferred Alternative

Members of the Airport Authority expressed support for both alternatives during the August 2, 2019 meeting. Therefore, it is proposed that both alternatives be carried forward to the Airport Layout Plan because the combination of both actions may be needed to meet future demand.

4.3.2.5 Terminal & Parking

The Facility Requirements section noted a future terminal space requirement of up to 1,000 additional square feet. This requirement is based upon planning factors specified in the Transportation Research Board (TRB) Airport Cooperative Research Program (ACRP) Report 113: *Guidebook on General Aviation Facility Planning*. Consultation with the Airport Authority indicated that the primary need at the Airport is the ability to provide a full-service kitchen to provide food preparation that would attract airport users and thereby facilitate fuel sales that would improve the financial performance of the Airport. The construction septic capability/capacity in conjunction with the kitchen is also needed.

Figure 4.3-9 illustrates the existing terminal along with the required taxilane separation from the taxilane serving the south side of the shade hangars. A separation of 39.5 feet is shown for Design Group I aircraft. Therefore, any expansion on the north side of the terminal (shown with tan shading) would penetrate this separation requirement. Expansions on the west or east side of the terminal (shown with green shading) would not present a taxilane clearance problem. The optimal size and location of an expansion would best be addressed during design services when utility, septic, drainage and other construction factors can be considered. However, this plan proposes an expansion on the west side of the terminal due to the lack of physical and geometric constraints on that side. An expansion of considerably more than 1,000 feet could be constructed on the west side without conflicting with other facilities.



S:\Projects\A\AVCON\60586846_TriCoMPU\Planning\400-Technical\403 Facility Requirements\Figures\FIG 4.3-8.dwg 08/09/2019 8:38

TRI-COUNTY AIRPORT
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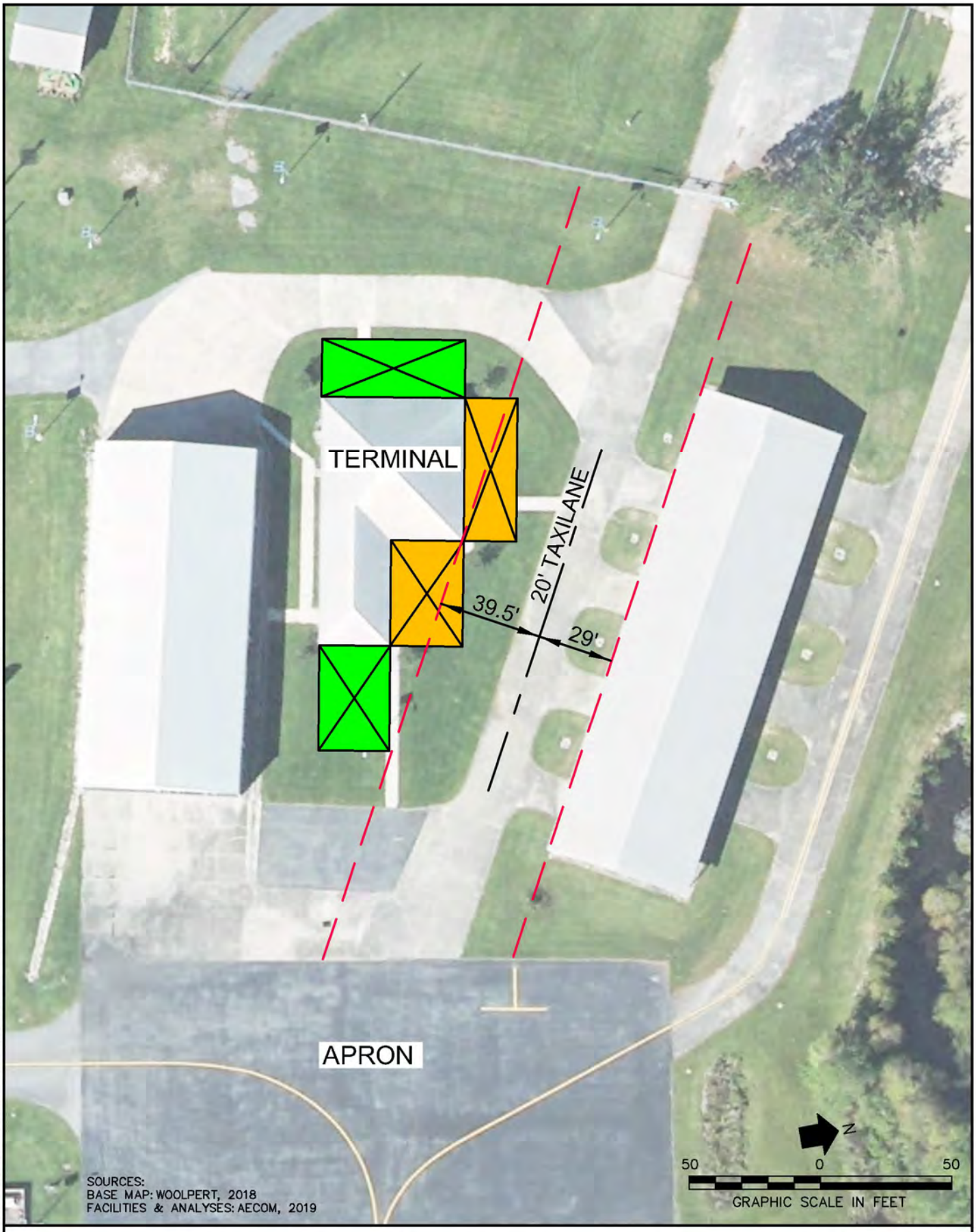
APRON EXPANSION

FIGURE 4.3-8



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TERMINAL EXPANSION CONSTRAINTS

FIGURE 4.3-9

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Figure 4.3-10 shows a potential layout of a terminal expansion along with the creation of a loop roadway. An awning could extend from the terminal over the roadway to provide all-weather protection for arriving or departing visitors. The construction of a small dedicated parking lot (18 spaces) in front of the terminal is also proposed. The remaining land west of the parking lot could be reserved for additional parking expansion if needed in the future, but would also provide space for a focal point including signage, a flag plaza or some other landscaping feature that provides a suitable "sense of place" and clearly identifies the entrance of the Airport to the general public.

It is proposed that the existing perimeter fence, as indicated on **Figure 4.3-10**, be moved eastward to provide the public with direct access to the terminal and eliminate the need for vehicles to pass through a security gate to reach the terminal. This would achieve a major objective of the Airport Authority which is to create a welcoming entrance for Airport users and the general public.

4.4. SUPPORT FACILITY ALTERNATIVES

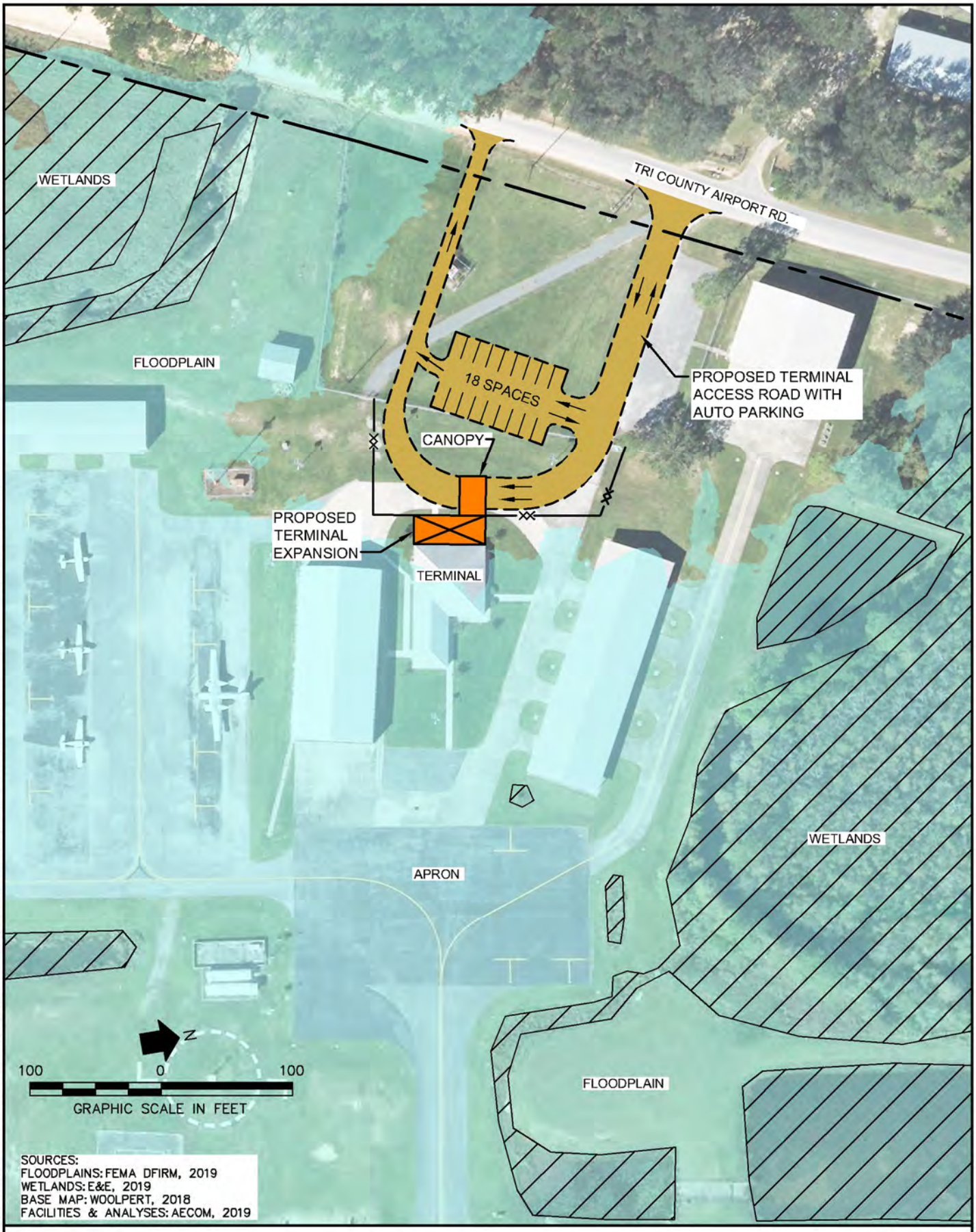
4.4.1 AIRCRAFT RESCUE AND FIREFIGHTING

As noted in the Facility Requirements section, the Airport Authority desires improvements to fire protection capabilities including the construction of a suitable vehicle parking area for use by local firefighting authorities and the construction of a water tank that could provide a dedicated water supply to the vehicles. These facilities would not be eligible for federal funding through the FAA's Airport Improvement Program, because the Airport is not certified under Part 139 of the Federal Aviation Regulations. However, these facilities could potentially be funded through other sources such as county funds or other funding sources that are dedicated to firefighting capabilities.

Alternatives identified in this section focus on potential locations for a vehicle parking area and water tank. **Figure 4.4-1** illustrates three potential sites. Site 1 is located adjacent to Tri County Airport Road, while Site 2 and Site 3 are located in the southwest corner of the Airport.

Site 1 offers the advantage of a shorter distance to County Road 162 and the existing terminal area facilities (i.e., hangars, aprons and fueling). Consequently, it offers quicker response time to these facilities. This site is not located within wetlands or floodplains and is nearly level and therefore, would not require significant site work. It is also located adjacent to existing powerlines and therefore offers lower costs for utility construction.

Sites 2 and 3 offer the advantage of also being free of wetlands and the floodplain. However, these sites are located a greater distance from the existing terminal area and would require longer response times for personnel to reach these sites. Utilities are not currently located at these sites and would need to be constructed. Furthermore, Tri County Airport Road is not paved to these sites. Paving the road would improve access conditions and reliability during poor weather conditions.



S:\Projects\A\AVCON\60586846_TriCoMPU\Planning\400-Technical\403 Facility Requirements\Figures\FIG 4.3-10.dwg 08/12/2019 13:20

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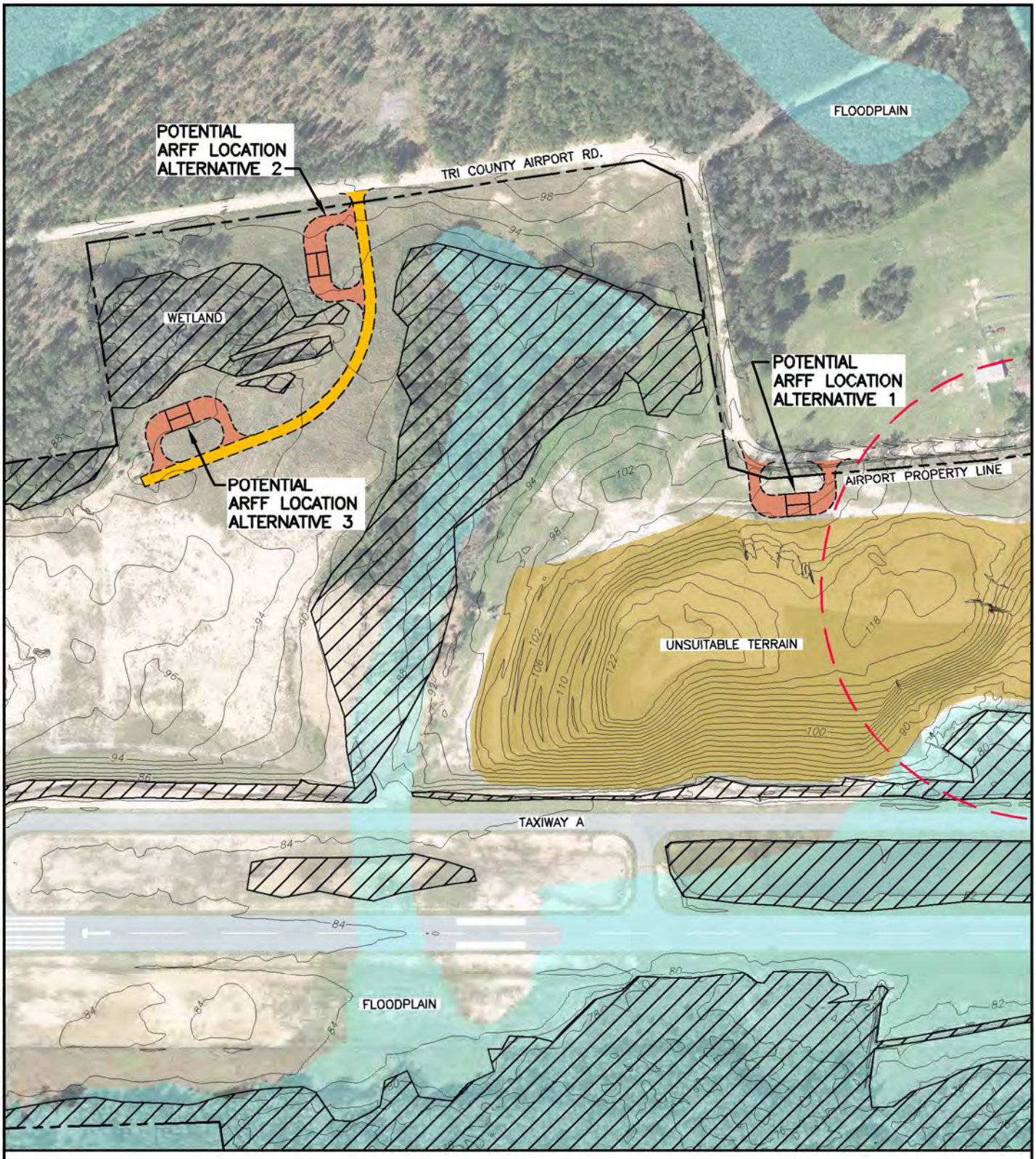
TERMINAL, PARKING AND ROADWAY EXPANSION

FIGURE 4.3-10



SOURCES:
FLOODPLAINS: FEMA DFIRM, 2019
WETLANDS: E&E, 2019
BASE MAP: WOOLPERT, 2018
FACILITIES & ANALYSES: AECOM, 2019

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POTENTIAL ARFF FACILITY LOCATIONS

FIGURE 4.4-1

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4.4.1.1 Preferred Alternative

These three alternatives were presented to the Tri-County Airport Authority at a meeting on August 2nd, 2019. The Airport Authority indicated that Site 2 is their preferred alternative due to the fact that it does not conflict with other potential development at Site 1 and offers better response time than Site 3, while also being closer to Tri County Airport Road in the event that this facility is needed prior to the construction of a new road in the southwest corner of the Airport.

4.4.2 FUELING

The Facility Requirements section determined that the existing fuel farm provides adequate capacity to meet existing and future demand. Therefore, no alternatives were developed for these facilities. However, members of the Airport Authority indicated that the demolition of the old fuel containment area west of the two existing fuel tanks is desired. This capital improvement will be included in the Facilities Implementation Plan.

4.4.3 MAINTENANCE EQUIPMENT STORAGE (MES)

The Facility Requirements section noted that the existing MES shed is not sufficiently sized to provide weather protection and security for the Airport's existing equipment such as tractors and mowers. Nor does it provide proper space for a work area or the storage of supplies. Therefore, some of the equipment is currently stored beneath the shade hangars along the existing work bench.

Information provided by the Airport Authority indicates that space is required for the items listed below and shown in **Figure 4.4-2**.

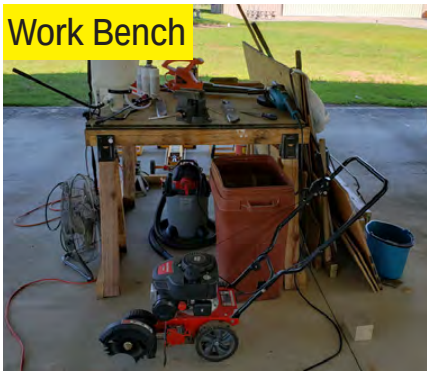
- John Deere Tractor and mower
- Lektro Tug
- Scag Mower
- Tool room and work bench area
- Storage for supplies and air compressor

The Authority also indicated that additional bays will be required if additional property is acquired. These bays would be needed to store an additional tractor and mowers, as well as a John Deere "Gator" for around-the-airport transportation with small tools, etc.

The Transportation Research Board's ACRP published a report entitled "Guidebook on General Aviation Facility Planning" The report provides guidance on planning of facilities to store maintenance equipment. The guidebook provides recommendations on building sizing based on the overall acreage of the airport as shown in **Table 4.4-1**.

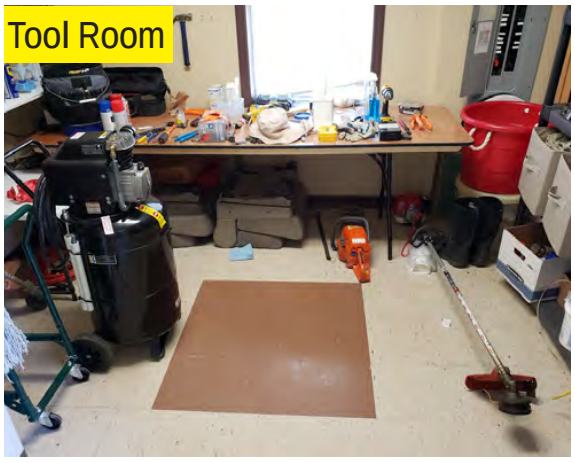
Lektro Tug

Work Bench



John Deere Tractor

Tool Room



Air Compressor

Scag Mower

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EXISTING MES EQUIPMENT AND WORK AREA

FIGURE 4.4-2

TABLE 4.4-1
MES BUILDING SIZING

Areas	Small (<250 acres)	Medium (250 to 500 acres)	Large (500 to 750 acres)
Equipment Storage	1,200 to 1,600 SF (2 bays)	2,400 to 3,200 sf (4 bays)	3600 to 4800 sf (6 bays)
Support	0 sf	600 to 800 sf	1,200 to 1,600 sf
Total	**1,200 to 1,600 SF**	**3,000 to 4,000 sf**	**4,800 to 6,400 sf**

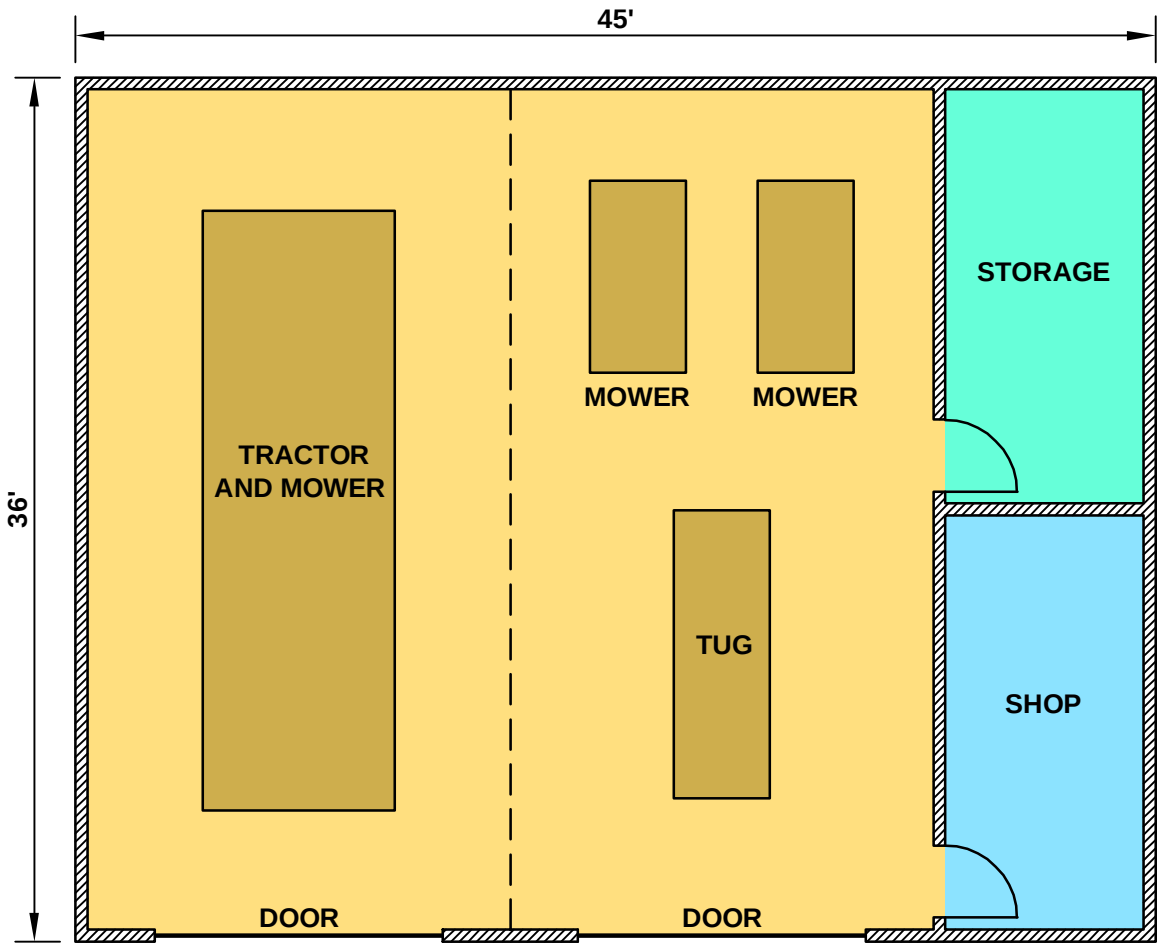
Source: ACRP Report 113, Guidebook on General Aviation Facility Planning, 2014

The guidebook notes that the recommendations regarding building size should be used as a starting point and then tailored to meet the specific needs of each airport. The guidebook also provides guidance on appropriate layouts for vehicle bays as well as space for storage and workshops. **Figure 4.4-3** provides an illustration of a potential two-bay MES facility along with templates showing equipment placement. The facility dimensions include a width of 36 feet (subdivided into two 18-foot bays) and a length of 45 feet. An additional 9-feet of width is provided for storage and workshops. This size facility would be capable of providing storage for the current airport equipment.

An MES building should be located near the existing terminal area to minimize travel distance for airport staff and vehicles. Alternatives for locating a MES Storage were discussed with the Airport Authority during meetings on June 26th and August 2nd 2019. Initial alternatives explored sites in the existing terminal area next to the existing shed. However, Airport Authority members expressed support for additional alternatives next to or inside the existing shade hangars.

Figure 4.4-4 illustrates an alternative for the construction of a new MES facility at the west end of the shade hangars. This location has no wetlands and is mostly out of the floodplain. It could accommodate a building containing two bays for vehicles along with work/storage areas. It is proposed that the front of the building face the taxilane on the north side of the shade hangars so equipment entering and exiting the facility do not conflict with vehicles entering and exiting the main Airport gate. It also would facilitate a potential relocation of the gate closer to the terminal.

Figure 4.4-5 illustrates another alternative that would enclose two bays at the west end of the existing shade hangar and convert them to an enclosed MES facility. Most of the existing airfield maintenance equipment is currently located beneath the shade hangars. Therefore, this alternative would simply enclose two bays to provide a proper MES facility. It is anticipated that this alternative could be provided at lower cost than the preceding alternative. Although this alternative would enclose two bays, it would effectively eliminate three existing shade hangar bays due to the need for proper wing tip clearance.



SOURCES:
FACILITIES & ANALYSES: AECOM, 2019

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MES BUILDING LAYOUT

FIGURE
4.4-3

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MES FACILITY
WEST OF SHADE HANGARS

FIGURE
4.4-4

SOURCES:
BASE MAP: WOOLPERT, 2018
FACILITIES & ANALYSES: AECOM, 2019

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CONVERSION OF SHADE HANGARS TO MES FACILITY

FIGURE 4.4-5

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Consultation with Airport Authority members indicate that the existing shade hangars are not the preferred means of aircraft storage and therefore, only two to three bays are typically occupied. Therefore, no loss of capability or potential revenue is anticipated in conjunction with converting three bays to a MES facility.

4.4.3.1 Preferred Alternative

Both alternatives were presented to the Tri-County Airport Authority at meetings on August 2nd 2019. The Airport Authority indicated that enclosure of two existing shade hangars is the preferred alternative due to its anticipated lower cost and proximity to the existing terminal. However, if design or permitting complications arise with this alternative, the Airport Authority will proceed with the alternative of constructing a new facility west of the existing shade hangars.

4.5 ROADWAY AND AIRPORT ACCESS

Alternatives for improving roadway access to the Airport were described in conjunction with proposed improvement for hangar facilities. Therefore, this section focuses on the other item noted in the Facility Requirement section which was signage.

Currently there is no signage for the Airport at the intersection of County Road 162 and Tri County Airport Road. The installation of a monument sign should be planned for the southeast corner of this intersection on Airport property. A well designed and lighted monument sign would provide heightened visibility of the Airport and would assist motorists in locating the Airport.

Directional signs should be installed at the entrance to the previous Baptist College facility and the intersection of Tri County Airport Road and the road leading to the terminal area. **Figure 4.5-1** provides an illustration of all potential sign locations. The recommendation for a directional sign at the entrance to this facility is because visitors who are not familiar with the Airport may mistake it for the main airport entrance and terminal. A directional sign that informs motorists that the main airport entrance is further south on Tri County Airport Road would eliminate potential confusion.

The signs for all locations should be designed together to follow a single branding function consisting of similar materials, colors and lighting. The materials selected for the sign should be durable and consider prevailing weather conditions. Landscaping suitable for the region should also be considered in conjunction with the signage to provide an attractive focal point and a sense of place that establishes an airport identity.

In addition to location and directional signage, the Facility Requirements section also noted a need for security signage on the Airport's perimeter fence. TSA guidelines note that "signage provides a deterrent by warning individuals of facility boundaries and consequences for violation. Signs along a fence line should be located such that when standing at one sign, the observer is able to see the next sign in both directions." Security signs are currently located at a few locations along the existing perimeter fence, but are not of sufficient quantity to provide visibility along the entire fence line.

SOURCES:
BASE MAP: WOOLPERT, 2018
FACILITIES & ANALYSES: AECOM, 2019

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GRAPHIC SCALE IN FEET

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POTENTIAL SIGN LOCATIONS

FIGURE 4.5-1

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Security signs should be installed along the fence line at a maximum of 400-foot distances, excluding the existing signage at tenant and terminal area entrances. It is estimated that approximately 12 additional signs would be needed using that distance interval. The precise number of signs will be determined during design services.

4.6 PERIMETER FENCING

The Airport's existing perimeter fencing does not completely enclose the airfield on the south end and therefore presents hazards in terms of wildlife management, safety and security. Wildlife can enter the operations area and presents a collision hazard for aircraft operations. The current version of the FAA published Chart Supplement notes "deer occasionally on runway."

Although the missing portion of fence is surrounding by undeveloped areas, it also presents a security deficiency because it may allow unauthorized persons to enter the airfield without encountering any boundary identification other than the existing tree line. For these reasons, the enclosure of the south end of the Airport with perimeter fencing was recommended in the Facility Requirements section.

Figure 4.6-1 depicts three alternatives for completing perimeter fencing at the south end of the Airport. Alternative 1 would extend the existing fence from its current termination point in the southeast corner of the Airport, along the property line and then proceed westward through the RPZ along low or constant elevations to avoid penetrating the approach surface to Runway 1 and the majority of the departure surface from Runway 19 except for the portion near the west property boundary.[4] This alternative would place the fence in the RPZ which is permissible, but not preferred.

Alternative 2 would extend a greater distance than Alternative 1 and would place the fence outside of the RPZ in an area where impacts to wetlands and floodplains is also minimized. Alternative 3 would mostly follow the airport property line, but avoid certain wetlands and floodplain at the far south end of airport property. **Table 4.6-1** presents a comparison of these three alternatives.

TABLE 4.6-1
PERIMETER FENCE ALTERNATIVES

Alternative	New Fence Length (LF)	Length of Fence Inside Wetlands or Floodplain (LF)	Other Factors
1	2,037	727	Crosses RPZ
2	3,568	1,219	Outside of RPZ
3	4,772	1,504	Outside of RPZ

Source: AECOM, 2019.

[4] All three alternatives would penetrate the departure surface by the same amount along the west airport boundary due to high terrain in that location. However, the amount of penetration, approximately 16 feet, would be significantly less than adjoining trees and may not be within the departure surface in the future according to FAA guidance published in Engineering Brief 100.

DEPARTURE SURFACE (40:1 SLOPE)

FENCE ALTERNATIVE 1

END OF EXISTING FENCELINE

AIRPORT PROPERTY LINE

FENCE ALTERNATIVE 2

RUNWAY PROTECTION ZONE

(TOFA)

(ROFA)

(RSA)

EL. 85.96 MSL

(RSA)

EL. 140 MSL

EL. 130 MSL

EL. 120 MSL

EL. 110 MSL

EL. 100 MSL

EL. 90 MSL

FENCE ALTERNATIVE 3

RUNWAY PROTECTION ZONE

END OF EXISTING FENCELINE

(ROFA)

DEPARTURE SURFACE (40:1 SLOPE)

LEGEND

- FENCE – ALTERNATIVE 1
- FENCE – ALTERNATIVE 2
- FENCE – ALTERNATIVE 3
- FLOODPLAINS
- WETLANDS/OTHER SURFACE WATERS

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GRAPHIC SCALE IN FEET

SOURCES:
FLOODPLAINS: FEMA DFIRM, 2019
WETLANDS: E&E, 2019
BASE MAP: WOOLPERT, 2018
FACILITIES & ANALYSES: AECOM, 2019

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PERIMETER FENCING ALTERNATIVES

FIGURE 4.6-1

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4.6.1 PREFERRED ALTERNATIVE

These alternatives were presented to the Tri-County Airport Authority at meetings on June 24th and August 2nd, 2019. The Airport Authority indicated that they prefer Alternative 1 due to its reduced length and maintenance compared to Alternatives 2 and 3. Alternative 1 should also have a significantly lower cost, because its length is 43 percent less than Alternative 2 and 57 percent less than Alternative 3.

Airport Authority members noted that several sections of existing perimeter fence need repair and/or require vegetation removal to prevent further damage. Therefore, it is recommended that additional fencing projects be added to the Facilities Implementation Plan to address these needs.

The Facility Requirements section noted that consideration could be given to the installation of fencing around the fuel farm. However, the recommendation to complete perimeter fencing at the Airport would provide positive access control. Therefore, an additional fencing project solely for the fuel farm is not recommended.

4.7 HELIPAD

FAA personnel in the Orlando Airports District Office commented that the existing helipad is not registered as a helipad according to FAA records. Therefore, two alternatives were considered for this facility. The first alternative is to make any required improvements to ensure that the facility meets all applicable design standards and to proceed with the process of getting the helipad properly registered with the FAA. A second alternative is to remark the helipad as a helicopter parking position.

Consultation with the Airport Authority confirmed that the existing facility is currently being used by rotorcraft as a helipad and not just a parking position. Equipment noted as commonly operating includes the Bell LongRanger. Consequently, the second alternative was discarded from further consideration and the rest of this section addresses the feasibility of the first alternative.

FAA *Advisory Circular 150/5390-2C Heliport Design*, specifies the design standards for helicopter facilities at airports. The following paragraphs discuss these design standards.

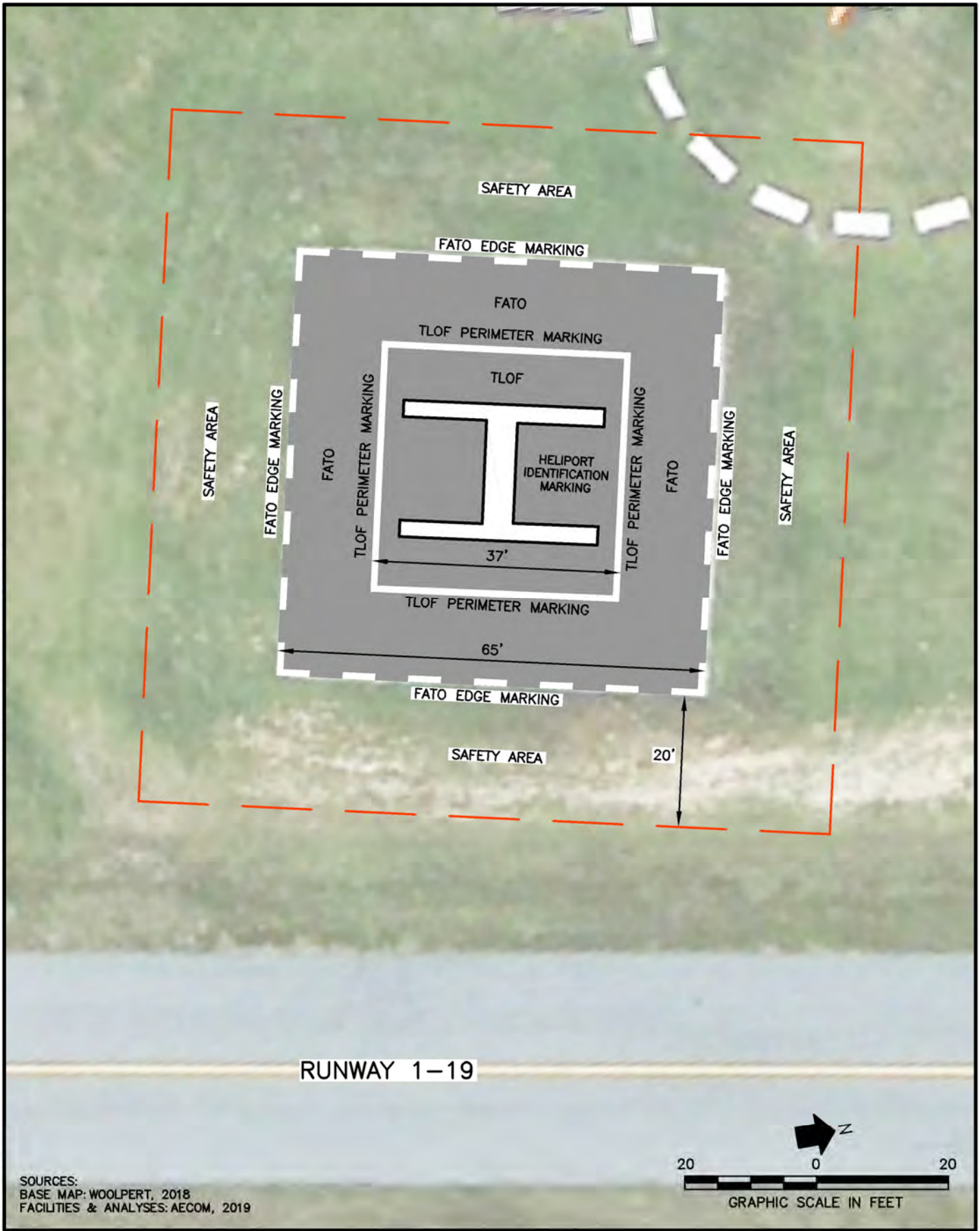
The advisory circular specifies a recommended distance between the center of the helipad and the runway centerline. The recommended distance for helipads serving small rotorcraft (i.e., 7,000 pounds or less) and small aircraft (i.e., 12,500 pounds or less) is 300 feet. The distance between the existing helipad and the centerline of Runway 1-19 is 331 feet. Therefore, the existing facility meets the separation requirement for distance from the runway for rotorcraft such as the LongRanger.

The advisory circular also notes geometric and airspace clearances associated with helipads. **Figure 4.7-1** applies the geometric clearances to the existing helipad and reveals that it meets all of the clearances including safety areas.

Figure 4.7-2 presents the relevant airspace surfaces including the 8:1 approach/departure surface and the 2:1 transitional surface the vicinity of the terminal area. An assessment of these airspace surfaces determined that the wind sock in the center of the segmented circle penetrates the Transitional Surface by 1.3 feet. The recommended solution is to adjust the wind sock height downward to eliminate the penetration. No other facilities penetrate the helipad's airspace surfaces.

Review of the existing helipad pavement markings indicates that they require revisions to fully comply with the design standards. These revisions can be accomplished through a capital improvement project in conjunction with the adjustment to the wind sock.

It is recommended that the improvements noted above be implemented to bring the existing helipad into compliance with design standards and that required documentation such as the ALP be filed with the ADO. These actions will enable the Airport Authority to bring the existing helipad into compliance with FAA requirements.



SOURCES:
BASE MAP: WOOLPERT, 2018
FACILITIES & ANALYSES: AECOM, 2019

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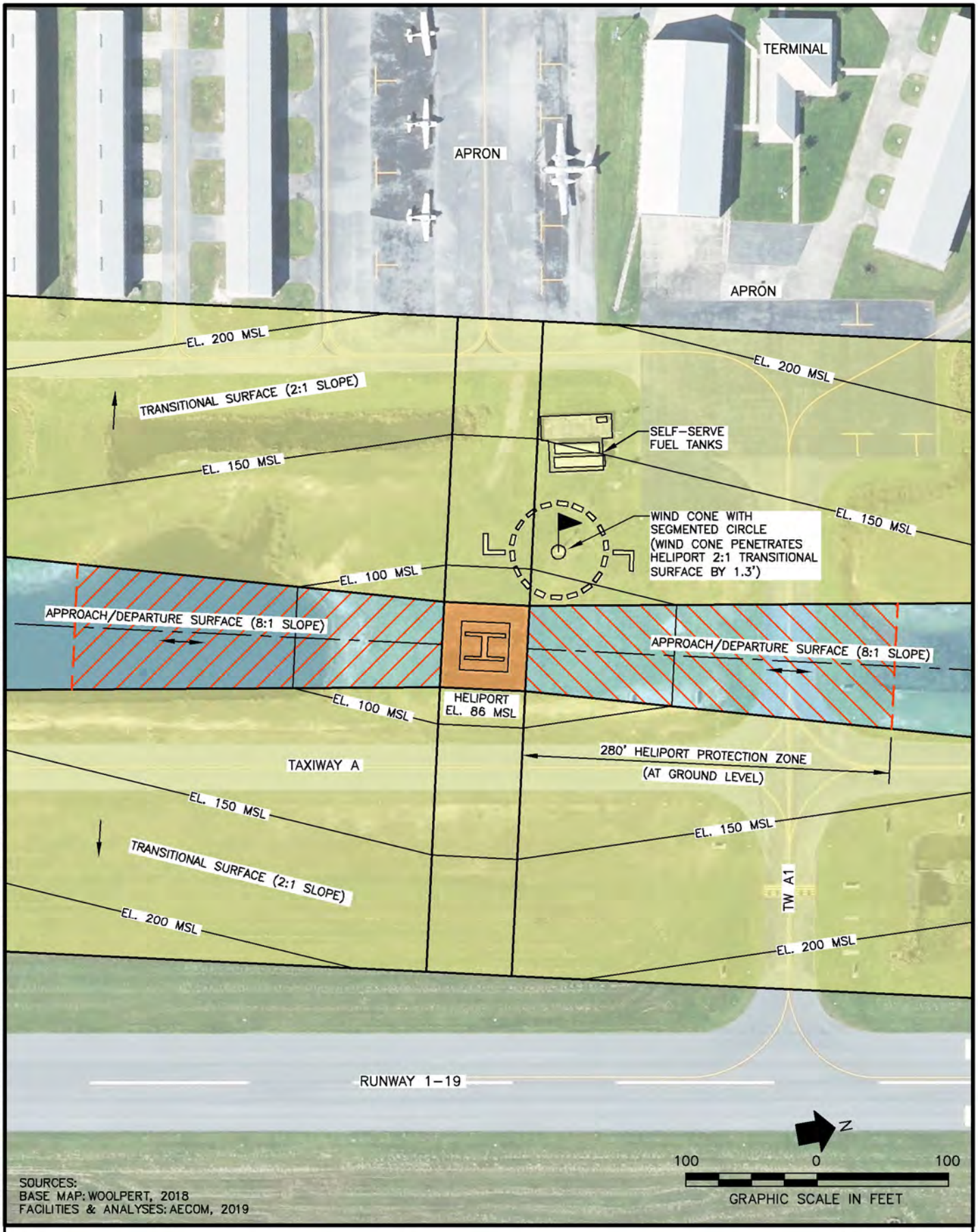
HELIPAD GEOMETRIC CLEARANCES

FIGURE 4.7-1



SOURCES:
BASE MAP: WOOLPERT, 2018
FACILITIES & ANALYSES: AECOM, 2019

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HELIPAD AIRSPACE SURFACES

FIGURE 4.7-2

SECTION 5.0 ENVIRONMENTAL OVERVIEW

5.1 INTRODUCTION

This Environmental Overview was prepared to 1) characterize the existing physical, natural and social environment on and surrounding Tri-County Airport (i.e., the Airport); and 2) identify environmental review, approval and permitting requirements potentially applicable to proposed capital improvements.

5.2 EXISTING ENVIRONMENTAL CONDITIONS

5.2.1 AIR QUALITY

Pursuant to the Federal Clean Air Act and its amendments, the U.S. Environmental Protection Agency (EPA) identifies air pollutants that cause or contribute to the endangerment of human health and or environmental welfare and establishes air quality "criteria" that guide the establishment of air quality standards to regulate these pollutants (42 United States Code [U.S.C.] Sections [§§] 7408 - 7409). To date, EPA has established such criteria for six air pollutants: carbon monoxide, lead, nitrogen dioxide, ozone, fine and respirable particulate matter, and sulfur dioxide, and has subsequently promulgated National Ambient Air Quality Standards (NAAQS) meant to safeguard public health (i.e., primary NAAQS) and environmental welfare (i.e., secondary NAAQS).

According to the US EPA, Holmes, Jackson, and Washington counties are considered attainment/unclassifiable for all current NAAQS. The current NAAQS are summarized on **Table 5.2-1**, along with EPA data from the nearest available air monitoring stations for the period of 2016-2018. Of note, only ozone and particulate matter (less than or equal to 2.5 micrometers) concentrations are monitored within 29 miles of the Airport; pollutant monitoring data from more-distant monitors are excluded from the summary. Available data indicate no current violations of the NAAQS for ozone and particulate matter (less than or equal to 2.5 micrometers).

TABLE 5.2-1
AIR MONITORING DATA SUMMARY (2016-2018)

Pollutant	Averaging Time	Level	Form	Concentration (Monitor ID, Distance from Airport)		
				12-059-0004 (On Airport Property)	01-69-004 (26 miles NE)	01-069-0003 (29 miles NE)
Carbon monoxide [76 FR 54294, Aug 31, 2011]	8-hour	9 ppm	Not to be exceeded more than once per year	--	--	--
	1-hour	35 ppm		--	--	--
Lead [81 FR 71906, Oct 18, 2016]	Rolling 3-month average	0.15 µg/m^3	Not to be exceeded	--	--	--
Nitrogen dioxide [77 FR 20218, Apr 3, 2012] [75 FR 6474, Feb 9, 2010]	1-hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, 3-year average	--	--	--
	Annual	53 ppb	Annual mean	--	--	--
Ozone [80 FR 65292, Oct 26, 2015]	8-hour	0.070 ppm	Annual fourth-highest daily maximum 8-hr concentration, 3-year average	0.060	0.060	--
Particle Pollution [78 FR 3085, Jan 15, 2013]	Less than or equal to 2.5 micrometers Annual (primary)	12 µg/m^3	Annual mean, 3-year average	--	--	7.8
	Less than or equal to 2.5 micrometers Annual (secondary)	15 µg/m^3	Annual mean, 3-year average			
	Less than or equal to 2.5 micrometers 24-hour	35 µg/m^3	98th percentile, 3-year average	--	--	7.8
	Less than or equal to 10 micrometers 24-hour	150 µg/m^3	Not to be exceeded more than once per year, 3-year average	--	--	--

TABLE 5.2-1 (continued)
AIR MONITORING DATA SUMMARY (2016-1018)

Pollutant	Averaging Time	Level	Form	Concentration (Monitor ID, Distance from Airport)		
				12-059-0004 (On Airport Property)	01-69-004 (26 miles NE)	01-069-0003 (29 miles NE)
Sulfur dioxide [77 FR 20218, Apr 3, 2012] [84 FR 9866, Mar 18, 2019]	1-hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, 3-year average	--	--	--
	3-hour	0.5 ppm	Not to be exceeded more than once per year	--	--	--

Source: Federal Register (FR), as above; and EPA AirData (https://www.epa.gov/outdoor-air-quality-data/interactive-map-air-quality-monitors), accessed June 4, 2019.
-- = not monitored; ppb = parts per billion; ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter of air.

5.2.2 BIOLOGICAL RESOURCES

The Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.), requires that all Federal agencies undertake programs for the conservation of endangered and threatened species and prohibits Federal agencies from authorizing, funding, or carrying out any action that would jeopardize a listed species or destroy or modify its critical habitat as designated in Title 50 Code of Federal Regulations (CFR) 17 and 226. Projects that would otherwise jeopardize a federally listed species or impact its critical habitat must contain conservation measures or habitat mitigation that removes the jeopardy. State listed species are those animal and plant species protected by the State of Florida.

In April and May 2019, Energy and Environment, LLC (E&E) scientists conducted field assessments within the Airport property boundary to delineate land use and vegetative cover types. The Airport was also evaluated for potential occurrences of federally and state listed plant and animal species. Land use and vegetative cover types identified within and adjacent to the Airport property boundary are depicted on **Figure 5.2-1**. All vegetative habitats and land uses were classified using the Florida Land Use, Cover and Forms Classification System (FLUCFCS)[5]. **Table 5.2-2** summarizes the acreage of each land use/vegetative cover type within the existing property boundary.

The majority of the airfield is regularly mowed and maintained and is vegetated with ruderal vegetation. Upland forests, located mostly on the north end of the Airport, predominantly consist of laurel oak (*Quercus hemisphaerica*), water oak (*Q. nigra*), live oak (*Q. virginiana*), hickories

[5] Florida Department of Transportation (FDOT), *Florida Land Use, Cover and Forms Classification System Handbook*, 1999.

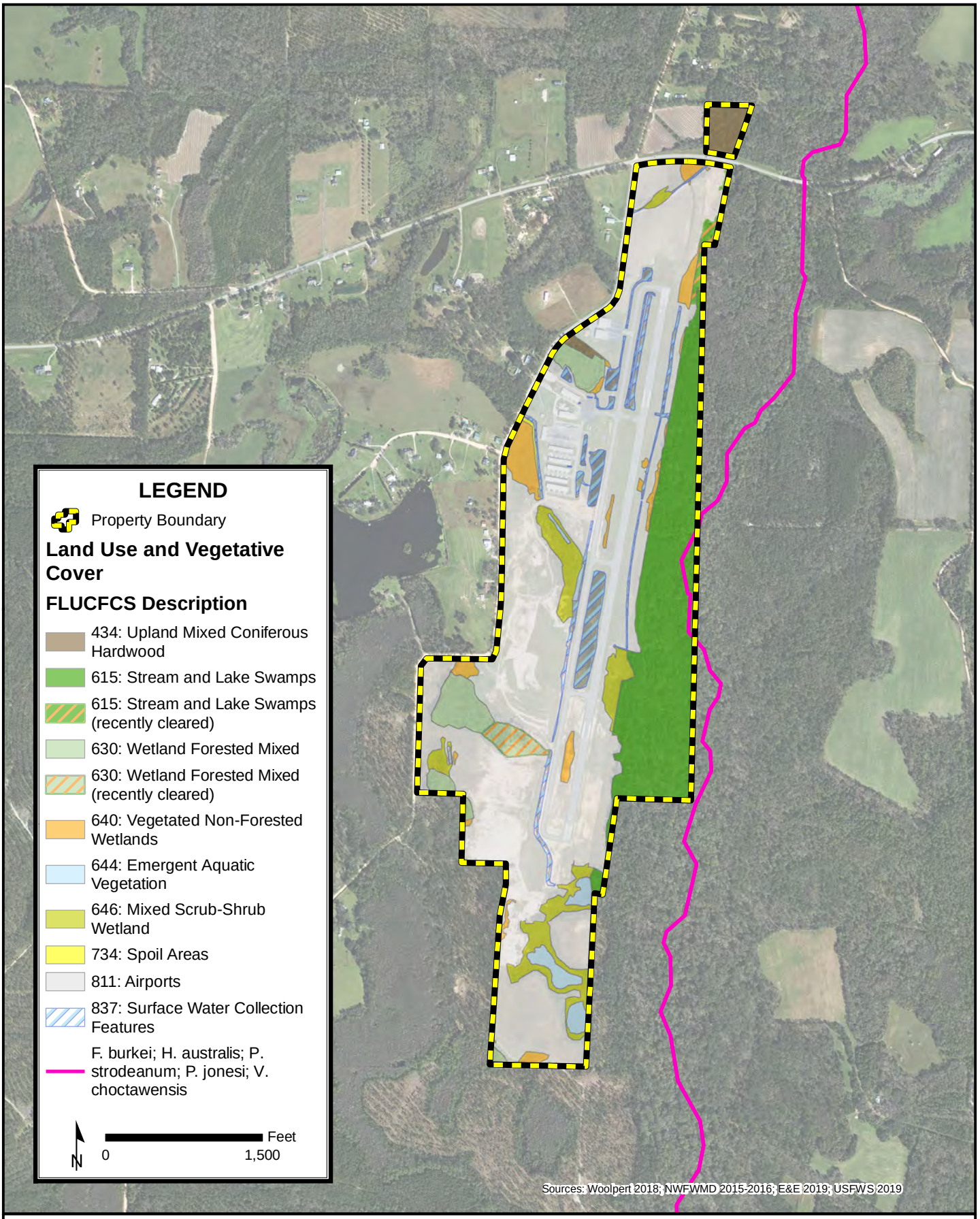
(*Carya* spp.), sweetgum (*Liquidambar styraciflua*), and slash pine (*Pinus elliottii*). Forested floodplain associated with Holmes Creek occurs along the eastern boundary of the Airport and consists predominantly of sweet bay (*Magnolia virginiana*), black gum (*Nyssa biflora*), red maple (*Acer rubrum*), bald cypress (*Taxodium distichum*), sweetgum, and slash pine. Forested wetland systems also occur on the west side of the runway that extend outside of the Airport property boundary. Portions of these wetland areas have recently been cleared of all canopy and shrub vegetation (see **Figure 5.2-1**). Emergent aquatic wetlands dominated by fragrant water-lily (*Nymphaea ordorata*) occur in the southern end of the Airport. Herbaceous wetlands occurring throughout the airport property consist predominantly of yellow-eyed grass (*Xyris* spp.), spikerush (*Eleocharis* spp.), beakrush (*Rhynchospora* spp.), and camphorweed (*Pluchea rosea*). A network of stormwater management facilities (i.e., ditches and wet detention ponds) are located within the airport boundary and connect to off-site wetlands.

Most of the upland and wetland habitats within the airport boundary have been significantly altered by past development and other airfield management activities, such as ditching, tree removal, mowing, excavation, and spoil disposal.

TABLE 5.2-2
LAND USE AND VEGETATIVE COMMUNITIES ON AIRPORT PROPERTY

FLUCFCS Description	Acres
Uplands	
434 – Upland mixed coniferous hardwood	4.6
734 – Spoil areas	0.3
811 – Airports	189.8
Sub-Total of Uplands	***194.7***
Wetlands	
615 – Stream and lake swamps	53.0
615 – Stream and lake swamps (recently cleared)	1.9
630 – Wetland forested mixed	9.9
630 – Wetland forested mixed (recently cleared)	2.7
640 – Vegetated non-forested wetlands	9.3
644 – Emergent aquatic vegetation	4.6
646 – Mixed scrub-shrub wetland	15.1
Sub-Total of Wetlands	***96.5***
Other Surface Waters	
837 – Surface water collection features	12.6
Sub-Total of Other Surface Waters	***12.6***
TOTAL	**303.8**

Source: FDOT, 1999; E&E, 2019.



TRI-COUNTY AIRPORT
MASTER PLAN UPDATE

LAND USE/VEGETATIVE COVER

FIGURE 5.2-1

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The potential for federally and state listed species to occur within and/or adjacent to the Airport was assessed by reviewing agency listings of species, species' ranges, and the presence of suitable nesting and foraging habitat. **Table 5.2-3** provides a summary of the listed and protected species with the potential to occur within and/or adjacent to the Airport.

TABLE 5.2-3
STATE AND FEDERALLY LISTED SPECIES [1] WITH POTENTIAL TO OCCUR ON OR ADJACENT TO THE AIRPORT

Species	Common Name	Habitat	Federal Status [2]	State Status [3]
Plants				
Agrimonia incisa	Incised groove-bur	Open pine woods or mixed pine-oak woods.	NL	T
Andropogon arctatus	Pinewoods bluestem	Wet pine flatwoods, seepage wetlands, wet pine savannas.	NL	T
Arnoglossum diversifolium	Variable-leaved Indian-plantain	Floodplain forests over limestone, banks of woodland streams, seasonally wet places in richly wooded hammocks, and calcareous swamps.	NL	T
Asclepias viridula	Southern milkweed	Clearings in moist, acidic pineland savannas, pine flatwoods, and borders of shrub-tree bays or bogs.	NL	T
Baptisia megacarpa	Apalachicola wild indigo	Slope forest, up-slope from streams and floodplain woodlands.	NL	E
Brickellia cordifolia	Flyr's brickell-bush	Dry, upland pine-oak woods.	NL	E
Calamintha dentata	Toothed savory	Longleaf pine-deciduous oak sandhills, planted pine plantations, sand, open and abandoned fields, and roadsides.	NL	T
Coreopsis integrifolia	Ciliate-leaf tickseed	Limestone-based soils of floodplains along small streams.	NL	E
Enemion biternatum	False rue-anemone	Moist deciduous forests.	NL	E
Ilex amelanchier	Serviceberry holly	Sandy swamps; wet woods; streambanks.	NL	T
Linum westii	West's flax	Wet flatwoods, depression ponds, edges of pond cypress swamps.	NL	E
Lobelia boykinii	Pond's lobelia	Cypress-gum depressions or ponds, wet pine savannahs and flatwoods.	NL	E
Macranthera flammea	Hummingbird flower	Seepage slopes, wet streamside thickets, edges of baygalls and cypress - gum ponds.	NL	E

TABLE 5.2-3 (continued)
STATE AND FEDERALLY LISTED SPECIES 1 WITH POTENTIAL TO OCCUR ON OR ADJACENT TO THE AIRPORT

Species	Common Name	Habitat	Federal Status [2]	State Status [3]
Pinguicula primuliflora	Primrose-flowered butterwort	In shallow, usually flowing, water of springy areas, boggy banks of small streams, swamps, rarely in shallow ditches.	NL	E
Platanthera integra	Yellow fringeless orchid	Wet pine flatwoods, wet prairies, depressions within pinelands, marshes.	NL	E
Rhexia parviflora	Small-flowered meadowbeauty	Seepage slopes, margins of dome swamps, depression marshes, and evergreen shrub ponds.	NL	E
Rhexia salicifolia	Panhandle meadowbeauty	Sunny margins of depression marshes, flatwoods ponds, and sandhill upland lakes (karst ponds), in wet sands or peats.	NL	T
Rhododendron austrinum	Florida flame azalea	Moist acidic sandy soils, primarily in shaded ravines & in wet bottomlands on rises of sandy alluvium or older terraces.	NL	E
Rhynchospora crinipes	Mosquito beaksedge	Stream and riversides on narrow streamside shelves, sand-clay bars, and occasionally rooted in streambeds. Substrates range from clays and peaty silts to sands and gravels.	NL	E
Sideroxylon thornei	Thorne's buckthorn	Wet woods bordering streams or cypress ponds.	NL	E
Silene polypetala	Fringed campion	Hardwood forests on slopes and stream terraces.	E	E
Spigelia gentianoides	Gentian pinkroot	Upland mixed pine-oak forest.	E	E
Torreya taxifolia	Florida torreya	Rich, deciduous forests on mid-slopes of ravines and steepheads.	E	E
Uvularia floridana	Florida merrybells	Bottomland and floodplain forests, moist ravines.	NL	E
Xyris isoetifolia	Quillwort yellow-eyed grass	Moist sands or sandy peats of savanna bogs, flatwood pond margins, grassy seepage slopes of creek, and shores of limestone lakes and sinks.	NL	E
Xyris scabrifolia	Harper's yellow-eyed grass	Sandhill seepage bogs and wet pine savannas.	NL	T

TABLE 5.2-3 (continued)
STATE AND FEDERALLY LISTED SPECIES 1 WITH POTENTIAL TO OCCUR ON OR ADJACENT TO THE AIRPORT

Species	Common Name	Habitat	Federal Status [2]	State Status [3]
Mussels				
Fusconaia burkei	Tapered pigtoe	Medium-sized creeks to large rivers in stable sand or sand and gravel substrata, occasionally occurring in silty sand in slow to moderate current.	T	FT
Hamiota australis	Southern sandshell	Medium-sized creeks to rivers with slow to moderate current and sandy substrates.	T	FT
Pleurobema strodeanum	Fuzzy pigtoe	Medium-sized creeks and rivers, in sand and silty sand substrates with slow to moderate current.	T	FT
Ptychobranchus jonesi	Southern kidneyshell	Medium to large creeks to small rivers with firm sand and fine gravel substrates and slow to moderate currents; commonly associated with bedrock outcroppings.	E	FE
Villosa choctawensis	Choctaw bean	Large creeks and rivers with moderate current over sand to silty-sand substrates.	E	FE
Fish				
Pteronotropis welaka	Bluenose shiner	Quiet backwaters and pools of blackwater streams and rivers and spring runs; usually with thick vegetation nearby.	NL	T
Amphibians				
Ambystoma bishopi	Reticulated flatwoods salamander	Mesic flatwoods, wet flatwoods and wet prairie communities with wiregrass groundcover and scattered wetlands. Breeds in ponds that lack predatory fish and which usually have some emergent herbaceous vegetation.	E	FE
Reptiles				
Drymarchon corais couperi	Eastern indigo snake	Various habitats with the exception of open water.	T	FT
Gopherus polyphemus	Gopher tortoise	Dry upland habitats, including disturbed habitats such as pastures, old fields, and road shoulders.	C	T
Pituophis melanoleucus mugitus	Florida pine snake	Well-drained sandy soils with a moderate to open canopy.	NL	T

TABLE 5.2-3 (continued)
STATE AND FEDERALLY LISTED SPECIES 1 WITH POTENTIAL TO OCCUR ON OR ADJACENT TO THE AIRPORT

Species	Common Name	Habitat	Federal Status [2]	State Status [3]
Birds				
Egretta caerulea	Little blue heron	Permanently and seasonally flooded wetlands, streams, lakes, and swamps, and in manmade impoundments and ditches.	NL	T
Mycteria americana	Wood stork	Nests in inundated forested wetlands. Forages in freshwater marshes, swamps, flooded pastures.	T	FT
Mammals				
Myotis grisescens	Gray bat	Roosts in caves almost exclusively. Forages over creeks, rivers, and lakes surrounded by forested communities.	E	FE
Other Species of Concern				
Haliaeetus leucocephalus	Bald eagle	Nests in tall trees. Forages near bodies of water.	NL[(4)]	NL[(4)]
Ursus americanus floridanus	Florida black bear	A wide variety of forested communities.	NL[(5)]	NL[(5)]

NL = Not Listed; E = Endangered; T = Threatened; F = Federal; C = Candidate
Sources: See footnotes below.

[1] As reported by the "Florida Natural Areas Inventory (FNAI) Tracking List, Holmes, Jackson, and Washington counties" http://www.fnai.org. and U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) database http://ecos.fws.gov/ipac.
[2] As listed by the USFWS in 50 CFR 17 (http://www.fws.gov/endangered/), updated March 2017.
[3] Plant species listed by the Florida Department of Agricultural and Consumer Services pursuant to Chapter 5B-40, Florida Administrative Code (F.A.C.), updated July 2018. Animal species listed by the Florida Fish and Wildlife Conservation Commission (FWC) pursuant to Rules 68A-27.003 through 68A-27.005, F.A.C. (https://myfwc.com/wildlifehabitats/wildlife/), updated December 2018.
[4] The bald eagle is neither state nor federally-listed; however, this species is federally-protected by the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. The bald eagle is also managed in Florida by the FWC's bald eagle rule (68A-16.002, F.A.C.).
[5] The Florida black bear is no longer state-listed; however, this species is managed in Florida by the FWC's Florida Black Bear Conservation rule (68A-4.009, F.A.C.).

Based on the review of available data and the FNAI online biodiversity matrix, no listed or protected species have been documented within one mile of the Airport. As previously discussed, the land use/vegetative cover within airport property is comprised mostly of Airport use with little natural vegetative cover or habitat for listed species.

Airport property was also evaluated for the occurrence of listed species Critical Habitat designated by Congress in Title 50 CFR 424. Designated Critical Habitat does occur on the east side of airport property within Holmes Creek for the southern sandshell, southern kidneyshell, tapered pigtoe, fuzzy pigtoe, and the Choctaw bean (see **Figure 5.2-1**). However, Holmes Creek is mostly located outside of the airport's boundary.

In order to avoid or minimize potential adverse impacts to the species listed in **Table 5.2-3**, the following commitments may be required:

1. Implement the latest version of the USFWS Standard Protection Measures for the Eastern Indigo Snake during all construction phases of any development projects;
2. Prior to construction, resurvey appropriate habitats within the project area for gopher tortoises. Coordination with the USFWS and/or FWC will occur to minimize adverse effects to these species as necessary;
3. Prior to construction, resurvey for bald eagle nests within the limits of the project area. If a nest is observed or documented within 1,000 feet of the project area, coordinate with the USFWS and FWC; and
4. Obtain any necessary state and Federal permits and coordinate with the appropriate state and Federal agencies. If there are unavoidable impacts to jurisdictional waterbodies, appropriate mitigation to offset adverse impacts to wetland-dependent listed species habitat should be provided.

It is anticipated that the following permits may be required for work proposed on Airport property that may adversely affect a listed and/or protected species:

Permit	**Issuing Agency**
Gopher Tortoise Conservation Relocation Permit (as necessary)	FWC
Eagle Nest Disturbance Permit (as necessary)	USFWS and FWC

5.2.3 DEPARTMENT OF TRANSPORTATION ACT SECTION 4(F) RESOURCES

Section 4(f) of the Department of Transportation (DOT) Act of 1966 provides protection for publicly-owned parks, recreational areas, wildlife, and waterfowl refuges; and significant historic sites (properties listed on or eligible for listing on the National Register). The term “Section 4(f) resource” refers to any specific site or property meeting DOT Act criteria. Section 4(f) which stipulates that the use of land from these resources cannot be approved unless the following conditions apply:

- There is no feasible and prudent avoidance alternative to the use of land; and the action includes all possible planning to minimize harm to the property resulting from such use; or
- The project includes all possible planning to minimize harm to the protected resource resulted from the use.

Special consideration needs to also be given to noise sensitive areas within Section 4(f) properties (including, but not limited to, noise sensitive areas within national parks; national wildlife and waterfowl refuges; and historic sites, including traditional cultural properties).

A review of available information from a variety of sources including county documentation, local municipalities, and state databases was used to document the location of Section 4(f) resources such as publicly-owned parks, recreational areas, wildlife, and waterfowl refuges; and significant historic sites within the vicinity of the Airport.

No Section 4(f) resources are located on or adjacent to Airport property. The nearest Section 4(f) resource is the Choctawhatchee and Holmes Creek Water Management Area owned and managed by the NWFWMD and located in Washington County approximately 14 miles west of the Airport.

5.2.4 FARMLANDS

In accordance with the Farmland Policy Protection Act (FPPA), the Natural Resources Conservation Service (NRCS) of the U.S. Department of Agriculture uses soil survey information to identify the extent to which soils are classified as Prime, Unique, or Statewide/Locally Important farmland, defined as follows:

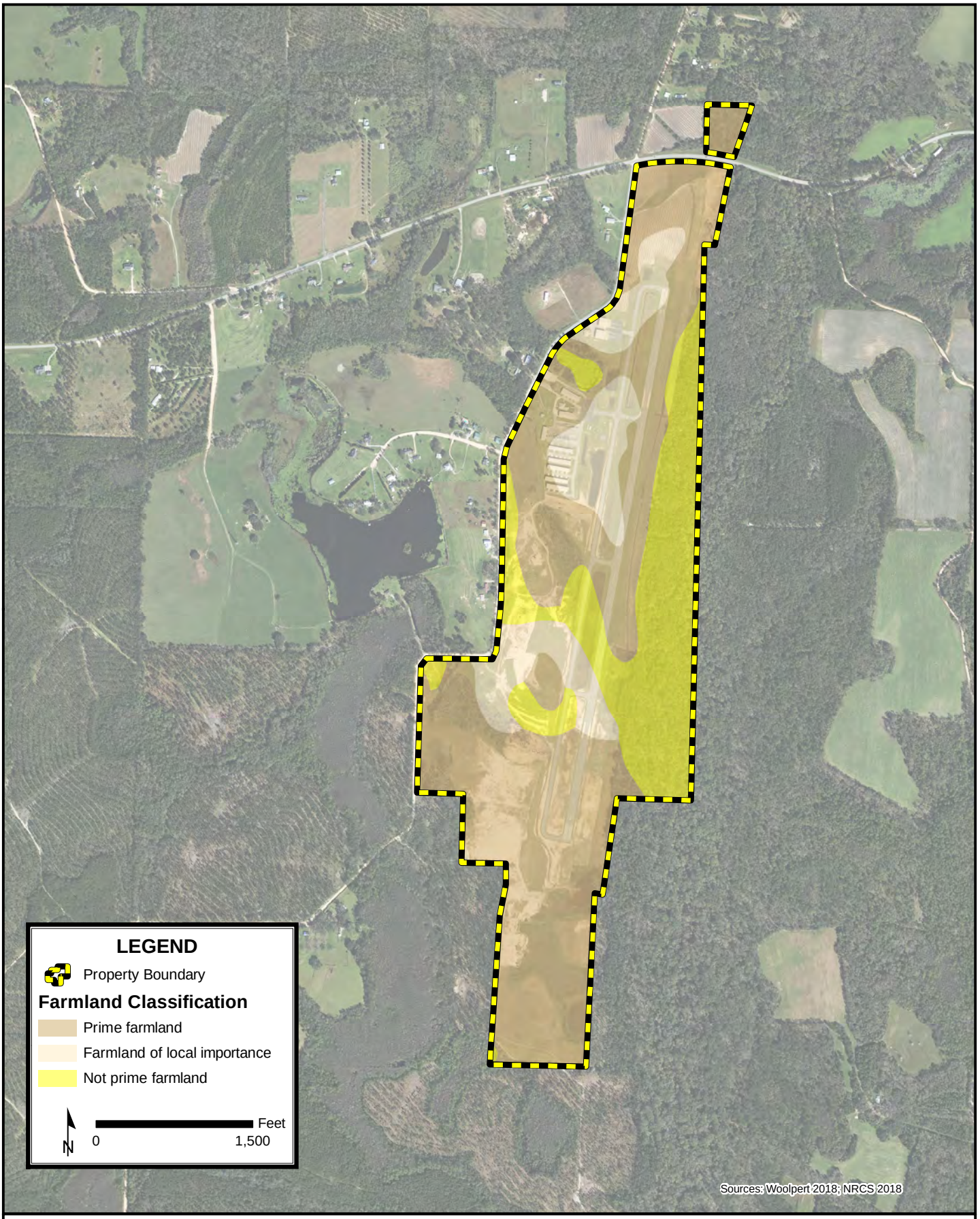
- Prime Farmland: soils which have the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed and other agricultural crops. Prime farmlands require minimal use of fuel, fertilizer, pesticides or other products to maximize agricultural yield.
- Farmland of Unique Importance: soils which are used for producing high-value food and fiber crops. Unique farmland has unique qualities conducive to producing high quality crops and/or high yields of such crops.
- Farmland of Local/Statewide Importance: soils designated as "important" by a state or local governmental entity.

The NRCS has published soil survey data for Holmes, Jackson, and Washington counties, presented on **Table 5.2-4** and **Figure 5.2-2** for the Airport property.

TABLE 5.2-4
FARMLANDS ON AIRPORT PROPERTY

Category	Acres
Prime farmland	181.8
Farmland of local importance	46.1
Not prime farmland	75.9
Grand Total	**303.8**

Source: NRCS, 2018.



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FARMLANDS

FIGURE 5.2-2

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As shown on **Table 5.2-4,** there are farmlands located on airport property that are considered by the NRCS to be Prime Farmland and Farmland of Local Importance.

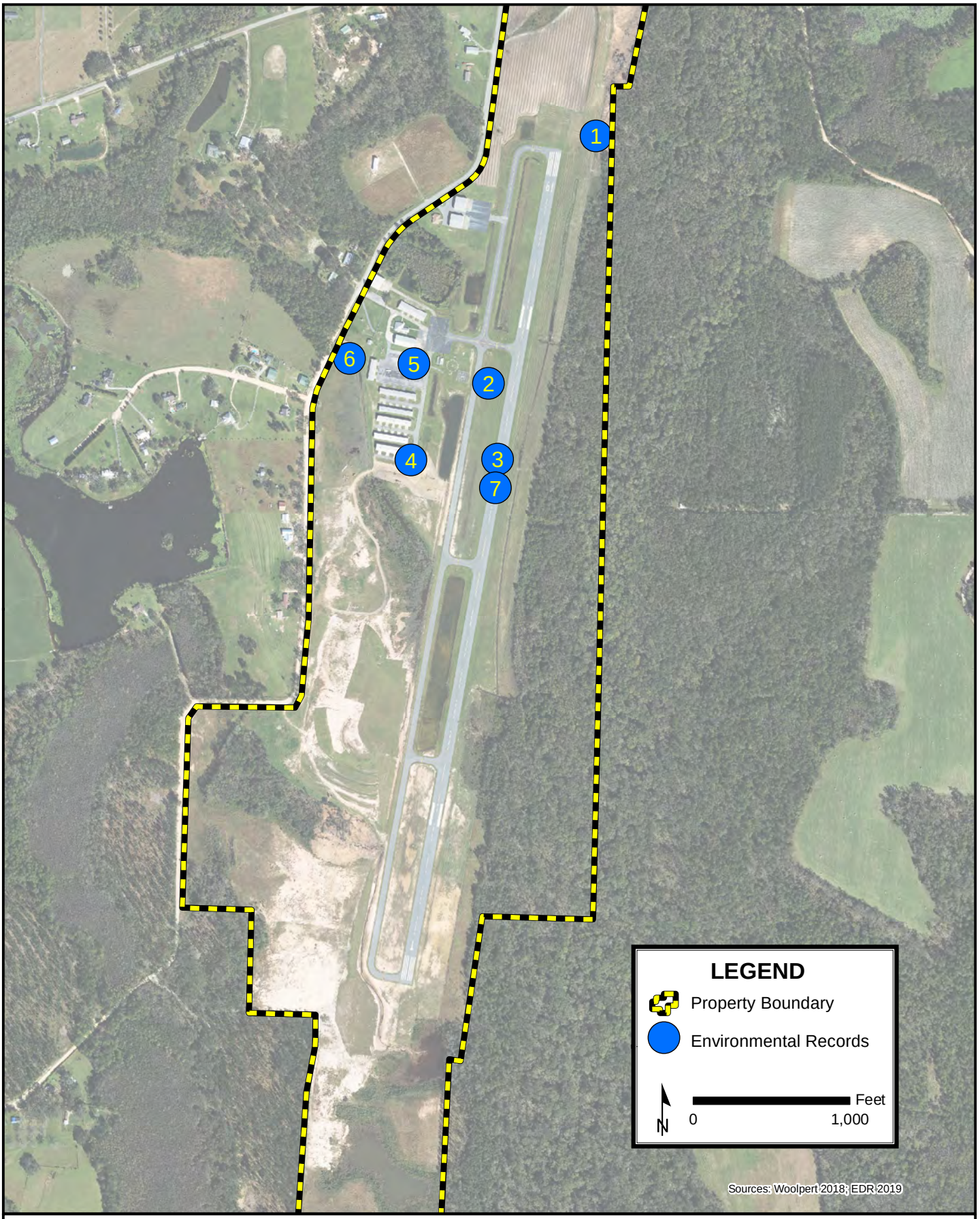
Federal agencies such as the Federal Aviation Administration (FAA) are directed to account for the adverse effects of Federal programs on the preservation of farmland and minimize the extent to which Federal activities contribute to the conversion of agricultural land to nonagricultural uses. Compliance with the FPPA would need to be addressed during review under the National Environmental Policy Act (NEPA) if land outside of airport property are ever acquired and converted to airport use due to a development project or other action. The FAA may elect to initiate coordination with the NRCS to further inform an impact determination. The mechanism for this coordination is completion of Form AD-1006 - Farmland Conversion Impact Rating. A farmland impact would be considered significant if the "Farmland Conversion Impact Rating" from the Form AD-1006 ranges between 200 and 260 points.

5.2.5 HAZARDOUS MATERIALS AND SOLID WASTE

To evaluate potential for hazardous waste and contamination related impacts at the Airport, an environmental records search was performed by Environmental Data Resources (EDR) which queried available environmental records from Federal and state environmental databases. Available historical aerial photographs were also collected and evaluated. Environmental records located on or surrounding Airport property were identified within the following six databases:

- **Above-ground Storage Tank (AST) Facility Information:** contains information about registered AST as reported by the Florida Department of Environmental Protection (FDEP).
- **ECHO (Enforcement and Compliance History Online):** provides integrated compliance and enforcement information for regulated facilities nationwide.
- **Financial Assurance:** provides a listing of hazardous waste, solid waste, or storage tank facilities obligated to provide financial assurance under the Resource Conservation and Recovery Act.
- **FINDS (Facility Index Data System):** contains both facility information and "pointers" to other sources of information that contain more detail.
- **National Pollutant Discharge Elimination System (NPDES):** indicates that a facility currently maintains or has historically obtained a discharge permit under the NPDES
- **Underground Storage Tanks (UST):** contains facility information for registered USTs.

The results of the environmental records searches are depicted graphically on **Figure 5.2-3**. The results are also described in detail on **Table 5.2-5** for those records that likely occur within or adjacent to the Airport property, based on the best available geographic data.



TRI-COUNTY AIRPORT
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ENVIRONMENTAL RECORDS

FIGURE 5.2-3

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TABLE 5.2-5
ENVIRONMENTAL RECORDS SEARCH SUMMARY

Map ID	Site Name	Data-base(s)	Description
1	Tri-County Aviation Highway 162	AST	One 15,000-gallon jet fuel AST removed in October 1998.
2	Tri-County Airport Authority 1983 Tri-County Airport Road	UST, AST, Financial Assurance, NPDES, FINDS, ECHOS	One 3,000-gallon aviation gas UST removed in February 1992. One 10,000-gallon UST for unreported substance removed in February 1993. One 10,000-gallon aviation gas AST registered in service as of April 1994. One 12,000-gallon jet fuel AST registered in service as of September 2007. Multiple NPDES permits have been issued and remain active for construction dewatering and stormwater construction. No violations have been reported.
3, 4, 5, 7	Tri-County Airport Authority 1983 Tri-County Airport Road	FINDS, ECHO, NPDES	Facility registered in the Emissions Inventory System as of 2009. Multiple NPDES permits issued for facility that have since expired with no violations reported.
6	Tri-County Airport Authority 1983 Tri-County Airport Road	FINDS	Site registered for air monitoring in the EPA Air Quality System.

Source: EDR, 2019; individual databases as noted.

No sites on or around the Airport are listed on the National Priority List of contaminated sites.

Aside from what is documented above, the potential for contaminated site involvement during the construction or implementation of any development within the Airport property is generally low.

In general terms, solid wastes and hazardous materials generated during the construction phase of any project would be handled in accordance with all applicable Federal, state and local regulations. Construction waste not diverted, recycled, or re-used would be transported to and disposed of in local permitted construction/demolition facilities or in local waste-to-energy plants in accordance with applicable state and local requirements.

Construction contractor(s) would be required to implement pollution prevention, spill prevention, and response plans documenting the measures that will be taken to prevent accidental releases to the environment and, should they occur, the actions that will be undertaken to minimize the environmental impact. In addition, new aviation-related tenants would, in most cases, be required to implement site-specific pollution prevention plans (i.e., Spill Prevention Control and Countermeasures Plan) that reduce the potential for substantial impacts associated with regulated materials.

5.2.6 HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL AND CULTURAL RESOURCES

Section 106 of the National Historic Preservation Act of 1966 requires that Federal agencies take into account the effect of their undertakings on any site that is included in or eligible for inclusion in the National Register of Historic Places (NRHP).

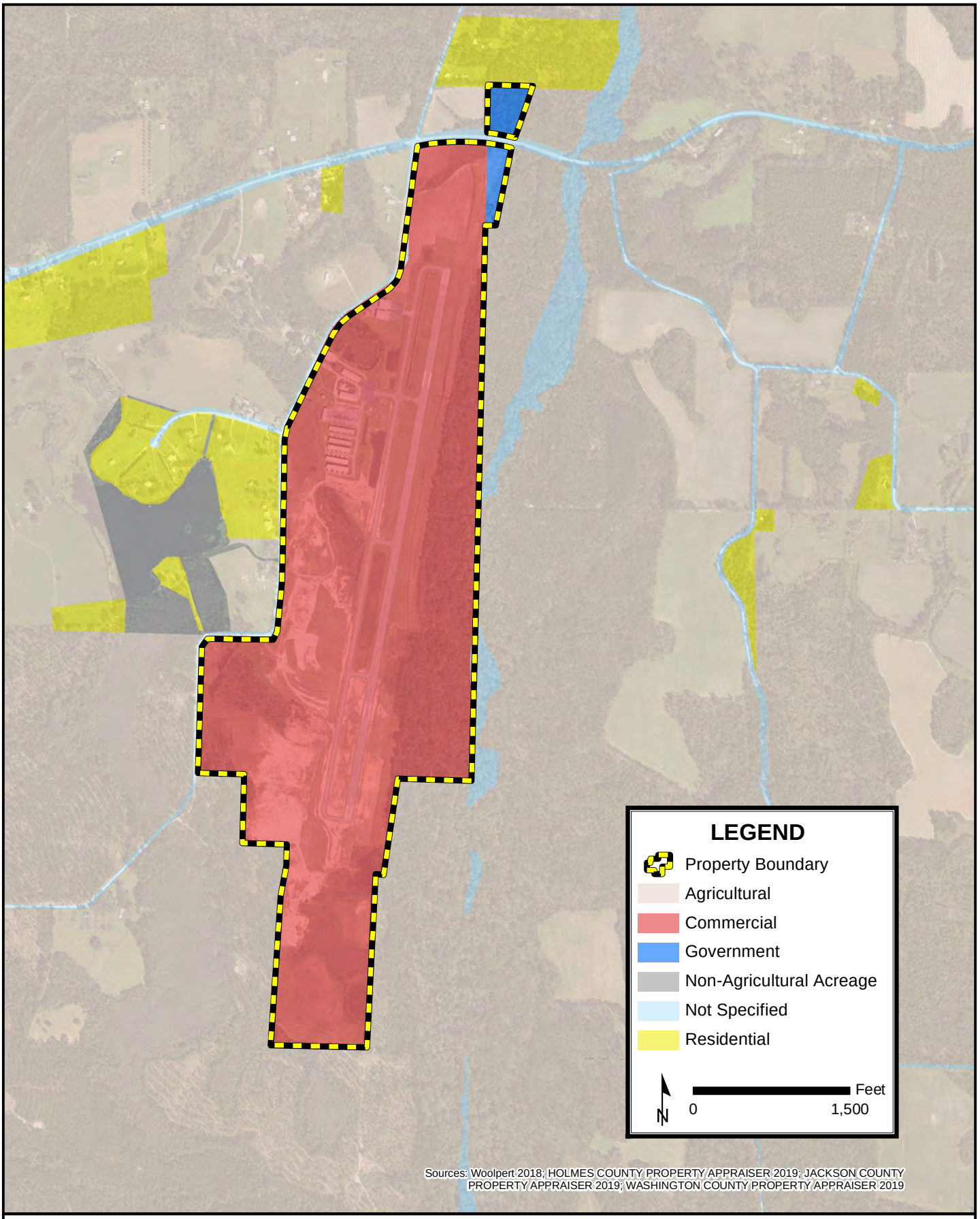
Implementing regulations published at Title 36 CFR 800 define the measures to be implemented to identify and mitigate impacts to such historic properties.

An archaeological and historical information search within the vicinity of the Airport was conducted to determine the types, chronology, and locations of previously recorded cultural resources and studies within or near the Airport. This included an appraisal of area physiographic and soils information, as well as a search of the Florida Master Site File (FMSF), NRHP nomination forms, and cultural resource management reports on file at the Florida Division of Historical Resources in Tallahassee. The FMSF documents that there are no recorded cultural resources located within the vicinity of the Airport.

Should construction activities associated with the proposed capital improvements uncover any archaeological remains, it is recommended that activity in the immediate area of the remains be stopped while a professional archaeologist evaluates the remains. In the event that human remains are found during construction or maintenance activities, the provisions of Chapter 872.05, Florida Statutes will apply. Chapter 872.05 states that when human remains are encountered all activity that might disturb the remains shall cease and may not resume until authorized by the District Medical Examiner or the State Archaeologist. The District Medical Examiner has jurisdiction if the remains are less than 75 years old or if the remains are involved in a criminal investigation. The State Archaeologist has jurisdiction if the remains are over 75 years of age or more.

5.2.7 LAND USE

Land uses on or surrounding the Airport were assessed with a particular focus on land use types that would be particularly affected by airport development and airport operations, or would otherwise be considered environmentally sensitive in terms of noise and air pollutant exposure. The assessment focused on the presence of residential and institutional land uses, including religious facilities, recreational areas, schools, cemeteries, and hospitals. **Figure 5.2-4** displays the existing land use on Airport property and surrounding areas based on the Holmes, Washington, and Jackson County Property Appraiser offices' online database. This information does not appear to fully reflect the most current land use types. However, no noise sensitive land use types have been identified within the vicinity of the Airport. Based on the information collected, the existing land use within the property boundary of the Airport is entirely comprised of Airport use (i.e., commercial and governmental land use).



Sources: Woolpert 2018; HOLMES COUNTY PROPERTY APPRAISER 2019; JACKSON COUNTY PROPERTY APPRAISER 2019; WASHINGTON COUNTY PROPERTY APPRAISER 2019

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EXISTING LAND USE

FIGURE 5.2-4

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As discussed in **Section 5.2.3**, there are no recreational properties protected by DOT Section 4(f) within the vicinity of the Airport. Land uses on and surrounding the Airport would remain fully compliant with local existing and future land use and zoning regulations. During NEPA review of the Proposed Project, the FAA would require an airport sponsor assurance letter which states that any acquired or controlled property would remain a compatible land use per the local applicable land use planning authority.

5.2.8 SOCIOECONOMICS, ENVIRONMENTAL JUSTICE AND CHILDREN'S HEALTH AND SAFETY RISK

EPA's Environmental Justice Screening and Mapping Tool (EJSCREEN) reports environmental and demographic indicators, drawing from the U.S. Census Bureau's American Community Survey (ACS), the National Air Toxics Assessment (NATA), information from the Center for Disease Control and other sources. These indicators are used to assess potential environmental justice issues in planning and decision-making processes.

EJSCREEN was queried within one-mile of the Airport. Information from the ACS as reported through EJSCREEN indicates that 205 people live in this area with a population density of 29 people per square mile. Sixty-three households are within this area with a per capita income of $19,293. Approximately 18 percent of the 63 households income base was less than $15,000, between $15,000 to $25,000 (four percent), between $25,000 to $50,000 (27 percent), between $50,000 to $75,000 (31 percent), and at $75,000 or above (20 percent). Approximately 92 percent of housing units are owned rather than renter-occupied.

Environmental and demographic indicators from EJSCREEN are summarized on **Table 5.2-6** below. Indicators are expressed in terms of percentiles compared to similar statistics within the state of Florida, within the EPA region, and within the United States. A low percentile value signifies that the Airport area scores or ranks better or is at lower risk for that indicator compared to the state/regional/national population; a high percentile value signifies that the Airport area ranks worse or is at elevated risk compared to state/regional/national populations.

In terms of reported environmental indicators, nearly all environmental indicators show that the Airport area ranks better or is comparable to reference populations for risk of environmental exposure. Demographically, EJSCREEN reports that there is a relatively low level of minority population compared to state, regional and national trends, although low-income populations are high. The area has a comparatively high elderly population and populations under five years of age.

TABLE 5.2-6
SOCIOECONOMIC INDICATORS

Category	Percentile		
	Florida	EPA Region	USA
Environmental Indicators			
Particulate Matter (PM)	41	48	53
O_3	42	49	54
NATA* Diesel PM	45	51	55
NATA* Air Toxics Cancer Risk	41	48	52
NATA* Respiratory Hazard Index	41	46	50
Traffic Proximity and Volume	40	43	50
Lead Paint Indicator	15	28	40
Superfund Proximity	40	42	48
Risk Management Plan Proximity	47	52	57
Hazardous Waste Proximity	46	52	57
Water Discharger Proximity	11	25	30
Demographic Indicators			
Demographic Index (composite of minority and low income population statistics)	40	45	51
Minority Population	15	23	26
Low Income Population	73	71	77
Linguistically Isolated Population	29	50	44
Population with Less Than High School Education	64	57	64
Population under Age 5	82	79	77
Population over Age 64	64	73	76

Source: EPA EJSCREEN, 2019.

In general, socioeconomic effects related to the any construction at the Airport would stem from a temporary increase in the labor force needed to support facility construction and the potential displacement of existing use. Generally, projected effects would be short-term and minor in scope having a minimal to no effect on adjacent communities.

5.2.9 WETLANDS

The U.S. Army Corps of Engineers (USACE) has authority to regulate activities in waters of the United States, including certain wetlands, under three laws: the Clean Water Act; the Rivers and Harbors Act of 1899; and the Marine Protection, Research, and Sanctuaries Act of 1972, as amended.

The USACE's regulations define wetlands as:

> "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." (33 CFR 328.3(b))

The USACE uses three characteristics of wetlands when making wetland determinations; vegetation, soil, and hydrology. Unless an area has been altered or is a rare natural situation, wetland indicators of all three characteristics must be present during some portion of the growing season for an area to be defined as a wetland.

In April and May 2019, E&E scientists delineated wetlands and other surface waters occurring on the Airport property pursuant to the methodologies prescribed in Chapter 62-340, F.A.C. "Delineation of the Landward Extent of Wetlands and Surface Waters" and the guidelines found within the USACE *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region*[6].

Based on available data and as previously shown on **Figure 5.2-1**, approximately 12.6 acres of other surface waters (i.e., ditches and wet detention ponds) present on the Airport treat, attenuate, and convey surface water. Alterations of these features would require authorization from the NWFWMD. Approximately 96.5 acres of forested, scrub-shrub, and herbaceous wetlands are present throughout the Airport property. Characteristics of these wetlands are provided in **Section 5.2.2**.

Both the USACE and NWFWMD regulate impacts to wetlands and other surface waters. Other agencies, including the USFWS, National Marine Fisheries Service, EPA, and the FWC, review and comment on wetland permit applications. In addition, the FDEP regulates stormwater discharges from construction sites. The complexity of the permitting process will depend greatly on the degree of the impact of proposed projects to jurisdictional areas. If wetland impacts are incurred as a result of development projects, the following permits may be required:

Permit	**Issuing Agency**
Section 404 Dredge and Fill Permit	USACE
Environmental Resource Permit	NWFWMD
NPDES	FDEP

5.2.10 FLOODPLAINS

Executive Order (EO) 11988, *Floodplain Management*, defines floodplains as the lowland and relatively flat areas adjoining inland and coastal waters including flood prone areas of offshore islands. Floodplain areas are differentiated primarily based on flood frequency and intensity. Specifically, areas subject to a one (1) percent or greater chance of flooding in a given year are commonly referred to as the 100-year floodplain. Further, areas subject to a 0.2 percent chance of flooding in a given year are referred to as the 500-year floodplain.

[6] USACE, *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0)*, ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-10-20. Vicksburg, MS: U.S. Army Engineer Research and Development Center. November 2010.

The Federal Emergency Management Agency in part implements the National Flood Insurance Program (NFIP) by developing Flood Insurance Rate Maps (FIRM) to delineate the extent of floodplains across the United States. The current effective FIRMs for the Airport area are map number 12059C, panel 0255D, with a revised date of December 17, 2010; map number 12063C, panel 0230D, with a revised date of December 17, 2010; and map number 12133C, panel number 0055D, with a revised date of July 4, 2011. For flood insurance purposes, FIRM floodplain areas are further classified into Special Flood Hazard Areas (SFHA), constituting areas where NFIP floodplain management regulations must be enforced and the area where the mandatory purchase of flood insurance applies.

Data from the above-referenced FIRM panels are depicted on **Figure 5.2-5** for the Airport property and summarized on **Table 5.2-7**. As shown, approximately 172 acres (57 percent) of the Airport property is comprised of Zone A and AE SFHA of the 100-year floodplain. Of note, no 500-year floodplain is located on or near Airport property.

TABLE 5.2-7
FLOODPLAINS ON AIRPORT PROPERTY

SFHA	Acres
Zone A[1]	5.6
Zone AE[2]	166.3
Total	**171.9**

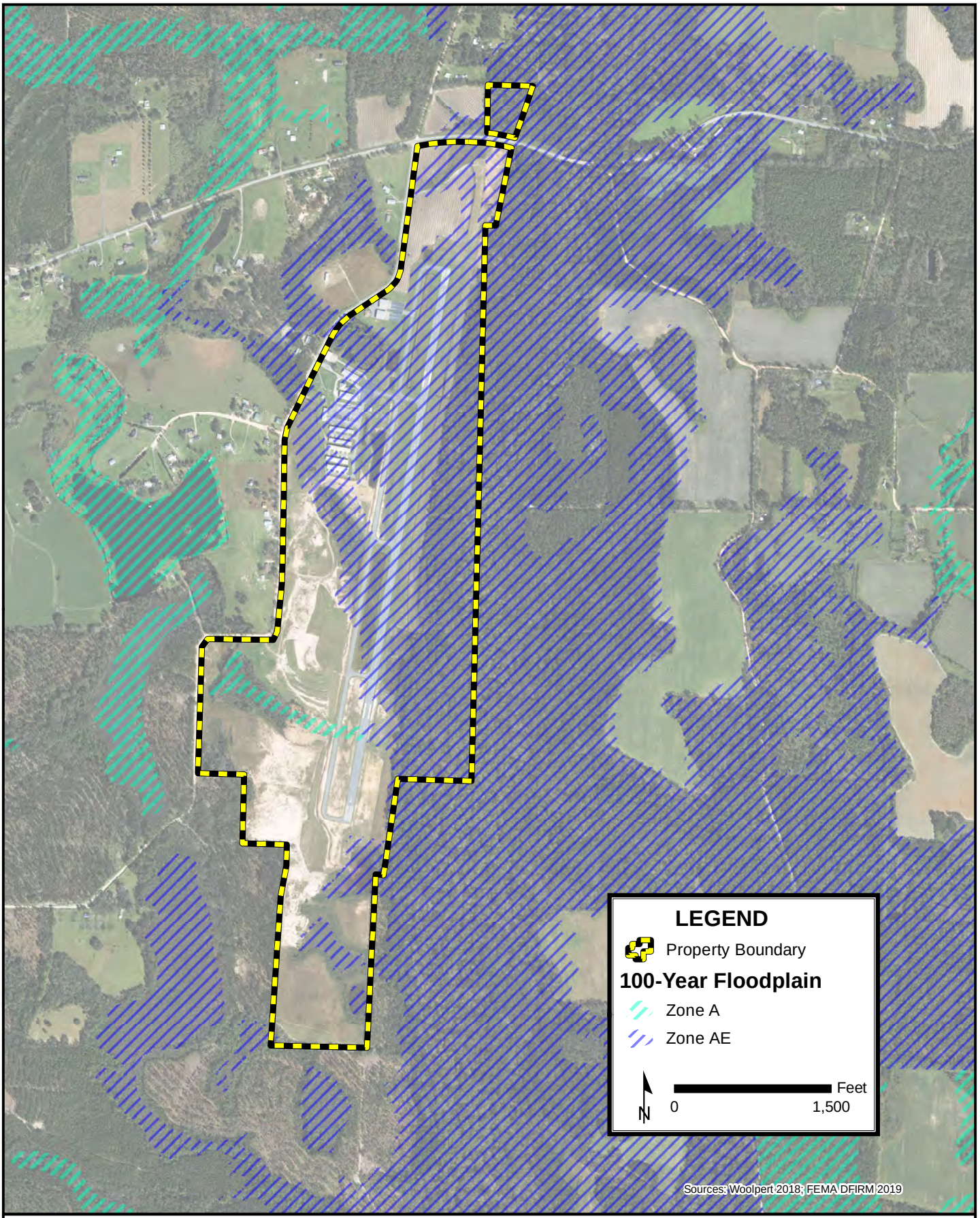
Source: FEMA DFIRM 12059C, 2010; 12063C, 2010; 12133C, 2011.

[1] Areas subject to inundation by the 1-percent-annual-chance flood event generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply.

[2] Areas subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. BFEs are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply.

Significant floodplain encroachments involve actions that result in: 1) considerable probability of loss of human life; 2) likely future damage that could be substantially costly or widespread, including loss of a vital transportation facility; and/or 3) notable adverse impact on natural and beneficial floodplain values. DOT Order 5650.2, *Floodplain Management and Protection*, qualifies "natural and beneficial floodplain values" as those including, but not necessarily being limited to: natural moderation of floods; water quality maintenance; groundwater recharge; fish, wildlife, and plants; open space; natural beauty; scientific study; outdoor recreation; agriculture; aquaculture and forestry.

EO 11988 directs Federal agencies such as the FAA to avoid floodplain encroachments to the extent that a practicable alternative to do so exists. If there is no practicable alternative available for an FAA action, FAA is required to issue a written finding prior to a NEPA decision that significant floodplain encroachment is the only practicable alternative available.



TRI-COUNTY AIRPORT
MASTER PLAN UPDATE

FLOODPLAINS

FIGURE 5.2-5

Path: S:\Projects\AVCON\60586846_TriCoMPUPlanning\400-Technical\405 Environmental Overview\GIS\mxd\190805_Figure 5-2-5_Floodplains_rev1.mxd, Date Saved: 8/5/2019 9:50:39 AM

This Finding of No Practicable Alternative (FONPA) must contain a discussion of why no practicable alternative to the action was available, that all applicable state and local floodplain protection standards will be adhered to, and that all feasible measures to minimize floodplain harm will be incorporated into the action's construction/implementation. Therefore, during preliminary planning and design of development projects at the Airport, the viability and practicability of avoiding significant encroachment upon floodplain areas mapped on **Figure 5.2-5** should be thoroughly considered; otherwise, FAA would have to substantiate and issue a FONPA prior to rendering NEPA approval on the project(s).

During design and prior to construction of developments occurring in the floodplain, Holmes and Jackson County Code of Ordinances require floodplain development permits to be submitted and approved for buildings, structures and facilities exempt from the Florida Building Code.

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SECTION 6.0 AIRPORT LAYOUT PLANS

6.1 INTRODUCTION

The Master Plan Update for Tri-County Airport consists of this report and an Airport Layout Plan (ALP) drawing set. The drawing set (published separately) consists of 30-inch by 42-inch drawings which present, to scale, all proposed development at the Airport through 2039. The proposed development shown on the drawing set is based upon the data and analysis presented in the preceding sections of this report.

The drawing set includes the following plans:

- Airport Layout Plan Drawing
- Airport Airspace Drawing
- Inner Portion of the Approach Surface Drawing
- Runway Departure Surface Drawing – Runway 1
- Runway Departure Surface Drawing – Runway 19
- Terminal Area Drawing
- Land Use Drawing
- Airport Property Map

All of these drawings are described on the following pages and a few are also depicted at reduced size. Full-size (i.e., 30-inch by 42-inch) drawings are presented in the ALP drawing set published in conjunction with this report. Readers interested in the details of the development plans should refer to the full-size drawing set.

6.2 AIRPORT LAYOUT PLAN DRAWING

The ALP drawing is one of three master plan elements which requires Federal Aviation Administration (FAA) approval; the other elements are the aviation forecast and the determination of the existing and future critical aircraft. The ALP is required for an airport to receive Federal funding of proposed capital improvements through the Airport Improvement Program (AIP). It is also required by the Florida Department of Transportation (FDOT) to received funding through the Florida Aviation Grant Program.

Consequently, an ALP must be kept current and must accurately depict an airport owner's existing facilities and proposed development projects. FAA approval of an ALP indicates that the FAA finds the development shown on the drawing to be to be safe, useful, efficient and designed in accordance with FAA design standards, but it does not commit the FAA to funding proposed development. Likewise, FDOT acceptance of the ALP does not commit the state to funding proposed development.

A reduced size version of the ALP drawing is provided in **Figure 6.2-1**. The following paragraphs describe the development depicted on the ALP.

6.2.1 RUNWAYS

The ALP does not depict any changes to the length, width or strength of Runway 1-19. The existing runway will be maintained in its current configuration throughout the planning period. However, a rehabilitation of existing runway pavement is included in the plan and should be undertaken when warranted by the findings of the FDOT pavement management program. The construction of blast pads is shown on both ends of the runway in accordance with FAA design standards for a Design Group B-II "small" runway. The blast pads will have a width of 95 feet and length of 150 feet as specified for runways with visibility minimums not lower than ¾ mile. The pads should be constructed in conjunction with the runway rehabilitation.

The establishment of a non-precision instrument approach is recommended on Runway 1. It would provide pilots with the ability to land at the Airport during poor visibility conditions when winds do not favor the use of Runway 19.

The existing Runway Safety Area (RSA) does not meet FAA design standards due to the presence of vegetative obstacles and storm water retention ponds. The recommended actions for resolving these deficiencies include an obstruction removal program and a modification of the existing stormwater retention ponds through grading work.

The Runway Object Free Area (ROFA) and Obstacle Free Zone (OFZ) also do not meet FAA design standards due to vegetative obstructions within their boundaries. The recommended action for resolution is an obstruction removal program. A project will be included in the short-term to implement recommended RSA, ROFA and OFZ improvements.

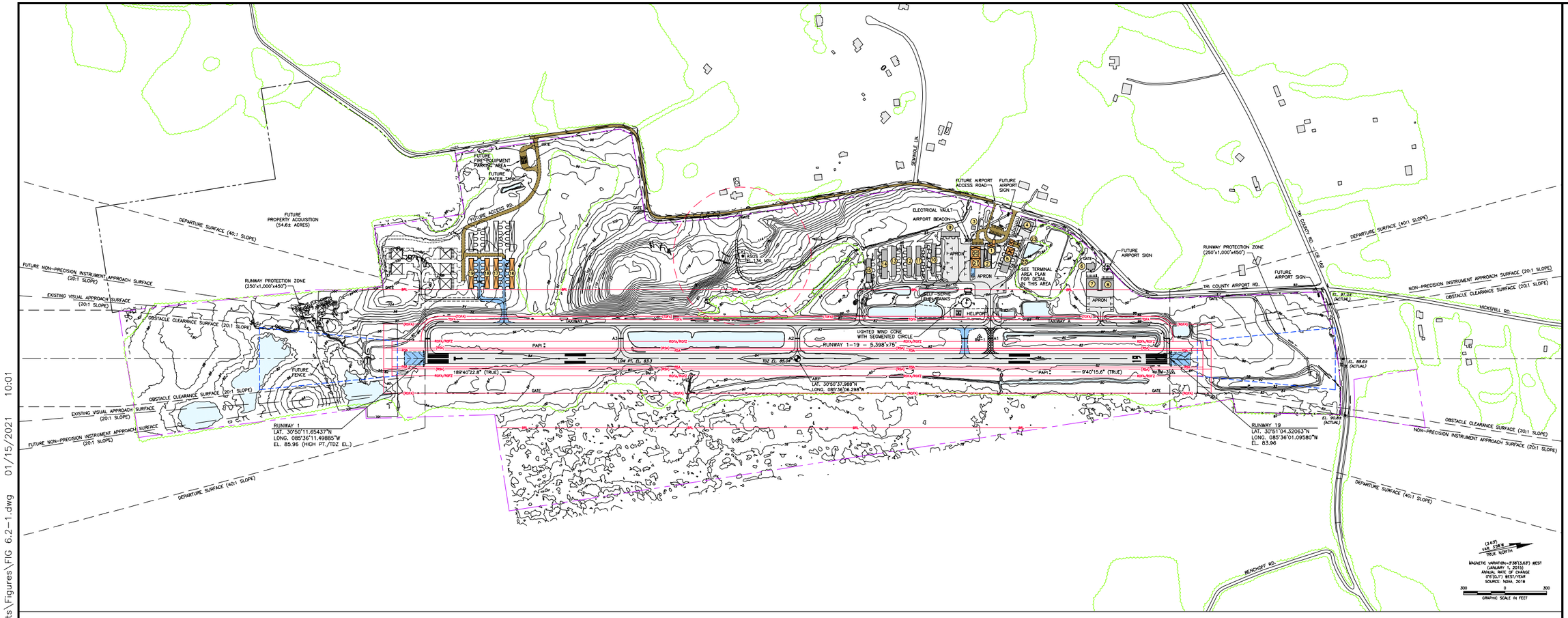
6.2.1.1 Runway Protection Zones

The ALP does not propose any changes to the size or location of the Airport's existing Runway Protection Zones (RPZ). The RPZ on the south end of Runway 1-19 is located entirely on airport property and fully complies with FAA land use guidance.

The RPZ on the north end of Runway 1-19 is also located on airport property except for a 0.03 acre sliver on its northwest corner. The portion of the RPZ that is not within the Airport's boundary is located within the right-of-way for County Road 162. Although the Airport Authority does not control land use within that area, it is extremely unlikely that an incompatible land use can or will occur. Holmes County has no plans on file to widen or reroute County Road 162 and development is not permitted with the County's right-of way. Therefore, compliance with FAA land use guidance will continue in the future.

6.2.1.2 Navigational Aids

No new navigational aids are proposed on the ALP. The existing wind sock inside the segmented circle should be lowered to remove it from the transitional surface of the helipad.



GEODETIC CONTROL POINTS

BM-1	PRIMARY AIRPORT CONTROL STATION (1JO A) ELEVATION = 83.06
BM-2	SECONDARY AIRPORT CONTROL STATION (1JO B) ELEVATION = 81.53
BM-3	SECONDARY AIRPORT CONTROL STATION (1JO C) ELEVATION = 82.26

MODIFICATION TO STANDARDS

NONE REQUIRED

DECLARED DISTANCES

RUNWAY	TORA	TODA	ASDA	LDA
1	5,398'	5,398'	5,398'	5,398'
19	5,398'	5,398'	5,398'	5,398'

TAXIWAY DATA TABLE

TAXIWAY (TDG 2)	WIDTH	T.S.M.	SHOULDER	T.S.A.	T.O.F.A.	LIGHTING
A (EXISTING)	40'	7.5'	15'	49'	89'	MITL
A1 (EXISTING)	35'	7.5'	15'	49'	89'	MITL
A2 (EXISTING)	35'	7.5'	15'	49'	89'	MITL
A3 (EXISTING)	35'	7.5'	15'	49'	89'	MITL
A (FUTURE)	40'	7.5'	15'	79'	131'	MITL
A1 (FUTURE)	35'	7.5'	15'	79'	131'	MITL
A2 (FUTURE)	35'	7.5'	15'	79'	131'	MITL
A3 (FUTURE)	35'	7.5'	15'	79'	131'	MITL

LEGEND

ITEM	EXISTING	FUTURE
AIRPORT PROPERTY LINE		
AIRFIELD PAVEMENT		
BUILDINGS		
ROADS & PARKING		
FENCE		
RUNWAY SAFETY AREA	RSA	(RSA)
RUNWAY OBJECT FREE AREA	ROFA	(ROFA)
TAXIWAY OBJECT FREE AREA	TOFA	(TOFA)
OBSTACLE FREE ZONE	ROFZ	N/A
BUILDING RESTRICTION LINE	BRL	N/A
PROPERTY ACQUISITION	N/A	
PAVEMENT TO BE REMOVED	N/A	
PAPI		N/A
THRESHOLD LIGHTS		N/A
WIND CONE		N/A
AIRPORT REFERENCE POINT (ARP)		N/A
ROTATING BEACON		N/A
TREELINE		N/A
2' GROUND CONTOUR		N/A
WATER		N/A

BUILDING/TENANT INDEX

NO.	DESCRIPTION	ELEVATION (FT.) MSL (ESTIMATED)
1	TERMINAL BUILDING (4,019 SF)	107.8
2	CONVENTIONAL HANGAR (60'x134')	111.3
3	MAINTENANCE SHED (27'x27')	102.3
4	CONVENTIONAL HANGAR (80'x60')	115.2
5	SHADE HANGARS (8 UNITS)	105.3
6	BUILDING (3,025 SF)	109.9
7	HANGAR (80'x80')	115.0
8	HANGAR (80'x70')	114.6
9	RECTANGULAR HANGARS (3-UNITS)	102.4
10	T-HANGAR (7-UNITS)	100.7
11	RECTANGULAR HANGARS (5-UNITS)	103.0
12	RECTANGULAR HANGARS (5-UNITS)	105.2
13	RECTANGULAR HANGARS (5-UNITS)	104.4
14	RECTANGULAR HANGARS (4-UNITS)	108.1
15	RECTANGULAR HANGARS (4-UNITS)	103.0
16	FUTURE RECTANGULAR HANGARS (5-UNITS)	111.0
A	FUTURE RECTANGULAR HANGARS (5-UNITS)	111.0
B	FUTURE RECTANGULAR HANGARS (5-UNITS)	113.0
18	FUTURE RECTANGULAR HANGARS (5-UNITS)	113.0
20	FUTURE HANGAR (70'x70' WITH 20'x70' OFFICE)	111.0
21	FUTURE HANGAR (70'x70')	111.0
23	FUTURE MAINTENANCE BUILDING (A PORTION OF SHADE HANGAR 5B&5F)	106.0
F	FUTURE MAINTENANCE BUILDING / SHOP / STORAGE ALTERNATIVE (30'x40')	102.0

AIRPORT DATA TABLE

		EXISTING	FUTURE
AIRPORT REFERENCE CODE		A-I	B-II
MEAN MAX. TEMPERATURE – HOTTEST MONTH		93.1° (JULY)	SAME
ESTABLISHED AIRPORT ELEVATION (NAVD 88)		86.0 (MSL)	SAME
AIRPORT NAVIGATIONAL AIDS		ROTATING BEACON	SAME
AIRPORT REFERENCE POINT (ARP) COORDINATES (NAD 83)	LATITUDE	30°50'37.988"N	SAME
	LONGITUDE	085°36'06.298"W	SAME
MISCELLANEOUS FACILITIES		ASOS, WIND CONE	SAME
CRITICAL AIRCRAFT		CESSNA 172	BEECH KING AIR B200
MAGNETIC VARIATION		5°38'W	ANNUAL RATE OF CHANGE 0°6'W/YR.
DATE OF MAGNETIC VARIATION		01/01/2015	SAME
AIRPORT ROLE (NPIAS)		LOCAL GA	SAME
AIRPORT ACREAGE		303.91 AC.	358.51± AC.

NOTES:

1. ALL ELEVATIONS ARE IN FEET (MSL).
2. HORIZONTAL DATUM NAD83, VERTICAL DATUM NAVD88.
3. DRAWING PREPARED IN FLORIDA STATE PLANE, NORTH ZONE (0903), US FOOT.

RUNWAY DATA TABLE

ITEM		RUNWAY 1/19 EXISTING		RUNWAY 1/19 FUTURE	
RUNWAY LENGTH/WIDTH (FT.)		5,398/75		SAME	
RUNWAY DESIGN CODE (RDC)		A-I-5000 (SMALL AIRCRAFT)		B-II-5000 (SMALL AIRCRAFT)	
APPROACH REFERENCE CODE (APRC)		B/II/5000		SAME	
DEPARTURE REFERENCE CODE (DPRC)		B/II		SAME	
CRITICAL DESIGN AIRCRAFT		CESSNA 172		BEECH KING AIR B200	
EFFECTIVE GRADIENT (%)		.037		SAME	
% WIND COVERAGE		(SEE WIND ROSE TABLES)		SAME	
RUNWAY PAVEMENT	STRENGTH (000 lbs.)	30 SINGLE GEAR		SAME	
	PCN	21 F/B/W/T		SAME	
	SURFACE TYPE/FRICTION	ASPHALT		SAME	
MAXIMUM RUNWAY ELEVATION (ABOVE MSL)		85.96		SAME	
RUNWAY LIGHTING		MIRL		SAME	
RUNWAY MARKING		NON-PRECISION		SAME	
RUNWAY ENDS		1	19	1	19
END ELEVATIONS (NAVD 88) (MSL)		85.96	83.96	SAME	SAME
END COORDINATES (NAD 83)	LATITUDE	30°50'11.65437"N	30°51'04.32063"N	SAME	SAME
	LONGITUDE	085°36'11.49885"W	085°36'01.09580"W	SAME	SAME
DISPLACED THRESHOLD ELEVATIONS (NAVD 88) (MSL)		N/A	N/A	SAME	SAME
DISPLACED THRESHOLD COORDINATES (NAD 83)	LATITUDE	N/A	N/A	SAME	SAME
	LONGITUDE	N/A	N/A	SAME	SAME
DATUM	HORIZONTAL	NAD83	NAD83	SAME	SAME
	VERTICAL	NAVD88	NAVD88	SAME	SAME
RUNWAY PROTECTION ZONE (RPZ)	LENGTH	1,000'	1,000'	SAME	SAME
	WIDTH-INNER/OUTER	250'/450'	250'/450'	SAME	SAME
APPROACH LIGHTING		NONE	NONE	SAME	SAME
RUNWAY TOUCH DOWN ZONE ELEVATIONS (MSL)		85.96	85.04	SAME	SAME
C.F.R. PART 77 IMAGINARY AIRSPACE SURFACES	APPROACH CATEGORY	VISUAL	NON-PRECISION	NON-PRECISION	SAME
	APPROACH SURFACE SLOPES	20:1	20:1	SAME	SAME
RUNWAY DEPARTURE SURFACE		YES	YES	SAME	SAME
THRESHOLD SITING SURFACE		20:1	20:1	SAME	SAME
NAVAIDS	ELECTRONIC NAVIGATION AIDS	N/A	N/A	SAME	SAME
	VISUAL APPROACH AIDS	PAPI-2	PAPI-2	SAME	SAME
TYPE OF INSTRUMENT APPROACH		N/A	RNAV (GPS)	RNAV (GPS)	SAME
TYPE OF SURVEY REQUIRED		N/A	N/QS	N/QS	SAME
APPROACH VISIBILITY MINIMUMS		N/A	580 FEET/1 MILE	400 FEET/1 MILE	SAME
RUNWAY SAFETY AREA (RSA) W=WIDTH BRE=BEYOND RUNWAY END		W=120' BRE=240'		W=150' BRE=300'	
RUNWAY OBJECT FREE AREA (ROFA) W=WIDTH BRE=BEYOND RUNWAY END		W=250' BRE=240'		W=500' BRE=300'	
RUNWAY OBSTACLE FREE ZONE (ROFZ) W=WIDTH BRE=BEYOND RUNWAY END		W=250' BRE=200'		SAME SAME	

CONSTRUCTION NOTICE REQUIREMENT

TO PROTECT OPERATIONAL SAFETY AND FUTURE DEVELOPMENT, ALL PROPOSED CONSTRUCTION ON THE AIRPORT MUST BE COORDINATED BY THE AIRPORT OWNER WITH THE FAA AIRPORTS DISTRICT OFFICE PRIOR TO CONSTRUCTION. FAA'S REVIEW TAKES APPROXIMATELY 60 DAYS.

FAA DISCLAIMER

THE CONTENTS OF THIS PLAN DO NOT NECESSARILY REFLECT THE OFFICIAL VIEWS OR POLICY OF THE FAA. ACCEPTANCE OF THESE DOCUMENTS BY THE FAA DOES NOT IN ANY WAY CONSTITUTE A COMMITMENT ON THE PART OF THE UNITED STATES TO PARTICIPATE IN ANY DEVELOPMENT DEPICTED THEREIN NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS.

FAA APPROVAL BLOCK

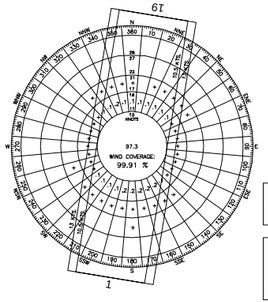
AIRPORT SPONSOR APPROVAL

THIS AIRPORT DRAWING IS APPROVED BY:

(SIGNATURE) _____ DATE:_____

NAME: _____

TITLE: _____

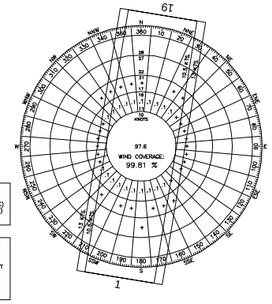


ALL WEATHER WIND ROSE

METEOROLOGICAL CONDITION	RUNWAY	RUNWAY WIND COVERAGE BY PERCENT			
		10.5 KNOTS (12 MPH)	13 KNOTS (15 MPH)	OBSERVATIONS	
ALL-WEATHER	1-19	99.65	99.91	66,604	

WIND ROSE DEPICTED RELATIVE TO TRUE NORTH (NAD83)
RUNWAY 1 ORIENTATION: 186°39'50.4" (TRUE)
RUNWAY 19 ORIENTATION: 9°39'46.8" (TRUE)
MAGNETIC DECLINATION: 5°38' W

SOURCE: NOAA, NATIONAL CENTERS FOR ENVIRONMENTAL INFORMATION INTEGRATED SURFACE DATABASE, 2018.
STATION: WBAN 63871 TRI-COUNTY AIRPORT BONIFAY, FL
RECORD PERIOD: 2008-2010, 2012-2017
SURFACE OBSERVATION DATA COMPILED BY AECOM, 2018.



IMC WEATHER WIND ROSE

METEOROLOGICAL CONDITION	RUNWAY	RUNWAY WIND COVERAGE BY PERCENT			
		10.5 KNOTS (12 MPH)	13 KNOTS (15 MPH)	OBSERVATIONS	
IMC	1-19	99.49	99.81	12,631	

TRI-COUNTY AIRPORT
MASTER PLAN UPDATE

AIRPORT LAYOUT PLAN DRAWING

FIGURE 6.2-1

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6.2.1.3 Lighting

The ALP does not propose new runway or taxiway lighting. However, projects are proposed to replace all existing runway and taxiway lighting with more energy efficient light emitting diode (LED) systems. Likewise, the plan proposes replacing the existing rotating beacon with a new and more energy efficient beacon. These projects are further described in **Section 7.0**.

6.2.2 TAXIWAYS

The ALP depicts the construction of new taxiway segments from Taxiway A to the proposed hangar development in the southwest corner of the airfield. The proposed taxiway segment would be designed to meet B-II standards in accordance with the future critical aircraft (i.e., a Beech King Air).

FAA design standards specify that taxi paths from aircraft aprons should include a turn prior to reaching a runway in order to reduce the potential for inadvertent runway incursions. Aircraft currently taxiing from the terminal area can taxi straight to Runway 1-19 without having to make a turn. Therefore, the ALP also depicts the relocation of the segment of Taxiway A1 that extends from Runway 1-19 to Taxiway A. The relocation will move the segment of Taxiway A1 to a point approximately 187 feet south of its current location. This will provide pilots of aircraft exiting the runway sufficient distance to see taxiway signage for the terminal along Taxiway A. It will also allow construction associated the proposed taxiway segment to remain clear of the Taxiway Object Free Area for Taxiway A1. The precise distance of the relocation can be determined during the project's final design.

6.2.3 HELIPORT

The existing helipad is not registered as a heliport according to FAA records. This plan specifies the improvements needed to bring the helipad into compliance with FAA standards. The recommended actions include remarking the helipad to meet design standards and lowering the wind sock to remove it from the helipad's transitional surface. Although these actions are not shown on the ALP, their implementation will bring the helipad into compliance with FAA design standards and enable it to be properly registered. A project to bring the helipad into compliance with FAA design standards will be include in the short-term phase of the Capital Improvement Plan. Details for the heliport are shown on the Terminal Area Plan due to the scale and resulting legibility constraints if shown on the ALP.

6.3 AIRSPACE PLAN

Airport airspace requirements are specified by Part 77 of the Federal Aviation Regulations (FAR) which define a series of imaginary surfaces that extend upward and outward from an airport's runways. The purpose of these surfaces is to define the volume of airspace required to ensure safe and efficient aircraft operations. Obstacles that penetrate Part 77 surfaces are defined as "obstructions" and may be "hazards to air navigation" upon a finding by the FAA. Therefore, it is important to maintain Part 77 surfaces clear of all obstructions. **Figure 6.3-1** presents the Airport's airspace drawing.

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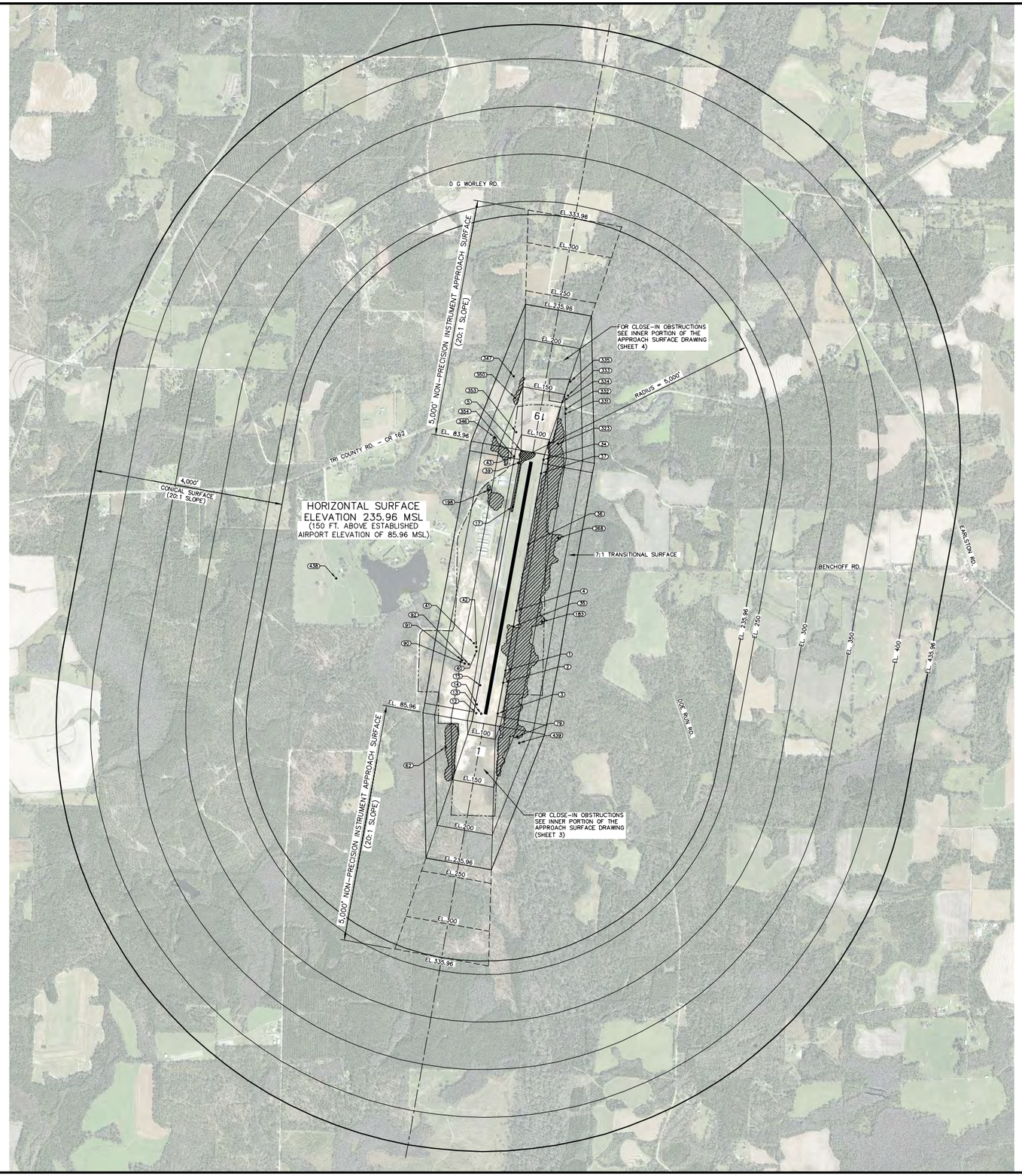

OBSTRUCTION DATA TABLE

NO.	DESCRIPTION	OBSTACLE ELEVATION FEET (MSL)	LOWEST AFFECTED FAR PART 77 SURFACE	PENETRATION (FEET)	RECOMMENDED ACTION	LIGHTED
1	FENCE	89.91	PRIMARY	5.15	RELOCATE	N/A
2	FENCE	91.65	PRIMARY	6.57	RELOCATE	N/A
3	FENCE	92.98	PRIMARY	7.09	RELOCATE	N/A
4	FENCE	86.40	PRIMARY	2.13	RELOCATE	N/A
5	GRADE (HIGH POINT)	91.74	PRIMARY	7.78	REGRADE	N/A
12	GRADE	86.27	PRIMARY	0.31	REGRADE	N/A
13	GRADE	86.32	PRIMARY	0.36	REGRADE	N/A
14	GRADE	85.81	PRIMARY	0.08	REGRADE	N/A
15	GRADE	85.29	PRIMARY	0.04	REGRADE	N/A
17	GRADE (HIGH POINT)	85.38	PRIMARY	1.37	REGRADE	N/A
34	FENCE	89.76	7:1 TRANSITIONAL	5.72	RELOCATE	N/A
35	FENCE	87.22	7:1 TRANSITIONAL	3.33	RELOCATE	N/A
36	FENCE	86.09	7:1 TRANSITIONAL	1.67	RELOCATE	N/A
37	FENCE	89.27	7:1 TRANSITIONAL	5.18	RELOCATE	N/A
39	GRADE (HIGH POINT)	86.62	7:1 TRANSITIONAL	0.09	REGRADE	N/A
40	GRADE	112.61	7:1 TRANSITIONAL	3.37	REGRADE	N/A
41	GRADE	123.01	7:1 TRANSITIONAL	1.88	REGRADE	N/A
42	GRADE	117.58	7:1 TRANSITIONAL	5.79	REGRADE	N/A
43	TREE	119.22	7:1 TRANSITIONAL	17.76	TRIM OR REMOVE	N/A
62	TREE CLUSTER (HIGH POINT)	182.83	7:1 TRANSITIONAL	7.62	TRIM OR REMOVE	N/A
79	TREE CLUSTER (HIGH POINT)	176.04	7:1 TRANSITIONAL	13.97	TRIM OR REMOVE	N/A
90	TREE	139.88	7:1 TRANSITIONAL	1.77	TRIM OR REMOVE	N/A
91	TREE	147.46	7:1 TRANSITIONAL	0.69	TRIM OR REMOVE	N/A
92	TREE	136.19	7:1 TRANSITIONAL	10.78	TRIM OR REMOVE	N/A
183	TREE CLUSTER (HIGH POINT)	179.16	7:1 TRANSITIONAL	12.73	TRIM OR REMOVE	N/A
198	TREE CLUSTER (HIGH POINT)	163.89	7:1 TRANSITIONAL	5.71	TRIM OR REMOVE	N/A
268	TREE CLUSTER (HIGH POINT)	179.06	7:1 TRANSITIONAL	8.90	TRIM OR REMOVE	N/A
323	TREE CLUSTER (HIGH POINT)	160.12	7:1 TRANSITIONAL	33.95	TRIM OR REMOVE	N/A
331	TREE	152.43	7:1 TRANSITIONAL	1.40	TRIM OR REMOVE	N/A
332	TREE	153.35	7:1 TRANSITIONAL	0.28	TRIM OR REMOVE	N/A
333	TREE	160.02	7:1 TRANSITIONAL	0.17	TRIM OR REMOVE	N/A
334	TREE	144.03	7:1 TRANSITIONAL	1.57	TRIM OR REMOVE	N/A
335	TREE	168.01	7:1 TRANSITIONAL	0.30	TRIM OR REMOVE	N/A
346	TREE CLUSTER (HIGH POINT)	176.31	7:1 TRANSITIONAL	2.92	TRIM OR REMOVE	N/A
347	TREE	189.47	7:1 TRANSITIONAL	0.95	TRIM OR REMOVE	N/A
350	TREE CLUSTER (HIGH POINT)	163.33	7:1 TRANSITIONAL	3.13	TRIM OR REMOVE	N/A
353	POLE	122.54	7:1 TRANSITIONAL	4.36	LIGHT	NO
354	POLE	124.34	7:1 TRANSITIONAL	22.33	LIGHT	NO
438	ANTENNA	247.40	HORIZONTAL	11.44	LIGHT	NO
439	TREE	173.27	7:1 TRANSITIONAL	0.54	TRIM OR REMOVE	N/A

NOTES:

1. ALL PART 77 SURFACES INDICATED IN FEET ABOVE MEAN SEA LEVEL (NAVD88).
2. FOR CLOSE-IN OBSTRUCTIONS REFER TO INNER PORTION OF THE APPROACH SURFACE DRAWINGS. (SHEETS 3 & 4)
3. AERIAL BASE FROM WOOLPERT, 2018.

LEGEND

CROSS HATCHING REPRESENTS AREAS OF TREE PENETRATIONS THROUGH THE APPLICABLE SURFACE. WITH HIGH POINT(S) DEPICTED.

CROSS HATCHING REPRESENTS AREAS OF GRADE PENETRATIONS THROUGH THE APPLICABLE SURFACE WITH HIGH POINT(S) DEPICTED.

TRUE NORTH

MAGNETIC VARIATION=7.39°(13.63') WEST (JANUARY 1, 2019)
ANNUAL RATE OF CHANGE 0°10.1'S WEST/YEAR
SOURCE: NOAA, 2018

800 0 800
GRAPHIC SCALE IN FEET

TRI-COUNTY AIRPORT
MASTER PLAN UPDATE

AIRPORT AIRSPACE DRAWING

FIGURE 6.3-1

S:\Projects\A AVCON\60586846_TriCoMPU\Planning\400-Technical\403 Facility Requirements\Figures\FIG 6.3-1.dwg 08/10/2020 12:13

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The Airport Authority has removed numerous obstructions to these surfaces, primarily trees within the approach surfaces. However, some vegetative obstructions remain and must be addressed through an additional obstruction removal project. This includes trees in the approaches to Runway 1 and Runway 19 which penetrate the 20:1 Obstacle Clearance Surface. Obstructions are also located along the east and west sides of the runway that penetrate the 7:1 Transitional Surface. However, not all of those obstructions need to be removed because they are not located within the Airport's approach or departures surfaces or may be in environmentally sensitive areas.

A review of height zoning for Holmes, Jackson and Washington County revealed that airport height zoning exists in Jackson County, but primarily addresses Marianna Airport rather than Tri-County Airport and does not appear to meet the current requirements of Florida Statue, Chapter 333, *Airport Zoning*. No airport height zoning was found in Holmes County's or Washington County's administrative code.

It is recommended that a height zoning ordinance that fully complies with Florida Statue 333 be developed and adopted for Holmes, Jackson and Washington County. This may best occur through an interlocal agreement or joint airport zoning board which can adopt, administer, enforce and amend airport zoning regulations. A project to undertake this task will be included in the short-term phase of the Capital Improvement Plan presented in **Section 7.0**.

6.4 INNER PORTION OF THE APPROACH SURFACE DRAWING

Although this drawing's title only refers to the inner portion of the approach surface, it actually depicts a series of surfaces which should be kept clear of obstructions to the greatest extent possible. Surfaces shown on the drawing include the FAR Part 77 Approach Surface, the Obstacle Clearance Surface and a clearance surface associated with the Precision Approach Path Indicators (PAPIs). These surfaces begin at different points along the runway and have different sizes, shapes and slopes. The purpose of these surfaces is to ensure the safety of approaches by identifying obstacles that penetrate the surfaces and to facilitate their removal. Obstacles which remain inside these surfaces may require operational changes to mitigate their existence.

The Approach Surface Drawing for Runway 19 reveals two obstacle penetrations relatively close (i.e., approximately 300 feet) to the runway threshold. These penetrations consist of the perimeter fence on the east side of the Airport and an area of higher terrain in the farmed field west of the extended runway centerline. Additional obstacle penetrations (i.e., areas of trees) are located on the north side of County Road 162 and are mostly within airport property. However, there is also a group of tree penetrations directly on the extended runway centerline off airport property. These vegetative obstructions should be removed via an obstruction removal program to ensure compliance with FAA grant assurances. The program should also address the two close-in obstructions. A project to undertake this task will be included in the short-term phase of the Capital Improvement Plan presented in **Section 7.0**.

The Approach Surface Drawing for Runway 1 reveals two obstructions within the future non-precision approach surface, but no obstructions to the obstacle clearance surface or the PAPI clearance surface. The obstructions to the future non-precision approach surface consist of two tall trees on an adjacent property owner's parcel. The amount of penetration is approximately three feet on one tree and six feet on the other. These trees should be trimmed to ten feet below the approach surface or removed.

6.5 RUNWAY DEPARTURE SURFACE DRAWING

The Runway Departure Surface drawing depicts a trapezoid surface that begins at the departure end of the runway and extends 10,200 feet. It has a width of 1,000 feet at the runway end and expands to a width of 6,466 feet at the far end of the surface. The surface slopes upward 1 foot vertically for every 40 feet of horizontal distance. This surface should be kept clear of obstructions that may have adverse impacts on aircraft departures. Obstacles that penetrate the surface may require aircraft departures to use non-standard climb rates or require higher departure minimums or may require that reductions in runway length used for calculating aircraft performance limitations. The purpose of the departure surface drawing is to identify all obstructions that should be considered in the development of departure procedures and to provide airport owners with the information needed to address obstruction removal where possible.

The Runway Departure Surface drawing reveals that numerous obstructions penetrate the departure surface on the north and south ends of the runway. Many of these obstructions are located toward the outer edges of the surface. However, some obstructions are located closer to the extended runway centerline. Obstructions on centerline begin approximately 1,300 feet north of the north end of the runway and approximately 2,100 feet south of the south end of the runway.

There are also areas of terrain that penetrate the surface on both ends of the runway. These areas are located on airport property and can be addressed through grading projects.

FAA Engineering Brief Number 100, *Holding Position Sign for Runway Approach/Departure Areas* was published by the FAA on May 13, 2019. The engineering brief states the following:

> *"The FAA is currently assessing the hazards and risks associated with modifying the dimensional standards of the 40:1 departure surface. FAA believes there is potential to reduce the initial width based on this risk assessment."*

Therefore, it is likely that the definition of the departure surface will change in the near future and may reduce the number of obstacles penetrating the departure surface. Consequently, any obstruction removal conducted within the departure surfaces should focus on obstructions located toward the center of the surface and would ideally match up with the outer limits of the approach surface. This will ensure that any funds expended on obstruction removal in the short-term are focused on the obstructions that are most likely to remain within the departure surface following the FAA's reassessment of the surface's dimensions and/or slope.

6.6 TERMINAL AREA DRAWING

The Terminal Area Drawing (see **Figure 6.6-1**) depicts proposed hangar and apron development, heliport details (including a Heliport Data Table), as well as proposed improvements to access roads. Specific development shown on the drawing includes the following:

- Construction of a new double-bay hangar immediately south of the terminal building. The bays for this hangar would be 70 feet by 70 feet. It is anticipated that this hangar will replace the existing hangar in this location which suffers from flooding problems and is reaching the end of its useful life.

- Expansion of the terminal building is shown on the west side of the terminal including a relocation of existing security fencing, reconfiguration of the entrance road and construction of additional automobile parking. The reconfigured access road will enable passengers to be dropped at the terminal building with a potential canopy over the road to provide weather protection. The proposed automobile parking would provide space for approximately 18 vehicles. This project would achieve a major goal of the Airport Authority which is to provide public access to the terminal.

- Construction of a Maintenance Equipment Storage (MES) facility is shown within the west end of the existing shade hangars. Enclosing two of the existing shade hangar bays will provide required space for equipment storage that currently occurs beneath the shade hangars and will also provide space for maintenance requirements. If this option encounters difficulty during the design process and/or permitting, an alternate solution is to construct a new MES building immediately west of the shade hangars. This solution is also depicted on the Airport Layout Plan Drawing and the Terminal Area Drawing.

- Expansion of the existing aircraft parking apron east of the shade hangars is shown on the Airport Layout Plan Drawing and the Terminal Area Drawing to provide space for additional aircraft tie-downs while still providing proper clearance from existing taxilane centerlines. This expansion will only occur when needed based on demand.

6.7 LAND USE PLAN

The Land Use Plan depicts how airport property is used currently and how it will be used in the future. It also shows the current land uses around the perimeter of the Airport (see **Figure 6.7-1**). A summary of the Airport's land use by category is provided in **Table 6.7-1**. As the table indicates, the largest quantity of airport property is consumed by airfield operations followed by vacant/open space. Quantities indicated in the table were calculated based on CAD delineations and should be considered approximations.

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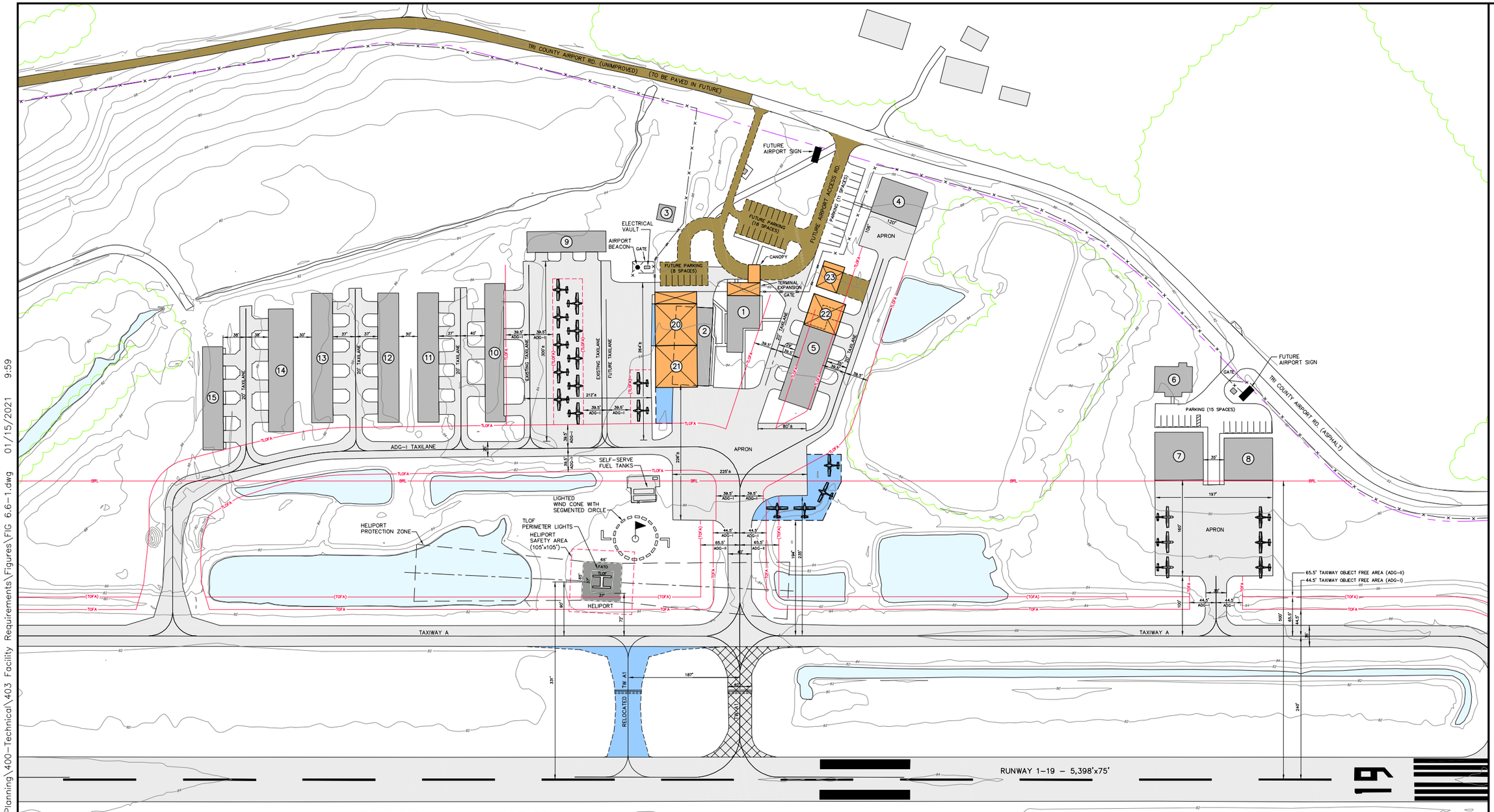

HELIPORT DATA TABLE

ITEM	EXISTING	FUTURE
NAME	TRI COUNTY	SAME
DESIGN ROTORCRAFT	BELL LONGRANGER	SAME
TLOF	37 FT. BY 37 FT.	SAME
TLOF PERIMETER MARKING	YES	SAME
TLOF LIGHTING	YES	SAME
FATO	65 FT. BY 65 FT.	SAME
FATO MARKING	YES	SAME
SAFETY AREA	105 FT. BY 105 FT.	SAME
DISTANCE TO RUNWAY	331 FT.	SAME
ELEVATION	86 AMSL	SAME

BUILDING/TENANT INDEX

NO.	DESCRIPTION	ELEVATION (FT.) MSL (ESTIMATED)
1	TERMINAL BUILDING (4,019 SF)	107.8
2	CONVENTIONAL HANGAR (60'x134')	111.3
3	MAINTENANCE SHED (27'x27')	102.3
4	CONVENTIONAL HANGAR (80'x60')	115.2
5	SHADE HANGARS (8 UNITS)	105.3
6	BUILDING (3,025 SF)	109.9
7	HANGAR (80'x80')	115.0
8	HANGAR (80'x70')	114.6
9	RECTANGULAR HANGARS (3-UNITS)	102.4
10	T-HANGAR (7-UNITS)	100.7
11	RECTANGULAR HANGARS (5-UNITS)	103.0
12	RECTANGULAR HANGARS (5-UNITS)	105.2
13	RECTANGULAR HANGARS (5-UNITS)	104.4
14	RECTANGULAR HANGARS (4-UNITS)	108.1
15	RECTANGULAR HANGARS (4-UNITS)	103.0
20	FUTURE HANGAR (70'x70' WITH 20'x70' OFFICE)	111.0
21	FUTURE HANGAR (70'x70')	111.0
22	FUTURE MAINTENANCE BUILDING (A PORTION OF SHADE HANGAR 56'x54')	106.0
23	FUTURE MAINTENANCE BUILDING / SHOP / STORAGE ALTERNATIVE (36'x45')	102.0

LEGEND

ITEM	EXISTING	FUTURE
AIRPORT PROPERTY LINE		N/A
AIRFIELD PAVEMENT		
BUILDINGS		
ROADS & PARKING		
FENCE		
TAXIWAY OBJECT FREE AREA	TOFA	(TOFA)
TAXILANE OBJECT FREE AREA	TLOFA	(TLOFA)
BUILDING RESTRICTION LINE	BRL	N/A
PAPI		N/A
WIND CONE		N/A
ROTATING BEACON		N/A
TREELINE		N/A
2' GROUND CONTOUR		N/A
WATER		N/A

(3.63°) VAR 7.95 E TRUE NORTH

MAGNETIC VARIATION=7°35'(3.63°) WEST (JANUARY 1, 2015) ANNUAL RATE OF CHANGE: 0°0'(0.1°) WEST/YEAR SOURCE: NOAA, 2018

50 0 50

GRAPHIC SCALE IN FEET

TRI-COUNTY AIRPORT

MASTER PLAN UPDATE

TERMINAL AREA DRAWING

FIGURE 6.6-1

S:\Projects\A AVCON\60586846_TriCoMPU\Planning\400-Technical\403 Facility Requirements\Figures\FIG 6.6-1.dwg 01/15/2021 9:59

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FORESTED

AGRICULTURAL & LOW-DENSITY RURAL

FORESTED

FUTURE PROPERTY ACQUISITION (54.6± ACRES)

DEPARTURE SURFACE

SEMINOLE LN.

AGRICULTURAL & LOW-DENSITY RURAL

TRI COUNTY AIRPORT RD.

TRI COUNTY AIRPORT RD. (CR 162)

DEPARTURE SURFACE

RPZ

TAXIWAY A

APRON

APRON

APRON

TAXIWAY A

A1

A2

A3

RUNWAY 1-19 – 5,398'x75'

(RSA)

RSA

RPZ

RPZ

DEPARTURE SURFACE

DEPARTURE SURFACE

FORESTED

FORESTED

FORESTED

BENCHOFF RD.

AGRICULTURAL

LEGEND

- AIRPORT PROPERTY LINE
- EXISTING AIRFIELD PAVEMENT
- EXISTING AIRFIELD BUILDING
- FUTURE AIRFIELD BUILDING
- FUTURE AIRFIELD PAVEMENT
- FUTURE ROADS/PARKING
- FUTURE LAND ACQUISITION
- EXISTING RUNWAY SAFETY AREA
- FUTURE RUNWAY SAFETY AREA
- BUILDING RESTRICTION LINE
- WATER FEATURE
- SURVEYED WETLANDS
- TREELINE

LAND USE LEGEND

- AIRFIELD OPERATIONS
- GENERAL AVIATION
- FUTURE AVIATION DEVELOPMENT
- FUTURE NON-AVIATION DEVELOPMENT
- VACANT/OPEN SPACE

(3.63°) VAR. STATION TRUE NORTH

MAGNETIC VARIATION=3°38'(3.63°) WEST
JANUARY 1, 2020
ANNUAL RATE OF CHANGE
0°6'(0.1°) WEST/YEAR
SOURCE: NOAA, 2018

300 0 300
GRAPHIC SCALE IN FEET

TRI-COUNTY AIRPORT
MASTER PLAN UPDATE

LAND USE DRAWING

FIGURE 6.7-1

S:\Projects\A\AVCON\60586846_TriCoMPU\Planning\400-Technical\403 Facility Requirements\Figures\FIG 6.7-1.dwg 01/15/2021 9:56

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TABLE 6.7-1
AIRPORT LAND USE

Land Use	Quantity (Acres)	Percent of Airport Property
Airfield Operations	141	46%
General Aviation Facilities	21	7%
Future Aviation Development	18	6%
Future Non-Aviation Development	14	5%
Vacant / Open Space	110	36%
Total	**304**	**100%**

Source: AECOM, 2020.
Note: Quantities are approximate.

All land currently used for aviation facilities, as well as all land suitable for aviation development in the future is located on the west side of the Airport. Land on the east side of the Airport that is within wetlands and/or floodplains is shown as remaining vacant / open space. Likewise, areas on the west side of the Airport that are primarily within wetlands, floodplains or navigational aid clearance areas are also designated as vacant / open space.

Off airport land uses surrounding the Airport primarily consists of low-density rural residential, agricultural and forested lands. Most of the land south of the Airport is undeveloped, while the land use east, west and north of the airport is a mixture of agricultural, low-density residential and forest.

6.8 PROPERTY MAP

A new Exhibit “A” property map was prepared as part of this Master Plan Update. It provides detailed information regarding the property boundary and historical parcel transactions. Readers interested in those details should refer to the Exhibit “A” drawing set.

The Airport Property Map shown in **Figure 6.8-1** depicts the various parcels that were acquired for the Airport. The Airport currently consists of 303.91 acres.

Three conservation easements exist on the east side of airport property. These easements restrict development on these parcels. The Airport Property Map also shows the proposed acquisition of approximately 50 acres southwest of the existing airfield to support long-range development beyond the planning horizon of this study.

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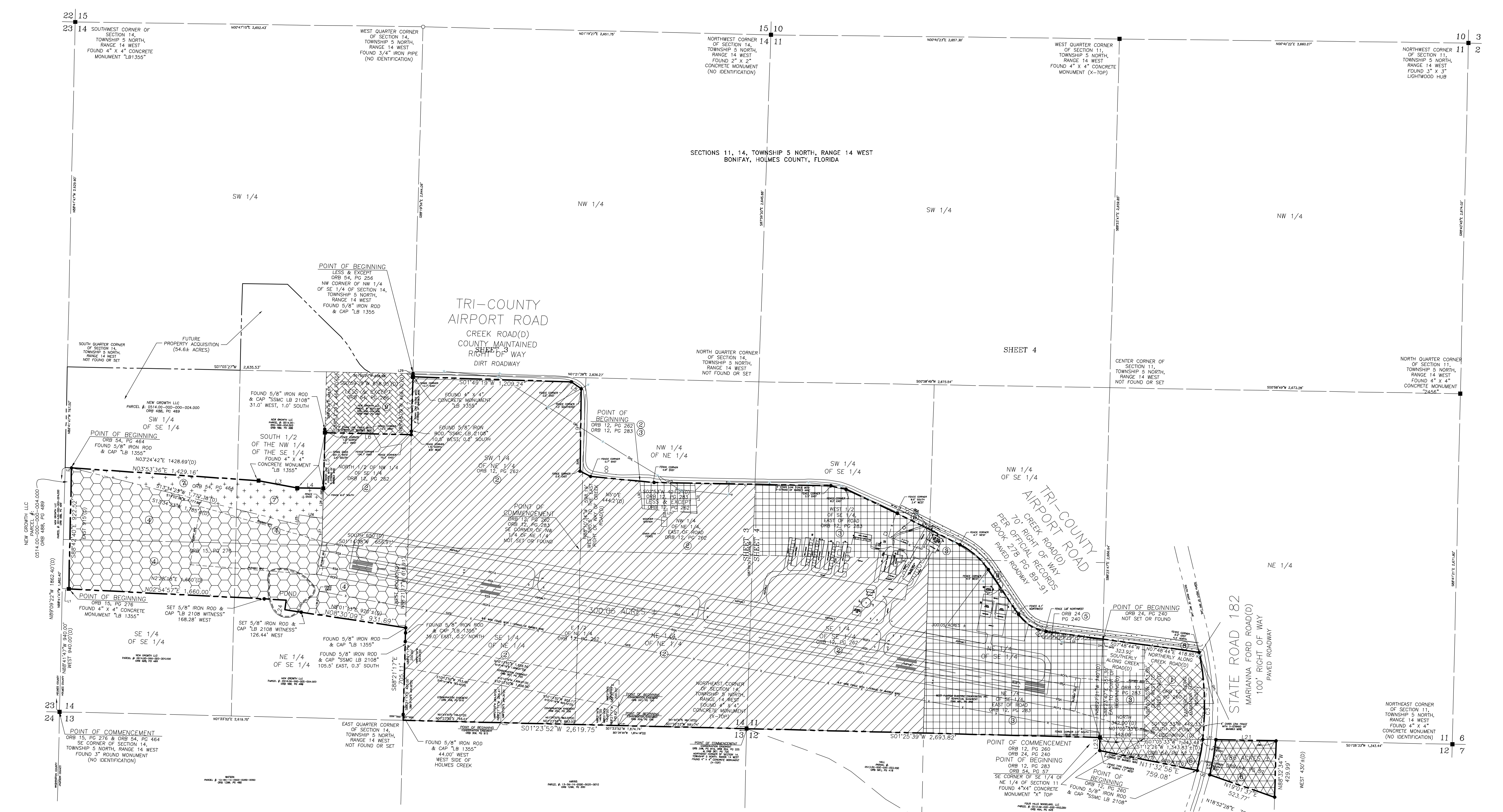
TRI-COUNTY AIRPORT

MASTER PLAN UPDATE

AIRPORT PROPERTY MAP (EXHIBIT A)



CURVE TABLE					
CURVE #	RADIUS	DELTA	LENGTH	CHORD BEARING	CHORD DISTANCE
C1	565.72'	29°23'48"	290.25'	S41°13'28"W	287.08'
C2	302.83'	48°13'56"	254.93'	N31°48'23"E	247.46'
C3	2098.46'	24°49'24"	909.16'	N89°03'39"W	902.06'
C4	2098.46'	18°14'51"	668.32'	N87°39'05"E	665.50'
C5	2098.46'	6°34'33"	240.84'	N79°56'13"W	240.71'
C6	2198.46'	7°05'38"	272.20'	N79°56'14"W	272.03'

LINE TABLE		
LINE #	BEARING	LENGTH
L1	N02°50'55"E	49.63'
L2	N02°42'47"E	49.39'
L3	N10°49'50"E	299.83'
L4	N00°28'44"E	199.90'
L5	S88°26'24"E	423.81'
L6	N01°21'58"E	658.17'
L7	N88°21'17"W	441.65'
L8	S35°32'18"W	91.03'
L9	N89°14'19"W	628.17'
L10	N26°49'57"E	89.22'
L11	N26°49'57"E	23.61'
L12	N26°49'57"E	65.61'
L13	N05°22'39"E	486.07'
L14	S05°22'39"W	107.48'
L15	S01°03'04"W	309.62'
L16	N13°03'35"E	118.12'
L17	S25°15'03"W	432.56'
L18	N26°31'33"E	533.24'
L19	N55°55'22"E	413.37'
L20	S01°05'33"W	100.47'

LINE TABLE		
LINE #	BEARING	LENGTH
L21	S01°05'33"W	458.64'
L22	N19°01'37"E	100.47'
L23	S89°05'22"E	100.00'
L24	N81°32'02"W	75.00'
L25	S81°27'10"E	75.00'
L26	S08°27'50"W	180.10'
L27	N88°26'24"W	204.06'
L28	S88°26'24"E	228.80'
L29	S88°21'17"E	25.09'
L30	N85°00'00"E	210.00'
L31	N05°00'00"E	420.00'
L32	S85°00'00"W	230.93'

LINE TABLE(DEED)		
LINE #	BEARING	LENGTH
L1	N02°28'18"E	50.00'
L2	N03°24'42"E	50.03'
L3	N10°20'35"E	300.00'
L4	N00°05'44"E	199.70'
L6	N00°59'29"E	658.22'
L23	S88°49'07"E	100.00'
L24	S81°58'47"E	75.00'
L25	S81°53'47"E	75.00'
L26	S08°01'13"W	180.00'
L27	WEST	200.00'
L28	S88°53'29"E	228.80'
L29	S88°21'17"E	38.07'
L30	N85°00'00"E	210.00'
L31	N05°00'00"E	420.00'
L32	S85°00'00"W	228.00'
L33	S01°30'05"W	455.41'
L34	S57°27'51"W	95.52'
L35	N10°20'38"E	515.00'

PROPERTY DATA TABLE		
PARCEL No.	AREA	OFFICIAL RECORD BOOK & PAGE
①		ORB 12, PG 260
②		ORB 12, PG 262
③		ORB 12, PG 283
④		ORB 15, PG 276
⑤		ORB 24, PG 240
⑥		ORB 54, PG 57
⑦		ORB 54, PG 464
⑧		ORB 278, PG 89
⑨		ORB 54, PG 286

LEGEND & ABBREVIATIONS:

- ■ = CONCRETE MONUMENT
- ○ = IRON PIPE
- ● = SET 5/8" IRON ROD & CAP "SSMC LB2108" UNLESS OTHERWISE SHOWN
- ORB = OFFICIAL RECORD BOOK
- PG = PAGE
- LB = LICENSED BUSINESS
- SSMC = SOUTHEASTERN SURVEYING & MAPPING CORPORATION

FIGURE 6.8-1

S:\Projects\A\AVCON\60586846_TriCoMPU\Planning\400-Technical\403 Facility Requirements\Figures\FIG 6.8-1.dwg 02/07/2020 7:24

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SECTION 7.0 FACILITIES IMPLEMENTATION PLAN

7.1 INTRODUCTION

The Facilities Implementation Plan identifies, costs and phases the projects that comprise the development plans presented in the preceding section. Projects were identified based on the following factors: safety, adherence to FAA design standards, capacity requirements, as well as the priorities of airport tenants and the Airport Authority. The implementation of projects will ultimately be decided based on several factors including available funding and required approvals.

7.2 PROJECT IDENTIFICATION

7.2.1 AIRFIELD PROJECTS

7.2.1.1 A1 – Construct RSA, ROFA and OFZ Improvements

This project will consist of removing vegetative obstructions from the limits of the existing and future RSA, ROFA and the OFZ, as well as regrading to remove storm water retention ponds from within the RSA. A small portion of the stormwater retention pond located between taxiways A1 and A2 is located within the RSA for existing and future conditions. This water retention pond needs to be removed from the RSA for it to meet design standards. This pond should also be modified to ensure it meets the requirements of FAA Advisory Circular 150/5200-33B, *Hazardous Wildlife Attractants on or Near Airports.*

7.2.1.2 A2 – Rehabilitate Runway 1-19 and Construct Blast Pads

Runway 1-19 was repaved in conjunction with the runway extension completed in 2015 and the existing pavement appears to be in generally good condition. This conclusion is confirmed by the 2019 FDOT Statewide Airfield Pavement Management Program Study for District 3 which showed Pavement Condition Index ratings of 93 to 100 during 2017.

Therefore, it is anticipated that a runway rehabilitation will be a long-term project. This project will include a repaving of Runway 1-19 to bring pavement back to excellent condition and will include the construction of blasts pads to meet FAA design standards for a B-II runway.

7.2.1.3 A3 – Remark Existing Helipad & Lower Wind Cone

This project will consist of remarking the existing helipad in accordance with the requirements specified in FAA Advisory Circular 150/5390-2C*, Heliport Design*. Specifically, the Final Approach and Takeoff edge marking should match the required lengths. The helipad analysis presented in the Alternatives section noted that the wind sock located inside the segmented circle penetrates the helipad's transitional surface by slightly more than 1 foot. Therefore, this project should also include lowering the wind sock to clear the transitional surface. If it is determined that the wind sock cannot be lowered and still meet design standards, then the segmented circle and wind sock should be relocated to clear the transitional surface.

7.2.1.4 A4 – Rehabilitate Taxiway A and Connectors

This project will consist of rehabilitating Taxiway A pavements including its connector segments to the taxiway holding position markings for Runway 1-19. This project should be undertaken when justified based on a Pavement Condition Index (PCI) report finding. This project should also re-evaluate the need for improvements to taxiway fillets in accordance with FAA design standards.

7.2.1.5 A5 – Construct Stormwater Improvements

The Facility Requirements section noted that there are numerous stormwater retention ponds on the Airport. Some of these ponds do not meet the requirements of FAA Advisory Circular 150/5200-33B, *Hazardous Wildlife Attractants on or Near Airports*. The advisory circular notes that ponds should be designed and operated so as not to create above-ground standing water. More specifically, stormwater retention ponds should be designed, engineered, constructed, and maintained for a maximum 48–hour retention period after the design storm and remain completely dry between storms. The ponds at the Airport do not meet these requirements. Therefore, stormwater improvements are required to bring the Airport's ponds into compliance with FAA's design standards.

A stormwater management plan being prepared by AVCON will define the precise actions to be undertaken. Consequently, this project is a placeholder for specific stormwater improvements to be defined by the stormwater study. At a minimum, it is anticipated that the existing stormwater pond located between Runway 1-19 and Taxiway A, north of A1 and south of A2 will be removed.

7.2.1.6 A6 – Construct Airfield Perimeter Fencing (South End)

The existing airfield perimeter fence is missing a segment beyond the south end of Runway 1-19 which was previously removed in conjunction with a southward extension of the runway. The recommended routing for a new segment of fence to eliminate this gap was shown as Alternative 1 in the Alternatives section. The proposed fence has a length of slightly more than 2,000 feet and will entail construction in wetlands and the floodplain. Therefore, this project will also include any required environmental mitigation measures.

7.2.1.7 A7 – Conduct Obstruction Removal and Obstacle Review

The approach and departure surface drawings prepared as part of the Airport Layout Plan drawing set revealed that numerous on-airport and off-airport obstructions penetrate these surfaces. This project will consist of the preparation of a comprehensive obstruction removal program to improve the Airport's compliance with FAA approach and departure standards. This project also includes the subsequent removal of obstructions.

7.2.1.8 A8 – Replace Runway Lighting

An Airfield Lighting System, Signage and Airport Equipment Assessment was conducted for the Airport by AVCON in 2019. The assessment determined that the existing quartz incandescent runway edge and threshold lighting should be replaced with light emitting diode (LED) fixtures to

improve reliability and to reduce maintenance requirements and energy consumption. This project will consist of replacing all existing runway lighting along with associated cables, connectors and transformers.

7.2.1.9 A9 – Replace Taxiway Lighting

The AVCON Airfield Lighting System, Signage and Airport Equipment Assessment determined the Airport's existing quartz incandescent taxiway edge lighting should be replaced with LED fixtures for the same reasons specified above for the runway and threshold lighting. This project will consist of removing the existing taxiway edge lighting system and installing new LED fixtures along with associated cabling, connectors and transformers.

7.2.1.10 A10 – Replace Airfield Guidance Signs

The AVCON Airfield Lighting System, Signage and Airport Equipment Assessment recommended the Airport's existing quartz incandescent airfield signs be replaced with new LED signs to reduce maintenance requirements and energy consumption. The report also noted that LED signs will have a longer useful life. This project consists of replacing all airfield signs along with new ducts, cables and grounding rods.

7.2.1.11 A11 – Replace Runway 1-19 PAPI's

The AVCON Airfield Lighting System, Signage and Airport Equipment Assessment recommended the Airport's existing PAPI's on both ends of Runway 1-19 should be replaced with new units. This project will consist of replacing these navigational aids with new units along with new ducts, cables and grounding rods. Conducting an FAA flight check for the new units is also part of this project.

7.2.1.12 A12 – Rehabilitate Terminal Area Taxiway/Taxilane, Relocate Taxiway A1 Segment & Remark Airfield

The 2019 FDOT Statewide Airfield Pavement Management Program Study for District 3 published a new Pavement Condition Index map for Tri-County Airport which showed the taxiway segment from Runway 1-19 to the terminal area ramp had a PCI rating of 64 "Fair" while the taxilane segment from the terminal ramp to the hangar closest to Tri-County Airport Road has a PCI rating of 34 "Very Poor". These pavements will need to be rehabilitated prior to the remainder of airfield pavement that have PCI ratings of "Good" or "Satisfactory". This project consists of rehabilitating these two sections of pavement, relocating the segment of Taxiway A1 extending from Runway 1-19 to Taxiway A and remarking of airfield pavements.

7.2.2 LANDSIDE PROJECTS

7.2.2.1 L1 – Install New Airport Landside Signage

This project consists of installing three new landside signs as described in the Alternatives section. A monument sign is proposed at the southeast corner of County Road 162 and Tri-County

Airport Road. Directional signs are proposed at the entrance to the previous Baptist College facility and the intersection of Tri-County Airport Road and the road leading to the terminal area. This project also includes all required lighting to maintain sign visibility during nighttime and low visibility conditions and associated landscaping to create and maintain a sense of place that will establish an airport identity. The final element of this project is the installation of new security signage along the airport perimeter fence to provide a deterrence to unauthorized access of airport property.

7.2.2.2 L2 – Construct New Terminal Entrance & Parking & Relocate Fencing

This project consists of constructing a new loop access road from Tri-County Airport Road to a proposed expansion of the terminal (as described in the Alternatives section) and a small parking lot with space for approximately 18 parking spaces. This project also includes site preparation, all necessary excavation, paving, sodding and allowances for fencing, gate signage and lighting improvements.

7.2.2.3 L3 – Construct Terminal Expansion

The Facility Requirements section noted a future terminal space requirement of up to 1,000 additional square feet. This project consists of expanding the existing terminal to provide the required space along with associated site preparation, sediment control and drainage improvements.

7.2.2.4 L4 – Rehabilitate & Remark GA Apron

The Alternatives section presented an option for remarking the existing aircraft apron to increase the number of tie-down positions and to bring existing taxilane clearances into compliance with FAA design standards. This project consists of rehabilitating the existing apron through milling and repaving with a 2-inch overlay, applying a prime/tack coat, installing new tie-downs, and applying new taxilane markings.

7.2.2.5 L5 – Expand GA Apron

The Alternatives section presented an option for expanding the existing aircraft parking apron when needed, based on demand. This project consists of expanding the apron on the north side of the taxiway leading to the terminal. Space for three to four aircraft tie-downs could be provided in this area depending on the required operational clearances. This project consists of required site preparation, excavation, sediment control, subgrade and base course preparation, paving and prime/tack coat. It also includes allowances for apron edge lighting, new marking and new sod.

7.2.2.6 L6 – Rehabilitate Hangar Taxilanes

This project consists of rehabilitating the taxilanes around the existing T-Hangars and rectangular hangars in the terminal area (except for the taxilane on the north side of the shade hangars). The

project includes milling existing pavements and constructing a 2-inch overlay with new asphalt to bring pavements back to excellent condition. The application of a prime/tack coat, new pavement markings and sod will also be part of this project.

7.2.2.7 L7 – Construct New Dual-Bay Hangar in Terminal Area

This project consists of constructing a new dual bay hangar with office space immediately south of the terminal building as previously shown in **Figure 4.3-4**. Each hangar bay will be approximately 70 by 70 feet and would be capable of accommodating certain aircraft in Airplane Design Group II, such as a Beech King Air which has a wingspan of nearly 58 feet. The Airport Authority envisions this facility as being able to accommodate an FBO operation or handling larger aircraft which cannot be accommodated in rectangular or T-hangars.

This project will include site preparation, embankment construction and/or excavation, sediment control, and hangar and office construction. It also includes allowances for utility improvements, lighting and signage and new sod.

7.2.2.8 L8 – Pave Tri-County Airport Road (Third Party Funded)

Tri-County Airport Road is currently paved from County Road 162 to a point just south of the entrance to the Airport's terminal area. This project will consist of paving the road further south (a distance of approximately 3,900 feet) to the proposed entrance in the southwest corner of the Airport. This project includes erosion and sedimentation control, maintenance of traffic, site preparation, subgrade and base course preparation, asphalt paving and prime/tack coat. It also includes all required pavement markings and signage along with new sod at the roadway edge.

7.2.2.9 L9 – Construct Roadway Access to Southwest Area

The Alternatives section noted that the Airport Authority desires the construction of new hangar facilities in the southwest corner of airport property which is currently undeveloped. Construction in this area will require new roadway access to provide a means for pilots and other airport users to reach the proposed hangars. This project consists of roadway construction from Tri-County Airport Road to the proposed hangar development a distance of approximately 2,000 feet. A potential route for the first phase of road is shown in **Figure 4.3-6** in the Alternatives section.

The proposed roadway route will provide access to proposed rectangular hangars, as well as potential future larger box hangars. This project includes erosion and sedimentation control, maintenance of traffic, site preparation, subgrade and base course preparation, asphalt paving and prime/tack coat. It also includes all required fencing, roadway markings and signage along with new sod at the roadway edge.

7.2.2.10 L10 – Construct Taxilane Access to Southwest Area

This project consists of providing taxiway access from Taxiway A to the proposed hangar development in the southwest corner of airport property. The taxiway will be designed according

to Airplane Design Group II design standards to enable access to future box hangars even though the taxiway would initially serve ADG I aircraft in the rectangular hangars. The proposed taxiway length would be approximately 400 feet.

This project includes erosion and sedimentation control, site preparation, embankment construction and/or excavation, subgrade and base course preparation, asphalt paving and prime/tack coat. It also includes all required taxiway markings, an allowance for taxiway edge lighting improvements and new sod at the taxiway edge.

7.2.2.11 L11 – Construct Rectangular Hangars (5 Units)

The Facility Requirements section noted a future demand for up to 20 T-hangars or rectangular hangars for based aircraft owners. The Alternatives section noted that the Airport Authority desires these new hangars to be constructed in the southwest corner of the Airport. Projects L9 and L10 would provide roadway and taxiway access, respectively, to this area. This project consists of constructing the first 5-unit row of hangars on an as needed basis, after Projects L9 and L10 are completed.

This project includes erosion and sedimentation control, site preparation, embankment construction and/or excavation, rectangular hangar construction, utility improvements, construction of hangar unit ramps and drainage improvements. It also includes new sod around the new hangars and ramps.

7.2.2.12 L12 – Construct Rectangular Hangars (5 Units)

This project consists of the construction of a second 5-unit row of rectangular hangars south of the first row described in Project L11. These hangars will be constructed when needed based on demand and available funding.

This project includes erosion and sedimentation control, site preparation, embankment construction and/or excavation, rectangular hangar construction, utility improvements, construction of hangar unit ramps and drainage improvements. It also includes new sod around the new hangars and ramps.

7.2.2.13 L13 – Construct Rectangular Hangars (5 Units)

This project consists of the construction of a third 5-unit row of rectangular hangars south of the second row described in Project L12. These hangars will be constructed when needed based on demand and available funding.

This project includes erosion and sedimentation control, site preparation, embankment construction and/or excavation, rectangular hangar construction, utility improvements, construction of hangar unit ramps and drainage improvements. It also includes new sod around the new hangars and ramps.

7.2.2.14 L14 – Construct Rectangular Hangars (5 Units)

This project consists of the construction of a fourth 5-unit row of rectangular hangars south of the third row described in Project L13. These hangars will be constructed when needed based on demand and available funding.

This project includes erosion and sedimentation control, site preparation, embankment construction and/or excavation, rectangular hangar construction, utility improvements, construction of hangar unit ramps and drainage improvements. It also includes new sod around the new hangars and ramps.

7.2.3 SUPPORT PROJECTS

7.2.3.1 S1 – Convert Portion of Shade Hangars to MES Facility

Two options were identified and discussed in the alternatives section for the construction of a Maintenance Equipment Storage (MES) facility. These options consist of constructing a completely new facility or converting approximately two bays of the existing shade hangars into a MES facility by enclosing the western end. The alternatives analysis noted that most of the existing airfield maintenance equipment is currently located in unoccupied shade hangars and enclosure of a few bays could most likely be accomplished at lower cost than constructing a new MES facility. Therefore, this project consists of enclosing the west end of the shade hangars. The project would include required construction and utility modifications. If design or permitting issues determine that a conversion of a portion of the shade hangars is not feasible or cost effective then the construction of a new MES building is proposed in lieu of this project.

7.2.3.2 S2 – Construct Fire Equipment Parking Area and Water Tank

This project will consist of the constructing a suitable vehicle parking area for use by local firefighting authorities and the construction of a water tank to provide a dedicated water supply to the vehicles. These facilities will be constructed at a site in the southwest corner of the Airport adjacent to Tri-County Airport Road. This project will include site preparation along with erosion and sediment control, embankment/excavation and the construction of a cement concrete parking areas for two vehicles. The project also includes an allowance for the installation of a water tank along with required pipes and pumps.

7.2.3.3 S3 – Update Airport Master Plan

Airport's typically update their master plan due to obsolescence of their previous plan or changes in airport operations and/or conditions which drive the need for a new plan. The FAA does not specify a specific frequency for updating master plans, however, plans are typically updated every 5 to 10 years. This project will consist of preparing a new master plan which includes a technical report and airport layout plan drawing set.

7.2.3.4 S4 – Acquire Property to Southwest

After the hangar facilities proposed by this Master Plan Update are constructed in the southwest portion of the Airport, all remaining airport property will be within identified wetlands or floodplains or occupied by existing facilities. Consequently, property acquisition will be needed to support additional future growth. The plan proposes acquiring approximately 50 additional acres to the southwest. Roadway and airfield access to the property would be accessible by future extensions of the roadway and airfield access proposed by this plan in projects L9 and L10.

7.2.3.5 S5 – Implement Height Zoning Ordinances

This project includes the preparation of a model airport height zoning ordinance for Holmes, Washington and Jackson Counties to better protect the Airport's approach and departure surfaces from encroachment by natural and man-made objects which have the potential to adversely impact safe and efficient operations at the Airport. An allowance for required legal services is also part of this project.

7.2.3.6 S6 – Install New Rotating Beacon

This project consists of replacing the Airport's existing rotating beacon. The 2019 AVCON Airfield Lighting System, Signage and Airport Equipment Assessment recommended that the existing beacon be replaced. This project will consist of removal of the existing beacon and the installation of a new beacon with a tip-down pole and the installation of lighting protection in accordance with code requirements.

7.2.3.7 S7 – Construct New Electrical Vault

The 2019 AVCON Airfield Lighting System, Signage and Airport Equipment Assessment noted that the existing airfield lighting shelter consists of an out-of-date steel enclosure on a concrete pad that does not have air-conditioned inner space and suffers from a variety of physical and operational issues. This project consists of replacing the existing shelter with a modern concrete pre-cast structure that will provide the proper amount of space to meet code requirements. This project also includes providing power, equipment and lighting protection along with lighting control system modifications and new sod at the site.

7.2.3.8 S8 – Install New Generator

The Airport does not currently have any form of emergency power that can maintain power to the airfield's lighting systems in the event of a power interruption or failure during or after severe weather events. This project will consist of installing an emergency power generator along with site preparation, concrete foundation and new sod at the site which is anticipated to be next to the lighting vault.

7.3 COST ESTIMATES

Cost estimates were prepared for all proposed projects in 2019 dollars. No escalation factors were applied to project costs. This methodology allows project costs to be escalated based on actual escalation factors from 2019 at the time they are initiated.

The cost estimates include construction and program costs. Construction costs include all physical items and labor. Program costs include survey and geotechnical testing, design and bidding fees, construction administration, inspection and testing, and project administration fees. A 20 percent budget contingency is included for each project. Details of the cost estimate are provided in **Appendix B**.

7.4 PROJECT PHASING

Phasing for the projects described on the previous pages was established as follows: Short-Term (2020 through 2024), Intermediate-Term (2025 to 2029) and Long-Term (2030 and Beyond). The ultimate timing of projects will be determined based on operational and/or physical demands, funding availability and tenant and Airport Authority priorities.

7.4.1 SHORT-TERM PROJECTS

Project priorities in the short-term include high priority projects such as providing public access to the terminal and a series of safety & standards compliance items such as removing obstacles from the RSA, ROFA and OFZ and the runway approaches. Other safety related projects include the completion of airfield perimeter fencing at the south end of the airfield and the implementation of new airport height zoning ordinances.

Additional short-term projects include electrical improvements (i.e., installing a new electrical vault, emergency generator, as well as a new rotating beacon), paving an additional portion of Tri-County Airport Road, the construct of new terminal access and parking, a terminal expansion and the conversion of a portion of the shade hangars to a MES facility or the construction of a new MES building.

The estimated costs associated with these projects are shown in **Table 7.4-1**. Short-term projects are illustrated (where possible) in **Figure 7.4-1**.

TABLE 7.4-1
SHORT-TERM (2020 TO 2024) - PROJECT COST ESTIMATES

Project Number	Project Name	Estimated Cost (2019 Dollars)
A3	Remark Existing Helipad & Lower Wind Cone	$68,000
L2	Construct New Terminal Entrance & Parking & Relocate Fencing	$753,000
A1	Construct RSA, ROFA and OFZ Improvements	$366,000
A5	Construct Stormwater Improvements (Phase 1)	$750,000
S5	Implement Height Zoning Ordinances	$95,000
A7	Conduct Obstruction Removal and Obstacle Review	$117,000
S6	Install New Rotating Beacon	$84,000
S8	Install New Generator	$352,000
S7	Construct New Electrical Vault	$673,000
A6	Construct Airfield Perimeter Fencing (South End)	$454,000
A12	Rehabilitate Terminal Area Taxiway/Taxilane, Relocate Taxiway A1 Segment & Remark Airfield	$1,000,000
L1	Install New Airport Signage	$65,000
L8	Pave Tri-County Airport Road (Third Party Funded)	$1,339,000
L3	Construct Terminal Expansion	$510,000
S1	Convert Portion of Shade Hangars to MES Facility	$280,000
	Total	**$6,906,000**

Source: AVCON, 2021.

TRI COUNTY AIRPORT RD.

SEMINOLE LN.

TAXIWAY A

TAXIWAY A

ASOS

PAPI

PAPI

RUNWAY 1–19 – 5,398'x75'

19

AIRPORT PROPERTY LINE

L1 L2 L3 L8 A1 A2 A3 A6 A12 S1

PROJECTS NOT SHOWN

- A5 CONSTRUCT STORMWATER IMPROVEMENTS
- A7 CONDUCT OBSTRUCTION REMOVAL AND OBSTACLE REVIEW
- S5 IMPLEMENT HEIGHT ZONING ORDINANCES
- S6 INSTALL NEW ROTATING BEACON
- S7 CONSTRUCT NEW VAULT BUILDING
- S8 INSTALL NEW GENERATOR

N

400 0 400

GRAPHIC SCALE IN FEET

TRI-COUNTY AIRPORT

MASTER PLAN UPDATE

CAPITAL IMPROVEMENT PROGRAM
SHORT-TERM (2020-2024)

FIGURE
7.4-1

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7.4.2 INTERMEDIATE-TERM PROJECTS

Project priorities during the intermediate-term include constructing additional hangars to facilitate growth. This includes the construction of a dual-bay hangar in the existing terminal area for larger aircraft, as well as the construction of new landside and airside access to a new hangar development in the southwest corner of the Airport. Rehabilitating existing pavements based on the current Pavement Condition Index map is also a priority in the intermediate-term. Pavements planned for rehabilitation include the existing GA apron as well as the hangar taxilanes. The final project in the intermediate-term is the construction of facilities that would support fire protection equipment and a water tank.

Table 7.4-2 presents the estimated costs of projects proposed for the intermediate-term. The projects are illustrated (where possible) in **Figure 7.4-2.**

TABLE 7.4-2
INTERMEDIATE-TERM (2025 TO 2029) - PROJECT COST ESTIMATES

Project Number	Project Name	Estimated Cost (2019 Dollars)
L7	Construct New Dual-Bay Hangar in Terminal Area	$1,918,000
L4	Rehabilitate & Remark GA Apron	$721,000
L9	Construct Roadway Access to Southwest Area	$896,000
L10	Construct Taxilane Access to Southwest Area	$491,000
L11	Construct Rectangular Hangars (5 Units)	$1,458,000
L6	Rehabilitate Hangar Taxilanes	$177,000
S2	Construct Fire Equipment Parking Area and Water Tank	$1,276,000
	Total	**$6,937,000**

Source: AVCON, 2020

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S:\Projects\A\AVCON\60586846_TriCoMPU\Planning\400-Technical\403 Facility Requirements\Figures\FIG 7.4-2.dwg 01/15/2021 9:50

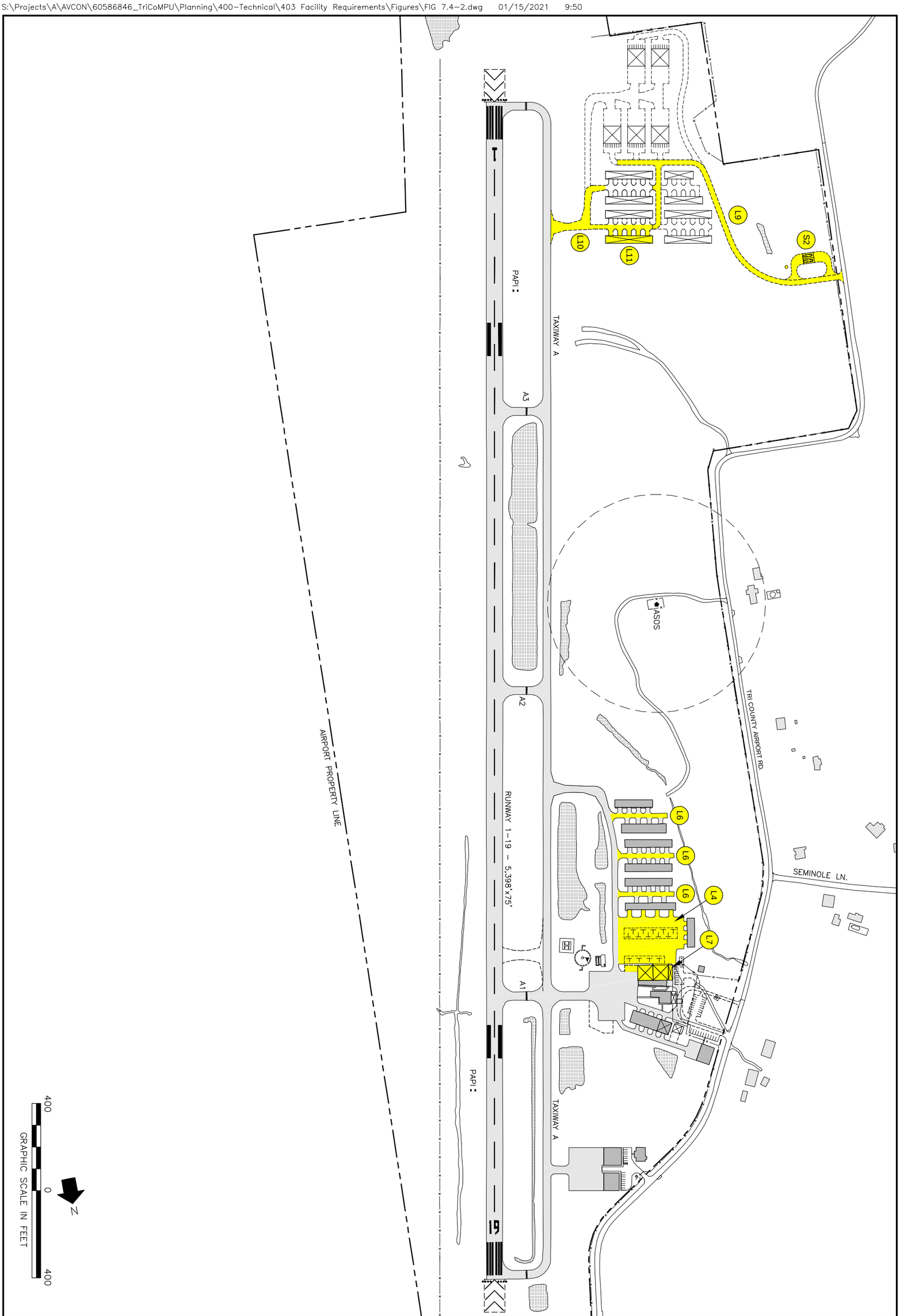

FIGURE 7.4-2

CAPITAL IMPROVEMENT PROGRAM INTERMEDIATE-TERM (2025-2029)

TRI-COUNTY AIRPORT
MASTER PLAN UPDATE

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7.4.3 LONG-TERM PROJECTS

Project priorities in the long-term include rehabilitating pavements that are likely to be reaching the end of their useful life. This includes Taxiway A and Runway 1-29. Associated electrical projects such as runway and taxiway edge lighting, guidance signs and PAPI's are also include in the long-term phase.

Other priorities in the long-term include the construction of additional hangars, an update to the master plan and the acquisition of additional property to facility growth after the build out of facilities in the southwest corner of the airfield.

Table 7.4-3 presents the estimated costs of projects proposed in the long-term. **Figure 7.4-3** illustrates these projects.

TABLE 7.4-3
LONG-TERM (2030 AND BEYOND) - PROJECT COST ESTIMATES

Project Number	Project Name	Estimated Cost (2019 Dollars)
A4	Rehabilitate Taxiway A and Connectors	$1,353,000
A9	Replace Taxiway Lighting	$657,000
A10	Replace Airfield Guidance Signs	$215,000
A11	Replace Runway 1-19 PAPI Systems	$183,000
A2	Rehabilitate Runway 1-19 and Construct Blast Pads	$3,299,000
A8	Replace Runway Lighting	$513,000
L12	Construct Rectangular Hangars (5 Units)	$1,377,000
L5	Expand GA Apron	$279,000
S3	Update Airport Master Plan	$420,000
L13	Construct Rectangular Hangars (5 Units)	$1,377,000
S4	Acquire Property to Southwest	$255,000
A5	Construct Stormwater Improvements	$750,000
L14	Construct Rectangular Hangars (5 Units)	$1,377,000
	Total	**$12,055,000**

Source: AVCON, 2020.

7.4.4 PROJECT PHASING CHART

Figure 7.4-4 provides a Gantt chart which shows the project phasing described in the preceding paragraphs on an annual basis.

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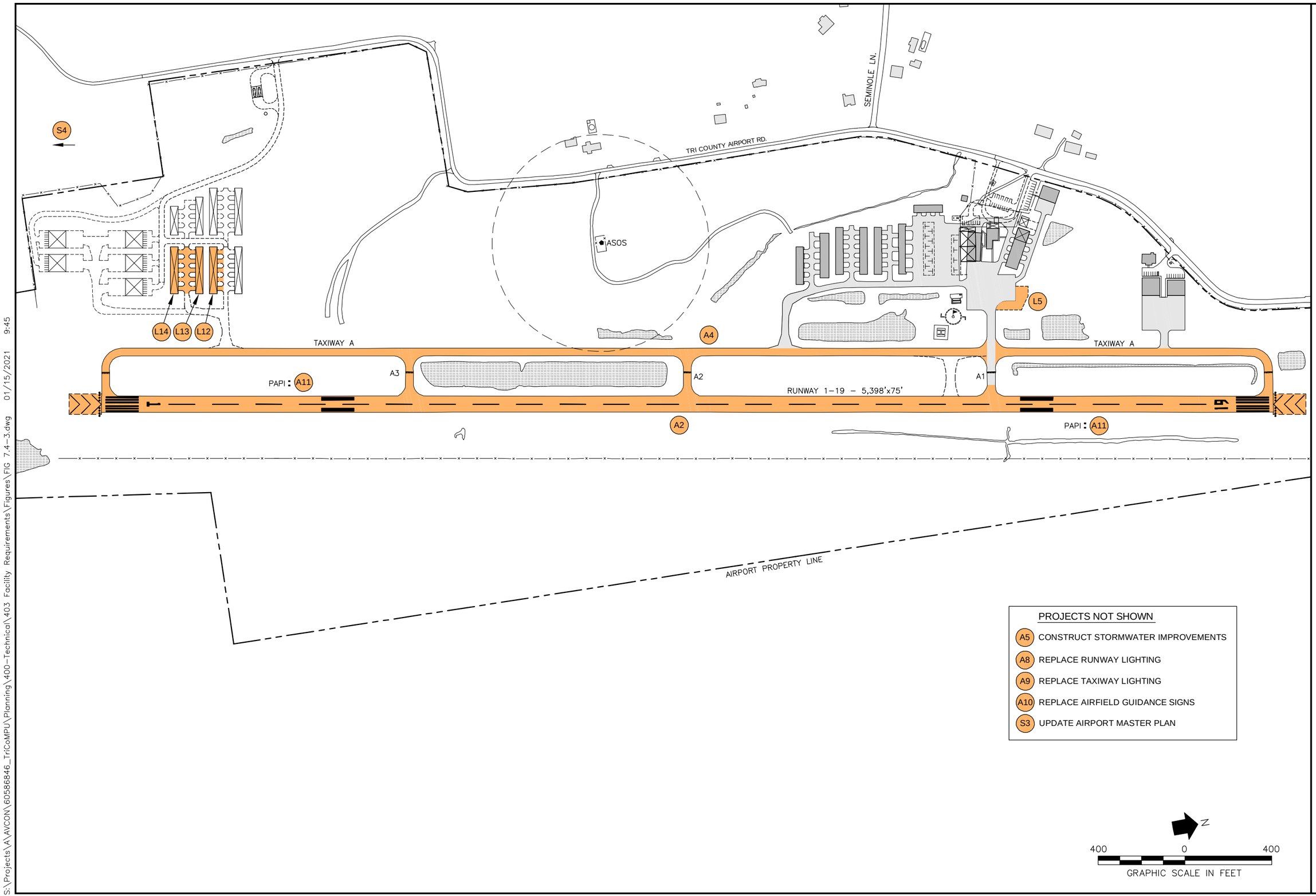

TRI-COUNTY AIRPORT
MASTER PLAN UPDATE

CAPITAL IMPROVEMENT PROGRAM
LONG-TERM (2030-2039)

FIGURE
7.4-3

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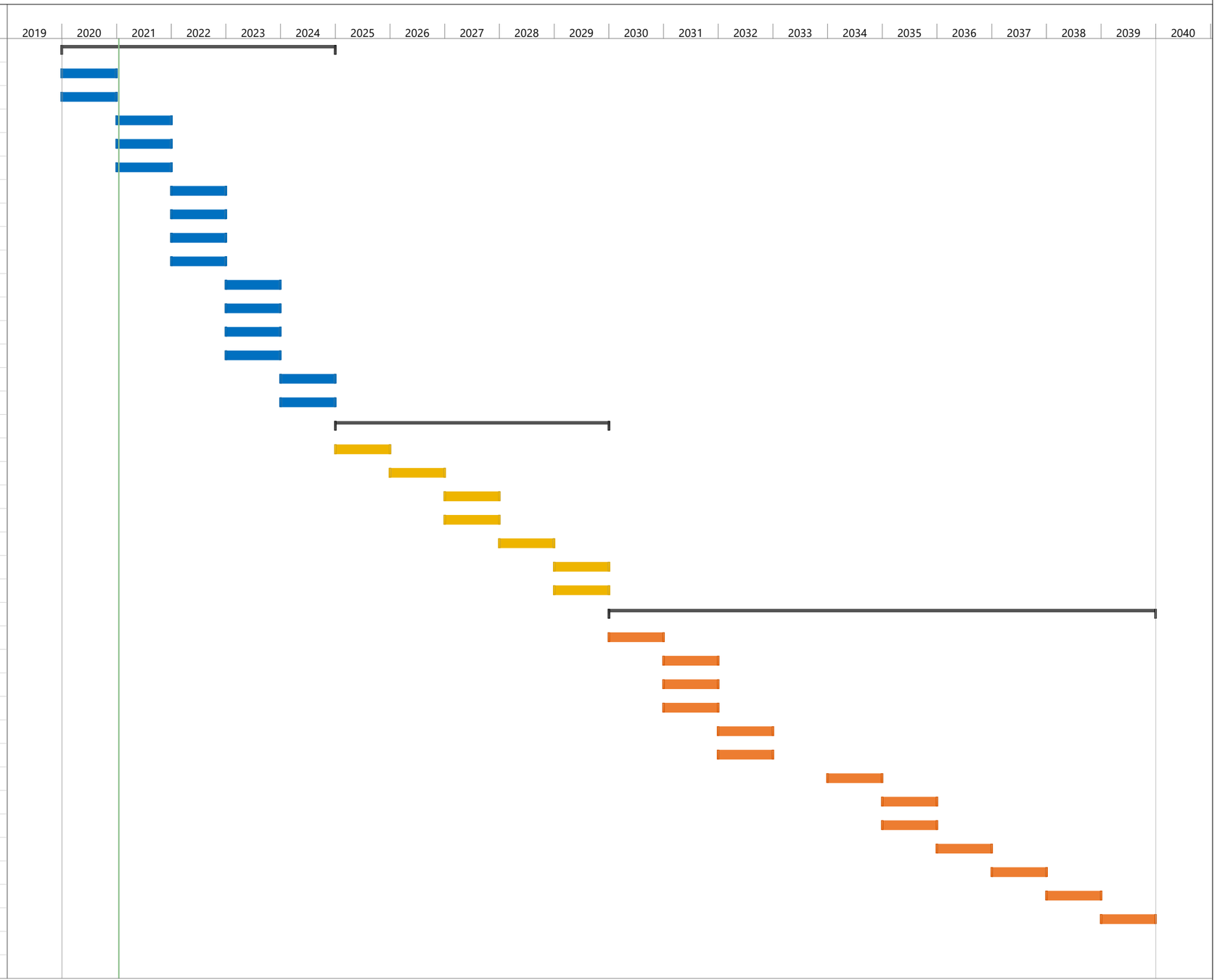
Capital Improvement Program - Project Phasing

ID	Text1	Task Name
1		**Short-Term Projects**
2	A3	Remark Existing Helipad & Lower Wind Cone
3	L2	Construct New Terminal Entrance & Parking & Relocate Fencing
4	A1	Construct RSA, ROFA and OFZ Improvements
5	A5	Construct Stormwater Improvements (Phase 1)
6	S5	Implement Height Zoning Ordinances
7	A7	Conduct Obstruction Removal and Obstacle Review
8	S6	Install New Rotating Beacon
9	S8	Install New Generator
10	S7	Construct New Electrical Vault
11	A6	Construct Airfield Perimeter Fencing (South End)
12	A12	Rehabilitate & Relocate Taxiway/Taxilane & Remark Airfield
13	L1	Install New Airport Signage
14	L8	Pave Tri-County Airport Road (Third Party Funded)
15	L3	Construct Terminal Expansion
16	S1	Convert Portion of Shade Hangars to MES Facility
17		**Intermediate-Term Projects**
18	L7	Construct New Dual-Bay Hangar in Terminal Area
19	L4	Rehabilitate & Remark GA Apron
20	L9	Construct Roadway Access to Southwest Area
21	L10	Construct Taxilane Access to Southwest Area
22	L11	Construct Rectangular Hangars (5 Units)
23	L6	Rehabilitate Hangar Taxilanes
24	S2	Construct Fire Equipment Parking Area and Water Tank
25		**Long-Term Projects**
26	A4	Rehabilitate Taxiway A and Connectors
27	A9	Replace Taxiway Lighting
28	A10	Replace Airfield Guidance Signs
29	A11	Replace Runway 1-19 PAPI Systems
30	A2	Rehabilitate Runway 1-19 and Construct Blast Pads
31	A8	Replace Runway Lighting
32	L12	Construct Rectangular Hangars (5 Units)
33	L5	Expand GA Apron
34	S3	Update Airport Master Plan
35	L13	Construct Rectangular Hangars (5 Units)
36	S4	Acquire Property to Southwest
37	A5	Construct Stormwater Improvements
38	L14	Construct Rectangular Hangars (5 Units)
39		
40		



Project: 1J0 - Project Phasing G
Date: Sat 1/16/21

Task | Split | Milestone | Summary | Progress

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SECTION 8.0 FINANCIAL FEASIBILITY ANALYSIS

8.1 INTRODUCTION

This section identifies sources of funding for the projects described in the preceding section. It also identifies potential revenue enhancement opportunities, reviews the Airport's capital improvement program and presents a financial feasibility plan.

8.2 SOURCES OF FUNDING

Funding for projects at general aviation airports in Florida primarily comes from the Federal Aviation Administration (FAA) and the Florida Department of Transportation (FDOT). Smaller amounts come from other less common sources. The following paragraphs describe potential funding sources for the types of projects identified in **Section 7.0**.

8.2.1 FAA AIRPORT IMPROVEMENT PROGRAM

Funding for airport projects is available from the FAA through the Airport Improvement Program (AIP). This program was established by US Government for the purpose of providing grants to airport sponsors for planning and development of public-use airports that are included in the National Plan of Integrated Airport Systems. The program provides grants at a level of 90 percent[7] of eligible project costs based on the program's requirements.

A wide variety of projects that enhance airport safety, capacity, security, and environmental concerns are eligible for AIP grants. This includes most airfield capital improvements or rehabilitation projects and in some specific situations, for terminals, hangars, and nonaviation development. The professional services required to plan and design these projects are also eligible for funding.

Two types of grants are typically issued by the FAA to airports under the program: entitlement grants and discretionary grants. Entitlement grants, as the name implies, are monies that each airport in the NPIAS is entitled to receive under the guidelines of the program subject to annual appropriations by Congress. Discretionary grants are monies that the airport may compete for from a separate apportionment in the program. Projects that better meet the priorities of the program are more likely to receive discretionary grants.

On the basis of current appropriations, AIP entitlement funding for a general aviation airport such as Tri-County Airport is $150,000 dollars per year. These funds can be carried over from one year to the next for three years in order to build up a sufficient amount to undertake a specific project.

[7] For general aviation airports.

8.2.2 FDOT AVIATION GRANT PROGRAM

Funding for airport projects is also available from the FDOT through its Aviation Grant Program, which was established by the state for the purpose of providing a safe, efficient and cost-effective statewide aviation transportation system. According to FDOT, the program "provides financial assistance to Florida's airport's in the areas of safety, security, preservation, capacity improvement, land acquisition, planning, and economic development. Program funds assist local governments and airport authorities in planning, designing, constructing, and maintaining public-use aviation facilities." Funding for the program is derived from the Florida's State Transportation Trust Fund, which is funded, in part, through the state's aviation fuel tax.

FDOT guidelines specify that the program's funding for general aviation airports may be provided at a level of up to 80 percent of the local share when receiving a federal grant (i.e., up to 8 percent when the FAA is providing 90 percent funding) or 80 percent of total project cost when no federal monies are involved. Furthermore, because Tri-County Airport is located in Holmes County which meets the definition for the Rural Economic Development Initiative[8], the Airport is eligible for a waiver of the match requirements and can receive grants that fund 100 percent of the project's cost.

The airport has received numerous grants through the program at the 100 percent level and it is anticipated that the Airport will continue to do so in the future. Overall, it is anticipated that grants from FDOT will be the primary source of funds for the proposed projects.

8.2.3 FDOT SMALL COUNTY OUTREACH PROGRAM (SCOP)

The purpose of SCOP is to assist small county governments in repairing or rehabilitating county bridges, paving unpaved roads, addressing road-related drainage improvements, resurfacing or reconstructing county roads, or constructing capacity or safety improvements to county roads.

The precise language of SCOP is shown in the following paragraphs.

> "Small counties shall be eligible to compete for funds that have been designated for the small County Outreach Program (SCOP) for projects on county roads. Available funds are allocated to the districts based on the number of eligible counties. For example, if a district has 12 counties eligible for SCOP/Small County Economic Development (SCED) and Small County Growth Management (GRSC), and there is a total of 38 eligible counties statewide, then the district's allocation would be approximately 31.57% of the total available funding. The Florida Department of Transportation (department) shall fund 75% of the cost of projects on county roads funded under the program. Any initial bid costs or project overruns

[8] Section 288.0656, Florida Statutes, defines a rural county as:
- A county with a population of 75,000 or less
- A county with a population of 125,000 or less which is contiguous to a county with a population of 75,000 or less
- Any municipality within a county as described above

> after the letting that exceed the department's participation as stated, will be at the county's expense. This will help ensure that the funds are utilized on as many projects as possible."
>
> "Subsequent to the department's selection of a project for inclusion in SCOP, a joint participation agreement (JPA) must be executed. Districts shall use the standard boilerplate JPA. Any changes to the financial provisions in this agreement must be approved by the Office of Comptroller."

It is anticipated that SCOP could be a source of funding for paving the portion of Tri-County Airport Road that is currently unpaved. The Airport Authority should coordinate with Holmes County regarding the entry of the road project into the program.

8.2.4 OTHER FUNDING SOURCES

The funding sources described in the preceding paragraphs are anticipated to be the most applicable to proposed projects at the Airport. However, other potential sources of funding include local County revenues for infrastructure improvements, as well as any revenues generated from airport operations. Most funding at Tri-County Airport has historically come from FDOT and the FAA grants. County revenues are not typically devoted to the Airport Authority and the Authority's revenues are primarily devoted to the operation and maintenance of existing facilities. Furthermore, the magnitude of operational revenues is not large enough to undertake most capital improvement projects identified by the Capital Improvement Program (CIP).

8.3 POTENTIAL REVENUE ENHANCEMENT OPPORTUNITIES

The primary opportunities for revenue enhancement at the Airport are related to redevelopment in the existing building area and the construction of new development areas. New facilities will bring in additional monthly lease revenue that can then be used to further improve airport facilities. Furthermore, it is likely that as additional aircraft are located at the Airport, additional fuel sales will be achieved and the revenue from those sales could also be devoted to airport improvements.

The Facilities Implementation Plan proposes the redevelopment of the existing large open bay hangar located south of the terminal building. The demolition of the existing hangar and its replacement with the construction of a new dual bay hangar could accommodate aircraft that are not capable of using existing T-hangar storage. Potential tenants may include owners of larger aircraft who can pay higher monthly rates for premium storage hangars.

The Facilities Implementation Plan also proposes the development of a new hangar area in the southwest quadrant of the Airport. The plan shows potential development of up to 37 rectangular hangars and up to five larger conventional hangars, although the plan only proposes the construction of 20 rectangular hangars in accordance with estimated demand during the twenty-year planning period. Both of these development areas have the potential to increase airport revenues.

Finally, the proposed projects contain an expansion of the existing terminal building which is intended to provide sufficient space (and septic capability) to support food preparation. It is anticipated that the creation of food service capability at the Airport would increase the number of military and other flights that may choose to land at the Airport and therefore may lead to an increase of fuel sales. Therefore, this may also further improve the Airport's financial condition.

8.4 FINANCIAL FEASIBILITY PLAN

The financial feasibility plan examines the projects proposed in **Section 7.0** and assesses their eligibility for funding through the programs described in the preceding pages. The Facilities Implementation Plan attempted to distribute projects into logical timeframes based upon the need for each item and the need to balance project costs with the number of years (and available funding) in each period. **Table 8.4-1** provides a summary of the program's cost by timeframe.

TABLE 8.4-1
PROGRAM COST BY TIMEFRAME

Timeframe	Estimated Cost (2019 Dollars)
Short-Term	$6,906,000
Intermediate-Term	$6,937,000
Long-Term	$12,055,000
Total	**$25,898,000**

Source: AVCON, 2020.

Table 8.4-2 presents the proposed distribution of these projects by year within each term along with a summary of each project's construction cost and soft cost. **Table 8.4-3** shows the eligibility of these projects for AIP funding on a percentage basis and then shows the resulting dollar amounts. Although the majority of projects are eligible for FAA AIP funding at 90 percent, the Airport's annual limit for entitlement grants is $150,000. Consequently, there will be a substantial shortfall between the amount of AIP funding the Airport can receive through entitlement grants and the funding amounts required to undertake most projects. The summary lines shown at the bottom of the table indicate that although the projects are eligible for approximately $13.9 million in AIP funding the entitlement limit is $3 million for twenty-year planning period. This leaves a shortfall of approximately $10.9 million.

The most likely options for addressing the funding shortfall is for the Airport Authority to seek AIP discretionary grants and/or FDOT grants for the balance. As previously noted, projects must compete for AIP discretionary funding on the basis of how well they meet the program's priorities. The highest priority is given to projects that address safety, security, reconstruction, capacity and standards. Each project is given a priority ranking based on these program objectives.

Tri County Airport
Capital Improvement Program
Cost Distribution By Year

Category	CIP Designation	Project Name	Construction Cost	Soft Cost	Program Cost	Short-Term Year 1	Year 2	Year 3	Year 4	Year 5	Intermediate-Term Year 6	Year 7	Year 8	Year 9	Year 10	Long-Term Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Airfield Projects	A1	Construct RSA, ROFA and OFZ Improvements	$240,000	$126,000	$366,000		$366,000																		
	A2	Rehabilitate Runway 1-19 and Construct Blast Pads	$2,203,842	$1,095,158	$3,299,000													$3,299,000							
	A3	Remark Existing Helipad & Lower Wind Cone	$43,000	$25,000	$68,000	$68,000																			
	A4	Rehabilitate Taxiway A and Connectors	$902,200	$450,800	$1,353,000											$1,353,000									
	A5	Construct Stormwater Improvements	$1,020,500	$479,500	$1,500,000		$750,000																	750000	
	A6	Construct Airfield Perimeter Fencing (South End)	$305,000	$149,000	$454,000				$454,000																
	A7	Conduct Obstruction Removal and Obstacle Review	$85,000	$32,000	$117,000			$117,000																	
	A8	Replace Runway Lighting	$345,000	$168,000	$513,000													$513,000							
	A9	Replace Taxiway Lighting	$441,500	$215,500	$657,000												$657,000								
	A10	Replace Airfield Guidance Signs	$143,000	$72,000	$215,000												$215,000								
	A11	Replace Runway 1-19 PAPI Systems	$123,000	$60,000	$183,000												$183,000								
	A12	Rehabilitate & Relocate Taxiway/Taxilane & Remark Airfield	$838,700	$161,300	$1,000,000				$1,000,000																
Landside Projects	L1	Install New Airport Signage	$45,000	$20,000	$65,000				$65,000																
	L2	Construct New Terminal Entrance & Parking & Relocate Fencing	$498,300	$254,700	$753,000	$753,000																			
	L3	Construct Terminal Expansion	$340,000	$170,000	$510,000					$510,000															
	L4	Rehabilitate & Remark GA Apron	$480,950	$240,050	$721,000							$721,000													
	L5	Expand GA Apron	$181,940	$97,060	$279,000																$279,000				
	L6	Rehabilitate Hangar Taxilanes	$113,550	$63,450	$177,000										$177,000										
	L7	Construct New Dual-Bay Hangar in Terminal Area	$1,286,080	$631,920	$1,918,000						$1,918,000														
	L8	Pave Tri-County Airport Road	$885,350	$453,650	$1,339,000				$1,339,000																
	L9	Construct Roadway Access to Southwest Area	$593,000	$303,000	$896,000								$896,000												
	L10	Construct Taxilane Access to Southwest Area	$323,160	$167,840	$491,000								$491,000												
	L11	Construct Rectangular Hangars (5 Units)	$982,000	$476,000	$1,458,000									$1,458,000											
	L12	Construct Rectangular Hangars (5 Units)	$927,000	$450,000	$1,377,000															$1,377,000					
	L13	Construct Rectangular Hangars (5 Units)	$927,000	$450,000	$1,377,000																	$1,377,000			
	L14	Construct Rectangular Hangars (5 Units)	$927,000	$450,000	$1,377,000																				$1,377,000
Support Facility & Other Projects	S1	Convert Portion of Shade Hangars to MES Facility	$193,000	$87,000	$280,000					$280,000															
	S2	Construct Fire Equipment Parking Area and Water Tank	$878,500	$397,500	$1,276,000										$1,276,000										
	S3	Update Airport Master Plan	$420,000	$0	$420,000																$420,000				
	S4	Acquire Property to Southwest	$255,000	$0	$255,000																		$255,000		
	S5	Implement Height Zoning Ordinances	$95,000	$0	$95,000		$95,000																		
	S6	Install New Rotating Beacon	$54,500	$29,500	$84,000			$84,000																	
	S7	Construct New Electrical Vault	$452,200	$220,800	$673,000			$673,000																	
	S8	Install New Generator	$236,800	$115,200	$352,000			$352,000																	
Total					$25,898,000	$821,000	$1,211,000	$1,226,000	$2,858,000	$790,000	$1,918,000	$721,000	$1,387,000	$1,458,000	$1,453,000	$1,353,000	$1,055,000	$3,812,000	$0	$1,377,000	$699,000	$1,377,000	$255,000	$750,000	$1,377,000
		Subtotal by Term						**$6,906,000**					**$6,937,000**							**$12,055,000**					

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Tri County Airport
Capital Improvement Program
FAA AIP Funding Eligibility (Distribution By Year)

Category	CIP Designation	Name	Program Cost	Funding Source	FAA Percentage	FAA Share	Short-Term Year 1	Year 2	Year 3	Year 4	Year 5	Intermediate-Term Year 6	Year 7	Year 8	Year 9	Year 10	Long-Term Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Airfield	A1	Construct RSA, ROFA and OFZ Improvements	$366,000	FAA / FDOT	90%	$329,400		$329,400																		
Projects	A2	Rehabilitate Runway 1-19 and Construct Blast Pads	$3,299,000	FAA / FDOT	90%	$2,969,100													$2,969,100							
	A3	Remark Existing Helipad & Lower Wind Cone	$68,000	FAA / FDOT	90%	$61,200	$61,200																			
	A4	Rehabilitate Taxiway A and Connectors	$1,353,000	FAA / FDOT	90%	$1,217,700											$1,217,700									
	A5	Construct Stormwater Improvements	$1,500,000	FAA / FDOT	90%	$1,350,000		$675,000																	$675,000	
	A6	Construct Airfield Perimeter Fencing (South End)	$454,000	FAA / FDOT	90%	$408,600				$408,600																
	A7	Conduct Obstruction Removal and Obstacle Review	$117,000	FAA / FDOT	90%	$105,300			$105,300																	
	A8	Replace Runway Lighting	$513,000	FAA / FDOT	90%	$461,700													$461,700							
	A9	Replace Taxiway Lighting	$657,000	FAA / FDOT	90%	$591,300												$591,300								
	A10	Replace Airfield Guidance Signs	$215,000	FAA / FDOT	90%	$193,500												$193,500								
	A11	Replace Runway 1-19 PAPI Systems	$183,000	FAA / FDOT	90%	$164,700												$164,700								
	A12	Rehabilitate & Relocate Taxiway/Taxilane & Remark Airfield	$1,000,000	FAA / FDOT	90%	$900,000				$900,000																
Landside	L1	Install New Airport Signage	$65,000	FAA / FDOT	90%	$58,500				$58,500																
Projects	L2	Construct New Terminal Entrance & Parking & Relocate Fencing	$753,000	FAA / FDOT	90%	$677,700	$677,700																			
	L3	Construct Terminal Expansion	$510,000	FAA / FDOT	90%	$459,000					$459,000															
	L4	Rehabilitate & Remark GA Apron	$721,000	FAA / FDOT	90%	$648,900							$648,900													
	L5	Expand GA Apron	$279,000	FAA / FDOT	90%	$251,100																$251,100				
	L6	Rehabilitate Hangar Taxilanes	$177,000	FAA / FDOT	90%	$159,300										$159,300										
	L7	Construct New Dual-Bay Hangar in Terminal Area	$1,918,000	FAA / FDOT	0%	$0						$0														
	L8	Pave Tri-County Airport Road (Third Party Funded)	$1,339,000	Third Party	0%	$0				$0																
	L9	Construct Roadway Access to Southwest Area	$896,000	FAA / FDOT	90%	$806,400								$806,400												
	L10	Construct Taxilane Access to Southwest Area	$491,000	FAA / FDOT	90%	$441,900								$441,900												
	L11	Construct Rectangular Hangars (5 Units)	$1,458,000	FAA / FDOT	0%	$0									$0											
	L12	Construct Rectangular Hangars (5 Units)	$1,377,000	FAA / FDOT	0%	$0															$0					
	L13	Construct Rectangular Hangars (5 Units)	$1,377,000	FAA / FDOT	0%	$0																	$0			
	L14	Construct Rectangular Hangars (5 Units)	$1,377,000	FAA / FDOT	0%	$0																				$0
Support	S1	Convert Portion of Shade Hangars to MES Facility	$280,000	FAA / FDOT	90%	$252,000					$252,000															
Facility	S2	Construct Fire Equipment Parking Area and Water Tank	$1,276,000	FAA / FDOT	0%	$0										$0										
& Other	S3	Update Airport Master Plan	$420,000	FAA / FDOT	90%	$378,000																$378,000				
Projects	S4	Acquire Property to Southwest	$255,000	FAA / FDOT	0%	$0									$0									$0		
	S5	Implement Height Zoning Ordinances	$95,000	FAA / FDOT	90%	$85,500		$85,500																		
	S6	Install New Rotating Beacon	$84,000	FAA / FDOT	90%	$75,600			$75,600																	
	S7	Construct New Vault Building	$673,000	FAA / FDOT	90%	$605,700			$605,700																	
	S8	Install New Generator	$352,000	FAA / FDOT	90%	$316,800			$316,800																	
			$25,898,000			$13,968,900	$738,900	$1,089,900	$1,103,400	$1,367,100	$711,000	$0	$648,900	$1,248,300	$0	$159,300	$1,217,700	$949,500	$3,430,800	$0	$0	$629,100	$0	$0	$675,000	$0

FAA Eligibility Subtotal by Term			**$5,010,300**					**$2,056,500**							**$6,902,100**						
FAA Eligibility Total	**$13,968,900**																				
FAA Entitlements By Year	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000
FAA Entitlements by Term			**$750,000**					**$750,000**							**$1,500,000**						
FAA Entitlement Total	**$3,000,000**																				
FAA Funding Shortfall By Year	$588,900	$939,900	$953,400	$1,217,100	$561,000	$0	$348,900	$1,098,300	$0	$0	$927,000	$799,500	$3,280,800	$0	$0	$179,100	0	$0	$225,000	$0	
FAA Funding Shortfal by Term			**$4,260,300**					**$1,447,200**							**$5,411,400**						
FAA Funding Shortfall Total	**$10,968,900**																				

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Review of the proposed projects indicates that the rehabilitation of Runway 1-19 and the parallel taxiway are likely to score high priority rankings for discretionary funding. However, those projects are not scheduled until the long-term. Consequently, discretionary funding may not be easily obtainable for projects in the short-term and intermediate terms due to their lower rankings.

In addition to the issue of funding shortfalls, the issue of grant timing will also play a role in how projects can be funded since most of the projects exceed the $150,000 annual limit. Airport sponsors are allowed to carry over entitlement grants for three years. Sponsors may choose to delay using their entitlement the first, second or third year and use all of the money in the final year in order to fund a larger project. Unused funds expire after four years unless the sponsor obligates the funds under a grant or transfers the funds to another NPIAS airport.

Table 8.4-4 shows the eligibility of projects for FDOT Aviation Grants assuming FAA grants are obtained and the FDOT amount consists solely of a match at 10 percent. The total amount eligible by formula is $10.5 million.

The rows at the bottom of the table indicate the additional amount of FDOT funding needed to make up for the FAA shortfall on an annual basis given the $150,000 annual limitation on FAA entitlements funds. The total amount required is $21.7 million.

Assuming that the Airport Authority is successful in obtaining FAA discretionary funding for high ranking items like the runway and taxiway rehabilitation in the long-term, the FDOT funding requirement would be reduced by roughly $4.1 million. The remaining funding requirement would still exceed $17 million to implement the proposed projects in the twenty-year timeframe envisioned by the Master Plan Update. This equates to approximately $860,000 annually. If this level of financial support is not available from FDOT, then the Airport Authority will need to seek additional FAA discretionary grants or defer projects to match with funding availability.

The last element of the financial plan is the use of FDOT Small County Outreach Program (SCOP) for paving the currently unpaved portion of Tri-County Airport Road from the terminal area to the proposed new development in the southwest corner of the airfield. A grant in the amount of $1.33 million would be needed to complete that project.

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Tri County Airport
Capital Improvement Program
FDOT Funding Eligibility (Distribution By Year)

Category	CIP Designation	Name	Program Cost	Funding Source	FDOT Percentage	FDOT Share	Short-Term					Intermediate-Term					Long-Term									
							Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Airfield Projects	A1	Construct RSA, ROFA and OFZ Improvements	$366,000	FAA / FDOT	10%	$36,600		$36,600																		
	A2	Rehabilitate Runway 1-19 and Construct Blast Pads	$3,299,000	FAA / FDOT	10%	$329,900													$329,900							
	A3	Remark Existing Helipad & Lower Wind Cone	$68,000	FAA / FDOT	10%	$6,800	$6,800																			
	A4	Rehabilitate Taxiway A and Connectors	$1,353,000	FAA / FDOT	10%	$135,300											$135,300									
	A5	Construct Stormwater Improvements	$1,500,000	FAA / FDOT	10%	$150,000		$75,000																		$75,000	
	A6	Construct Airfield Perimeter Fencing (South End)	$454,000	FAA / FDOT	10%	$45,400				$45,400																
	A7	Conduct Obstruction Removal and Obstacle Review	$117,000	FAA / FDOT	10%	$11,700			$11,700																	
	A8	Replace Runway Lighting	$513,000	FAA / FDOT	10%	$51,300													$51,300							
	A9	Replace Taxiway Lighting	$657,000	FAA / FDOT	10%	$65,700												$65,700								
	A10	Replace Airfield Guidance Signs	$215,000	FAA / FDOT	10%	$21,500												$21,500								
	A11	Replace Runway 1-19 PAPI Systems	$183,000	FAA / FDOT	10%	$18,300												$18,300								
	A12	Rehabilitate & Relocate Taxiway/Taxilane & Remark Airfield	$1,000,000	FAA / FDOT	10%	$100,000				$100,000																
Landside Projects	L1	Install New Airport Signage	$65,000	FAA / FDOT	10%	$6,500				$6,500																
	L2	Construct New Terminal Entrance & Parking & Relocate Fencing	$753,000	FAA / FDOT	10%	$75,300	$75,300																			
	L3	Construct Terminal Expansion	$510,000	FAA / FDOT	10%	$51,000					$51,000															
	L4	Rehabilitate & Remark GA Apron	$721,000	FAA / FDOT	10%	$72,100							$72,100													
	L5	Expand GA Apron	$279,000	FAA / FDOT	10%	$27,900																$27,900				
	L6	Rehabilitate Hangar Taxilanes	$177,000	FAA / FDOT	10%	$17,700										$17,700										
	L7	Construct New Dual-Bay Hangar in Terminal Area	$1,918,000	FAA / FDOT	100%	$1,918,000						$1,918,000														
	L8	Pave Tri-County Airport Road (Third Party Funded)	$1,339,000	Third Party	0%	$0				$0																
	L9	Construct Roadway Access to Southwest Area	$896,000	FAA / FDOT	10%	$89,600								$89,600												
	L10	Construct Taxilane Access to Southwest Area	$491,000	FAA / FDOT	10%	$49,100								$49,100												
	L11	Construct Rectangular Hangars (5 Units)	$1,458,000	FAA / FDOT	100%	$1,458,000									$1,458,000											
	L12	Construct Rectangular Hangars (5 Units)	$1,377,000	FAA / FDOT	100%	$1,377,000															$1,377,000					
	L13	Construct Rectangular Hangars (5 Units)	$1,377,000	FAA / FDOT	100%	$1,377,000																	$1,377,000			
	L14	Construct Rectangular Hangars (5 Units)	$1,377,000	FAA / FDOT	100%	$1,377,000																				$1,377,000
Support Facility & Other Projects	S1	Convert Portion of Shade Hangars to MES Facility	$280,000	FAA / FDOT	10%	$28,000					$28,000															
	S2	Construct Fire Equipment Parking Area and Water Tank	$1,276,000	FAA / FDOT	100%	$1,276,000										$1,276,000										
	S3	Update Airport Master Plan	$420,000	FAA / FDOT	10%	$42,000																$42,000				
	S4	Acquire Property to Southwest	$255,000	FAA / FDOT	100%	$255,000																		$255,000		
	S5	Implement Height Zoning Ordinances	$95,000	FAA / FDOT	10%	$9,500		$9,500																		
	S6	Install New Rotating Beacon	$84,000	FAA / FDOT	10%	$8,400			$8,400																	
	S7	Construct New Vault Building	$673,000	FAA / FDOT	10%	$67,300			$67,300																	
	S8	Install New Generator	$352,000	FAA / FDOT	10%	$35,200			$35,200																	
			$25,898,000			$10,590,100	$82,100	$121,100	$122,600	$151,900	$79,000	$1,918,000	$72,100	$138,700	$1,458,000	$1,293,700	$135,300	$105,500	$381,200	$0	$1,377,000	$69,900	$1,377,000	$255,000	$75,000	$1,377,000

FDOT Eligibility Subtotal by Term			**$556,700**				**$4,880,500**				**$5,152,900**						
FDOT Eligibility Total	**$10,590,100**																
FAA Shortfall Amount	$588,900	$939,900	$953,400	$1,217,100	$561,000	$0	$348,900	$1,098,300	$0	$0	$927,000	$799,500	$3,280,800	$0	$0	$179,100	$0	$0	$225,000	$0
FDOT Eligible + FAA Shortfall	$671,000	$1,061,000	$1,076,000	$1,369,000	$640,000	$1,918,000	$421,000	$1,237,000	$1,458,000	$1,293,700	$1,062,300	$905,000	$3,662,000	$0	$1,377,000	$249,000	$1,377,000	$255,000	$300,000	$1,377,000
Total Funding Needed by Term			**$4,817,000**				**$6,327,700**				**$10,564,300**						

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APPENDIX A

Recycling, Reuse and Waste Reduction Plan

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APPENDIX A
RECYCLING, REUSE AND WASTE REDUCTION PLAN

1.1 PURPOSE OF THIS REPORT

The purpose of this Recycling, Reuse and Waste Reduction Plan (i.e., Plan) is to document current waste management practices and information associated with recycling, reuse and waste reduction at the Tri-County Airport (i.e., the Airport), as well as to provide summary recommendations. This Plan was prepared in accordance with the FAA *Guidance on Airport Recycling, Reuse and Waste Reduction Plans*, dated September 30, 2014.

1.2 FACILITY DESCRIPTION AND BACKGROUND

The Airport is owned and operated by the Tri-County Airport Authority (i.e., Authority). Located in the Florida panhandle situated on the boundary of Holmes, Jackson, and Washington counties, the Airport is approximately six miles northeast of Bonifay and approximately six miles northwest of Chipley. The FAA 2019-2023 (September 2018) National Plan of Integrated Airport Systems classifies the Airport as a local/basic airfield.

1.3 AIRPORT FACILITIES

Solid waste disposal and recycling practices at airports can be complicated by the varied systems employed to collect and dispose of waste. For the purposes of this Plan, it is important to clarify where the Authority has control or influence over waste management and disposal, and where it does not. Areas within airport property are divided into three broad categories:

- Areas under direct control of the Authority;
- Areas where the Authority has influence, but no direct control; and
- Areas where the Authority has neither control nor influence.

1.3.1 DIRECT CONTROL

The Authority has direct control over the following:

- Terminal building including offices and storage/ancillary support facilities (e.g., vending machines, conference rooms, public lounge, and restrooms);
- Aircraft hangars; and
- Fuel storage facilities.

1.3.2 INFLUENCE, BUT NO DIRECT CONTROL

Although the Authority does not directly control the many tenants operating on airport grounds, in most cases the Authority could have influence, as the lessor, over their waste disposal and recycling practices. This is particularly true where tenants occupy space within the terminal itself,

since the majority of waste and recycling containers are located in the terminal. The Authority cannot force non-residential customers to recycle.

The Authority has influence, but no direct control over the following:

- Tenant hangars

1.3.3 NEITHER CONTROL NOR INFLUENCE

There are no areas on Airport property where the Authority has neither control nor influence. Currently, airfield tenants and landside non-aviation tenants conduct their own individual waste collection efforts independent of the Airport. However, all are influenced in small part by the leases and fees negotiated by the Authority. Furthermore, any consolidated recycling collection and disposal program implemented by the Authority could be made available to all tenants on a voluntary basis in the short-term and written into renewed and new contracts in the long-term.

1.4 EXISTING SOLID WASTE MANAGEMENT AND RECYCLING FRAMEWORK

1.4.1 SOLID WASTE MANAGEMENT AND RECYCLING PROGRAMS

The waste management services for Holmes, Jackson, and Washington counties are provided by either Northwest Sanitation (3502 East White Street) or Household Disposal Service (1540 Will Lee Road), both of which are located in Bonifay, Florida. The Authority currently has a service agreement for $50 per month for weekly pick-up of three 64-gallon waste containers located at the Airport.

1.4.2 SOLID WASTE AND RECYCLING INFRASTRUCTURE

Dedicated trash receptacles are available on Airport property. The Airport does not have a solid waste dumpster or recycling container on the property. There is a tank for waste oil on the property.

According to the Authority, the leases for the hangars reference that tenants cannot store certain materials in their hangar except in approved containers.

1.4.3 SOLID WASTE DISPOSAL FACILITY

The Springhill Landfill (Class I permit no. 0000475-013-SO), located at 4945 Highway 273, Campbellton, Florida, services Holmes, Jackson, and Washington counties. This facility accepts the following non-hazardous materials: asbestos- friable, asbsotos – non-friable, auto shredder fluff, biosolids, CERCLA waste, construction and demolition debris, drum management liquids and solids, industrial and special waste, and municipal solid waste. This facility does not accept hazardous waste.

Federal and state regulations specify that the following types of wastes are prohibited from disposal at the landfill:

- Used motor oil and filters;
- Lead-acid batteries;
- Rechargeable batteries (e.g., nickel-cadmium, small sealed lead-acid batteries, lithium ion);
- Mercury devices (e.g., thermostats, thermometers and similar mercury containing products);
- Fluorescent and other mercury-containing light bulbs;
- Hazardous wastes (i.e., U.S. Environmental Protection Agency (EPA) listed waste and EPA characteristic wastes - ignitable, corrosive, reactive, and toxic);
- Biomedical waste; and
- Liquid wastes (e.g., unsolidified waste latex paint, bulk liquids in drums).

The Holmes County Recycling Center (3165 Thomas Drive, Bonifay, Florida) accepts the following items: cardboard, newspapers, magazines, books, soda/water bottles, milk jugs, bleach jugs, aluminum cans, steel and tin cans, auto and lawn mower batteries, used oil, metal, washers, dryers, stoves, refrigerators, dish washers, hot water heaters, microwaves, televisions, and computers. This facility does not accept glass, wood, fabric, upholstery, hard plastic and gas cylinders of any kind.

The Jackson County Recycling Center (3530 Wiley Drive, Marianna, Florida) accepts the following recycling items: electronics, paper, cardboard, aluminum cans, and plastic. This facility does not accept glass, PVC piping or siding. This facility also disposes of rechargeable batteries, any type of metals, and household hazardous wastes such as oil, antifreeze, brake fluids, household chemicals, garden chemicals, old paint, paint thinners, and all liquid paint related items.

The Washington County Recycling Center (3115 Highway 77, Chipley, Florida) accepts the following items for a fee: car and pickup truck tires, semi-truck tires, farm tractor tires, skidder tires, televisions, and appliances. This facility accepts the following items for free: aluminum cans, cardboard, metal, automotive batteries, paper, electronics, and plastic.

Table 1.4-1 summarizes the accepted items for each recycling center.

Table 1.4-1 Accepted Items at County Recycling Centers

Item	Facility		
	Holmes County Recycling Center	Jackson County Recycling Center	Washington County Recycling Center
Aluminum cans	X	X	X
Appliances	X		X
Auto and lawn mower batteries	X		X
Cardboard	X	X	X
Electronics	X	X	X
Household hazardous material		X	
Metal	X	X	X
Paper	X	X	X
Plastic bottles	X	X	X
Rechargeable batteries		X	
Steel and tin cans	X		
Tires			X
Used oil	X	X	

Source: Holmes County Board of County Commissioners (https://holmescountyfla.com/departments/418-2) accessed July 2019; Jackson County Board of County Commissioners (http://www.jacksoncountyfl.net/parks-and-recycling/recycling) accessed July 2019; Washington County Board of County Commissioners (https://www.washingtonfl.com/?DivisionID=21213&DepartmentID=25392) accessed July 2019.

1.5 WASTE SUMMARY

Generally speaking, wastes generated by typical airport operations comprise MSW containing paper, cardboard, plastics, glass, aluminum, food waste and other conventional materials. Airports such as Tri-County do not generate a significant quantity of scrap metal, construction/demolition debris, or natural wood waste/vegetative debris. Any amounts of scrap metal that are generated are typically collected by maintenance staff for reuse in various repairs. Maintenance personnel may also collect and dispose of waste oil, oil filters, oily water and automotive batteries on an as-needed basis.

A conceptual Rough Order of Magnitude estimate of waste quantities occurring at the Airport based on normal operations was formulated to support this Plan and is summarized on **Table 1.4-2**. The estimate incorporates data provided by the Authority as well as conversion weights and waste stream category data from EPA and Florida Department of Environmental Protection (FDEP) larger geographies (e.g., state of Florida). The following assumptions were applied in the analysis:

- Three 64-gallon wheeled bins on-site for airport waste collection;
- Bins/totes are 10% full on average at the time of collection/removal, and collection/removal occurs once weekly;
- Waste and recyclables composition based on applicable types as listed in the latest

version of the FDEP Solid Waste Composition Model - 2016[1];

- Volume to weight conversion factors based on EPA's latest available Volume-to-Weight Conversion Factors[2]; and
- Generation frequency held constant week-to-week, month-to-month.

Table 1.4-2 Annual Solid Waste Generation Estimate

Type	Estimated Total Weight (lbs)
Aluminum Cans	3.1
Corrugated Cardboard	87.3
Ferrous Metals	182.8
Food Wastes	311.8
Glass	107.2
Newspapers	118.8
Non-Ferrous Metal	40.5
Office Paper	85.8
Other Paper	233.3
Other Plastics	14.8
Plastic Bottles	5.8
Steel Cans	6.9
Total	**1,198.2**

The resulting estimate shown on **Table 1.4-2** is likely conservatively high based on the level of assumptions applied, but nevertheless substantiate the fact that annual waste generation is de minimis at the Airport (estimated at three pounds per day).

1.6 STATE WASTE DIVERSION GOALS

Florida Statutes Section 403.7032 established a statewide recycling goal of 75 percent to be achieved by the year 2020. The statue applies to each state agency, K-12 public school, public institution of higher learning, community college, and state university, including all buildings that are occupied by municipal, county, or state employees and entities occupying buildings managed by the Department of Management Services. Private businesses are encouraged, but not required, to participate.

[1] (https://floridadep.gov/waste/waste-reduction/documents/solid-waste-composition-model-2016, accessed 19 July 2019)

[2] U.S. Environmental Protection Agency Office of Resource Conservation and Recovery, Volume-to-Weight Conversion Factors, April 2016. https://www.epa.gov/sites/production/files/2016-04/documents/volume_to_weight_conversion_factors_memorandum_04192016_508fnl.pdf, Accessed 19 July 2019

The statute directed the Florida Department of Environmental Protection (FDEP) to develop a program to achieve this goal and document it by submitting a one-time report to the Legislature for approval. Florida DEP submitted its 75 percent Recycling Goal Report in January 2010. The goal means that 75 percent of all waste generated (including construction and demolition debris waste and food waste) must be recycled; there is no baseline year.

The process of creating energy in the form of electricity from the incineration of waste is known as Waste-to-Energy (WTE). WTE receives some recycling credit, which is based on the efficiency of the WTE facility used. Florida Statutes Section 403.706 describes how the credit is calculated.

> *"(4)(a) In order to promote the production of renewable energy from solid waste, each megawatt-hour produced by a renewable energy facility using solid waste as a fuel shall count as 1 ton of recycled material and shall be applied toward meeting the recycling goals set forth in this section. If a county creating renewable energy from solid waste implements and maintains a program to recycle at least 50 percent of municipal solid waste by a means other than creating renewable energy, that county shall count 1.25 tons of recycled material for each megawatt-hour produced. If waste originates from a county other than the county in which the renewable energy facility resides, the originating county shall receive such recycling credit. Any byproduct resulting from the creation of renewable energy that is recycled shall count towards the county recycling goals..."*

Organizations subject to the statute must, at a minimum, annually report all recycled materials to their county. Private businesses, other than certified recovered materials dealers, that recycle paper, metals, glass, plastics, textiles, rubber materials, and mulch, are encouraged to report the amount of materials recycled to their county annually. Using the information provided, the FDEP shall recognize private businesses that demonstrate outstanding recycling efforts. Notwithstanding any other provision of state or county law, private businesses (other than certified recovered materials dealers) are not required to report recycling rates.

1.7 LOCAL WASTE DIVERSION GOALS

Neither Holmes, Jackson, and Washington Counties nor the City of Bonifay and Chipley have formally published waste diversion goals or ordnances.

1.8 AIRPORT WASTE DIVERSION GOALS, OBJECTIVES AND RECOMMENDATIONS

The Airport has not developed recycling, reuse and waste reduction targets, developed performance indicators (e.g., tons of waste per aircraft operation) to track the goals, identified program reporting and performance methods and routines, or assessed the need to conduct community outreach. Based on the conservative estimate of waste generated annually at the Airport, it may not be conducive to consider developing many of these items. Nevertheless, general recommendations included in **Table 1.8-1** are presented to improve the Airport's solid

waste and recycling program and focus on increasing solid waste diversion. Each item in the table includes the following information:

- Recommendation – description of the waste reduction opportunity.
- Ease of Implementation – indication of the level of complexity that may be involved in implementing the opportunity and identified as easy, moderate, or difficult.
- Implementation Timeframe – a 10-year timeframe for opportunities development and implementation broken down as short-term (<1 year out), mid-term (1-2 years out) and long-term (3+ years out).
- Capital Required – ranking of capital needed to implement the recycling opportunity, displayed by $ signs (one $ sign = low; three $$$ signs = high); does not include labor costs.

Table 1.8-1 Waste Reduction Opportunities and Initiatives Recommendations

ID#	Recommendation	Ease of Implementation	Implementation Timeframe	Capital Required[1]
1	Develop recycling, reuse and waste reduction targets and performance indicators (e.g., tons of waste per enplaned passenger) to track the goals. Prepare and distribute a written waste diversion policy.	Easy	Short-Term	None
2	Determine if the current collection practices are cost efficient. Is the lease fee less for smaller containers? Would fewer pickups provide savings?	Easy	Short-Term	None
3	Identify, document, and implement waste reduction program reporting and tracking procedures.	Easy	Short-Term	None
4	Create a centralized tracking system to use in monitoring quantities and progress. Identify points of contact and collect data on quantity of waste disposed and recycled.	Difficult	Mid-Term	$
5	Conduct periodic audits of the types and amounts of waste being placed in the solid waste and recycling containers (i.e., mini sorts and/or visual surveys), as well as monitor container pickup frequency to evaluate the effectiveness of solid waste management activities.	Moderate	Long-term	None
6	Periodically re-evaluate the need to conduct waste reduction opportunity assessments for waste streams	Moderate	Mid-term	None

[1] Does not include labor costs.

APPENDIX B

Cost Estimates

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Tri-County Airport
Master Plan Update
Preliminary List of Capital Improvement Projects

	Airfield Projects		**Recommended Project Budget**
A1	Construct RSA, ROFA and OFZ Improvements	$	366,000
A2	Rehabilitate Runway 1-19 and Construct Blast Pads	$	3,299,000
A3	Remark Existing Helipad & Lower Wind Cone	$	68,000
A4	Rehabilitate Taxiway A and Connectors	$	1,353,000
A5	Construct Stormwater Improvements	$	1,500,000
A6	Construct Airfield Perimeter Fencing (South End)	$	454,000
A7	Conduct Obstruction Removal and Obstacle Review	$	117,000
A8	Replace Runway Lighting	$	513,000
A9	Replace Taxiway Lighting	$	657,000
A10	Replace Airfield Guidance Signs	$	215,000
A11	Replace Runway 1-19 PAPI Systems	$	183,000
A12	Rehabilitate Terminal Area Taxiways/Taxilanes	$	1,000,000
	Landside Projects		
L1	Install New Airport Signage	$	65,000
L2	Construct New Terminal Entrance & Parking & Relocate Fencing	$	753,000
L3	Construct Terminal Expansion	$	510,000
L4	Rehabilitate & Remark GA Apron	$	721,000
L5	Expand GA Apron	$	279,000
L6	Rehabilitate Hangar Taxilanes	$	177,000
L7	Construct New Dual-Bay Hangar in Terminal Area	$	1,918,000
L8	Pave Tri-County Airport Road (Third Party Funded)	$	1,339,000
L9	Construct Roadway Access to Southwest Area	$	896,000
L10	Construct Taxilane Access to Southwest Area	$	491,000
L11	Construct Rectangular Hangars (5 Units)	$	1,458,000
L12	Construct Rectangular Hangars (5 Units)	$	1,377,000
L13	Construct Rectangular Hangars (5 Units)	$	1,377,000
L14	Construct Rectangular Hangars (5 Units)	$	1,377,000
	Support Facility & Other Projects		
S1	Convert Portion of Shade Hangars to MES Facility	$	280,000
S2	Construct Fire Equipment Parking Area and Water Tank	$	1,276,000
S3	Update Airport Master Plan	$	420,000
S4	Acquire Property to Southwest	$	255,000
S5	Implement Height Zoning Ordinances	$	95,000
S6	Install New Rotating Beacon	$	84,000
S7	Construct New Vault Building	$	673,000
S8	Install New Generator	$	352,000
	Total:	**$**	**25,898,000**

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Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: A1 Construct RSA, ROFA and OFZ Improvements

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 23,000.00	$ 23,000	
2	Erosion and Sediment Control	1	LS	$ 7,000.00	$ 7,000	
3	Vegetation Clearing/Removal in ROFA and OFZ	1	LS	$ 43,000.00	$ 43,000	
4	Shoulder Grading	1	LS	$ 25,000.00	$ 25,000	
5	Excavation of Unsuitable Fill; Backfill and Grade	1	LS	$ 100,000.00	$ 100,000	
6	Seeding & Mulching	10,000	SY	$ 1.00	$ 10,000	
7	Sodding	8,000	SY	$ 4.00	$ 32,000	
				Approx. Construction Cost ==>		**$ 240,000**
				Topographic Survey @ 6%:	$ 14,400	
				Design/Engineering/Bidding @ 11%:	$ 26,400	
				Construction Administration @ 5%:	$ 12,000	
				Inspection @ 4%:	$ 9,600	
				Project Administration @ 1%:	$ 2,400	
				Approx. Professional Services Cost ==>		**$ 64,800**
				Preliminary Estimate of Project Cost ==>		**$ 304,800**
				ADD 20% Budgeting Contingency ==>		**$ 60,960**
				Total ==>		**$ 365,760**
				USE Recommended Project Budget ==>		**$ 366,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*
2. *Stormwater pond modifications shall be addressed as part of Project A5*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: A2 Rehabilitate Runway 1-19 and Construct Blast Pads

Approx. New Pavement Area:	2,300	sy
Approx. Rehab. Pavement Area:	49,500	sy

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 210,000.00	$ 210,000	
2	Erosion and Sediment Control	1	LS	$ 7,500.00	$ 7,500	
3	Maintenance of Traffic	1	LS	$ 10,000.00	$ 10,000	
4	Site Preparation/Grubbing	1	LS	$ 15,000.00	$ 15,000	
5	Asphalt Pavement Milling	49,500	SY	$ 10.00	$ 495,000	
6	Embankment/Excavation	3,000	CY	$ 5.00	$ 15,000	
7	Subgrade Compaction	2,530	SY	$ 10.00	$ 25,300	
8	Base Course	2,415	SY	$ 24.00	$ 57,960	
9	Bituminous Surface Course - Blast Pad 2"	370	TON	$ 150.00	$ 55,538	
10	Bituminous Surface Course - Runway Overlay 2"	7,002	TON	$ 150.00	$ 1,050,338	
11	Bituminous Prime/Tack Coat	5,180	GAL	$ 3.00	$ 15,540	
12	Pavement Markings	1	LS	$ 100,000.00	$ 100,000	
13	Shoulder Grading	1	LS	$ 15,000.00	$ 15,000	
14	Sodding	26,667	SY	$ 4.00	$ 106,667	
15	Utility Inspection & Rehabilitation	1	LS	$ 25,000.00	$ 25,000	
				Approx. Construction Cost ==>		**$ 2,203,842**
				Survey & Geotech Testing @ 4%:	$ 88,154	
				Design/Engineering/Bidding @ 11%:	$ 242,423	
				Permitting Allowance:	$ 5,000	
				Construction Administration @ 4%:	$ 88,154	
				Inspection & Testing @ 5%:	$ 110,192	
				Project Administration @ 0.5%:	$ 11,019	
				Approx. Professional Services Cost ==>		**$ 544,941**
				Preliminary Estimate of Project Cost ==>		**$ 2,748,783**
				ADD 20% Budgeting Contingency ==>		**$ 549,757**
				Total ==>		**$ 3,298,539**
				USE Recommended Project Budget ==>		**$ 3,299,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*
2. *Assumes no wetland/floodplain impacts for blast pad construction*
3. *Includes rehabilitation of taxiway connectors to hold position bars*
4. *Budget does not include airfield lighting or NAVAID improvements*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: A3 Remark Existing Helipad & Lower Wind Cone

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 5,000.00	$ 5,000	
2	Site Preparation	1	LS	$ 1,000.00	$ 1,000	
3	Pavement Markings	1	LS	$ 7,000.00	$ 7,000	
4	Wind Cone Modification/Replacement	1	LS	$ 30,000.00	$ 30,000	
				Approx. Construction Cost ==>		**$ 43,000**
				Design/Engineering/Bidding @ 15%:	$ 6,450	
				Construction Administration @ 7%:	$ 3,010	
				Inspection & Testing @ 7%:	$ 3,010	
				Project Administration @ 2%:	$ 860	
				Approx. Professional Services Cost ==>		**$ 13,330**
				Preliminary Estimate of Project Cost ==>		**$ 56,330**
				ADD 20% Budgeting Contingency ==>		**$ 11,266**
				Total ==>		**$ 67,596**
				USE Recommended Project Budget ==>		**$ 68,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*
2. *Re-marking of the helipad is tentatively scheduled as a seaprate project in January 2020.*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: A4 Rehabilitate Taxiway A and Connectors

Approx. Rehab. Pavement Area: 25,500 sy

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 90,000.00	$ 90,000	
2	Maintenance of Traffic	1	LS	$ 24,000.00	$ 24,000	
3	Asphalt Pavement Milling	25,500	SY	$ 10.00	$ 255,000	
4	Bituminous Surface Course - Runway Overlay 2"	2,810	TON	$ 155.00	$ 435,550	
5	Limited Pavement Repair/Reconstruction	1	LS	$ 50,000.00	$ 50,000	
6	Bituminous Prime/Tack Coat	2,550	GAL	$ 3.00	$ 7,650	
7	Pavement Markings	1	LS	$ 40,000.00	$ 40,000	
				Approx. Construction Cost ==>		**$ 902,200**
				Survey & Geotech Testing @ 4%:	$ 36,088	
				Design/Engineering/Bidding @ 11%:	$ 99,242	
				Construction Administration @ 4%:	$ 36,088	
				Inspection & Testing @ 5%:	$ 45,110	
				Project Administration @ 1%:	$ 9,022	
				Approx. Professional Services Cost ==>		**$ 225,550**
				Preliminary Estimate of Project Cost ==>		**$ 1,127,750**
				ADD 20% Budgeting Contingency ==>		**$ 225,550**
				Total ==>		**$ 1,353,300**
				USE Recommended Project Budget ==>		**$ 1,353,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*
2. *Budget does not include airfield lighting or signage improvements*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: **A5** **Construct Stormwater Improvements**

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 115,500.00	$ 115,500	
2	Erosion and Sediment Control	1	LS	$ 25,000.00	$ 25,000	
3	Excavation & Embankment	1	LS	$ 350,000.00	$ 350,000	
4	Seeding & Mulching	50,000	SY	$ 1.00	$ 50,000	
5	Sodding	25,000	SY	$ 4.00	$ 100,000	
6	Allowance for Drainage Improvements	1	LS	$ 380,000.00	$ 380,000	
				Approx. Construction Cost ==>		**$ 1,020,500**
				Survey & Geotech Testing @ 4%:	$ 40,820	
				Design/Engineering/Bidding @ 9%:	$ 91,845	
				Construction Administration @ 4%:	$ 40,820	
				Inspection & Testing @ 5%:	$ 51,025	
				Project Administration @ 0.5%:	$ 5,103	
				Approx. Professional Services Cost ==>		**$ 229,613**
				Preliminary Estimate of Project Cost ==>		**$ 1,250,113**
				ADD 20% Budgeting Contingency ==>		**$ 250,023**
				Total ==>		**$ 1,500,135**
				USE Recommended Project Budget ==>		**$ 1,500,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*
2. *Project is to remove wet ponds and consolidate stormwater management facilities*
3. *Currently budgeted in work program as two-phase project for 2020-2021 and 2021-2022*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: A6 Construct Airfield Perimeter Fencing (South End)

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Clearing and Grading	1	LS	$ 5,000.00	$ 5,000	
2	Mitigation Allowance	1	LS	$ 100,000.00	$ 100,000	
3	Fence Improvements	8,000	LF	$ 25.00	$ 200,000	
				Approx. Construction Cost ==>		**$ 305,000**
				Survey @ 3%:	$ 9,150	
				Design/Engineering/Bidding @ 11%:	$ 33,550	
				Construction Administration @ 4%:	$ 12,200	
				Inspection & Testing @ 5%:	$ 15,250	
				Project Administration @ 1%:	$ 3,050	
				Approx. Professional Services Cost ==>		**$ 73,200**
				Preliminary Estimate of Project Cost ==>		**$ 378,200**
				ADD 20% Budgeting Contingency ==>		**$ 75,640**
				Total ==>		**$ 453,840**
				USE Recommended Project Budget ==>		**$ 454,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*
2. *Assumes airport security fence with barbed attachments and 10 ft wide clear area*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: A7 Conduct Obstruction Removal and Obstacle Review

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Allowance for Survey	1	LS	$ 35,000.00	$ 35,000	
2	Allowance for Tree Removal	1	LS	$ 50,000.00	$ 50,000	
					Approx. Construction Cost ==>	**$ 85,000**
				Project Administration @ 15%:	$ 12,750	
					Approx. Professional Services Cost ==>	**$ 12,750**
					Preliminary Estimate of Project Cost ==>	**$ 97,750**
					ADD 20% Budgeting Contingency ==>	**$ 19,550**
					Total ==>	**$ 117,300**
					USE Recommended Project Budget ==>	**$ 117,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: **A8** **Replace Runway Lighting**

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 32,000.00	$ 32,000	
2	Demolition and Temporary Power	1	LS	$ 20,000.00	$ 20,000	
3	Maintenance of Traffic with Closure Markers	1	LS	$ 20,000.00	$ 20,000	
4	Runway LED Edge & Threshold Lights	66	EA	$ 1,500.00	$ 99,000	
5	Cable	25,000	LF	$ 1.00	$ 25,000	
6	Counterpoise & Ground Rods	12,500	LF	$ 2.00	$ 25,000	
7	Ducts	13,000	LF	$ 8.00	$ 104,000	
8	Concrete-Encased Ducts	800	LF	$ 25.00	$ 20,000	
				Approx. Construction Cost ==>		**$ 345,000**
				Design/Engineering/Bidding @ 13%:	$ 44,850	
				Construction Administration @ 5%:	$ 17,250	
				Inspection & Testing @ 5%:	$ 17,250	
				Project Administration @ 1%:	$ 3,450	
				Approx. Professional Services Cost ==>		**$ 82,800**
				Preliminary Estimate of Project Cost ==>		**$ 427,800**
				ADD 20% Budgeting Contingency ==>		**$ 85,560**
				Total ==>		**$ 513,360**
				USE Recommended Project Budget ==>		**$ 513,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*
2. *Project need summarized in 2019 Electrical Assessment report*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: **A9** **Replace Taxiway Lighting**

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 41,000.00	$ 41,000	
2	Demolition and Temporary Power	1	LS	$ 7,500.00	$ 7,500	
3	Maintenance of Traffic	1	LS	$ 7,500.00	$ 7,500	
4	Taxiway LED Edge Lights & Helipad Lights	288	EA	$ 800.00	$ 230,400	
5	Cable	25,000	LF	$ 1.00	$ 25,000	
6	Counterpoise & Ground Rods	12,500	LF	$ 2.00	$ 25,000	
7	Ducts	12,200	LF	$ 8.00	$ 97,600	
8	Concrete-Encased Ducts	300	LF	$ 25.00	$ 7,500	
				Approx. Construction Cost ==>		**$ 441,500**
				Design/Engineering/Bidding @ 13%:	$ 57,395	
				Construction Administration @ 5%:	$ 22,075	
				Inspection & Testing @ 5%:	$ 22,075	
				Project Administration @ 1%:	$ 4,415	
				Approx. Professional Services Cost ==>		**$ 105,960**
				Preliminary Estimate of Project Cost ==>		**$ 547,460**
				ADD 20% Budgeting Contingency ==>		**$ 109,492**
				Total ==>		**$ 656,952**
				USE Recommended Project Budget ==>		**$ 657,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*
2. *Project need summarized in 2019 Electrical Assessment report*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: A10 Replace Airfield Guidance Signs

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 18,000.00	$ 18,000	
2	Maintenance of Traffic	1	LS	$ 5,000.00	$ 5,000	
3	LED Signs	18	EA	$ 5,000.00	$ 90,000	
4	Cable	5,000	LF	$ 1.00	$ 5,000	
5	Counterpoise & Ground Rods	2,500	LF	$ 2.00	$ 5,000	
6	Ducts	2,500	LF	$ 8.00	$ 20,000	
				Approx. Construction Cost ==>		**$ 143,000**
				Design/Engineering/Bidding @ 13%:	$ 18,590	
				Construction Administration @ 6%:	$ 8,580	
				Inspection & Testing @ 5%:	$ 7,150	
				Project Administration @ 1%:	$ 1,430	
				Approx. Professional Services Cost ==>		**$ 35,750**
				Preliminary Estimate of Project Cost ==>		**$ 178,750**
				ADD 20% Budgeting Contingency ==>		**$ 35,750**
				Total ==>		**$ 214,500**
				USE Recommended Project Budget ==>		**$ 215,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*
2. *Project need summarized in 2019 Electrical Assessment report*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: A11 Replace Runway 1-19 PAPI Systems

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 16,000.00	$ 16,000	
2	Grading and Foundation	2	EA	$ 12,000.00	$ 24,000	
3	PAPI Assembly	2	EA	$ 32,000.00	$ 64,000	
4	Cable	2,000	LF	$ 1.00	$ 2,000	
5	Counterpoise & Ground Rods	1,000	LF	$ 2.00	$ 2,000	
6	Aiming and FAA Flight Check	1	LS	$ 15,000.00	$ 15,000	
				Approx. Construction Cost ==>		**$ 123,000**
				Design/Engineering/Bidding @ 13%:	$ 15,990	
				Construction Administration @ 5%:	$ 6,150	
				Inspection & Testing @ 5%:	$ 6,150	
				Project Administration @ 1%:	$ 1,230	
				Approx. Professional Services Cost ==>		**$ 29,520**
				Preliminary Estimate of Project Cost ==>		**$ 152,520**
				ADD 20% Budgeting Contingency ==>		**$ 30,504**
				Total ==>		**$ 183,024**
				USE Recommended Project Budget ==>		**$ 183,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*
2. *Project need summarized in 2019 Electrical Assessment report*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: A12 Rehabilitate Terminal Area Taxiways/Taxilanes & Repaint Airfield

Approx. Rehab. Pavement Area:	1,800	sy concrete
Approx. Rehab. Pavement Area:	1,250	sy asphalt
Approx. New Asphalt Pavement Area:	2,150	sy asphalt

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 67,500.00	$ 67,500	
2	Maintenance of Traffic	1	LS	$ 12,000.00	$ 12,000	
3	Erosion and Sediment Control	1	LS	$ 5,000.00	$ 5,000	
4	Site Preparation	1	LS	$ 15,000.00	$ 15,000	
5	Embankment / Excavation	5,000	CY	$ 10.00	$ 50,000	
6	Subgrade Preparation	2,500	SY	$ 10.00	$ 25,000	
7	Base Course Preparation	2,400	SY	$ 24.00	$ 57,600	
8	Asphalt Pavement Milling	1,250	SY	$ 15.00	$ 18,750	
9	Bituminous Surface Course - Taxiway Overlay 2"	200	TON	$ 165.00	$ 33,000	
10	Bituminous Surface Course - 3"	400	TON	$ 165.00	$ 66,000	
11	Bituminous Prime/Tack Coat	3,400	GAL	$ 3.00	$ 10,200	
12	Shoulder Grading	1	LS	$ 12,000.00	$ 12,000	
13	Allowance for Edge Lighting & Signage Improvements	1	LS	$ 75,000.00	$ 75,000	
14	Allowance for Demolition of Existing Taxiway & Restoration	1	LS	$ 25,000.00	$ 25,000	
15	Isolated Asphalt Pavement Repair/Reconstruction	1	LS	$ 12,000.00	$ 12,000	
16	Concrete Repair with Isolated Slab Replacement	400	SY	$ 120.00	$ 48,000	
17	Airfield Pavement Markings	1	LS	$ 120,000.00	$ 120,000	
18	Sodding	5,000	SY	$ 4.00	$ 20,000	
				Approx. Construction Cost ==>		**$ 672,050**
				Design/Engineering/Bidding @ 13%:	$ 87,367	
				Construction Administration @ 5%:	$ 33,603	
				Inspection & Testing @ 5%:	$ 33,603	
				Project Administration @ 1%:	$ 6,721	
				Approx. Professional Services Cost ==>		**$ 161,292**
				Preliminary Estimate of Project Cost ==>		**$ 833,342**
				ADD 20% Budgeting Contingency ==>		**$ 166,668**
				Total ==>		**$ 1,000,010**
				USE Recommended Project Budget ==>		**$ 1,000,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*
2. *Based on 2017 FDOT Pavement Condition Index Report*
3. *Assumes re-painting of existing airfield pavement*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: L1 Install New Airport Signage (Landside)

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Install Airport Landside Signage	1	LS	$ 25,000.00	$ 25,000	
2	Install Fence Security Signage	1	LS	$ 20,000.00	$ 20,000	
					Approx. Construction Cost ==>	**$ 45,000**
				Project Administration @ 20%:	$ 9,000	
					Approx. Professional Services Cost ==>	**$ 9,000**
					Preliminary Estimate of Project Cost ==>	**$ 54,000**
					ADD 20% Budgeting Contingency ==>	**$ 10,800**
					Total ==>	**$ 64,800**
					USE Recommended Project Budget ==>	**$ 65,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: **L2** **Construct New Terminal Entrance & Parking & Relocate Fencing**

Approx. New Pavement Area:	2,500	sy
Approx. Rehab. Pavement Area:	1,000	sy

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 46,000.00	$ 46,000	
2	Erosion and Sediment Control	1	LS	$ 10,000.00	$ 10,000	
3	Maintenance of Traffic	1	LS	$ 12,000.00	$ 12,000	
4	Site Preparation	1	LS	$ 25,000.00	$ 25,000	
5	Embankment / Excavation	1,800	CY	$ 5.00	$ 9,000	
6	Subgrade Preparation	3,000	SY	$ 10.00	$ 30,000	
7	Base Course Preparation	2,750	SY	$ 24.00	$ 66,000	
8	Bituminous Surface Course - 2"	450	TON	$ 165.00	$ 74,250	
9	Bituminous Prime/Tack Coat	350	GAL	$ 3.00	$ 1,050	
10	Allowance for Pavement Markings, Wheel Stops	1	LS	$ 20,000.00	$ 20,000	
11	Sodding	10,000	SY	$ 4.00	$ 40,000	
12	Allowance for Fence & Gate Improvements	1,000	LF	$ 25.00	$ 25,000	
13	Allowance for Drainage Improvements	1	LS	$ 40,000.00	$ 40,000	
14	Allowance for Signage Improvements	1	LS	$ 35,000.00	$ 35,000	
15	Allowance for Lighting Improvements	1	LS	$ 65,000.00	$ 65,000	
				Approx. Construction Cost ==>		**$ 498,300**
				Survey & Geotech Testing @ 4%:	$ 19,932	
				Design/Engineering/Bidding @ 11%:	$ 54,813	
				Permitting Allowance:	$ 5,000	
				Construction Administration @ 4%:	$ 19,932	
				Inspection & Testing @ 5%:	$ 24,915	
				Project Administration @ 1%:	$ 4,983	
				Approx. Professional Services Cost ==>		**$ 129,575**
				Preliminary Estimate of Project Cost ==>		**$ 627,875**
				ADD 20% Budgeting Contingency ==>		**$ 125,575**
				Total ==>		**$ 753,450**
				USE Recommended Project Budget ==>		**$ 753,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*
2. *Currently budgeted in work program for 2019-2020*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: **L3** **Construct Terminal Expansion**

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 40,000.00	$ 40,000	
2	Erosion and Sediment Control	1	LS	$ 3,000.00	$ 3,000	
3	Site Preparation & Demolition	1	LS	$ 17,000.00	$ 17,000	
4	Building Improvements	1	LS	$ 250,000.00	$ 250,000	
5	Allowance for Drainage Improvements	1	LS	$ 30,000.00	$ 30,000	
				Approx. Construction Cost ==>		**$ 340,000**
				Survey & Geotech Testing @ 4%:	$ 13,600	
				Design/Engineering/Bidding @ 11%:	$ 37,400	
				Construction Administration @ 4%:	$ 13,600	
				Inspection & Testing @ 5%:	$ 17,000	
				Project Administration @ 1%:	$ 3,400	
				Approx. Professional Services Cost ==>		**$ 85,000**
				Preliminary Estimate of Project Cost ==>		**$ 425,000**
				ADD 20% Budgeting Contingency ==>		**$ 85,000**
				Total ==>		**$ 510,000**
				USE Recommended Project Budget ==>		**$ 510,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*
2. *Project included in work program in 2023-2024*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: **L4** **Rehabilitate & Remark GA Apron**

Approx. Rehab. Pavement Area: 11,500 sy

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 50,000	$ 50,000	
2	Maintenance of Traffic	1	LS	$ 30,000	$ 30,000	
3	Asphalt Pavement Milling	11,500	SY	$ 10.00	$ 115,000	
4	Bituminous Surface Course - Apron Overlay 2"	1,500	TON	$ 165.00	$ 247,500	
5	Bituminous Prime/Tack Coat	1,150	GAL	$ 3.00	$ 3,450	
6	Pavement Markings & Tie-Downs	1	LS	$ 35,000.00	$ 35,000	
				Approx. Construction Cost ==>		**$ 480,950**
				Survey & Geotech Testing @ 4%:	$ 19,238	
				Design/Engineering/Bidding @ 11%:	$ 52,905	
				Construction Administration @ 4%:	$ 19,238	
				Inspection & Testing @ 5%:	$ 24,048	
				Project Administration @ 1%:	$ 4,810	
				Approx. Professional Services Cost ==>		**$ 120,238**
				Preliminary Estimate of Project Cost ==>		**$ 601,188**
				ADD 20% Budgeting Contingency ==>		**$ 120,238**
				Total ==>		**$ 721,425**
				USE Recommended Project Budget ==>		**$ 721,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: **L5** **Expand GA Apron**

Approx. New Pavement Area: 1,100 sy

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 18,500.00	$ 18,500	
2	Erosion and Sediment Control	1	LS	$ 5,000.00	$ 5,000	
3	Site Preparation	1	LS	$ 10,000.00	$ 10,000	
4	Embankment / Excavation	500	CY	$ 10.00	$ 5,000	
5	Subgrade Preparation	1,325	SY	$ 10.00	$ 13,250	
6	Base Course Preparation	1,225	SY	$ 24.00	$ 29,400	
7	Bituminous Surface Course - 3"	250	TON	$ 165.00	$ 41,250	
8	Bituminous Prime/Tack Coat	180	GAL	$ 3.00	$ 540	
9	Shoulder Grading	1	LS	$ 5,000.00	$ 5,000	
10	Allowance for Edge Lighting Improvements	1	LS	$ 30,000.00	$ 30,000	
11	Allowance for Markings & Tie-Downs	1	LS	$ 20,000.00	$ 20,000	
12	Sodding	1,000	SY	$ 4.00	$ 4,000	
				Approx. Construction Cost ==>		**$ 181,940**
				Survey & Geotech Testing @ 4%:	$ 7,278	
				Design/Engineering/Bidding @ 11%:	$ 20,013	
				Permitting Allowance:	$ 5,000	
				Construction Administration @ 4%:	$ 7,278	
				Inspection & Testing @ 5%:	$ 9,097	
				Project Administration @ 1%:	$ 1,819	
				Approx. Professional Services Cost ==>		**$ 50,485**
				Preliminary Estimate of Project Cost ==>		**$ 232,425**
				ADD 20% Budgeting Contingency ==>		**$ 46,485**
				Total ==>		**$ 278,910**
				USE Recommended Project Budget ==>		**$ 279,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: **L6** **Rehabilitate Hangar Taxilanes**

Approx. Rehab. Pavement Area: 2,600 sy

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 11,500.00	$ 11,500	
2	Maintenance of Traffic	1	LS	$ 14,000.00	$ 14,000	
3	Asphalt Pavement Milling	2,600	SF	$ 10.00	$ 26,000	
4	Bituminous Surface Course - Taxilane Overlay 2"	290	TON	$ 165.00	$ 47,850	
5	Bituminous Prime/Tack Coat	300	GAL	$ 4.00	$ 1,200	
6	Pavement Markings	1	LS	$ 8,000.00	$ 8,000	
7	Sodding	1	LS	$ 5,000.00	$ 5,000	
				Approx. Construction Cost ==>		**$ 113,550**
				Survey & Geotech Testing @ 7%:	$ 7,949	
				Design/Engineering/Bidding @ 12%:	$ 13,626	
				Construction Administration @ 5%:	$ 5,678	
				Inspection & Testing @ 5%:	$ 5,678	
				Project Administration @ 1%:	$ 1,136	
				Approx. Professional Services Cost ==>		**$ 34,065**
				Preliminary Estimate of Project Cost ==>		**$ 147,615**
				ADD 20% Budgeting Contingency ==>		**$ 29,523**
				Total ==>		**$ 177,138**
				USE Recommended Project Budget ==>		**$ 177,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: **L7** **Construct New Dual-Bay Hangar in Terminal Area**

Approx. New Building Area:	6,300	sf
Approx. Apron Pavement Area:	600	sy

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 140,000.00	$ 140,000	
2	Erosion and Sediment Control	1	LS	$ 5,000.00	$ 5,000	
3	Site Preparation/Demolition	1	LS	$ 15,000.00	$ 15,000	
4	Embankment / Excavation	4,000	CY	$ 5.00	$ 20,000	
5	Building Improvements	1	LS	$ 882,000.00	$ 882,000	
6	Allowance for Utility Improvements	1	LS	$ 50,000.00	$ 50,000	
7	Allowance for Lighting and Signage	1	LS	$ 50,000.00	$ 50,000	
8	Base Course Preparation	1,370	SY	$ 24.00	$ 32,880	
9	Concrete Hangar Ramps	600	SY	$ 150.00	$ 90,000	
10	Sodding	300	SY	$ 4.00	$ 1,200	
				Approx. Construction Cost ==>		**$ 1,286,080**
				Survey & Geotech Testing @ 4%:	$ 51,443	
				Design/Engineering/Bidding @ 10%:	$ 128,608	
				Permitting Allowance:	$ 4,000	
				Construction Administration @ 4%:	$ 51,443	
				Inspection & Testing @ 5%:	$ 64,304	
				Project Administration @ 1%:	$ 12,861	
				Approx. Professional Services Cost ==>		**$ 312,659**
				Preliminary Estimate of Project Cost ==>		**$ 1,598,739**
				ADD 20% Budgeting Contingency ==>		**$ 319,748**
				Total ==>		**$ 1,918,487**
				USE Recommended Project Budget ==>		**$ 1,918,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: **L8** **Pave Tri-County Airport Road (Third Party-Funded)**

Approx. New Pavement Area:	11,000 sy

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 90,000.00	$ 90,000	
2	Erosion and Sediment Control	1	LS	$ 15,000.00	$ 15,000	
3	Maintenance of Traffic	1	LS	$ 15,000.00	$ 15,000	
4	Site Preparation	1	LS	$ 75,000.00	$ 75,000	
5	Subgrade Preparation	13,200	SY	$ 10.00	$ 132,000	
6	Base Course Preparation	12,100	SY	$ 24.00	$ 290,400	
7	Bituminous Surface Course - 2"	1,210	TON	$ 165.00	$ 199,650	
8	Bituminous Prime/Tack Coat	1,100	GAL	$ 3.00	$ 3,300	
9	Sodding	10,000	SY	$ 4.00	$ 40,000	
10	Pavement Marking & Signage	1	LS	$ 25,000.00	$ 25,000	
				Approx. Construction Cost ==>		**$ 885,350**
				Survey & Geotech Testing @ 5%:	$ 44,268	
				Design/Engineering/Bidding @ 11%:	$ 97,389	
				Construction Administration @ 4%:	$ 35,414	
				Inspection & Testing @ 5%:	$ 44,268	
				Project Administration @ 1%:	$ 8,854	
				Approx. Professional Services Cost ==>		**$ 230,191**
				Preliminary Estimate of Project Cost ==>		**$ 1,115,541**
				ADD 20% Budgeting Contingency ==>		**$ 223,108**
				Total ==>		**$ 1,338,649**
				USE Recommended Project Budget ==>		**$ 1,339,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: **L9** **Construct Roadway Access to Southwest Area**

Approx. New Pavement Area:	5,000 sy

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 60,000.00	$ 60,000	
2	Erosion and Sediment Control	1	LS	$ 15,000.00	$ 15,000	
3	Site Preparation	1	LS	$ 35,000.00	$ 35,000	
4	Embankment / Excavation	3,750	CY	$ 5.00	$ 18,750	
5	Subgrade Preparation	6,000	SY	$ 10.00	$ 60,000	
6	Base Course Preparation	5,500	SY	$ 24.00	$ 132,000	
7	Bituminous Surface Course - 2"	550	TON	$ 165.00	$ 90,750	
8	Bituminous Prime/Tack Coat	500	GAL	$ 3.00	$ 1,500	
9	Sodding	10,000	SY	$ 4.00	$ 40,000	
10	Fence & Gate Improvements	1	LS	$ 30,000.00	$ 30,000	
11	Drainage Improvements	1	LS	$ 50,000.00	$ 50,000	
12	Lighting, CCTV, and Signage Allowance	1	LS	$ 60,000.00	$ 60,000	
				Approx. Construction Cost ==>		**$ 593,000**
				Survey & Geotech Testing @ 4%:	$ 23,720	
				Design/Engineering/Bidding @ 11%:	$ 65,230	
				Permitting Allowance:	$ 5,000	
				Construction Administration @ 4%:	$ 23,720	
				Inspection & Testing @ 5%:	$ 29,650	
				Project Administration @ 1%:	$ 5,930	
				Approx. Professional Services Cost ==>		**$ 153,250**
				Preliminary Estimate of Project Cost ==>		**$ 746,250**
				ADD 20% Budgeting Contingency ==>		**$ 149,250**
				Total ==>		**$ 895,500**
				USE Recommended Project Budget ==>		**$ 896,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: **L10** **Construct Taxilane Access to Southwest Area**

Approx. New Pavement Area:	2,900	sy

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 33,000.00	$ 33,000	
2	Erosion and Sediment Control	1	LS	$ 12,000.00	$ 12,000	
3	Site Preparation	1	LS	$ 12,000.00	$ 12,000	
4	Embankment / Excavation	2,500	CY	$ 5.00	$ 12,500	
5	Subgrade Preparation	3,480	SY	$ 10.00	$ 34,800	
6	Base Course Preparation	3,190	SY	$ 24.00	$ 76,560	
7	Bituminous Surface Course - 3"	320	TON	$ 165.00	$ 52,800	
8	Bituminous Prime/Tack Coat	1,500	GAL	$ 3.00	$ 4,500	
9	Pavement Markings	1	LS	$ 5,000.00	$ 5,000	
10	Sodding	2,500	SY	$ 4.00	$ 10,000	
11	Allowance for Airfield Lighting Improvements	1	LS	$ 40,000.00	$ 40,000	
12	Drainage Improvements	1	LS	$ 30,000.00	$ 30,000	
				Approx. Construction Cost ==>		**$ 323,160**
				Survey & Geotech Testing @ 4%:	$ 12,926	
				Design/Engineering/Bidding @ 11%:	$ 35,548	
				Permitting Allowance:	$ 5,000	
				Construction Administration @ 4%:	$ 12,926	
				Inspection & Testing @ 5%:	$ 16,158	
				Project Administration @ 1%:	$ 3,232	
				Approx. Professional Services Cost ==>		**$ 85,790**
				Preliminary Estimate of Project Cost ==>		**$ 408,950**
				ADD 20% Budgeting Contingency ==>		**$ 81,790**
				Total ==>		**$ 490,740**
				USE Recommended Project Budget ==>		**$ 491,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: L11 Construct Rectangular Hangars (5 Units)

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 95,000.00	$ 95,000	
2	Erosion and Sediment Control	1	LS	$ 5,000.00	$ 5,000	
3	Site Preparation	1	LS	$ 25,000.00	$ 25,000	
4	Embankment / Excavation	1,000	CY	$ 10.00	$ 10,000	
5	T-Hangar Building Improvements	8,000	SF	$ 90.00	$ 720,000	
6	Utility Allowance	1	LS	$ 50,000.00	$ 50,000	
7	Concrete Hangar Ramps	400	SY	$ 100.00	$ 40,000	
8	Allowance for Drainage Improvements	1	LS	$ 25,000.00	$ 25,000	
9	Sodding	3,000	SY	$ 4.00	$ 12,000	
				Approx. Construction Cost ==>		**$ 982,000**
				Survey & Geotech Testing @ 4%:	$ 39,280	
				Design/Engineering/Bidding @ 10%:	$ 98,200	
				Permitting Allowance:	$ 2,500	
				Construction Administration @ 4%:	$ 39,280	
				Inspection & Testing @ 5%:	$ 49,100	
				Project Administration @ 0.5%:	$ 4,910	
				Approx. Professional Services Cost ==>		**$ 233,270**
				Preliminary Estimate of Project Cost ==>		**$ 1,215,270**
				ADD 20% Budgeting Contingency ==>		**$ 243,054**
				Total ==>		**$ 1,458,324**
				USE Recommended Project Budget ==>		**$ 1,458,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*
2. *Includes allowance for utilities which will serve future hangars in southwest development area.*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: **L12** **Construct Rectangular Hangars (5 Units)**

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 85,000.00	$ 85,000	
2	Erosion and Sediment Control	1	LS	$ 5,000.00	$ 5,000	
3	Site Preparation	1	LS	$ 25,000.00	$ 25,000	
4	Embankment / Excavation	1,000	CY	$ 10.00	$ 10,000	
5	T-Hangar Building Improvements	8,000	SF	$ 90.00	$ 720,000	
6	Utility Allowance	1	LS	$ 20,000.00	$ 20,000	
7	Concrete Hangar Ramps	400	SY	$ 75.00	$ 30,000	
8	Allowance for Drainage Improvements	1	LS	$ 20,000.00	$ 20,000	
9	Sodding	3,000	SY	$ 4.00	$ 12,000	
				Approx. Construction Cost ==>		**$ 927,000**
				Survey & Geotech Testing @ 4%:	$ 37,080	
				Design/Engineering/Bidding @ 10%:	$ 92,700	
				Permitting Allowance:	$ 2,500	
				Construction Administration @ 4%:	$ 37,080	
				Inspection & Testing @ 5%:	$ 46,350	
				Project Administration @ 0.5%:	$ 4,635	
				Approx. Professional Services Cost ==>		**$ 220,345**
				Preliminary Estimate of Project Cost ==>		**$ 1,147,345**
				ADD 20% Budgeting Contingency ==>		**$ 229,469**
				Total ==>		**$ 1,376,814**
				USE Recommended Project Budget ==>		**$ 1,377,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*
2. *Assumes primary utilities in southwest development area are installed*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: **L13** **Construct Rectangular Hangars (5 Units)**

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 85,000.00	$ 85,000	
2	Erosion and Sediment Control	1	LS	$ 5,000.00	$ 5,000	
3	Site Preparation	1	LS	$ 25,000.00	$ 25,000	
4	Embankment / Excavation	1,000	CY	$ 10.00	$ 10,000	
5	T-Hangar Building Improvements	8,000	SF	$ 90.00	$ 720,000	
6	Utility Allowance	1	LS	$ 20,000.00	$ 20,000	
7	Concrete Hangar Ramps	400	SY	$ 75.00	$ 30,000	
8	Allowance for Drainage Improvements	1	LS	$ 20,000.00	$ 20,000	
9	Sodding	3,000	SY	$ 4.00	$ 12,000	
				Approx. Construction Cost ==>		**$ 927,000**
				Survey & Geotech Testing @ 4%:	$ 37,080	
				Design/Engineering/Bidding @ 10%:	$ 92,700	
				Permitting Allowance:	$ 2,500	
				Construction Administration @ 4%:	$ 37,080	
				Inspection & Testing @ 5%:	$ 46,350	
				Project Administration @ 0.5%:	$ 4,635	
				Approx. Professional Services Cost ==>		**$ 220,345**
				Preliminary Estimate of Project Cost ==>		**$ 1,147,345**
				ADD 20% Budgeting Contingency ==>		**$ 229,469**
				Total ==>		**$ 1,376,814**
				USE Recommended Project Budget ==>		**$ 1,377,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*
2. *Assumes primary utilities in southwest development area are installed*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: L14 Construct Rectangular Hangars (5 Units)

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 85,000.00	$ 85,000	
2	Erosion and Sediment Control	1	LS	$ 5,000.00	$ 5,000	
3	Site Preparation	1	LS	$ 25,000.00	$ 25,000	
4	Embankment / Excavation	1,000	CY	$ 10.00	$ 10,000	
5	T-Hangar Building Improvements	8,000	SF	$ 90.00	$ 720,000	
6	Utility Allowance	1	LS	$ 20,000.00	$ 20,000	
7	Concrete Hangar Ramps	400	SY	$ 75.00	$ 30,000	
8	Allowance for Drainage Improvements	1	LS	$ 20,000.00	$ 20,000	
9	Sodding	3,000	SY	$ 4.00	$ 12,000	
				Approx. Construction Cost ==>		**$ 927,000**
				Survey & Geotech Testing @ 4%:	$ 37,080	
				Design/Engineering/Bidding @ 10%:	$ 92,700	
				Permitting Allowance:	$ 2,500	
				Construction Administration @ 4%:	$ 37,080	
				Inspection & Testing @ 5%:	$ 46,350	
				Project Administration @ 0.5%:	$ 4,635	
				Approx. Professional Services Cost ==>		**$ 220,345**
				Preliminary Estimate of Project Cost ==>		**$ 1,147,345**
				ADD 20% Budgeting Contingency ==>		**$ 229,469**
				Total ==>		**$ 1,376,814**
				USE Recommended Project Budget ==>		**$ 1,377,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*
2. *Assumes primary utilities in southwest development area are installed*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: S1 Convert Portion of Shade Hangars to MES Facility

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 18,000.00	$ 18,000	
2	Allowance for Demolition	1	LS	$ 10,000.00	$ 10,000	
3	Allowance for Building Renovation	3200	SF	$ 50.00	$ 160,000	
4	Allowance for Utility Modifications	1	LS	$ 5,000.00	$ 5,000	
				Approx. Construction Cost ==>		**$ 193,000**
				Design/Engineering/Bidding @ 11%:	$ 21,230	
				Construction Administration @ 4%:	$ 7,720	
				Inspection & Testing @ 5%:	$ 9,650	
				Project Administration @ 1%:	$ 1,930	
				Approx. Professional Services Cost ==>		**$ 40,530**
				Preliminary Estimate of Project Cost ==>		**$ 233,530**
				ADD 20% Budgeting Contingency ==>		**$ 46,706**
				Total ==>		**$ 280,236**
				USE Recommended Project Budget ==>		**$ 280,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: **S2** **Construct Fire Equipment Parking Area and Water Tank**

Approx. New Pavement Area:	1,500 sy

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 85,000.00	$ 85,000	
2	Erosion and Sediment Control	1	LS	$ 5,000.00	$ 5,000	
3	Site Preparation/Grubbing	1	LS	$ 10,500.00	$ 10,500	
4	Embankment/Excavation	1,200	CY	$ 5.00	$ 6,000	
5	Subgrade Compaction	1,800	SY	$ 10.00	$ 18,000	
6	Portland Cement Concrete Parking	1,500	SY	$ 160.00	$ 240,000	
7	Allowance for Water Tank, Pipes, and Pumps	1	LS	$ 500,000.00	$ 500,000	
8	Sodding	3,500	SY	$ 4.00	$ 14,000	
				Approx. Construction Cost ==>		**$ 878,500**
				Design/Engineering/Bidding @ 11%:	$ 96,635	
				Construction Administration @ 4%:	$ 35,140	
				Inspection & Testing @ 5%:	$ 43,925	
				Project Administration @ 1%:	$ 8,785	
				Approx. Professional Services Cost ==>		**$ 184,485**
				Preliminary Estimate of Project Cost ==>		**$ 1,062,985**
				ADD 20% Budgeting Contingency ==>		**$ 212,597**
				Total ==>		**$ 1,275,582**
				USE Recommended Project Budget ==>		**$ 1,276,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: **S3** **Update Airport Master Plan**

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Master Plan Update Services	1	LS	$ 250,000.00	$ 250,000	
2	Photogrammetry/AGIS Survey	1	LS	$ 125,000.00	$ 125,000	
3	Exhibit A Property Map	1	LS	$ 25,000.00	$ 25,000	
4	Agency Coordination	1	LS	$ 10,000.00	$ 10,000	
5	Project Administration	1	LS	$ 10,000.00	$ 10,000	
					Total ==>	**$ 420,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*

USE Recommended Project Budget ==>	**$ 420,000**

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: S4 Acquire Property to Southwest

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Property Appraisals	1	LS	$ 15,000.00	$ 15,000	
2	Allowance for Environmental Reviews	1	LS	$ 20,000.00	$ 20,000	
3	Allowance for Legal/Administrative Services	1	LS	$ 20,000.00	$ 20,000	
4	Property Acquisition	50	AC	$ 4,000.00	$ 200,000	
					Total ==>	**$ 255,000**

NOTES:

1. *Recommended project udget based on 2019 dollars*
2. *Assumes approximately 50 acres of a larger parcel; actual property need may vary*

USE Recommended Project Budget ==> $ 255,000

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: **S5** **Implement Height Zoning Ordinances**

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Allowance for Document Collection/Review, Develop Draft	1	LS	$ 35,000.00	$ 35,000	
2	Allowance for Legal Fees	1	LS	$ 10,000.00	$ 10,000	
3	Project Administration, Public Notices, Meetings	1	LS	$ 50,000.00	$ 50,000	
					Total ==>	**$ 95,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*

USE Recommended Project Budget ==> $ 95,000

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: **S6** **Install New Rotating Beacon**

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 4,500.00	$ 4,500	
2	Allowance for Rotating Beacon with Tip-Down Pole	1	LS	$ 45,000.00	$ 45,000	
3	Allowance for Grounding/Lightning Protection	1	LS	$ 5,000.00	$ 5,000	
				Approx. Construction Cost ==>		**$ 54,500**
				Design/Engineering/Bidding @ 14%:	$ 7,630	
				Construction Administration @ 7%:	$ 3,815	
				Inspection & Testing @ 7%:	$ 3,815	
				Project Administration @ 1%:	$ 545	
				Approx. Professional Services Cost ==>		**$ 15,805**
				Preliminary Estimate of Project Cost ==>		**$ 70,305**
				ADD 20% Budgeting Contingency ==>		**$ 14,061**
				Total ==>		**$ 84,366**
				USE Recommended Project Budget ==>		**$ 84,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*
2. *Project need summarized in 2019 Electrical Assessment report*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: **S7** **Construct New Vault Building**

Approx. New Building Area:	700	sf

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 44,000.00	$ 44,000	
2	Site Preparation/Demolition	1	LS	$ 25,000.00	$ 25,000	
3	Pre-Engineered, Pre-Cast Concrete Vault Building	1	LS	$ 142,000.00	$ 142,000	
4	Power, Equipment, and Lightning Protection	1	LS	$ 130,000.00	$ 130,000	
5	Airfield Lighting Control System Modifications	1	LS	$ 110,000.00	$ 110,000	
6	Sodding	300	SY	$ 4.00	$ 1,200	
				Approx. Construction Cost ==>		**$ 452,200**
				Survey & Geotech Testing @ 4%:	$ 18,088	
				Design/Engineering/Bidding @ 10%:	$ 45,220	
				Construction Administration @ 4%:	$ 18,088	
				Inspection & Testing @ 5%:	$ 22,610	
				Project Administration @ 1%:	$ 4,522	
				Approx. Professional Services Cost ==>		**$ 108,528**
				Preliminary Estimate of Project Cost ==>		**$ 560,728**
				ADD 20% Budgeting Contingency ==>		**$ 112,146**
				Total ==>		**$ 672,874**
				USE Recommended Project Budget ==>		**$ 673,000**

NOTES:

1. *Recommended project budget based on 2019 dollars*
2. *Project need summarized in 2019 Electrical Assessment report*

Recommended Project Budget
Capital Improvement Program
Tri-County Airport Master Plan Update

Project: **S8** **Install New Generator**

Approx. New Building Area:	700	sf

Item #	Item Description	Quantity	Unit	Unit Price	Item Cost	Total Cost
1	Mobilization	1	LS	$ 17,000.00	$ 17,000	
2	Site Preparation/Demolition	1	LS	$ 4,000.00	$ 4,000	
3	Concrete Foundation with Bollards	1	LS	$ 15,000.00	$ 15,000	
4	New Emergency Power Generator with ATS	1	LS	$ 200,000.00	$ 200,000	
5	Sodding	200	SY	$ 4.00	$ 800	
				Approx. Construction Cost ==>		**$ 236,800**
				Survey & Geotech Testing @ 4%:	$ 9,472	
				Design/Engineering/Bidding @ 10%:	$ 23,680	
				Construction Administration @ 4%:	$ 9,472	
				Inspection & Testing @ 5%:	$ 11,840	
				Project Administration @ 1%:	$ 2,368	
				Approx. Professional Services Cost ==>		**$ 56,832**
				Preliminary Estimate of Project Cost ==>		**$ 293,632**
				ADD 20% Budgeting Contingency ==>		**$ 58,726**
				Total ==>		**$ 352,358**

NOTES:

1. *Recommended project budget based on 2019 dollars*
2. *Project need summarized in 2019 Electrical Assessment report*

USE Recommended Project Budget ==> $ 352,000