WINTER HAVEN MUNICIPAL AIRPORT
GILBERT FIELD
AIRPORT MASTER PLAN UPDATE

AIRPORT MASTER PLAN
FINAL REPORT

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1. INTRODUCTION

This Airport Master Plan Update has been prepared for the Board of City Commissioners of the City of Winter Haven, Florida and the Winter Haven Airport Advisory Committee to provide long-range airport improvement strategies that respond to the projected future demand for aviation and aviation-related services at the Winter Haven Municipal Airport – Gilbert Field (Airport). Funding for this project has been received from the Federal Aviation Administration's (FAA) Airport Improvement Program (AIP), the Florida Department of Transportation (FDOT) Aviation and Spaceports Office, and the City of Winter Haven.

The FAA requires airports receiving AIP funding to conduct periodic updates of their planning document. The last Master Plan for the Airport was completed in September 2004 and since then a number of changes have taken place on the Airport.

This study considers future airport improvements for a 20-year period of 2014 to 2033. This period will be broken into three phases over which airport improvement projects will be undertaken: Short-term (2014-2018), Mid-term (2019-2023), and Long-term (2024-2033). This project provides an update to the previous Master Plan, which provided a basis for some information in this study. Use of the current versions of FAA Advisory Circular (AC) 150/5070-6B, *Airport Master Plans*, AC 150/5300-13, *Airport Design*, FDOT regulations, and local laws provided guidance in decision making during this study. Local, state, and federal agencies have been coordinated with throughout this Master Plan Process.

The Master Plan Process identifies the existing facilities and their condition. Current and future aviation activity demands are also identified. Facility requirements are developed to meet the aviation activity demands. This Master Plan Update provides guidance for future development over the planning period that will satisfy the demand in an efficient, safe, and financially feasible manner, as well as serving as a guide for the City, the Airport Advisory Committee, and the funding agencies. This Master Plan addresses the following:

- Updates the 2004 Master Plan
- Identifies the location and types of facility improvements needed
- Provides a capital improvement plan that addresses project phasing and financial needs
- Develops an Airport Layout Plan (ALP) that graphically depicts existing and future developments

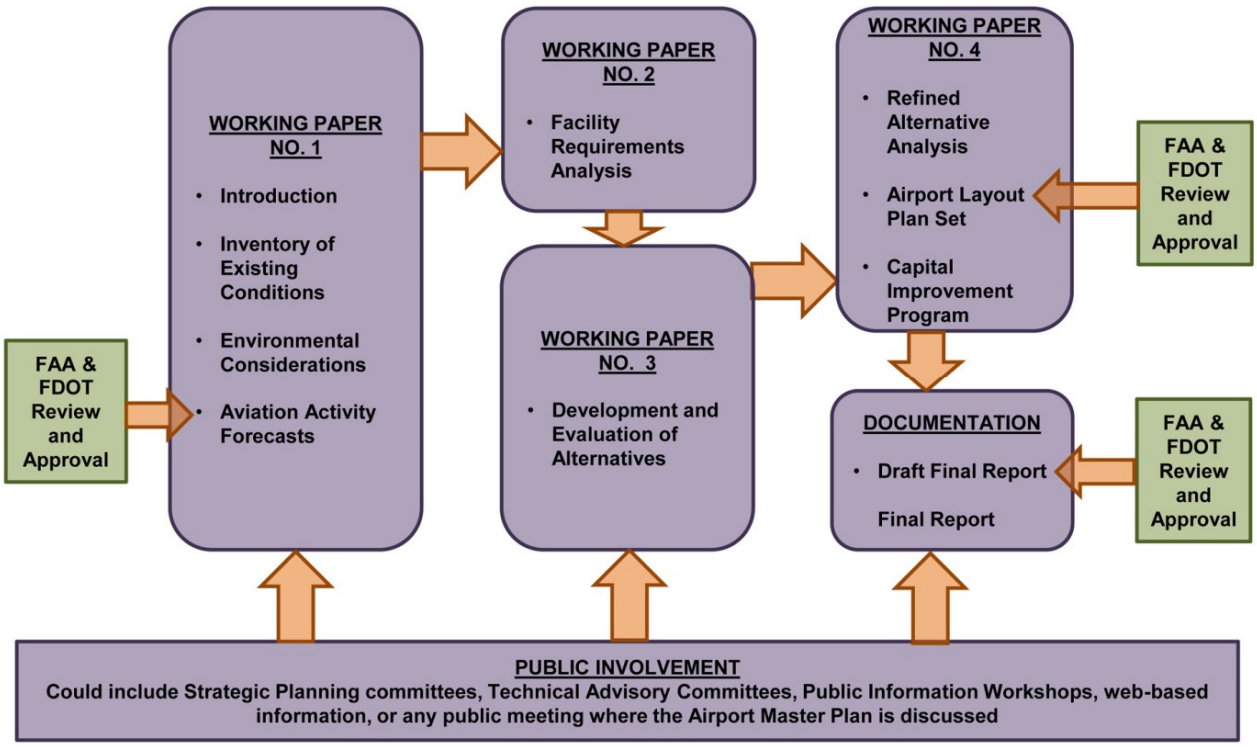
The steps in the typical Master Planning Process are shown in Figure 1-1 and are briefly described below:

- **Inventory of Existing Conditions:** The existing Airport facilities are catalogued and a brief evaluation is made as to their condition. State of Florida Statutes, the Polk County Comprehensive Plan, and the City of Winter Haven's Comprehensive Plan are searched for Airport-related information. Additionally, information related to the area demographics is collected.

- **Environmental Considerations:** Environmental factors are assessed to provide enough information to evaluate airport development alternatives and to provide information that will assist in the expediting of any subsequent environmental process. Typically, this results in an overview of the Airport's environmental setting and the identification of environmentally related permits that may be required for the recommended development projects.

- **Aviation Activity Forecasts:** Current and future levels of based aircraft and aircraft operations are determined in this study phase. These forecasts are further broken out into various categories, such as aircraft type and local versus itinerant operations. Forecasts are generally developed for the Short-term, Mid-term, and Long-term periods as described above for the planning period. The aviation activity forecasts are the basis and the justification for the Master Plan Update. As such, both the FAA and FDOT require that the aviation activity forecasts be reviewed and approved by them before developing the remainder of the Master Plan Update. If the forecasts are not approved by the FAA and FDOT, projects identified as a result are not eligible for funding by these agencies.

Figure 1-1
WINTER HAVEN MUNICIPAL AIRPORT - GILBERT FIELD MASTER PLANNING PROCESS



- **Facility Requirements Forecast:** An assessment of the airfield operational capacity is conducted to determine if unacceptable operational delays would be expected

over the planning period. Various analyses are conducted to project future demand for facilities based on the aviation activity forecasts, including airfield infrastructure, hangars, aprons, terminal space, and vehicle parking. These future facility demands are then compared to the existing facilities to identify any shortfalls. Additionally, a review is conducted to identify any existing facilities that do not meet federal, state, or local regulations, codes, or standards.

- **Development and Evaluation of Alternatives:** Alternatives are developed to meet the shortfalls in facilities identified in the previous task. These alternatives are then evaluated using a number of criteria including the ability to meet the demand, cost, environmental impacts, and other relevant criteria. These alternatives could consider airside and landside facilities and any needed access improvements. From the evaluation, a preferred development plan will result.

- **Refined Alternative Analysis:** As the alternatives are being evaluated during the previous phase, the pros and cons of the various alternatives are evaluated. It is rare that the preferred alternative would be considered perfect. This phase attempts to correct or mitigate some of the perceived flaws in the preferred alternative. In addition, more detail or refinement is put into the plan. This refinement will allow a better preliminary cost estimate to be accomplished in a later phase of the project.

- **Airport Layout Plan Production:** A set of engineering-type drawings, referred to as the Airport Layout Plan (ALP) set, is created showing existing facilities and the selected preferred alternative. The ALP also includes airspace and runway approach drawings, a terminal area map, a land use map, and a property map showing the existing and proposed boundaries. These maps and drawings will assist the City of Winter Haven in the planning and maintenance of Airport boundaries and airspace.

- **Capital Improvement Program:** Cost estimates and a development timeline are determined for the preferred alternative. This information makes up the Capital Improvement Program (CIP), which is utilized by the FAA, FDOT, and the City in determining funding and development priorities.

- **Documentation:** All of the analyses will be documented and consolidated into Working Papers as shown in Figure 1-1. Each working paper will be submitted to the City as it is completed. At the completion of the four working papers, they will be consolidated into one draft document and submitted to the City, FAA, and FDOT for review. The aviation activity forecasts and the Airport Layout Plan Set are the only portions of the Master Plan Update that the FAA approves, although they review the entire document. FDOT reviews and approves the entire document. Comments from the City, FDOT, and the FAA will be addressed and the final document will be submitted to the City.

These steps build one upon another to identify a clear action plan that can be used by the City to guide financial and development decisions. This process leads to the production of two key documents – the ALP and the Master Plan Update report. The development of an approved ALP is a requirement for public use airports that receive federal AIP funding and FDOT aviation development funds. The Master Plan Update report describes and justifies the proposed improvement concepts included in the ALP.

2. INVENTORY OF EXISTING CONDITIONS

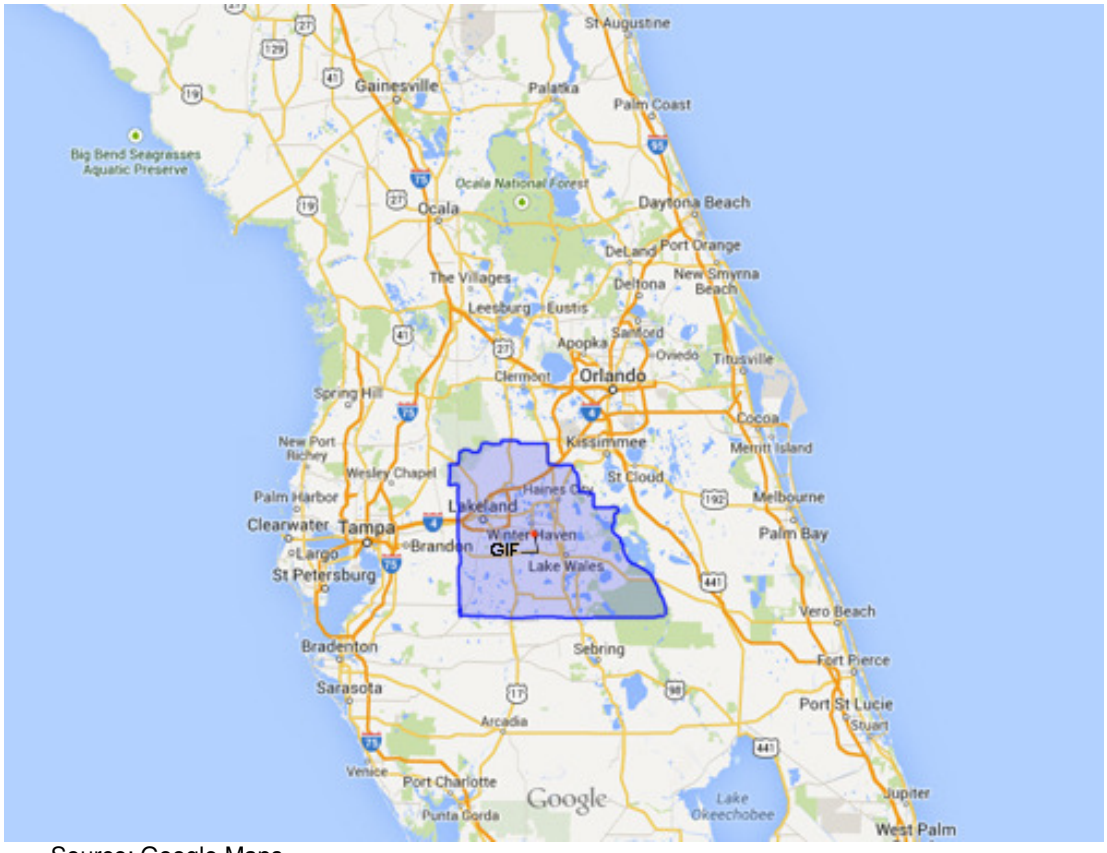
2.1 Introduction

This chapter presents a description of the existing conditions and facilities at the Winter Haven Municipal Airport – Gilbert Field (Airport). The description of these facilities will assess the overall conditions of the Airport, including the non-conformance of any infrastructure to FAA standards. This information will be the basis of comparison for the facility requirements analysis to be developed later in this Master Plan Update. The assessment of the existing facilities includes the description of the existing airside facilities including the runway, taxiway, aprons, and navigational aids. Landside facilities, including T-hangars, fueling facilities, conventional hangars, the Airport terminal, and vehicular facilities are also discussed. A field visit was conducted on 11 December 2014, which included a visual assessment of each facility's condition.

2.2 Airport Setting

Polk County is located in central Florida between Tampa, Florida and Orlando, Florida. The County covers approximately 2,011 square miles of which 1,798 miles are land and 213 miles are water.

Figure 2-1
VICINITY MAP

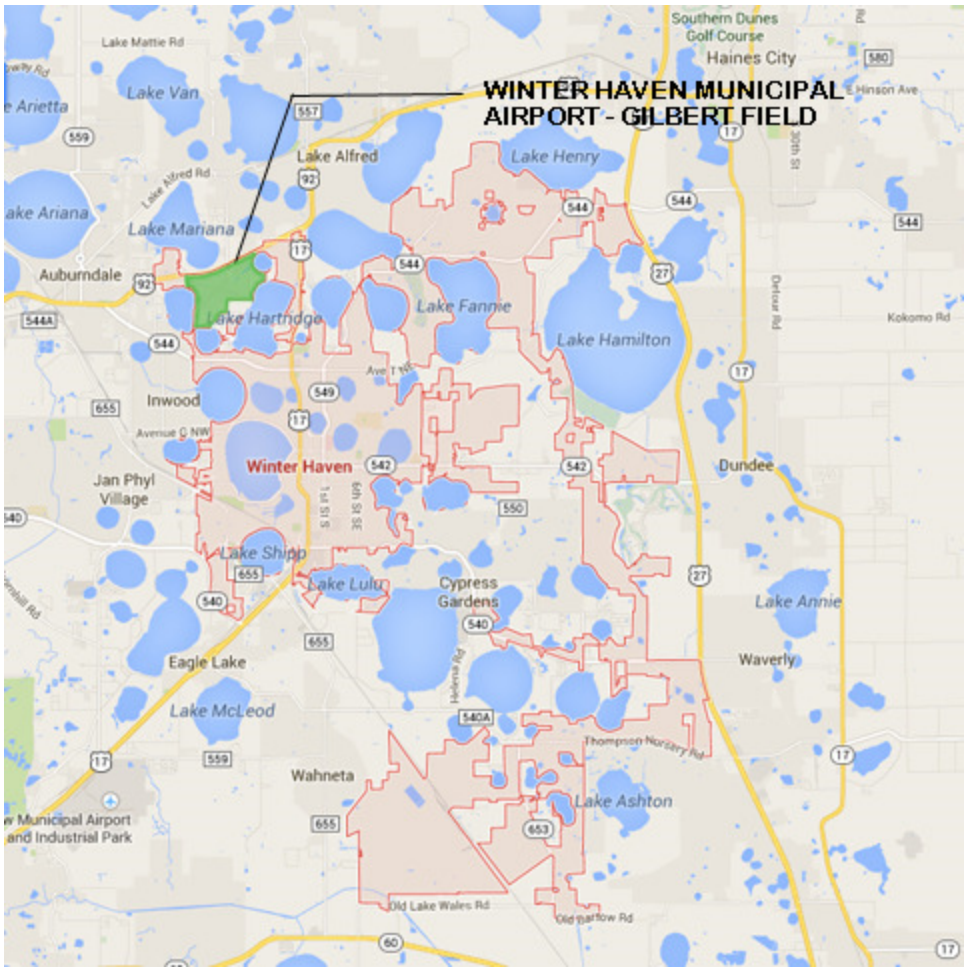


Source: Google Maps

2.2.1 Location

The Airport is located within the City limits of Winter Haven, Florida. The Airport is located three miles from the City center as shown in Figure 2-2. The Airport is located immediately south of U.S. Highway 92 and public access to the Airport is achieved directly from U.S. Highway 92. The Airport covers 520 acres and the airfield has an elevation of 145 feet above mean sea level. Major cities in the vicinity of the Airport are Tampa (51 miles) and Orlando (46 miles).

Figure 2-2
AIRPORT LOCATION MAP



Source: Google Maps

2.2.2 Administration

The Airport is owned and operated by the City of Winter Haven, Florida. An 11 member Airport Advisory Committee counsels the City of Winter Haven City Commission to make recommendations pertaining to the development, use, and general operation of the Airport. Each member has a term limit of three years. The Airport Advisory Committee is made up of the following:

- Two local business people who own and/or operate a business within the municipal limits of the City of Winter Haven

- One member from the educational community in Polk County, Florida
- Four members who own and/or operate a business at the Airport
- Two tenants who occupy property at the Airport
- One member as designated by the current Fixed Base Operator (FBO) at the Airport
- One member as designated by the Winter Haven Economic Development

There are three ex-officio members to the Airport Advisory Committee. They are:

- The Winter Haven Municipal Airport Director
- A representative from the City of Winter Haven's Growth Management Department
- A liaison from the City Commission

The Airport Director reports to the Department of Growth Management and handles the day-to-day operations of the Airport.

2.2.3 National Air Transportation System Role

The U.S. Secretary of Transportation is required to publish every two years a national plan to Congress that presents data, forecasts, and development plans of all public-use airports in the United States. This plan is referred to as the National Plan of Integrated Airport Systems (NPIAS). One of the main outcomes of the NPIAS is a listing of infrastructure that will be eligible for federal grants. A general aviation (GA) airport is characterized in the NPIAS as an airport not receiving scheduled commercial passenger or cargo service. To be included in the NPIAS, airports should have at least 10 based aircraft and be located a minimum of 20 miles from other NPIAS airports. Airports located closer than 20 miles from another NPIAS airport can also be included based on several exception criteria.

The FAA 2013 NPIAS indicated that future development of general aviation facilities must be based on "eligible and justified needs and priorities." These are in part based on the new categories of general aviation airports. Winter Haven is classified as a regional public-use airport. Regional airports are located in metropolitan areas and serve relatively large populations. They support interstate and some local long distance flying with sophisticated aircraft. There could be a substantial amount of charter (air taxi), jet flying, and rotorcraft flights at such airports.

Meeting these requirements, the Airport serves an important role in the national and state aviation systems. Facilities for aircraft storage, maintenance, and fueling are offered at the Airport.

Within the United States, the FAA assigns location identifiers to airports. These are then adopted by the International Air Transport Association (IATA), which has airport or location indicators for each airport around the world. The airport code is a three-character alphanumeric code. The International Civil Aviation Organization (ICAO) also uses and publishes a similar system. The assigned codes for each organization often bear little resemblance to one another. The ICAO designations are published in ICAO Document 7910: *Location Indicators.* In general,

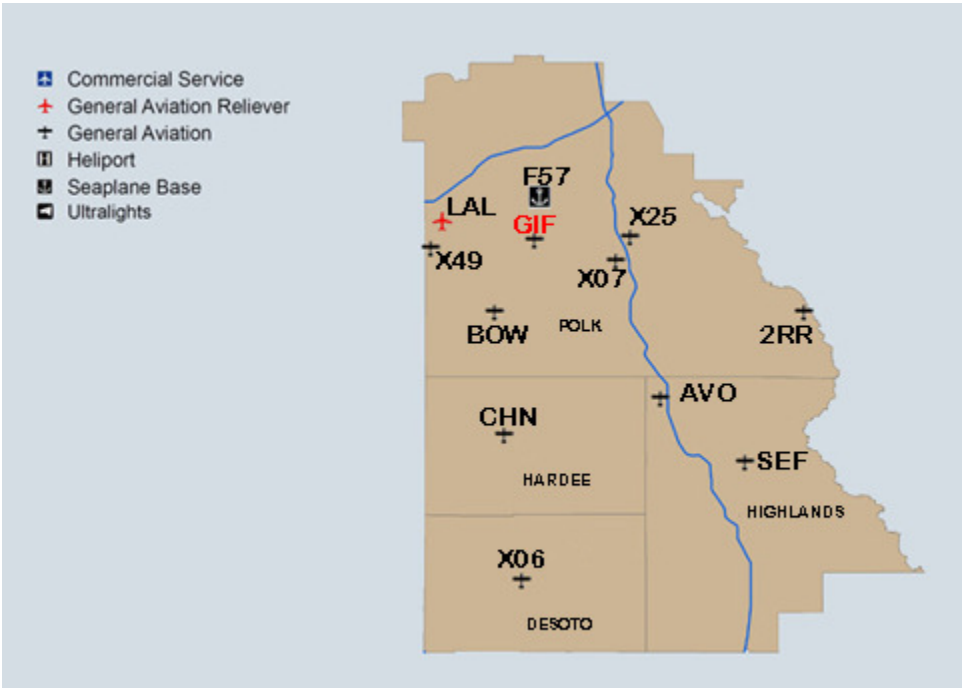
codes are distributed by region and country. Winter Haven Municipal Airport – Gilbert Field has the IATA designation of GIF and the ICAO designation of KGIF.

2.2.4 Florida Aviation System Plan

The Florida Aviation System Plan (FASP) is administered by the FDOT Aviation and Spaceports Office through its Continuing Florida Aviation System Planning Process (CFASPP). The CFASPP was established by the FAA and FDOT to maintain and enhance the Florida aviation system and to help keep the FASP in step with the constant changes by updating the FASP periodically.

Within the CFASPP, there are nine regions within the State of Florida. Winter Haven Municipal Airport – Gilbert Field is located in the Central Florida Region of the CFASPP. This region consists of Polk, Hardee, Arcadia and Highland Counties. There are twelve public-use airports in the Central Florida Region. All of these airports, with the exception of Lakeland Linder, are currently designated as general aviation airports, as shown in Figure 2-3. Lakeland Linder is designated as a reliever airport.

Figure 2-3
CENTRAL FLORIDA REGION CFASPP



Source: CFASPP

2.3 Meteorological Conditions

Weather plays an important role in the operation of aircraft. It must be considered in a number of different airfield parameters. Information regarding the Winter Haven Municipal Airport – Gilbert Field's climate and wind characteristics is presented in this section.

2.3.1 Climate

Winter Haven, Florida receives an average of 50 inches of precipitation per year of which none are counted as snow. The month with the heaviest precipitation is July with an average of 8.11 inches. The month with the least precipitation is April with an average of 2.2 inches.

The average annual high temperature for June, July, and August is 92 degrees Fahrenheit and the average January low temperature is 51 degrees Fahrenheit.

2.3.2 Wind Coverage

Runway wind coverage at an airport refers to the percentage of time that crosswinds are below an acceptable velocity. According to the FAA Advisory Circular 150/5300-13A, *Airport Design*, the minimum wind coverage permitted for a runway, considering all observations, is 95 percent. This means that for 95 percent of the time, the crosswind component must be less than the maximum crosswind component of the aircraft landing at that specific airport. The crosswind component is calculated based on a crosswind not exceeding the following:

- 10.5 knots (12 miles per hour (mph)) for aircraft with an Airport Reference Code (ARC) of A-1 and B-1. Example aircraft include the Beech Bonanza, the Cessna Citation I, and the Beech King Air.
- 13 knots (15 mph) for ARC A-II and B-II. Example aircraft include the Beech King Air 200, the DHC 6 Twin Otter, and the Cessna 441.
- 16 knots (18 mph) for ARC A-III, B-III and C-I through D-III. Example aircraft include the Dash 8, the DHC-5D Buffalo, and the Gates Learjet 24/25/28/29/54/55/56.
- 20 knots (23 mph) for ARC A-IV through D-IV. Example aircraft include the Boeing TC-14, the Boeing 757, and the MD-11.

If this coverage cannot be accomplished for the maximum crosswind component of the critical aircraft for a specific runway, then constructing a crosswind runway should be considered.

The Winter Haven Municipal Airport – Gilbert Field has an Automated Surface Observing Station (ASOS) that has been in operation since 2006 collecting and recording hourly weather data for the Airport. The FAA AC 150/5300-13A states that a period of at least 10 consecutive years of wind data should be examined when analyzing airfield wind coverage. There is ten consecutive years' data available for this study. The results are shown in Table 2-1.

Table 2-1
RUNWAY WIND ANALYSIS

	All Weather	Visual Flight Rules	Instrument Flight Rules
Runway 5/23			
10.5 knots (12 mph)	94.7%	94.94%	93.79%
13.0 knots (15 mph)	97.51%	97.66%	96.64%
Runway 11/29			
10.5 knots (12 mph)	95.06%	95.22%	93.95%
13.0 knots (15 mph)	97.55%	97.68%	96.68%
Runways 5/23 and Runway 11/29			
10.5 knots (12 mph)	98.77%	98.9%	98.02%
13.0 knots (15 mph)	99.72%	99.77%	99.45%
Number of Observations	102,801	88,610	14,095

Source: FAA Airports Global Information Systems (GIS) Airport Design Tools, Data for January 2006 through December 2015, Station 747931, Winter Haven – Gilbert Field

The information is given for three different conditions. The first is called all weather and covers all weather conditions. The second is called Visual Flight Rules (VFR) and covers those rules in effect when visual flight meteorological conditions occur, which occurs when the cloud ceiling is greater than 1,000 feet and the visibility is greater than three miles. The third condition is called Instrument Flight Rules or IFR. This occurs when the meteorological conditions are less than 1,000 feet and the visibility is at or lower than three miles. Only the crosswind components 10.5 and 13 knots were calculated, as aircraft in the higher wind groups are not expected to operate in significant numbers at the Airport.

Those cells in Table 2-1 that are outlined in heavy black indicate that the percentage of coverage does not meet the FAA's minimum runway wind coverage of 95 percent. The wind coverage is not achieved for Runway 5/23 during 10.5 knot winds during All Weather, VFR, or IFR weather. It is not achieved for Runway 11/29 during 10.5 knot winds during IFR weather. This indicates that a crosswind runway is recommended. When the two runways are analyzed together, the minimum wind coverage is achieved. Specific wind rose information can be found in **Appendix A.**

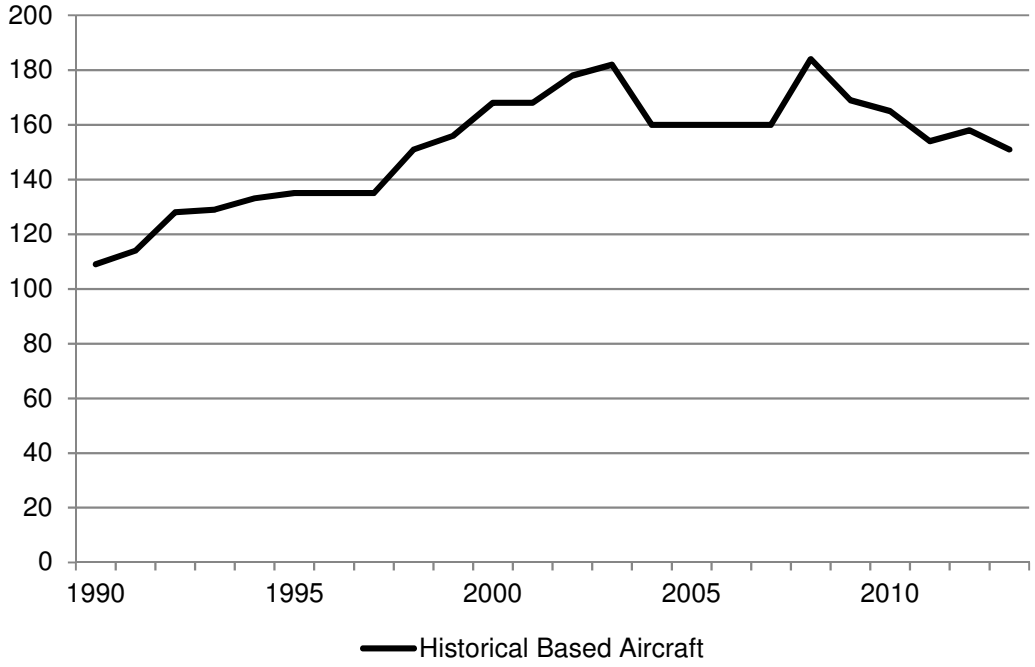
2.4 Historical Data

The historical aviation activity data for the Winter Haven Municipal Airport – Gilbert Field was taken from the 2014 FAA Terminal Area Forecast (TAF) for the Airport. This historical data is reported to the FAA by each respective airport on the FAA Airport Master Record (Form 5010).

2.4.1 Based Aircraft

The historical data for based aircraft for the Airport as shown in the 2015 FAA TAF for the Airport begins in 1990 and goes through 2012. The data is shown in Figure 2-4 and Table 2-2.

Figure 2-4
HISTORICAL BASED AIRCRAFT



Source: 2015 FAA TAF

Table 2-2
HISTORICAL BASED AIRCRAFT

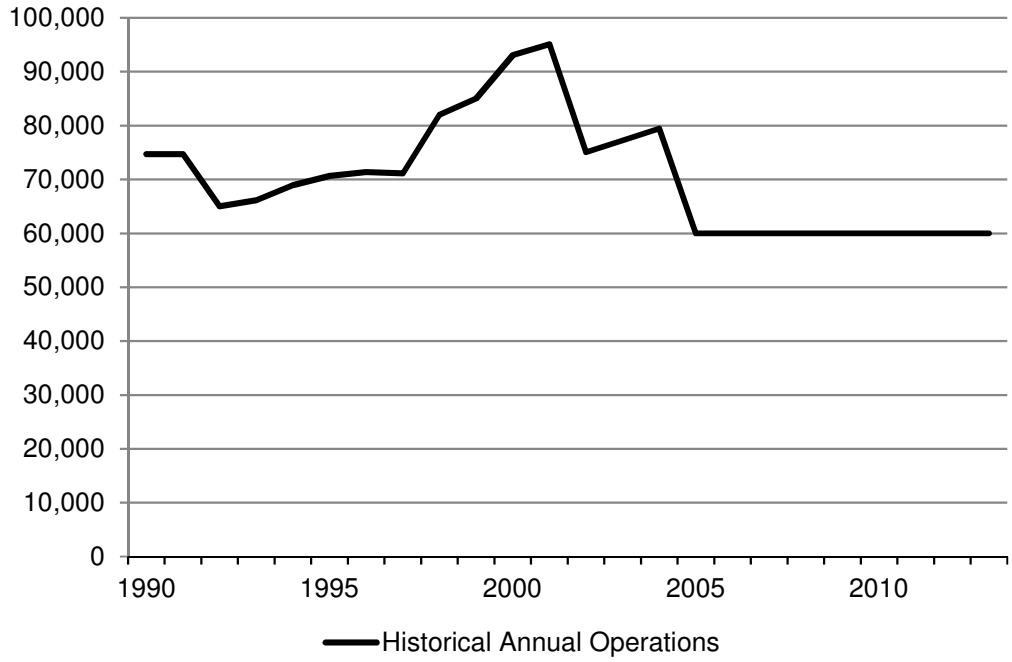
Year	Based Aircraft
1990	109
1991	114
1992	128
1993	129
1994	133
1995	135
1996	135
1997	135
1998	151
1999	156
2000	168
2001	168
2002	178
2003	182
2004	160
2005	160
2006	160
2007	160
2008	184
2009	169
2010	165
2011	154
2012	158
2013	151

From 1990 through 2003, the number of aircraft based at the Airport rose steadily from 109 in 1990 to 182 in 2003. By the year 2004, the based aircraft had fallen to 160. By 2008, the number of based aircraft had again risen to 184. However, the number of based aircraft has fallen steadily until the number of based aircraft at the Airport in 2013 was 151.

2.4.2 Aircraft Operations

Similar to the based aircraft forecast, the number of annual operations was taken from the 2015 FAA TAF. The data is shown Figure 2-5 and Table 2-3.

Figure 2-5
HISTORICAL AIRCRAFT OPERATIONS



Source: 2015 FAA TAF

From the year 1990 through 1992, the annual operations fell from 74,706 to 65,000. However, from the years 1992 through 2001, the number of annual operations rose to 95,094. After the events of September 11, 2001, the number of annual operations at the Airport fell to 75,050 within one year. The number of operations rose to 79,453 by 2004. However, from the year 2005 through 2012, the number of annual operations at the Airport has been reported as a steady 60,000 operations.

It is unlikely that the Airport's annual operations remained at one steady round number of 60,000 for the period 2005 through 2013. It is more likely that these numbers were originally estimated and have been continuously repeated in the reporting to the FAA for lack of other data. Unfortunately, this is likely to negatively impact the forecast of future annual operations in Chapter 4, *Aviation Activity Forecasts,* of this Master Plan Update.

Table 2-3
HISTORICAL AIRCRAFT OPERATIONS

Year	Annual Operations
1990	74,706
1991	74,706
1992	65,000
1993	66,177
1994	68,925
1995	70,676
1996	71,399
1997	71,129
1998	82,035
1999	85,054
2000	93,080
2001	95,094
2002	75,050
2003	77,270
2004	79,453
2005	60,000
2006	60,000
2007	60,000
2008	60,000
2009	60,000
2010	60,000
2011	60,000
2012	60,000
2013	60,000

2.5 Airside Facilities

Airside facilities are those facilities required to support the movement and operation of aircraft. This involves not only the Airport's runway and taxiway system; it also includes the airfield lighting, pavement markings, takeoff and landing aids, and airfield signage.

2.5.1 Aircraft Movement Areas

Aircraft movement areas include paved and unpaved surfaces that enable aircraft to move to and from the runways. This includes not only the runways and taxiways, but the Airport's aprons. Figure 2-6 provides an aerial layout of the facilities at the Airport. Winter Haven Municipal Airport – Gilbert Field has two runways; Runway 5/23 is the primary runway and Runway 11/29 is the crosswind runway.

Figure 2-6
WINTER HAVEN MUNICIPAL AIRPORT - GILBERT FIELD AERIAL PHOTO

2.5.1.1 Runway 5/23

Runway 5/23 is oriented in a northeast/southwest direction and meets the design criteria for an Airport Reference Code (ARC) of B-II. An ARC is composed of the Airplane Design Group, which is the classification of aircraft based on wingspan and tail height, and the Approach Speed, which is the FAA classification of aircraft based on approach speeds. The ARC classification B-II means Runway 5/23 accommodates aircraft with wingspans up to but not including 79 feet, and having approach speeds of up to 121 knots. Examples of B-II aircraft include the Beech King Air C90, the Cessna Citation III, and the Grumman Gulfstream I.

Runway 5/23 is a 5,006-foot long by 100-foot wide asphalt runway. The pavement has a single wheel (SW) gross weight capacity rating of 30,000 pounds. The runway does not currently have any displaced thresholds, which are thresholds located at a point on the runway beyond the beginning of the runway. Displaced thresholds shorten the length of the runway and are typically put into effect to allow aircraft to avoid obstructions to the airspace at the ends of a runway.

According to the FDOT Statewide Airfield Pavement Management Program Report of May 2011, the pavement of Runway 5/23 was in good condition with a Pavement Condition Index (PCI) of 100.

2.5.1.2 Runway 11/29

Runway 11/29 is oriented in a west-northwest by east-southeast direction and meets the design criteria for an Airport Reference Code (ARC) of B-I. The ARC classification B-I means Runway 11/29 accommodates aircraft with wingspans up to but not including 49 feet, and having approach speeds of up to 121 knots. Examples of B-I aircraft include the Beech King Air F90, the Cessna Citation I, and the Piper 400LS Cheyenne.

Runway 11/29 is a 4,001-foot long by 100-foot wide asphalt runway. The pavement has a single wheel (SW) gross weight capacity designation of 12,500 pounds. The runway does not currently have any displaced thresholds. According to the FDOT Statewide Airfield Pavement Management Program Report of May 2011, the pavement of Runway 11/29 was in satisfactory condition with a Pavement Condition Index (PCI) of 79, except where Runway 11/29 intersects with Runway 5/23 where the PCI was 96. Data for both Runways can be found in Table 2-4.

Table 2-4
AIRPORT RUNWAY DATA

Characteristic	Runway 5/23	Runway 11/29
Length and Width (feet)	5,006 x 100	4,001 x 100
Displaced Threshold	None	None
Marking (condition)	Non-Precision (Good)	Basic (Fair)
Approach Aids	2-Box PAPI	None
Surface Type	Asphalt	Asphalt
Strength (pounds)	30,000 SW	12.500 SW
Effective Gradient (%)	0.01%	0.05%
Pavement Condition Index (PCI) (2011)	Good/100	Satisfactory/76

Note: SW = Single Wheel

The FAA has developed various safety standards to provide an adequate safety margin for aircraft operators and for others in the general vicinity of a runway. These standards vary based upon the design aircraft wingspan and approach speed as well as the approved approach procedures to each runway end. The following provides a brief description of the runway safety criteria set by the FAA:

- **Runway Safety Area (RSA)**: These areas are centered upon the runway centerline and run along the sides and ends of each runway. The terrain within the RSA must be able to support maintenance and emergency response vehicles, as well as the occasional passage of aircraft. These areas must be smoothly graded and be free of any objects (except those needed to support aircraft operations), including aircraft and vehicles while an operation is occurring on the runway. The purpose of an RSA is to minimize damage to aircraft and injuries to passengers in the event an aircraft leaves the runway. The RSA dimensions depend on the aircraft approach category and on the physical characteristics of the critical aircraft identified for the runway.
- **Runway Object Free Area (ROFA)**: This safety criterion provides a defined area, which runs along the sides of and beyond the runway end, which must be free of any permanent objects. It is permissible to taxi and hold aircraft within a ROFA, but not to park them in this area.
- **Runway Object Free Zone (OFZ)**: Very similar to the ROFA, the OFZ is centered on the runway centerline and extends beyond each runway end by 200 feet. The OFZ must remain free of all objects during an aircraft operation.
- **Runway Protection Zones (RPZ)**: The RPZ is a trapezoid shape located at the end of each runway, with the shortest side located 200 feet beyond the runway threshold and centered on the runway centerline. The RPZ is designed to protect property and people on the ground off the end of a runway as this area is statistically where most aircraft accidents are likely to occur. The RPZs at opposite runway ends may have different dimensions as determined by the approved procedure to that specific runway end. Airport operators should have legal control over the property within the defined RPZ at each runway end.

Table 2-5 provides a listing of the design standards for each of these safety criteria for Runways 5/23 and 11/29.

Table 2-5
RUNWAY SAFETY AREA CRITERIA

Safety Criteria		Runway 5/23 (in feet)	Runway 11/29 (in feet)
Runway Safety Area (RSA) Width		300	120
RSA Length Beyond Departure End		300	240
Runway Object Free Area (ROFA) Width		500	400
ROFA Length Beyond Runway End		300	240
Obstacle Free Zone (OFZ) Width		250	250
OFZ Length Beyond Runway End		200	200
Runway Protection Zone (RPZ)	Runway 5	1,000 x 700 x 500	
	Runway 23	1,000 x 700 x 500	
	Runway 11		1,000 x 700 x 500
	Runway 29		1,000 x 700 x 500

Note: RPZ dimensions given as length x outer width x inner width
Source: Winter Haven Municipal Airport – Gilbert Field Airport Layout Plan, 2004 and FAA Form 5010

2.5.1.3 Taxiway System

The purpose of any taxiway system is to support the operational activity and enhance the safety of aircraft ground movements. Taxiways also act to enhance the capacity of the runway system by allowing aircraft to move on and off the active runway system in an efficient manner. A good taxiway system is designed to provide freedom of movement to and from the runways and between aviation facilities at an airport. Such a system is essential to non-towered airports such as Winter Haven Municipal Airport – Gilbert Field. At a minimum, the FAA recommends that each end of the primary runway should be easily accessible from the terminal and hangar areas. Ideally, all runway ends would be easily accessible from the terminal and hangar areas. Taxiway systems include entrance and exit taxiways, by-pass taxiways, taxiway run-up areas, apron taxiways, and taxilanes.

The Airport currently has five taxiways as shown in Figure 2-6. Taxiway A is located in the southwestern portion of the airfield, connects the south ramp with Taxiway B, and in 2011 had Pavement Condition Indexes (PCI) varying from fair/70 to poor/55.

Taxiway B is a full-length, parallel taxiway to Runway 5/23 and is located south of the Runway. In 2011, it had PCIs that varied from good/90 to poor/44. Likewise, the taxiway stubs that connect the Taxiway with Runway 5/23 had PCIs that varied from very poor/31 to good/92.

Taxiway C connects Runway 11 to Runway 5 on the south side of Runway 11/29. In 2011, it had a PCI of good/98.

Taxiway D connects Runway 29 to the south apron on the south side of Runway 11/29. In 2011, it had a PCI of satisfactory/85.

Taxiway F connects the north terminal apron area to Runway 23. In 2011, it had a PCI of good/100.

The required distance between a taxiway/taxilane centerline and other objects is based on the required wingtip clearance, which is a function of the wingspan of the Airport Design Group (ADG) for the corresponding runway. Runway 5/23 has an ADG of II. Runway 11/29 has an ADG of I. The requirements for Runway Airplane Design Group (ADG) I and II taxiways are shown in Table 2-6 and are compared with the current metrics of the five taxiways.

Table 2-6
DESIGN STANDARDS FOR ADG I AND II TAXIWAYS

Item	ADG I (in feet)	ADG II (in feet)	Taxiway (in feet)				
			A	B	C	D	F
Taxiway Safety Area (TSA) Width	49	79	49	79	49	49	79
Taxiway Object Free Area in Width (OFA)	89	131	89	131	89	89	131
Taxiway Centerline to Parallel Taxiway/Taxilane Centerline	69	105	69	105	69	69	105
Taxiway Centerline to Fixed or Moveable Object	44.5	65.5	44.5	65.5	44.5	44.5	65.5
Taxilane Centerline to Parallel Taxilane Centerline	39.5	57.5	39.5	57.5	39.5	39.5	57.5

Pavement width requirements for taxiing aircraft are based on the Taxiway Design Group (TDG), which is based on the dimensions of the design aircraft's undercarriage. The requirements for Taxiway Design Group (TDG) 1, 2, and 3 taxiways are shown in Table 2-7. This table compares these requirements against the current metrics of the five taxiways.

Table 2-7
DESIGN STANDARDS FOR TDG 1, 2, AND 3 TAXIWAYS

Item	TDG 1 (in feet)	TDG 2 (in feet)	TDG 3 (in feet)	Taxiway (in feet)				
				A	B	C	D	F
Taxiway Width	25	35	50	50	40	25	25	35
Taxiway Edge Safety Margin	5	7.5	10	10	10	5	5	7.5
Taxiway Shoulder Width	10	10	20	n/a	n/a	n/a	n/a	n/a
Taxiway/Taxilane Centerline to Parallel Taxiway/Taxilane Centerline	69	69	160	160	160	69	69	69

2.5.2 Airfield Lighting

Proper airfield lighting is required at all airports that have nighttime operations. Winter Haven Municipal Airport – Gilbert Field has lighting systems that enable it to accommodate nighttime aircraft operations.

2.5.2.1 Identification Lighting

The Airport's rotating beacon is located adjacent to the former Airport terminal on the south side of the Airport, which now serves as a corporate hangar. This hangar is accessed by 21st Street NW. The rotating beacon indicates the location and presence of an airport at night or in adverse weather conditions. The beacon's tower is equipped with an optical rotating system

that projects two beams of light, one green and one white, 180 degrees apart, in accordance with FAA criteria. This indicates that the Airport is a civil airport. An airport rotating beacon is a visual navigational aid (navaid) located at many airports.

The rotating beacon is in satisfactory condition. It operates dusk to dawn and when the airfield is operating under Instrument Flight Rules (IFR) conditions.

Figure 2-7
AIRPORT ROTATING BEACON

2.5.2.2 Runway Lighting

Runway lights allow pilots to identify the edges of a runway and assist them in determining the remaining length available at night and during periods of restricted visibility. These lighting systems are classified according to their intensity or brightness. Runway 5/23 is equipped with Medium Intensity Runway Lights (MIRL). This system can be activated by pilots through the Common Traffic Advisory Frequency (CTAF), frequency 123.050 MHz. Runway 11/29 is not equipped with runway lighting.

2.5.2.3 Taxiway Lighting

Taxiway B and Taxiway F have Medium Intensity Taxiway Lights (MITL). The remainder of the taxiways do not have lighting.

2.5.3 Pavement Markings

Pavement markings delineate the various movement areas on the airfield. Runway 5/23 has designation numbers and centerline striping. Both ends of Runway 5/23 also have threshold bars and aiming point markers. These indicate a non-precision instrument approach, and they are considered to be in good condition. Runway 11/29 has designation numbers and centerline striping. However, it does not have threshold bars or aiming point markers. These indicate a basic runway marking. The Runway 11/29 markings are considered to be in fair condition.

The designation markings identify the runways by their magnetic azimuth, while the threshold markings identify the beginning of the available landing area. All of the runway markings are painted white.

Each of the taxiways has visible centerline stripes with runway holding position markings at the required locations. The taxiway centerline markings are yellow.

2.5.4 Take-off and Landing Aids

There are a number of different takeoff and landing aids at the Winter Haven Municipal Airport – Gilbert Field. As with the runway and taxiway lighting, any takeoff or landing lights that emit light, with the exception of the lighted wind sock, are pilot controlled through the Common Traffic Advisory Frequency (CTAF).

2.5.4.1 Wind Indicators and Segmented Circles

Perhaps the most basic takeoff and landing aid is the windsock, which indicates wind direction and speed. Currently, there are three lighted wind socks on the Airport. There is one located south of the intersection of the two runways, the remaining two are located at each end of Runway 11/29.

Segmented circles are often co-located with a wind sock. A segmented circle performs two functions; it aids the pilot in locating airports and it provides a centralized location for indicators and signal devices that may be required on a particular airport. The Airport does not have a segmented circle. Segmented circles are required and are particularly helpful to pilots at non-towered airports.

2.5.4.2 Runway End Identification Lights

The identification of the runway ends and thresholds are critical to a pilot during landing and takeoff. Therefore, runway ends are often equipped with special lighting configurations to aid in their identification. Runway End Identifier Lights (REIL) provide pilots with rapid and positive visual identification of the approach end of the runway during night, instrument, and marginal weather conditions. REILs also aid in the identification of the runway end in areas that have a featureless terrain. The systems consist of a pair of synchronized white flashing lights, which are located on each side and abeam of the runway end threshold lights. Runway 5/23 has REILs, Runway 11/29 does not.

2.5.4.3 Precision Approach Path Indicators

There are a number of systems installed at airports that provide guidance information of the aircraft's position relative to the correct approach, in the vertical plane, to the runway. At Winter Haven Municipal Airport – Gilbert Field, Precision Approach Path Indicators (PAPI) systems have been installed on both ends of Runway 5/23. PAPIs provide the pilot with visual descent information during an approach to a runway. These lights are typically visible from five miles during the day and up to 20 miles or more at night. PAPIs use a light bar unit that is installed in a single row perpendicular to the runway edge. The lights project a beam of white light in the upper segment and red light in the lower segment. Depending on the aircraft's angle in relation to these lights, the pilot will receive a visual indication of the aircraft's position relative to the desired 3.00-degree approach slope. Both ends of Runway 5/23 have a 2-light PAPI system located on the right side of the Runway when viewed from an approaching aircraft. Runway 11/29 does not have a PAPI system.

2.6 Airspace and Air Traffic Control

The Federal Aviation Administration has regulatory control over flight routes whether enroute, on approach, or departure from an airport. The FAA has divided the airspace over and between airports into various classifications. These classifications are separated into controlled airspace and uncontrolled airspace. The controlled airspaces are defined as shown in Table 2-8.

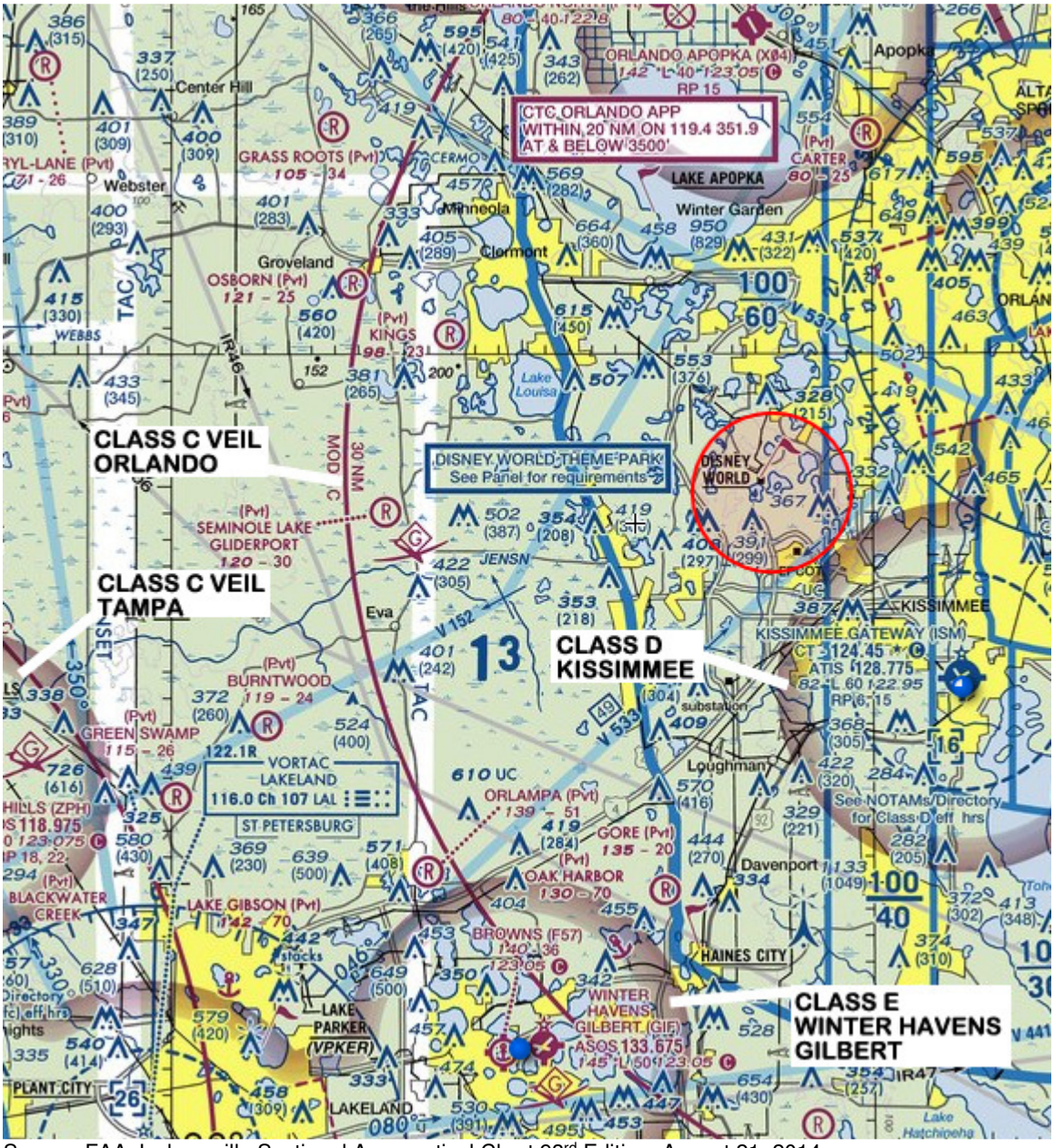
Table 2-8
AIRSPACE CLASSIFICATIONS

Controlled Airspace Classification	Description
A	Begins at 18,000 feet above mean sea level (AMSL) and continues upward. Used to manage enroute air traffic
B	Surrounds the busiest airports such as Orlando and Tampa
C	Surrounds the next level of busy airports. These include such airports as Orlando Sanford and Daytona Beach
D	Surrounds airports that have an air traffic control tower that are not located in Class B or C airspace
E	Any other controlled airspace
G	Any uncontrolled airspace

The Winter Haven Municipal Airport – Gilbert Field does not have an air traffic control tower and it is not located within the close environs of another busy airport. It has published instrument approach procedures for Runways 5 and 11. Therefore, its airspace is classified as Class E, which has no defined vertical limit. Rather, it extends upward from either the surface or from a designated altitude to the overlying or adjacent airspace. In the case of this Airport, it extends upward from the surface. Class E airspace does not require specific pilot certification or specific aircraft equipment as some of the higher classifications do.

There are other controlled airspaces in the vicinity of the Airport as shown in Figure 2-8. These include those for Bartow, Lakeland Linder, and Kissimmee Gateway, all of which have control towers, as well as Plant City and Zephyrhills, which do not. The Class C Veil for Orlando is located to the northeast and the Class C Veil for Tampa is located to the west.

Figure 2-8
WINTER HAVEN AIRPORT AIRSPACE



Source: FAA Jacksonville Sectional Aeronautical Chart 93rd Edition, August 21, 2014.

2.6.1 Approach Procedures

Winter Haven Municipal Airport – Gilbert Field features non-precision GPS approaches on Runways 5 and 11. Table 2-9 shows the required approach minima for the Airport's instrument approach procedures. The approach plates current to the Airport as of 11 December 2014 are included in **Appendix B.**

Table 2-9
WINTER HAVEN INSTRUMENT APPROACHES

Procedure Name	Minimum Visibility	Minimum Descent Altitude Mean Sea Level
RNAV (GPS) Runway 5	Aircraft Groups A and B: 1 mile, Aircraft Group C: 1 1/4 mile, Aircraft Group D: 1 1/2 mile	600 feet
RNAV (GPS) Runway 11	Aircraft Groups A and B: 1 mile, Aircraft Group C: 1 3/4 mile, Group D: 2 miles	760 feet
VOR/DME-A	Aircraft Groups A and B: 1 mile, Aircraft Group C: 1 ¾ miles	780 feet
VOR/DME-A	Aircraft Group D: 2 ½ miles	820 feet

Source: FAA Southeast Terminal Procedures, Date 11 December 2014

2.6.2 Vicinity Airports

Pilots that use Winter Haven Municipal Airport – Gilbert Field can travel to a large variety of airports within a short distance. Commercial, general aviation and private airports surround the region and provide many different services to the flying public. Table 2-10 presents a list of public-use airports within 60 nautical miles of the Airport and some of the services and amenities each provides. Table 2-11 provides a list of private airports within 40 nautical miles of the Airport.

Table 2-10
PUBLIC-USE VICINITY AIRPORTS

Airport ID	Airport	City	Runways	Pavement	Instrument Approaches	Services			Based Aircraft	Annual Operations	Nautical Miles from Winter Haven
						Fuel	Airframe and Powerplant	Avionics			
Commercial Service Airports (Within 60 Nautical Miles)											
MLB	Melbourne International	Melbourne, FL	9R/27L - 10,181x150 9L/27R - 6,000x150 5/23 - 3,000x75	Asphalt Asphalt Asphalt	ILS, GPS, VOR	100LL, Jet A	Yes	Yes	235	122,920	58.7
MCO	Orlando International	Orlando, FL	18L/36R - 12,005x200 18R/36L - 12,004x200 17R/35L - 10,000x150 17L/35R - 9,001x150	Asphalt/Concrete Asphalt/Concrete Concrete Concrete	ILS, GPS, VOR	100LL, Jet A	Yes	Yes	34	295,720	32.2
SFB	Orlando Sanford International	Sanford, FL	9L/27R - 11,002x150 9R/27L - 6,647x75 18/36 - 6,002x150 9C/27C - 9,001x150	Asphalt Asphalt Asphalt Asphalt	ILS, GPS, NDB	100LL, Jet A	Yes	Yes	344	215,847	50.8
PIE	St. Pete - Clearwater International	Clearwater, FL	18L/36R - 9,730x150 4/22 - 5,903x150 9/27 - 4,712x150 18R/36L - 4,000x75	Asphalt Asphalt Asphalt Asphalt	ILS, GPS, VOR	100LL, Jet A	Yes	Yes	310	132,536	50.3
TPA	Tampa International	Tampa, FL	1L/19R - 11,002x150 1R/19L - 8,300x150 10/28 - 6,999x150	Concrete Asphalt/Concrete Asphalt Concrete	ILS, GPS, LOC	100LL, Jet A	Yes	Yes	65	213,005	41.6
Public Use General Aviation Airports (Within 60 Nautical Miles)											
SPG	Alfred Whitted	St. Petersburg, FL	7/25 - 3,677x75 18/36 - 2,2864x150	Asphalt Asphalt	GPS VOR	100LL, Jet A	Yes	Yes	141	93,812	49.6
X06	Arcadia	Arcadia, FL	6/24 - 3,700x75 13/31 - 2,780x140	Asphalt Turf	GPS	100LL, Jet A	Yes	No	3	19,370	52.2
X21	Arthur Dunn	Titusville, FL	15/33 - 2,961x70 4/22 - 1,790x100	Asphalt Turf	GPS	100LL, Jet A	Yes	No	73	40,450	59.0

Airport ID	Airport	City	Runways	Pavement	Instrument Approaches	Services			Based Aircraft	Annual Operations	Nautical Miles From Winter Haven
						Fuel	Airframe and Powerplant	Avionic			
Public Use General Aviation Airports (Within 60 Nautical Miles) (continued)											
AVO	Avon Park	Avon Park, FL	5/23 - 5,374x100 10/28 - 3,844x75	Asphalt Asphalt	GPS	100LL, Jet A	Yes	No	37	32,400	30.7
BOW	Bartow	Bartow, FL	5/23 - 5,000x100 9L/27R - 5,000x150 9R/27L - 4,400x150	Asphalt Asphalt Asphalt	GPS, VOR	100LL, Jet A	Yes	Yes	101	27,759	7.3
X61	Bob White Field	Zellwood, FL	9/27 - 3,300x150	Turf	VFR	No	Yes	No	76	20,000	40.9
BKV	Brooksville-Tampa Bay Regional	Brooksville, FL	9/27 - 7,002x150 3/21 - 5,015x150	Concrete Concrete	ILS, GPS	100LL, Jet A	Yes	Yes	148	78,000	44.5
X25	Chalet Suzanne	Lake Wales, FL	18/36 - 2,313x50	Turf	VFR	No	No	No	6	2,472	10.4
CLW	Clearwater Air Park	Clearwater, FL	16/34 - 4,108x75	Asphalt	VFR	100LL, Jet A	Yes	No	85	50,590	53.5
INF	Inverness	Inverness, FL	1/19 - 5,001x75	Asphalt	GPS	100LL, Jet A	No	No	28	15,000	53.5
F57	Jack Brown's Seaplane Base	Winter Haven, FL	1/19 - 3,600x2,200	Water	VFR	100LL, Jet A	Yes	No	6	10,000	0.6
ISM	Kissimmee Gateway	Kissimmee, FL	15/33 - 6.001x100 6/24 - 5,001x150	Asphalt Asphalt	ILS, GPS, VOR	100LL, Jet A	Yes	Yes	147	150,388	21.6
X07	Lake Wales Municipal	Lake Wales, FL	6/24 - 3,999x100 17/35 - 3,800x75	Asphalt Asphalt	GPS	100LL, Jet A	No	No	32	20,000	12.3
LAL	Lakeland Linder Regional	Lakeland, FL	9/27 - 8,499x150 5/23 - 5,005x150	Asphalt Asphalt	ILS, GPS, VOR	100LL, Jet A	Yes	Yes	201	91,105	14.7
LEE	Leesburg International	Leesburg, FL	13/31 - 6,300x100 3/21 - 4,957x100	Asphalt Asphalt	GPS, NDB	100LL, Jet A	Yes	Yes	149	72,262	45.7
COI	Merritt Island	Merritt Island, FL	11/29 - 3,601x75	Asphalt	GPS	100LL, Jet A	Yes	Yes	156	113,500	58.9
X04	Orlando Apopka	Apopka, FL	15/33 - 3,987x60	Asphalt	GPS	100LL, Jet A	Yes	No	127	21,900	39.7

Airport ID	Airport	City	Runways	Pavement	Instrument Approaches	Services			Based Aircraft	Annual Operations	Nautical Miles From Winter Haven
						Fuel	Airframe and Powerplant	Avionics			
Public Use General Aviation Airports (Within 60 Nautical Miles) (continued)											
TPF	Peter O. Knight	Tampa, FL	4/22 - 3,580x100 18/36 - 2,687x75	Asphalt Asphalt	GPS	100LL, Jet A	Yes	No	106	53,800	37.9
X05	Pilot Country	Brooksville, FL	18/36 - 3,700x75	Asphalt	VFR	100LL	Yes	No	27	10,176	42.4
PCM	Plant City	Plant City, FL	10/28 - 3,948x75	Asphalt	GPS, VOR	100LL, Jet A	Yes	No	89	47,975	22.0
2RR	River Ranch	River Ranch, FL	16/34 - 4,950x75	Asphalt	VFR	100LL	No	No	n/a	n/a	33.7
SEF	Sebring Regional	Sebring, FL	1/19 - 5,234x100 14/32 - 4,990x100	Asphalt Asphalt	GPS	100LL, Jet A, Mogas	Yes	No	69	103,087	42.4
X49	South Lakeland	Lakeland, FL	14/32 - 3,115x100	Turf	VFR	No	Yes	No	69	12,000	17.2
TIX	Space Coast Regional	Titusville, FL	18/36 - 7,319x150 9/27 - 5,000x100	Asphalt Asphalt	ILS, GPS	100LL, Jet A	Yes	Yes	133	100,231	57.2
VDF	Tampa Executive	Tampa, FL	5/23 - 5,000x100 18/36 - 3,259x75	Asphalt Asphalt	ILS, GPS	100LL, Jet A	Yes	Yes	138	94,590	31.5
X39	Tampa North	Tampa, FL	14/32 - 3,541x50	Asphalt	VFR	100LL, Jet A	Yes	No	38	11,000	34.2
FA1	Tavares Seaplane Base	Tavares, FL	9/27 - 3,000x200	Water	VFR	100LL, Mogas	No	No	4	7,000	44.3
X23	Umatilla	Umatilla, FL	1/19 - 2,500x60	Asphalt	GPS	100LL	No	No	12	5,000	52.0
CHN	Wauchula Municipal	Wauchula, FL	18/36 - 4,005x75	Asphalt	GPS	100LL	Yes	No	45	8,200	33.6
ZPH	Zephyrhills Municipal	Zephyrhills, FL	5/23 - 4,999x100 1/19 - 4,694x100	Asphalt Asphalt	GPS	100LL, Jet A	Yes	Yes	183	49,425	23.5

Table 2-11
ADJACENT PRIVATE AIRPORTS

Airport ID	Florida City	Private Airport	Distance From Winter Haven in Nautical Miles
FL16	Auburndale	Market World Airport	3.4
FA08	Polk City	Orlampa Inc Airport	6.9
4FL9	Haines City	Gore Airport	7.4
4FD7	Polk City	Flanders Field Airport	9.5
58FD	Dundee	Southerly Airport	11.6
FL43	Lakeland	Burntwood Ranch Airport	15
FD33	Lakeland	Green Swamp Aerodrome	15.8
1FA9	Fort Meade	Villa Char Mar Airport	17.5
79FD	Plant City	Midway Lake Airport	18
52FA	Lake Wales	Bent Willies Airport	18.6
4FL5	Frostproof	Ridge Landing Airport	20.2
62FL	Lake Wales	David Wine's Airstrip	21.2
52FL	Frostproof	Lake Clinch Airpark	21.4
FD83	Kissimmee	Stout Airport	22.8
2FL8	River Ranch	Tiger Lake Airport	23.3
FL78	Brandon	Lewis Airport	24.8
0FL6	Lithia	Stanchester Airport	25.7
FD37	St Cloud	Gentry Airport	26.3
21FL	Clermont	Kings Field Airport	26.9
FL01	Avon Park	Crews Homestead Ranch Airport	27.6
02FA	Groveland	Osborn Airfield	28.6
FA42	Groveland	Sheets Airport	28.6
5FL0	Dade City	Dusty Airpatch Airport	32.5
3FL1	Dade City	Two J's Flying Ranch Airport	33.5
FD53	Dade City	Cub Haven Airport	33.8
23FL	Wimauma	Gyro Town USA Airport	34.5
57FA	St Cloud	Lake X Airport	34.7
FD77	Wimauma	Wimauma Air Park	35.1
06FD	Mascotte	Grass Roots Airpark	35.4
FL57	Apopka	Carter Airport	35.8
51FD	Leesburg	Tex Merritt Private Airstrip	37.3
72FL	St Cloud	Gator Airpark	38
4FL2	Bushnell	Ko-Kee Airport	38.2
6FD5	Yeehaw Junction	Blanket Bay Airport	38.6
31FL	Melbourne	Tedford Ranch Airport	38.9
FL00	Zolfo Springs	Griffins Peace River Ranch Airport	38.9
FL35	Lutz	Geraci Airpark	39.4

2.7 Airport Facilities

A majority of the Airport's facilities are located on the south side of the Airport. However, in 2010, a new FBO executive terminal and associated aircraft parking ramp were built on the north side of the Airport. The south side is now the main area for based aircraft and most of the various companies located on the Airport. This area is accessed from U.S. Highway 92 via 21st Street NW, which winds around the eastern portion of the airfield. The northern areas of the Airport are accessed directly from U.S. Highway 92.

2.7.1 Terminal Building

A new terminal building was built and dedicated in 2008. It is located on the northeast portion of the Airport and has direct access to U.S. Highway 92. The terminal building contains the Airport administration offices, the Fixed Base Operator (FBO), a flight school, and several concessionaires including a car rental agency and a casual sit-down restaurant. The terminal has approximately 12,200 square feet and 77 paved vehicle parking spaces.

Figure 2-9
TERMINAL BUILDING

2.7.2 Hangars and Other Buildings

Hangars are generally divided between T-hangars and conventional hangars. T-hangars typically house a single small aircraft. Several of these are often nested together in such a way that the footprint of an individual hangar looks like a "T", while the combined footprint is long and linear. Conventional or "box" hangars can be built in a number of sizes and can house one or more aircraft depending on the size of the structure.

2.7.2.1 T-Hangars

The Airport currently has 13 buildings of T-hangars. All but one building contains 10 T-hangars each. The remaining building houses 8 T-hangars for a total of 128 T-hangars. The 10-unit

T-hangars appear to be in good condition as shown in Figure 2-10, except that they could each use painting. The 8-unit T-hangar, shown in Figure 2-11, is in poor condition.

Figure 2-10
TYPICAL 10-UNIT T-HANGAR BUILDING

Figure 2-11
8-UNIT T-HANGAR BUILDING

2.7.2.2 Conventional Hangars

There are 25 conventional hangars of various sizes and shapes on the Airport. All but two are located south of the airfield. Of the 23 that are located in the south airfield, one is the former FBO hangar/terminal for the Airport. Today, it houses a couple of aviation-related businesses. This hangar measures approximately 14,000 square feet and a cursory inspection indicated that it may be in need of repair. There are approximately 35 paved vehicle parking spaces located adjacent to the terminal.

Figure 2-12
FORMER FBO HANGAR/AIRPORT TERMINAL

Eight of the conventional hangars are associated with a “fly-in community” known as Eagle’s Landing. These eight hangars were formerly owned by the homeowners that owned the homes immediately adjacent to each hangar. However, the Airport has purchased the hangars and the associated homeowners pay a fee to the Airport to access these eight hangars.

Figure 2-13
EAGLE'S LANDING HANGARS

Located between the former terminal and the Eagle’s Landing hangars are six conventional hangars of varying sizes. There are also nine conventional hangars that are located to the east and west of the 10-unit T-hangar buildings. Several of these are shown in Figure 2-14, Figure 2-15, and Figure 2-16.

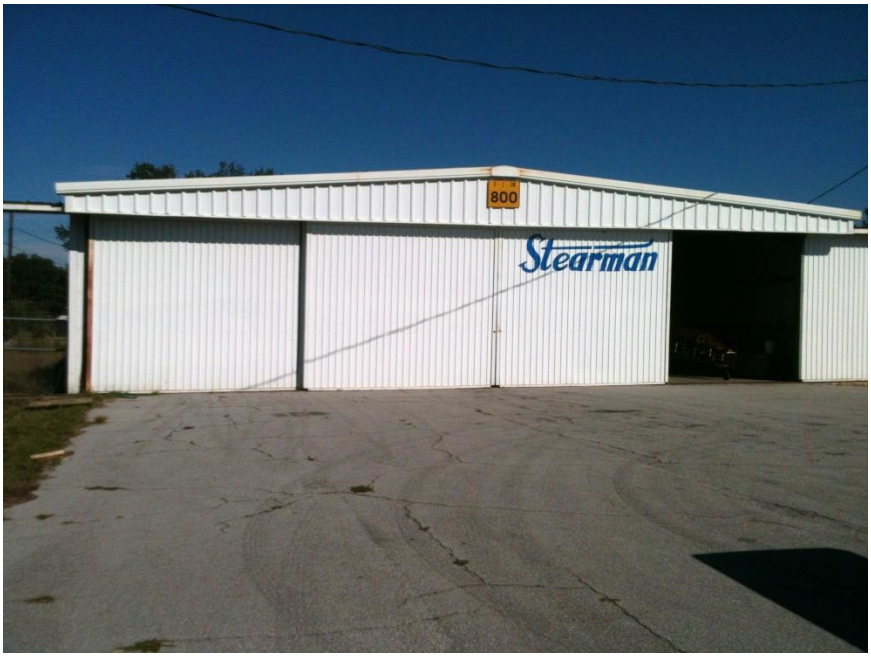
Figure 2-14
CONVENTIONAL HANGARS

Figure 2-15
TYPICAL CONVENTIONAL HANGAR

Figure 2-16
TYPICAL CONVENTIONAL HANGARS

There are two conventional hangars located on the north side of the airfield; one on the east side and one on the west side. The hangar located in the northeast area of the Airport is approximately 5,000 square feet in size and is shown in Figure 2-17.

Figure 2-17
NORTHEAST CONVENTIONAL HANGAR



The hangar located in the northwest area of the Airport was built in 1978, has approximately 11,200 square feet, is used largely for storage, and is shown in Figure 2-18.

Figure 2-18
NORTHWEST CONVENTIONAL HANGAR

2.7.2.3 General Buildings

There are four general use buildings on the Airport. These are buildings that are used for a variety of purposes. Three are located on the south side of the Airport. They include buildings that house the Civil Air Patrol, the City of Winter Haven's Document Storage facility, and the Experimental Aircraft Association facilities, as shown in Figure 2-19, Figure 2-20, and Figure 2-21.

Figure 2-19
CIVIL AIR PATROL BUILDING

Figure 2-20
CITY OF WINTER HAVEN DOCUMENT STORAGE BUILDING

Figure 2-21
EXPERIMENTAL AIRCRAFT ASSOCIATION BUILDING

The fourth general use building is located adjacent to the conventional hangar located in the northeast section of the Airport. This building is used for storage and to house the fuel truck when it is not in use. This building is shown in Figure 2-22.

Figure 2-22
GENERAL STORAGE BUILDING

2.7.2.4 Buildings Scheduled for Demolition

Three buildings have been purchased that are scheduled for demolition along with small associated sheds. These buildings are a former residence and a former church with an associated temporary educational structure. These buildings were purchased for the land they sit upon and are scheduled to be razed to make way for an intersection that would allow a new entrance road to the new terminal. The intersection would align with an existing traffic light located at U.S. Highway 92 and Lynchburg Road. These structures are shown in Figure 2-23 and Figure 2-24.

Figure 2-23
RESIDENCE TO BE DEMOLISHED

Figure 2-24
CHURCH AND SCHOOL TO BE DEMOLISHED

2.7.3 Aircraft Parking Areas

There are currently two aircraft parking areas that are not directly associated with the hangars. One is located in the south of the Airport near the former FBO building/terminal area and one that is located in the north of the Airport adjacent to the new Airport terminal.

The south aircraft parking area is used for tie-down facilities for based aircraft. It has approximately 39,350 square yards of pavement and 62 marked tie-downs. According to the

FDOT Airfield Pavement Management Report of May 2011, the pavement in this area was in fair condition with a Pavement Condition Index of 63.

The north aircraft parking area is used for transient aircraft parking and has approximately 4,615 square yards of parking area and 18 marked tie-downs. According to the FDOT Airfield Pavement Management Report of May 2011, the pavement in this area was good with a Pavement Condition Index of 100.

2.7.4 Jack Brown's Seaplane Base

Jack Brown's Seaplane Base is located on the shore of Lake Jessie and has operated at the Airport since 1963. It is a privately-owned, public-use seaplane base that offers single engine and multi-engine flight training, ground school, and testing for pilots interested in receiving FAA seaplane ratings, as well as fuel services, aircraft storage, and aircraft maintenance. It leases apron space from the Airport with access to the Airport airfield. Currently, the seaplane base has six based aircraft and approximately 9,855 seaplane operations per year.

Figure 2-25
JACK BROWN'S SEAPLANE BASE

2.7.5 Police Training Facility

Located in the southernmost area of the Airport along the shores of Lake Idylwild is located the Stotz-Patterson Winter Haven Police Department Training Center. This Center has an office, a classroom facility, obstacle courses for personnel and canines, as well as a training tower and other facilities. The classroom structure, which has approximately 4, 500 square feet, is shown in Figure 2-26.

Figure 2-26
POLICE TRAINING CLASSROOM

The police training facility office has about 1,044 square feet and is shown in Figure 2-27.

Figure 2-27
POLICE TRAINING OFFICE

There is a temporary structure on the property that is used for storage. This building has approximately 770 square feet and is shown in Figure 2-28.

Figure 2-28
POLICE TRAINING TEMPORARY BUILDING

2.7.6 Aviation Fuel Storage

The Airport's fuel facilities are located in the south of the Airport slightly northeast of the former Airport terminal. The Airport provides 100 Low-Lead (LL), Jet A fuel and Mogas. The fuel farm consists of two 10,000 gallon above-ground storage tanks, one containing Jet A and the other containing 100 Low-Lead (LL) fuel. Fuel is accessible 24 hours a day, seven days a week through a self-serve unit and is provided remotely via two fuel trucks. This fuel facility is in poor condition and is scheduled to be replaced.

Jack Brown's Seaplane Base also has a public-use 2,500 gallon above-ground storage tank containing Avgas located north of their main hangar facility.

Figure 2-29
AVIATION FUEL STORAGE

2.7.7 Airfield Security Fencing

The Airport is surrounded by a six-foot high security fence topped with three strands of barbed wire. Approximately 14 gates exist within this fencing. Access is monitored by the FBO and through a punch code at four of the gates. The remainder is protected under lock and key. Currently, many of the gates are inoperable for long periods of time and remain open.

2.7.8 Aircraft Rescue and Firefighting

The City of Winter Haven Fire Department provides fire services for the Airport, responding to aircraft emergencies, fuel spills, fuel fires, and structural fires. Station No. 1 is located at 301 Avenue G, SW, less than one mile from the Airport. Station No. 2 is located at 4700 Lucerne Park Road and is located a little over five miles from the Airport.

In the event of an incident, emergency vehicles access the airfield via one of the gates in the fence. Station No. 1 is the first designated response unit, while Station No. 2 stands by at a designated location on the Airport. Through mutual aid agreements, the Lake Alfred and Auburndale Fire Departments are also available; however, they are not on the first alarm assignment. Emergency response time is two to three minutes and the non-emergency response time is approximately eight minutes.

2.8 Airport Infrastructure

The information in this section was determined from past planning studies and the utility providers. It should be noted that prior to any development at the Airport, detailed utility surveys or drawings should be obtained.

2.8.1 Electric Power

Electrical service is provided to the Airport by Tampa Electric Company (TECO), and is routed along both U.S. Highway 92 and 21st Street. Electric meters are installed at each individual hangar.

2.8.2 Water

The City of Winter Haven provides water services to the Airport. There is a 10-inch water main that runs along the south side of U.S. Highway 92 that serves the northeast terminal area. There is also a 10-inch water main located on the west and north side of 21st Street, which serves the south ramp area of the Airport with 6-inch and 8-inch mains off of the 10-inch main.

2.8.3 Wastewater

On-Airport sewer is handled through the use of individual septic tanks.

2.9 Area Demographics

Aviation activity levels have traditionally been linked to several key socioeconomic indicators. The connection is related to the relatively high cost of operating an aircraft and, in some cases, the percent of population using these services remains constant. This section presents data on population, employment, and personal income per capita for the United States, the Southeastern U.S., Florida, and Polk County areas.

2.9.1 Population

The population of Polk County experienced an average annual growth rate of 2.4 percent in the period between 1969 and 2011. This rate of growth was only slightly less than that experienced by Florida, which far exceeded the Southeast U.S. and the United States as a whole. For the next 28 years, Polk County is not expected to maintain that same rate of growth. It is forecast to have a 1.1 percent average annual rate of growth, which is the same as the Southeastern U.S. and only slightly less than the 1.3 percent average annual growth anticipated for Florida.

Figure 2-30
HISTORICAL AND PROJECTED
COMPOUNDED ANNUAL GROWTH RATE FOR POPULATION

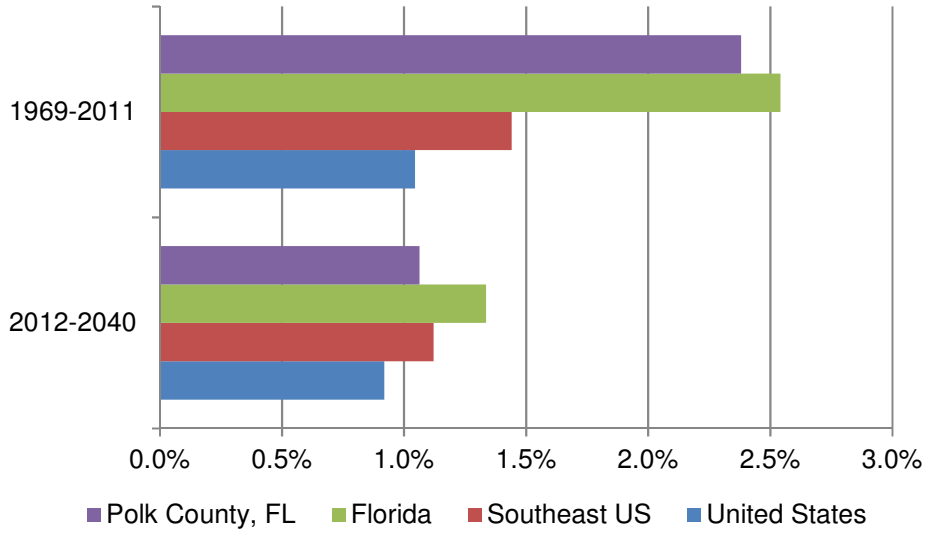


Table 2-12
HISTORICAL AND PROJECTED POPULATION DATA

	United States	Southeast US	Florida	Polk County, FL
2012-2040	0.9%	1.1%	1.3%	1.1%
1969-2011	1.0%	1.4%	2.5%	2.4%

Source: Wood and Poole Economics

2.9.2 Employment

The average annual growth rate for employment in Polk County between 1969 and 2011 was 2.4 percent, which was less than that for Florida which experienced 3.0 percent, but higher than those for the Southeast U.S. and the United States, which experienced 1.9 percent and 1.6 percent average annual growth, respectively.

During the next 28 years, it is forecast that the average annual growth rate for employment in Polk County will mirror that of the United States at 1.3 percent. The Southeast U.S. and Florida are anticipated to outpace Polk County with average annual growth rates for employment of 1.5 and 1.6 percent, respectively.

Figure 2-31
HISTORICAL AND PROJECTED
COMPOUNDED ANNUAL GROWTH RATE FOR EMPLOYMENT

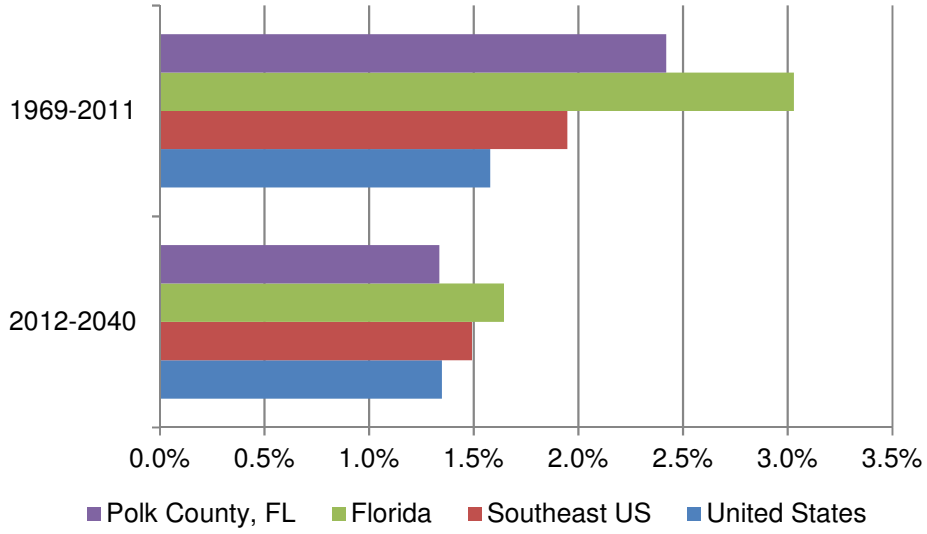


Table 2-13
HISTORICAL AND PROJECTED EMPLOYMENT DATA

	United States	Southeast US	Florida	Polk County, FL
2012-2040	1.3%	1.5%	1.6%	1.3%
1969-2011	1.6%	1.9%	3.0%	2.4%

Source; Woods and Poole Economics

2.9.3 Personal Income Per Capita

At 5.7 percent, the Personal Income Per Capita average annual growth in Polk County was slightly less than those for Florida, the Southeast U.S., and the United States. Both the United States and Florida averaged 5.8 percent annual growth and the Southeast U.S. averaged 6.1 percent annual growth between 1969 and 2011.

For the next 28, it is anticipated that Polk County will experience an average annual growth rate of 4.7 percent for Personal Income Per Capita while Florida, the Southeast U.S., and the United States are each expected to experience 4.8 percent average annual rate of growth.

Figure 2-32
HISTORICAL AND PROJECTED
COMPOUNDED ANNUAL GROWTH RATE FOR PERSONAL INCOME PER CAPITA

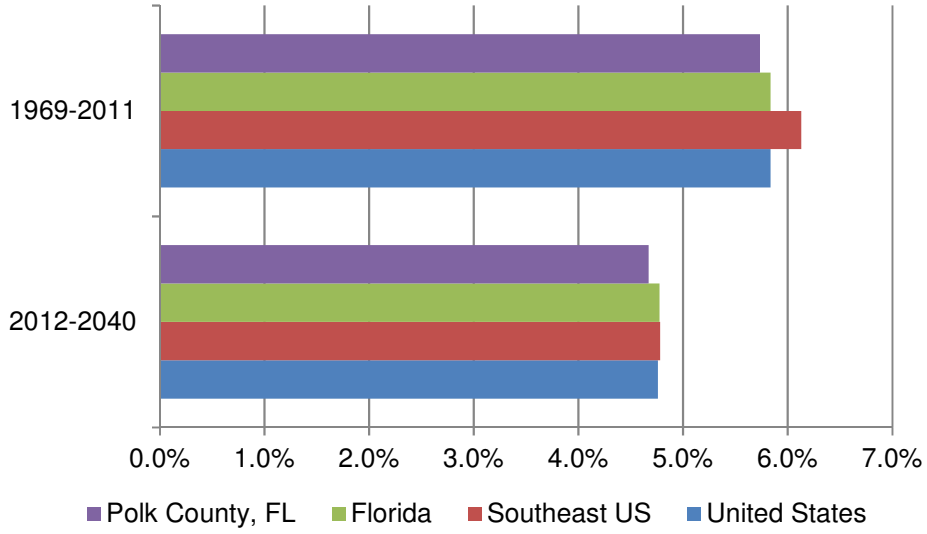


Table 2-14
HISTORICAL AND PROJECTED PERSONAL INCOME PER CAPITA

	United States	Southeast US	Florida	Polk County, FL
2012-2040	4.8%	4.8%	4.8%	4.7%
1969-2011	5.8%	6.1%	5.8%	5.7%

Source: Woods and Poole Economics

2.10 Land Uses/Community Characteristics

The information regarding the land use surrounding the Airport is important as it is necessary to ensure that the Airport is compatible with its surrounding community. It is equally essential that the surrounding community does not encroach upon the operations of the Airport. This section will explore the land use planning surrounding the Airport.

2.10.1 Florida Statutes Chapter 333

Local government regulation of land uses in areas surrounding airports is generally the primary method of protecting airports from incompatible development. Florida Statutes Chapter 333 requires local governments to exercise their land use planning and regulation authority to protect airports from incompatible development and loss of navigable airspace. Protecting the surrounding land and airspace of an airport is important so that future developments will not hinder current and future airport activities. All local governments with an airport hazard area within its territorial limits are required to adopt, administer, and enforce airport zoning. An airport hazard as defined by Chapter 333 is any obstruction to air navigation which affects the

safe and efficient use of navigable airspace or the operation of planned or existing air navigation and communication facilities.

Development within a 10-nautical mile radius from the Airport Reference Point (ARP) may also require an FDOT Airspace Obstruction Permit. A permit is required if the development is taking place in an area that does not have airport zoning and if the height of the development exceeds federal obstruction standards contained in 14 C.F.R. Part 77.

2.10.1.1 Landfill Restrictions

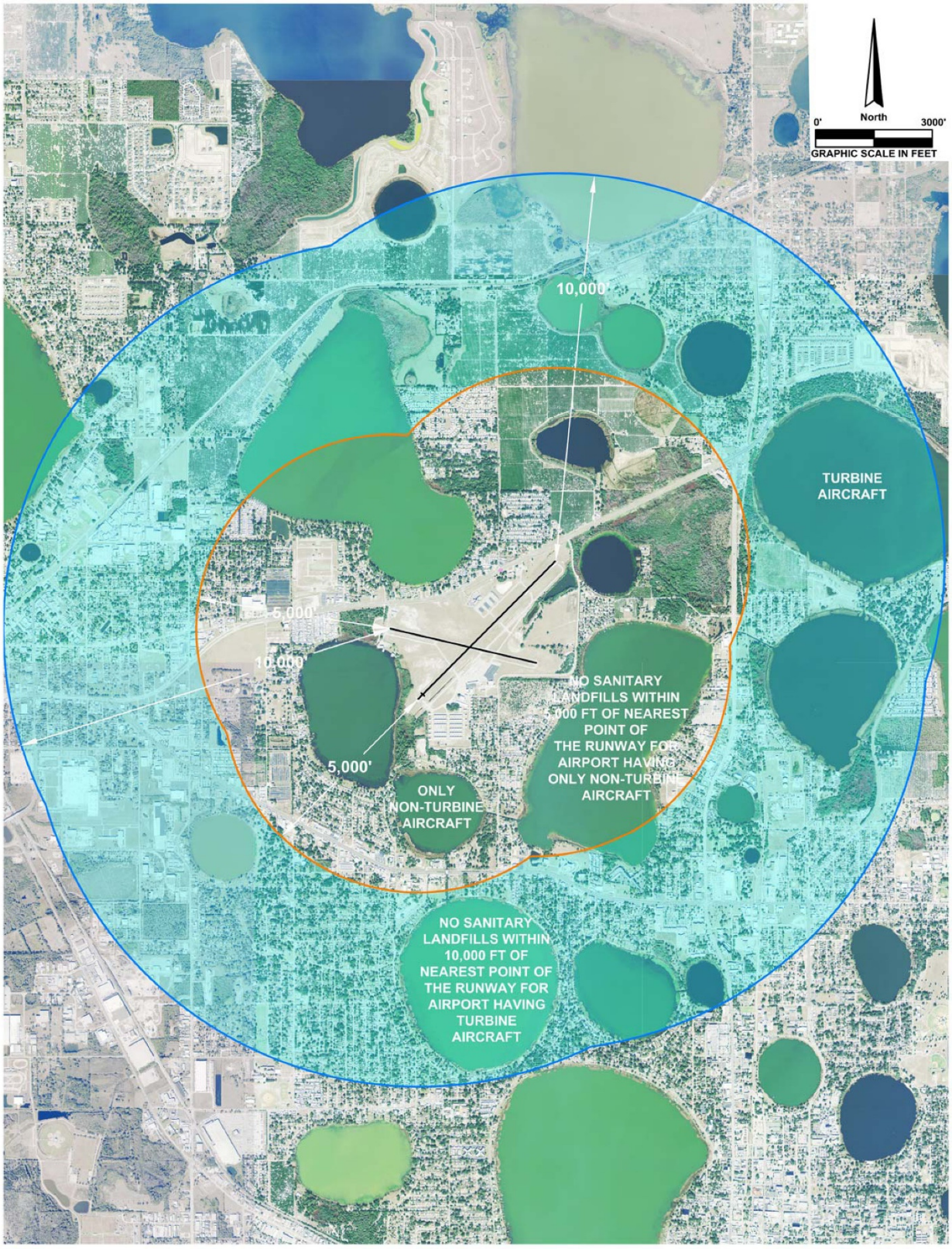
Chapter 333 also requires communities to adopt, administer and enforce airport zoning regulations that regulate the location of sanitary landfills with respect to airports. Landfills tend to attract birds and bird strikes pose a serious risk to the aircraft and the individuals on the aircraft. Sanitary landfills should be:

- 10,000 feet from the nearest point on the runways used by turbine aircraft
- 5,000 feet from the nearest point on runways used by only non-turbine aircraft
- Located outside of the lateral limits of an airport's 14 C.F.R. Part 77.19 surfaces

Where such landfills exist and there are hazardous bird movements associated with the landfill, the landfill operator must begin bird management techniques or other practices to minimize bird hazards to airborne aircraft.

Figure 2-33 shows the areas around the Winter Haven Municipal Airport – Gilbert Field that would be restricted from having a landfill. No known landfills currently exist within these limits.

Figure 2-33
LANDFILL RESTRICTED AREAS



2.10.1.2 Residential and Educational Restrictions

If an airport authority has conducted a noise study in compliance with 14 C.F.R. Part 150, or if noise contours have been established for an airport through another study approved by the FAA, then the specific recommendations that are a result of either or both of these studies will be used as restrictions.

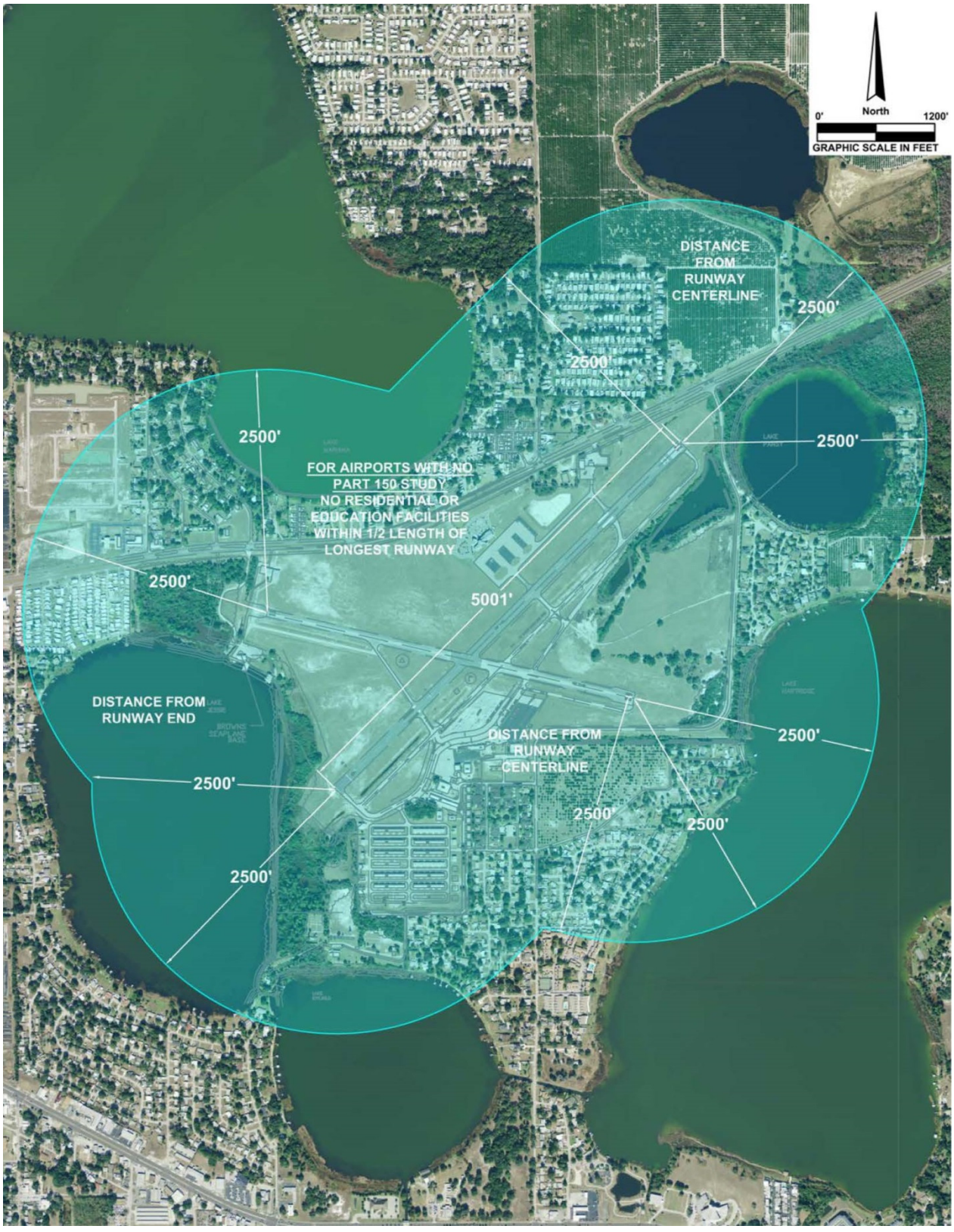
If such studies have not been conducted, then residential and educational development with the exception of aviation school facilities are prohibited within an oval area centered on each runway end. The width of the oval should be equal to one-half the of the longest runway at an airport and is centered on the centerline of the runway. The oval extends out from each runway end a distance of one half the length of the longest runway. Figure 2-34 shows the extent of the residential and educational restrictions with respect to the Airport if it did not have an approved noise study. In late 2018, the FAA approved a noise study for the Winter Haven Regional Airport. This noise study can be found as Appendix N to this report.

It can be seen that there are several areas of residential development in the highlighted areas. However, Chapter 333 specifically does not require the "removal, alteration, sound conditioning, or other change, or to interfere with the continued use or adjacent expansion of any educational facility or site in existence on July 1, 1993."

2.10.1.3 Changes to Chapter 333

Changes to Chapter 333, which went into effect on July 1, 2016, specify that those jurisdictions with airport protection zoning regulations and airport land use compatibility zoning regulations, as well as amendments must provide a copy of these regulations to the FDOT Office of Aviation by July 31, 2016. If any of the regulations do not conform with the 2016 changes to Chapter 333, amendments must be made to the regulations by July 1, 2017. If the jurisdiction has an airport within its limits, and does not have such regulations, they must adopt such regulations by July 1, 2017. Until such regulations are adopted, the FDOT will administer the permitting process as outlined in Chapter 333.025, *Permit Required for Obstructions.*

Figure 2-34
RESIDENTIAL AND EDUCATIONAL RESTRICTED AREAS



2.10.2 Local Government Comprehensive Plans

Florida Statute Chapter 163, *Intergovernmental Programs*, generally known as the Growth Management Act, requires all counties and cities to adopt a Local Government Comprehensive Plan. These are intended to guide the future growth and development of the respective governments.

Development projects within an FAA-approved master plan for licensed, publicly-operated airports are exempt from oversight by the local community with respect to the Local Government Comprehensive Plan. However, there should be coordination between an airport, the local government, and, where applicable, the Metropolitan Planning Organization (MPO), or in this case the Polk County Transportation Planning Organization (TPO).

The Polk County TPO is the lead transportation planning agency for Polk County, Florida. It develops transportation plans and programs for Polk County as mandated by federal and state legislation, which are designed to meet the community's short- and long-term travel needs. Transportation projects, e.g., road widening projects or bus service expansions, are planned and programmed (federal and state funding) by the TPO in cooperation with the FDOT, transportation operators, and local governments.

2.10.3 Polk County and Winter Haven Airport Zoning

The Polk County Joint Airport Zoning Board is a member of the Polk County TPO. The Polk County Joint Airport Zoning Board of Polk County, Florida adopted *The Polk County Airport Zoning Regulations* on January 7, 2002. Winter Haven became a part of the Polk County Joint Airport Zoning Board through its Resolution 78-36 on July 19, 1978 and as such is a party to these Zoning Regulations. The Regulations regulate the uses of land located around the Polk County airports relative to the:

- Height of structure and objects of natural growth on such land
- Uses of land in areas subject to airport noise
- Uses of land in areas subject to overflight potential
- Establishment of educational facilities of public and private schools on such land
- Uses of land which result in the generation of in-flight visual or electronic interference
- Uses of land which result in airport bird strike hazard

The Polk County Zoning Regulations establish three airport zones of influence:

- The Airport Height Notification Zone
- The Airport Overflight Zone
- The Airport Noise Zone

2.10.3.1 Airport Height Notification Zone

The Airport Height Notification Zone is subdivided into two subzones. For Winter Haven Municipal Airport – Gilbert Field, Subzone 1 includes the area which lies within 20,000 feet of its runways. Subzone 2 includes the area which lies within the territorial limits over which the local

governments represented on the Polk County Joint Airport Zoning Board have jurisdiction, excluding the area which lies within the Airport Height Notification Subzone 1.

Any development proposed to occur for land located within the Airport Height Notification Zone must be reviewed for conformance with Federal Aviation Regulation Title 14, *Aeronautics and Space*, Part 77, *Objects Affecting Navigable Airspace* (Part 77). This review would identify structures or growing objects having a height exceeding:

- An imaginary surface extending outward and upward from the ends and sides of a runway at a slope of one foot vertically for every 100 feet horizontally, for a distance of 20,000 feet in Airport Height Notification Subzone 1
- 200 feet above ground level in Airport Height Notification Subzone 2

2.10.3.2 Airport Overflight Zone

An Airport Overflight Zone as defined by the Polk County Airport Zoning Regulations "regulates the uses of land lying in specified areas above which aircraft must routinely operate at low altitudes and climb from or descend to the runways of Polk County's public-use airports along said paths." In the case of Winter Haven Municipal Airport – Gilbert Field, the Airport Overflight Zone is made up of the area over which aircraft routinely operate at altitudes of 50 feet above the runway end elevation and is defined as the "Primary Surface," as defined by 14 CFR Part 77.25(a), and that portion of the Approach Surface, as defined by 14 CFR Part 77(d), which extends outward from, and perpendicular to, its common boundary with the Primary Surface, as defined in 14 CFR Part 77.25(a), for a horizontal distance of:

- 1,000 feet for Runways 23 and 29, as they are utility/visual runways
- 1,700 feet for Runways 5 and 11, as they are non-precision instrument runways

2.10.3.3 Airport Noise Zone

An Airport Noise Zone has been established around each public-owned, public-use airport in Polk County in order to regulate land uses that are sensitive to the sound levels that are routinely generated by airport activities. The Airport Noise Zone is subdivided into three subzones:

- Subzone A, which is an area beginning at the Airport Reference Point and extending out to the approximate line shown by calculating the 75 DNL Noise Contour.
- Subzone B, which is an area beginning at the Airport Reference Point and extending out to the approximate line shown by calculating the 70 DNL Noise Contour and excluding Subzone A.
- Subzone C, which is the area commencing at the Airport Reference Point and extending out to the approximate line shown by calculating the 65 DNL and excluding the Subzones A and B.

The boundary for each Airport Noise Zone around a specific airport is established based on the airport's approved airport master plan or airport layout plan, or both. The current Airport Noise Zone established for Winter Haven Municipal Airport – Gilbert Field is based on the Projected

2004 Noise Contours established as part of the 1986 Winter Haven Municipal Airport Master Plan.

2.11 Inventory of Existing Conditions Summary

This inventory discussion has focused on the existing conditions and facilities located at and around the Winter Haven Municipal Airport – Gilbert Field. As noted, many of the Airport's facilities are in good condition, whereas others are in need of some repair, rehabilitation, or replacement. The information in this chapter will serve as the basis of comparison for the Facility Requirements Analysis.

3. ENVIRONMENTAL CONSIDERATIONS

As a federal agency, the FAA must consider the potential environmental impacts of any project for which they provide funding either in part or in whole. The provision of funds is considered a Federal action. Therefore, as part of this Master Plan Update, consideration is given during the evaluation of alternatives to determine if there are currently any environmental concerns on or in the vicinity of the Airport that either might be affected by or impact any of the alternatives that may be developed. This section is not intended to be an environmental assessment. Where such is required, a Categorical Exclusion, an Environmental Assessment, or an Environmental Impact Statement would be developed immediately prior to the commencement of the design of an individual or related projects, when much more project-specific information would be available.

The FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Projects, Section 706e, Affected Environment*, states that "this section succinctly describes only those environmental resources the proposed action and its reasonable alternatives, if any, are likely to affect."

The following environmental resources and conditions within the Affected Environment that have a potential to be impacted by Airport development that may be proposed within this Master Plan Update are discussed in the following sections:

- Noise
- Compatible Land Use
- Air Quality
- Construction Impacts
- Threatened and Endangered Species (Federal and State of Florida)
- Coastal Resources (Coastal Zones and Coastal Barriers)
- Department of Transportation: Section 4(f)
- Farmlands
- Flood Plains
- Hazardous Materials, Pollution Prevention, and Solid Waste
- Historic, Architectural, Archaeological, and Cultural Resources
- Light Emissions and Visual Effects
- Natural Resources and Energy Supply
- Secondary (Induced) Impacts
- Socioeconomic Impacts
- Water Quality
- Wetlands
- Wild and Scenic Rivers

3.1 Noise

In 2014, the impacts from aircraft are considered to be *de minimus*, which can be considered for the most part a risk too small to be concerned about. The current aircraft mix for the Airport

does not show a conflict between aircraft noise and current or future residential development. The location of the Airport and the current land use does not suggest a conflict with land use and future development of the Airport.

This Master Plan Update recommends appropriate buffering of Airport-related development and non-compatible land uses. The Winter Haven Municipal Airport – Gilbert Field should support and encourage development of aviation-related development on Airport property; master planning of all development; and coordination with City, County, and State of Florida agencies is a priority in order to promote economic growth and aviation-related development. Based on the above information, there will be no impacts to noise abatement requirements identified in this Master Plan Update.

3.2 Compatible Land Use

The Winter Haven Municipal Airport – Gilbert Field compatible land use is, for the most part, consistent with State of Florida and Polk County land use plans. The Airport is located in an area that does reflect land use conflicts. Proposed future development of hangars, aprons, and other aviation-related development should be planned for consistency with future growth, land use, and development aviation linkages for current and future development.

The Airport does, and should continue to, take advantage of local comprehensive planning, State of Florida economic planning and development funding, and preservation of future important aviation corridors for transportation including surface and aviation-related development.

3.3 Air Quality

Air quality has been historically monitored at the Winter Haven Municipal Airport – Gilbert Field using the FAA Order 1050.1 E, which provides guidelines for determining whether air quality analysis is required for proposed development. These Federal guidelines also require that any State regulations, such as indirect sources requirements (ISR), be addressed when determining the need to assess air quality. The State of Florida does not have any requirements for an indirect source review. The projected activities for the Winter Haven Municipal Airport Master Plan show that the annual operations will not require an Air Quality Analysis to be conducted. Annual operations were 60,000 in 2013 and are forecasted to reach 94,099 by the year 2033, according to the 2015 FAA Terminal Area Forecast for the Airport.

3.4 Construction Impacts

Current aviation and land surface transportation construction impacts are not considered significant based on current or planned future development. All current and future development impacts at the Airport are, and will be, in compliance with State of Florida, Polk County, and City of Winter Haven development guidelines, regulations, and permitting.

There are environmentally sensitive areas on the Airport including Federal and State of Florida Wetlands, protected Federal and State of Florida Threatened and Endangered Species. Based on the information in this chapter, there will be no significant impacts caused by construction

resulting from this Master Plan Update. All construction impacts will consider these factors and any necessary permits will be acquired.

3.5 Threatened and Endangered Species

A wildlife inventory was conducted for the Airport for the primary purpose of documenting Federal U.S. Fish and Wildlife Service and State of Florida Wildlife Conservation Commission Resources onsite and in the immediate area. A Threatened and Endangered Species Inventory is included in this report as **Appendix C.** The Florida Natural Areas Inventory is also included in the Threatened and Endangered Species report for independent evaluation. Federally protected species of flora and fauna were not identified on or near the Airport site based on onsite investigation. State of Florida protected species were identified and gopher tortoises (*Gopherus polyphemus*) exist on site with a population of approximately two to six burrows per acre of upland shrub habitat. Other wildlife commensals could exist onsite but none were observed. It is likely that protected species of birds exist on the Airport in a non-nesting capacity especially as it applies to open maintained grassed fields. These species could include: Sand Hill Cranes, Wood Storks, White Ibis, and others. No rookeries were observed. Isolated wetlands, which are likely a result of earth-moving work, are located on the Airport.

According to the Soil Conservation Service Map for the Airport, there are hydric soils located within the Master Plan development area including:

- Pomona fine sand
- Sparr sand (0 to 5 percent slopes)
- Tavares fine sand (0 to 5 percent slopes)
- Smyrna and Myakka fine sands
- Immokalee sand
- Pomello fine sand
- Placid and Myakka fine sands (depressional)
- Adamsville fine sand (0 to 2 percent slopes)
- Adamsville-Urban land complex
- Myakka- Immokalee-Urban land complex
- Pomello-Urban land complex,
- Sparr-Urban land complex (0 to 5 percent slopes)
- Tavares-Urban land complex

3.6 Coastal Resources (Coastal Zones and Coastal Barriers)

Florida's Coastal Zone Management Program is administered by the Florida Department of Environmental Protection (FDEP). Authorization under Section 380.23 of Florida Statutes states that only those Federal activities which significantly affect Florida's Coastal Zone will be evaluated for consistency with the Florida Coastal Management Programs. The Winter Haven Municipal Airport Master Plan proposes no impacts to Florida Coastal Zone areas.

3.7 Department of Transportation Act: Section 4(f)

This Master Plan Update will likely propose no significant impacts to City of Winter Haven, Polk County or State of Florida recreation facilities, nor City, County or State of Florida parks.

3.8 Farmlands

There are no prime or unique farmlands on the Airport or in the immediate vicinity. Some areas adjacent and near the Airport were historically unimproved pastures but none were considered prime or unique farmland. The U.S. Department of Agriculture Natural Resource Conservation has confirmed this observation on previous FAA funded projects.

3.9 Flood Plains

Review of the Federal Emergency Management Agency (FEMA) Flood Plain Insurance Rate Maps (FIRM) show that the Airport Master Plan will not likely encroach upon any 100-year or 500-year flood plains, as shown in **Appendix D.**

FEMA Flood Zone

Target Property County: Polk, FL	FEMA Flood Electronic Data YES – Refer to the Overview Map and Detail Map
Flood Plain Panel at Target Property:	1202710005B – FEMA Q3 Flood data
Additional Panels in Search Area:	1202610350B – FEMA Q3 Flood data 1202610375D – FEMA Q3 Flood data 1202610345B – FEMA Q3 Flood data

3.10 Hazardous Materials, Pollution Prevention, and Solid Waste

There does appear to be documentation of existing recognizable conditions at the Airport or adjacent and nearby areas as shown in the December 2014 Environmental Site Assessment (**Appendix E).** This Assessment also includes the American Society for Testing and Materials (ASTM) Assessment and ASTM E1527-05 Database Review.

3.11 Historical Architectural, Archaeological, and Cultural Resources

Two Registered Professional Archaeologists evaluated the Winter Haven Municipal Airport – Gilbert Field Master Plan development area. An archaeological and cultural survey was conducted in December 2014 in association with an FAA 5050.4 Environmental Assessment.

The Florida State Historic Preservation Officer (SHPO) and the Division of Historical Resources has not recorded significant historic and/or archaeological sites on the Airport property. Based on this information, if additional archaeological/cultural materials, historical resources, or human remains are recovered during construction or any other activity on the Airport, a registered professional archaeologist should be contacted to provide guidance if systematic excavation is required. The State of Florida Division of Historical Resources should be notified regarding any modification of findings presented in this report. It is the opinion of the surveying archaeologists

that development of the Airport would not constitute an adverse impact to cultural resources eligible for listing on the *National Register of Historic Places*.

3.12 Light Emissions and Visual Effects

An evaluation for light emissions and visual effects has identified no current or proposed impacts or significant issues.

3.13 Natural Resources and Energy Supply

It is not anticipated that any Airport development alternatives will have significant adverse impact on natural resources and energy supply. There are currently no significant impacts on people or businesses because of uses of natural resources or the energy supply.

3.14 Secondary (Induced) Impacts

No significant secondary impacts are anticipated with the existing and/or proposed Airport development that may be recommended in this Airport Master Plan Update.

3.15 Socioeconomic Impacts

The property surrounding the Winter Haven Municipal Airport – Gilbert Field did not undergo significant development before the early 1950's, when the area to the north and northeast of the Airport, between Highway 92 and Lake Mariana, began to develop as is shown in the historical aerials of the site found in **Appendix F**. The residential communities to the east and south of the Airport remained buffered by orange groves until the 1990's. However, in the early 1990's, residential units were being constructed adjacent to the Airport to the southeast with the idea of having adjacent hangars for the use of the homeowners. The Airport has since purchased these hangars, although many of the homeowners have retained access to the hangars. All of the residential communities adjacent to the Airport are well established and approach build-out. These established residential developments may impact aviation growth in these areas.

3.16 Water Quality

Stormwater design is determined, to a large extent, by the soil at the site and the depth of the groundwater level below the surface. Soils at the site have been evaluated and details are included in the Wetlands Analysis found in **Appendix G**. The aviation footprint for runways, taxiways, aprons, and hangars are all in uplands with a drainage system of swales and surface drainage.

All proposed Airport development will incorporate stormwater drainage management. Water quality improvements will be designed in accordance with the applicable water quality guidelines set forth by local, State of Florida, and Federal agencies. Appropriate permits will be obtained prior to commencing construction. Temporary construction impacts will be avoided and minimized through the use of Environmental Best Management Practices.

3.17 Wetlands

The Winter Haven Municipal Airport – Gilbert Field has identified isolated wetlands. The onsite wetlands are not connected to major wetlands and should be considered significant for Master

Plan development. A Southwest Florida Water Management District and the U.S. Army Corps of Engineers review may be required prior to development impacting wetlands.

3.18 Wild and Scenic Rivers

The U.S. Department of the Interior maintains a national inventory of river segments that qualify for inclusion in the National Wild and Scenic River Systems. There are no national wild and scenic rivers on or near the Winter Haven Municipal Airport – Gilbert Field.

3.19 Wildlife Hazard Management Issues

Rules governing the certification and operation of commercial service airports are identified in 14 CFR Part 139. Section 139.337 discusses the need to manage wildlife hazards on or near airports when aircraft collide with wildlife. This is most often birds. As Winter Haven Municipal Airport – Gilbert Field is not a commercial service airport and as it does not have a record of either bird or other wildlife strikes; it is currently not required to have a Wildlife Hazard Management Plan. A Wildlife Hazard Management Plan would address the responsibilities, policies, and procedures necessary to reduce wildlife hazards at the Airport.

3.20 Environmental Considerations Summary

Specific environmental resources and conditions within the Affected Environment of the Winter Haven Municipal Airport – Gilbert Field that have a potential to be impacted by Airport development are discussed in this chapter. Based on the information gathered, no impacts to specific environmental requirements were identified. The information gathered will be used in evaluating alternatives to ensure that future development, together with Best Management Practices, avoid as much as possible any future impact to the environment.

4. AVIATION ACTIVITY FORECASTS

4.1 Overview

The forecasts of aviation activity form the basis and justification for all planning and development on an airport. These forecasts are the basis for determining how many and what type of facilities will be needed within designated periods. The forecasts are typically divided into three periods. The first is the short-term period and usually occurs within the first five years of the forecasts (2013-2018). The second is the medium-term period and usually takes place within the second five years of the forecasts (2019-2023). The third, or long-term, period usually takes place within the last ten years of the forecasts (2024-2033).

To adequately forecast the future needs of the Airport, specific forecasts or projections are necessary for an airport with the characteristics of the Winter Haven Municipal Airport – Gilbert Field. These forecasts include:

- Based Aircraft
  - Single Engine
  - Multi-engine
  - Jets
  - Rotorcraft
  - Other (Gliders, Light Sport, Experimental, Balloons, etc.)
- Aircraft Operations
  - Annual Operations
  - Local Versus Itinerant Activity
  - Operational Fleet Mix
- Peak Period Activity
  - Peak Month
  - Average Day of the Peak Month
  - Peak Hour

The forecasts in this chapter include a review of forecasts previously developed for the Airport. New forecasts have also been developed. From these forecasts, preferred based aircraft and annual operations forecasts are recommended.

4.2 Historical Activity

The historical aviation activity data for the Airport was taken from a number of sources, including the 2015 FAA Terminal Area Forecast (2015 FAA TAF), the Florida Aviation Database (FAD), the Continuing Florida Aviation System Planning Process, and the 2004 Master Plan Update.

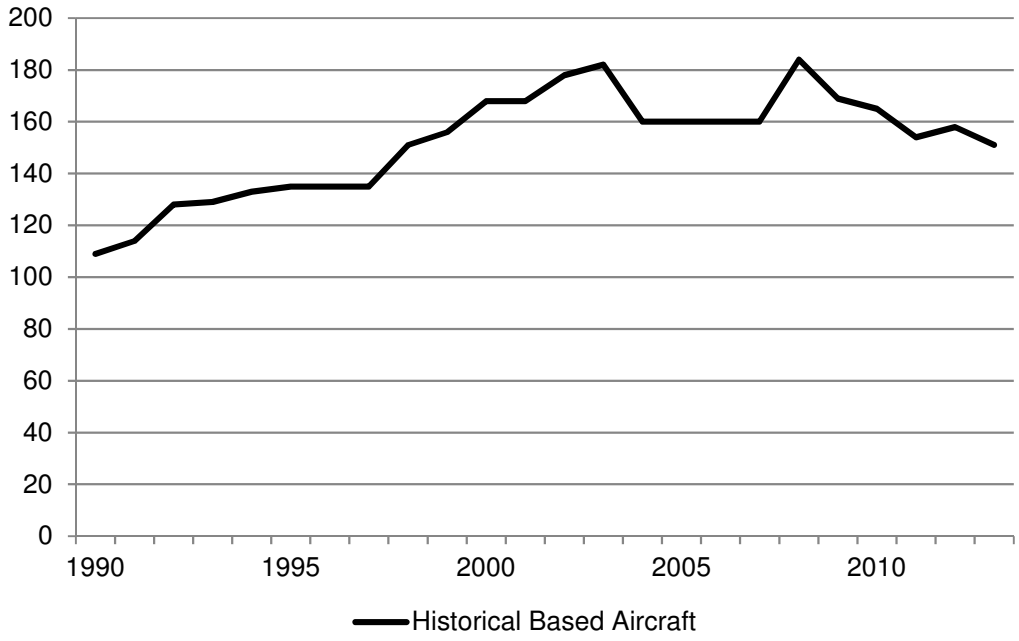
The FAA TAF is a forecast developed annually by the FAA for each of the airports in the National Plan of Integrated Airport Systems (NPIAS). The 2015 FAA TAF was released in January 2015 and is based on data received by the FAA through the end of their fiscal year on September 30, 2014.

The Florida Aviation Database (FAD) is developed and maintained by the Florida Department of Transportation, in cooperation with the Federal Aviation Administration, Florida Airports Council and Florida's Public Airport Sponsors, and is the central repository for Florida aviation system data. The Continuing Florida Aviation System Planning Process (CFASPP) was established by the FAA and Florida Department of Transportation (FDOT) to help maintain a viable statewide aviation environment to keep the Florida Aviation System Plan (FASP) in step with constant changes by updating it periodically. The historical numbers of based aircraft are shown in Table 4-1 and Figure 4-1.

Table 4-1
HISTORICAL BASED AIRCRAFT

Year	Based Aircraft
1990	109
1991	114
1992	128
1993	129
1994	133
1995	135
1996	135
1997	135
1998	151
1999	156
2000	168
2001	168
2002	178
2003	182
2004	160
2005	160
2006	160
2007	160
2008	184
2009	169
2010	165
2011	154
2012	158
2013	151

Figure 4-1
HISTORICAL BASED AIRCRAFT



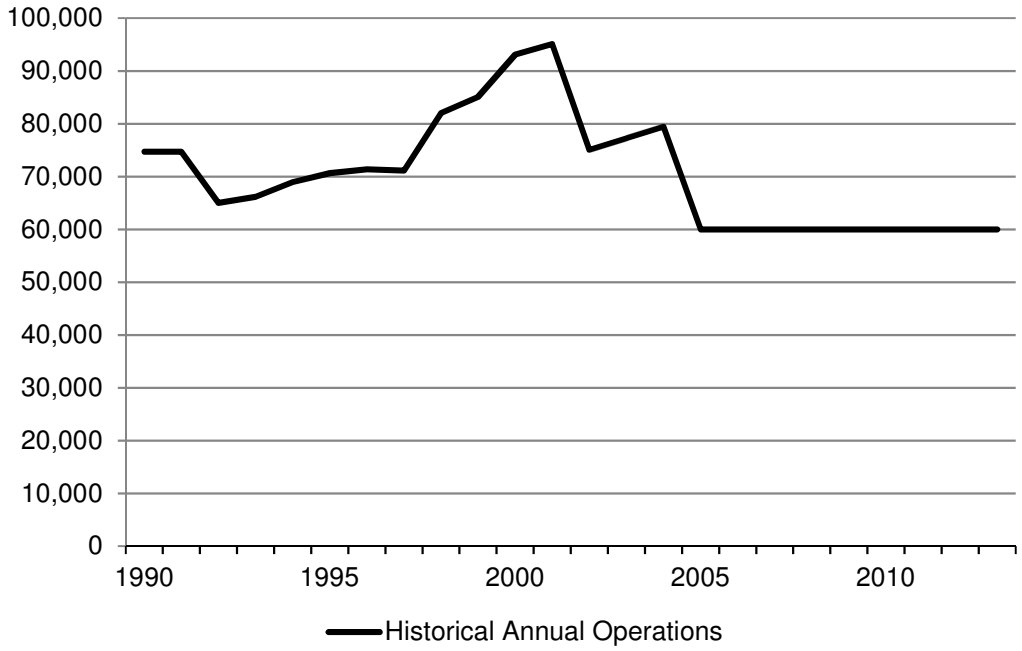
The number of aircraft based at the Winter Haven Municipal Airport – Gilbert Field has varied over the last 23 years. The high number of 184 aircraft occurred in the year 2008 and the low number was in the year 1990 with 109 based aircraft. In 2013, the Airport hosted 151 based aircraft. For the most part, the number of based aircraft has been in the neighborhood of 152 aircraft.

The number of annual operations for the Airport was gathered from the 2015 FAA TAF, the FAD, the CFASPP and the 2004 Master Plan Update. This is shown in Table 4-2, as well as Figure 4-2.

Table 4-2
HISTORICAL ANNUAL OPERATIONS

Year	Annual Operations
1990	74,706
1991	74,706
1992	65,000
1993	66,177
1994	68,925
1995	70,676
1996	71,399
1997	71,129
1998	82,035
1999	85,054
2000	93,080
2001	95,094
2002	75,050
2003	77,270
2004	79,453
2005	60,000
2006	60,000
2007	60,000
2008	60,000
2009	60,000
2010	60,000
2011	60,000
2012	60,000
2013	60,000

Figure 4-2
HISTORICAL ANNUAL OPERATIONS



The Airport experienced its highest recorded annual operations of 95,094 in 2001. These sank to 75,050 annual operations in 2002. There was a brief rise to 79,453 annual operations in 2004. By the year 2005, the Airport was reporting 60,000 annual operations per year. Because the annual operations continue to be reported at 60,000 annual operations, it is assumed that this is an estimated number.

4.3 Forecast of Based Aircraft

The forecast of based aircraft at an airport is based on the historical number of aircraft that are "operational and air worthy." This generally means that the aircraft has a current registration and has been flown at least one hour during the calendar year. It also means that the aircraft is typically stored at the airport for a majority of a year. These historical counts are used to develop a forecast of the number of aircraft that can be anticipated to be based at an airport in the future. These numbers are used to anticipate the number of tie-down positions and hangars that will need to be available to accommodate these aircraft.

4.3.1 Previous Based Aircraft Forecasts

At least four previous forecasts have recently been developed for the Winter Haven Municipal Airport – Gilbert Field. These forecasts result in projections of various numbers of based aircraft and are reviewed in this section.

The first forecast of based aircraft previously developed for the Airport was developed by the FAA in their annual Terminal Area Forecast (TAF). This forecast is developed annually by the FAA for each public use airport in the United States and is developed by the FAA as a means of

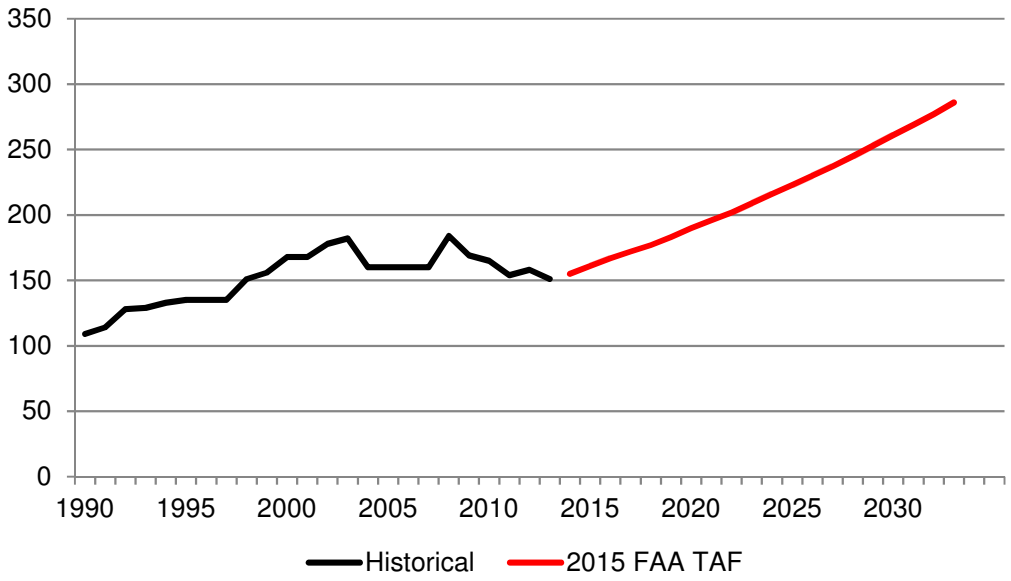
forecasting their workload. The 2015 FAA TAF shown in Table 4-3 and Figure 4-3 was released in January of 2015.

Table 4-3
2015 FAA TAF FORECAST OF BASED AIRCRAFT

Year	Based Aircraft	2015 FAA TAF
1990	109	
1995	135	
2000	168	
2005	160	
2010	165	
2013	151	
2018		177
2023		209
2028		245
2033		286
Average Annual Growth		
1990-2013	1.4%	
2013-2018		3.2%
2018-2023		3.4%
2023-2028		3.2%
2028-2033		3.1%

Source; 2015 FAA Terminal Area Forecast

Figure 4-3
2015 FAA TAF FORECAST



The 2015 FAA TAF indicates that the Airport had 151 based aircraft in 2013. The FAA anticipates that the 151 aircraft will increase to 209 based aircraft by the year 2023. The FAA further anticipates that the number of based aircraft will increase to 286 by the year 2033.

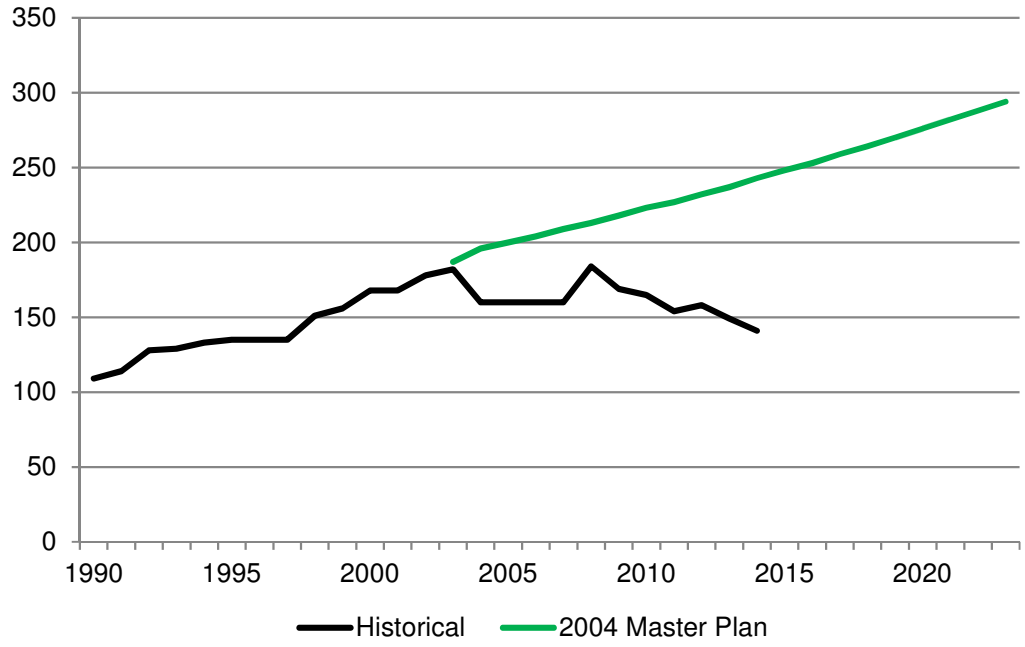
The 2004 Master Plan, developed from 2002, counted 178 based aircraft at the Airport. It was anticipated at that time that the number would increase to 209 based aircraft in 2007 as shown in Table 4-4 and Figure 4-4, and that the number would grow to 288 based aircraft by the year 2022.

Table 4-4
2004 MASTER PLAN FORECAST OF BASED AIRCRAFT

Year	Historical	2004 Master Plan
1990	109	
1995	135	
2000	168	
2002	178	
2007		209
2012		232
2017		259
2022		288
Average Annual Growth		
1990-2002	4.2%	
2002-2007		3.3%
2007-2012		2.1%
2012-2017		2.2%
2017-2022		2.1%

Source: 2004 Winter Haven Municipal Airport - Gilbert Field Master Plan

Figure 4-4
2004 MASTER PLAN FORECAST OF BASED AIRCRAFT



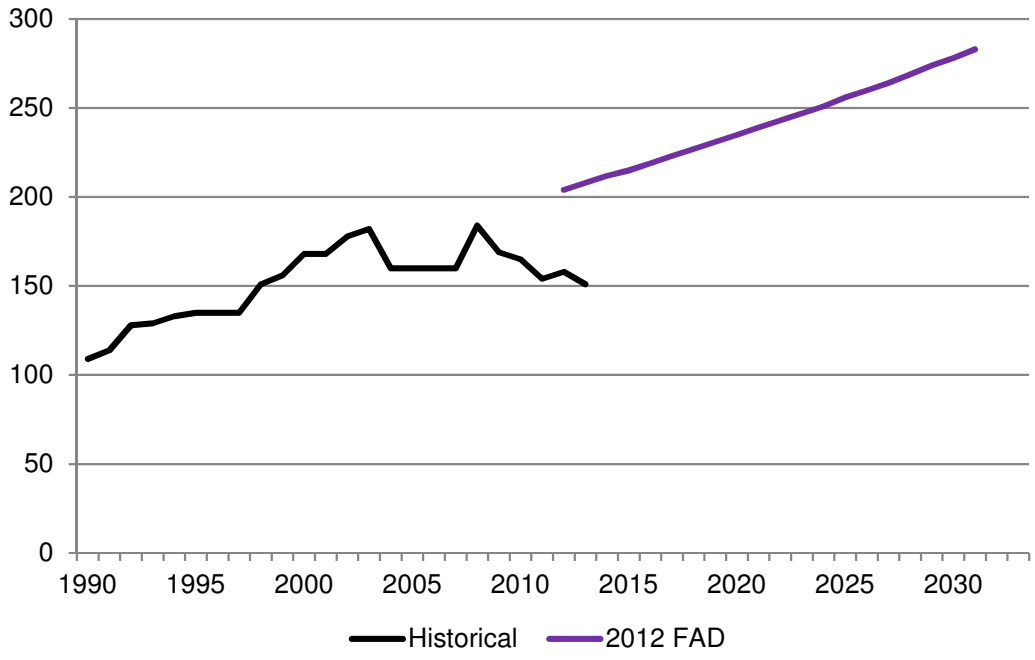
The Florida Aviation Database (FAD) developed a forecast of based aircraft for Winter Haven Municipal Airport – Gilbert Field in 2011. At that time, the Airport had 154 based aircraft and that number was projected to grow to 219 by the year 2016 and to 283 by the year 2031 as shown in Table 4-5 and Figure 4-5.

Table 4-5
FAD FORECAST OF BASED AIRCRAFT

Year	Historical	2012 FAD Projection
1990	109	
1995	135	
2000	168	
2005	160	
2010	165	
2011	154	
2016		219
2021		239
2026		260
2031		283
Average Annual Growth		
1990-2011	1.7%	
2011-2016		7.3%
2016-2021		1.8%
2021-2026		1.7%
2026-2031		1.7%

Source: Florida Aviation Database

Figure 4-5
FAD FORECAST OF BASED AIRCRAFT



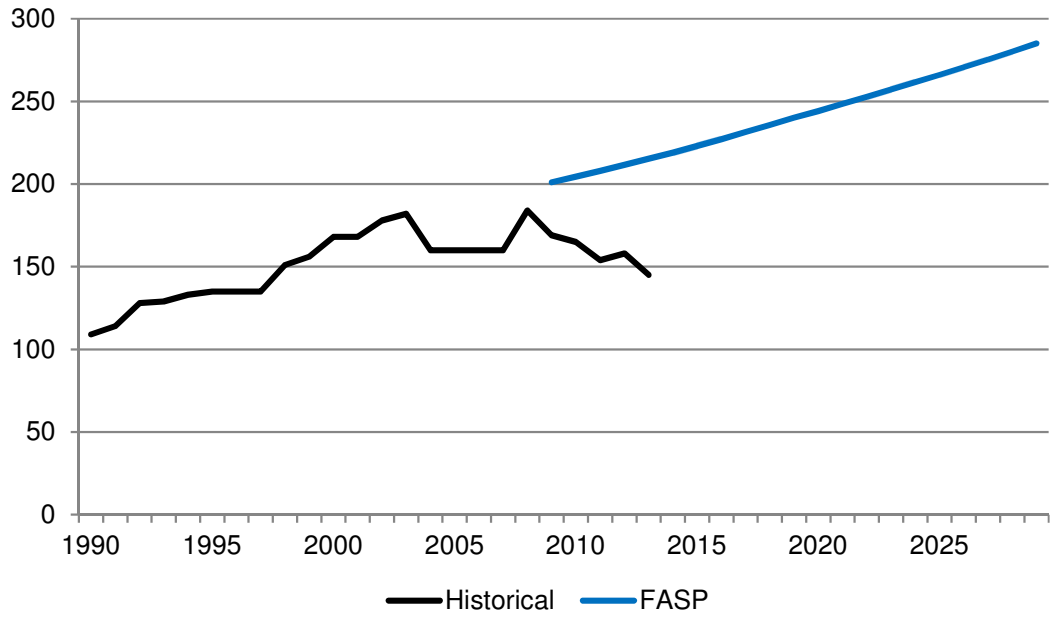
In 2011, the FASP developed a forecast for the Winter Haven Municipal Airport – Gilbert Field using 2009 data. This forecast indicated that the Airport had 184 based aircraft in 2008 and that this number would grow to 215 by the year 2013 and would eventually reach 280 aircraft in the year 2028, as shown in Table 4-6 and Figure 4-6.

Table 4-6
FASP FORECAST OF BASED AIRCRAFT

Year	Historical	2011 FASP
1990	109	
1995	135	
2000	168	
2005	160	
2008	184	
2013		215
2018		236
2023		257
2028		280
Average Annual Growth		
1990-2008	3.0%	
2008-2013		3.2%
2013-2018		1.8%
2018-2023		1.8%
2023-2028		1.7%

Source: 2011 Florida Aviation System Plan

Figure 4-6
FASP FORECAST OF BASED AIRCRAFT



A comparison of the four previously developed forecasts is shown in Figure 4-7 and in Table 4-7. The 2004 Master Plan is older than the others and begins from a higher level of based aircraft. The 2013 FAD and the Florida Aviation System Plan have similar rates of growth, but they also begin with a much higher level of based aircraft. The 2015 FAA TAF begins at a lower level of based aircraft. However, the rate of average annual growth is higher than the other three forecasts and quickly outpaces them.

Figure 4-7
COMPARISON OF PREVIOUS FORECASTS OF BASED AIRCRAFT

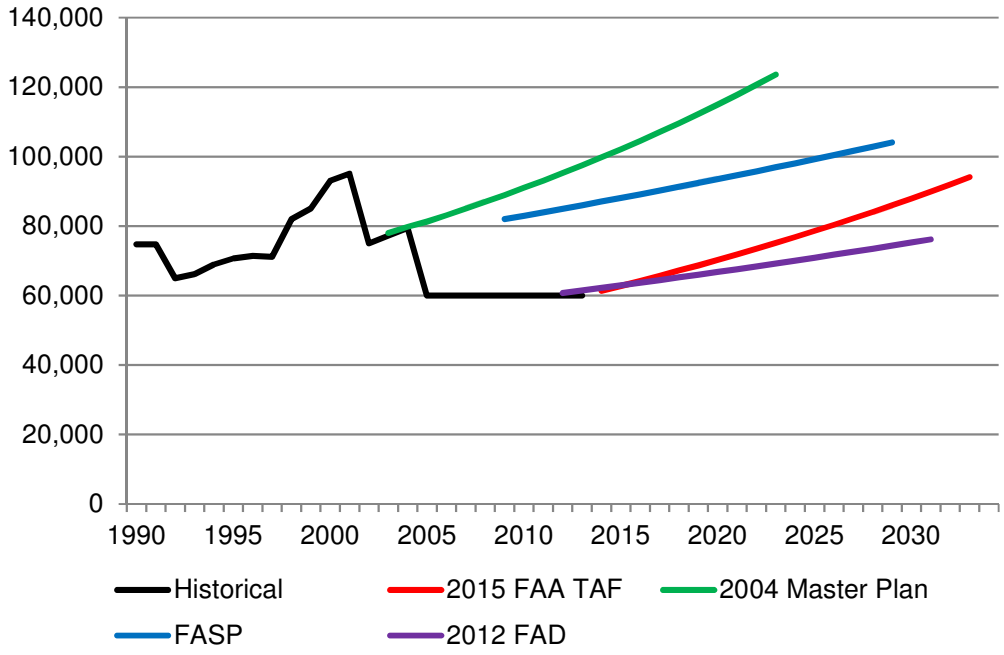


Table 4-7
COMPARISON OF PREVIOUS FORECASTS OF BASED AIRCRAFT

Year	Historical	2015 FAA TAF	2004 Master Plan	2009 FASP	2012 FAD
1990	109				
1995	135				
2000	168				
2005	160		196		
2010	165		223	204	
2013	151		237	215	208
2018		177	264	236	227
2023		209	294	257	247
2028		245		280	269
2033		286			
Average Annual Compounded Growth					
2013-2018		3.2%	2.2%	1.8%	1.8%
2018-2023		3.4%	2.2%	1.8%	1.7%
2023-2028		3.2%	n/a	1.7%	1.7%
2028-2033		3.1%	n/a	n/a	n/a

It was determined that the forecast developed for the 2004 Master Plan Update was too outdated to be considered further within this Master Plan Update. While the 2011 FASP and the 2013 FAD forecasts were more recent, it was decided to also reject these forecasts due largely to the fact that they begin with much higher numbers of aircraft. This leaves the 2015 FAA TAF still under consideration for this Master Plan Update.

4.3.2 Based Aircraft Forecasts

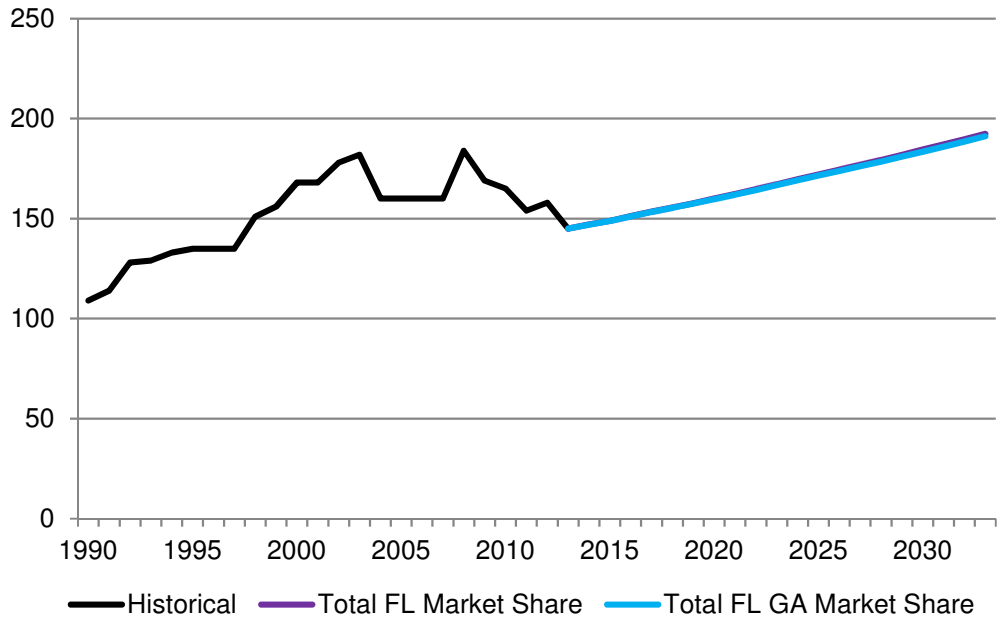
In addition to the previously developed forecasts of based aircraft, this Master Plan Update has also developed six additional forecasts of based aircraft. The first and second forecasts of based aircraft developed for this Master Plan Update are the Market Share of all aircraft based at general aviation, public-use airports in Florida and the Market Share of all aircraft based at all public-use airports in Florida. The first forecast of these two takes the number of aircraft at Winter Haven Municipal Airport – Gilbert Field and compares it to the total number of aircraft based at all public-use general aviation airports in the State of Florida in the year 2013. This is the Airport's market share of based aircraft. This forecast presumes that the market share of the Airport will remain the same over the planning period. The second of the two forecasts compares the based aircraft at the Airport with all of the public-use airports in Florida; general aviation and commercial. It also presumes that the market share of the Airport will remain the same over the planning period. The results for both forecasts are shown in Table 4-8 and Figure 4-8.

Table 4-8
MARKET SHARE OF FLORIDA BASED AIRCRAFT

Year	Historical	Total FL Market Share	Total FL GA Market Share
1990	109		
1995	135		
2000	168		
2005	160		
2010	165		
2013	145	145	145
2018		156	155
2023		167	167
2028		179	179
2033		192	191
Average Annual Growth			
1990-2013	1.2%		
2013-2018		1.4%	1.4%
2018-2023		1.4%	1.4%
2023-2028		1.4%	1.4%
2028-2033		1.4%	1.4%

Source: 2015 FAA TAF

Figure 4-8
MARKET SHARE OF FLORIDA BASED AIRCRAFT



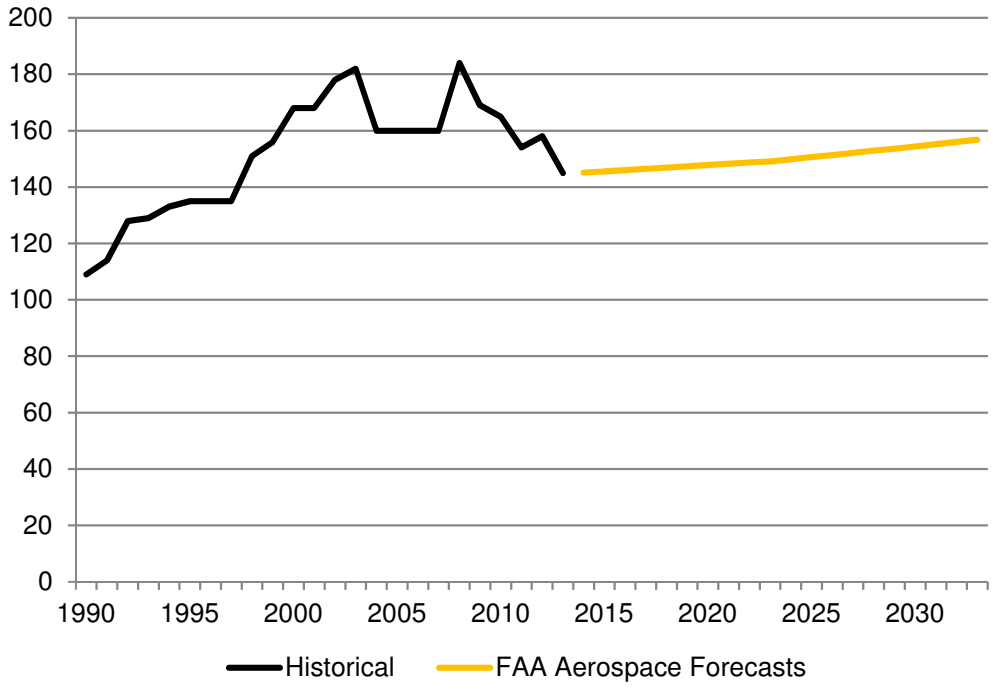
Both of the Market Share forecasts produce similar results and indicate that the Airport should have between 155 and 156 based aircraft in 2018, 167 in 2023, 179 in 2028, and between 191 and 192 in 2033. This is an overall average annual compounded rate of growth of 1.4 percent for each of the forecasts.

The third forecast is one that was developed using the *FAA Aerospace Forecasts 2014-2034.* These are developed annually by the FAA and are much more global in nature than the Terminal Area Forecasts. They have forecasts for commercial operations, aircraft, and enplanements as well as information on general aviation aircraft, pilots, and operations. The *FAA Aerospace Forecasts 2014-2033*, Table 28, *Active General Aviation and Air Taxi Aircraft* projects that the total number of general aviation aircraft will increase by an average of 0.3 percent per year from 2013-2023. They will continue to increase by an average of 0.5 percent per year from 2023 through 2034. By applying these percentages, the resulting numbers of based aircraft are shown in Table 4-9 and Figure 4-9.

Table 4-9
PROJECTIONS USING FAA AEROSPACE FORECASTS

Year	Historical	FAA Aerospace Forecasts
1990	109	
1995	135	
2000	168	
2005	160	
2010	165	
2013	145	145
2018		147
2023		149
2028		153
2033		157
Average Annual Growth		
1990-2013	1.2%	
2013-2018		0.3%
2018-2023		0.3%
2023-2028		0.5%
2028-2033		0.5%

Figure 4-9
PROJECTIONS USING FAA AEROSPACE FORECASTS

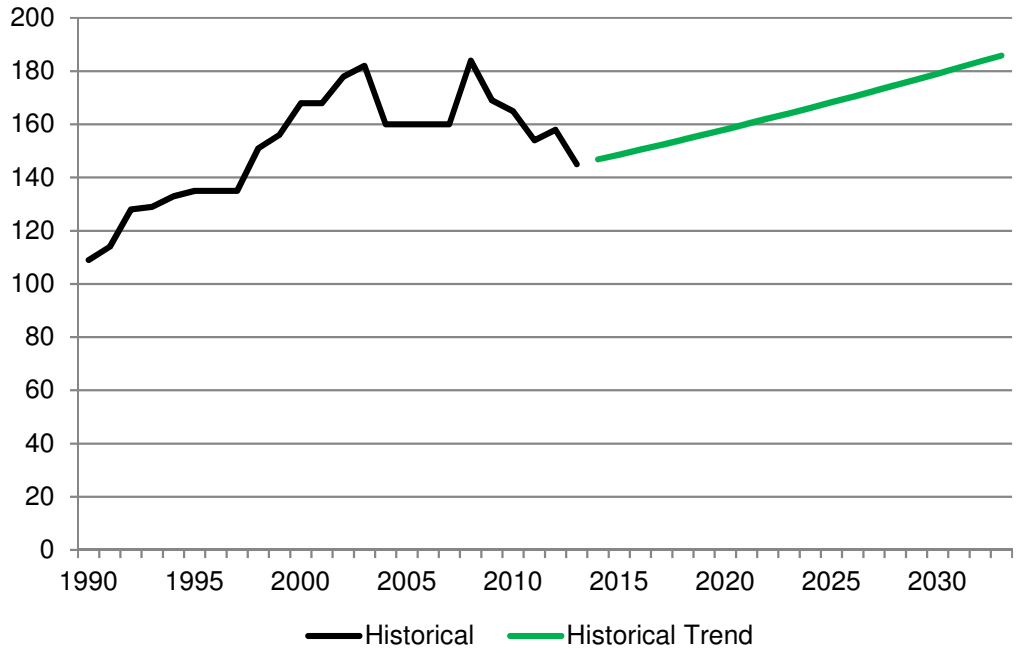


The fourth forecast is a forecast that is based on the historic trend in the number of based aircraft and a trend line analysis. The linear trend methodology examines historical growth trends in the number of based aircraft and applies this trend to the current demand levels to produce projections of future activity. Linear trend analysis presumes that the numbers and the factors that have historically affected those numbers will continue to influence demand levels at similar rates over an extended period of time. Linear trend projections are typically used to provide baseline forecasts that reflect stable market conditions. Over the period of the last 23 years, the Airport has averaged a 1.2 percent annual growth in the number of based aircraft. By projecting this percentage, the results shown in Table 4-10 and Figure 4-10 are obtained.

Table 4-10
HISTORICAL TREND FORECAST

Year	Historical	Historical Trend
1990	109	
1995	135	
2000	168	
2005	160	
2010	165	
2013	145	
2018		154
2023		164
2028		175
2033		186
Average Annual Growth		
1990-2013	1.2%	
2013-2018		1.2%
2018-2023		1.2%
2023-2028		1.2%
2028-2033		1.2%

Figure 4-10
HISTORICAL TREND FORECAST



Using the historical trend methodology, there would be 154 based aircraft at the Airport in 2018. By the year 2033, it is projected that there would be 186 based aircraft.

The fifth and last forecast done for this Master Plan Update utilized a methodology called regression analysis. Several socioeconomic indicators were reviewed and analyzed to determine if statistically significant relationships exist between historical numbers of based aircraft at the Airport and selected indicators. These independent variables can sometimes be good predictors of the number of based aircraft (the dependent variable). The independent variables reviewed in this analysis included:

- Polk County Population
- Polk County Employment
- Polk County Personal Income Per Capita

These independent variables and the number of based aircraft were analyzed using regression analysis, which is a general statistical technique and a statistical forecast model that is used to predict and measure the relationships between a dependent variable, in this case based aircraft, and one or more independent variables, the socioeconomic indicators in this case. The benefit of using regression analysis as a forecast methodology is that the tool interprets the significance of the results.

One determination of the statistical significance to the projections produced by the regression analysis is the coefficient of determination, or R^2 value, as shown in the peach color in Figure 4-11. The R^2 value is the square of the correlation coefficient and measures the contribution of the independent variables in the prediction of the dependent variable. The R^2 values will range between 0.00 and 1.00 with 1.00 indicating a perfect correlation between the independent and dependent variables. R^2 values of less than 0.70 generally indicate there is little correlation between the independent and dependent variable. Where there is more than one independent variable in the analysis, the adjusted R^2 value will be of more significance. Each independent variable adds some variance to the dependent variable. The adjusted R^2 attempts to yield a truer R^2. Again, values higher that 0.70 indicate a higher correlation between the independent and dependent variables.

While the R^2 and the adjusted R^2 are important, they only indicate whether the dependent variable is predictable, not whether the analysis is a good job at predicting the dependent variable (number of based aircraft) with that particular data. The “Significant F”, highlighted in the yellow color in Figure 4-11, gives that information and more. It tests the overall significance of the regression. It also tests whether or not the independent variable or group of independent variables can reliably predict the independent variable. The level looked for is 0.05 or less. If the “Significant F” is greater than 0.05, it usually indicates that the independent variable or group of variables is not worthwhile.

The coefficients, highlighted in the lavender color, indicate the value of each independent variable measured against the dependent variable. If the independent variable (Polk County Population) increased by one unit, the dependent variable (based aircraft) would be raised

0.185 units. If the independent variable (Polk County Population) were zero, the dependent variable (based aircraft) would be equivalent to 56.6 (57) based aircraft.

The "P-value" highlighted in the green color indicates whether the coefficient is significantly different from zero. Values below 0.15 are considered good. In the example shown in Figure 4-11, the "P-value" is well below 0.15.

Figure 4-11
SUMMARY OUTPUT OF A REGRESSION ANALYSIS

Regression Statistics	
Multiple R	0.656513642
R Square	0.431010162
Adjusted R Square	0.405146987
Standard Error	15.71766657
Observations	24

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	4117.009	4117.009	16.66501	0.000493478
Residual	22	5434.991	247.045		
Total	23	9552			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	56.61348204	23.46389	2.412792	0.024609	7.95234974	105.274614
Polk County Population	0.185180679	0.045362	4.08228	0.000493	0.09110551	0.27925585

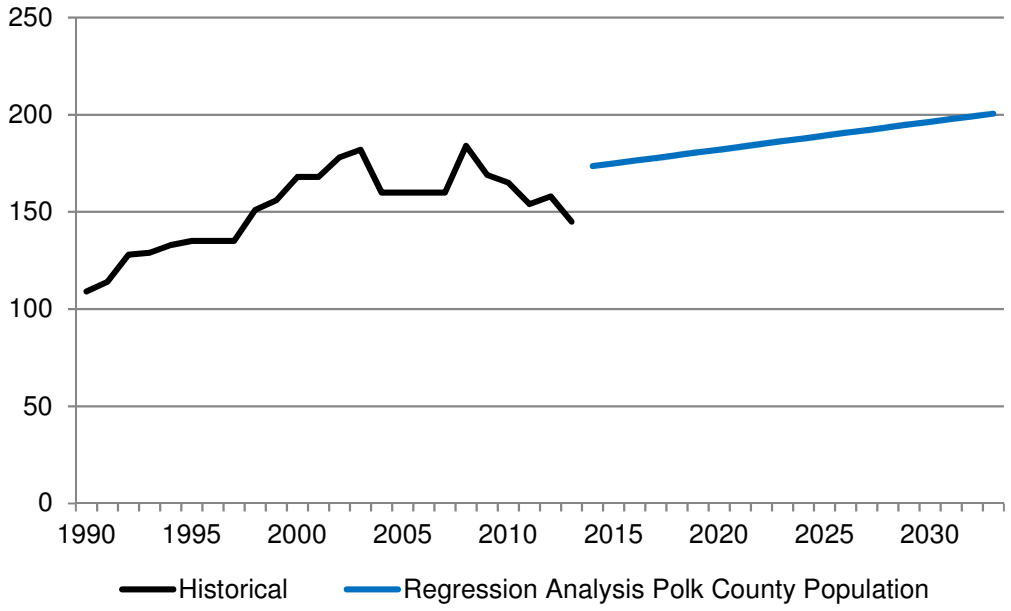
Multiple regression analyses were performed using various combinations of the independent variables including single and multiple variable regression analyses. However, few analyses were found to be significantly viable. Only one scenario was found to have some statistical significance. This analysis paired the independent variable Polk County Population with the number of historical based aircraft. As can be seen in Table 4-11 and Figure 4-12, this analysis has only one variable and the R^2 number is shown in the table. However, as can be seen in Figure 4-11, the "Significant F and the P-value are good.

Regression analysis was also performed for the annual operations forecasts: however, no results of statistical significance resulted. This would indicate that the number of annual operations is not related significantly to any of the socioeconomic indicators listed above.

Table 4-11
REGRESSION ANALYSIS

Year	Historical	Regression Analysis Polk County Population
1990	109	
1995	135	
2000	168	
2005	160	
2010	165	
2013	145	
2018		179
2023		186
2028		194
2033		201
R^2		0.43
Average Annual Growth		
1990-2013	1.2%	
2013-2018		4.3%
2018-2023		0.8%
2023-2028		0.8%
2028-2033		0.7%

Figure 4-12
REGRESSION ANALYSIS

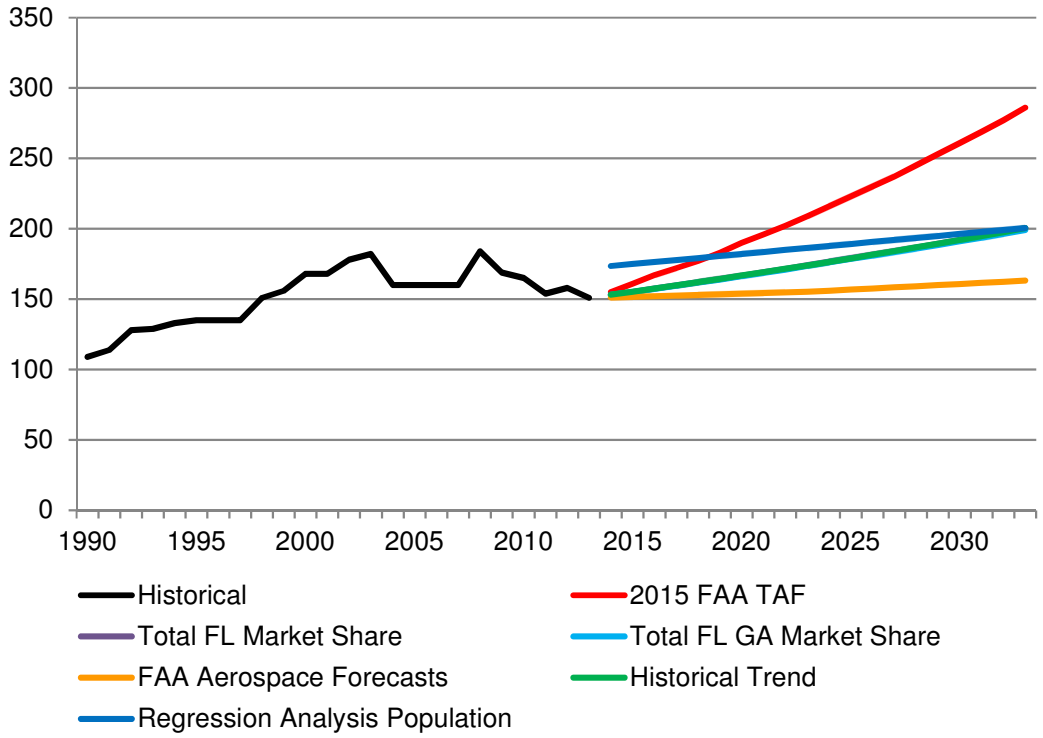


The previously developed forecast of based aircraft, from the 2015 FAA TAF, was compared to the newly developed forecasts. These are shown in Table 4-12 and Figure 4-13.

Table 4-12
COMPARISON OF BASED AIRCRAFT FORECASTS

Year	Historical	2015 FAA TAF	Total FL Market Share	Total FL GA Market Share	FAA Aerospace Forecasts	Historical Trend	Regression Analysis Population
1990	109						
1995	135						
2000	168						
2005	160						
2010	165						
2013	151						
2018		177	162	162	153	162	179
2023		209	174	174	155	174	186
2028		245	187	186	159	187	194
2033		286	200	199	163	200	201
Average Annual Growth							
1990-2013	1.4%						
2013-2018		3.2%	1.4%	1.4%	0.3%	1.4%	3.5%
2018-2023		3.4%	1.4%	1.4%	0.3%	1.4%	0.8%
2023-2028		3.2%	1.4%	1.4%	0.5%	1.4%	0.8%
2028-2033		3.1%	1.4%	1.4%	0.5%	1.4%	0.7%

Figure 4-13
COMPARISON OF BASED AIRCRAFT FORECASTS



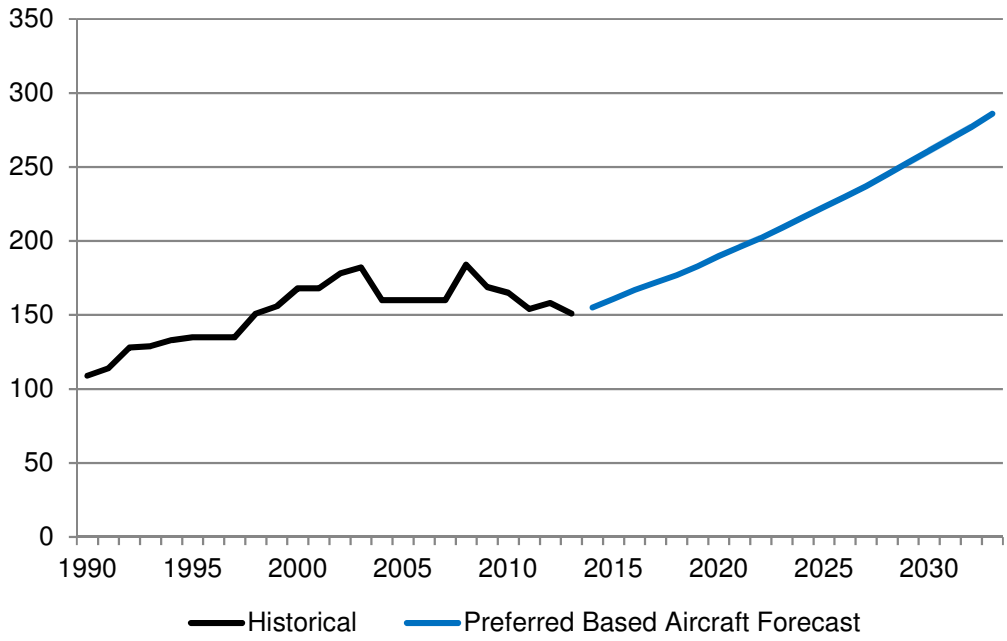
4.3.3 Preferred Based Aircraft Forecast

After comparing the six forecasts, it was determined that the early growth indicated in the Regression Analysis probably could not be achieved. It was also considered that the FAA Aerospace and the Market Share forecasts did not achieve the long-term growth that the Winter Haven Municipal Airport – Gilbert Field is capable of achieving. For these reasons, the 2015 FAA TAF was selected as the preferred forecast for based aircraft at the Airport over the next 20 years. This forecast projects a steady average annual compounded growth of about 3.3 percent per year, as shown in Table 4-13 and Figure 4-14.

Table 4-13
PREFERRED BASED AIRCRAFT FORECAST

Year	Historical	Preferred Forecast
1990	109	
1995	135	
2000	168	
2005	160	
2010	165	
2013	151	
2018		177
2023		209
2028		245
2033		286
Average Annual Growth		
1990-2013	1.4%	
2013-2018		3.2%
2018-2023		3.4%
2023-2028		3.2%
2028-2033		3.1%

Figure 4-14
PREFERRED BASED AIRCRAFT FORECAST



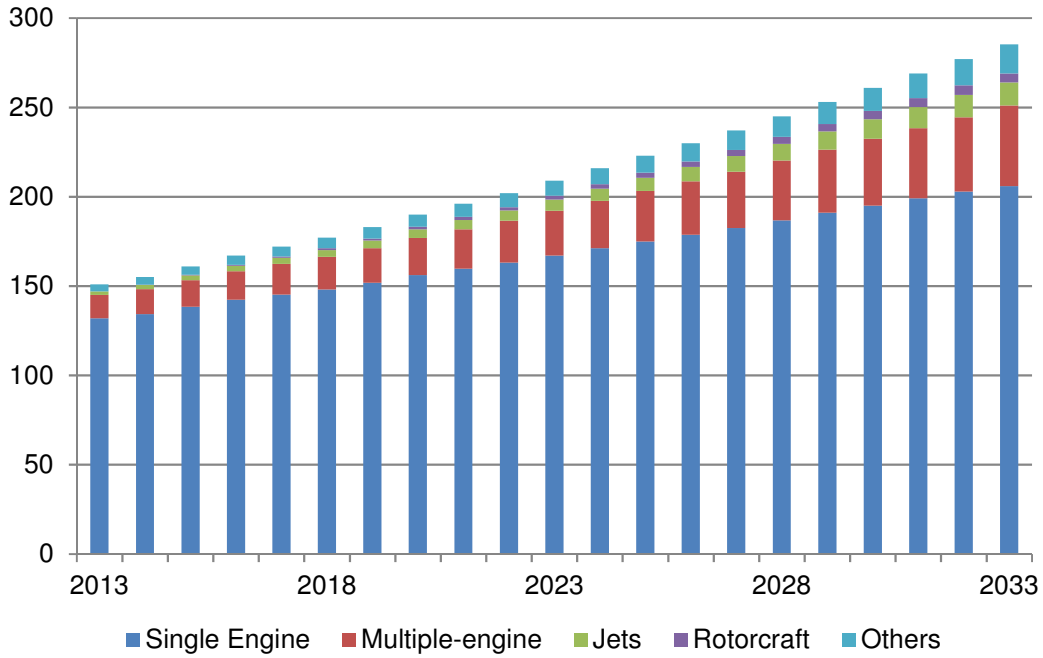
4.3.4 Forecast of Based Aircraft Fleet Mix

The forecast of based aircraft fleet mix is based on the preferred based aircraft forecast. It is then divided by the number of single engine aircraft, multiple engine aircraft, jets, rotorcraft and "other" types of aircraft that are likely to be based at the Airport in any given year. The "other" classification of aircraft could include ultra-light aircraft, powered parachutes, gliders, balloons, and other light sport or experimental aircraft. The various percentages of these types of aircraft are based on the average annual rate of growth projected in each category by the *FAA Aerospace Forecasts 2014-2034.* The resulting fleet mix is shown in Table 4-14 and Figure 4-15.

Table 4-14
FUTURE BASED AIRCRAFT FLEET MIX

Year	Single Engine	Multiple-engine	Jets	Rotorcraft	Others	Total Based Aircraft
2013	132	13	2	0	4	151
2018	148	18	4	1	6	177
2023	167	25	6	2	8	209
2028	187	33	9	4	12	245
2033	206	45	13	5	16	285
Percentage of Aircraft						
2013	87.4%	8.6%	1.3%	0.0%	2.6%	100.0%
2018	83.7%	10.3%	2.2%	0.5%	3.3%	100.0%
2023	80.0%	12.0%	3.0%	1.0%	4.0%	100.0%
2028	76.2%	13.6%	3.9%	1.5%	4.7%	100.0%
2033	72.2%	15.8%	4.6%	1.8%	5.7%	100.0%

Figure 4-15
FUTURE BASED AIRCRAFT FLEET MIX



The number of single engine aircraft operating in the United States and at the Airport is projected to decline over the next 20 years. In 2013, there were 151 based aircraft on the Airport. Currently, there are 132 single engine aircraft based at the Airport or about 87.4 percent of the total based aircraft. The Airport is anticipated to have 206 single engine based aircraft in the year 2033, which will represent only 72.2 percent of the total based aircraft.

Multiple-engine aircraft based at the Airport are projected to increase over the same time period from 13 in 2013 to 45 in the year 2033. The percentage of multiple-engine aircraft will rise from 8.6 percent in 2013 to 15.38 percent in 2033.

There are currently two jets based at the Airport. This number is projected to increase to 13 in the year 2033. This will increase the percentage of jets in the fleet from 1.3 percent to 4.6 percent in 2033.

There was no rotorcraft based at the Airport in 2013. This number is projected to increase to 5 in 2033. This will represent 1.8 percent of the total fleet.

There are currently four ultralights based at the Airport. The number of aircraft within the "other" category is anticipated to increase to 16 in 2033. This number will probably not be exclusively ultralights, but could also include other aircraft in this category such as gliders, balloons, light sport, or experimental aircraft.

4.4 Forecast of Annual Operations

Winter Haven Municipal Airport – Gilbert Field is classified as a general aviation airport. General aviation activities include all segments of the aviation industry except those conducted by commercial airline passenger carriers. Typical activities include the training of new pilots, medical flights, aerial surveys, recreational flying, law enforcement, spraying services, sightseeing, aerial photography, and business and personal travel.

An operation is defined by the FAA to be either the takeoff or the landing of a single aircraft. A touch and go training procedure would be considered two operations. Operations are further divided into the categories of local or itinerant. Local operations are those performed by aircraft that remain in the airport traffic pattern, or are within sight of the local airport. This area is considered to cover a 20 nautical mile radius of the airfield. Local operations are often associated with training activities and flight instruction. At Winter Haven Municipal Airport – Gilbert Field, recreational flying makes up the majority of the local operations.

Itinerant operations are arrivals or departures other than local operations performed by either based or itinerant aircraft. Itinerant general aviation operations include business or personal operations to or from another airport. However, itinerant operations may also include law enforcement or medical flights that operate outside of the local limits of an airport.

4.4.1 Forecast of Annual Operations

Forecasts of annual operations allow the Airport to predict the number of operations that are likely to occur at the Airport over the next 20 years. This provides the Airport with the basis for deciding both the level of capital improvements and the timing for the necessary investments.

4.4.1.1 Previous Forecasts of Annual Operations

Four forecasts of annual operations at Winter Haven Municipal Airport – Gilbert Field were completed prior to the initiation of this Master Plan Update. These include forecasts developed by the FAA, the 2004 Master Plan Update, the 2013 Florida Aviation Database, and the 2011 FASP forecast.

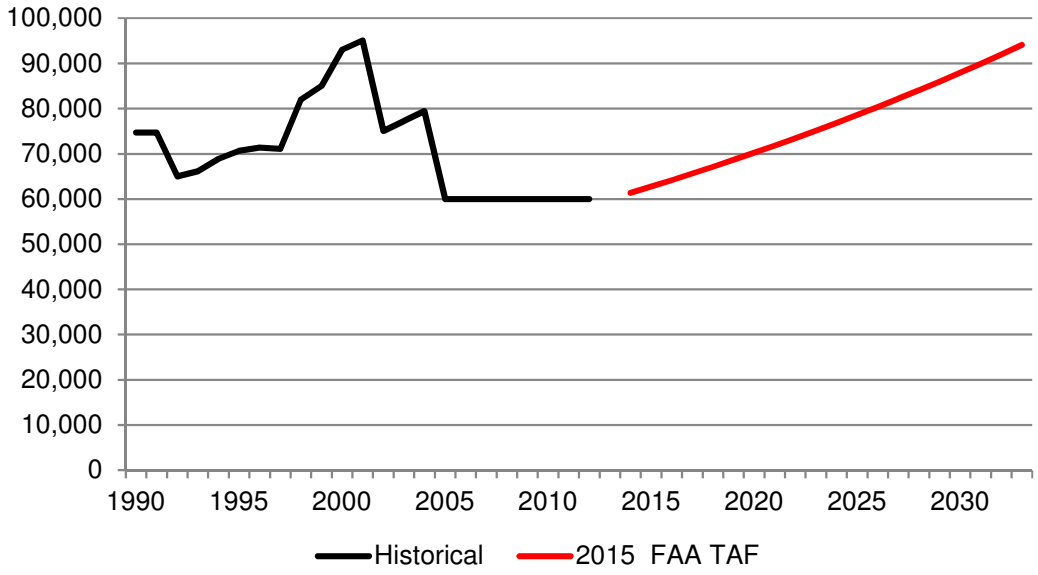
Not only does the 2015 FAA TAF give historical data and forecast projections for based aircraft, it also provides the same information for annual operations. Further, the 2015 FAA TAF breaks the annual operations into local and itinerant traffic. The latest FAA TAF was published in January 2015 and is shown in Table 4-15 and Figure 4-16.

Table 4-15
2015 FAA TAF FORECAST OF ANNUAL OPERATIONS

Year	Historical Annual Operations	2015 FAA TAF
1990	74,706	
1995	70,676	
2000	93,080	
2005	60,000	
2010	60,000	
2013	60,000	
2018		67,144
2023		75,138
2028		84,085
2033		94,099
Average Annual Growth		
1990-2013	-0.9%	
2014-2019		2.3%
2019-2024		2.3%
2024-2029		2.3%
2029-2034		2.3%

Source: 2015 FAA Terminal Area Forecast

Figure 4-16
2015 FAA TAF FORECAST OF ANNUAL OPERATIONS



The 2015 FAA TAF predicts that the annual operations at the Airport will rise from 60,000 in 2013 to 67,144 in 2018, to 94,099 annual operations in the year 2033. This is an overall average annual compounded growth rate of 2.3 percent per year.

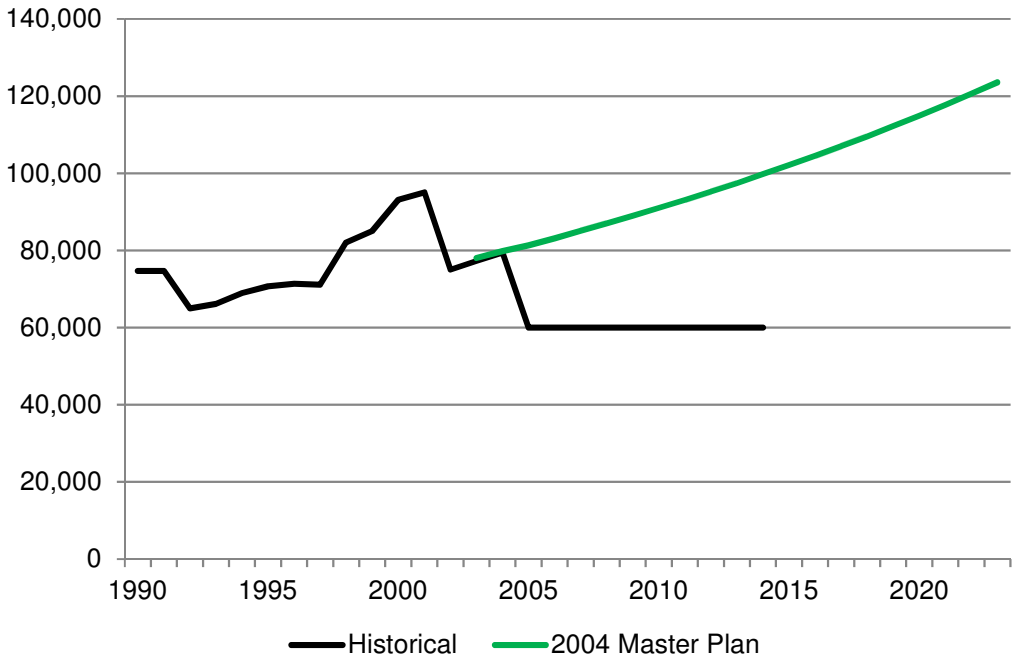
The last Master Plan completed for the Airport, the 2004 Master Plan Update, developed a forecast that can be seen in Table 4-16 and Figure 4-17.

Table 4-16
2004 MASTER PLAN FORECAST OF ANNUAL OPERATIONS

Year	Historical	2004 Master Plan
1990	74,706	
1995	70,676	
2000	93,080	
2002	75,050	
2007		85,051
2012		95,243
2017		107,050
2022		120,660
Average Annual Growth		
1990-2002	0.04%	
2002-2007		2.5%
2002-2012		2.3%
2012-2017		2.4%
2017-2022		2.4%

Source: 2004 Winter Haven Municipal Airport - Gilbert Field Master Plan

Figure 4-17
2004 MASTER PLAN FORECAST OF ANNUAL OPERATIONS



The 2004 Master Plan reported that there were 75,050 operations at the Airport in 2002. The Master Plan Update projected that there would be 95,243 annual operations in 2012, and 120,660 in the year 2022. This projection represents an average annual compounded growth rate of 2.3 percent.

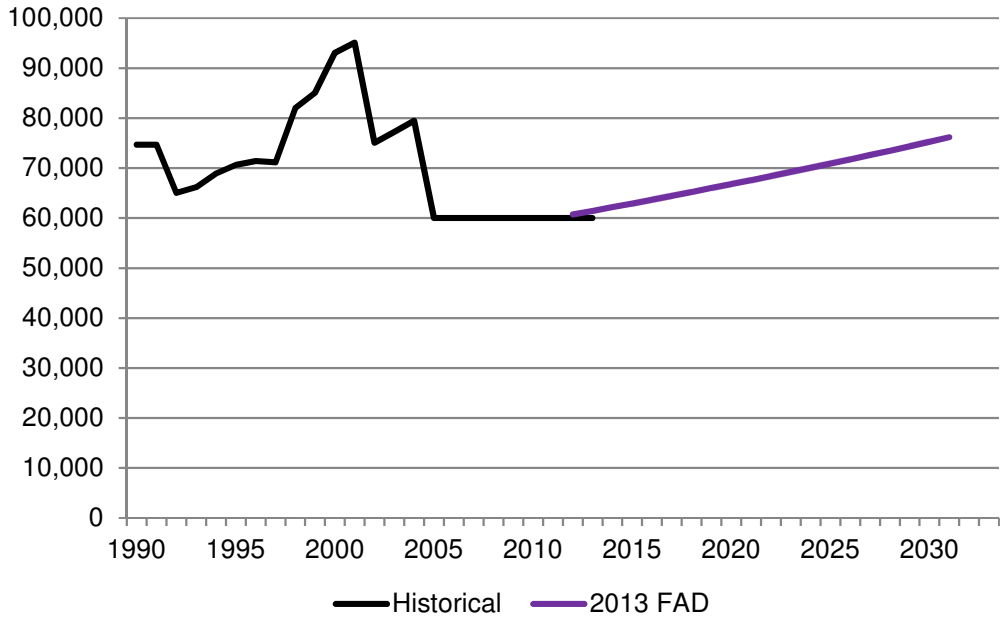
The Florida Aviation Database (FAD) developed a forecast of annual operations for the Winter Haven Municipal Airport – Gilbert Field. This is shown in Table 4-17 and Figure 4-18.

Table 4-17
FAD FORECAST OF ANNUAL OPERATIONS

Year	Historical	2013 FAD Projection
1990	74,706	
1995	70,676	
2000	93,080	
2005	60,000	
2010	60,000	
2011	60,000	
2016		63,687
2021		67,602
2026		71,756
2031		76,166
Average Annual Growth		
1990-2011	-1.0%	
2011-2016		1.2%
2016-2021		1.2%
2021-2026		1.2%
2026-2031		1.2%

Source: Florida Aviation Database

Figure 4-18
FAD FORECAST OF ANNUAL OPERATIONS



The FAD forecasts indicated that the 60,000 annual operations in 2011 will grow to 63,687 in the year 2016 and to 67,602 annual operations in the year 2021. Finally, the annual operations would climb to 76,166 in the year 2031. This represents an average annual compounded growth rate of 1.2 percent per year.

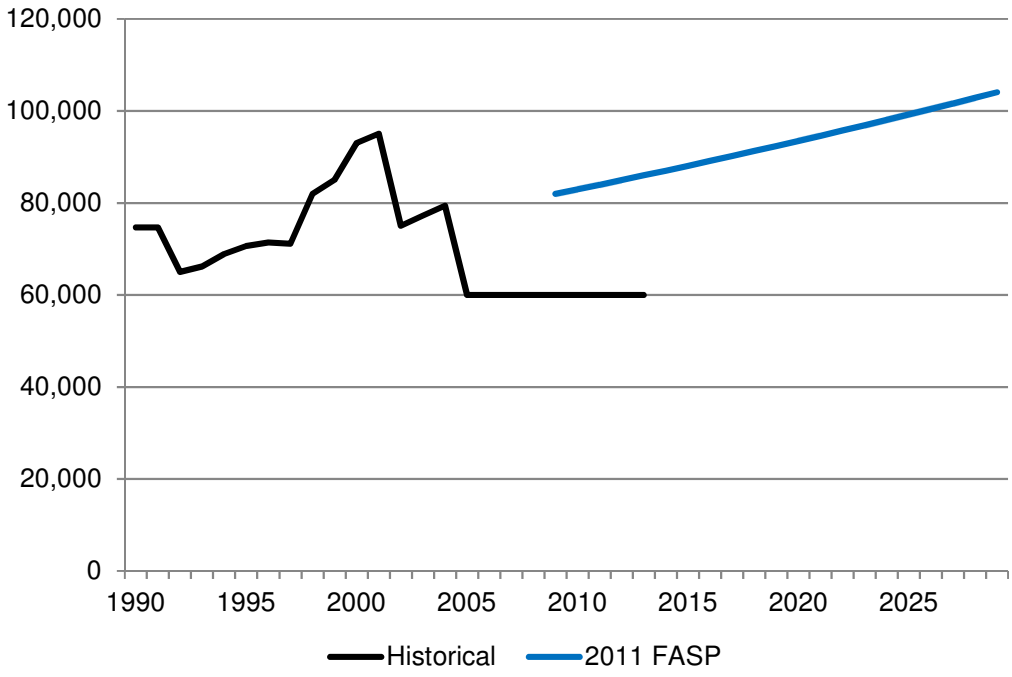
The 2011 FASP forecast of Winter Haven Municipal Airport – Gilbert Field operations was completed in 2011 using 2009 data. It is shown in Table 4-18 and Figure 4-19.

Table 4-18
FASP FORECAST OF ANNUAL OPERATIONS

Year	Historical	2011 FASP
1990	74,706	
1995	70,676	
2000	93,080	
2005	60,000	
2008	60,000	
2013		86,008
2018		91,294
2023		96,904
2028		102,860
Average Annual Growth		
1990-2008	-1.2%	
2008-2013		7.5%
2013-2018		1.2%
2018-2023		1.2%
2023-2028		1%

Source: Florida Aviation System Plan

Figure 4-19
FASP FORECAST OF ANNUAL OPERATIONS



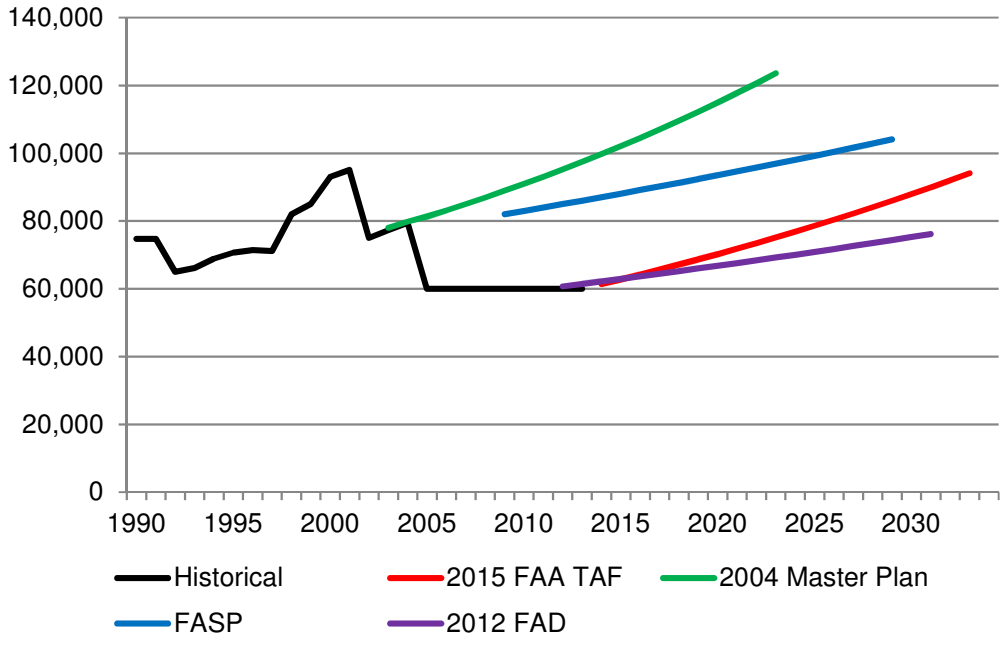
The FASP forecast reports that there were 60,000 annual operations at the Airport in 2008. It predicts that this number would grow to 86,008 in the year 2013 and would grow to 102,860 annual operations by the year 2028. This represents a 1.3 percent average annual compounded rate of growth over that 15-year period.

The four previously developed forecasts of annual operations for the Airport were compared. These are shown in Table 4-19 and Figure 4-20.

Table 4-19
COMPARISON OF PREVIOUSLY DEVELOPED FORECASTS OF ANNUAL OPERATIONS

Year	Historical	2015 FAA TAF	2004 Master Plan	FASP	2013 FAD
1990	74,706				
1995	70,676				
2000	93,080				
2005	60,000		81,309		
2010	60,000		91,022	82,984	
2013	60,000		97,462	86,008	61,449
2018		67,144	109,579	91,294	65,225
2023		75,138	123,600	96,904	69,234
2028		84,085	n/a	102,860	73,489
2033		94,099	n/a	n/a	n/a
Average Annual Growth					
1990-2013	-0.9%				
2013-2018		2.3%	2.4%	1.2%	1.2%
2018-2023		2.3%	2.4%	1.2%	1.2%
2023-2028		2.3%	n/a	1.2%	1.2%
2028-2033		2.3%	n/a	n/a	n/a

Figure 4-20
COMPARISON OF PREVIOUSLY DEVELOPED FORECASTS OF ANNUAL OPERATIONS



The 2004 Master Plan Update forecast, which is the oldest of the forecasts, begins at a higher number of operations, while the 2015 FAA TAF is only slightly less aggressive than the 2004 Master Plan. The FASP and the 2013 FAD have the same rate of average annual growth, but the FASP begins at a much higher level.

It was determined that the forecast developed for the 2004 Master Plan Update was too outdated to be considered further within this Master Plan Update. The FASP forecast begins at a higher level than today's reported operations would warrant, and it was felt that the 2013 FAD does not accurately reflect the potential of the Airport. This leaves the 2015 FAA TAF still under consideration for this Master Plan Update.

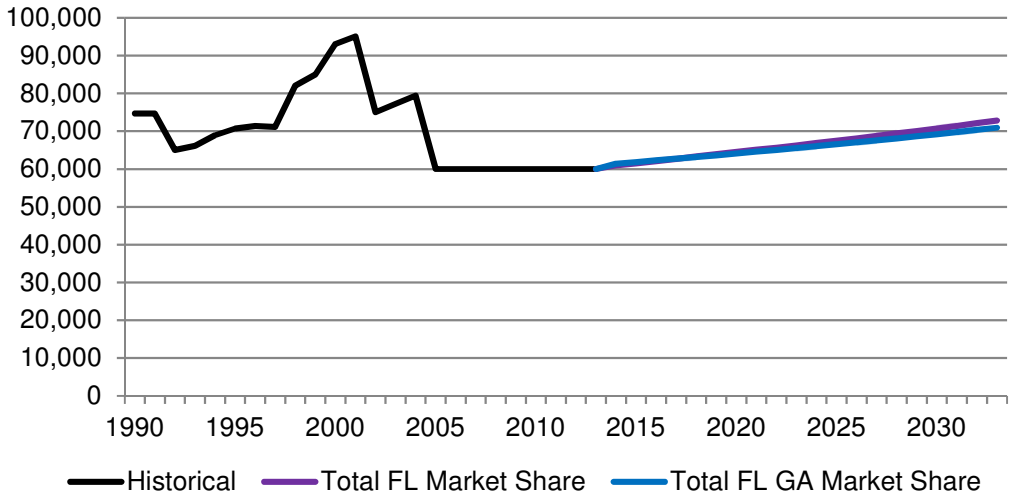
4.4.1.2 Forecasts of Annual Operations

In addition to the previously developed forecasts of annual operations, this Master Plan Update has also developed four additional forecasts of annual operations. The first and second forecasts use the same methodology of forecasting annual operations developed for this Master Plan Update by using the Florida General Aviation Market Share of annual operations forecast and the Total Florida Market Share of annual operations for another forecast. These forecasts take the annual operations at Winter Haven Municipal Airport – Gilbert Field and compare them to the total annual operations at all general aviation airports in the State of Florida in the year 2013 and all of the annual operations at all of the public-use airports in the State of Florida in 2013, respectively. These forecasts presume that the market share of the Airport will remain the same over the planning period with the results shown in Table 4-20 and Figure 4-21.

Table 4-20
MARKET SHARE OF FLORIDA ANNUAL OPERATIONS

Year	Historical	Total FL Market Share	Total FL GA Market Share
1990	74,706		
1995	70,676		
2000	93,080		
2005	60,000		
2010	60,000		
2013	60,000	60,000	60,000
2018		63,300	63,200
2023		66,300	65,600
2028		69,400	68,100
2033		72,800	70,900
Average Annual Growth			
1990-2013	-0.9%		
2013-2018		1.1%	1.0%
2018-2023		0.9%	0.7%
2023-2028		0.9%	0.8%
2028-2033		1.0%	0.8%

Figure 4-21
MARKET SHARE OF FLORIDA ANNUAL OPERATIONS



Using the Florida General Aviation Market Share, the results would be 63,200 annual operations in the year 2018, 65,600 in the year 2023, and 70,900 in the year 2033. This would be an average annual compounded growth rate of 0.8 percent.

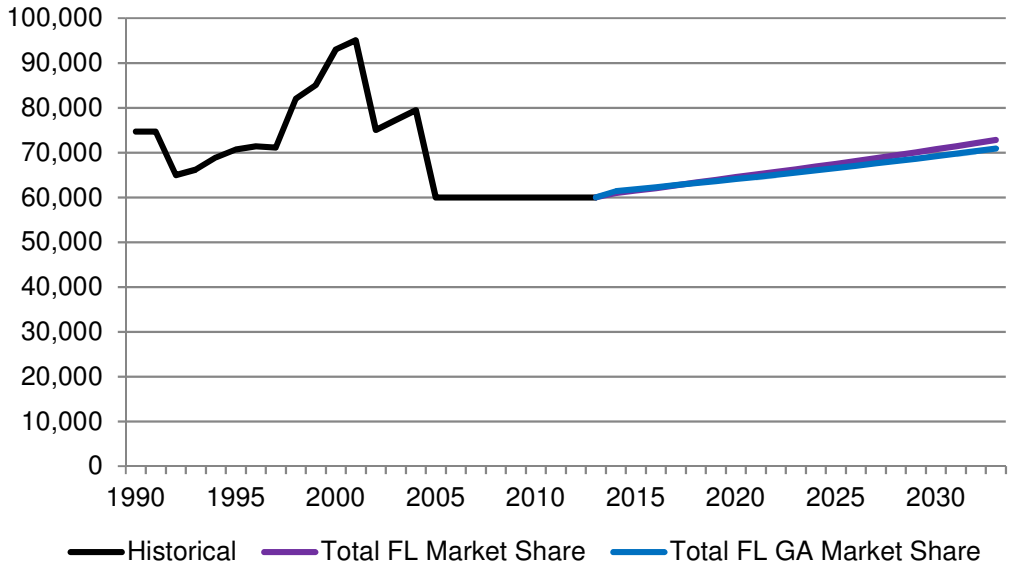
Using the Total Florida Aviation Market Share, the results would be 63,300 annual operations in the year 2018, 66,300 in the year 2023, and 72,800 in the year 2033. This would be an average annual compounded growth rate of 1.0 percent.

The third forecast is one that was developed using the *FAA Aerospace Forecasts 2014-2034* similar to that done for the based aircraft. The *FAA Aerospace Forecasts 2014-2034*, Table 29, *Active General Aviation and Air Taxi Hours Flown* projects that the total number of general aviation hours flown will increase by an average of 1.0 percent per year from 2013-2023. They are predicted to continue to increase by an average of 1.4 percent per year from 2023 through 2034. By applying these percentages, the resulting numbers of annual operations are shown in Table 4-21 and Figure 4-22.

Table 4-21
FAA AEROSPACE BASED FORECAST OF ANNUAL OPERATIONS

Year	Historical	Total FL Market Share	Total FL GA Market Share
1990	74,706		
1995	70,676		
2000	93,080		
2005	60,000		
2010	60,000		
2013	60,000	60,000	60,000
2018		63,300	63,200
2023		66,300	65,600
2028		69,400	68,100
2033		72,800	70,900
Average Annual Growth			
1990-2013	-0.9%		
2013-2018		1.1%	1.0%
2018-2023		0.9%	0.7%
2023-2028		0.9%	0.8%
2028-2033		1.0%	0.8%

Figure 4-22
FAA AEROSPACE BASED FORECAST OF ANNUAL OPERATIONS

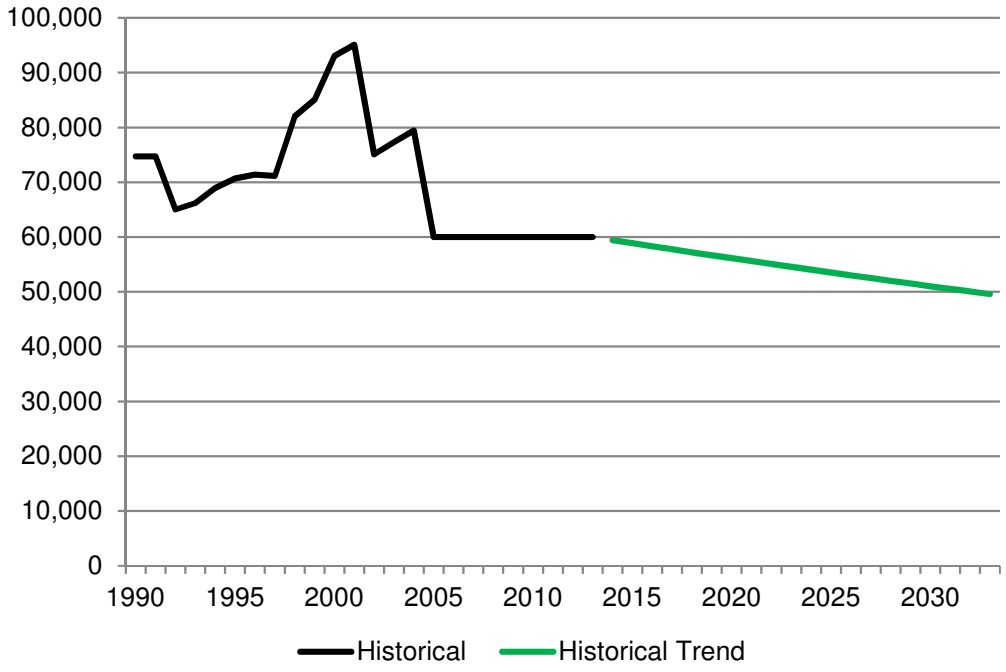


The fourth forecasting methodology used to develop a forecast of annual operations is one that is based on the historic trend in the number of annual operations and a trend line analysis similar to one that was done for based aircraft. The linear trend methodology examines historical growth trends in the number of based aircraft and applies this trend to the current demand levels to produce projections of future activity. Over the period of the last 23 years, the Airport has averaged a negative 0.9 percent annual growth in the number of annual operations. By projecting this percentage, the results shown in Table 4-22 and Figure 4-23 are obtained.

Table 4-22
HISTORICAL TREND FORECAST OF ANNUAL OPERATIONS

Year	Historical	Historical Trend
1990	74,706	
1995	70,676	
2000	93,080	
2005	60,000	
2010	60,000	
2013	60,000	
2018		57,200
2023		54,500
2028		52,000
2033		49,600
Average Annual Growth		
1990-2013	-0.9%	
2013-2018		-1.0%
2018-2023		-1.0%
2023-2028		-0.9%
2028-2033		-0.9%

Figure 4-23
HISTORICAL TREND FORECAST OF ANNUAL OPERATIONS

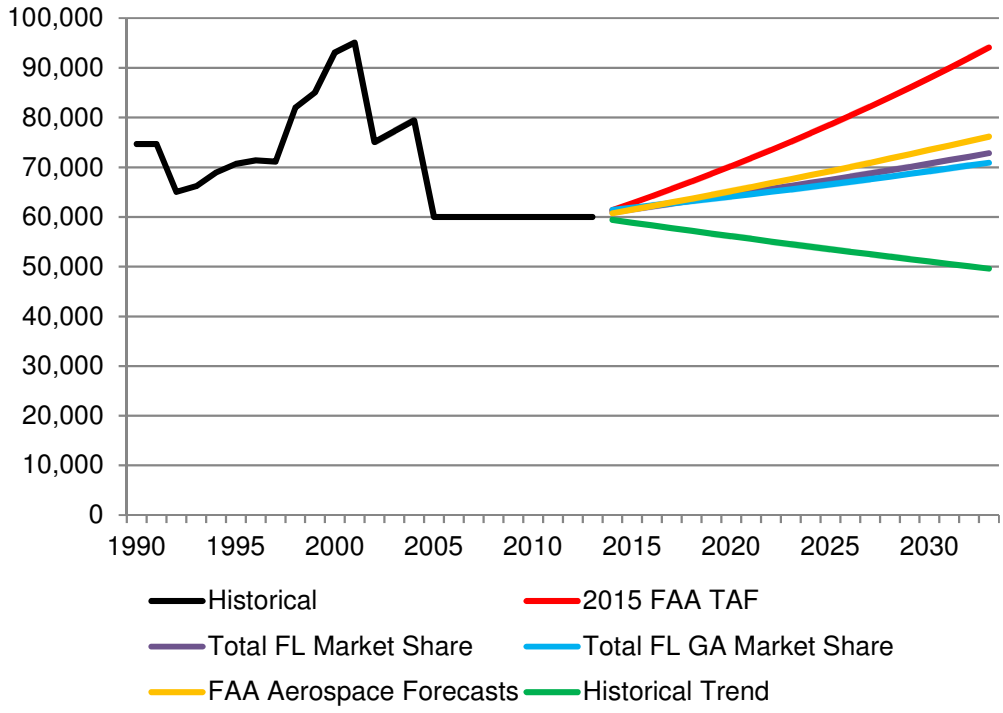


The remaining previously developed forecast of annual operations, the 2015 FAA TAF, was compared to the newly developed forecasts: the FL GA Market Share, the Total FL Market Share, the FAA Aerospace, and the Historical Trend forecasts. These are shown in Table 4-23 and Figure 4-24.

Table 4-23
COMPARISON OF CURRENT ANNUAL OPERATIONS FORECASTS

Year	Historical	2015 FAA TAF	Total FL Market Share	Total FL GA Market Share	FAA Aerospace Forecasts	Historical Trend
1990	74,706					
1995	70,676					
2000	93,080					
2005	60,000					
2010	60,000					
2013	60,000					
2018		67,144	63,300	63,200	63,700	57,200
2023		75,138	66,300	65,600	67,600	54,500
2028		84,085	69,400	68,100	71,800	52,000
2033		94,099	72,800	70,900	76,200	49,600
Average Annual Growth						
1990-2013	-0.9%					
2013-2018		2.3%	1.1%	1.0%	1.2%	-1.0%
2018-2023		2.3%	0.9%	0.7%	1.2%	-1.0%
2023-2028		2.3%	0.9%	0.8%	1.2%	-0.9%
2028-2033		2.3%	1.0%	0.8%	1.2%	-0.9%

Figure 4-24
COMPARISON OF CURRENT ANNUAL OPERATIONS FORECASTS



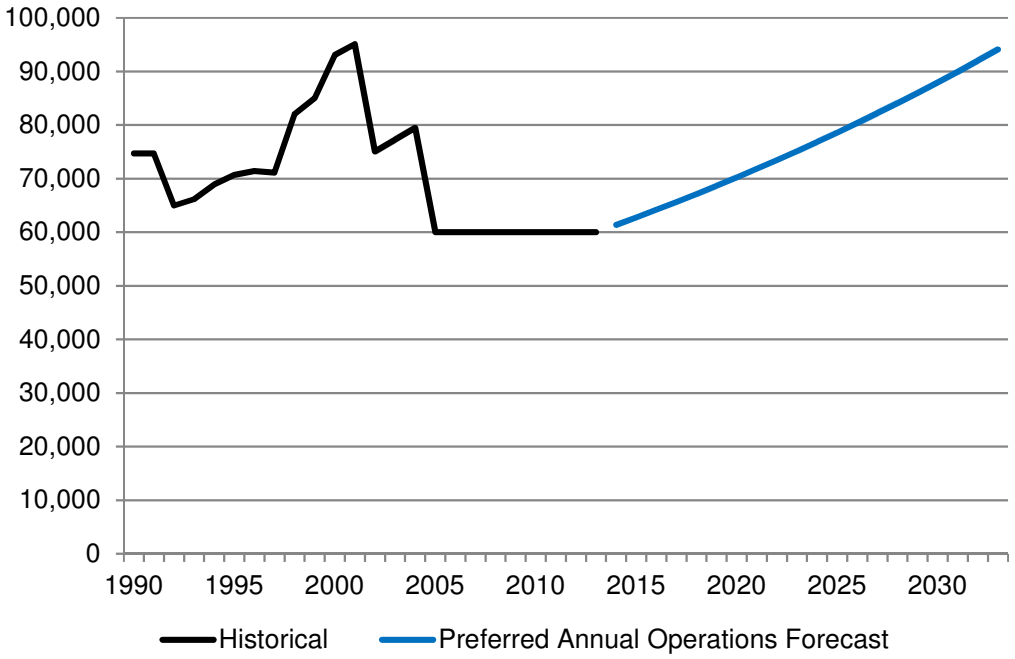
4.4.1.3 Preferred Forecast of Annual Operations

After comparing the five remaining forecasts, it was determined that the 2015 FAA TAF resulted in the highest number of annual operations while still being reasonable. The 2015 FAA TAF forecast was selected as the preferred forecast for annual operations at Winter Haven Municipal Airport – Gilbert Field over the next 20 years. This forecast projects a steady 2.3 percent average annual compounded growth throughout the 20 years of the forecast, as shown in Table 4-24 and Figure 4-25.

Table 4-24
PREFERRED ANNUAL OPERATIONS FORECAST

Year	Historical	Preferred Forecast
1990	74,706	
1995	70,676	
2000	93,080	
2005	60,000	
2010	60,000	
2013	60,000	
2018		67,100
2023		75,100
2028		84,100
2033		94,100
Average Annual Growth		
1990-2013	-0.9%	
2013-2018		2.3%
2018-2023		2.3%
2023-2028		2.3%
2028-2033		2.3%

Figure 4-25
PREFERRED ANNUAL OPERATIONS FORECAST



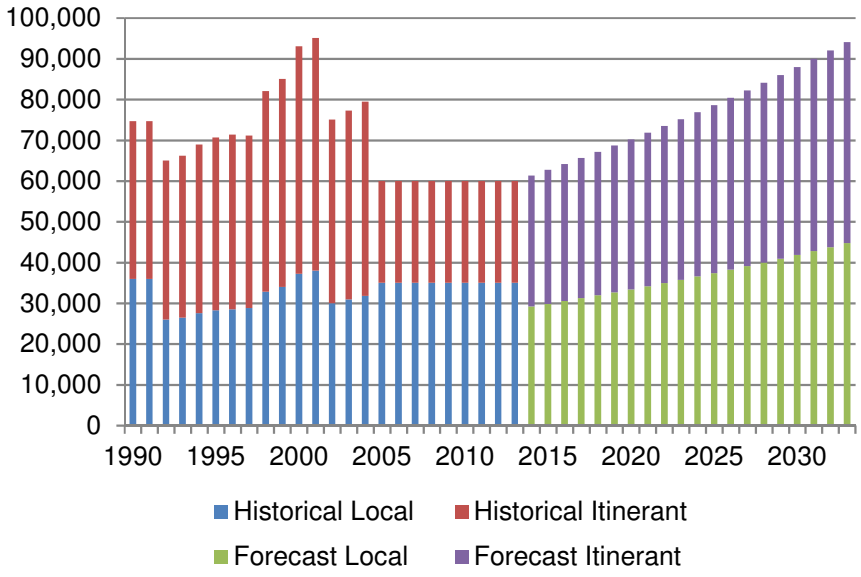
4.4.2 Forecast of Local Versus Itinerant Operations Distribution

The only data source where the historical activity for Winter Haven Municipal Airport – Gilbert Field has been split between local and itinerant operations is the 2015 FAA TAF. The historical split between local and itinerant, as shown by the 2015 FAA TAF, has varied somewhat over the years. The average split of local vs. itinerant between the years 1990 and 2013 has been 47.6 percent local and 52.4 percent itinerant. This split has been distributed across the preferred forecast for annual operations with the results as shown in Table 4-25 and Figure 4-26.

Table 4-25
LOCAL VERSUS ITINERANT OPERATIONS DISTRIBUTION

Year	Historical Local	Historical Itinerant	Preferred Forecast Local	Preferred Forecast Itinerant
1990	36,000	38,706		
1995	28,250	42,426		
2000	37,212	55,868		
2005	35,000	25,000		
2010	35,000	25,000		
2013	35,000	25,000		
2018			31,900	35,200
2023			35,700	39,400
2028			40,000	44,100
2033			44,800	49,300

Figure 4-26
LOCAL VERSUS ITINERANT OPERATIONS DISTRIBUTION



4.4.3 Military Operations

Operations are also divided between commercial operations, military operations and general aviation operations. Commercial operations include regularly scheduled passenger services, air taxi, charter, and air cargo services. Winter Haven Municipal Airport – Gilbert Field has no commercial service.

Military operations are those officially carried out by a branch of the U.S. military services. The 2015 FAA TAF indicates that the Airport has not seen any itinerant military aircraft operations since the year 2000. There have never been any local military operations reported. The reported military itinerant operations prior to the year 2000 were limited to approximately 50 per year. There is no evidence supporting an alternative forecast and no additional projections have been made to include military operations at the Airport. The remainder of the operations at the Airport is general aviation operations.

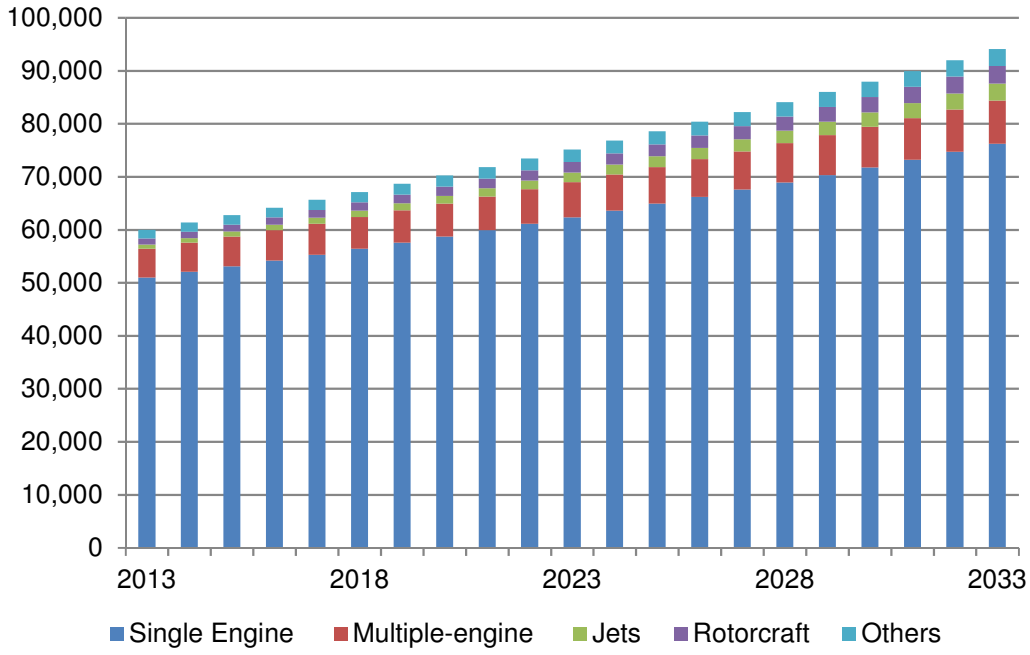
4.4.4 Airport Operational Fleet Mix

The forecast of the split of operations based on the forecast fleet mix is commonly called the operational fleet mix. This forecast is based on the based aircraft fleet mix and the preferred forecast of annual operations. The various growth percentages of these types of aircraft operations are based on the average annual rate of growth projected in each aircraft operations category by the *FAA Aerospace Forecasts 2014-2034.* The resulting operational fleet mix is shown in Table 4-26 and Figure 4-27.

Table 4-26
OPERATIONAL FLEET MIX

Year	Single Engine	Multiple-engine	Jets	Rotorcraft	Others	Total Annual Operations
2013	51,000	5,379	795	1,138	1,655	59,967
2018	56,400	6,000	1,200	1,500	2,000	67,100
2023	62,400	6,600	1,800	2,000	2,300	75,100
2028	68,900	7,400	2,400	2,600	2,700	84,000
2033	76,200	8,200	3,200	3,300	3,200	94,100
Percentage of Aircraft						
2013	85.0%	9.0%	1.3%	1.9%	2.8%	100.0%
2018	84.1%	8.9%	1.8%	2.2%	3.0%	100.0%
2023	83.1%	8.8%	2.4%	2.7%	3.1%	100.0%
2028	82.0%	8.8%	2.9%	3.1%	3.2%	100.0%
2033	81.0%	8.7%	3.4%	3.5%	3.4%	100.0%

Figure 4-27
OPERATIONAL FLEET MIX



Each category of aircraft is anticipated to increase the annual number of operations at the Airport over the next 20 years. However, jets, rotorcraft, and "other" aircraft are anticipated to increase their respective percentage of operations at the Airport. The percentage of single-engine aircraft and multiple-engine aircraft operations are forecast to decline as the other sectors increase. Single engine aircraft will still continue to perform the majority of the operations at the Airport throughout the planning period.

4.5 Peak Activity

Peak activity forecasts are used to size facilities such as aprons and terminals. Typically, aircraft do not land and take off consistently from one hour to the next or even from one month to the next. The peak activity forecasts typically projected are the peak month, the average day of the peak month, and the peak hour of the average day. This is not intended to forecast the busiest hour of the busiest day of the year. If a facility were designed to accommodate the busiest day of the busiest month of the year, the facility would be underutilized the majority of the year. By designing to the peak hour of the average day of the peak month, the result is a facility that is comfortably utilized about 85 percent of the year. There will be times when the facility is underutilized, and there will also be times when it is crowded for short periods.

As Winter Haven Municipal Airport – Gilbert Field has no air traffic control tower, monthly tabulations for the peak periods are not available. However, the Airport typically has the highest levels of activity during the months beginning in November and ending in April. This is largely due to the mild weather in Florida during these months. The Airport also enjoys overflow activity

from Sun 'n Fun and the peak month is, therefore, usually in April when this event at Lakeland Linder Regional Airport usually occurs. It was estimated that approximately 10 percent of the Airport's annual activity would occur during the peak month due to this activity. The figure of 10 percent of annual operations was used to determine the peak month activities through the year 2033, as shown in Table 4-27.

Table 4-27
PROJECTED PEAK OPERATIONS

Year	Total Annual Operations	Peak Month Operations	Average Day Operations	Peak Hour Operations
Base Year				
2013	60,000	6,000	200	20
Forecast				
2018	67,100	6,710	220	25
2023	75,100	7,510	250	25
2028	84,085	8,409	280	30
2033	94,100	9,410	310	30

To achieve the average day peak month activity, the peak month activities would be divided by the number of days in the month identified as the peak month, April. In Table 4-27, each of the peak month activity numbers have been divided by 30.

No historical data was available to determine the peak hour operations at the Airport. Therefore, an estimate of a tenth of the average day operations was used to calculate the peak hour operations.

4.6 Comparison of Preferred Forecasts to FAA Terminal Area Forecasts

If an airport is included in the FAA Terminal Area Forecasts, any new aviation activity forecasts need to be reviewed and approved by the FAA before they can be applied to further analyses. During this review, the FAA looks to see if the based aircraft and annual operations forecasts differ from the TAF by less than 10 percent in the first five years and 15 percent in the first 10 years. An FAA Memorandum dated 23 December 2004 states "Where the 5- or 10-year forecast does not exceed 100,000 total annual operations or 100 based aircraft, then it does not need headquarters review, and should be provided for use in the annual update of the TAF." This is the case with Winter Haven Municipal Airport – Gilbert Field with respect to reported annual operations, but not to the number of based aircraft. In accordance with FAA preference and for informational purposes, a comparison of the preferred forecast to the 2015 FAA TAF is shown in Table 4-28.

Table 4-28
COMPARISON OF 2015 FAA TAF AND PREFERRED FORECASTS

	Preferred Forecast	2015 FAA TAF	Difference
Based Aircraft			
Base Year (2013)	151	151	0%
5 Year (2018)	177	177	0%
10 Year (2023)	209	209	0%
Annual Operations			
Base Year (2013)	60,000	60,000	0%
5 Year (2018)	67,100	67,144	0%
10 Year (2023)	75,100	75,138	0%

The based aircraft and annual operations forecasts are well within the limits set by the FAA. The preferred forecasts for based aircraft and annual operations are that of the 2015 FAA TAF. Therefore, both preferred forecasts are within the limits set by the FAA. For the reasons stated in this chapter, the forecasts of based aircraft and annual operations selected in this study are considered reasonable and valid for planning purposes.

4.7 Summary of Aviation Activity Forecasts

The data and methods used to forecast aviation demand for the Airport are consistent with those used by the FAA and other general aviation airports around the nation. The forecasts selected in this study reflect the activity anticipated at the Winter Haven Municipal Airport – Gilbert Field over the next 20 years without being either too conservative or too optimistic. The FAA approved these forecasts on February 27, 2015, as shown in a letter contained in **Appendix J**. Table 4-29 shows an overview of the selected forecasts.

Table 4-29
SUMMARY OF AVIATION ACTIVITY FORECASTS

	2013	2018	2023	2028	2033
Based Aircraft					
Single Engine	132	148	167	187	206
Multiple-engine (piston and turboprop)	13	18	25	33	45
Jet	2	4	6	9	13
Rotorcraft	0	1	2	4	5
Other (gliders, light sport, balloons, etc.)	4	6	8	12	16
Total	151	177	209	245	285
Annual Operations					
Local	35,000	31,900	35,700	40,000	44,800
Itinerant	25,000	35,200	39,400	44,100	49,300
Total	60,000	67,100	75,100	84,100	94,100
Operational Fleet Mix					
Single Engine	51,000	56,400	62,400	68,900	76,200
Multiple-engine (piston and turboprop)	5,379	6,000	6,600	7,400	8,200
Jet	795	1,200	1,800	2,400	3,200
Rotorcraft	1,138	1,500	2,000	2,600	3,300
Other (gliders, light sport, balloons, etc.)	1,655	2,000	2,300	2,700	3,200
Total	59,967	67,100	75,100	84,000	94,100

5. FACILITY REQUIREMENTS

5.1 Introduction

This chapter builds upon the Inventory of Existing Conditions and the Aviation Activity Forecast of Aviation Activities chapters to develop an understanding of how many and what types of facilities will be required to meet the forecast demand. It compares what is already available with what will be required over the next 20-year planning period and determines in five-year increments what facilities are likely to be needed and when.

5.2 Airspace

There are five commercial service airports located within 60 nautical miles of the Winter Haven Municipal Airport – Gilbert Field. These are augmented by 30 public-use general aviation airports located within 60 nautical miles and 37 private general aviation airports located within 40 nautical miles. In addition, there are three military operating areas (MOA) located to the southeast of the Airport; Lake Placid North MOA, Lake Placid East MOA, and Lake Placid West MOA. There is also the 30 nautical mile Mode C veil for Orlando located just east of the Airport and the Tampa 30 nautical mile Mode C veil for Tampa located just west of the Airport. However, based on available data, no known airspace conflicts currently exist. The airspace around the Airport is relatively uncongested.

5.2.1 Approaches

There are many types of approaches that can be executed into airports. There are those that occur during Visual Flight Rule (VFR) operations and those that occur during Instrument Flight Rules (IFR) operations. VFR operations are those that occur under Visual Meteorological Conditions (VMC) that are clear enough that the pilot can see where the aircraft is going. IFR operations are those that occur during Instrument Meteorological Conditions (IMC), or where the pilot's visibility is obscured.

IFR approaches are designed so that the pilot of an aircraft in IMC can land by using instruments, Global Positioning System (GPS), or Inertial Navigation System (INS) navigation without assistance from air traffic control. IFR approaches are generally classified as either precision or non-precision approaches. Precision approaches are those that provide both lateral (through use of a localizer or a very high frequency omnidirectional range (VOR)) and vertical (through use of a glideslope) electronic information. Non-precision approaches provide lateral information only.

Winter Haven Municipal Airport – Gilbert Field does not have any precision approaches. All existing IFR approaches to the Airport are non-precision. GPS based non-precision approaches are published for both Runway 5 and Runway 11. GPS is a satellite-based navigation system that provides location and time information in all weather, anywhere there is an unobstructed line of sight to four or more GPS satellites. The GPS system is maintained by the U.S. government and is freely accessible to anyone with a GPS receiver.

The approach plates for the Airport indicate that for Aircraft Category A and B, the visibility minimum is one mile. For an Aircraft Category C, the visibility minimum is 1 ¼ miles for Runway 5 and 1 ¾ miles for Runway 11. For an Aircraft Category D, the visibility minimum is 1 ½ miles for Runway 5 and 2 miles for Runway 11. Approaches with lower visibility minimums would require:

- The widening of the Part 77 Primary Surface from the existing 500 feet to 1,000 feet
- Significant lengthening and widening of the Runway Protection Zone (RPZ). It is recommended by the FAA that the Airport sponsor (the City of Winter Haven) acquire or control the land in the RPZ. No public roads are allowed within an RPZ.
- Runway approach lights would need to be installed or, in the case of Runway 11/29, just adding runway edge lighting.

The widening of the primary surface, to achieve the lower visibility minimums, would encroach on and diminish the utility of the developable land within the current Airport boundaries. Records show that weather conditions with lower than one-mile visibility minimums only occur between one and three percent of the time annually at the Airport.

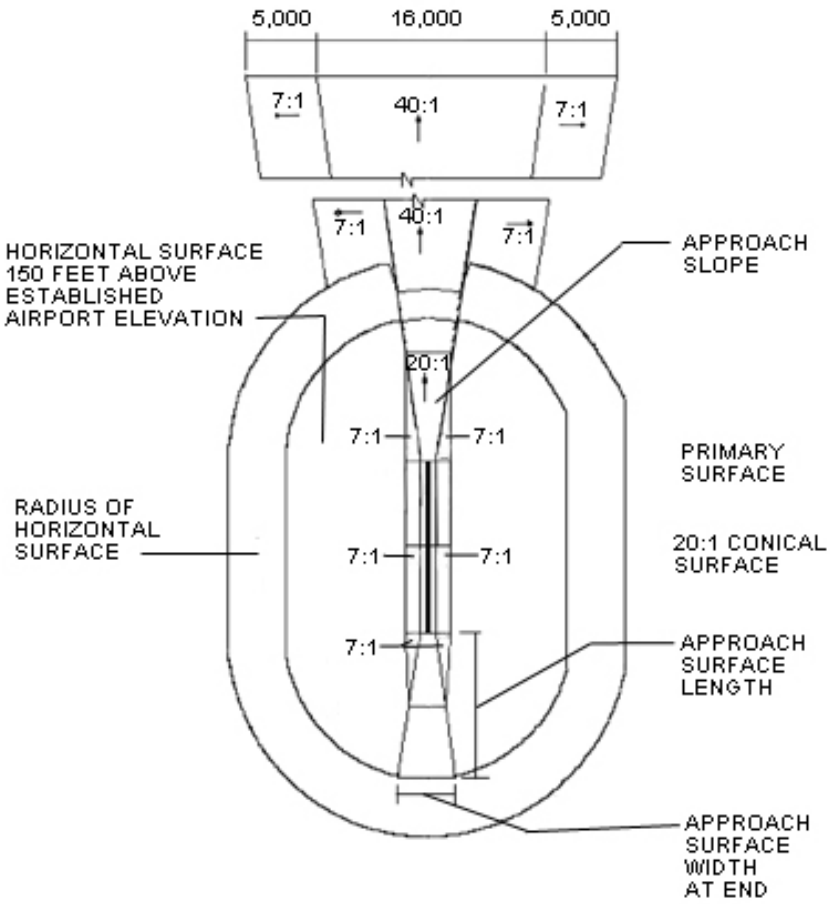
5.2.2 Part 77 Surfaces

Code of Federal Regulations (CFR) Title 14, Chapter 1, Part 77, *Objects Affecting Navigable Airspace* (Part 77), sets criteria for protecting airspace near airports. These regulations define numerous airspace surfaces that exist on and around airports. The size and dimensions of these surfaces are dependent upon the runway type, i.e. utility, or non-utility, and the approved or planned approach procedures. Objects, whether natural or man-made, should not penetrate these defined Part 77 surfaces. The dimensions of the existing Part 77 surfaces for Winter Haven Municipal Airport – Gilbert Field are given in Table 5-1 and the surfaces themselves are depicted in Figure 5-1.

Table 5-1
EXISTING PART 77 SURFACES

Surface	Non-Precision Instrument Runway (in feet) (Runways 5 and 11)	Visual Runway Larger Than Utility (in feet) (Runway 23)	Visual Runway Utility (in feet) (Runway 29)
Width of Primary Approach Surface and Approach Surface Width at Inner End	500	500	250
Radius of Horizontal Surface	10,000	5,000	5,000
Approach Surface Width at End	3,500	1,500	1,250
Approach Surface Length	10,000	5,000	5,000
Approach Slope	34:1	20:1	20:1

Figure 5-1
EXISTING PART 77 SURFACES



Florida Administrative Code 14-60 requires that any structure within Florida that is located within 10 nautical miles of a public-use or military airport licensed by the State of Florida that exceeds the federal limits must be permitted by the FDOT Office of Aviation. FDOT may require that the structure be marked and/or lighted. In all cases, the safety of people on the ground and in the air will be an overriding consideration.

5.3 Airfield

The airfield is a system of components upon which aircraft operate. These include runways, taxiways, and aircraft parking aprons. Airfield requirements are affected by demand capacity, aircraft mix, runway and taxiway design standards, airspace, and navigational and visual aids. This section looks at each of these factors as they relate to the Winter Haven Municipal Airport – Gilbert Field.

5.3.1 Airfield Configuration

The number, orientation, and spatial layout of the runways at an airport make up the airfield configuration. The configuration is adequate if it provides sufficient operational capacity and

appropriate wind coverage for the aircraft operating or expected to operate at the Airport through the end of the planning period.

The existing airfield configuration at the Airport consists of two runways, one of 5,006 feet in length, Runway 5/23, and one of 4,001 feet in length, Runway 11/29. Runway 5/23 is situated in a northeast-southwest direction on the airfield and it has a full-length, parallel taxiway, Taxiway B, with five connector taxiways. Runway 5/23 has been designated the primary runway for the Airport. Runway 11/29 is situated in an east/southeast by west/northwest direction. It has two partial-length parallel taxiways each of which connect to Runway 11/29 with two taxiway connectors. Runway 11/29 is designated as the crosswind or secondary runway.

5.3.2 Airfield Demand/Capacity

It is recommended by the FAA that the operational capacity of an airport be determined on a periodic basis. This allows for any adjustments that might be required based on such an analysis. An airfield capacity analysis determines what percentage of the airfield's theoretical capacity is being used and what potential delays might develop given the calculated capacity. The FAA Advisory Circular (AC) 150/5060-5, *Airport Capacity and Delay*, provides a methodology for performing the analysis.

The Annual Service Volume (ASV) is the theoretical capacity of the Airport on an annual basis given the runway configuration, the number and location of taxiways, the aircraft fleet mix, the percentage of aircraft arrivals, the percentage of touch-and-go activity at the Airport, and the historical meteorological conditions. The analysis performed with the methodology provided in FAA AC 150/5060-5 indicates that the current theoretical hourly capacity for the Airport during Visual Flight Rules (VFR) weather is approximately 98 operations as shown in Table 5-2.

Table 5-2
AIRFIELD CAPACITY

	Theoretical Capacity	2013 Operations	Percent of Capacity	2033 Operations	Percent of Capacity
Operations Per Hour During VFR Weather	98	20	20.4%	31	32.0%
Operations Per Hour During IFR Weather	59	12	20.3%	19	31.9%
Operations Per Year	230,000	60,000	26.1%	94,100	40.9%

While the theoretical capacity of the Airport indicates as many as 98 operations per hour could occur during VFR weather, the Airport is not anticipated to approach this number of hourly operations during the planning period. The forecasts of aviation activity indicate that the average peak hour operations in 2013 were 20 and that they are expected to rise to 31 in the year 2033. The ASV of the Airport is calculated at 230,000 annual operations. However, it is reported that only 60,000 annual operations occurred at the Airport in 2013. This is approximately 26.1 percent of the ASV. The forecasts of aviation activity indicate that the

annual operations will increase to 94,100 by the year 2033. This would equate to approximately 40.9 percent of the ASV.

5.3.3 Runway Design Code

Each runway on an airport has an established Runway Design Code (RDC), which is determined by the Aircraft Approach Category (AAC), the Airplane Design Group (ADG), and the approach visibility minimums for that runway. The first component, the AAC, is depicted by a letter and relates to aircraft approach speed, as shown in Table 5-3.

Table 5-3
AIRCRAFT APPROACH CATEGORIES

Aircraft Approach Category	Aircraft 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

The second component, the ADG, is depicted by a Roman numeral and relates to either the wingspan or the tail height of the aircraft; whichever is more restrictive. The levels of the ADG are shown in Table 5-4.

Table 5-4
AIRPLANE DESIGN GROUPS

Group Number	Tail Height in Feet	Wingspan in 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

The third component, the approach visibility minimums, are expressed by Runway Visual Range (RVR) values in feet of 1200, 1600, 2400, 4000, and 5,000, as shown in Table 5-5. The third component would read “VIS” for runways designated with a visual approach only.

Table 5-5
VISIBILITY MINIMUMS

RVR in Feet	Flight Visibility Category in Statute Miles
5,000	Not lower than 1 mile
4,000	Lower than 1 mile but not lower than ¾ mile (APV ≥ ¾ but <1 mile)
2,400	Lower than ¾ mile but not lower than ½ mile (CAT-I PA)
1,600	Lower than ½ Mile but not lower than ¼ mile (CAT-II PA)
1,200	Lower than ¼ mile (CAT-III PA)

Note: APV = Approach Procedure with Vertical Guidance

Given the above parameters, Runway 5 currently has a RDC of B-II-5,000 and Runway 23 has a RDC of B-II-VIS. The design aircraft identified for Runway 5/23 in the 2004 Master Plan Update was the Grumman Gulfstream I. This aircraft has an approach speed of 113 knots, a wingspan of 78.3 feet, a tail height of 23 feet, and a Maximum Take Off Weight (MTOW) of 36,000 pounds. This brings the design aircraft solidly into the B-II category. However, as production of the Grumman Gulfstream I ceased in 1969, it is proposed that the design aircraft for Runway 5/23 re-assigned to the Dassault Falcon 900, which is still in production and is also an ARC B-II aircraft. It has an approach speed of 100 knots, a wingspan of 63.4 feet, a tail height of 24.75 feet, and an MTOW of 45,500 pounds.

Runway 11 currently has a RDC of B-I-5,000 and Runway 29 has a RDC of B-I-VIS. The design aircraft identified for Runway 11/29, in the 2004 Master Plan Update, was the Beechcraft King Air B-100. This aircraft has an approach speed of 111 knots, a wingspan of 45.8 feet, a tail height of 15.3 feet, and an MTOW of 11,800 pounds. The Beechcraft King Air B-100 qualifies as a B-I aircraft.

The Airport has GPS coverage. However, it does not have vertical guidance. A visibility of not less than one mile has been implemented at the Airport. Therefore, the visibility minimum is Visual or "VIS". This results in a RDC of B-II-VIS for Runway 5/23 and an RDC of B-I-VIS for Runway 11/29. The RDC is based on current or planned development and does not have an operational application.

5.3.4 Airport Reference Code

The FAA has established a tiered system of Airport Reference Codes (ARC), which determines the design standards for runways, separation distances, safety areas, and many other airfield facilities. The ARC is an airport designation that signifies the airport's highest Runway Design Code (RDC), minus the third component, visibility, of the RDC. The ARC is used for planning and design only and does not limit the aircraft that may be able to operate safely on the Airport. Currently, the highest ARC on the Airport is for Runway 5/23 with an RDC of B-II-VIS. Therefore, the current Airport ARC is B-II. This is not projected to change, unless the fleet mix at the Airport changes significantly. An aircraft with a higher AAC and/or ADG would have to document 500 or more annual operations before this change could be considered.

5.3.5 Runway Length Analysis

Runway length analyses were performed for the current runways, Runway 5/23 and Runway 11/29, based on the Aviation Activity Forecasts presented in Chapter 4 of this report and approved by the FAA. The FAA Advisory Circular 150/5328-4B, *Runway Length Requirements for Airport Design*, was used in the preparation of this analysis.

Runway 5/23 has an ARC of B-II. The B-II designation indicates that the Runway is designed to accommodate aircraft with approach speeds up to but not including 121 knots and wingspans up to but not including 79 feet. In addition to the Dassault Falcon 900, aircraft that are within the B-II designation include aircraft found in Table 5-6.

Table 5-6
SAMPLE ARC B-II AIRCRAFT

ARC B-II Aircraft	MTOW (pounds)	Approach Speed (knots)	Wingspan (feet)
Aerospatiale NORD 262	23,810	96	74.2
ATR 42-300	33,450	103	58
Beechcraft 1900	17,120	113	58
Beechcraft King Air C90-1	10,100	100	50.3
Beechcraft King Air B200	12,500	103	54.5
Bombardier Continental Jet	37,500	108	63.1
Cessna 441	9,925	100	49.3
Cessna 675	8,000	104	52.1
Cessna Citation C25A	12,500	118	49.8
Cessna Citation C550	14,800	112	52.2
Cessna Citation C560	16,830	107	55.8
Cessna Citation C650	22,000	114	53.5
Dassault Falcon 900	45,500	100	63.4
Embraer 110 Bandeirante	13,007	92	50.3
Grumman Gulfstream I	36,000	113	78.3
Raytheon 300	12,500	103	54.1
Rockwell Aero Commander 500	6,750	97	49.1
Sabreliner 65	24,000	105	50.5
Shorts 360	26,000	104	74.8

Runway 11/29 has an ARC of B-I. The B-I designation indicates that the Runway is designed to accommodate aircraft with approach speeds up to but not including 91 knots and wingspans up to but not including 49 feet. In addition to the Beechcraft King Air B-100, aircraft that are within the B-I designation include aircraft found in Table 5-7.

Table 5-7
SAMPLE ARC B-I AIRCRAFT

ARC B-I Aircraft	MTOW (pounds)	Approach Speed (knots)	Wingspan (feet)
Beechcraft Airliner C99	11,300	107	45.9
Beechcraft Baron 58	5,500	96	37.8
Beechcraft Baron 58P	6,200	101	37.8
Beechcraft Baron 58TC	6,200	101	37.8
Beechcraft Duke B60	6,775	98	39.2
Beechcraft King Air B-100	11,800	111	45.8
Beechcraft King Air F90	10,950	108	45.9
Cessna Citation I	11,850	108	47.1
Cessna - 402 Businessliner	6,300	95	39.8
Cessna - 404 Titan	8,400	92	46.3
Cessna - 414 Chancellor	6,785	94	44.1
Cessna - 421 Golden Eagle	7,450	96	41.7
Embraer - 121 Xingu	12,500	92	47.4
Embraer - 326 Xavante	11,500	102	35.6
Hamilton Westwind II STD	12,495	96	46
Mitsubishi MU-2G	10,800	119	39.2
Piper 31-310 Navajo	6,200	100	40.7
Piper 400LS Cheyenne	12,050	110	47.7
Piper 60-602P Aerostar	6,000	94	36.7
Rockwell 690A Turbo Commander	10,300	97	46.5

The methodology used for determining the applicable runway length is contained in Table 1-1, *Airplane Weight Categorization for Runway Length Requirements*, of the FAA AC 150/5325-4B, *Runway Length Requirements for Airport Design*. The line for aircraft weighing in excess of 12,500 pounds but less than 60,000 pounds was used.

Information specific to Winter Haven Municipal Airport – Gilbert Field was used in conjunction with Figure 3-2, *100 Percent of Fleet at 60 Percent Load Factor*, of FAA AC 150/5325-4B to obtain a single runway length for the entire group of B-II aircraft. The Airport-specific information used is found in Table 5-8.

Table 5-8
WINTER HAVEN MUNICIPAL AIRPORT – GILBERT FIELD SPECIFIC DATA

Category	Information
Hottest Month	July
Mean Daily Maximum Temperature for July from 2006-2012	92° F
Airport Elevation	145 Feet Above Mean Sea Level

As Winter Haven is located on the fringes of a couple of metropolitan areas (Tampa and Orlando), it was determined that 100 percent of the fleet mix from Figure 3-2 of the FAA AC 150/5325-4B would be used. This results in an initial runway length for Runway 5/23 of 5,500 feet.

Title 14, Code of Federal Regulations (CFR), *Aeronautics and Space*, requires that runway landing distances for turbojet aircraft be increased by 15 percent when landing on wet or slippery runways. Further, the take-off distances are to be increased by 15 percent or up to 5,500 feet, whichever is less, for effective runway gradients greater than zero. This would result in a runway length of 5,505 feet. As the Winter Haven Municipal Airport – Gilbert Field currently has projected over 500 turbojet operations per year within the planning period per the FAA approved Forecasts of Aviation Activities; this calculation is valid for at least the primary runway, Runway 5/23.

For takeoff only, the effective runway gradient is also considered. The 5,500-foot runway length taken from the previous calculation would be increased at a rate of 10 feet for each foot of elevation difference between the high and low points of the centerline. For Runway 5/23, the difference in elevation between the runway ends is 0.5 feet. This would equate to five feet or a total runway length of 5,505 lineal feet. Runway 5/23 is currently 5,006 feet in length.

A similar runway length analysis was developed for Runway 11/29. In this case, Figure 2-1, *Small Airplanes with Fewer Than 10 Passengers*, at 100 percent of the fleet, was used resulting in a runway length of 3,750 feet. An additional 15 percent would result in a takeoff runway length of 4,313 feet. However, this Runway is not anticipated to accommodate turbojets nor is it sized for most turbojet traffic. Therefore, this calculation is not valid. The difference in runway gradient is two feet resulting in an additional 20 feet for a total length of 3,770 feet. Runway 11/29 is currently 4,001 feet in length. The results of the runway length analyses are shown in Table 5-9.

Table 5-9
RUNWAY LENGTH ANALYSIS

Runway	Recommended Length	Current Length
5/23	5,505 feet	5,006 feet
11/29	3,770 feet	4,001 feet

5.3.6 Runway Width Analysis

For runways such as Runway 5/23 that have an AAC of A or B, an ADG of II, and a visibility minimum of not lower than one mile, the FAA approved runway width would be 75 feet with 10-foot wide shoulders. Runway 5/23 is currently 100 feet in width with 10-foot wide stabilized turf shoulders and meets/exceeds FAA standards.

For runways such as Runway 11/29 that have an AAC of A or B, an ADG of I, and a visibility minimum of not lower than one mile, the FAA approved runway width would be 60 feet with 10-

foot wide shoulders. Runway 11/29 is currently 100 feet in width with 10-foot wide stabilized turf shoulders and meets/exceeds FAA standards.

5.3.7 Runway Design Standards

The FAA requires certain dimensional standards be met for a runway based on the identified RDG. Table 5-10 compares the dimensions of the runway and various safety areas with the FAA standards for B-I and B-II runways. Both runways meet or exceed these standards. Table 5-11 compares the existing runway protection zone dimensions with those recommended by the FAA. All runway protection zone dimensions meet the FAA standards. Table 5-12 shows runway separation distances to a holding position, a parallel taxiway/taxilane centerline, and an aircraft parking area with the design standards for B-I and B-II runways, which are representative of the existing runways. Runway 5/23 meets the FAA standards. However, the holdlines on Taxiways C and D are located only 120 feet from the centerline of Runway 11/29. They should be a minimum of 125 feet from the centerline of Runway 11/29.

Table 5-10
RUNWAY DESIGN STANDARDS

Design Parameter	Runway 5/23		Runway 11/29	
	Existing (in feet)	B-II Standards (in feet)	Existing (in feet)	B-I Standards (in feet)
Width	100	75	100	60
Shoulder Width	10 (stabilized turf)	10	10 (stabilized turf)	10
Crosswind Component	13 knot	13 knots	10.5 knots	10.5 knots
Runway Safety Area				
Length Beyond Departure End	300	300	240	240
Length Prior to Threshold	300	300	240	240
Width	150	150	120	120
Runway Obstacle Free Area				
Length Beyond Runway End	300	300	240	240
Length Prior to Threshold	300	300	240	240
Width	500	500	400	400
Runway Obstacle Free Zone				
Length	200 feet beyond each runway end	200 feet beyond each runway end	200 feet beyond each runway end	200 feet beyond each runway end
Width	400	400	400	400

Table 5-11
RUNWAY PROTECTION ZONE DIMENSIONS

Design Parameter	Existing 5 (in feet)	Existing Runway 23 (in feet)	Existing Runway 11 (in feet)	Existing Runway 29 (in feet)	B-I Standards Visual (in feet)	B-II Standards Not Lower than 1 Mile (in feet)
Approach Runway Protection Zone						
Length	1,000	1,000	1,000	1,000	1,000	1,000
Inner Width	500	500	500	500	500	500
Outer Width	700	700	700	700	700	700
Departure Runway Protection Zone						
Length	1,000	1,000	1,000	1,000	1,000	1,000
Inner Width	500	500	500	500	500	500
Outer Width	700	700	700	700	700	700

Table 5-12
RUNWAY SEPARATION STANDARDS

	Existing Runway 5/23	B-II Standards	Existing Runway 11/29	B-I Standards
Holding Position	200	200	120	125
Parallel Taxiway/Taxilane Centerline	300	240	150	150
Aircraft Parking Areas	400	250	310	125

5.3.8 Runway Designation

Runway designation markings are provided on each end of a runway and are used by pilots to properly identify the runway. The designation identifies a runway according to the inbound compass heading and consists of a number. The designation number represents the whole number nearest the compass heading when viewed from the direction of approach. For example, where a compass heading is 183 degrees, the runway designation would be 18, and for a compass heading of 87 degrees, the runway designation would be 9.

Compass readings are affected by the earth's magnetic field and by large magnetic objects in the vicinity. The effect of magnetic objects in the vicinity is called "deviation." The effect of the Earth's magnetic field is called "variation." Compass headings corrected for nearby objects (deviation) are "magnetic" directions. Correcting for the Earth's magnetic field (variation) gives us a "true" direction. When on land, "variation" is referred to as "magnetic declination" or sometimes "deviation."

The compass heading is determined by correcting a runway's true bearing for magnetic declination. To accomplish this modification, westerly magnetic declination values are added to

a runway's true bearing, while easterly magnetic declination values are subtracted. The magnetic declination for Winter Haven Municipal Airport – Gilbert Field is 05° 48' 00" West. Since the magnetic declination is westerly, the compass headings associated with the runways at the Airport are determined by adding the declination value to the true bearing values. The true bearing, the compass heading, the true designation, and the next anticipated designation change for each runway is shown in Table 5-13.

Table 5-13
RUNWAY DESIGNATIONS

Category	Measure
Airport Declination	5° 48' 00" West
Rate of Declination Change Per Year	0° 6' W
Runway 5	
True Bearing	N 44° 52' 58"
Compass Bearing	N 51° 40' 58"
Correct Runway Designation	5
Approximate Years to Next Designation Change	34
Runway 11	
True Bearing	N 103° 2' 24"
Compass Bearing	N 108° 50' 24"
Correct Runway Designation	11
Approximate Years to Next Designation Change	68
Runway 23	
True Bearing	N 224° 52' 58"
Compass Bearing	N 230° 39' 58"
Correct Runway Designation	23
Approximate Years to Next Designation Change	34
Runway 29	
True Bearing	N 283° 2' 24"
Compass Bearing	N 288° 49' 24"
Correct Runway Designation	29
Approximate Years to Next Designation Change	68

Source: National Oceanic and Atmospheric Administration National Geophysical Data Center accessed 24 February 2015

5.3.9 Runway Pavement Condition and Strength

Through the planning period, the condition of the pavement should be monitored to ensure that basic maintenance of the pavement is assured. It is recommended that pavement with a Pavement Condition Index (PCI) ranging from 90 to 75 be maintained with crack sealing, partial depth patching, full-depth patching, or surface treatment. Once the PCI reaches 74 or below, it is recommended that rehabilitation in the form of mill and overlay, concrete pavement restoration, or full-depth pavement reconstruction be considered and planned for before the pavement reaches a PCI at or below 41, which would indicate that the pavement is in poor

condition. Pavement rehabilitation will lengthen the useful life of a runway and ensure that it is operable well into the future.

The pavement of Runway 5/23 is grooved asphalt and is currently considered to be in good condition. The Runway was reconstructed in 2010. Typically, it would not require full rehabilitation or reconstruction for 15 to 20 years. It may, however, require some maintenance and repair approximately every five to ten years depending on the wear.

The pavement of Runway 11/29 is also grooved asphalt. The majority of this runway was last constructed in 1997. However, the portions of Runway 11/29 that intersect with Runway 5/23 were reconstructed in 2010 when that runway was reconstructed. The pavement for Runway 11/29 had a PCI of 79 and a category of satisfactory in 2011. At that time, it was anticipated that the Runway would require at least a mill and overlay by the year 2019.

Airports have varying pavement strengths based on the aircraft types they expect to serve. Runway 5/23 has pavement strength of 30,000 pounds for single-wheel gear aircraft. Runway 11/29 has pavement strength of 12,500 pounds for single-wheel gear aircraft. The majority of the aircraft operating at the Airport do not exceed 12,500 pounds; however, a growing number of operations by aircraft weighing over 12,500 pounds do occur. This is not currently projected to change significantly over the planning period. The existing pavement strength is anticipated to be suitable for the projected operations throughout the planning period.

5.3.10 Runway Markings and Lighting

The current non-precision markings at both ends of Runway 5/23 are in good condition and are in compliance with the FAA required non-precision markings for GPS non-precision approaches. Runway 11/29 has the basic runway markings that are in fair condition. As Runway 11 has a published GPS approach, it is recommended that this Runway should be marked with non-precision markings.

Runway 5/23 has Medium Intensity Runway Lights (MIRL). Runway 11/29 does not have any edge lights. As Runway 11 has a non-precision GPS approach, it is recommended that Runway 11/29 also be equipped with MIRLs.

5.3.11 Displaced Thresholds

There are currently no displaced thresholds on the Airport. However, on both ends of Runway 11/29, the clearance heights of the roads that travel around the runway end penetrates into a surface.

The road that travels around the end of Runway 11 is a private road that accesses the Jack Brown's Seaplane Base. As a private road, the clearance height above the road is 10 feet in height. The clearance penetrates the Runway 11 approach surface (34:1). The displacement of the Runway 11 threshold 200 feet will prevent this penetration.

The road that travels around the end of Runway 29 is a public road. As such, the clearance height above the road is 15 feet. The clearance penetrates both the Threshold Siting Surface

(20:1) and the Approach Surface (20:1) of Runway 29. The displacement of the Runway 29 threshold by 260 feet will prevent the penetration of the clearance of the road.

5.3.12 Taxiways and Taxilanes

5.1.1.1 Taxiway Design Standards

Taxiways and taxilanes also have design standards that are detailed in FAA AC 150/5300-13A, *Airport Design*. The design standards for taxiways and taxilanes are based in part on the Airplane Design Group (ADG) of the critical aircraft of the runway. However, taxiway design is also based on a Taxiway Design Group (TDG) designation, which is based on the dimensions of an aircraft's Main Gear Width (MGW) and the Cockpit to Main Gear (CMG) distance as shown in Figure 4-1 of the Advisory Circular. The Dassault Falcon 900, the critical design aircraft for Runway 5/23, is an ADG-II aircraft. The Beechcraft King Air B-I00, the critical design aircraft for Runway 11/29, is an ADG-I aircraft.

The Dassault Falcon 900 has an MGW of 14.7 feet and a CMG of 25.11 feet. This would place the aircraft in the TDG-2 category according to Figure 4-1 of FAA AC 150/5300-13A. The Beechcraft King Air B-100 has an ARC of B-II and a TDG of 1.

Runway 5/23 is served by a full-length, 40-foot wide, parallel taxiway, Taxiway B. There are five taxiway connectors between Taxiway B and Runway 5/23 with widths that vary from 35 feet to 50 feet. The centerline of Taxiway B is located 300 feet from the centerline of Runway 5/23 and is compatible with an ADG-II runway. As Taxiway B is 40 feet wide, it is in TDG-2.

Runway 11/29 is served by two partial-length parallel taxiways; Taxiway C and Taxiway D. Both are 25 feet in width and the centerlines are located 150 feet from the centerline of Runway 11/29. There are two taxiway connectors for each taxiway. All four taxiway connectors measure approximately 25 feet wide. Taxiways C and D are compatible with an ADG-I runway and are in the TDG-1.

Taxiway A serves to link the south ramp with Taxiway B. It is 50 feet wide and should be classified as an ADG-I taxiway and a TDG-2 taxiway.

Taxiway F is a partial parallel taxiway to Runway 5/23 and is 35 feet wide with its centerline 300 feet away from the centerline of Runway 5/23. It is currently classified as an ADG-II and a TDG-2.

The taxiway design standards, based on Airplane Design Group for ADG-II, are shown in Table 5-14. The existing dimensions for each of the existing taxiways are also shown. The taxiway design standards, based on Taxiway Design Standards for both TDG-1 and TDG-2, are shown in Table 5-15.

Table 5-14
TAXIWAY DESIGN STANDARDS BASED ON AIRPLANE DESIGN GROUP

Item	ADG-I (in feet)	ADG-II (in feet)	Taxiway A	Taxiway B	Taxiway C	Taxiway D	Taxiway F
Taxiway Protection							
Taxiway Safety Area (TSA) Width	49	79	49	79	49	49	79
Taxiway Object Free Area (OFA) Width	89	131	89	131	89	89	131
Taxiway Separation							
Taxiway Centerline to Parallel Taxiway/Taxilane Centerline	69	105	69	105	69	69	105
Taxiway Centerline to Fixed or Movable Object	44.5	65.5	44.5	65.5	44.5	44.5	65.5
Taxilane Centerline to Fixed or Moveable Object	39.5	57.5	72	57.5	39.5	39.5	57.5
Wingtip Clearance							
Taxiway Wingtip Clearance	20	26	20	26	26	20	26

Table 5-15
TAXIWAY DESIGN STANDARDS BASED ON TAXIWAY DESIGN GROUPS

Item	TDG-1 (in feet)	TDG-2 (in feet)	TDG-3 (in feet)	Taxiway A	Taxiway B	Taxiway C	Taxiway D	Taxiway F
Taxiway Width	25	35	50	50	50	25	25	35
Taxiway Edge Safety Margin	5	7.5	10	10	10	5	5	7.5
Taxiway Shoulder Width	10	10	20	n/a	n/a	n/a	n/a	n/a
Taxiway/Taxilane Centerline to Parallel Taxiway/Taxilane Centerline	69	69	160	160	160	69	69	160

5.1.1.2 Taxiway Conditions Assessment

The portion of Taxiway A that traverses through the South Ramp is constructed of asphalt overlay on asphalt concrete pavement. In 2011, the FDOT recommended that this portion of Taxiway A be immediately reconstructed. The remaining portions are constructed of asphalt concrete pavement and one small section was recommended for immediate mill and overlay. The remaining portions were recommended for mill and overlay in the year 2014. A graphic from the 2011 FDOT *Airfield Management Report* for the Airport is shown as Figure 5-2

Taxiway B is made up of different sections of both asphalt overlay on asphalt concrete pavement and asphalt concrete pavement. Sections of Taxiway B have not been reconstructed since 1985, while others were rehabilitated in 2010 with the rehabilitation of Runway 5/23. In 2011, the FDOT advised that portions of Taxiway B should be milled and overlaid immediately while other portions were slated as being able to wait until 2012. The portions that were

rehabilitated along with Runway 5/23 will probably only need periodic maintenance before the year 2030.

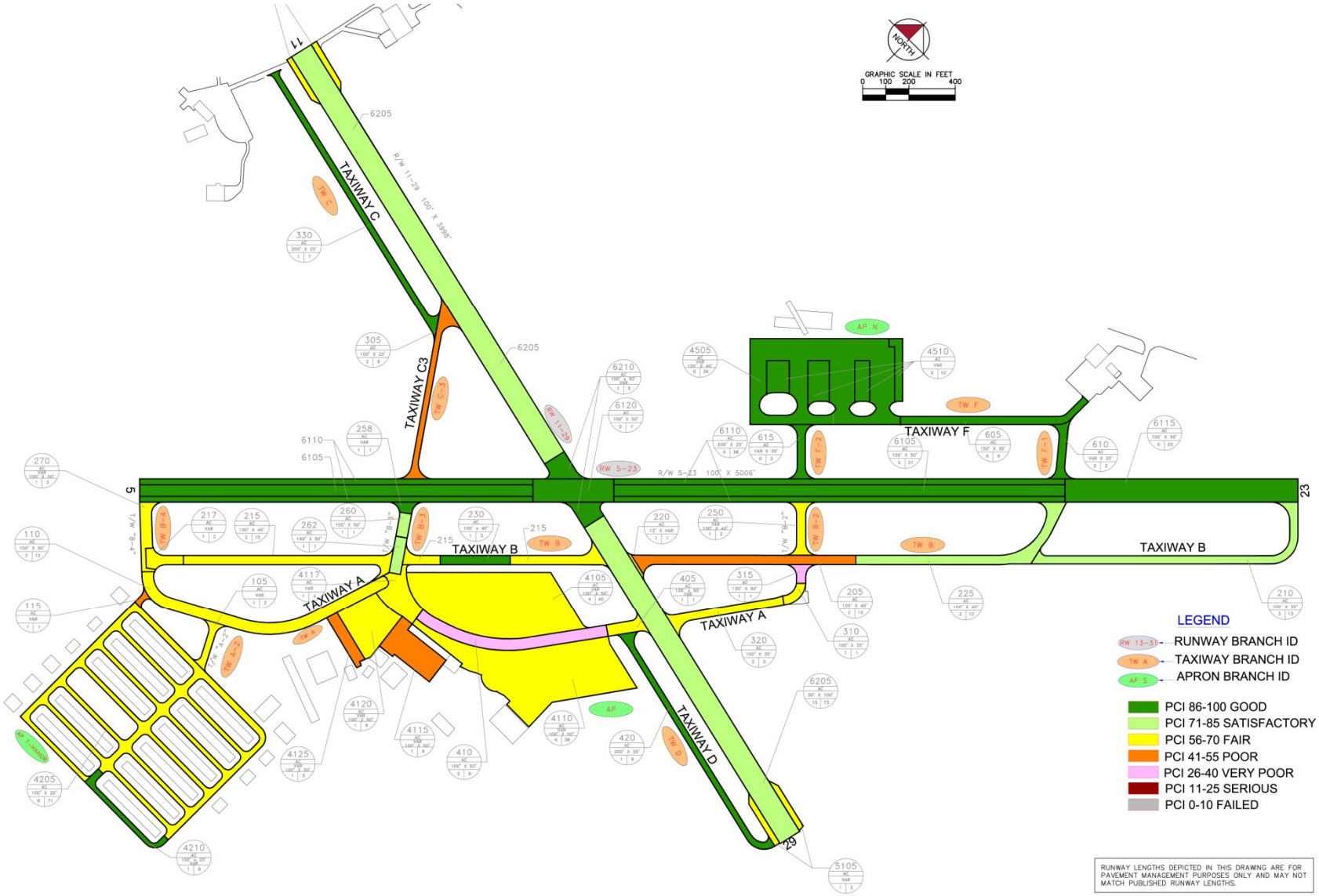
Taxiways C and D were both constructed in 1998 of asphalt concrete. Taxiway C3, which connects Taxiway C with Runway 5/23, was constructed in 1960 of asphalt overlay on asphalt concrete pavement. In 2011, Taxiways C and D were both recommended by the FDOT report for mill and overlay in 2019. Taxiway C3 was recommended for immediate mill and overlay.

Taxiway F was constructed in 2011 of asphalt concrete. Therefore, when FDOT performed the PCI testing, this Taxiway had a PCI of 100 or good. It was not anticipated to require anything but routine maintenance throughout the planning period of this Master Plan Update.

5.1.1.3 Taxiway Markings and Lighting

All taxiways at the Airport are currently marked with yellow centerline markings in fair to good condition. All holdlines are marked and are in good condition, although the holdlines to Runway 11/29 appear to be too close to the Runway in some cases.

Figure 5-2
AIRFIELD PAVEMENT CONDITIONS MAP



Taxiway B and Taxiway F, which serve Runway 5/23 have Medium Intensity Taxiway Lights (MITL). Taxiway C and Taxiway D, which serve Runway 11/29 do not have lights. As Runway 11 has a non-precision GPS approach, it is recommended that Taxiway C and Taxiway D, also be equipped with MITLs when MIRLs are installed on Runway 11/29.

5.1.1.4 Additional Taxiways

The FAA recommends that there be taxiways that will allow aircraft to easily maneuver from the terminal/FBO area to both ends of at least the primary runway of an airport. With the relocation of the terminal/FBO area from the south to the north of the airfield, there is currently only one taxiway that serves the new terminal/FBO area; Taxiway F. Taxiway F only serves portions of Runway 5/23 and does not extend to either end of the Runway. It is recommended that Taxiway F be extended in both directions to meet both ends of Runway 5/23.

It is also recommended that at least a partial parallel taxiway be built along the northern side of Runway 11/29. It is proposed that this taxiway would connect Runway 11 with Taxiway F allowing access to at least three of the four runway ends from the new terminal/FBO area.

In discussions with local pilots and tenants of the Airport, desire for an extension of Taxiway D was also expressed. It was expressed that the extension of Taxiway D should connect Runway 29 with Taxiway B.

Additional taxiways and taxilanes will most likely be required as further aviation development occurs at the Airport. New taxiways could also support development in new areas of the Airport. Taxilanes would also be required to access new hangars or aprons.

5.3.13 Navigational Aids

Runway 5 and Runway 11 have published Global Positioning System (GPS) approaches. It is recommended that in the future, a GPS approach also be considered for Runway 23.

Runway 5/23 has a 2-light Precision Approach Path Indicator (PAPI) system on each end of the Runway. PAPIs provide vertical plane guidance information to help a pilot acquire and maintain the correct approach to the Airport.

Runway 11/29 does not have a PAPI system. However, as Runway 11 has a published GPS approach, it is recommended that this Runway also be equipped with a PAPI system.

Runway 5/23 has Runway End Identifier Lights (REILs) at each end of the Runway. Runway 11/29 does not have REILs even though Runway 11 has a published GPS approach. It is recommended that Runway 11/29 also be equipped with REILs.

The Airport has a Rotating Beacon that is in fair condition. The Airport also has three wind socks, only one of which is illuminated. The Airport does not have a segmented circle and it is recommended that one be installed.

The Airport has an Automated Surface Observing System (ASOS). ASOS facilities are a joint effort of the National Weather Service (NWS), the FAA, and the Department of Defense (DOD).

An ASOS supports weather forecast activities and aviation operations and, at the same time, supports the needs of the meteorological, hydrological, and climatological research communities.

5.4 Landside

Landside facilities are those that interface between the airfield and the public infrastructure. Landside facilities typically include hangars, terminals, roads, vehicular parking, utilities and other support structures.

5.4.1 Based Aircraft Storage

Based aircraft are typically housed in conventional hangars, T-hangars, or other single-module types of hangars. In addition, based aircraft can also be stored at tie-downs in a specified area of the ramp or grassy areas on an airport. There are currently 13 T-hangar buildings with a total of 128 T-hangar units. In addition, there are 25 conventional hangars.

The South Ramp is dedicated to the tie-down of based aircraft. There are currently 62 tie-down positions marked on the South Ramp. There are currently no grass tie-down areas at the Airport and none are currently planned. Table 5-16 shows the distribution of the based aircraft stored in hangars and at tie-downs.

Table 5-16
STORAGE OF BASED AIRCRAFT IN HANGARS AND AT TIE-DOWNS

	2013	2018	2023	2028	2033
Based Aircraft	151	177	209	245	285
Based Aircraft in T-Hangars	118	138	163	191	223
Based Aircraft in Conventional Hangars	14	16	19	23	26
Based Aircraft at Tie-downs	19	22	26	31	36

As the number of based aircraft grows over the planning period, it is anticipated that some aircraft will continue to be stored at tie-down areas. In 2018, it is anticipated that 22 based aircraft will be stored at tie-down areas and that 154 based aircraft will be stored in hangars. It is anticipated by the year 2033, that 36 based aircraft will be stored at tie-downs and that 249 will be stored in hangars.

There are currently approximately 154 units of hangar space at the Airport. These are distributed between the T-hangars and the conventional hangars. Table 5-17 shows how the hangar storage of based aircraft might be distributed between T-hangars and conventional hangars throughout the planning period.

Table 5-17
NUMBER OF AVAILABLE AIRCRAFT STORAGE SPACES IN HANGARS

	2013	2018	2023	2028	2033
Number of Required Hangar Spaces for Based Aircraft	132	155	183	214	249
T-Hangars					
Number of Required Spaces	118	138	163	191	223
Number of Existing T-Hangar Units	126	126	126	126	126
Surplus/(Deficit)	8	(12)	(37)	(65)	(97)
Conventional Hangars					
Number of Required Spaces	14	16	19	23	26
Number of Existing Conventional Hangar Spaces	26	26	26	26	26
Surplus/(Deficit)	12	10	7	3	0

Table 5-17 indicated that there will be a deficit of 12 T-hangar units in 2018 and that by the year 2033, a total of 97 new T-hangar units will be required. Based solely on the FAA-approved forecasts, it is anticipated that there will continue to be a surplus of aircraft storage in conventional hangars until the very end of the planning period.

Not only should the proper number of aircraft parking spaces in hangars be provided, but the size of the hangars should also be taken into consideration.

Table 5-18 shows the comparison of the amount of hangar space available versus the amount that will be required throughout the planning period.

Table 5-18
HANGAR SPACE AVAILABLE VERSUS REQUIRED

	2013	2018	2023	2028	2033
Existing and Planned Hangared Areas					
Square Foot Area of T-Hangars	121,295	121,295	121,295	121,295	121,295
Average Square Foot Area per T-Hangar	963	963	963	963	963
Square Foot Area of Conventional Hangars	92,150	92,150	92,150	92,150	92,150
Average Square Foot Area per Conventional Hangar	3,544	3,544	3,544	3,544	3,544
Total Square Foot Area of Aircraft Storage	213,445	213,445	213,445	213,445	213,445
Average Square Feet per Stored Aircraft	1,617	1,379	1,168	997	857
Hangar Requirements					
Number of Single Engine Aircraft in Hangars	12	13	15	18	19
Square Feet per Single Engine Aircraft	850	850	850	850	850
Number of Multi-engine Aircraft in Hangars	2	2	2	3	4
Square Feet per Multi-engine Aircraft	1,550	1,550	1,550	1,550	1,550
Number of Jets in Hangars	0	0	1	1	1
Square Feet per Jets in Hangars	2,450	2,450	2,450	2,450	2,450
Number of Rotorcraft in Hangars	0	0	0	0	0
Square Feet per Rotorcraft	850	850	850	850	850
Number of Others in Hangars	0	1	1	1	2
Square Feet per Other Aircraft	850	850	850	850	850
Total Area Required for Based Aircraft in Hangars	13,300	15,000	19,150	23,250	26,500
Surplus/(Deficit) Square Feet from Existing	200,145	198,445	194,295	190,195	186,945

Currently, there are approximately 212,810 square feet of aircraft storage in hangars located across the Airport. Of this amount, 92,150 square feet are located in conventional hangars. However, only 26,500 square feet of space will be required founded on the forecast of based aircraft. It is understood that not all of the space within the conventional hangars is used for aircraft storage. Area within these hangars is also used for offices, work areas, maintenance, and storage of aviation material. The surplus will decrease as additional aircraft are based at the Airport.

As an alternative to storing aircraft in hangars, owners may elect to store their aircraft at dedicated tie-down positions. While this alternative exposes the aircraft to the elements, it is typically a less expensive alternative to storage in aircraft hangars. Table 5-19 shows the number of based aircraft tie-down positions that were in existence in 2013, as well as those likely to be required during each of the planning periods.

Table 5-19
BASED AIRCRAFT STORED AT TIE-DOWN AREAS

	2013	2018	2023	2028	2033
Number of Based Aircraft Tie-downs	62	62	62	62	62
Number of Based Aircraft at Tie-downs	19	22	26	31	36
Surplus/(Deficit)	43	40	36	31	26

There are currently 62 marked aircraft tie-down positions on the South Ramp. There were 19 based aircraft at tie-down positions in 2013. This number is anticipated to grow to 22 in 2018 and 36 in the year 2033. Based on these parameters, it is likely that there will be a surplus of tie-down spaces for based aircraft throughout the planning period.

Approximately 39,350 square yards of pavement are currently dedicated to based aircraft tie-down positions. This is not anticipated that there will be a need for this to be increased based solely on the FAA-approved forecasts of aviation activity as shown in Table 5-20.

Table 5-20
AREA OF DEMAND AND CAPACITY OF THE BASED AIRCRAFT TIE-DOWN AREAS

	2013	2018	2023	2028	2033
Total Square Yard Area of Tie-down Spaces	39,350	39,350	39,350	39,350	39,350
Square Yards Required for Tie-down Spaces	12,046	14,120	16,673	19,545	22,736
Surplus/(Deficit)	27,304	25,230	22,677	19,805	16,614

In the year 2018, it is anticipated that there will need to be approximately 14,120 square yards of pavement dedicated to based aircraft tie-downs. By the year 2033, a total of 22,736 square yards of based aircraft tie-down area is anticipated to be required. This will leave a surplus of based aircraft tie-down area of approximately 16,614 square yards.

5.4.2 Itinerant Aircraft Storage

Itinerant aircraft are those aircraft that are not based at the Airport, but which are visiting. Alternatively, itinerant aircraft can spend extended periods of time at the Airport as the owner/pilot may be a "snowbird." The pilots could be visiting for reasons of business or pleasure; however, itinerant aircraft also arrive for special events at the Airport or within the community. The itinerant aircraft require an area where they can be stored on a temporary basis. The majority of itinerant aircraft are typically stored for only a couple of days.

Table 5-21 shows the methodology for calculating the apron requirements for itinerant aircraft as defined in FAA AC 150/5300-13 Change 18, *Airport Design*, Appendix 5, *Small Airport Buildings, Airplane Parking and Tiedowns*. The revised FAA AC 150/5300-13A does not include this methodology; however, it is still available as a resource on the FAA website and it is used in this report as a viable guideline.

Table 5-21
ITINERANT AIRCRAFT STORAGE

	2013	2018	2023	2028	2033
Number of Based Aircraft	151	177	209	245	285
Number of Operations Per Based Aircraft	397	379	359	343	330
Total Annual Operations	60,000	67,100	75,100	84,100	94,100
Percent of Annual Operations Occurring in Busiest Month	10%	10%	10%	10%	10%
Busiest Month Operations	6,000	6,710	7,510	8,410	9,410
Average Day Operations of Busiest Month	200	224	250	280	314
Busiest Day Operations (Average Day + 10%)	220	246	275	308	345
Percent of Itinerant Operations	52.4%	52.4%	52.4%	52.4%	52.4%
Number of Itinerant Operations on Busiest Day	115	129	144	162	181
Number of Itinerant Aircraft Landing Operations	58	64	72	81	90
Percent of Itinerant Operations on Ground at Same Time	50%	50%	50%	50%	50%
Number of Itinerant Aircraft on Ground at Same Time	29	32	36	40	45
Square Yards Per Group I Aircraft on Apron	960	960	960	960	960
Percent of Group I Aircraft	91%	90%	88%	86%	84%
Number of Group I Aircraft	26	29	32	35	38
Square Yards Per Group II Aircraft on Apron	1,385	1,385	1,385	1,385	1,385
Percent of Group II Aircraft	9%	10%	12%	14%	16%
Number of Group II Aircraft	3	3	4	5	7
Square Yards of Itinerant Aircraft Apron Required	29,115	31,995	36,260	40,525	46,175
Existing and Planned Square Yards of Itinerant Apron	22,765	22,765	22,765	22,765	22,765
Surplus/(Deficit)	(6,350)	(9,230)	(13,495)	(17,760)	(23,410)

Using the FAA methodology shown in Table 5-21, it is anticipated that 26 Group I itinerant aircraft tie-down spaces were required in 2013 with an associated required area of 24,960 square yards. The Airport had 18 marked positions dedicated to itinerant aircraft parking on the North Ramp in 2013. This ramp has 22,764 square yards of pavement. By the year 2033, it is anticipated that a total of 45 aircraft tie-down positions dedicated to itinerant aircraft will be required with an associated 46,175 square yards of pavement.

5.4.3 Aprons

It is not recommended that based aircraft stored at the tie-downs and the itinerant aircraft parking occur on the same apron. Some consideration should be given to keeping these areas separate as they typically support different levels and types of activities. While the previous paragraphs indicate that there will likely be a surplus of apron area to serve the based aircraft and a future deficit of pavement to support the itinerant aircraft, it is possible that the number of aircraft requiring tie-down space in either category could increase unexpectedly and the facilities

of the other could be used on a temporary basis. This is particularly likely during periods of high activity such as the time around the annual Sun 'n Fun activities. The total anticipated aircraft parking apron requirements and existing and planned capacity are shown in Table 5-22.

Table 5-22
AIRCRAFT PARKING AREA REQUIREMENTS

Year	Required Itinerant Aircraft Apron in Square Yards	Required Based Aircraft Apron in Square Yards	Total Square Yards of Apron Required	Square Yards of Existing and Planned Apron	Surplus/(Deficit) in Square Yards
2013	29,115	12,046	41,161	62,114	20,953
2018	31,995	14,120	46,115	62,114	15,999
2023	36,260	16,673	52,933	62,114	9,181
2028	40,525	19,545	60,070	62,114	2,044
2033	46,175	22,736	68,911	62,114	(6,800)

As there is surplus apron in the based aircraft tie-down category and a deficit of apron in the itinerant aircraft tie-down space, some balance can be achieved when the two are combined. The Airport should have no trouble accommodating aircraft owners who wish to use tie-down spaces at the Airport through at least the year 2028. By the year 2033, even when the areas are combined, there will be a deficit of area for tie-downs of about 6,800 square yards. If it is decided that itinerant aircraft are to be located at tie-downs on the South Ramp, every accommodation should be made to separate these areas from those of the based aircraft. Additionally, accommodations should be made to ferry the aircraft pilots and passengers from the FBO area located adjacent to the North Ramp to the parking areas located on the South Ramp.

In addition to the aprons that are used to store aircraft, there is also a need for aprons to be located in front of the conventional hangars. These aprons serve as transition aprons between a taxiway/taxilane and can be used for temporary storage or staging of the aircraft housed in the hangar. This is particularly true if the hangar is to be used for aircraft service or maintenance. Typically, these aprons are sized to be no less than the same size as the hangar that it serves, with one and one-half the size of the hangar size being optimal.

Table **5-23** shows the existing conventional hangars and their associated apron and compares that apron to the typically-sized apron for a conventional hangar. Figure 5-3, Figure 5-4, and Figure 5-5 show where the various hangars and their identification numbers are located on the Airport.

Table 5-23
CONVENTIONAL HANGAR APRON AREA

Hangar Building Number	Existing Hangars in Square Feet	Existing Hangar Apron in Square Yards	Minimum Recommended Apron Size in Square Yards	Optimal Recommended Apron Size	Surplus/Deficit in Square Yards To Minimum Recommended
1	2,200	78	244	367	(166)
2	2,200	78	244	367	(166)
3	2,200	78	244	367	(166)
4	2,200	78	244	367	(166)
5	2,200	78	244	367	(166)
6	2,200	78	244	367	(166)
7	2,200	78	244	367	(166)
8	2,200	78	244	367	(166)
50	3,000	200	333	500	(133)
80	6,650	272	739	1,108	(467)
90	3,600	233	400	600	(167)
110	10,000	389	1,111	1,667	(722)
121	6,300	333	700	1,050	(367)
122	4,500	333	500	750	(167)
123	2,200	156	244	367	(89)
124	2,200	156	244	367	(89)
125	2,200	156	244	367	(89)
133	3,300	178	367	550	(189)
134	2,200	178	244	367	(67)
135	2,200	178	244	367	(67)
136	3,300	178	367	550	(189)
137	3,300	178	367	550	(189)
138	3,300	178	367	550	(189)
600	11,200	589	1,244	1,867	(656)
800	5,100	1,133	567	850	567

Figure 5-3
NORTHEAST AIRPORT BUILDING IDENTIFICATION NUMBERS

Note: TBD = To Be Determined/To Be Demolished

Figure 5-4
SOUTH AIRPORT BUILDING IDENTIFICATION NUMBERS

Figure 5-5
WEST AIRPORT BUILDING IDENTIFICATION NUMBERS

All of the conventional hangar aprons appear to be undersized. None of them achieve the minimum recommended size. It is recommended that in the future, when new conventional hangars are designed, that at least the minimum recommended size be allowed for to ensure flexibility of operations within and around these facilities.

5.4.4 Support Facilities

In addition to the primary facilities located on the airside and landside of the Winter Haven Municipal Airport – Gilbert Field, there are other facilities located on the Airport that support the operation of the airside and landside facilities. These include the airfield electrical vault, the fueling station, the FBO facilities, and the utility infrastructure.

5.1.1.5 Airfield Electrical Vault

The existing airport electrical vault is in good condition. The equipment in it was upgraded with the recent construction of Taxiway F. As circuits are added, as required, it should be ensured that the vault is sized appropriately to meet code and safety criteria.

5.1.1.6 Fueling Station

The existing fueling station has the capability to allow self-fueling credit card purchases. It has two tanks of 10,000 gallons each. One serves 100LL Avgas and the other serves Jet A fuel. There is also a tank that serves Mogas for aircraft and airfield and maintenance vehicles. While the tanks are of sufficient size to meet the need of the Airport throughout the planning period without excessive deliveries, they are in poor condition and are scheduled to be replaced.

5.1.1.7 FBO Facilities

A new terminal and Fixed Base Operator (FBO) facility was completed in 2010 and is located in the northeast section of the Airport. This facility has direct access to Highway 92 and houses the Airport's administration offices, the FBO, a flight school, and several concessionaires including a car rental agency and a casual sit-down restaurant. The terminal has approximately 17,500 square feet and is considered to be of a size adequate to meet the demands of the Airport throughout the planning period.

5.1.1.8 Access Roads

The north side of Winter Haven Municipal Airport – Gilbert Field is accessed by Highway 92 with a turn-off from the highway to access the new terminal/FBO building. There is a project currently under design that would provide an alternate access road to the new terminal from the existing signalized intersection located at Highway 92 and Lynchburg Road. This will provide a safer, more efficient access to the north side of the Airport.

The south side of the Airport is accessed via 21st Street Northwest, which comes off of Highway 92 northeast of the Airport and circles around the Airport to the east and south. This road accesses Highway 92 at a stop sign. It also travels through the Runway Protection Zones (RPZ) of Runway 23 and Runway 29. Since September 21, 2012, the FAA has reiterated and clarified its position that public roads are not acceptably located within RPZ's, as shown in **Appendix K**.

The landside access to Jack's Seaplane Base is via a gravel road. This gravel road travels through the RPZ for Runway 11.

Should any modification or rehabilitation be planned for any of these runways in the future for which Federal funds are anticipated, including restriping or maintenance, the issue with these roads being in the RPZ will have to be resolved first.

5.1.1.9 Aircraft Rescue and Fire Fighting Facilities

The City of Winter Haven Fire Department provides fire services for the Airport, responding to aircraft emergencies, fuel spills, fuel fires, and structural fires. Station No. 1 is located at 301 Avenue G, SW, less than one mile from the Airport. Station No. 2 is located at 4700 Lucerne Park Road and is located a little over five miles from the Airport. Emergency response time is

two to three minutes and the non-emergency response time is approximately eight minutes. As the Airport is not a Part 139 certificated airport, it is not required that Aircraft Rescue and Fire Fighting (ARFF) facilities be located on the Airport and the response times are considered to be appropriate.

5.1.1.10 Vehicular Parking

It is common at general aviation airports for automobiles to be parked in the various hangar facilities or adjacent to the structure while an aircraft is in use. Parking of personal vehicles on the airside should be avoided as it increases the risk of an incursion between an aircraft and a personal vehicle. It is recommended that vehicular parking be made available to pilots on the landside of the Airport.

There are 77 paved automobile spaces adjacent to the existing FBO building. These should be sufficient to meet the needs of those using the FBO and Airport Administration facilities. There appears to be sufficient parking available for the hangar and storage building (Buildings 800 and 800-2) located in the northeast section of the Airport, although specific parking spaces are not marked. There is also sufficient parking available adjacent to the hangar (Building 600) located in the west section of the Airport. There are 35 paved vehicle parking spaces associated with the former FBO hangar/airport terminal (Building 10) located on the south side of the Airport. This appears to be more than adequate to meet the needs of the current uses of this facility.

However, the parking needs of the conventional hangars and T-hangars located in the south section of the Airport are underserved. The City of Winter Haven code requires 1.8 parking spaces per 1,000 square feet of gross floor area of an industrial building. With the former terminal/FBO building, existing T-hangars, conventional hangars, and other buildings located in the South Ramp area, there is approximately 208,100 square feet of buildings in the area. This would equate to approximately 375 parking spaces rather than the 35 marked spaces currently located in the area.

For airports, however, it is much more typical to allow for approximately 1.0 parking spaces per 1,000 square feet of gross floor area. This is not a requirement by the FAA or FDOT. With the 208100 square feet of buildings in the south of the Airport, this would equate to 208 parking spaces. It is recommended that as the opportunity develops, that additional parking be added incrementally to the south Airport area.

As new facilities are built and the use of existing facilities change function, the needs for the vehicle parking at each structure will also change. When developing future facilities, an adequate amount of parking spaces should be considered to meet both the local codes as well as the functional requirements of the facility. As well, each new conventional hangar should have a separate parking area dedicated to that hangar. Each set of T-hangars should have conveniently located joint-use parking to accommodate the pilots and passengers without influencing them to park on the airside of the Airport.

5.1.1.11 Perimeter Fencing

The Airport is currently enclosed with security fencing. All of the fencing consists of a six-foot high section of chain-link with three strands of barbed wire on top. Approximately 14 gates exist

within this fencing. Access is monitored by the FBO and through a punch code at four of the gates; the remainder are protected by padlock and key. Currently, many of the gates are inoperable for long periods of time and remain open. It is considered that some of the gates currently within the fence line are unnecessary. Thought should be given to removing gates that are not required for day-to-day or emergency access. If additional land is added to the Airport, the chain-link fence should be extended to enclose the airside potions of the land, at a minimum.

5.1.1.12 Utilities

The utilities described in Section 2.8 of this Master Plan Update are adequate for the development anticipated within the next five to ten years. As specific projects are identified for design and construction, however, careful coordination with the City of Winter Haven should take place to ensure that this is still the case.

5.1.1.13 Stormwater Management

Currently, there is a system of ditches and ponds that control the drainage of stormwater in the different basins on Airport property. The system appears to be working well. These facilities should be monitored and maintained by the City to ensure that they continue to work properly. Routine maintenance includes trimming vegetation, cleaning pipes, and removing silt where applicable to ensure that the system continues to function properly.

As new facilities are constructed on the Airport, the stormwater management system will require modification and expansion to control the increased volume of runoff. Additional inlets, pipes and dry retention ponds will need to be constructed as more impervious surfaces are added.

During construction activities, topsoil and vegetation are typically removed. This exposes the underlying soil to erosion during rainfall events. Contractors should be required to use best management practices, such as silt barriers, hay bales, and temporary seeding to minimize erosion and silt contamination of neighboring waterways. It is recommended that the City secure for the Airport a General Permit for Construction, Operation, Maintenance, Alternation, Abandonment or Removal of Airport Airside Stormwater Management Systems as set forth in the Florida Administrative Code 62-330.449.

5.5 Demand Capacity and Facility Requirements Summary

This chapter has addressed a number of development issues that may need to be addressed over the 20-year planning period. Many of these are tied to the FAA-approved Forecasts of Aviation Activity. Table 5-24 is a summary of the requirements and recommendations from this chapter. Each of these requirements and recommendations is tied to a “trigger” that will allow the City to know when an event is being approached that would trigger additional development regardless of the time period.

Table 5-24
FACILITY REQUIREMENTS SUMMARY

Facility	Existing Capacity	Recommendations	Trigger
Runway 5/23	5,006' x 100', PCI = 100 (2011)	Routine maintenance - monitor PCI	When PCI reaches 65 or below institute rehabilitation
		Consider lengthening this runway to 5,505 feet	Currently meets the criteria
Runway 11/29	4,001' x 100', PCI = 96-79 (2011)	Routine maintenance - monitor PCI	When PCI reaches 65 or below institute rehabilitation
		Mark the pavement for non-precision instrument approaches	Runway 11 currently has a GPS approach
		Equip with Medium Intensity Runway Lights (MIRL)	Runway 11 currently has a GPS approach
Taxiway A	50' wide, PCI = 34-64 (2011)	Rehabilitate/Mill and Overlay Taxiway A	PCI varied between 34 and 64 in 2011
Taxiway B	50' wide, PCI = 30-64 (2011)	Mill and overlay	Portions had PCI that varied between 30 and 64 in 2011
Taxiway C	25' wide, PCI = 98 (2011)	Revise holdlines to 125' from centerline of Runway 11/29	Currently 120' from centerline
		Mill and overlay when PCI reaches 65 or below	PCI of 98 in 2011
		Equip with Medium Intensity Taxiway Lights (MITL)	Runway 11 currently has a GPS approach
Taxiway C3	25' wide, PCI = 53	Mill and overlay	PCI of 53 in 2011
Taxiway D	25' wide, PCI = 85 (2011)	Revise holdlines to 125' from centerline of Runway 11/30	Currently 120' from centerline
		Mill and overlay when PCI reaches 65 or below	PCI of 85 in 2011
		Extend Taxiway D from Runway 29 to Taxiway B	Pilots and tenants are currently requesting
		Equip with Medium Intensity Taxiway Lights (MITL)	Runway 11 currently has a GPS approach

Facility	Existing Capacity	Recommendations	Trigger
Taxiway F	35' wide, PCI = 100 (2011)	Routine maintenance - monitor PCI	When PCI reaches 65 or below institute rehabilitation
		Extend Taxiway F to reach both ends of Runway 5/23	Would provide full parallel taxiway to both ends of Primary Runway to terminal FBO
Taxiway E	Currently does not exist	Extend Taxiway as a parallel taxiway to the north of Runway 11/29 to extended Taxiway F	Would provide access to Runway 11 from terminal/FBO area.
Itinerant Aircraft Tie-downs	18 marked spaces, 62,114 square yards	Calculated that 29 spaces required in 2013, 32 in 2018, 36 in 2023, 40 in 2028 and 45 in 2033	Monitor demand
Based Aircraft Tie-downs	62	Sufficient to meet projected demands	Excess could potentially be used for itinerant aircraft tie-downs
T-Hangars	126	Calculated that 138 units required in 2018, 163 in 2023, 191 in 2028, and 223 in 2033	Monitor demand
Conventional Hangars	25 conventional hangars; 92,150 square feet	Based solely on forecasts, sufficient to meet projected demand	Monitor demand
Communications, Navigation, Surveillance and Weather	Non-Directional Beacon, PAPI-2 on Runway 5/23, windsocks (3) Surface Weather Observation Station (ASOS)	REILs for Runway 11/29	Runway 11 currently has a GPS approach
		PAPIs for Runway 11/29	Runway 11 currently has a GPS approach
		Segmented Circle	Required

Facility	Existing Capacity	Recommendations	Trigger
Vehicular Parking	77 parking spaces in north portion of the Airport	Sufficient to meet projected demand	Monitor demand
	35 parking spaces in the south portion of the Airport	Recommend up to 208 parking spaces for existing facilities	Add additional parking incrementally
Access Roads	Access roads currently run through three of the four RPZs	Re-route roads where possible. Look for alternative solutions	
Fuel Facilities	Two 10,000 fuel tanks and one Mogas tank; all in poor condition	Replace fuel facility tanks	

6. DEVELOPMENT AND EVALUATION OF ALTERNATIVES

6.1 Introduction

This chapter takes into consideration the facility requirements developed in the last chapter. The facility requirements were developed to address the requirements of the Airport based on the Aviation Activity Forecasts. The potential location of new, rehabilitated, or replacement facilities is considered in this chapter. Additional development is also considered, including the development of access to a new development area on the Airport and the development of non-aeronautical land on the Airport to provide alternative sources of revenue for the Airport. This chapter looks not only at the improvements that could ideally be made to the Airport, but also considers how these improvements will affect the Airport operationally, while avoiding environmental conflicts wherever possible.

6.2 Development of Alternatives

The facility requirements were generated based on the Aviation Activity Forecasts and were created to develop the required facilities immediately prior to when they would most likely be needed. However, future events do not always follow a predictable timeline. Future events could change the development that is required. The Airport should be developed so that the facilities meet the identified demand and minimize the operational constraints. Facilities should not be implemented if the demand has not materialized as forecast.

6.2.1 Airfield Improvements

Since the last Master Plan was completed in 2004, a new terminal was constructed in the northern section of the Airport. This shifted many of the airfield operations from the southern section of the Airport where the terminal had been previously located. However, the majority of the taxiways are located on the southern side of the runways and the focus of the airfield is still the movement of aircraft to and from the southern section of the airfield to the runway ends.

One of the initial projects of this Master Plan Update will be the extension of the existing Taxiway F, which serves the terminal apron area, to both ends of Runway 5/23. Additionally, Taxiway E will be built to provide access from the terminal area to the end of Runway 11. These two projects are shown in Figure 6-1.

The latest edition of FAA Advisory Circular 150/5300-13A, *Airport Design*, advises that taxiways should ideally approach a runway from a 90-degree angle and taxiways should not lead directly from an apron area to a runway. Both of these configurations have been the cause of runway incursions in the past at many airports. Therefore, a number of adjustments are proposed for the airfield at Winter Haven Municipal Airport – Gilbert Field. These are shown in Figure 6-2 and include the following:

- The realignment of Taxiway C-3 as it approaches Runway 11 to a 90-degree angle
- The deletion of a taxilane stub between the terminal apron and Taxiway F to prevent the direct access from the apron to Runway 23

Figure 6-1
TAXIWAY E AND TAXIWAY F

Figure 6-2
AIRFIELD REALIGNMENT PROJECTS

- The deletion of Taxiway A north of Taxiway D. This Taxiway approaches Taxiway B at an acute angle, is redundant to Taxiway B, and allows direct access from the south apron to Runway 29.
- The realignment of Taxiway B as it approaches Runway 23 to a 90-degree angle.
- The realignment of Taxiway A-3 as it approaches Taxiway B to make the approach a 90-degree angle and to prevent a direct access from the south apron area to Runway 5.
- The deletion of Taxiway C-3 south of Taxiway C. This taxiway currently approaches Taxiway C, Runway 5, Taxiway B and the south ramp at angles other than 90 degrees. This proposal would also add taxiway stubs from Taxiway F and Taxiway B where Taxiway C-3 was previously located.

It is further proposed that Taxiway C be extended to meet Taxiway D, as shown in Figure 6-3. This would allow access to both ends of Runway 11/29 from the south apron area. At the time that this project is realized, if not before, consideration should be given to changing the designations of many of the taxiways on the Airport for clarification and ease of communication and identification.

The extension of Taxiway E to the eastern section of the Airport, as shown in Figure 6-4 will allow access to the eastern section of the Airport when hangars or other facilities are built in this area. It will also provide an alternate access to Runway 29 from the terminal apron.

These airfield improvements are unlikely to occur all at once. Rather, they will be implemented as aviation activity demands require and as funding sources are identified and secured.

Figure 6-3
TAXIWAY C/D EXTENSION

Figure 6-4
EXTENSION OF TAXIWAY E

6.2.2 Roads and Runway Protection Zones

As discussed in Section 5.4.4.4, three of the four Runway Protection Zones (RPZ) at the Airport have public roads that travel through them, as shown in Figure 6-5. Public roads are currently located in the RPZs for Runway 11, Runway 23, and Runway 29.

Public roads are not considered by the FAA to be compatible land uses within an RPZ. A memorandum from the FAA discussing this issue can be found in **Appendix K**. This memorandum advises that the FAA Airports District Offices should work with airport sponsors to remove or mitigate the risk of any existing incompatible land uses in an RPZ as practical. This section will explore alternatives for removing the public roads from the RPZs where practical. However, currently, the FAA is only enforcing this memorandum for existing land uses when one of three conditions is planned to occur: an extension of the runway, a changing of size of the RPZ, and/or the changing of the critical aircraft to a larger aircraft. None of these are currently planned. However, the following alternatives are explored in the event that the interpretation of the guidance changes or becomes more restrictive in the future.

6.2.2.1 Runway 11 RPZ

The entrance road that leads to Jack Brown's Seaplane Base currently runs through the RPZ for Runway 11. Additionally, U.S. Highway 92 runs through the same RPZ. One alternative would be to make the entrance road into a private road. However, this would not allow free access to either Jack Brown's Seaplane Base or to the private residence that is also accessed via this road. It would not be possible to make U.S. Highway 92 into a public road.

A second option would be to reposition the entrance road to a location at the westernmost portion of the property and have the road travel along the Airport property line south and then extend east along the shoreline of Lake Jessie until it reaches the entrance to Jack Brown's Seaplane Base. However, this does not take into consideration the departure surface for Runway 11. The entrance road currently is not compatible with the departure surface and rerouting the entrance road around the departure surface on the south would not be feasible as it would require building the road out into Lake Jessie and would cut off all access to Jack Brown's Seaplane Base. Ho move U.S. Highway 92 either out of the RPZ or the departure surface is considered to be impractical, at this time.

6.2.2.2 21st Street NW and Runways 23 and 29 RPZs

The road known as 21st Street NW travels through the RPZ for Runways 23 and 29. This public road belongs to the City of Winter Haven, FL and it provides access to residential developments to the east and south of the Airport.

The alternative of closing all of 21st Street NW to public traffic as it travels adjacent to and through the Airport would close 21st Street NW between U.S. Highway 92 and Riddle Road NW. This alternative would relieve the issue with the conflict between 21st Street NW and the Runway 29 RPZ. It would also address the issue with the conflict between 21st Street NW and the Runway 23 RPZ.

21st Street NW is the only access to the residential neighborhood, Hartridge Hills, which has 58 homes located to the east of the Airport. If 21st Street NW were to become a private Airport road, an alternate access for this community would have to be found. This could potentially be accomplished by connecting South Lake Pansy Drive with Brigham Road NW. This connection would involve approximately 100 feet of pavement and would primarily affect the property associated with two homes in the community. Additionally, Brigham Road NW might require some additional upgrade as it currently appears to primarily access an orange grove.

The neighborhood to the south of the Airport has an alternate access. 21st Street NW south of Riddle Road NW continues south until it reaches Havendale Boulevard NW and from there, one can go east or west.

Another alternative would be to allow 21st Street NW to remain open to the public from U.S. Highway 92 to the entrance of Hartridge Hills. This alternative should only be considered if it is determined that opening a new entrance to the community from the east by connecting South Lake Pansy Drive with Brigham Road NW is determined to be unfeasible or impractical.

6.2.2.3 U.S. Highway 92 and the RPZ for Runway 23

U.S. Highway 92 is located in the Controlled Activity and Central Portion of the Runway 23 RPZ. It is considered impractical to move U.S. Highway 92. To displace the threshold of Runway 23 so as to mitigate the conflict would require displacing the threshold of Runway 23 by approximately 1,000 feet. This would reduce the Landing Distance Available (LDA) for Runway 23 from the current length of 5,006 feet to 4,006 feet, which is less than the recommended landing distance of 5,500, feet as discussed in Section 5.3.5 of this Master Plan Update. Therefore, the alternative of displacing the threshold of Runway 23 in order to mitigate the conflict between U.S. Highway 92 and the Runway 23 RPZ is considered to be impractical.

6.3 Alternatives

6.3.1 Potential Airport Development Areas

The potential Airport development areas are defined by the existing Airport property line, the RPZs for the runway ends, the limits of the approach or departure slopes to each runway end, the Runway Visibility Zone, and the Building Restriction Lines as shown in Figure 6-6. The Runway Visibility Zone is a zone around the intersection of the two runways that must remain clear of obstructions so that pilots on one runway can see aircraft on the other runway. The Building Restriction Line (BRL) is a line on either side of the runway past which no buildings should be built as it would then penetrate the navigable airspace of the runway. Typically, the BRL is located to allow the building of a twenty-foot high structure immediately adjacent to the BRL.

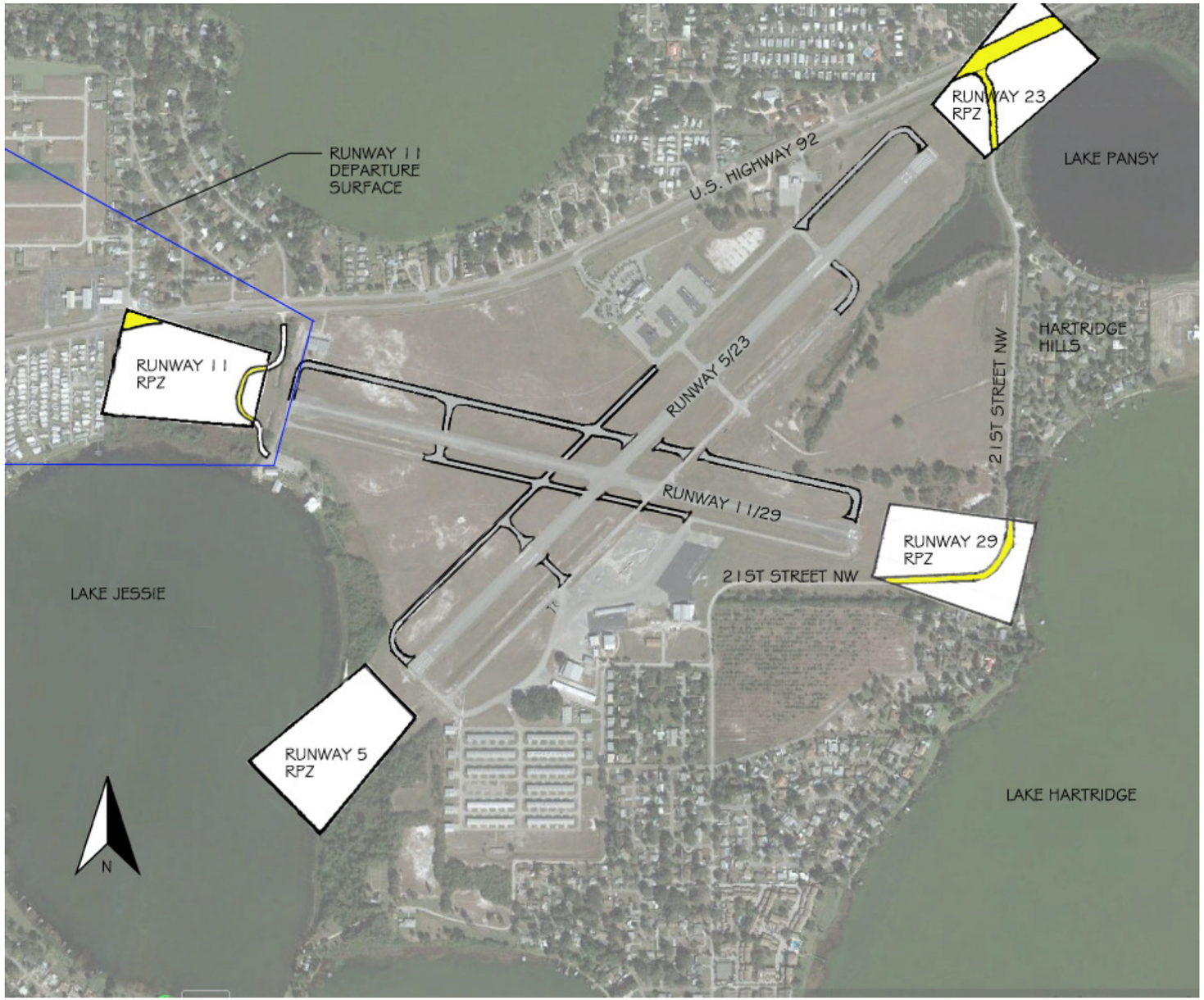


Figure 6-5
RPZ AND ROAD CONFLICTS

Figure 6-6
POTENTIAL DEVELOPMENT AREAS

6.3.2 Northwest Development Area

The Northwest Airport Development Area is located between U.S. Highway 92, the future Taxiway E, the existing terminal area, and Building No. 600. With the exception of Building No. 600, there is currently no development in this area. With the design and construction of the extension of Taxiway F and the future design and construction of Taxiway E, this area will be easily accessible for aviation-related activities. With a major frontage along U.S. Highway 92, this area is also easily accessible for landside development. The Airport is eager to develop this area as it is considered to be a prime area for the development of alternative revenue sources.

6.3.2.1 Northwest Development Area Alternative One

The Airport asked the City of Winter Haven to develop an alternative that would maximize the alternative revenue sources for the Northwest Development Area. The result is Alternative One, which is shown in Figure 6-7. This alternative does maximize the alternative revenue sources on the site with a shopping center that includes an anchor store, a hotel, a multi-purpose stores facility, and six out parcels. However, this alternative totally ignores the aviation potential of the site and does not take advantage of Taxiways E and F.

Added to each of the alternatives for this development area is additional itinerant aircraft parking. However, as the Runway Visibility Zone is also located in the area of the additional itinerant aircraft parking, there is not sufficient area to add all of the required itinerant aircraft parking that will be required by the end of the twenty-year planning period.

6.3.2.2 Northwest Development Area Alternative Two

Alternative Two for the Northwest Development Area takes advantage of Taxiways E and F by adding a row of eight 100 foot by 100 foot hangars adjacent to Taxiway E. This alternative also includes a shopping center with an anchor store, a hotel, a smaller multi-purpose stores building and four out parcels. This alternative is shown in Figure 6-8.

6.3.2.3 Northwest Development Area Alternative Three

The third alternative for the Northwest Development Area includes the eight 100 foot by 100 foot hangars adjacent to Taxiway E and a shopping center that has an anchor store, a multi-purpose stores building, and six out parcels. This alternative does not have a hotel located in this development area. Rather, the hotel is located in the Northeast Development Area in one of that Area's alternatives. Also included is the additional itinerant aircraft parking. This alternative is shown in Figure 6-9.

Figure 6-7
NORTHWEST DEVELOPMENT AREA ALTERNATIVE ONE

Figure 6-8
NORTHWEST DEVELOPMENT AREA ALTERNATIVE TWO

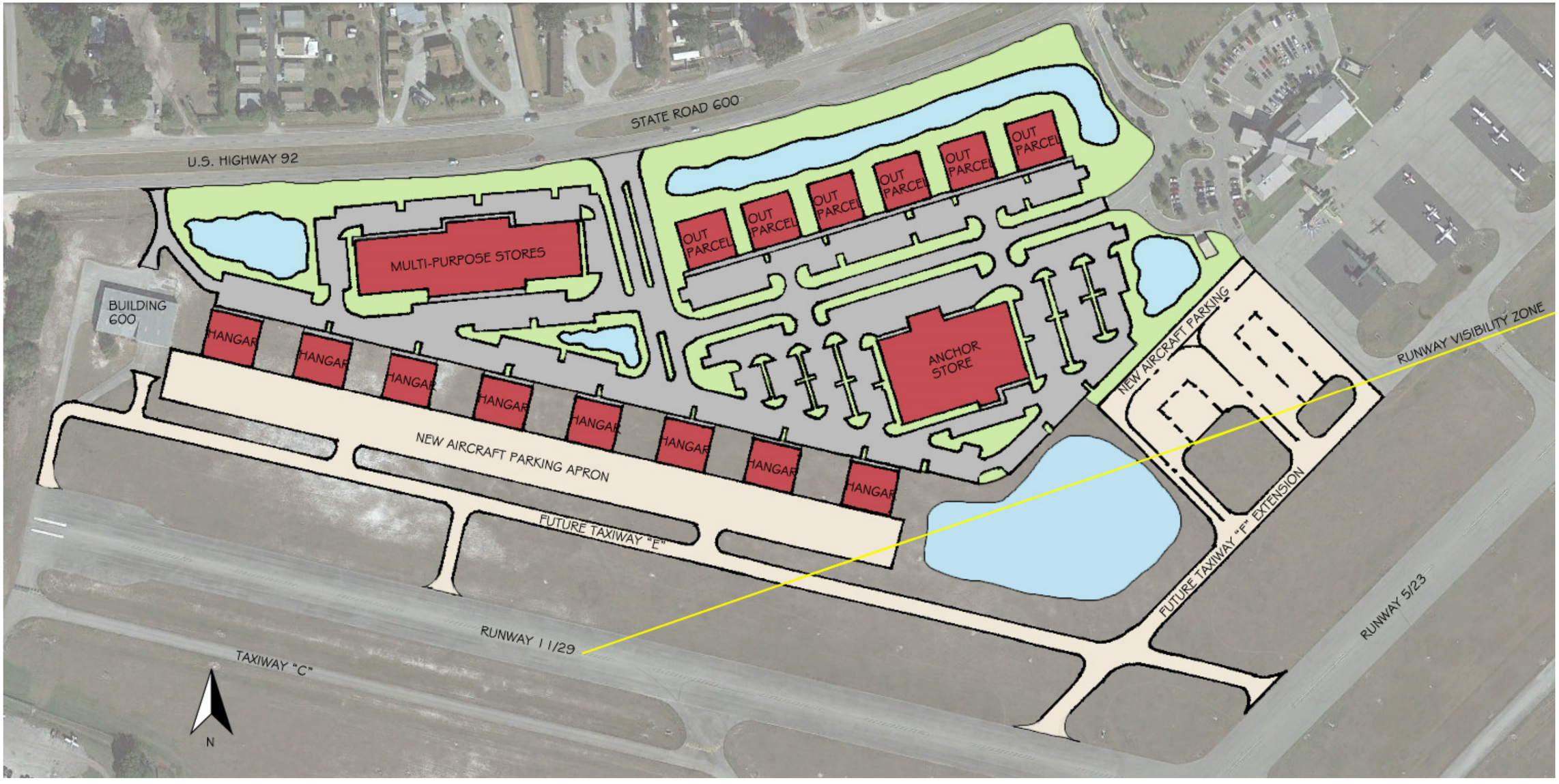


Figure 6-9
NORTHWEST DEVELOPMENT AREA ALTERNATIVE THREE

6.3.3 Northeast Development Area

The Northeast Development Area is located between the existing terminal area, U.S. Highway 92, and Taxiway F and its future extension to the east. The Airport is currently working with several tenants to develop three hangars in this area. For this reason, these three hangars are shown in each of the alternatives.

6.3.3.1 Northeast Development Area Alternative One

Alternative One for the Northeast Development Area is shown in Figure 6-10 and has the three hangars that the Airport is currently seeking to design and construct. These are located east of the area along Taxiway F and the extension of Taxiway F. These three hangars consist of two 100-foot by 100-foot hangars. The one furthest to the east has an associated office structure that has approximately 2,000 square feet. The second 100-foot by 100-foot hangar has an associated office structure of approximately 1,000 square feet. The third hangar would measure approximately 100 feet by 200 feet and would have an associated office structure of approximately 1,600 square feet.

In addition to the three hangars, this alternative also has a hotel that would share parking with the terminal building and an apron for the remainder of the itinerant aircraft parking that will be needed by the end of the planning period and not shown in the Northwest Development Area alternatives. One additional 100-foot by 100-foot hangar has also been proposed.

This alternative and each of the others in this development area eliminate the existing stormwater pond located northeast of the existing terminal area. This stormwater pond will have to be relocated to another area of the Airport, ideally within this development area. Additional stormwater area may or may not have to be added to compensate for the additional non-permeable area proposed to be added to this area. New State of Florida overland flow rules may allow the total new stormwater area to be less than the existing.

6.3.3.2 Northeast Development Area Alternative Two

Alternative Two for the Northeast Development Area is shown in Figure 6-11. The only difference between this alternative and the first one for this development area is that this alternative does not have a hotel or the associated parking. Rather, a replacement stormwater pond is shown.

6.3.3.3 Northeast Development Area Alternative Three

Alternative Three for the Northeast Development Area, as shown in Figure 6-12, also does not have the hotel located within the Area. The primary difference between this alternative and Alternative Two is that instead of the additional itinerant aircraft parking area, this alternative places an additional 100-foot by 100-foot hangar in the location of the existing stormwater pond.

Figure 6-10
NORTHEAST DEVELOPMENT AREA ALTERNATIVE ONE

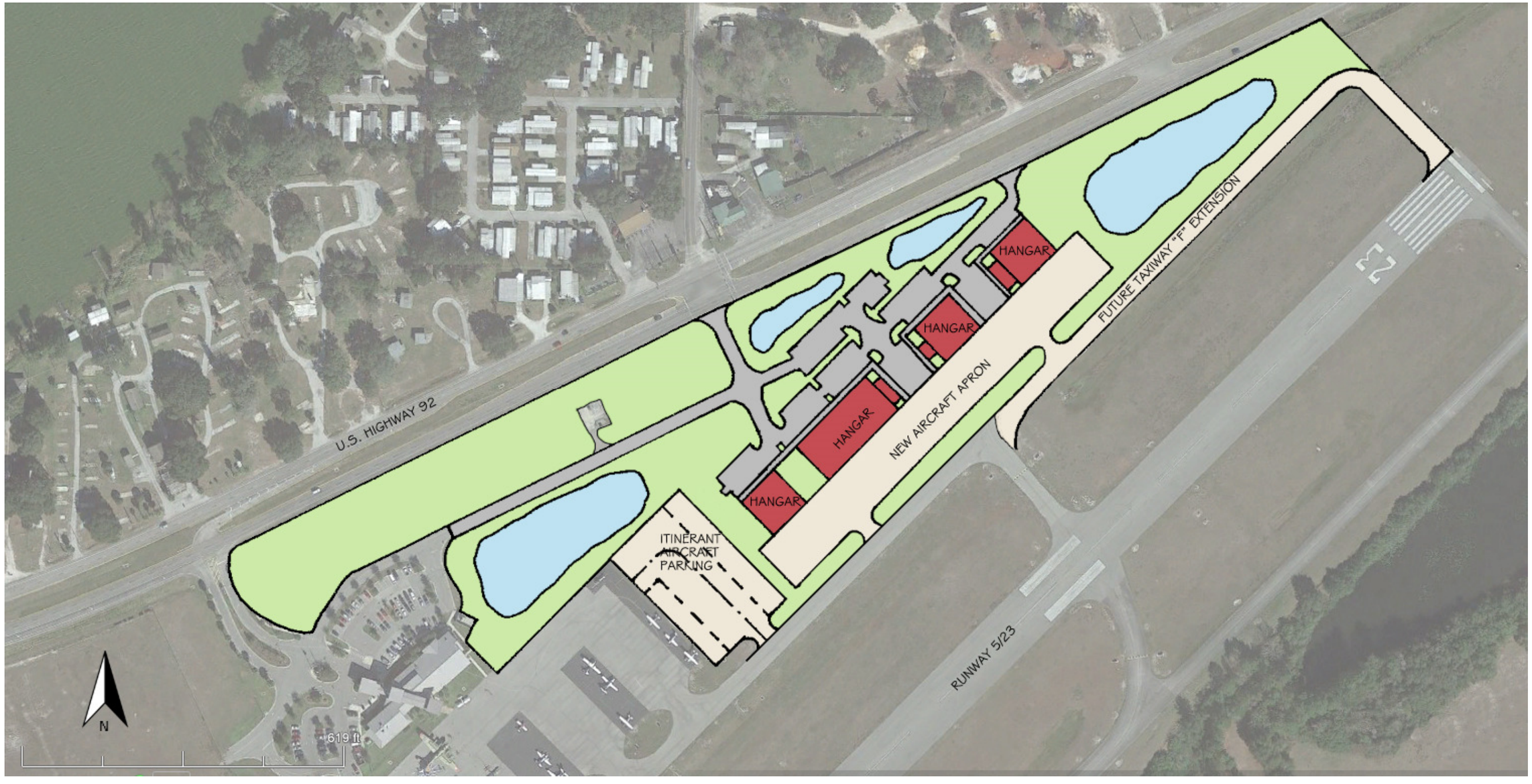


Figure 6-11
NORTHEAST DEVELOPMENT AREA ALTERNATIVE TWO

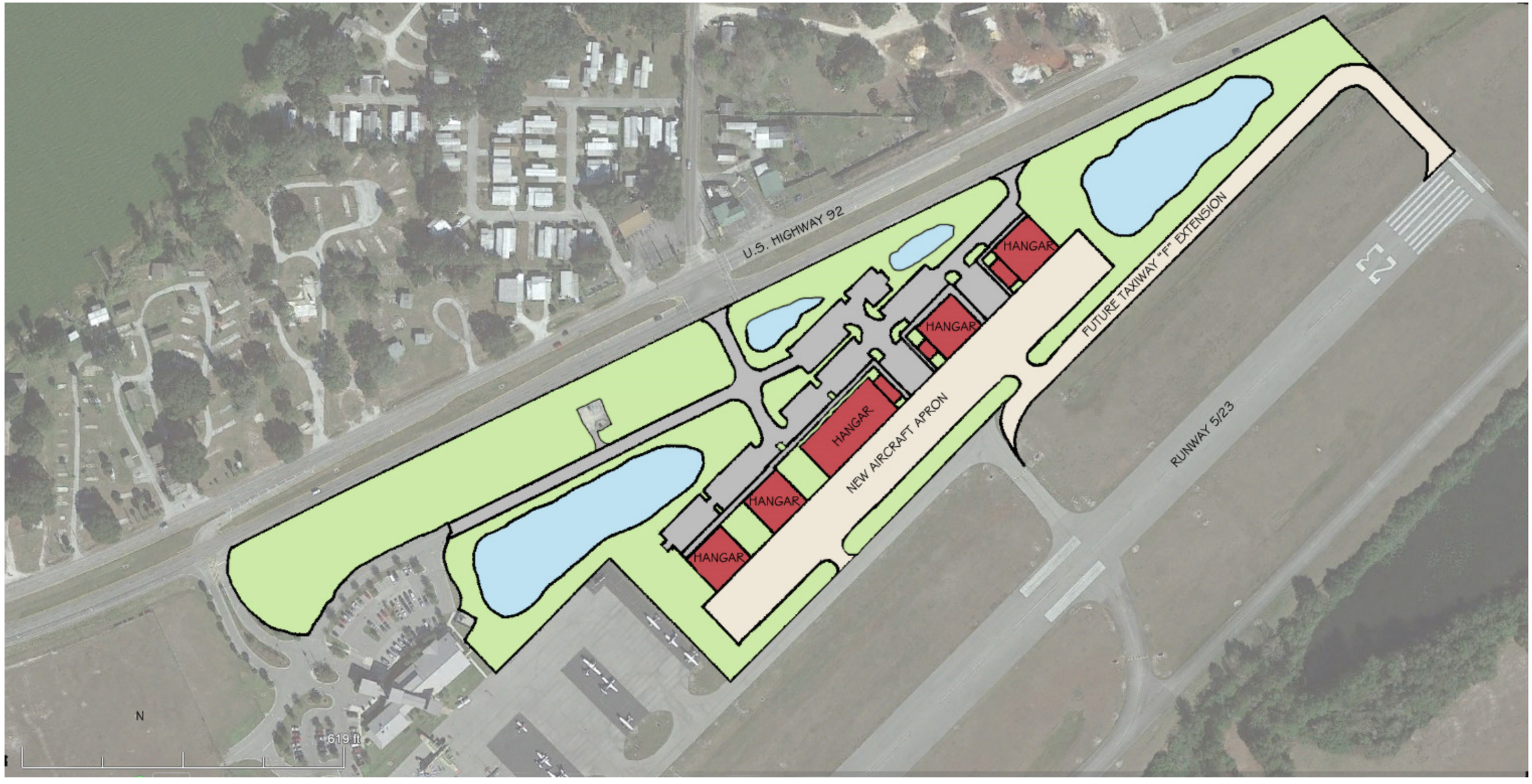


Figure 6-12
NORTHEAST DEVELOPMENT AREA ALTERNATIVE THREE

6.3.4 South Development Area

The South Development Area is bordered by the Building Restriction Line (BRL) for Runway 5, the BRL for Runway 29, the Runway 5 Departure Surface, and the eastern and southern Airport property lines. This area is the most developed area of the Airport as it was formerly the primary development area. It currently has the south apron, the former terminal building, and many conventional hangars and T-hangars. At first look, it might appear to be almost completely built out. However, there is potential to add quite a few hangars in this area.

6.3.4.1 South Development Area Alternative One

The most obvious alternative would be to add a 10-unit T-hangar between Building 250 and Building 290 where a T-hangar used to be located. The previous Master Plan also showed two additional T-hangars placed south of Building 310 and Building 300. This would, however, require the demolition of the City of Winter Haven document storage building (Building 40). This building is on a month-to-month lease, and the Airport receives revenue from this facility. This alternative is shown in Figure 6-13.

6.3.4.2 South Development Area Alternative Two

The Airport also receives revenue from a month-to-month lease for the Police Training Facility located to the south of the City of Winter Haven document storage building. Although the City continues to keep the Police Training Facility in good repair, the police reportedly find it less expensive to train at another facility. For these reasons, Alternative Two was developed to show the development of additional T-hangars in the location of both the City of Winter Haven document storage building and the Police Training Facility. This alternative would add 78 T-hangars and seven 60 foot by 60 foot conventional hangars into this area, as shown in Figure 6-14.

6.3.4.3 South Development Area Alternative Three

The third alternative for the South Development Area would also add hangars into the areas currently occupied by the City of Winter Haven document storage building and the Police Training Facility. However, in this alternative, only three 60 foot by 60 foot conventional hangars and 120 T-hangars would be built. This alternative is shown in Figure 6-15.

6.3.4.4 Southeast Development Area

The Southeast Development Area is a part of the South Development and would be associated with each of the South Development Area alternatives above. Other than the airfield improvements that have been previously discussed, there are only two elements to this alternative as shown in Figure 6-16. The first would be the removal of Buildings 50 and 190. Building 50 is a conventional hangar and Building 190 is a building of T-hangars. Both buildings are in disrepair.

The second element is the replacement of the existing fuel farm adjacent to the location of the existing fuel farm. The existing fuel farm pad would be used for fuel truck parking in the future, and a comfort station would also be added for the convenience of pilots in the south of the Airport.

Figure 6-13
SOUTH DEVELOPMENT AREA ALTERNATIVE ONE

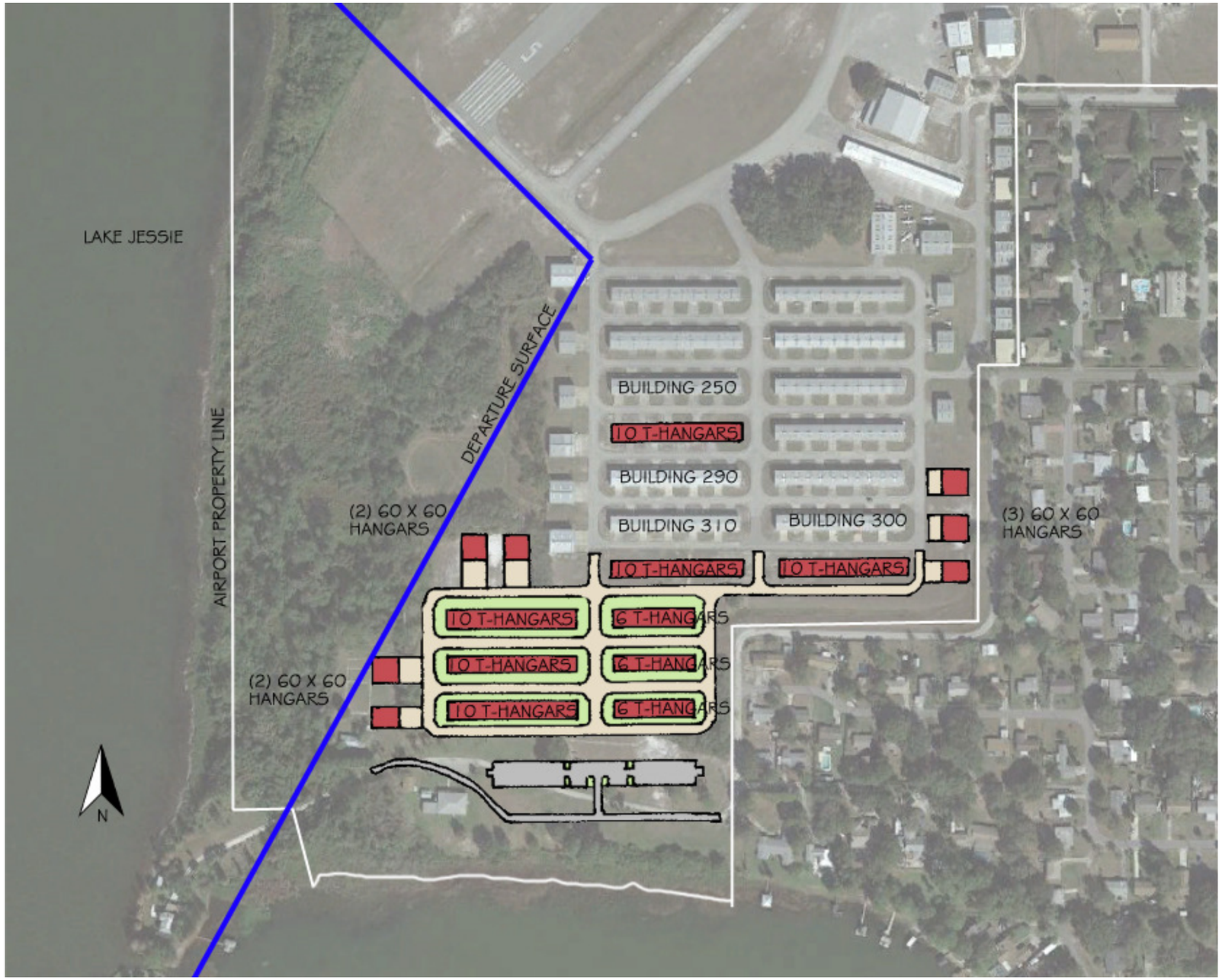


Figure 6-14
SOUTH DEVELOPMENT AREA ALTERNATIVE TWO

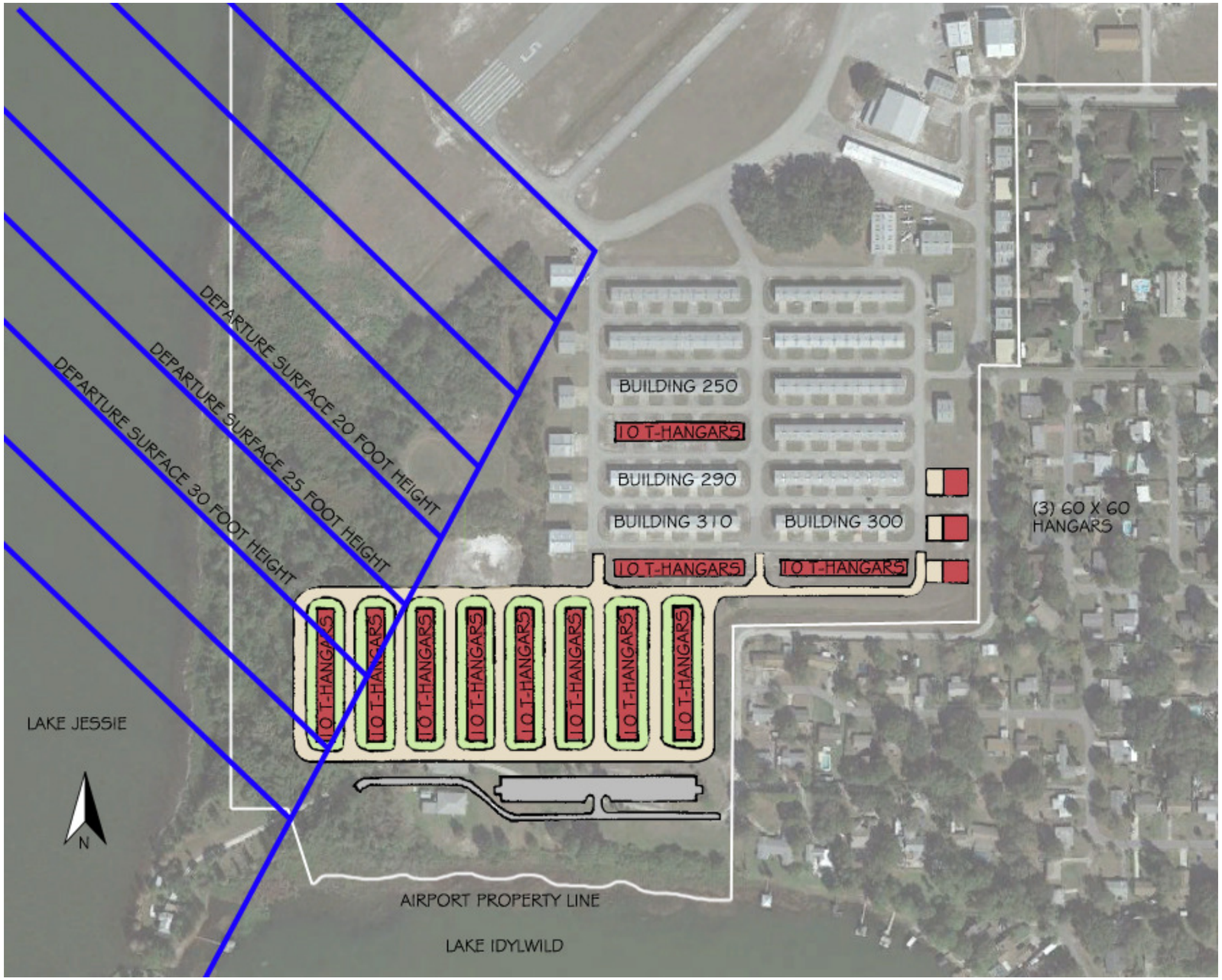


Figure 6-15
SOUTH DEVELOPMENT AREA ALTERNATIVE THREE

Figure 6-16
SOUTHEAST DEVELOPMENT AREA

6.3.5 East Development Area

The East Development Area is defined by the Building Restriction Line (BRL) for Runway 23, the BRL for Runway 29, the Runway Departure Surface for Runway 23, the Runway Approach Surface for Runway 29, and the Airport's eastern property line. The Airport is currently developing a lease with the Seaplane Pilots Association to place their world headquarters in this development area. Therefore, the early development plans for this facility are included in each of the alternatives for this area. These plans include a 100-foot by 100-foot hangar with associated apron, an office structure with approximately 5,000 square feet of office space, a seaplane ramp, a seaplane dock, and a picnic area with associated pavilion, restrooms, and showers.

Additionally, the Airport is in early talks with a seaplane manufacturer that is looking for a 40,000 square foot hangar with taxiway access to a lake. This facility is also shown in both of the alternatives for this development area.

6.3.5.1 East Development Area Alternative One

In addition to the Seaplane Pilots Association headquarters and the 40,000 square foot hangar, this alternative will also include 50 T-hangars and eight 100 foot by 100 foot conventional hangars. Primary access to the T-hangars is from Taxiway B. This alternative is shown in Figure 6-17.

6.3.5.2 East Development Area Alternative Two

The East Development Area Alternative Two has the Seaplane Pilots Association headquarters and the 40,000 square foot manufacturing hangar, as shown in Figure 6-18. This alternative also has 50 T-hangars, and eight 100-foot by 100-foot conventional hangars. Primary access to the T-hangars in this alternative is from the extension to Taxiway E.

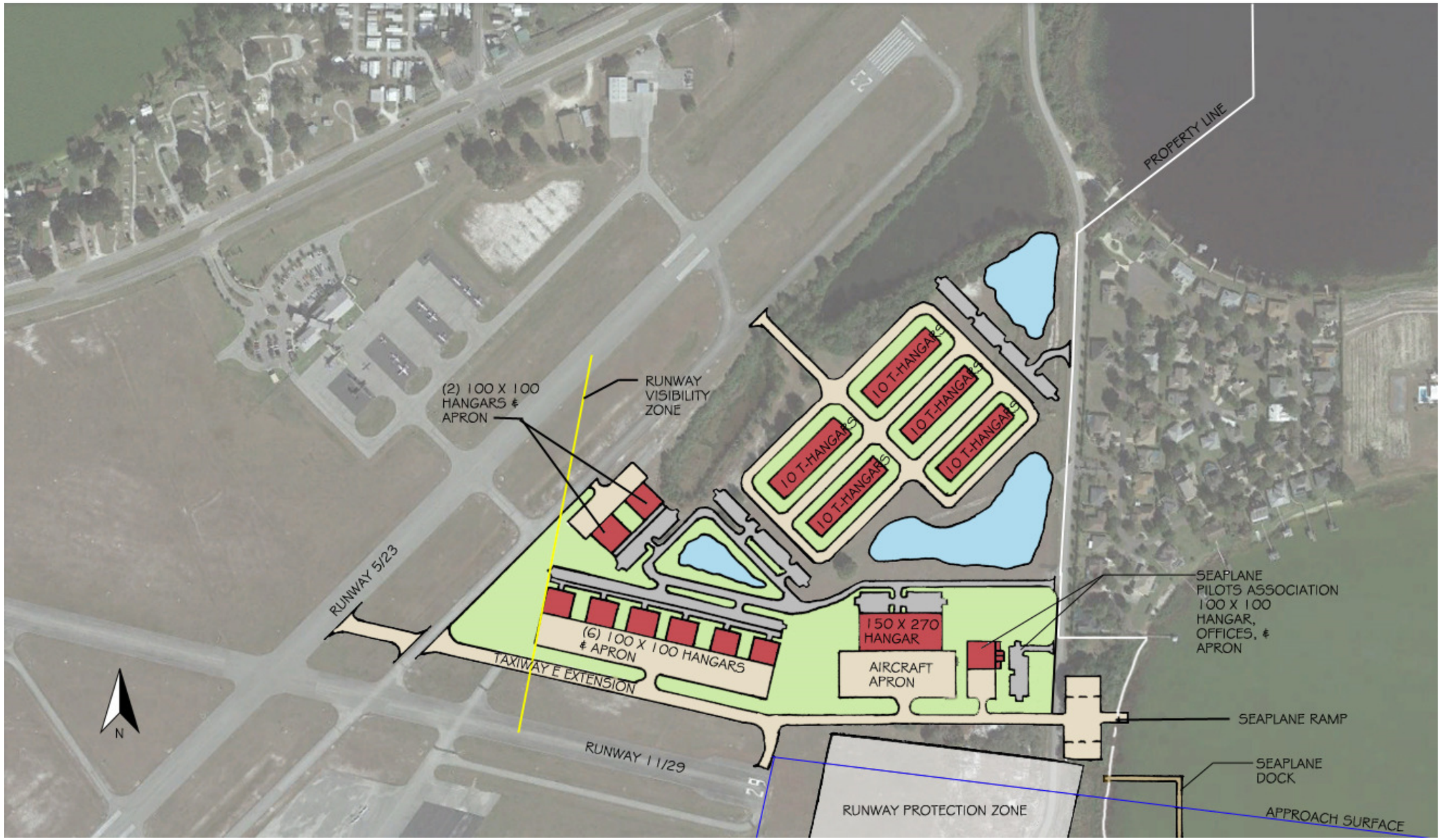


Figure 6-17
EAST DEVELOPMENT AREA ALTERNATIVE ONE

Figure 6-18
EAST DEVELOPMENT AREA ALTERNATIVE TWO

6.3.6 West Development Area

The West Development Area is bounded by the BRLs for Runway 11 and Runway 5, the Departure Surface for Runway 5, the Departure Surface for Runway 11, and the western property line for the Airport as it borders Lake Jessie. This area is currently undeveloped due to a lack of vehicular access.

Vehicular access to the area is restricted due to the location of the Departure Surfaces to Runways 5 and 11 and the location of Lake Jessie, as seen in Figure 6-19. Each Departure Surface is zero feet above the runway pavement at the end of the runway and rises at a rate of 40 feet to one foot. One could potentially bring a new entrance road to the Airport off of U.S. 92, west of the Runway 11 RPZ and then bring it south along the property line. One would have to build the entrance road on reclaimed land outside of and south of the Departure Surface. However, one could not reconnect to the Airport without cutting off all water access to Jack Brown's Seaplane Base.

One could potentially build something similar from the south side of Runway 5, coming in south of the Runway 5 RPZ and building out into Lake Jessie to avoid the Runway 5 RPZ and the Runway 5 Departure Surface. While feasible, this alternative would be exceedingly costly, would impact the environment, and would not be welcomed by those whose properties also border Lake Jessie. For these reasons, no development has been shown in this Master Plan Update in the West Development Area.

Figure 6-19
WEST DEVELOPMENT AREA ALTERNATIVE ONE

6.3.7 Composite Airport Development Alternatives

By combining various alternatives from each of the development areas, three composite alternatives have been developed. Each of these composites addresses the facility requirements in a different manner. Each of the Composite Airport Development Alternatives includes all of the airfield improvements discussed in this chapter as well as the road improvements developed to mitigate the road and RPZ conflicts where practical. In addition, the new fuel farm, comfort station and fuel truck parking area are common to each of the Composite Airport Development Alternatives.

6.3.7.1 Airport Development Composite One

Airport Development Composite One, as shown in Figure 6-20, shows the commercial development that the Airport desires along U.S. Highway 92 with six out parcels, a full-sized multi-purpose stores structure, an anchor store, and a hotel. It also shows aviation-related parcels located along Taxiway E. The full complement of 27 additional itinerant aircraft parking spaces adjacent to the terminal is realized and three 100-foot by 100-foot hangars are shown in the northeast area of the Airport along with a 200-foot by 100-foot hangar and associated office space.

There would be the capability to add 11 T-hangar structures for a total of 110 new T-hangars in the South Development Area of the Airport along with three new 60-foot by 60-foot conventional hangars. The East Development Area would have the proposed new Seaplane Pilots Association headquarters, a new 40,000 square foot seaplane manufacturing hangar, eight 100-foot by 100-foot conventional hangars and 50 new T-hangars housed in five structures.

6.3.7.2 Airport Development Composite Two

The second of the Airport Development Composites is shown in Figure 6-21. This composite has similar commercial components as Airport Development Composite One. However, they are in different locations: there are three out parcels instead of six, and the multi-purpose stores facility is about half the size of the one shown in Airport Development Composite One. This composite also has aviation development along the north side of Taxiway E and the full requirement of itinerant aircraft parking spaces that will be required by the year 2033. Three 100-foot by 100-foot hangars are shown in the northeast area of the Airport along with a 200- by 100-foot hangar and associated office space.

There would be the capability for six T-hangar structures for a total of 78 new T-hangars in the South Development Area of the Airport along with seven new 60 foot by 60 foot conventional hangars. The East Development Area would have the proposed new Seaplane Pilots Association headquarters, a new 40,000 square foot seaplane manufacturing hangar, seven 100-foot by 100-foot conventional hangars, one 100-foot by 150-foot conventional hangar, and 50 new T-hangars housed in six structures.

AIRPORT DEVELOPMENT COMPOSITE ONE

- 160 New T-Hangars
- (3) New 60-Foot by 60-Foot Conventional Hangars
- (19) New 100-Foot by 100-Foot Conventional Hangars
- (1) New 200-Foot by 100-Foot Conventional Hangar
- (1) 40,000 Square Foot Manufacturing Hangar
- (27) New Itinerant Aircraft Parking Spaces
- Seaplane Pilots Association Headquarters
- Commercial Facilities
  - Anchor Store
  - Hotel
  - Multi-purpose Stores Facility
  - Six Out Parcels

Figure 6-20
AIRPORT DEVELOPMENT COMPOSITE ONE

AIRPORT DEVELOPMENT COMPOSITE TWO

- 128 New T-Hangars
- (7) New 60-Foot by 60-Foot Conventional Hangars
- (19) New 100-Foot by 100-Foot Conventional Hangars
- (1) New 200-Foot by 100-Foot Conventional Hangars
- (1) New 100-Foot by 150-Foot Conventional Hangar
- (1) 40,000 Square Foot Manufacturing Hangar
- (27) New Itinerant Aircraft Parking Spaces
- Seaplane Pilots Association Headquarters
- Commercial Facilities
  - Anchor Store
  - Hotel
  - Small Multi-purpose Stores Facility
  - Four Out Parcels

Figure 6-21
AIRPORT DEVELOPMENT COMPOSITE TWO

6.3.7.3 Airport Development Composite Three

Airport Development Composite Three is shown in Figure 6-22. This composite shows the commercial development along U. S. Highway 92 in about the same configuration and sizes of buildings as shown in Airport Development Composite One, except that the hotel is located west of the terminal area and there is no aviation development along Taxiway E. Only about 13 new itinerant aircraft parking spaces are shown and the space to the east of the existing terminal area, that might have served for additional itinerant aircraft parking, is instead shown with an additional 100-foot by 100-foot conventional hangar. There is an additional two new 100-foot by 100-foot conventional hangars in the northeast area of the Airport along with a 200- by 100-foot hangar and associated office space.

There would be the capability for three T-hangar structures for a total of 30 new T-hangars in the South Development Area of the Airport along with three new 60-foot by 60-foot conventional hangars. The East Development Area would have the proposed new Seaplane Pilots Association headquarters, a new 40,000 square foot seaplane manufacturing hangar, eight 100-foot by 100-foot conventional hangars, and 50 new T-hangars housed in five structures.

6.4 Evaluation of Alternatives and Recommended Preferred Alternative

The requirements of the Facility Requirements Forecast, which are based on the FAA-approved Aviation Activity Forecasts, indicate the following requirements for additional facilities:

- 27 Itinerant Aircraft Parking Spaces
- 97 New T-hangars
- Additional Vehicular Parking Spaces with All New Facilities
- Replacement of the Existing Fueling Facilities

The existing airfield configuration needs to be addressed to accommodate the construction of the new terminal and the relocation of the Fixed Base Operator from the south of the airfield to the north. In addition, new requirements for taxiways covered in FAA Advisory Circular 15/5300-13A, *Airport Design*, need to be addressed. These include:

- Extension of Taxiway F to both ends of Runway 5/23
- Design and construction of Taxiway E to allow access to the Runway 11 end from the terminal area
- Connection of Taxiways C and D to allow access to the Runway 29 end and the West Development Area
- Removal of a taxilane stub from the new terminal apron to Taxiway F to prevent direct access from the terminal area directly to Runway 5/23
- Realignment of Taxiway B-1 to allow 90-degree access from Taxiway B to Runway 23
- Realignment of Taxiway C-3 to allow 90-degree access from Taxiway C to Runway 11
- Removal of Taxiway C-3 between Taxiway C and Taxiway F extension

- Realign and rename Taxiway C-3 between Taxiway B and Runway 5 and Runway 5 and Taxiway B to allow 90-degree access from Taxiways F and B to Runway 5
- Realign Taxiway A between the south apron and Taxiway B to prevent direct access from the apron to Runway 5 and to allow 90-degree access from the apron to Taxiway B
- Removal of Taxiway A north of Taxiway D to prevent direct access from the south apron to Runway 29

The Airport also has a strategy to build commercial retail space on Airport property to increase the non-aeronautical revenue for the Airport. The City of Winter Haven has provided assistance to the Airport in determining a mix of retail opportunities that include an anchor store, a multi-purpose stores facility, a hotel, and several out parcels.

Each of the Airport Development Composites has included:

- The entire list of airfield improvements above
- More than the minimum number of T-hangars as required by the Facility Forecasts
- A 200-foot by 100-foot conventional hangar and associated office space located in the northeast of the Airport
- Two 100-foot by 100-foot conventional hangars and associated office space located in the northeast of the Airport
- The current plans for the Seaplane Pilots Association headquarters
- A 40,000 square foot seaplane manufacturing hangar
- Vehicular parking for all new facilities
- Commercial development with:
    - An anchor store
    - A hotel

In addition to the above list, Airport Development Composite One also provides:

- The 27 itinerant aircraft parking spaces as required by the Facility Forecast
- (17) 100-foot by 100-foot conventional hangars
- (3) 60-foot by 60-foot conventional hangars
- Commercial development with:
    - A full-size multi-purpose stores facility
    - Six out-parcels

Airport Development Composite Two also provides:

- The 27 required itinerant aircraft parking spaces
- (17) 100-foot by 100-foot conventional hangars
- (7) 60-foot by 60-foot conventional hangars
- Commercial development with:
    - A reduced-size, multi-purpose stores facility

AIRPORT DEVELOPMENT COMPOSITE THREE

- 80 New T-Hangars
- (3) New 60-Foot by 60-Foot Conventional Hangars
- (12) New 100-Foot by 100-Foot Conventional Hangars
- (1) New 200-Foot by 100-Foot Conventional Hangars
- (1) 40,000 Square Foot Manufacturing Hangar
- (13) New Itinerant Aircraft Parking Spaces
- Seaplane Pilots Association Headquarters
- Commercial Facilities
  - Anchor Store
  - Hotel
  - Multi-purpose Stores Facility
  - Six Out Parcels

Figure 6-22
AIRPORT DEVELOPMENT COMPOSITE THREE

  - Three out-parcels

Airport Development Composite Three also provides:

- 13 of the 27 needed itinerant aircraft parking spaces
- (10) 100-foot by 100-foot conventional hangars
- (3) 60-foot by 60-foot conventional hangars
- Commercial development with:
  - A full-size multi-purpose stores facility
  - Six out-parcels
- No aeronautical use parcels along the north boundary of Taxiway E

Airport Development Composite One is recommended as the Preferred Alternative because it meets all of the facility requirements, it provides the most aviation facilities with the space provided, and it provides all of the commercial spaces desired by the Airport and the City of Winter Haven. The recommended Preferred Alternative is shown in Figure 6-23.

6.5 Summary

This chapter takes into consideration the Facility Requirements developed in the last chapter, which are based on the Aviation Activity Forecasts. In the Facility Requirements chapter, a number of items were identified as needing to be addressed. These facilities have been addressed within this chapter as have a commercial development along U.S. Highway 92, a facility for the new Seaplane Pilots Association headquarters, a 20,000 square foot hangar, and a 40,000 square foot seaplane manufacturing hangar with access to a seaplane ramp. These considerations resulted in a recommended Preferred Alternative as shown in Figure 6-23.

RECOMMENDED PREFERRED ALTERNATIVE

- 160 New T-Hangars
- (3) New 60-Foot by 60-Foot Conventional Hangars
- (19) New 100-Foot by 100-Foot Conventional Hangars
- (1) New 200-Foot by 100-Foot Conventional Hangar
- (1)40,000 Square Foot Manufacturing Hangar
- (27) New Itinerant Aircraft Parking Spaces
- Seaplane Pilots Association Headquarters
- Commercial Facilities
  - Anchor Store
  - Hotel
  - Multi-purpose Stores Facility
  - Six Out Parcels

Figure 6-23
RECOMMENDED PREFERRED ALTERNATIVE

7. AIRPORT LAYOUT PLAN SET

7.1 Introduction

This chapter describes the Airport Layout Plan (ALP) set for the development of the Winter Haven Municipal Airport – Gilbert Field from 2014 through 2033, presents the Airport's compliance with Federal Aviation Administration (FAA) design standards, lists revisions to the ALP, and presents a reduced size ALP set. The ALP graphically illustrates the existing facilities of the Airport, as well as the proposed development based on the aviation forecasts, facility requirements, and the alternatives analysis. An ALP set is made up of the ALP drawing, as well as other supporting drawings that are considered to be appended to the ALP drawing. As presented in the FAA Advisory Circular 150/5070-6B, *Airport Master Plans*, five primary functions of the ALP define its purpose:

- The approved plans are necessary in order to receive financial assistance under terms of the Airport and Airway Improvement Act of 1982 (AIP), as amended, and specific passenger facility charge actions. The maintenance of a current plan and conformity to the plan are grant assurance requirements at an airport on which Federal funds have been expended under the AIP Program (ADAP) and the Federal Air Airports Program (FAAP) of 1946, as amended. While ALPs are not required for airports other than those developed with assistance under the previously mentioned Federal programs, this guidance can be applied to all airports.
- The plans create a blueprint for airport development by depicting proposed facility improvements consistent with the strategic vision of the airport sponsor. The plans provide a guideline by which the airport sponsor can assure that development maintains airport design standards and safety requirements, and is consistent with airport and community land use plans.
- The ALP serves as a public document that is a record of aeronautical requirements, both present and future, and as a reference for community deliberations on land use proposals and budget resource planning.
- The approved ALP provides the FAA and the FDOT with a plan for airport development. This will allow compatible planning for FAA-owned facility improvements at the Airport. It also allows the FAA and the FDOT to anticipate needs for budgetary and procedural needs. The approved ALP will also allow the FAA to protect necessary airspace for planned facility or approach procedure improvements.
- The plans can be a working tool for use by the City of Winter Haven and Airport management.

The FAA and the FDOT require a complete ALP set for consideration of future funding. Programming of FAA and FDOT funds are based on development projects depicted on the ALP sheet.

The FAA provides airport design standards to ensure safe and efficient airport operations. The plans have been developed in accordance with the following:

- FAA Advisory Circular 150/5070-6B, *Airport Master Plans*
- FAA Advisory Circular 150/5070-6B, Appendix F, *Airport Layout Plan Drawing Set*

- FAA Advisory Circular 150/5300-13A, *Airport Design*
- Federal Regulations Part 77, *Objects Affecting Navigable Airspace*
- FAA Order 5200, *Runway Safety Area Program*
- FAA ARP Standard Operating Procedures No. 2, *ALP Review Checklist*
- FAA ARP Standard Operating Procedures No. 3, *Exhibit 'A' Review Checklist*

The ALP drawing set, developed as a part of this Master Plan Update complies, with each of these documents.

7.2 ALP Set

The complete Winter Haven Municipal Airport - Gilbert Field ALP set consists of sixteen drawings. The purpose of each drawing is described in this section. The ALP drawings are produced on 24-inch by 36-inch sheets and are submitted by the City of Winter Haven, Florida to FDOT and FAA for review and approval. Reduced reproductions of the draft ALP are included at the end of this chapter for illustration purposes. All of the ALP drawings were created using AutoCAD version 2012.

7.2.1 Cover Sheet

The cover sheet of the ALP set provides basic Airport data that is not found elsewhere on the ALP. The cover sheet includes the Airport's name, associated city, date, project name, FAA and FDOT grant numbers, and the name of the City of Winter Haven as the Airport Sponsor. The cover sheet also displays a location map, which indicates the Airport, major cities in Florida, and major roads near the Airport.

7.2.2 Data Sheets

The two data sheets are separate sheets that contain the basic Airport and runway data tables. In this case, one also includes the wind roses and the wind observation data.

7.2.3 Airport Layout Plan

The ALP is a graphic representation of existing and future Airport facilities. The ALP is the key document that reflects changes in physical features on and near the Airport, which may affect navigable airspace or the ability of the Airport to operate. The ALP includes dimensional information in order for recommended development to be in accordance with FAA planning and design recommendations outlined in FAA Advisory Circular 150/5300-13A, *Airport Design*, and 150/5070-6B, *Airport Master Plans*. Development shown on the ALP corresponds to the Airport's Capital Improvement Program (CIP) for the 20-year period, with emphasis on the first five-year period.

7.2.4 FAR Part 77 Surfaces Airport Airspace Drawing

This drawing depicts "imaginary surfaces" that surround the Airport, as defined in Federal Aviation Regulation (FAR) Part 77. They consist of the Primary Surface, the Approach Surface, the Transitional Surface, the Horizontal Surface, and the Conical Surface.

The drawing is based on the runway configuration as planned to occur within the twenty-year planning period. Known obstructions have been identified.

7.2.5 Inner Portion of the Approach Surface for Runway 5/23

Sheets six and seven show the plan and profile views of the inner portion of the approach surfaces to the runway ends of Runways 5 and 23, respectively, at the Airport. In addition to the approach surfaces contained in FAR Part 77, *Objects Affecting Navigable Airspace*, the drawings also depict the threshold siting surfaces.

7.2.6 Inner Portion of the Approach Surface for Runway 11/29

Sheets eight and nine show the plan and profile views of the inner portion of the approach surfaces to the runway ends of Runways 11 and 29, respectively, at the Airport. In addition to the approach surfaces contained in FAR Part 77, Objects Affecting Navigable Airspace, the drawings also depict the threshold siting surfaces.

7.2.7 Obstacle Action Plans

On 18 August 2015, the FAA issued a Memorandum entitled “Reminder of Responsibilities for FAA Personnel and Airport Sponsors for Protecting Approach and Departure Surfaces. This memo states that Airport Sponsors with unmitigated obstacles are expected to develop an Obstacle Action Plan (OAP) that details when and how each of the navigation surfaces will be maintained. The FAA has developed a template for use in developing an OAP. This template has been completed for the Airport and is shown on the Obstacle Action Plan Sheet.

7.2.8 Obstacle Disposition Plans and Obstacle Maintenance Plan

Also included in the FAA Template developed for the OAP, are templates for the Obstacle Disposition Plans and the Maintenance Plan, which are shown in this instance on a separate sheet. The OAP and the Obstacle Disposition Plans for the Departure Surfaces are shown on the Departure Surfaces Plan.

7.2.9 Runway Departure Surfaces Plan

The Departure Surfaces Plan shows the applicable departure surfaces for instrument departures for the Airport. The slopes shown are 40:1 slopes and identify those obstructions that penetrate the slope out from each runway end that is designated for instrument departures out to 10,200 feet beyond the runway threshold.

7.2.10 Land Use Plan

The property areas to be reserved for basic Airport functions are delineated on this drawing. Such functions include aeronautical and non-aeronautical land uses. These land uses are consistent with the Airport’s requirements for aircraft operations and safety. It also shows that existing land uses of land adjacent to the Airport and the proposed future land uses to on- and off-Airport land.

7.2.11 Airport Exhibit “A” Property Inventory Map

The Airport Exhibit ‘A’ Property Inventory Map consists of three sheets and depicts the Airport’s boundary, the various tracts of land that were acquired to develop the Airport, and the method of acquisition. This map must be updated when the Airport changes any property boundary, acquires new property, or acquires new easements.

7.3 ALP Highlights and Modifications

This section highlights significant elements of the proposed ALP and notes significant changes from the previous ALP (2008) prepared for the Airport, as follows.

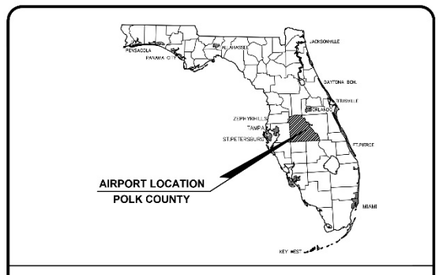
- Land recently acquired north of the new terminal building and adjacent to U.S. Highway 92
- The proposed extension of Taxiway E from Runway 5/23 to 21st Street NW
- The location and configuration of the new Seaplane Pilots Association World Headquarters
- A new Airport entrance road around the Runway 11 RPZ that will access the western quadrant of the Airport
- Additional T-hangars and taxilanes in the south quadrant of the Airport
- The demolition of Taxiway C-3 between Taxiway C and Taxiway B
- The demolition of Taxiway A between Taxiway D and Taxiway B-1
- The demolition of existing T-hangars on the South Apron

7.4 Summary

The Airport Layout Plan represents the facility needs that have been justified and documented in the preceding chapters. This development of the Airport Layout Plan brings the document up to date by showing development for which the construction is already complete or very near completion. This update shows projects that are proposed to be completed within the next twenty years with an emphasis on the next five years.

WINTER HAVEN MUNICIPAL AIRPORT
GILBERT FIELD

POLK COUNTY, FLORIDA
FOR
AIRPORT LAYOUT PLAN
NOVEMBER 2016



VICINITY MAPS
N.T.S.

INDEX OF DRAWINGS		
SHEET NUMBER	SHEET TITLE	REVISION DATE
1	COVER SHEET	
2	AIRPORT DATA SHEET (SHEET 1 OF 2)	
3	AIRPORT DATA SHEET (SHEET 2 OF 2)	
4	AIRPORT LAYOUT PLAN	
5	FAR PART 77 SURFACES AIRPORT AIRSPACE DRAWING	
6	INNER PORTION OF THE APPROACH SURFACE FOR RUNWAY 5	
7	INNER PORTION OF THE APPROACH SURFACE FOR RUNWAY 23	
8	INNER PORTION OF THE APPROACH SURFACE FOR RUNWAY 11	
9	INNER PORTION OF THE APPROACH SURFACE FOR RUNWAY 29	
10	OBSTACLE ACTION PLANS	
11	OBSTACLE DISPOSITION PLANS	
12	RUNWAY DEPARTURE SURFACE PLAN	
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14	EXHIBIT "A" AIRPORT PROPERTY INVENTORY MAP (SHEET 1 OF 3)	
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16	EXHIBIT "A" AIRPORT PROPERTY INVENTORY MAP (SHEET 3 OF 3)	

FLORIDA DEPARTMENT OF TRANSPORTATION APPROVAL

FDOT SIGNATURE _____ DATE _____

NAME _____

TITLE _____

SPONSOR APPROVAL
THIS AIRPORT DRAWING IS APPROVED BY:

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AVCON PROJECT NO. 2014.230.03

FAA AIP NO. 3-12-0088-023-2014
FDOT FM NO. 436409-1-94-01

REVISIONS

NO.	DATE	DESCRIPTION	SHEETS

WINTER HAVEN MUNICIPAL AIRPORT–GILBERT FIELD (GIF)
SPONSOR: CITY OF WINTER HAVEN, FL
2073 HIGHWAY 92 WEST
WINTER HAVEN, FL 33881–2277
AIRPORT DIRECTOR: LEO TREGGI
TELEPHONE: (863) 298–4551
EMAIL: LTREGGI@MYWINTERHAVEN.COM

WINTER HAVEN
The Chain of Lakes City

AVCON

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CORPORATE CERTIFICATE OF AUTHORIZATION NUMBER: 5057
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Figure 7-1
AIRPORT LAYOUT PLAN SET COVER SHEET

RUNWAY DATA TABLE

DESCRIPTION	RUNWAY 5			RUNWAY 23		RUNWAY 11		RUNWAY 29		SEA LANE 2		SEA LANE 20	
	EXISTING	FUTURE	ULTIMATE	EXISTING	FUTURE	EXISTING	FUTURE	EXISTING	FUTURE	EXISTING	FUTURE	EXISTING	FUTURE
RUNWAY DESIGN CODE (RDC)	B-II-5000	SAME	SAME	B-II-VIS	SAME	B-I-5000	SAME	B-I-VIS	SAME	N/A	B-II-VIS	N/A	B-II-VIS
APPROACH REFERENCE CODE (APRC)	B/III/5000	SAME	SAME	B/III/VIS	SAME	B/I(S)/5000	SAME	B/I(S)/VIS	SAME	N/A	B/II/VIS	N/A	B/II/VIS
DEPARTURE REFERENCE CODE (DPRC)	B/III	SAME	SAME	B/III	SAME	B/I(S)	SAME	B/I(S)	SAME	N/A	D/IV/VIS	N/A	D/IV/VIS
RUNWAY PAVEMENT MATERIAL	ASPHALT	SAME	SAME	ASPHALT	SAME	ASPHALT	SAME	ASPHALT	SAME	N/A	WATER	N/A	WATER
PAVEMENT STRENGTH BY WHEEL LOADING	SW 30,000 LBS.	SAME	SAME	SW 30,000 LBS.	SAME	SW 12,500 LBS.	SAME	SW 12,500 LBS.	SAME	N/A	N/A	N/A	N/A
PAVEMENT STRENGTH BY PCN	16/F/B/X/U	TBD	TBD	16/F/B/C/U	TBD	6/F/B/X/U	TBD	6/F/B/X/U	TBD	N/A	N/A	N/A	N/A
PAVEMENT SURFACE TREATMENT	GROOVED	SAME	SAME	GROOVED	SAME	GROOVED	SAME	GROOVED	SAME	N/A	N/A	N/A	N/A
EFFECTIVE RUNWAY GRADIENT	0.01%	SAME	0.20%	0.01%	SAME	0.05%	SAME	0.05%	SAME	N/A	N/A	N/A	N/A
PERCENT WIND COVERAGE IFR (10.5 KNOTS/13 KNOTS)	96.10% / 97.81%	TBD	TBD	96.10% / 97.81%	TBD	95.08% / 97.21%	TBD	95.08% / 97.21%	TBD	N/A	96.10% / 97.81%	N/A	96.10% / 97.81%
PERCENT WIND COVERAGE ALL WEATHER (10.5 KNOTS/13 KNOTS)	96.60% / 98.41%	TBD	TBD	96.60% / 98.41%	TBD	96.39% / 98.23%	TBD	96.39% / 98.23%	TBD	N/A	96.60% / 98.41%	N/A	96.60% / 98.41%
RUNWAY DIMENSIONS (LENGTH X WIDTH)	5,006' X 100'	SAME	6,356' X 100'	5,006' X 100'	SAME	4,001' X 100'	SAME	4,001' X 100'	SAME	N/A	3,000' X 200'	N/A	3,000' X 200'
DISPLACED THRESHOLD	NONE	SAME	SAME	NONE	SAME	NONE	400'	NONE	300'	N/A	NONE	N/A	NONE
RUNWAY SAFETY AREA WIDTH	150'	SAME	150'	150'	SAME	120'	SAME	120'	SAME	N/A	N/A	N/A	N/A
RUNWAY SAFETY AREA LENGTH BEYOND DEPARTURE END	300'	SAME	300'	300'	SAME	240'	SAME	240'	SAME	N/A	N/A	N/A	N/A
RUNWAY SAFETY AREA LENGTH PRIOR TO THRESHOLD	300'	SAME	300'	300'	SAME	240'	SAME	240'	SAME	N/A	N/A	N/A	N/A
RUNWAY END LATITUDE – (NAD83)	N28° 03' 30.69"	SAME	N28° 03' 21.24"	N28° 04' 05.74"	SAME	N28° 03' 48.90"	SAME	N28° 03' 39.88"	N28° 03' 40.56"	N/A	N28° 03' 00.17"	N/A	N28° 03' 26.63"
RUNWAY END LONGITUDE – (NAD83)	W81° 45' 28.35"	SAME	W81° 45' 39.01"	W81° 44' 48.84"	SAME	W81° 45' 37.85"	SAME	W81° 44' 54.36"	W81° 44' 57.60"	N/A	W81° 44' 45.63"	N/A	W81° 44' 30.32"
RUNWAY END ELEVATION – (NAVD88)	141.7'	SAME	131'	141.2'	SAME	143.0'	SAME	141.0'	SAME	N/A	131'	N/A	131'
TRUE BEARING	N44° 52' 58"E	SAME	224.86°	N44° 52' 58"E	SAME	N103° 02' 24"	SAME	N103° 02' 24"E	SAME	N/A	N27° 03' 20"E	N/A	N27° 03' 20"E
RUNWAY LIGHTING TYPE	MIRL	SAME	SAME	MIRL	SAME	NONE	MIRL	NONE	MIRL	N/A	NONE	N/A	NONE
RPZ INNER WIDTH DIMENSION	500'	SAME	SAME	500'	SAME	500'	SAME	500'	SAME	N/A	N/A	N/A	N/A
RPZ OUTER WIDTH DIMENSION	700'	SAME	SAME	700'	SAME	700'	SAME	700'	SAME	N/A	N/A	N/A	N/A
RPZ LENGTH	1,000'	SAME	SAME	1,000'	SAME	1,000'	SAME	1,000'	SAME	N/A	N/A	N/A	N/A
RUNWAY MARKING TYPE	NON-PRECISION	SAME	SAME	VISUAL	SAME	BASIC	NON-PRECISION	BASIC	SAME	N/A	N/A	N/A	N/A
14 CFR PART 77 APPROACH CATEGORY	34:1	SAME	SAME	20:1	SAME	34:1	SAME	20:1	SAME	N/A	20:1	N/A	20:1
APPROACH TYPE	NON-PRECISION	SAME	SAME	VISUAL	SAME	NON-PRECISION	SAME	VISUAL	SAME	N/A	VISUAL	N/A	VISUAL
APPROACH VISIBILITY MINIMUMS	NON-PRECISION – 1 MILE	SAME	SAME	VISUAL	SAME	NON-PRECISION – 1 MILE	SAME	VISUAL	SAME	N/A	VISUAL	N/A	VISUAL
TYPE OF AERONAUTICAL SURVEY REQUIRED	NOT VERTICALLY GUIDED	SAME	SAME	NOT VERTICALLY GUIDED	SAME	NOT VERTICALLY GUIDED	SAME	NOT VERTICALLY GUIDED	SAME	N/A	NOT VERTICALLY GUIDED	N/A	NOT VERTICALLY GUIDED
RUNWAY DEPARTURE SURFACE	YES	SAME	SAME	NONE	SAME	YES	SAME	NONE	SAME	N/A	NONE	N/A	NONE
RUNWAY OBJECT FREE AREA DIMENSIONS	5,606' X 500'	SAME	SAME	5,606' X 500'	SAME	4,481' X 400'	SAME	4,481' X 400'	SAME	N/A	N/A	N/A	N/A
OBSTACLE FREE ZONE DIMENSIONS	5,406' X 250'	SAME	SAME	5,406' X 250'	SAME	4,401' X 250'	SAME	4,401' X 250'	SAME	N/A	N/A	N/A	N/A
THRESHOLD SITING SURFACE (TSS)	20:1	SAME	SAME	20:1	SAME	20:1	SAME	20:1	SAME	N/A	20:1	N/A	20:1
DEPARTURE SITING SURFACE (DSS)	40:1	SAME	SAME	NONE	SAME	40:1	SAME	NONE	SAME	N/A	N/A	N/A	N/A
TYPES OF INSTRUMENT APPROACH	GPS	SAME	SAME	VISUAL	SAME	GPS	SAME	VISUAL	SAME	N/A	VISUAL	N/A	VISUAL
NAVIGATIONAL AIDS	GPS	SAME	SAME	NONE	GPS	GPS	SAME	NONE	SAME	N/A	NONE	N/A	NONE
VISUAL AND INSTRUMENT NAVAIDS	2-LIGHT PAPI, REILS	SAME	SAME	2-LIGHT PAPI, REILS	SAME	NONE	2-LIGHT PAPI, REILS, GPS	NONE	2-LIGHT PAPI, REILS	N/A	WINDSOCK	N/A	WINDSOCK
TOUCHDOWN ZONE ELEVATION	144.0'	SAME	SAME	141.0'	SAME	144.0'	SAME	143.0'	SAME	N/A	131'	N/A	131'
TAXIWAY WIDTH – (TDG 1A)	25'	SAME	SAME	25'	SAME	25'	SAME	25'	SAME	N/A	N/A	N/A	N/A
TAXIWAY WIDTH – (TDG 2)	35'	SAME	SAME	35'	SAME	35'	SAME	35'	SAME	N/A	N/A	N/A	N/A
TAXIWAY SAFETY AREA DIMENSIONS	79'	SAME	SAME	79'	SAME	49'	SAME	49'	SAME	N/A	N/A	N/A	N/A
TAXIWAY AND TAXILANE OBJECT FREE AREA – (TOFA) AND (TLOFA)	131' AND 115'	SAME	SAME	131' AND 115'	SAME	89' AND 79'	SAME	89' AND 79'	SAME	N/A	N/A	N/A	N/A
TAXIWAY/TAXILANE SEPARATION	105'	SAME	SAME	105'	SAME	70'	SAME	70'	SAME	N/A	N/A	N/A	N/A
TAXIWAY/TAXILANE LIGHTING	MITL	SAME	SAME	MITL	SAME	NONE	MITL	NONE	MITL	N/A	N/A	N/A	N/A

ABBREVIATIONS

AMSL	ABOVE MEAN SEA LEVEL
ARC	AIRPORT REFERENCE CODE
ARP	AIRPORT REFERENCE POINT
AS	APPROACH SLOPE
ASDA	ACCELERATED STOP DISTANCE AVAILABLE
AWOS	AUTOMATIC WEATHER OBSERVATION STATION
BRL	BUILDING RESTRICTION LINE
DS	DEPARTURE SLOPE
EL	ELEVATION
F	FAHRENHEIT
GA	GENERAL AVIATION
GPS	GLOBAL POSITIONING SYSTEM
IFR	INSTRUMENT FLIGHT RULES
LAT	LATITUDE
LDA	LANDING DISTANCE AVAILABLE
LONG	LONGITUDE
LBS	POUNDS
MIRL	MEDIUM INTENSITY RUNWAY LIGHTS
MN	MAGNETIC NORTH
MPH	MILES PER HOUR
NAD83	NORTH AMERICAN DATUM OF 1983
NAVAIDS	NAVIGATIONAL AIDS
NAVD 88	NORTH AMERICAN VERTICAL DATUM OF 1988

ABBREVIATIONS

NGDC	NATIONAL GEOPHYSICAL DATA CENTER
NOAA	NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NPIAS	NATIONAL PLAN OF INTEGRATED AIRPORT SYSTEMS
PAPI	PRECISION APPROACH PATH INDICATORS
PCN	PAVEMENT CONDITION INDEX
RDC	RUNWAY DESIGN CODE
REIL	RUNWAY END IDENTIFIER LIGHTS
ROFA	RUNWAY OBJECT FREE AREA
ROFZ	RUNWAY OBJECT FREE ZONE
RPZ	RUNWAY PROTECTION ZONE
RRC	RUNWAY REFERENCE CODE
RSA	RUNWAY SAFETY AREA
RW	RUNWAY
SW	SINGLE WHEEL
TBD	TO BE DETERMINED
TDZE	TOUCHDOWN ZONE ELEVATION
TN	TRUE NORTH
TODA	TAKE OFF DISTANCE AVAILABLE
TOFA	TAXIWAY OBJECT FREE AREA
TORA	TAKE OFF RUN AVAILABLE
TSA	TAXIWAY SAFETY AREA
TSS	THRESHOLD SITING SURFACE
TW	TAXIWAY

MODIFICATIONS TO STANDARDS APPROVAL TABLE

DESCRIPTION OF MODIFICATION	REQUIRED STANDARD	DATE OF MODIFICATION APPROVAL

GENERAL NOTES

1. ALL LATITUDE AND LONGITUDE COORDINATES ARE NORTH AMERICAN DATUM OF 1983 (NAD83)
2. ALL ELEVATIONS ARE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
3. RUNWAY MEETS RUNWAY VISIBILITY REQUIREMENTS

AIRPORT DATA TABLE

DESCRIPTION	EXISTING	FUTURE
AIRPORT IDENTIFIER	GIF	SAME
AIRPORT REFERENCE CODE (ARC) FOR THE AIRPORT	B-II	SAME
MEAN MAXIMUM TEMPERATURE OF THE HOTTEST (MO.)	92° F	SAME
AIRPORT ELEVATION – (NAVD88)	145.0'	SAME
AIRPORT NAVIGATIONAL AIDS	BEACON, GPS	SAME
AIRPORT REFERENCE POINT LATITUDE – (NAD83)	N28° 03' 46.50"	SAME
AIRPORT REFERENCE POINT LONGITUDE – (NAD83)	W81° 45' 11.90"	SAME
MISCELLANEOUS FACILITIES		
AIRPORT CRITICAL AIRCRAFT – EXISTING AND FUTURE	DASSAULT FALCON 900	SAME
AIRPORT MAGNETIC VARIATION	5° 48' W	TBD
AIRPORT MAGNETIC VARIATION DATE	24 FEBRUARY 2015	TBD
AIRPORT MAGNETIC VARIATION SOURCE	NATIONAL GEOPHYSICAL DATA CENTER	SAME
NPIAS SERVICE LEVEL	GENERAL AVIATION	SAME

TAXIWAY DESIGN GROUPS (TDG)

TAXIWAY	TDG
TAXIWAY A	2
TAXIWAY B	2
TAXIWAY C	1
TAXIWAY D	1
TAXIWAY F	2

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WINTER HAVEN MUNICIPAL AIRPORT - GILBERT FIELD

AIRPORT MASTER PLAN UPDATE

AIRPORT DATA SHEET (SHEET 1 OF 2)

SCALE:

REVISIONS:

NO.	DATE	BY	DESCRIPTION

DESIGNED BY: M.S.
DRAWN BY: J.A.
CHECKED BY: M.S.
APPROVED BY: J.A.K.
DATE: NOVEMBER 2016

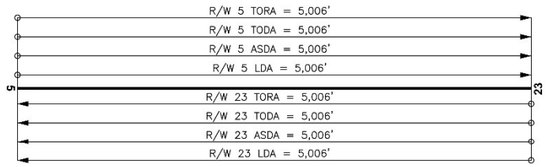
FAA AIP NO. 3-12-0088-023-2014
FDOT FM NO. 436409-1-94-01
AVCON PROJECT NO. 2014.230.03

SHEET NUMBER

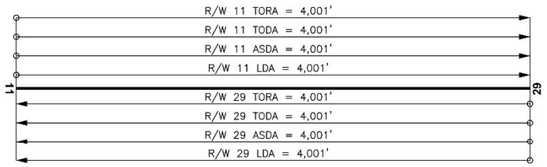
2

Figure 7-2
AIRPORT DATA SHEET (SHEET 1 OF 2)

RUNWAY 5-23 - EXISTING AND FUTURE



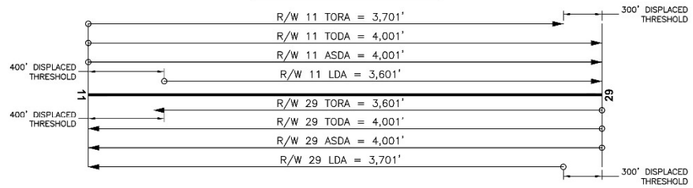
RUNWAY 11-29 - EXISTING

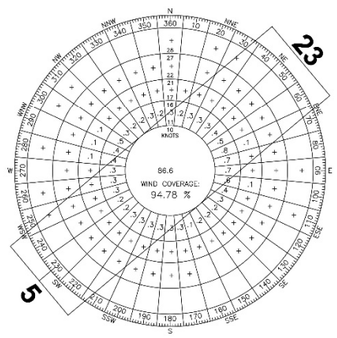


DECLARED DISTANCES TABLE

	RUNWAY 5		RUNWAY 23	
	EXISTING	FUTURE	EXISTING	FUTURE
TAKE OFF RUN AVAILABLE (TORA)	5,006'	5,006'	5,006'	5,006'
TAKE OFF DISTANCE AVAILABLE (TODA)	5,006'	5,006'	5,006'	5,006'
ACCELERATED STOP DISTANCE AVAILABLE (ASDA)	5,006'	5,006'	5,006'	5,006'
LANDING DISTANCE AVAILABLE (LDA)	5,006'	5,006'	5,006'	5,006'
	RUNWAY 11		RUNWAY 29	
	EXISTING	FUTURE	EXISTING	FUTURE
TAKE OFF RUN AVAILABLE (TORA)	4,001'	3,701'	4,001'	3,601'
TAKE OFF DISTANCE AVAILABLE (TODA)	4,001'	4,001'	4,001'	4,001'
ACCELERATED STOP DISTANCE AVAILABLE (ASDA)	4,001'	4,001'	4,001'	4,001'
LANDING DISTANCE AVAILABLE (LDA)	4,001'	3,601'	4,001'	3,701'

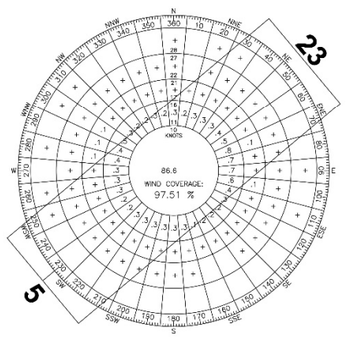
RUNWAY 11-29 - FUTURE





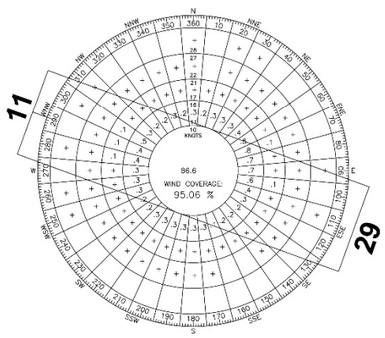
ALL WEATHER
WIND COVERAGE 10.5 KNOTS (12 MPH)
RUNWAY 5-23
94.78%

STATION: WINTER HAVEN – #747931
SOURCE: NATIONAL CLIMATIC DATA CENTER
PERIOD: 2006–2015



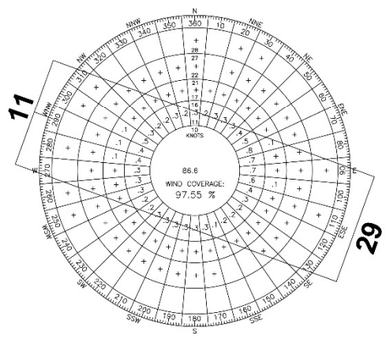
ALL WEATHER
WIND COVERAGE 13 KNOTS (15 MPH)
RUNWAY 5-23
97.51%

STATION: WINTER HAVEN – #747931
SOURCE: NATIONAL CLIMATIC DATA CENTER
PERIOD: 2006–2015



VISUAL FLIGHT RULES
WIND COVERAGE 10.5 KNOTS (12 MPH)
RUNWAY 11-29
95.06%

STATION: WINTER HAVEN – #747931
SOURCE: NATIONAL CLIMATIC DATA CENTER
PERIOD: 2006–2015



VISUAL FLIGHT RULES
WIND COVERAGE 13 KNOTS (15 MPH)
RUNWAY 11-29
97.55%

STATION: WINTER HAVEN – #747931
SOURCE: NATIONAL CLIMATIC DATA CENTER
PERIOD: 2006–2015

V:\2014\2014.230.03 — GF Airport Master Plan Update\2014.230.03 CADD\14230301_Sht 3 Data Sheet 2 of 2.dwg 11-4-16 AM

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WINTER HAVEN MUNICIPAL AIRPORT - GILBERT FIELD

AIRPORT MASTER PLAN UPDATE

AIRPORT DATA SHEET (SHEET 2 OF 2)

SCALE:

REVISIONS:

NO.	DATE	BY	DESCRIPTION

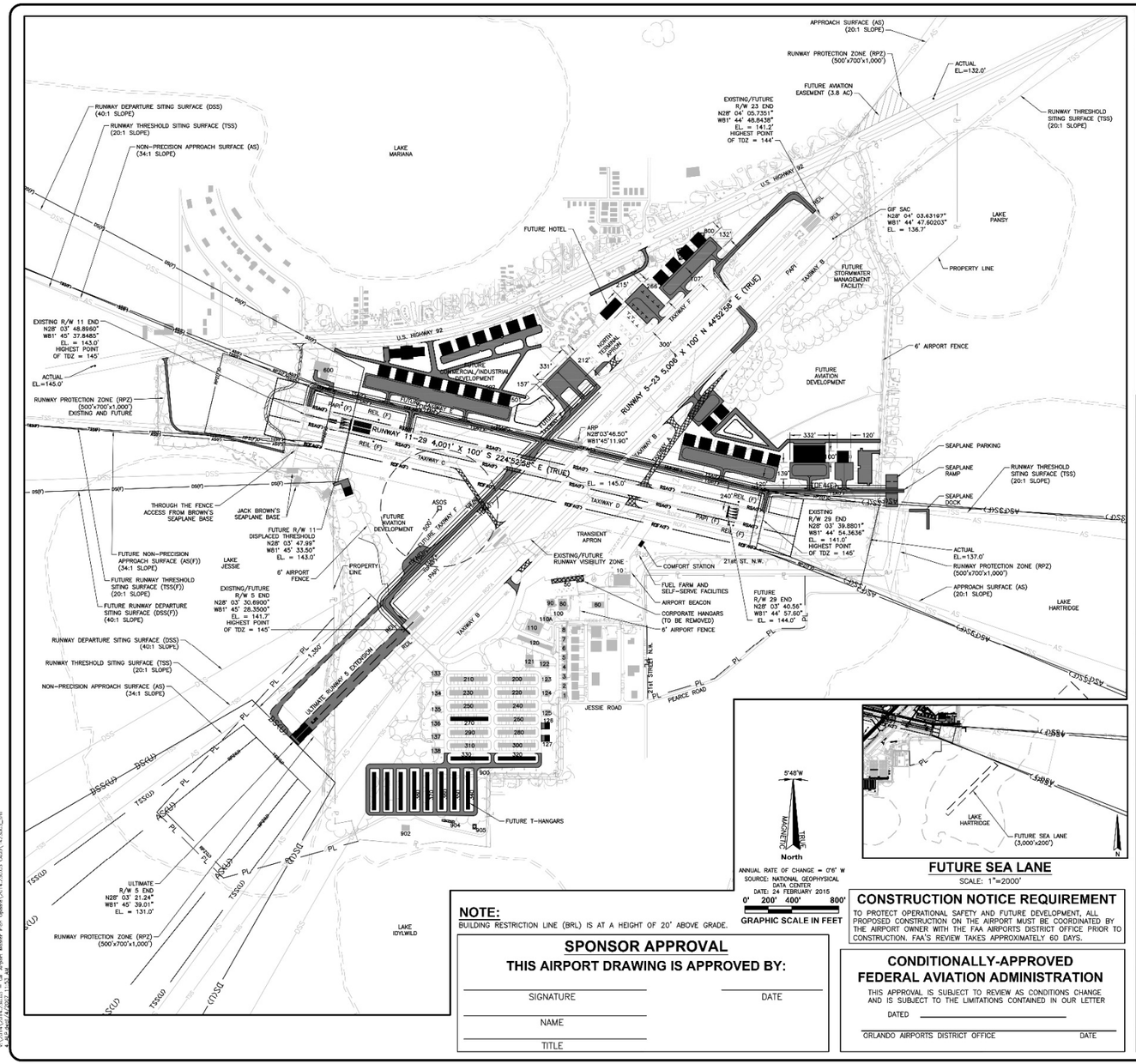
DESIGNED BY:	M.S.
DRAWN BY:	J.A.
CHECKED BY:	M.S.
APPROVED BY:	J.A.K.
DATE:	NOVEMBER 2016

FAA AIP NO.	3-12-0088-023-2014
FDOT FM NO.	436409-1-94-01
AVCON PROJECT NO.	2014.230.03

SHEET NUMBER

3

Figure 7-3
AIRPORT DATA SHEET (SHEET 2 OF 2)



NOTE:
BUILDING RESTRICTION LINE (BRL) IS AT A HEIGHT OF 20' ABOVE GRADE.

SPONSOR APPROVAL
THIS AIRPORT DRAWING IS APPROVED BY:

SIGNATURE _____ DATE _____

NAME _____

TITLE _____

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.

CONDITIONALLY-APPROVED FEDERAL AVIATION ADMINISTRATION
THIS APPROVAL IS SUBJECT TO REVIEW AS CONDITIONS CHANGE AND IS SUBJECT TO THE LIMITATIONS CONTAINED IN OUR LETTER
DATED _____
ORLANDO AIRPORTS DISTRICT OFFICE DATE

LEGEND

EXISTING	FUTURE	DESCRIPTION
N/A		FUTURE COMMERCIAL/INDUSTRIAL DEVELOPMENT AREA
N/A		FUTURE AVIATION DEVELOPMENT AREA
	N/A	AIRPORT REFERENCE POINT
	PL	PROPERTY LINE
BRL	BRL	BUILDING RESTRICTION LINE (BRL)
RSA	RSA(F)	RUNWAY SAFETY AREA (RSA)
ROFA	ROFA(F)	RUNWAY OBJECT FREE AREA (ROFA)
TOFA	TOFA(F)	TAXIWAY OBJECT FREE AREA (TOFA)
		TREES
× 20.6	× (20.3)	SURFACE ELEVATION
		PAVED AIRFIELD SURFACES
		PAVED AIRFIELD SURFACE REMOVAL
		FENCE
		RUNWAY PROTECTION ZONE (RPZ)
		BUILDING
		BUILDING REMOVAL
P	P	WINDSTOCK
		PAPI
		WETLAND/SURFACE WATER BOUNDARY
		ACCESS ROADS
		RUNWAY END INDICATOR LIGHTS (REIL)
TSS	TSS	THRESHOLD SITING SURFACE
RPZ(F)A	RPZ(F)D	RUNWAY PROTECTION ZONE
DS	DS(F)	DEPARTURE SURFACE
		FENCE

EXISTING FACILITY DATA

ID NUMBER	DESCRIPTION	MSL IN FEET (NAVD88)
1	HANGAR	159.0'
2	HANGAR	159.0'
3	HANGAR	158.0'
4	HANGAR	158.0'
5	HANGAR	158.0'
6	HANGAR	158.0'
7	HANGAR	158.0'
8	HANGAR	159.0'
10	FLIGHT SCHOOL/MAINTENANCE	168.0'
20	FUEL FARM	159.0'
50	HANGAR	159.0'
60	OFFICES	158.0'
80	HANGAR	155.0'
90	HANGAR	168.0'
100	OFFICES	156.0'
110	HANGAR	174.0'
110–A	HANGAR	159.0'
120	HANGAR	155.0'
121	HANGAR	160.0'
122	HANGAR	160.0'
123	HANGAR	159.0'
124	HANGAR	159.0'
125	HANGAR	159.0'
133	HANGAR	159.0'
134	HANGAR	157.0'
135	HANGAR	158.0'
136	HANGAR	158.0'
137	HANGAR	158.0'
138	HANGAR	160.0'
200	T–HANGAR	155.0'
210	T–HANGAR	154.0'
220	T–HANGAR	155.0'
230	T–HANGAR	155.0'
240	T–HANGAR	155.0'
250	T–HANGAR	155.0'
260	T–HANGAR	155.0'
270	NOT USED	0.0'
280	T–HANGAR	156.0'
290	T–HANGAR	155.0'
300	T–HANGAR	156.0'
310	T–HANGAR	155.0'
600	HANGAR	161.0'
750	NORTH TERMINAL	184.0'
800	HANGAR	160.0'
800–2	HANGAR	155.0'
900	RECORDS STORAGE	156.0'
901	NOT USED	0.0'
902	POLICE TRAINING FACILITY	154.0'
903	NOT USED	0.0'
904	NOT USED	0.0'
905	POLICE TRAINING FACILITY	150.0'

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WINTER HAVEN MUNICIPAL AIRPORT - GILBERT FIELD

AIRPORT MASTER PLAN UPDATE

AIRPORT LAYOUT PLAN

SCALE:

REVISIONS:

NO.	DATE	BY	DESCRIPTION

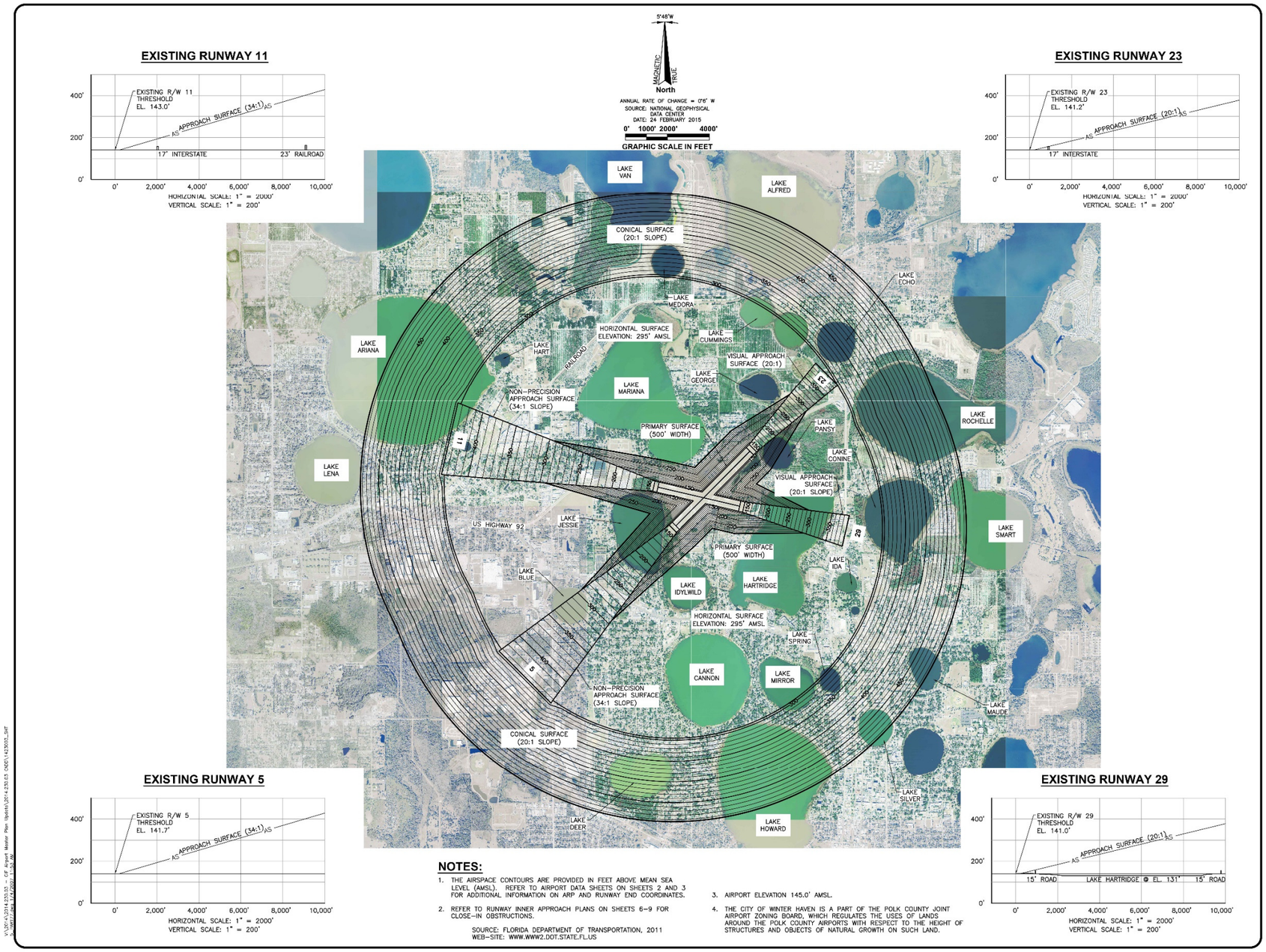
DESIGNED BY: M.S.
DRAWN BY: J.A.
CHECKED BY: M.S.
APPROVED BY: J.A.K.
DATE: NOVEMBER 2016

FAA AIP NO. 3-12-0088-023-2014
FDOT FM NO. 436409-1-94-01
AVCON PROJECT NO. 2014.230.03

SHEET NUMBER

4

Figure 7-4
AIRPORT LAYOUT PLAN



NOTES:

1. THE AIRSPACE CONTOURS ARE PROVIDED IN FEET ABOVE MEAN SEA LEVEL (AMSL). REFER TO AIRPORT DATA SHEETS ON SHEETS 2 AND 3 FOR ADDITIONAL INFORMATION ON ARP AND RUNWAY END COORDINATES.
2. REFER TO RUNWAY INNER APPROACH PLANS ON SHEETS 6–9 FOR CLOSE–IN OBSTRUCTIONS.

SOURCE: FLORIDA DEPARTMENT OF TRANSPORTATION, 2011
WEB–SITE: WWW.WWW2.DOT.STATE.FL.US

3. AIRPORT ELEVATION 145.0' AMSL.
4. THE CITY OF WINTER HAVEN IS A PART OF THE POLK COUNTY JOINT AIRPORT ZONING BOARD, WHICH REGULATES THE USES OF LANDS AROUND THE POLK COUNTY AIRPORTS WITH RESPECT TO THE HEIGHT OF STRUCTURES AND OBJECTS OF NATURAL GROWTH ON SUCH LAND.

V:\2014\2014.230.03 – GF Airport Master Plan Update\2014.230.03 GMDV14230DG_SHT 5_FAR77.dgn 11/4/2016 11:43 AM

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WINTER HAVEN MUNICIPAL AIRPORT - GILBERT FIELD

AIRPORT MASTER PLAN UPDATE

FAR PART 77 SURFACES AIRPORT AIRSPACE DRAWING

SCALE:

REVISIONS:

NO.	DATE	BY	DESCRIPTION

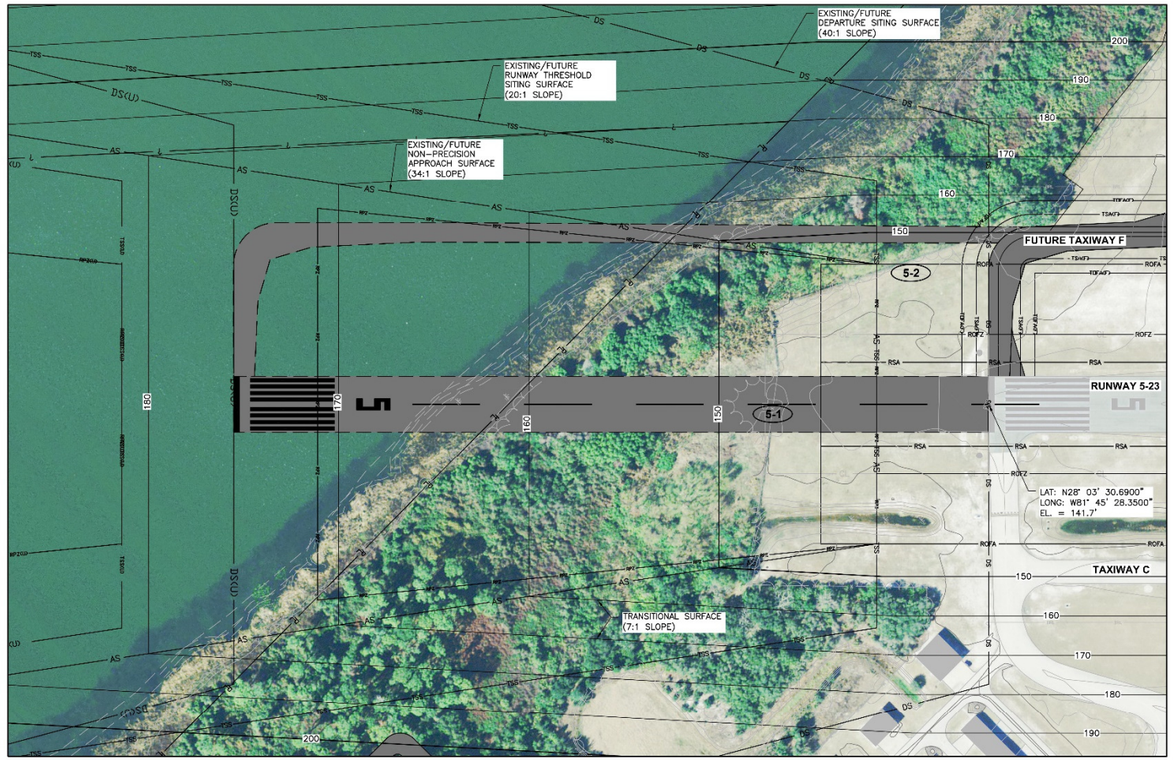
DESIGNED BY:	M.S.
DRAWN BY:	J.A.
CHECKED BY:	M.S.
APPROVED BY:	J.A.K.
DATE:	NOVEMBER 2016

FAA AIP NO.	3-12-0088-023-2014
FDOT FM NO.	436409-1-94-01
AVCON PROJECT NO.	2014.230.03

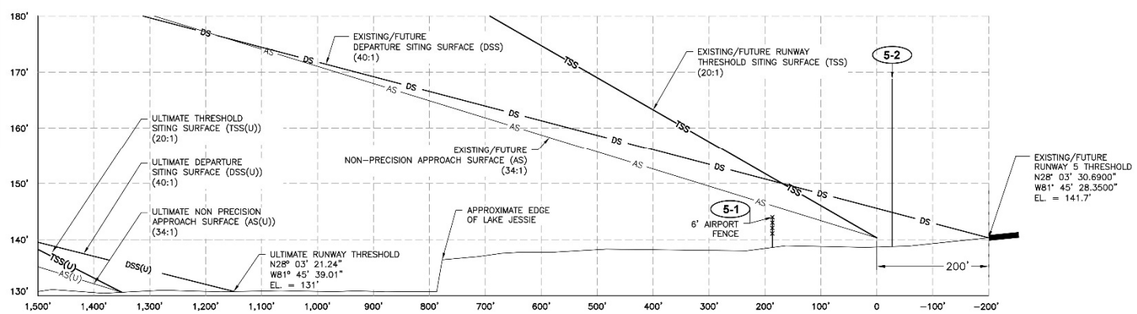
SHEET NUMBER

5

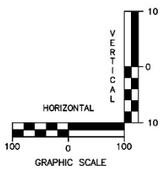
Figure 7-5
FAR PART 77 AIRSPACE SURFACES AIRPORT VICINITY MAP



RUNWAY 5 APPROACH PLAN VIEW



RUNWAY 5 APPROACH PROFILE VIEW



NOTES:

1. SEE SHEET 10 FOR OBSTACLE ACTION PLAN
2. SEE SHEET 11 FOR OBSTACLE DISPOSITION PLAN AND PROPOSED MAINTENANCE PLAN

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WINTER HAVEN MUNICIPAL AIRPORT - GILBERT FIELD

AIRPORT MASTER PLAN UPDATE

INNER PORTION OF THE APPROACH SURFACE FOR RUNWAY 5

SCALE:

REVISIONS:

NO.	DATE	BY	DESCRIPTION

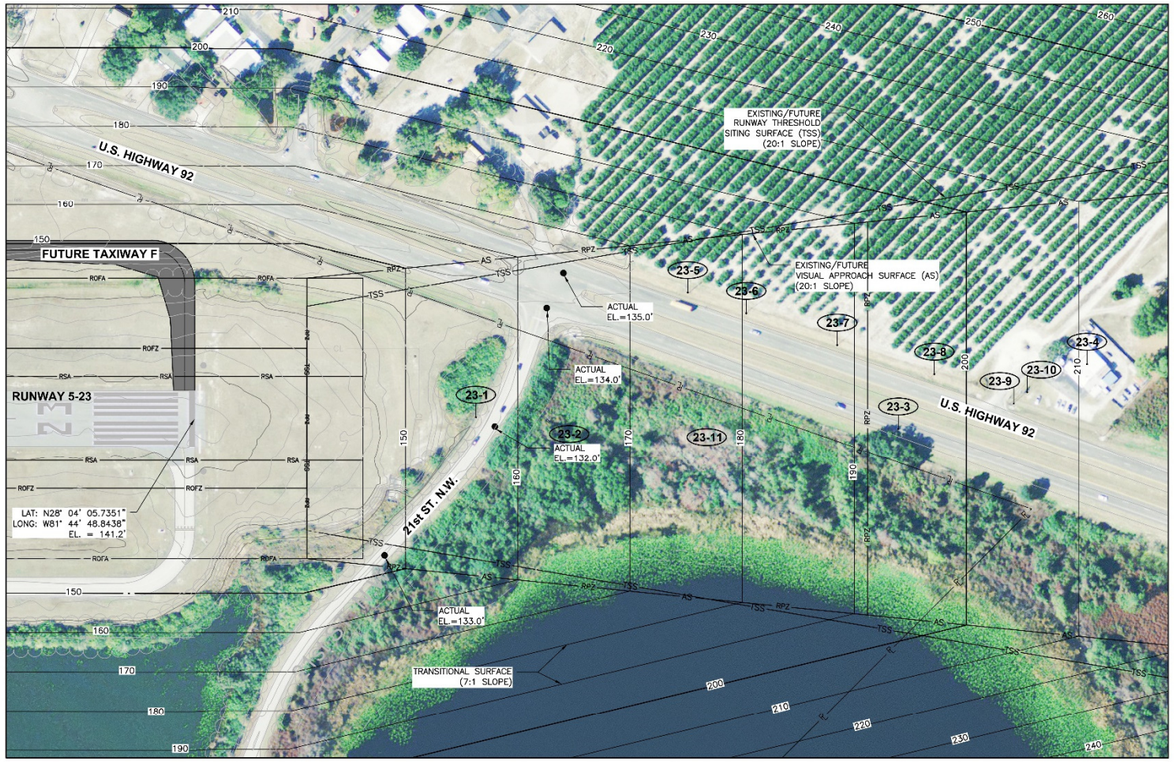
DESIGNED BY:	M.S.
DRAWN BY:	J.A.
CHECKED BY:	M.S.
APPROVED BY:	J.A.K.
DATE:	NOVEMBER 2016

FAA AIP NO.	3-12-0088-023-2014
FDOT FM NO.	436409-1-94-01
AVCON PROJECT NO.	2014.230.03

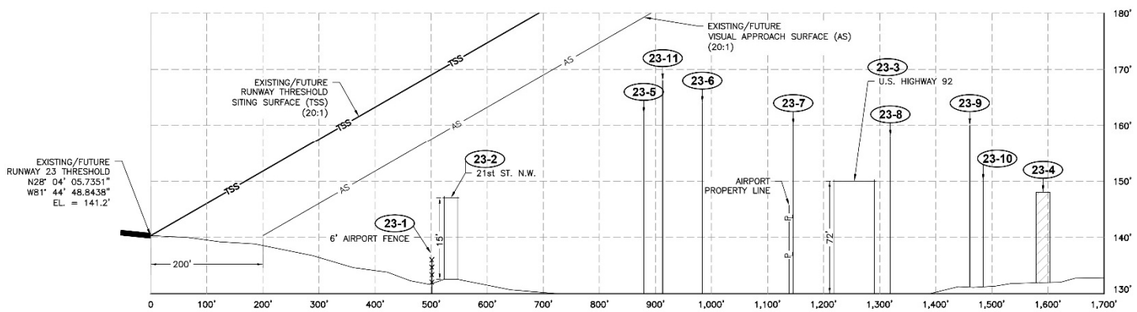
SHEET NUMBER

6

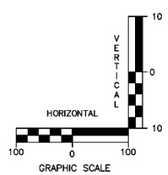
Figure 7-6
RUNWAY 5 INNER APPROACH PLAN

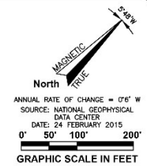


RUNWAY 23 APPROACH PLAN VIEW



RUNWAY 23 APPROACH PROFILE VIEW





NOTES:

1. SEE SHEET 10 FOR OBSTACLE ACTION PLAN
2. SEE SHEET 11 FOR OBSTACLE DISPOSITION PLAN AND PROPOSED MAINTENANCE PLAN

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WINTER HAVEN MUNICIPAL AIRPORT - GILBERT FIELD

AIRPORT MASTER PLAN UPDATE

INNER PORTION OF THE APPROACH SURFACE FOR RUNWAY 23

SCALE:

REVISIONS:

NO.	DATE	BY	DESCRIPTION

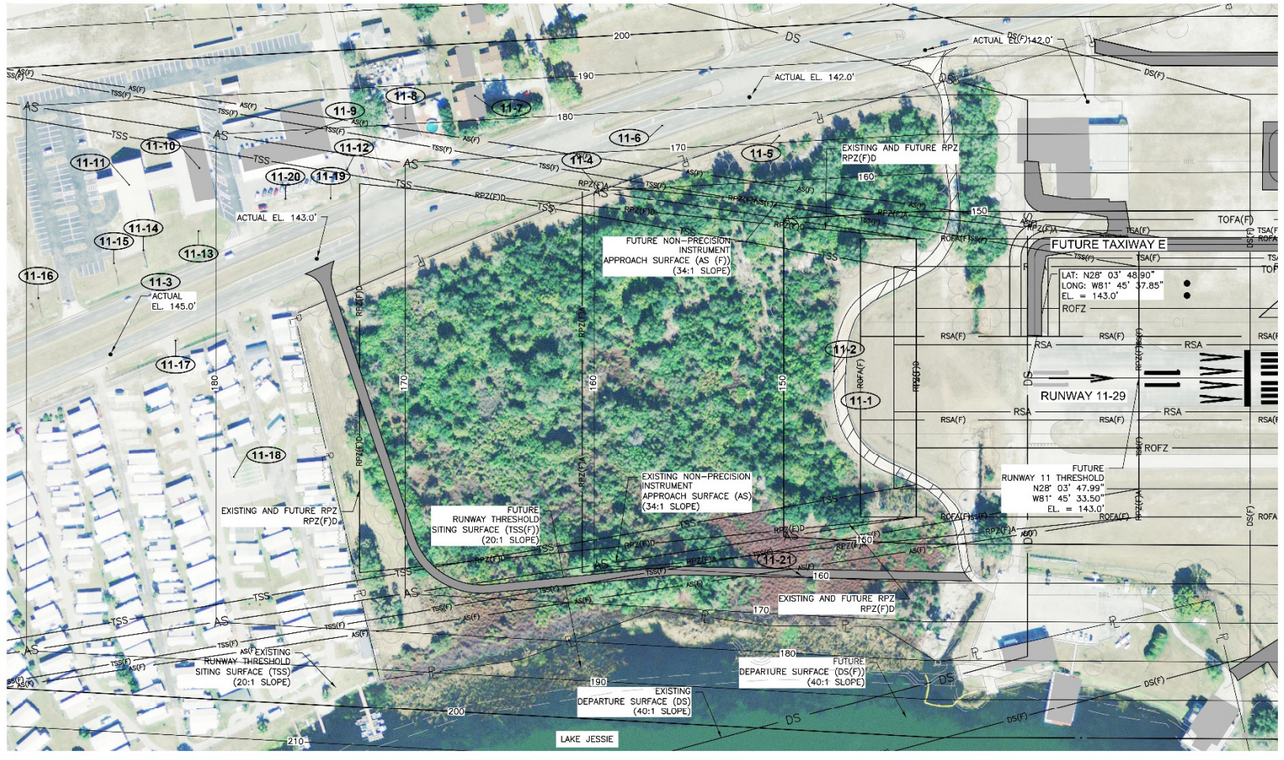
DESIGNED BY: M.S.
DRAWN BY: J.A.
CHECKED BY: M.S.
APPROVED BY: J.A.K.
DATE: NOVEMBER 2016

FAA AIP NO. 3-12-0088-023-2014
FDOT FM NO. 436409-1-94-01
AVCON PROJECT NO. 2014.230.03

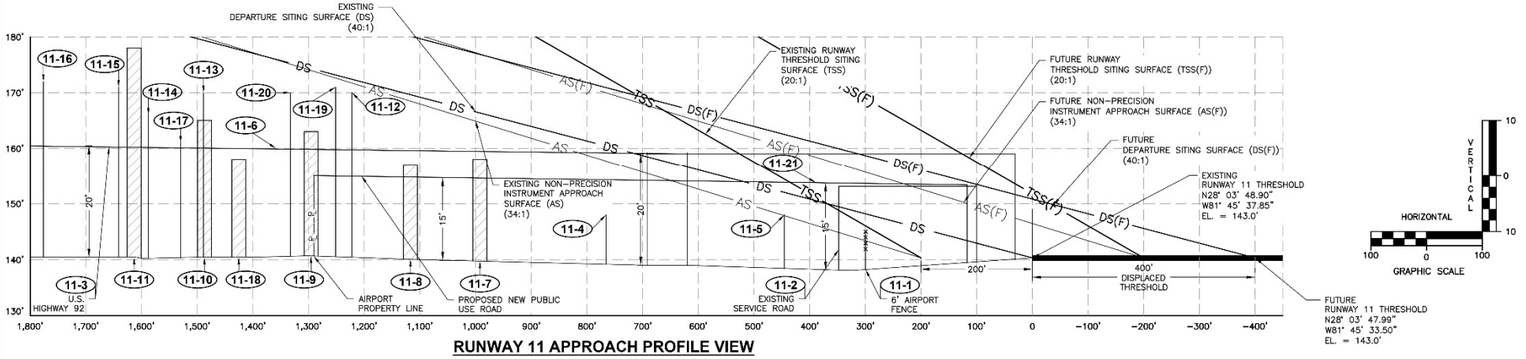
SHEET NUMBER

7

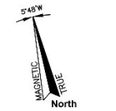
Figure 7-7
RUNWAY 23 INNER APPROACH PLAN



RUNWAY 11 APPROACH PLAN VIEW



RUNWAY 11 APPROACH PROFILE VIEW



NOTES:

1. SEE SHEET 10 FOR OBSTACLE ACTION PLAN
2. SEE SHEET 11 FOR OBSTACLE DISPOSITION PLAN AND PROPOSED MAINTENANCE PLAN
3. ALL TREES SHOWN IN AERIAL BELOW THE TSS AND THE AS HAVE BEEN REMOVED
4. EXISTING RPZ EQUALS FUTURE DEPARTURE RPZ

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WINTER HAVEN MUNICIPAL AIRPORT - GILBERT FIELD

AIRPORT MASTER PLAN UPDATE

INNER PORTION OF THE APPROACH SURFACE FOR RUNWAY 11

SCALE:

REVISIONS:

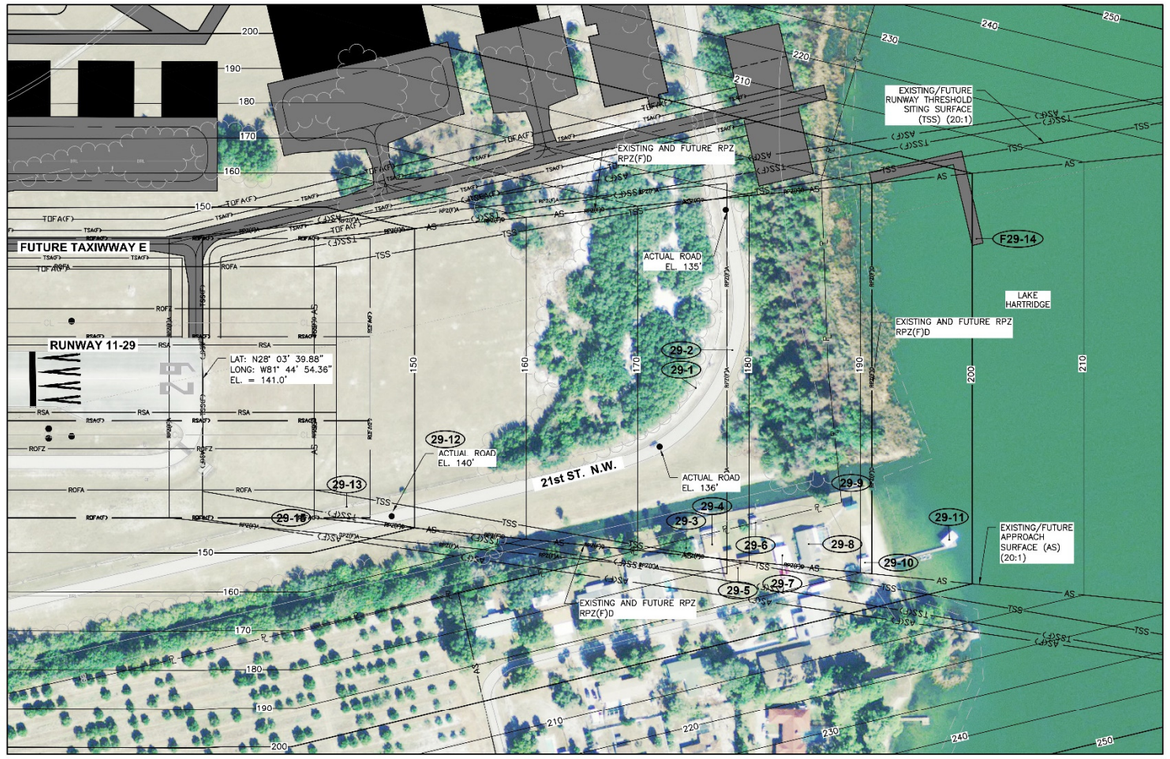
NO.	DATE	BY	DESCRIPTION

DESIGNED BY:	M.S.
DRAWN BY:	J.A.
CHECKED BY:	M.S.
APPROVED BY:	J.A.K.
DATE:	NOVEMBER 2016
FAA AIP NO.	3-12-0088-023-2014
FDOT FM NO.	436409-1-94-01
AVCON PROJECT NO.	2014.230.03

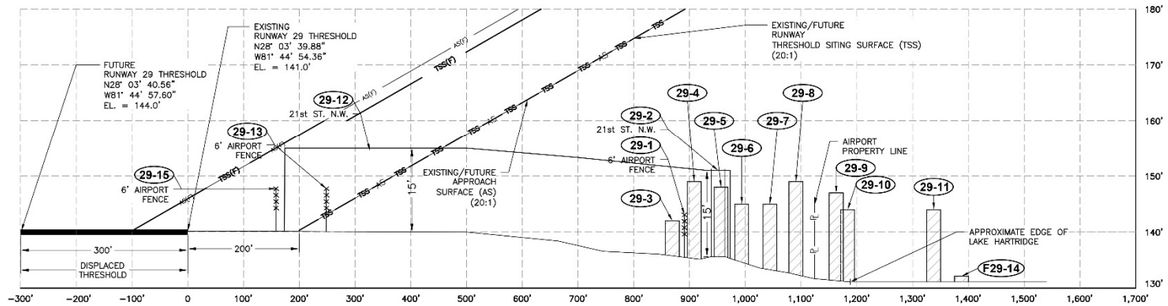
SHEET NUMBER

8

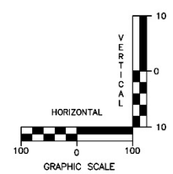
Figure 7-8
RUNWAY 11 INNER APPROACH PLAN

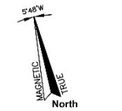


RUNWAY 29 APPROACH PLAN VIEW



RUNWAY 29 APPROACH PROFILE VIEW





ANNUAL RATE OF CHANGE = 0°6' W
SOURCE: NATIONAL GEOPHYSICAL DATA CENTER
DATE: 24 FEBRUARY 2015

0' 50' 100' 200'
GRAPHIC SCALE IN FEET

NOTES:

1. ALL TREES SHOWN IN AERIAL BELOW THE TSS AND AS HAVE BEEN REMOVED
2. SEE SHEET 10 FOR OBSTACLE ACTION PLAN
3. SEE SHEET 11 FOR OBSTACLE DISPOSITION PLAN AND PROPOSED MAINTENANCE PLAN
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WINTER HAVEN MUNICIPAL AIRPORT - GILBERT FIELD

AIRPORT MASTER PLAN UPDATE

INNER PORTION OF THE APPROACH SURFACE FOR RUNWAY 29

SCALE:

REVISIONS:

NO.	DATE	BY	DESCRIPTION

DESIGNED BY:	M.S.
DRAWN BY:	J.A.
CHECKED BY:	M.S.
APPROVED BY:	J.A.K.
DATE:	NOVEMBER 2016
FAA AIP NO.	3-12-0088-023-2014
FDOT FM NO.	436409-1-94-01
AVCON PROJECT NO.	2014.230.03

SHEET NUMBER

9

Figure 7-9
RUNWAY 29 INNER APPROACH PLAN

OBSTACLE ACTION PLAN RUNWAY 5

OBSTACLE REFERENCE NUMBER	OBSTACLE TYPE	FAA AERONAUTICAL STUDY NUMBER (ASN) – OE/NRA	LATITUDE	LONGITUDE	AMSL ELEVATION (FT)	HEIGHT AGL (FT)	SURFACE PENETRATED	PENETRATION AMOUNT
5–1	AIRPORT FENCE	2016–ASO–1670–NRA (5–1)	28° 03' 27.90"	81° 45' 31.27"	144'	6'	NONE	NONE
5–2	TREE	2016–ASO–3347–NRA	28° 03' 31.17"	81° 45' 31.68"	140'	30'	APPROACH SURFACE (20:1)	30'

OBSTACLE ACTION PLAN RUNWAY 23

OBSTACLE REFERENCE NUMBER	OBSTACLE TYPE	FAA AERONAUTICAL STUDY NUMBER (ASN) – OE/NRA	LATITUDE	LONGITUDE	AMSL ELEVATION (FT)	HEIGHT AGL (FT)	SURFACE PENETRATED	PENETRATION AMOUNT
23–1	AIRPORT FENCE	2016–ASO–1671–NRA (23–1)	28° 04' 09.23"	81° 44' 44.85"	136'	6'	NONE	NONE
23–2	PUBLIC ROAD	2016–ASO–1672–NRA (23–2)	28° 04' 13.05"	81° 44' 44.60"	147'	15'	NONE	NONE
23–3	INTERSTATE	2016–ASO–12723–OE	28° 04' 09.57"	81° 44' 42.13"	150'	17'	NONE	NONE
23–4	BUILDING	2016–ASO–12724–OE	28° 04' 17.73"	81° 44' 37.20"	148'	16'	NONE	NONE
23–5	LIGHT POLE	2016–ASO–12725–OE	28° 04' 13.47"	81° 44' 43.61"	162'	25'	NONE	NONE
23–6	LIGHT POLE	2016–ASO–12726–OE	28° 04' 13.91"	81° 44' 42.49"	164'	25'	NONE	NONE
23–7	LIGHT POLE	2016–ASO–12727–OE	28° 04' 14.62"	81° 44' 40.76"	160'	25'	NONE	NONE
23–8	LIGHT POLE	2016–ASO–12728–OE	28° 04' 15.40"	81° 44' 39.02"	158'	25'	NONE	NONE
23–9	LIGHT POLE	2016–ASO–12729–OE	28° 04' 16.05"	81° 44' 37.48"	160'	25'	NONE	NONE
23–10	SIGN	2016–ASO–12730–OE	28° 04' 16.38"	81° 44' 37.47"	150'	15'	NONE	NONE
23–11	TREE	2016–ASO–3348–NRA	28° 04' 11.65"	81° 44' 40.16"	131'	38'	NONE	NONE

OBSTACLE ACTION PLAN RUNWAY 11

OBSTACLE REFERENCE NUMBER	OBSTACLE TYPE	FAA AERONAUTICAL STUDY NUMBER (ASN) – OE/NRA	LATITUDE	LONGITUDE	AMSL ELEVATION (FT)	HEIGHT AGL (FT)	SURFACE PENETRATED	PENETRATION AMOUNT
11–1	AIRPORT FENCE	2016–ASO–1673–NRA (11–1)	28° 03' 49.50"	81° 45' 41.38"	145'	6'	NONE	NONE
11–2	PRIVATE ROAD	2016–ASO–1674–NRA (11–2)	28° 03' 49.48"	81° 45' 41.52"	150'	10'	APPROACH (34:1)	3'
11–3	INTERSTATE	2016–ASO–12731–OE	28° 03' 53.03"	81° 45' 55.62"	168'	17'	NONE	NONE
11–4	AIRPORT FENCE	2016–ASO–1675–NRA (11–4)	28° 03' 53.74"	81° 45' 45.60"	148'	6'	NONE	NONE
11–5	AIRPORT FENCE	2016–ASO–1676–NRA (11–5)	28° 03' 54.10"	81° 45' 41.42"	148'	6'	NONE	NONE
11–6	INTERSTATE	2016–ASO–12732–OE	28° 03' 54.56"	81° 45' 43.78"	166'	17'	NONE	NONE
11–7	BUILDING	2016–ASO–12733–OE	28° 03' 53.62"	81° 45' 45.01"	158'	14'	NONE	NONE
11–8	BUILDING	2016–ASO–12734–OE	28° 03' 55.59"	81° 45' 48.79"	157'	12'	NONE	NONE
11–9	BUILDING	2016–ASO–12735–OE	28° 03' 55.81"	81° 45' 50.71"	163'	17'	NONE	NONE
11–10	BUILDING	2016–ASO–12736–OE	28° 03' 55.43"	81° 45' 53.08"	165'	19'	NONE	NONE
11–11	BUILDING	2016–ASO–12737–OE	28° 03' 55.20"	81° 45' 54.35"	178'	31'	NONE	NONE
11–12	LIGHT POLE	2016–ASO–12738–OE	28° 03' 53.94"	81° 45' 47.07"	170'	25'	NONE	NONE
11–13	LIGHT POLE	2016–ASO–12739–OE	28° 03' 54.38"	81° 45' 53.26"	170'	25'	NONE	NONE
11–14	SIGN	2016–ASO–12740–OE	28° 03' 54.35"	81° 45' 54.47"	165'	19'	NONE	NONE
11–15	LIGHT POLE	2016–ASO–12741–OE	28° 03' 54.11"	81° 45' 55.11"	171'	25'	NONE	NONE
11–16	LIGHT POLE	2016–ASO–12742–OE	28° 03' 53.85"	81° 45' 56.75"	172'	25'	NONE	NONE
11–17	MOBILE HOME PARK LIGHT POLES	2016–ASO–12743–OE	28° 03' 50.97"	81° 45' 52.29"	161'	20'	NONE	NONE
11–18	MOBILE HOMES	2016–ASO–12744–OE	28° 03' 50.30"	81° 45' 53.99"	158'	18'	NONE	NONE
11–19	LIGHT POLE	2016–ASO–12745–OE	28° 03' 54.70"	81° 45' 51.45"	170'	25'	NONE	NONE
11–20	SIGN	2016–ASO–12746–OE	28° 03' 54.90"	81° 45' 51.50"	171'	26'	NONE	NONE
11–21	PUBLIC ROAD	2016–ASO–4008–NRA	28° 03' 46.13"	81° 45' 43.50"	134'	15'	DEPARTURE SURFACE (40:1)	NONE

OBSTACLE ACTION PLAN RUNWAY 29

OBSTACLE REFERENCE NUMBER	OBSTACLE TYPE	FAA AERONAUTICAL STUDY NUMBER (ASN) – OE/NRA	LATITUDE	LONGITUDE	AMSL ELEVATION (FT)	HEIGHT AGL (FT)	SURFACE PENETRATED	PENETRATION AMOUNT
29–1	AIRPORT FENCE	2016–ASO–1677–NRA (29–1)	28° 03' 37.88"	81° 44' 44.57"	141'	6'	NONE	NONE
29–2	PUBLIC ROAD	2016–ASO–1679–NRA (29–2)	28° 03' 37.96"	81° 44' 43.62"	151'	15'	NONE	NONE
29–3	BUILDING	2016–ASO–12747–OE	28° 03' 35.33"	81° 44' 45.65"	142'	7'	NONE	NONE
29–4	BUILDING	2016–ASO–12748–OE	28° 03' 34.91"	81° 44' 45.16"	149'	13'	NONE	NONE
29–5	BUILDING	2016–ASO–12749–OE	28° 03' 34.36"	81° 44' 44.64"	148'	12'	NONE	NONE
29–6	BUILDING	2016–ASO–12750–OE	28° 03' 35.09"	81° 44' 44.25"	145'	13'	NONE	NONE
29–7	BUILDING	2016–ASO–12751–OE	28° 03' 34.42"	81° 44' 43.86"	145'	13'	NONE	NONE
29–8	BUILDING	2016–ASO–12756–OE	28° 03' 34.51"	81° 44' 43.32"	149'	14'	NONE	NONE
29–9	BUILDING	2016–ASO–12757–OE	28° 03' 35.02"	81° 44' 42.23"	147'	13'	NONE	NONE
29–10	BUILDING	2016–ASO–12752–OE	28° 03' 33.95"	81° 44' 42.28"	144'	11'	NONE	NONE
29–11	BUILDING	2016–ASO–12753–OE	28° 03' 34.04"	81° 44' 40.52"	144'	31'	NONE	NONE
29–12	PUBLIC ROAD	2016–ASO–1684–NRA (29–12)	28° 03' 36.74"	81° 44' 52.65"	155'	15'	APPROACH (20:1)	12'
29–13	AIRPORT FENCE	2016–ASO–1678–NRA (29–13)	28° 03' 37.08"	81° 44' 52.65"	148'	6'	APPROACH (20:1)	6'
29–15	AIRPORT FENCE	2016–ASO–3349–NRA	28° 03' 37.11"	81° 44' 53.12"	140'	6'	APPROACH (20:1)	6'
FUTURE								
F29–14	SEAPLANE PIER	NONE	28° 03' 42.52"	81° 44' 39.03"	133'	3'	NONE	NONE

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WINTER HAVEN MUNICIPAL AIRPORT - GILBERT FIELD

AIRPORT MASTER PLAN UPDATE

OBSTACLE ACTION PLANS

SCALE:

REVISIONS:

NO.	DATE	BY	DESCRIPTION

DESIGNED BY: M.S.
DRAWN BY: J.A.
CHECKED BY: M.S.
APPROVED BY: J.A.K.
DATE: NOVEMBER 2016

FAA AIP NO. 3-12-0088-023-2014
FDOT FM NO. 436409-1-94-01
AVCON PROJECT NO. 2014.230.03

SHEET NUMBER

10

V:\2014\2014.230.03 - GF Airport Master Plan Update\2014.230.03 OBST\14230X3_Sht1 10-4-2016, 4:40:36 pm, 1:1

Figure 7-10
OBSTACLE ACTION PLANS

OBSTACLE DISPOSITION PLAN RUNWAY 5

OBJECT REFERENCE NUMBER	OBSTACLE TYPE	OBSTACLE LOCATED ON OR OFF AIRPORT	OE OR NRA NUMBER	UNDER SPONSOR CONTROL (ON OR OFF AIRPORT)	PROPOSED DISPOSITION OF THE OBSTACLE	PROPOSED DISPOSITION COMPLETION DATE
5–1	AIRPORT FENCE	ON	2016–ASO–1670–NRA (5–1)	UNDER SPONSOR CONTROL	NONE	NONE
5–2	TREE	ON	2016–ASO–3347–NRA	UNDER SPONSOR CONTROL	REMOVE	NOV 2016

OBSTACLE DISPOSITION PLAN RUNWAY 23

OBJECT REFERENCE NUMBER	OBSTACLE TYPE	OBSTACLE LOCATED ON OR OFF AIRPORT	OE OR NRA NUMBER	UNDER SPONSOR CONTROL (ON OR OFF AIRPORT)	PROPOSED DISPOSITION OF THE OBSTACLE	PROPOSED DISPOSITION COMPLETION DATE
23–1	AIRPORT FENCE	ON	2016–ASO–1671–NRA (23–1)	UNDER SPONSOR CONTROL	NONE	NONE
23–2	PUBLIC ROAD	ON	2016–ASO–1672–NRA (23–2)	UNDER SPONSOR CONTROL	NONE	NONE
23–3	INTERSTATE	OFF	2016–ASO–12723–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
23–4	BUILDING	OFF	2016–ASO–12724–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
23–5	LIGHT POLE	OFF	2016–ASO–12725–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
23–6	LIGHT POLE	OFF	2016–ASO–12726–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
23–7	LIGHT POLE	OFF	2016–ASO–12727–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
23–8	LIGHT POLE	OFF	2016–ASO–12728–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
23–9	LIGHT POLE	OFF	2016–ASO–12729–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
23–10	SIGN	OFF	2016–ASO–12730–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
23–11	TREE	ON	2016–ASO–ASO–3348–NRA	UNDER SPONSOR CONTROL	NONE	NONE

OBSTACLE DISPOSITION PLAN RUNWAY 11

OBJECT REFERENCE NUMBER	OBSTACLE TYPE	OBSTACLE LOCATED ON OR OFF AIRPORT	OE OR NRA NUMBER	UNDER SPONSOR CONTROL (ON OR OFF AIRPORT)	PROPOSED DISPOSITION OF THE OBSTACLE	PROPOSED DISPOSITION COMPLETION DATE
11–1	AIRPORT FENCE	ON	2016–ASO–1673–NRA (11–1)	UNDER SPONSOR CONTROL	NONE	NONE
11–2	PRIVATE ROAD	ON	2016–ASO–1674–NRA (11–2)	UNDER SPONSOR CONTROL	DISPLACE THRESHOLD	NOV–2017
11–3	INTERSTATE	OFF	2016–ASO–12731–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
11–4	AIRPORT FENCE	ON	2016–ASO–1675–NRA (11–4)	UNDER SPONSOR CONTROL	NONE	NONE
11–5	AIRPORT FENCE	ON	2016–ASO–1676–NRA (11–5)	UNDER SPONSOR CONTROL	NONE	NONE
11–6	INTERSTATE	OFF	2016–ASO–12732–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
11–7	BUILDING	OFF	2016–ASO–12733–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
11–8	BUILDING	OFF	2016–ASO–12734–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
11–9	BUILDING	OFF	2016–ASO–12735–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
11–10	BUILDING	OFF	2016–ASO–12736–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
11–11	BUILDING	OFF	2016–ASO–12737–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
11–12	LIGHT POLE	OFF	2016–ASO–12738–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
11–13	LIGHT POLE	OFF	2016–ASO–12739–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
11–14	SIGN	OFF	2016–ASO–12740–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
11–15	LIGHT POLE	OFF	2016–ASO–12741–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
11–16	LIGHT POLE	OFF	2016–ASO–12742–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
11–17	MOBILE HOME PARK LIGHT POLES	OFF	2016–ASO–12743–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
11–18	MOBILE HOMES	OFF	2016–ASO–12744–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
11–19	LIGHT POLE	OFF	2016–ASO–12745–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
11–20	SIGN	OFF	2016–ASO–12746–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
11–21	PUBLIC ROAD	ON	2016–ASO–4008–NRA	UNDER SPONSOR CONTROL	NONE	NONE

OBSTACLE DISPOSITION PLAN RUNWAY 29

OBJECT REFERENCE NUMBER	OBSTACLE TYPE	OBSTACLE LOCATED ON OR OFF AIRPORT	OE OR NRA NUMBER	UNDER SPONSOR CONTROL (ON OR OFF AIRPORT)	PROPOSED DISPOSITION OF THE OBSTACLE	PROPOSED DISPOSITION COMPLETION DATE
29–1	AIRPORT FENCE	ON	2016–ASO–1677–NRA (29–1)	UNDER SPONSOR CONTROL	NONE	NONE
29–2	PUBLIC ROAD	ON	2016–ASO–1679–NRA (29–2)	UNDER SPONSOR CONTROL	DISPLACE THRESHOLD	NOV–2017
29–3	BUILDING	OFF	2016–ASO–12747–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
29–4	BUILDING	OFF	2016–ASO–12748–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
29–5	BUILDING	OFF	2016–ASO–12749–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
29–6	BUILDING	OFF	2016–ASO–12750–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
29–7	BUILDING	OFF	2016–ASO–12751–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
29–8	BUILDING	OFF	2016–ASO–12756–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
29–9	BUILDING	OFF	2016–ASO–12757–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
29–10	BUILDING	OFF	2016–ASO–12752–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
29–11	BUILDING	ON	2016–ASO–12753–OE	UNDER SPONSOR CONTROL	NONE	NONE
29–12	PUBLIC ROAD	ON	2016–ASO–1684–NRA (29–12)	UNDER SPONSOR CONTROL	DISPLACE THRESHOLD	NOV–2017
29–13	AIRPORT FENCE	ON	2016–ASO–1678–NRA (29–13)	UNDER SPONSOR CONTROL	DISPLACE THRESHOLD	NOV–2017
29–15	AIRPORT FENCE	ON	2016–ASO–3349–NRA	UNDER SPONSOR CONTROL	DISPLACE THRESHOLD	NOV–2017
FUTURE						
F29–14	SEAPLANE PIER	OFF	NONE	NOT UNDER SPONSOR CONTROL	NONE	NONE

PROPOSED MAINTENANCE PLAN

RUNWAY DESIGNATOR	PROPOSED MAINTENANCE ACTION
RUNWAY 5	LIGHT DEPARTURE SURFACE OBSTACLES AND KEEP VEGETATION LOW
RUNWAY 23	KEEP VEGETATION LOW
RUNWAY 11	LIGHT DEPARTURE SURFACE OBSTACLES, DISPLACED THRESHOLD, AND KEEP VEGETATION LOW
RUNWAY 29	DISPLACE THRESHOLD AND KEEP VEGETATION LOW

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WINTER HAVEN MUNICIPAL AIRPORT - GILBERT FIELD

AIRPORT MASTER PLAN UPDATE

OBSTACLE DISPOSITION PLANS

SCALE:

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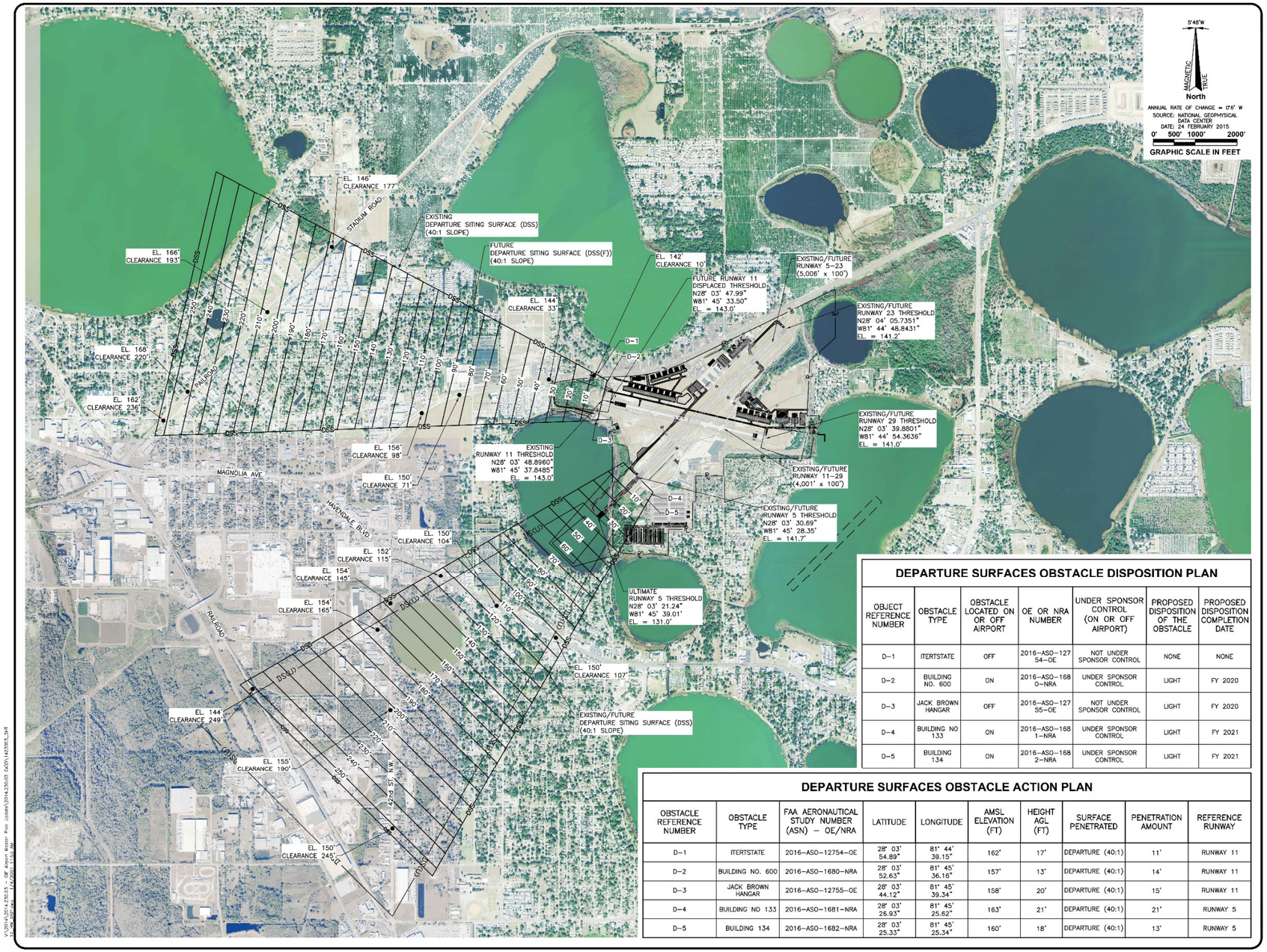
FDOT FM NO. 436409-1-94-01
AVCON PROJECT NO. 2014.230.03

SHEET NUMBER

11

Figure 7-11
OBSTACLE DISPOSITION PLANS



DEPARTURE SURFACES OBSTACLE DISPOSITION PLAN

OBJECT REFERENCE NUMBER	OBSTACLE TYPE	OBSTACLE LOCATED ON OR OFF AIRPORT	OE OR NRA NUMBER	UNDER SPONSOR CONTROL (ON OR OFF AIRPORT)	PROPOSED DISPOSITION OF THE OBSTACLE	PROPOSED DISPOSITION COMPLETION DATE
D–1	ITERTSTATE	OFF	2016–ASO–12754–OE	NOT UNDER SPONSOR CONTROL	NONE	NONE
D–2	BUILDING NO. 600	ON	2016–ASO–1680–NRA	UNDER SPONSOR CONTROL	LIGHT	FY 2020
D–3	JACK BROWN HANGAR	OFF	2016–ASO–12755–OE	NOT UNDER SPONSOR CONTROL	LIGHT	FY 2020
D–4	BUILDING NO 133	ON	2016–ASO–1681–NRA	UNDER SPONSOR CONTROL	LIGHT	FY 2021
D–5	BUILDING 134	ON	2016–ASO–1682–NRA	UNDER SPONSOR CONTROL	LIGHT	FY 2021

DEPARTURE SURFACES OBSTACLE ACTION PLAN

OBSTACLE REFERENCE NUMBER	OBSTACLE TYPE	FAA AERONAUTICAL STUDY NUMBER (ASN) – OE/NRA	LATITUDE	LONGITUDE	AMSL ELEVATION (FT)	HEIGHT AGL (FT)	SURFACE PENETRATED	PENETRATION AMOUNT	REFERENCE RUNWAY
D–1	ITERTSTATE	2016–ASO–12754–OE	28° 03' 54.89"	81° 44' 39.15"	162'	17'	DEPARTURE (40:1)	11'	RUNWAY 11
D–2	BUILDING NO. 600	2016–ASO–1680–NRA	28° 03' 52.63"	81° 45' 36.15"	157'	13'	DEPARTURE (40:1)	14'	RUNWAY 11
D–3	JACK BROWN HANGAR	2016–ASO–12755–OE	28° 03' 44.12"	81° 45' 39.34"	158'	20'	DEPARTURE (40:1)	15'	RUNWAY 11
D–4	BUILDING NO 133	2016–ASO–1681–NRA	28° 03' 26.93"	81° 45' 25.62"	163'	21'	DEPARTURE (40:1)	21'	RUNWAY 5
D–5	BUILDING 134	2016–ASO–1682–NRA	28° 03' 25.33"	81° 45' 25.34"	160'	18'	DEPARTURE (40:1)	13'	RUNWAY 5

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WINTER HAVEN MUNICIPAL AIRPORT - GILBERT FIELD

AIRPORT MASTER PLAN UPDATE

RUNWAY DEPARTURE SURFACE PLAN

SCALE:

REVISIONS:

NO.	DATE	BY	DESCRIPTION

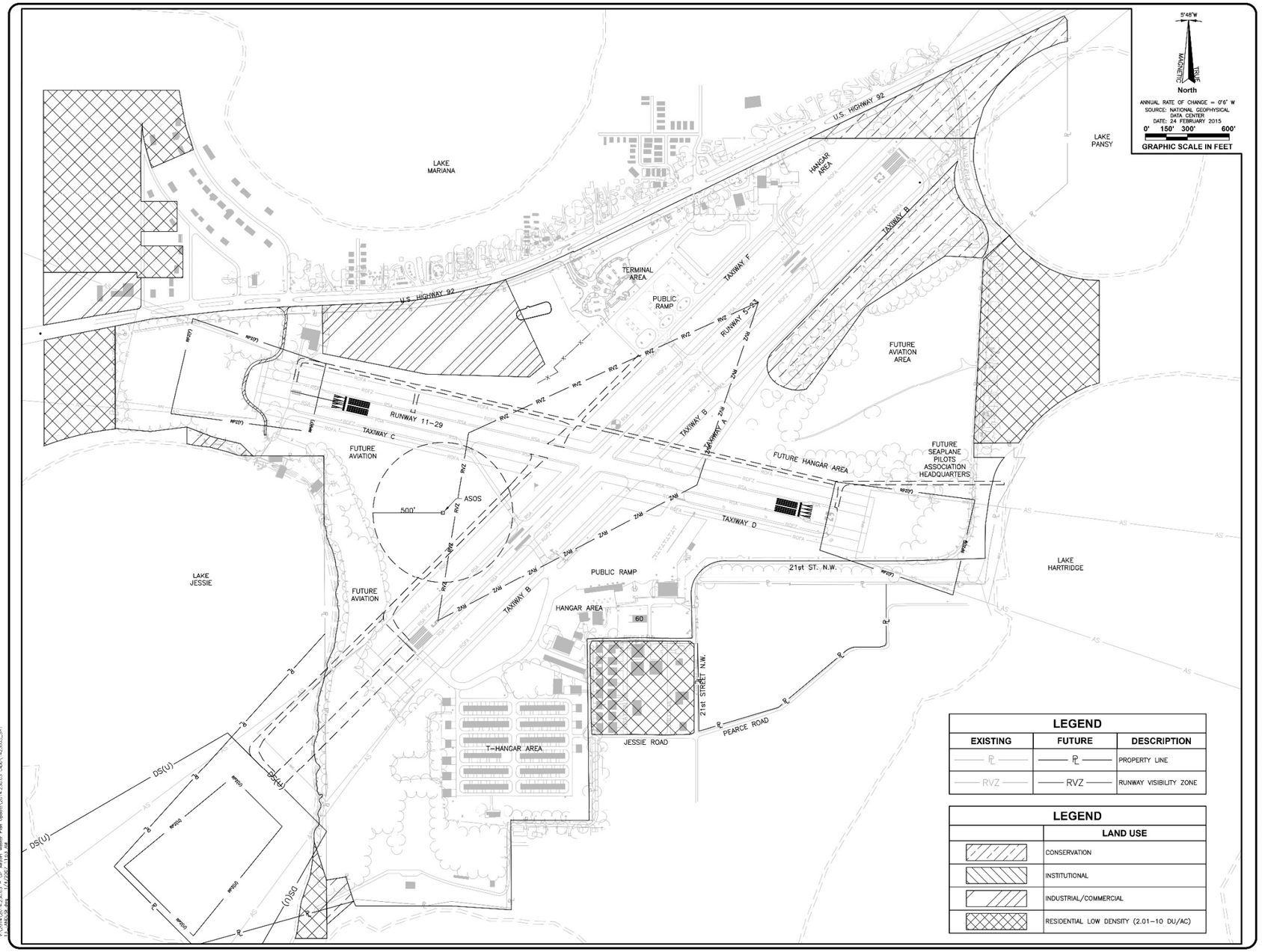
DESIGNED BY:	M.S.
DRAWN BY:	J.A.
CHECKED BY:	M.S.
APPROVED BY:	J.A.K.
DATE:	NOVEMBER 2016

FAA AIP NO.	3-12-0088-023-2014
FDOT FM NO.	436409-1-94-01
AVCON PROJECT NO.	2014.230.03

SHEET NUMBER

12

Figure 7-12
RUNWAY DEPARTURE SURFACES PLAN



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WINTER HAVEN MUNICIPAL AIRPORT - GILBERT FIELD

AIRPORT MASTER PLAN UPDATE

LAND USE PLAN

SCALE:

REVISIONS:

NO.	DATE	BY	DESCRIPTION

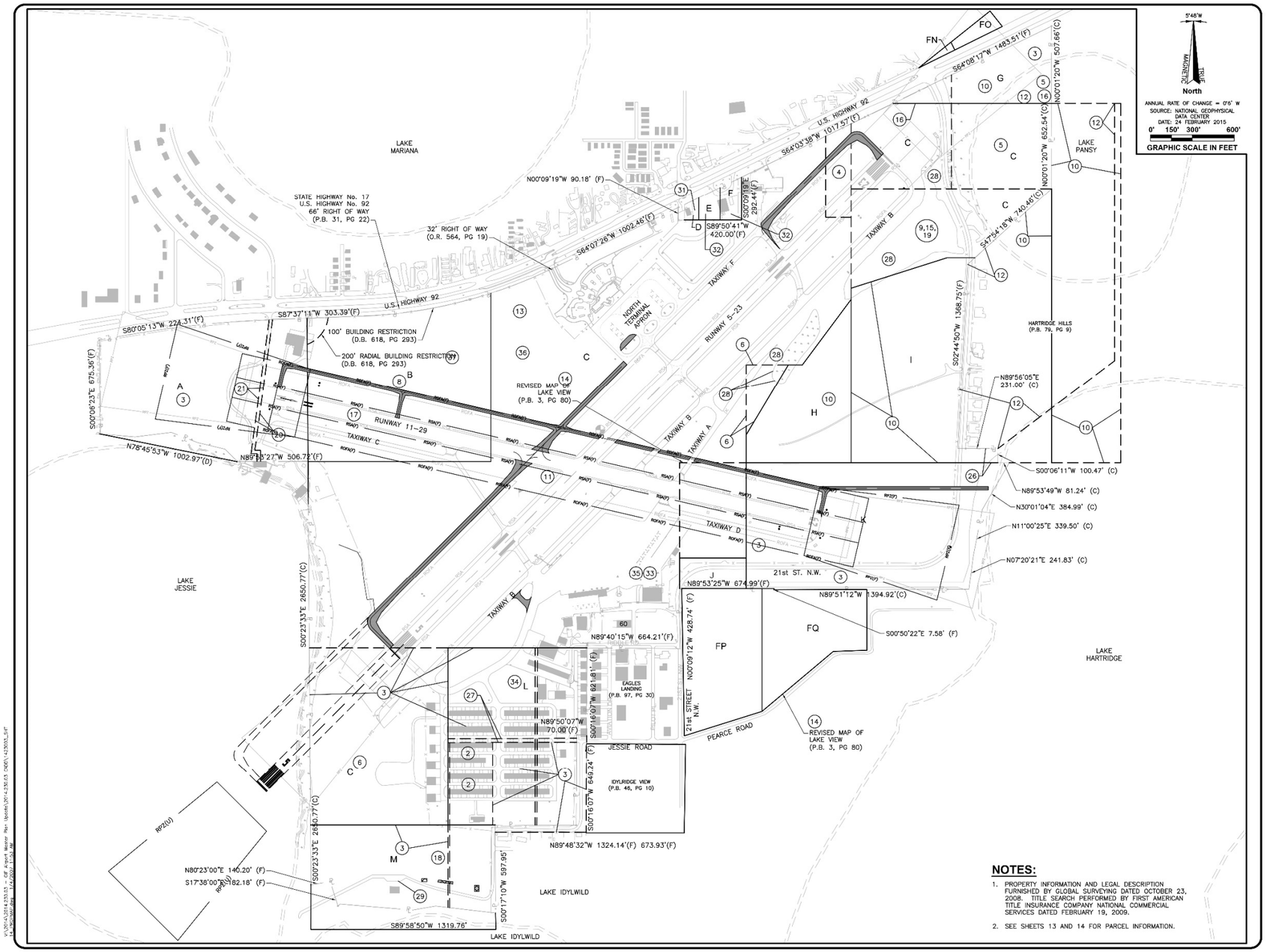
DESIGNED BY: M.S.
DRAWN BY: J.A.
CHECKED BY: M.S.
APPROVED BY: J.A.K.
DATE: NOVEMBER 2016

FAA AIP NO. 3-12-0088-023-2014
FDOT FM NO. 436409-1-94-01
AVCON PROJECT NO. 2014.230.03

SHEET NUMBER

13

Figure 7-13
LAND USE PLAN



NOTES:

1. PROPERTY INFORMATION AND LEGAL DESCRIPTION FURNISHED BY GLOBAL SURVEYING DATED OCTOBER 23, 2008. TITLE SEARCH PERFORMED BY FIRST AMERICAN TITLE INSURANCE COMPANY NATIONAL COMMERCIAL SERVICES DATED FEBRUARY 19, 2009.
2. SEE SHEETS 13 AND 14 FOR PARCEL INFORMATION.

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WINTER HAVEN MUNICIPAL AIRPORT - GILBERT FIELD

AIRPORT MASTER PLAN UPDATE

EXHIBIT 'A' AIRPORT PROPERTY INVENTORY MAP (SHEET 1 OF 3)

SCALE:

REVISIONS:

NO.	DATE	BY	DESCRIPTION

DESIGNED BY:	M.S.
DRAWN BY:	J.A.
CHECKED BY:	M.S.
APPROVED BY:	J.A.K.
DATE:	NOVEMBER 2016

FAA AIP NO.	3-12-0088-023-2014
FDOT FM NO.	436409-1-94-01
AVCON PROJECT NO.	2014.230.03

SHEET NUMBER

14

Figure 7-14
EXHIBIT "A" AIRPORT PROPERTY INVENTORY MAP (SHEET 1 OF 3)

PARCEL I.D.	POLK COUNTY PROPERTY APPRAISER'S NO.	GRANTOR	GRANTEE	TYPE OF INTEREST ACQUIRED	ACREAGE	TYPE OF CONVEYANCE INSTRUMENT	BOOK	PAGE	DATE	DOCUMENT NO.	PURPOSE OF ACQUISITION
A	252812000000012020	GEORGE ANDREWS	CITY OF WINTER HAVEN, FL	FEE SIMPLE	33.23	DEED	DEED BOOK 641	339	6 NOV 1941	3	AIRPORT DEVELOPMENT
		CITY OF WINTER HAVEN, FL	LAKE REGION AVIATION, INC.	EASEMENT		EASEMENT	O.R. BOOK 1174	1026	26 AUG 1968	20	
		CITY OF WINTER HAVEN, FL	TAMPA ELECTRIC COMPANY	EASEMENT		EASEMENT	O.R. BOOK 1009	762	11 APR 168	21	
B	262807527500001500	COUNTY OF POLK, STATE OF FLORIDA	CITY OF WINTER HAVEN, FL	FEE SIMPLE	33.06	QUIT CLAIM	DEED BOOK 773	381	6 JUN 1946	8	AIRPORT DEVELOPMENT
		COUNTY OF POLK, STATE OF FLORIDA	CITY OF WINTER HAVEN, FL	FEE SIMPLE		INDENTURE	DEED BOOK 773	381	6 JUN 1946	17	AIRPORT DEVELOPMENT
		CITY OF WINTER HAVEN, FL	TAMPA ELECTRIC COMPANY	EASEMENT		EASEMENT	O.R. BOOK 7618	1920	1 JUN 2008	37	
C	262807000000001010	GEORGE ANDREWS	CITY OF WINTER HAVEN, FL	FEE SIMPLE	263.66	DEED	DEED BOOK 641	339	6 NOV 1941	3	AIRPORT DEVELOPMENT
		CLARENCE L. & CALLIE BELL SMITH	CITY OF WINTER HAVEN, FL	FEE SIMPLE		WARRANTY DEED	DEED BOOK 647	161	20 FEB 1942	4	AIRPORT DEVELOPMENT
		DI GIORGIO FRUIT CORPORATION	CITY OF WINTER HAVEN, FL	FEE SIMPLE		INDENTURE	DEED BOOK 649	259	26 MAR 1942	5	AIRPORT DEVELOPMENT
		FRANK & ALACE D SARGENT	CITY OF WINTER HAVEN, FL	FEE SIMPLE		WARRANTY DEED	DEED BOOK 720	559	14 DEC 1944	6	AIRPORT DEVELOPMENT
		TRUSTEES OF THE INTERNAL IMPROVEMENT FUND OF THE STATE OF FLORIDA	CITY OF WINTER HAVEN, FL	FEE SIMPLE		WARRANTY DEED	DEED BOOK 754	535	24 NOV 1945	7	AIRPORT DEVELOPMENT
		FRANCES O. BRIGHAM, ET. AL	CITY OF WINTER HAVEN, FL	FEE SIMPLE		WARRANTY DEED	O.R. BOOK 1198	548	3 JUN 1969	9	AIRPORT DEVELOPMENT
		ARCHIBALD L. & SYLVIA T. CAMBELL JR.	CITY OF WINTER HAVEN, FL	FEE SIMPLE		WARRANTY DEED	O.R. BOOK 1706	1199	18 AUG 1976	10	AIRPORT DEVELOPMENT
		J.W. & VIRGINIA HOLLAND	CITY OF WINTER HAVEN, FL	FEE SIMPLE		WARRANTY DEED	O.R. BOOK 618	293	2 SEPT 1940	3	
		N/A	CITY OF WINTER HAVEN, FL	FEE SIMPLE		INDENTURE	DEED BOOK 512	305	N/A	11	AIRPORT DEVELOPMENT
		HARTRIDGE HILLS	N/A	N/A		N/A	PLAT BOOK 79	9	12 JUN 1985	12	AIRPORT DEVELOPMENT
		PLAT OF CLEARVIEW ESTATES	N/A	N/A		N/A	PLAT BOOK 31	22	17 FEB 1940	13	
		REVISED MAP OF LAKE VIEW	N/A	N/A		N/A	PLAT BOOK 3	80	N/A	14	AIRPORT DEVELOPMENT
		FRANCES O. BRIGHAM, ET. AL	CITY OF WINTER HAVEN, FL	FEE SIMPLE		WARRANTY DEED	O.R. BOOK 1198	548	3 JUN 1969	15	AIRPORT DEVELOPMENT
		INTERNATIONAL FRUIT CORPORATION	CITY OF WINTER HAVEN, FL	FEE SIMPLE		DEED	O.R. BOOK 468	371	29 NOV 1930	16	AIRPORT DEVELOPMENT
		FRANCES O. BRIGHAM, ET. AL	CITY OF WINTER HAVEN, FL	FEE SIMPLE		WARRANTY DEED	O.R. BOOK 1198	548	3 JUN 1969	19	AIRPORT DEVELOPMENT
		CITY OF WINTER HAVEN, FL	TAMPA ELECTRIC COMPANY	EASEMENT		EASEMENT	O.R. BOOK 1036	372	18 AUG 1966	22	
		CITY OF WINTER HAVEN, FL	TAMPA ELECTRIC COMPANY	EASEMENT		EASEMENT	O.R. BOOK 1093	289	14 JUL 1967	23	
		CITY OF WINTER HAVEN, FL	TAMPA ELECTRIC COMPANY	EASEMENT		EASEMENT	O.R. BOOK 1422	349	22 FEB 1972	24	
		CITY OF WINTER HAVEN, FL	TAMPA ELECTRIC COMPANY	EASEMENT		EASEMENT	O.R. BOOK 1468	1073	8 AUG 1972	25	
		CITY OF WINTER HAVEN, FL	DEPARTMENT OF ENVIRONMENTAL PROTECTION AGENCY	EASEMENT		EASEMENT	O.R. BOOK 4216	1588	6 APR 1999	28	AIRPORT DEVELOPMENT
		NOTICE OF COMMENCEMENT BY SEMCO CONSTRUCTION – CITY OF WINTER HAVEN		N/A		N/A	O.R. BOOK 7639	362	29 MAY 2008	30	AIRPORT DEVELOPMENT
		NOTICE OF COMMENCEMENT BY SHEPPARD ROOFING – CITY OF WINTER HAVEN		N/A		N/A	O.R. BOOK 8812	457	30 NOV 2012	33	AIRPORT DEVELOPMENT
		NOTICE OF COMMENCEMENT BY LARRY MCCARTY GC – CITY OF WINTER HAVEN		N/A		N/A	O.R. BOOK 8000	1469	23 OCT 2009	35	
D	262807000000013050	EMMETT RAY & KATHY A. MCLEAN III	CITY OF WINTER HAVEN, FL	FEE SIMPLE	0.23	WARRANTY DEED	O.R. BOOK 8739	1345	5 SEPT 2012	31	AIRPORT DEVELOPMENT
E	262807000000013060	AUBURNDALE COMMUNITY CHURCH	CITY OF WINTER HAVEN, FL	FEE SIMPLE	0.42	WARRANTY DEED	O.R. BOOK 8739	1347	5 SEPT 2012	32	AIRPORT DEVELOPMENT
F	262807000000013010	AUBURNDALE COMMUNITY CHURCH	CITY OF WINTER HAVEN, FL	FEE SIMPLE	1.31	WARRANTY DEED	O.R. BOOK 8739	1347	5 SEPT 2012	32	AIRPORT DEVELOPMENT
G	262806000000022010	GEORGE ANDREWS	CITY OF WINTER HAVEN, FL	FEE SIMPLE	6.21	DEED	DEED BOOK 641	339	6 NOV 1941	3	AIRPORT DEVELOPMENT
		DI GIORGIO FRUIT CORPORATION	CITY OF WINTER HAVEN, FL	FEE SIMPLE		INDENTURE	DEED BOOK 649	259	26 MAR 1942	5	AIRPORT DEVELOPMENT
		ARCHIBALD L. & SYLVIA T. CAMPBELL JR.	CITY OF WINTER HAVEN, FL	FEE SIMPLE		WARRANTY DEED	O.R. BOOK 1706	1199	18 AUG 1976	10	AIRPORT DEVELOPMENT
		HARTRIDGE HILLS	N/A	N/A		N/A	PLAT BOOK 79	9	12 JUN 1985	12	AIRPORT DEVELOPMENT
		INTERNATIONAL FRUIT CORPORATION	CITY OF WINTER HAVEN, FL	FEE SIMPLE		DEED	O.R. BOOK 468	371	29 NOV 1930	16	AIRPORT DEVELOPMENT
H	262807000000014010	FRANK & ALACE D SARGENT	CITY OF WINTER HAVEN, FL	FEE SIMPLE	10.22	WARRANTY DEED	DEED BOOK 720	559	14 DEC 1944	6	AIRPORT DEVELOPMENT
		ARCHIBALD L. & SYLVIA T. CAMPBELL JR.	CITY OF WINTER HAVEN, FL	FEE SIMPLE		WARRANTY DEED	O.R. BOOK 1706	1199	18 AUG 1976	10	AIRPORT DEVELOPMENT
I	262807000000011040	ARCHIBALD L. & SYLVIA T. CAMPBELL JR.	CITY OF WINTER HAVEN, FL	FEE SIMPLE	23.14	WARRANTY DEED	O.R. BOOK 1706	1199	18 AUG 1976	10	AIRPORT DEVELOPMENT
		HARTRIDGE HILLS	N/A	N/A		N/A	PLAT BOOK 79	9	12 JUN 1985	12	AIRPORT DEVELOPMENT
		CITY OF WINTER HAVEN, FL	TAMPA ELECTRIC COMPANY	EASEMENT		EASEMENT	O.R. BOOK 2161	284	15 JUN 1983	26	
J	262807528000003010	GEORGE ANDREWS	CITY OF WINTER HAVEN, FL	FEE SIMPLE	3.68	DEED	DEED BOOK 641	339	6 NOV 1941	3	AIRPORT DEVELOPMENT
K	262807528000004010	GEORGE ANDREWS	CITY OF WINTER HAVEN, FL	FEE SIMPLE	30.20	DEED	DEED BOOK 641	339	6 NOV 1941	3	AIRPORT DEVELOPMENT
L	262807528000001040	ROSA A & W.G. ROE	CITY OF WINTER HAVEN, FL	FEE SIMPLE	18.23	WARRANTY DEED	DEED BOOK 641	337	6 NOV 1941	2	AIRPORT DEVELOPMENT
		GEORGE ANDREWS	CITY OF WINTER HAVEN, FL	FEE SIMPLE		DEED	DEED BOOK 641	339	6 NOV 1941	3	AIRPORT DEVELOPMENT
		REVISED MAP OF LAKE VIEW	N/A	N/A		N/A	PLAT BOOK 3	80	N/A	14	AIRPORT DEVELOPMENT
		CITY OF WINTER HAVEN, FL	TAMPA ELECTRIC COMPANY	EASEMENT		EASEMENT	O.R. BOOK 1093	289	14 JUL 1967	23	
		CITY OF WINTER HAVEN, FL	TAMPA ELECTRIC COMPANY	EASEMENT		EASEMENT	O.R. BOOK 1468	1073	8 AUG 1972	25	
		RESOLUTION R-86-02 ABANDONING PORTION OF JESSIE STREET		N/A		N/A	O.R. BOOK 2437	682	9 JUL 1986	27	AIRPORT DEVELOPMENT
		NOTICE OF COMMENCEMENT BY SHEPPARD ROOFING – CITY OF WINTER HAVEN		N/A		N/A	O.R. BOOK 8843	256	8 JAN 2013	34	AIRPORT DEVELOPMENT
M	262818000000033030	GEORGE ANDREWS	CITY OF WINTER HAVEN, FL	FEE SIMPLE	15.86	DEED	DEED BOOK 641	339	6 NOV 1941	3	AIRPORT DEVELOPMENT
		ROSA A & W.G. ROE	CITY OF WINTER HAVEN, FL	FEE SIMPLE		WARRANTY DEED	DEED BOOK 641	337	4 NOV 1941	2	AIRPORT DEVELOPMENT
		ARTHUR R. MERCEDES C. KLEMM JR.	CITY OF WINTER HAVEN, FL	FEE SIMPLE		DEED	DEED BOOK 641	335	6 NOV 1941	1	
		TRUSTEES OF THE INTERNAL IMPROVEMENT FUND OF THE STATE OF FLORIDA	CITY OF WINTER HAVEN, FL	FEE SIMPLE		WARRANTY DEED	DEED BOOK 754	535	24 NOV 1945	7	AIRPORT DEVELOPMENT
		TRUSTEES OF THE INTERNAL IMPROVEMENT FUND OF THE STATE OF FLORIDA	CITY OF WINTER HAVEN, FL	FEE SIMPLE		WARRANTY DEED	DEED BOOK 754	535	24 NOV 1945	18	AIRPORT DEVELOPMENT
		CITY OF WINTER HAVEN, FL	CHESTER G. & RITA J. RASNAKE	EASEMENT		EASEMENT	O.R. BOOK 5635	495	7 JAN 2004	29	
					439.45						

NOTE:
COPIES OF ALL DEED, OFFICIAL RECORD, EASEMENT AND PLAT DOCUMENTS CAN BE FOUND AS APPENDIX M TO THE MASTER PLAN REPORT.

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WINTER HAVEN MUNICIPAL AIRPORT - GILBERT FIELD

AIRPORT MASTER PLAN UPDATE

EXHIBIT 'A' AIRPORT PROPERTY INVENTORY MAP (SHEET 2 OF 3)

SCALE:

REVISIONS:

NO.	DATE	BY	DESCRIPTION

DESIGNED BY:	**M.S.**
DRAWN BY:	**J.A.**
CHECKED BY:	**M.S.**
APPROVED BY:	**J.A.K.**
DATE:	**NOVEMBER 2016**

FAA AIP NO.	**3-12-0088-023-2014**
FDOT FM NO.	**436409-1-94-01**
AVCON PROJECT NO.	**2014.230.03**

SHEET NUMBER

15

V:\2014\2014.230.03 - GF Airport Master Plan Update\2014.230.03 CAD\L-ex230x3_5.dwg
Layout: EXHIBIT A SHEET 2 OF 3 1/24/2017 11:03 AM

Figure 7-15
EXHIBIT "A" PROPERTY INVENTORY MAP DATA SHEET (SHEET 2 OF 3)

LEGAL DESCRIPTION (AS FURNISHED):

FROM TITLE REPORT BY: COMMONWEALTH LAND TITLE INSURANCE COMPANY,
205 ½ SOUTH BROADWAY AVENUE, BARTOW FLORIDA 33830

FILE/CASE NO. BA080433 PER LAND AMERICA COMMONWEALTH OWNERSHIP AND ENCUMBRANCE REPORT PARCEL ID# 262870000001010 PER POLK COUNTY PROPERTY APPRAISER THE NORTH ½ OF NORTHEAST ¼ OF NORTHEAST ¼ OF SECTION 7 LYING SOUTH OF HIGHWAY 92 AND BEGIN AT THE NORTHWEST CORNER OF SOUTHWEST ¼ OF NORTHEAST ¼ OF NORTHEAST ¼; RUN SOUTH 844.85 FEET; N61°29'55"E, 693.13 FEET; EAST 176.7 FEET; N48°04'26"E, 740.16 FEET TO NORTHEAST CORNER OF SOUTHEAST ¼ OF NORTHEAST ¼ OF NORTHEAST ¼; WEST 1334.83 FEET TO POB; AND THE NORTHWEST ¼ OF NORTHEAST ¼ LYING SOUTH OF HIGHWAY 92 LESS BEGIN AT POINT OF INTERSECTION OF WEST LINE OF NORTHEAST ¼ AND OLD SOUTH MAINTAINED RIGHT OF WAY LINE OF HIGHWAY 92, RUN SOUTH 200 FEET; EAST 420 FEET; NORTH TO SAID OLD RIGHT OF WAY LINE OF HIGHWAY 92; SOUTHWESTERLY ALONG SAID RIGHT OF WAY LINE TO POB; AND THE NORTHWEST ¼ OF NORTHWEST ¼ OF SOUTHEAST ¼ OF SECTION 7; THE NORTH ½ OF THE SOUTHWEST ¼ OF THE NORTHEAST ¼; THE SOUTHWEST ¼ OF THE SOUTHWEST ¼ OF THE NORTHEAST ¼; LESS BEGIN AT THE SOUTHEAST CORNER OF SOUTHWEST ¼ OF THE NORTHEAST ¼; RUN NORTH 1095 FEET; RUN SOUTHWESTERLY 530 FEET; WEST 72 FEET; SOUTHWESTERLY 544 FEET; SOUTH 200 FEET; EAST TO POB; AND SOUTH ½ OF EAST ½ OF NORTHWEST ¼ LYING SOUTH OF HIGHWAY 92; AND NORTH ½ OF SOUTHWEST ¼; AND SOUTHWEST ¼ OF SOUTHWEST 1/4.

FILE/CASE NO. BA080434 PER LAND AMERICA COMMONWEALTH OWNERSHIP AND ENCUMBRANCE REPORT PARCEL ID# 262807000000011040 PER POLK COUNTY PROPERTY APPRAISER SOUTH ½ OF NORTHEAST ¼ OF NORTHEAST ¼; AND SOUTHEAST¼ OF NORTHEAST ¼ OF SECTION 7; LESS BEGIN AT NORTHWEST CORNER OF SOUTHWEST ¼ OF NORTHEAST ¼ OF NORTHEAST ¼; RUN SOUTH 844.45 FEET; N61°29'55"E, 693.13 FEET; EAST 176.7 FEET; N48°04'26"E, 740.16 FEET TO NORTHEAST CORNER OF SOUTHEAST ¼ OF NORTHEAST ¼ OF NORTHEAST ¼; WEST 1334.83 FEET TO POB AND LESS CARTRIDGE HILLS AS RECORDED IN PLAT BOOK 79, PAGE 9.

FILE/CASE NO. BA080435 PER LAND AMERICA COMMONWEALTH OWNERSHIP AND ENCUMBRANCE REPORT PARCEL ID# 262807000000014010 PER POLK COUNTY PROPERTY APPRAISER THE SOUTHEAST ¼ OF SOUTHWEST ¼ OF NORTHEAST ¼ OF SECTION 7; LESS BEGIN 200 FEET NORTH OF SOUTHWEST CORNER; RUN NORTHEAST 544 FEET; WEST 285 FEET; SOUTH 465 FEET TO BEGINNING; AND BEGIN AT NORTHEAST CORNER OF SOUTHEAST ¼ OF SOUTHWEST ¼ OF NORTHEAST ¼; RUN NORTH 435 FEET; SOUTHWEST 530 FEET; EAST 305 FEET TO BEGINNING.

FILE/CASE NO. BA080431 PER LAND AMERICA COMMONWEALTH OWNERSHIP AND ENCUMBRANCE REPORT PARCEL ID# 252812000000012020 PER POLK COUNTY PROPERTY APPRAISER THAT PART OF THE NORTHEAST ¼ LYING SOUTH OF HIGHWAY DESCRIBED AS; EASTERLY 1500 FEET MEASURED ALONG SOUTH RIGHT OF WAY OF U.S. 92, THE WESTERLY BOUNDARY BEING PARALLEL TO THE EAST BOUNDARY OF THE NORTHEAST ¼; LESS ROAD RIGHT OF WAYS.

FILE/CASE NO. BA080432 PER LAND AMERICA COMMONWEALTH OWNERSHIP AND ENCUMBRANCE REPORT TAX PARCEL ID# 062826000000022010 THE SOUTH ½ OF THE SOUTHEAST ¼ OF SECTION 6, TOWNSHIP 28 SOUTH, RANGE 26 EAST, POLK COUNTY, FLORIDA LYING SOUTH OF THE SOUTHERLY RIGHT OF WAY LINE OF U.S. HIGHWAY 92.

FILE/CASE NO. BA080440 PER LAND AMERICA COMMONWEALTH OWNERSHIP AND ENCUMBRANCE REPORT PARCEL ID# 262818000000033030 PER POLK COUNTY PROPERTY APPRAISER THE NORTHWEST ¼ OF THE NORTHWEST ¼ OF SECTION 18 LYING NORTH OF LAKE IDLEWYLD; LESS BEGIN AT THE NORTHWEST CORNER OF SECTION 18; RUN SOUTH 381.05 FEET FOR POB; RUN N80°23'00"E, 140.17 FEET; S17°38'00"E, 192 MORE OR LESS TO WATERS EDGE OF LAKE MILDEWY; SOUTHWESTERLY ALONG WATERS EDGE TO WEST BOUNDARY OF SECTION 18; RUN NORTH 236 FEET TO POB.

FILE/CASE NO. BA080436 PER LAND AMERICA COMMONWEALTH OWNERSHIP AND ENCUMBRANCE REPORT TAX PARCEL ID# 072826527500001500
LOT 15 OF CLEARVIEW ESTATES, ACCORDING TO THE PLAT THEREOF, RECORDED IN PLAT BOOK 31, PAGE 22 OF THE PUBLIC RECORDS OF POLK COUNTY, FLORIDA. LESS AND EXCEPT RIGHT OF WAY FOR U.S. HIGHWAY 92.

FILE/CASE NO. BA080437 PER LAND AMERICA COMMONWEALTH OWNERSHIP AND ENCUMBRANCE REPORT PARCEL ID# 262807528000001040 POLK COUNTY PROPERTY APPRAISER LAKE VIEW SUBDIVISION PLAT BOOK 3 PAGE 80, BLOCK A, LOTS 4 AND 5; AND BLOCK B, LOTS 4 AND 5; AND ALL OF VACATED JESSIE STREET LYING NORTH OF BLOCK B LOTS 4 AND 5 AND LYING SOUTH OF BLOCK A, LOTS 4 AND 5; LESS ROAD RIGHT OF WAY FOR PISTOL RANGE ROAD.

FILE/CASE NO. BA080439 PER LAND AMERICA COMMONWEALTH OWNERSHIP AND ENCUMBRANCE REPORT TAX PARCEL ID# 072826528000003010
LOT 1 AND LOT 2, LESS THE SOUTH 202.40 FEET THEREOF IN BLOCK C OF REVISED MAP OF LAKE VIEW, RECORDED IN PLAT BOOK 3, PAGE 80 OF THE PUBLIC RECORDS OF POLK COUNTY, FLORIDA.

FILE/CASE NO. BA080438 PER LAND AMERICA COMMONWEALTH OWNERSHIP AND ENCUMBRANCE REPORT TAX PARCEL ID# 072826528000004010
LOTS 1 AND 2 AND THE NORTH 250 FEET OF LOT 3, BLOCK D, REVISED MAP OF LAKE VIEW SUBDIVISION, ACCORDING TO THE PLAT THEREOF, RECORDED IN PLAT BOOK 3, PAGE 80 OF THE PUBLIC RECORDS OF POLK COUNTY, FLORIDA.

O.R. BOOK 1198, PAGES 548, OF THE PUBLIC RECORDS OF POLK COUNTY, FLORIDA. BEGINNING AT THE NORTHWEST CORNER OF THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 7, TOWNSHIP 28 SOUTH, RANGE 26 EAST, POLK COUNTY, FLORIDA, RUN THENCE S00°10'46"W ALONG THE WEST BOUNDARY OF THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER AND THE WEST BOUNDARY OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SAID SECTION 7 A DISTANCE OF 844.85 FEET, THENCE N61°29'55"E A DISTANCE 693.13 FEET, THENCE N89°34'25"E, ALONG EDGE OF FORMER BORROW-PIT, A DISTANCE OF 176.60 FEET, THENCE N48°04'26"E A DISTANCE OF 740.16 FEET TO THE NORTHEAST CORNER OF THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SAID SECTION 7, THENCE RUN N89°13'02"W ALONG THE NORTH BOUNDARY OF THE SOUTH ONE HALF OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SAID SECTION 7, A DISTANCE OF 1334.83 FEET TO THE POINT OF BEGINNING. SECOND PARTY AGREES THAT FIRST PARTY SHALL ALWAYS HAVE ACCESS ACROSS THE AIRPORT TO U.S. HIGHWAY 92.

PARCEL ID# 072826-000000-013050
BEGINNING AT A POINT AT THE INTERSECTION OF THE WEST LINE OF THE NORTHEAST ¼ OF SECTION 7, TOWNSHIP 28 SOUTH, RANGE 26 EAST, POLK COUNTY, FLORIDA, AND THE SOUTH LINE OF RIGHT OF WAY OF ROAD #17, NOW KNOWN AS U.S. 92; THENCE SOUTH 200 FEET ALONG SAID WEST LINE OF THE NORTHEAST ¼; THENCE EAST 100 FEET; THENCE NORTH 200 FEET; THENCE WEST 100 FEET TO THE POINT OF BEGINNING; LESS THE WEST 30 FEET FOR ROAD OF WAY AND LESS ROAD RIGHT OF WAY FOR U.S. HIGHWAY 92 (S.R. 600).

PARCEL ID# 072826-000000-013010 & 013060
PARCEL 1:
COMMENCE AT THE NORTHWEST CORNER OF THE NORTHEAST ¼ O SECTION 7, TOWNSHIP 28 SOUTH, RANGE 26 EAST, RUN SOUTH ALONG THE WEST BOUNDARY THEREOF FOR 883.34 FEET; THENCE EAST 200.00 FEET TO THE POINT OF BEGINNING; THENCE CONTINUE EAST 220.00 FEET; THENCE NORTH 292.47 FEET TO THE SOUTHERLY RIGHT OF WAY LINE OF STATE ROAD 600 (U.S. 92); THENCE SOUTHWESTERLY ALONG SAID RIGHT OF WAY LINE 244.20 FEET; THENCE SOUTH 186.47 FEET TO THE POINT OF BEGINNING, SAID PROPERTY BEING AND SITUATE IN POLK COUNTY, FLORIDA, LESS ROAD RIGHT OF WAY FOR S.R. 600.

PARCEL 2:
BEGINNING AT A POINT AT THE INTERSECTION OF WEST LINE OF THE NORTHEAST ¼ OF SECTION 7, TOWNSHIP 28 SOUTH, RANGE 26 EAST, AND THE SOUTH LINE OF RIGHT OF WAY ROAD #17, NOW KNOWN AS U.S. 92, THENCE EAST 100 FEET TO THE POINT OF BEGINNING RUNNING THENCE SOUTH 200 FEET, THENCE EAST 100 FEET, THENCE NORTH 200 FEET AND THENCE WEST 100 FEET TO THE POINT OF BEGINNING, SAID PROPERTY BEING AND SITUATE IN POLK COUNTY, FLORIDA, LESS ROAD RIGHT OF WAY FOR S.R. 600.

NOTES:

1. BEARINGS ARE BASED ON THE SOUTH RIGHT OF WAY LINE OF U.S. 92/S.R. 600 BEING S64°08'17"W.
2. THE PROPERTY LIES IN FLOOD ZONES X, AE, & A AS PER FLOOD INSURANCE RATE MAP NUMBER 12105C, COMMUNITY PANEL NUMBERS 0335F, 0345F, 0355F, 0365F, ALL WITH EFFECTIVE DATE 12-20-2000. (SUBJECT TO VERIFICATION).
3. ELEVATIONS SHOWN HEREON ARE BASED ON BENCHMARK ELEVATIONS. (REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1988).
4. UNDERGROUND IMPROVEMENTS INCLUDING BUILDING FOUNDATIONS HAVE NOT BEEN LOCATED EXCEPT AS MAY BE SHOWN HEREON.
5. ABOVE GROUND IMPROVEMENTS INCLUDING BUILDING OVERHANGS HAVE NOT BEEN LOCATED EXCEPT AS SHOWN HEREON.
6. THERE MAY BE ADDITIONAL EASEMENTS, RESTRICTIONS AND OR RIGHT OF WAYS NOT SHOWN ON THIS DRAWING THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.
7. REUSE OF THIS SURVEY FOR THE PURPOSES OTHER THAN WHICH IT WAS INTENDED WITHOUT WRITTEN VERIFICATION, WILL BE AT THE RE-USERS SOLE RISK AND WITHOUT LIABILITY TO THE SURVEYOR. NOTHING HEREIN SHALL BE CONSTRUED TO GIVE ANY RIGHTS OR BENEFITS TO ANYONE OTHER THAN THOSE CERTIFIED TO.
8. THE CLIENT AGREES TO LIMIT THE SURVEYOR'S LIABILITY TO THE CLIENT ON THE PROJECT DUE TO ANY CLAIM OF ANY NATURE WHATSOEVER ARISING OUT OF OR RELATING TO THIS SURVEY, SUCH AS THE TOTAL AGGREGATE LIABILITY OF THE SURVEYOR TO ALL THOSE NAMED SHALL NOT EXCEED THE SURVEYOR'S TOTAL FEE FOR SERVICES RENDERED.
9. COORDINATES ARE BASED ON THE FLORIDA STATE PLANE COORDINATES SYSTEM, WEST ZONE, 1983, ADJUSTMENT OF 1990 AND USING STATIONS GILPORT HAVING A NORTHING OF 1,354,126.90 AND AN EASTING 734,216.87 AND GILPORT AZIMUTH MARK HAVING A NORTHING OF 1,355,340.45 AND AN EASTING OF 735,412.58.

FUTURE PROPERTY ACQUISITIONS

PARCEL I.D.	PROPERTY APPRAISER'S NO.	ACQUISITION DATE	FAA AIP GRANT	CURRENT OWNER	TYPE OF INTEREST TO BE ACQUIRED	AREA (IN ACRES)	BOOK AND PAGE OF RECORDING	INSTRUMENT OF CONVEYANCE	PURPOSE OF ACQUISITION
FN	262806000000022030	TBD	N/A	LYNCHBURG GROVES	FEE SIMPLE	ABOUT 0.5	TBD	TBD	AVIATION EASEMENT
FO	262806000000014000	TBD	N/A	LYNCHBURG GROVES	FEE SIMPLE	ABOUT 3.3	TBD	TBD	AVIATION EASEMENT
FP	262807528000003020	TBD	N/A	BISSETT REVOCABLE TRUST	FEE SIMPLE	13.97	TBD	TBD	AIRPORT DEVELOPMENT
FQ	262807528000004038	TBD	N/A	ARTHUR M. & DORRIS J. BISSETT REVOCABLE TRUST	FEE SIMPLE	8.76	TBD	TBD	AIRPORT DEVELOPMENT

NOTE: PROPERTY APPRAISER'S INFORMATION FOR THESE PARCELS CAN BE FOUND AS APPENDIX M TO THE MASTER PLAN REPORT.

V:\2014\2014.230.003 - GP Airport Master Plan Update\2014-230.03 EXHIBITS\EXHIBIT A\2014-230.03_EXHIBIT A_PROPERTY MAP_SHEET 3.dwg, 11/29/2016 8:47:41 AM, Jeff

WINTER HAVEN
The Chain of Lakes City

AVCON

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WINTER HAVEN MUNICIPAL AIRPORT - GILBERT FIELD

AIRPORT MASTER PLAN UPDATE

EXHIBIT 'A' AIRPORT PROPERTY INVENTORY MAP (SHEET 3 OF 3)

SCALE:

REVISIONS:

NO.	DATE	BY	DESCRIPTION

DESIGNED BY: M.S.
DRAWN BY: J.A.
CHECKED BY: M.S.
APPROVED BY: J.A.K.
DATE: NOVEMBER 2016

FAA AIP NO. 3-12-0088-023-2014
FDOT FM NO. 436409-1-94-01
AVCON PROJECT NO. 2014.230.03

SHEET NUMBER

16

Figure 7-16
EXHIBIT "A" PROPERTY INVENTORY MAP DATA SHEET (SHEET 3 OF 3)

8. CAPITAL IMPROVEMENT PROGRAM

8.1 Introduction

The Capital Improvement Program (CIP) has been developed based on the needs of the Winter Haven Municipal Airport - Gilbert Field, as identified in the Facility Requirements chapter and justified in the Aviation Activity Forecasts chapter. The goal of this chapter is to:

- Provide a list of projects that will fulfill CIP requirements
- Give a brief description of each project
- Provide a general cost estimate of each project
- Give general financial guidance to Airport management concerning potential funding sources
- Provide a recommended schedule that balances the need for a project with the prospects of available funds for the project

The various projects identified in the CIP are broken out over three timeframes:

- Short-term (2015-2019) – five years
- Mid-term (2020-2024) – five years
- Long-term (2025-2034) – 10 years

Although the implementation schedule presented in this chapter provides estimated timeframes for initiating the proposed projects, continuous re-evaluation of the schedules will be necessary to account for changes in aviation demand, funding availability, and other unforeseen factors. Actual project implementation should generally occur just prior to when the actual need for an improvement is anticipated to occur and when funding for the project is available. This will allow the facility to be available just as the need is realized. Additionally, other improvements not identified in this report may be needed over the planning period. All projects noted in this chapter are compatible with the development noted on the Airport Layout Plan (ALP) drawing. Certain projects may require an FAA-approved amendment to the ALP.

The project cost estimates presented in this chapter reflect a preliminary opinion of probable implementation costs. Among the items included in the implementation costs are construction costs, engineering, testing, surveying fees, and a pricing allowance. All cost estimates are provided in 2015 dollars.

The projects have been scheduled in recognition of the probable availability of FAA and FDOT funds. Particularly within the short-term, it also recognizes the probable availability of local funding sources. It is possible that the City of Winter Haven may identify additional resources and projects may be moved forward at that time. It is just as possible that any of the funding sources may not be as available as shown in this document. In that event, one or more projects may be pushed to a later year.

8.2 Short-Term Projects (2015-2019)

The projects planned over the short-term timeframe will become the basis for the FAA/FDOT JACIP process, where the appropriate funding can be programmed and applied for following submittal and acceptance of this report. A probable breakdown of the funding sources for the individual projects is also presented in this chapter. The total project cost over the short-term timeframe is estimated at $17.6 million. While cost estimates for the completed projects are provided, the exact scopes of these projects have yet to be completed, and will be subject to change. These project costs are estimated as accurately as possible based upon available data. Prior to the initiation of these projects, a detailed engineering investigation may be needed to obtain a more detailed cost estimate.

Project 15-01 Design - Taxiway E on the North Side of Runway 11

Project Cost: $73,000

Taxiway E would be located on the north side of Runway 11 and would connect with an extended Taxiway F and Runway 5/23. Together, Taxiways E and F would provide efficient access from the terminal area to Runway 11, which is not currently possible. These two taxiways would also provide airside access to the north quadrant of the Airport. This project would provide the design of this project. Construction is to be provided in Project 16-02.

Project 15-02 Construct – New Terminal Access Road

Project Cost: $625,000

The new terminal access road would connect the terminal parking area to the signaled intersection of U.S. Highway 92 and Lynchburg Road thereby providing a safe and efficient access to the terminal area. Design services were provided in a project previous to this Master Plan Update.

Project 16-01 Construct – Taxiway F Extension

Project Cost: $3,482,200

The Taxiway F extension is proposed to extend the existing Taxiway F north to the Runway 23 end and south to Runway 11/29. The Taxiway F extension to the north would provide efficient access from the terminal area to Runway 23. The Taxiway F extension to the south when combined with Taxiway E, would provide efficient access from the terminal area to Runway 11, which is not currently possible. Taxiways F and E would also provide airside access to the north quadrant of the Airport. This project would provide the construction for the project. Design services were provided in a project previous to this Master Plan Update.

Project 16-02 Construct – New Taxiway E on North Side of Runway 11

Project Cost: $825,000

Taxiway E would be located on the north side of Runway 11 and would connect with an extended Taxiway F and Runway 5/23. Together, Taxiways E and F would provide efficient access from the terminal area to Runway 11, which is not currently possible. These two

taxiways would also provide airside access to the north quadrant of the Airport. This project would provide the construction of this project. Design is to have been provided in Project 15-01.

Project 16-03 Design – Gates, Access Control, and Fencing

Project Cost: $150,000

The Airport has deteriorating access gates and perimeter fencing. Additionally, the Airport does not have an effective access control system or security cameras at the gates. TSA, in visits to the Airport, has sited the lack of security at the Airport, as unauthorized persons can easily access the airfield. This project would provide the design of a new security system that would include the construction of fencing, access control, and cameras. It would also repair and consolidate gates. Construction of this project is anticipated to occur with Project 17-02.

Project 16-04 Design and Construct – Public Restrooms at Fuel Farm

Project Cost: $80,000

The fuel farm is located on the south side of the Airport, which lacks public restrooms. Pilots using the self-serve fuel pump are currently required to cross two runways in order to use the public facilities of the FBO located in the terminal. The crossing of the runways by these aircraft causes a safety hazard to aircraft landing and taking off. This project would provide design and construction services for public restrooms adjacent to the fuel farm in a stand-alone structure.

Project 16-05 Conceptual Study and Design – Airport Commerce Park

Project Cost: $450,000

An Airport Commerce Park is proposed to be located west of the terminal area, north of proposed Taxiways E and F, and south of U.S. Highway 92. The conceptual study and design of the Airport Commerce Park would include the general layout of the Park, as well as the design of all infrastructure including water, sewer, electricity, and the interior roadway system. By developing this study and design, the City of Winter Haven would be able to commence its marketing strategy to attract aviation and non-aviation business to locate at the Airport providing additional revenue sources. The first phase of construction of the utilities and roads is proposed to occur with Project 17-04.

Project 16-06 Construct - Culvert Box/Bridge at Entrance Road to Seaplane Base

Project Cost: $193,326

The existing box culvert/bridge that is part of the only existing landside public entrance to the western portion of the airfield and to Jack Brown's Seaplane Base is collapsing and in serious need of replacement. This project involves the construction portion of the project. Design services were provided in a project previous to this Master Plan Update.

Project 17-01 Design – Runway 11/29 Airfield Lighting and Signage Rehabilitation

Project Cost: $166,667

Runway 11/29 and associated taxiways are currently unlit and the signage is beyond its useful life. This project would evaluate and design the lighting and signage in accordance with the most current FAA Advisory Circulars. Construction of this project is anticipated to occur with Project 18-01.

Project 17-02 Construct – Gates, Access Control, and Fencing

Project Cost: $1,100,000

The Airport has deteriorating access gates and perimeter fencing. Additionally, the Airport does not have an effective access control system or security cameras at the gates. TSA, in visits to the Airport has sited the lack of security at the Airport, as unauthorized persons can easily access the airfield. This project would provide the design of a new security system that would include the construction of fencing, consolidate gates, access control, and cameras. Design of this project would have occurred with Project 16-03.

Project 17-03 Wildlife Hazard Assessment

Project Cost: $65,000

Many species of wildlife on airports pose direct and indirect threats to aviation safety. There have been reported and known unreported bird strikes at the Winter Haven Municipal Airport – Gilbert Field. The FAA encourages General Aviation airports with a history of incursions between wildlife and aircraft to conduct a Wildlife Hazard Assessment to determine what, if any, wildlife mitigation is needed. The Wildlife Hazard Assessment would identify the primary areas and species of concern at the Airport, as well as make recommendations to assist in minimizing or avoiding the interaction of wildlife and aircraft.

Project 17-04 Construct – Airport Commerce Park (Phase 1)

Project Cost: $1,500,000

Project 16-05 would have developed a conceptual study and design of the Airport Commerce Park to be located in the northern quadrant of the Airport. Project 16-05 would include the general layout of the Park, as well as the design of all infrastructure including water, sewer, electricity, and the interior roadway system. The first phase of construction of the utilities and roads is proposed to occur with this project.

Project 17-05 Design and Construct – Conventional Hangar (#501)

Project Cost: $1,000,000

The design and construction of an additional conventional hangar at the Airport is needed to satisfy growing demand for hangar space, as there is currently a waiting list. It is proposed that this hangar would be one of the initial aviation structures built in the Airport Commerce Park located in the northern quadrant of the Airport.

Project 17-06 Land Acquisition – Phase II

Project Cost: $600,000

This project would allow for the purchase of avigation easements over 3.8 acres of land located in the approach of Runway 23.

Project 17-07 Design and Construct – New T-Hangar Building (#270)

Project Cost: $550,000

There is currently a vacancy within the neighborhood of T-hangars located in the southern quadrant of the Airport, where a previous T-hangar stood. This project would build a 10-unit T-hangar structure in this vacancy. No additional taxilanes would be required for this project.

Project 18-01 Construct – Runway 11/29 Airfield Lighting and Signage Rehabilitation

Project Cost: $500,000

Runway 11/29 and associated taxiways are currently unlit and the signage is beyond its useful life. This project would construct the design proposed to have been accomplished with Project 17-01.

Project 18-02 Design – Rehabilitation of Taxiways A, A-2, A-3, and South Apron

Project Cost: $235,300

The *Statewide Airfield Pavement Management Program*, developed by the FDOT in May of 2011, stated that Taxiways A, A-2, A-3, and the South Apron had Pavement Condition Indexes (PCI) ranging from 35, very poor, to 68, fair. It is anticipated that these pavements have continued to deteriorate in the interim. This project would design the rehabilitation of these pavements, as well as the relocation of Taxiway A-3 to ensure that it does not provide direct access to Runway 5/23 in conjunction with Taxiway B-3. This project would also raze an 8-unit T-hangar and adjacent box hangar located on the South apron. While these structures are relatively new, they are in very poor condition. It is anticipated that the construction associated with this project would occur in Project 19-01.

Project 18-03 Design – Rehabilitation of South Taxiway B, B-2, and B-4

Project Cost: $54,990

The *Statewide Airfield Pavement Management Program*, developed by the FDOT in May of 2011, stated that Taxiway B, from just north of Taxiway B-4 and south to Runway 5, and Taxiways B-2, and B-4 had PCIs ranging from 44, poor, to 66, fair. It is anticipated that these pavements have continued to deteriorate in the interim. This project would design the rehabilitation of these pavements. It is anticipated that the construction associated with this project would occur in Project 19-02.

Project 18-04 Design – Extension of Taxiway E to 21st Street NW

Project Cost: $159,300

The Seaplane Pilots Association is currently planning on building their national headquarters in the eastern quadrant of the Airport, just west of 21st Street NW. The extension of Taxiway E from Runway 5/23 to the eastern edge of 21st Street NW would provide access from the Seaplane Pilots Association headquarters to the airfield. The Seaplane Pilots Association has agreed to further extend Taxiway E to the shore of Lake Hartridge, where they will also provide a seaplane ramp. The construction of the extension of Taxiway E from Runway 5/23 to the eastern edge of 21st Street NW is anticipated with Project 19-03.

Project 18-05 Design and Construct – Conventional Hangar (#502)

Project Cost: $1,000,000

The design and construction of an additional conventional hangar at the Airport is needed to satisfy growing demand for hangar space, as there is currently a waiting list. It is proposed that this hangar would be one of the aviation structures built in the Airport Commerce Park located in the northern quadrant of the Airport.

Project 19-01 Construct – Rehabilitation of Taxiways A, A-2, A-3, and South Apron

Project Cost: $2,395,500

This project would construct the rehabilitation of the pavements associated with Taxiway A, A-2, A-3, and the South Apron, as well as the relocation of Taxiway A-3 to ensure that it does not provide direct access to Runway 5/23 in conjunction with Taxiway B-3. The design for this project would have occurred in Project 18-02.

Project 19-02 Construct – Rehabilitation of South Taxiway B, B-2, and B-4

Project Cost: $549,900

This project would construct the rehabilitation of the pavements associated with the pavement of Taxiway B, from just north of Taxiway B-4 and south to Runway 5, and Taxiways B-2 and B-4. The design of this project would have occurred with Project 18-03.

Project 19-03 Construct – Extension of Taxiway E to 21st Street NW

Project Cost: $1,770,500

The construction of the extension of Taxiway E from Runway 5/23 to the eastern edge of 21st Street NW, would provide access from the Seaplane Pilots Association headquarters to the airfield. The Seaplane Pilots Association has agreed to further extend Taxiway E to the shore of Lake Hartridge, where they will also provide a seaplane ramp. The design of the extension of Taxiway E from Runway 5/23 to the eastern edge of 21st Street NW would have taken place with Project 18-04.

Project 19-04 Design - Rehabilitation of Turn-arounds on Runways 11 and 29

Project Cost: $11,400

The *Statewide Airfield Pavement Management Program*, developed by the FDOT in May of 2011, stated that the turn-arounds located at the Runway 11 and Runway 29 ends had PCIs of 60, fair and 56, fair, respectively. It is anticipated that these pavements have continued to deteriorate in the interim. This project would provide design services for the rehabilitation of these pavements. The construction of these rehabilitated pavements is anticipated to occur with Project 20-01.

Project 19-05 New Wind Sock and Segmented Circle

Project Cost: $35,000

The existing wind sock at the Airport is nearing its useful life span and needs to be replaced. There currently is no segmented circle at the Airport and airports receiving AIP funds are required to have one. This project would provide a lighted wind cone and segmented circle.

Table 8-1 presents the list of projects anticipated to occur in the short-term as well as the proposed year. An order of magnitude cost estimate is also provided. Figure 8-1 shows the location and extent of each project.

Table 8-1
SHORT-TERM CAPITAL IMPROVEMENT PROGRAM PROJECTS

Year	Project Number	Project Description	Estimated Project Cost
2015	15-01	Design - Taxiway E on North Side of Runway 11	$ 73,000
2015	15-02	Construct - New Terminal Access Road	$ 625,000
2016	16-01	Construct - Taxiway F Extension	$ 3,482,200
2016	16-02	Construct - New Taxiway E on North Side of Runway 11	$ 825,000
2016	16-03	Design - Gates, Access Control, and Fencing	$ 150,000
2016	16-04	Design and Construct - Public Restrooms at Fuel Farm	$ 80,000
2016	16-05	Conceptual Study and Design - Airport Commerce Park	$ 450,000
2016	16-06	Construct - Culvert Box/Bridge at Entrance to Seaplane Base	$ 193,326
2017	17-01	Design – Runway 11/29 Airfield Lighting and Signage Rehabilitation	$ 166,667
2017	17-02	Construct - Gates, Access Control, and Fencing	$ 1,100,000
2017	17-03	Wildlife Hazard Assessment	$ 65,000
2017	17-04	Construct - Airport Commerce Park (Phase I)	$ 1,500,000
2017	17-05	Design and Construct - Conventional Hangar (#501)	$ 1,000,000
2017	17-06	Land Acquisition - Phase II	$ 600,000
2017	17-07	Design and Construct - New T-Hangar Building (#270)	$ 550,000
2018	18-01	Construct – Runway 11-29 Airfield Lighting and Signage Rehabilitation	$ 500,000
2018	18-02	Design - Rehabilitation of Taxiways A, A-2, A-3, and South Apron	$ 235,300
2018	18-03	Design - Rehabilitation of South Taxiway B, B-2, and B-4	$ 54,990
2018	18-04	Design - Extension of Taxiway E to 21st Street NW	$ 159,300
2018	18-05	Design and Construct - Conventional Hangar (#502)	$ 1,000,000
2019	19-01	Construct – Rehabilitation of Taxiways A, A-2, A-3, and South Apron	$ 2,395,500
2019	19-02	Construct - Rehabilitation of South Taxiway B, B-2, and B-4	$ 549,900
2019	19-03	Construct - Extension of Taxiway E to 21st Street NW	$ 1,770,500
2019	19-04	Design - Rehabilitation of Turn-arounds on Runways 11 and 29	$ 11,400
2019	19-06	New Wind Sock and Segmented Circle	$ 35,000
		TOTAL	**$ 17,572,093**

Figure 8-1
SHORT-TERM CIP PROJECTS

8.3 Mid-Term Projects (2020-2024)

The mid-term projects have been identified for submittal to the FAA and FDOT for funding purposes. The sum of the development project costs and anticipated funding needs over the mid-term period is estimated to be approximately $6.5 million in 2015 dollars. Some of the projects identified as mid-term projects may move forward into the short-term as additional funds are identified. Conversely, if anticipated funding sources are not available short-term projects may be pushed back to the mid-term. The primary focus of the mid-term program is the development of hangars and the rehabilitation of existing airfield pavement.

Project 20-01 Construct – Rehabilitation of Runways 11 and 29 Turn-arounds

Project Cost: $114,200

This project would provide construction for the rehabilitation of the turn-arounds located at the Runway 11 and Runway 29 ends. The design of these rehabilitated pavements would have occurred with Project 19-04.

Project 20-02 Design and Construct Obstruction Lighting for Runway 11 Departure Surface

Project Cost: $20,000

Building No. 600 and the hangar at Jack Brown's Seaplane Base are obstructions to the departure surface of Runway 11. This project would design and construct the obstruction lighting for these facilities.

Project 20-03 Build One 10-Unit T-Hangar and Taxilanes (#320)

Project Cost: $902,900

It is anticipated that another new 10-unit T-hangar will be required by the year 2020. This T-hangar would be located south of the existing T-hangars located in the south quadrant. It will also require that taxilanes be built on three of the four sides of the structure.

Project 21-01 Master Plan Update

Project Cost: $275,000

It is anticipated that the current Master Plan Update will be completed in 2016. The FAA recommends that a new Master Plan Update be developed every five to eight years. This project would begin the Master Plan Update process in 2021.

Project 21-02 Design and Construct Obstruction Lighting for Runway 5 Departure Surface

Project Cost: $15,000

Hangars 133 and 134 are obstructions to the departure surface of Runway 5. This project would design and construct the obstruction lighting for these facilities.

Project 21-03 Design – Rehabilitation of T-Hangars Taxilanes

Project Cost: $45,400

The *Statewide Airfield Pavement Management Program*, developed by the FDOT in May of 2011, stated that all but the southeastern-most portion of the pavement associated with the existing T-hangars located in the south quadrant have a PCI of 62 or fair. It is anticipated that the pavement has continued to deteriorate since that time. This project would design the rehabilitation of this pavement. It is anticipated that the construction would occur in Project 22-01.

Project 22-01 Construct – Rehabilitation of T-Hangar Taxilanes

Project Cost: $504,200

The construction of the rehabilitation of the pavement associated with all but the southeastern-most portion of the existing T-hangars located in the south quadrant would be accomplished with this project. The design portion of the project would have occurred in Project 21-03.

Project 22-02 Design – Rehabilitation of Runway 11/29

Project Cost: $122,800

Runway 11/29 was originally constructed in 1942 and was last rehabilitated in 1997, with the exception of the intersection with Runway 5/23, which was rehabilitated in 2010. The *Statewide Airfield Pavement Management Program*, developed by the FDOT in May of 2011, stated that the PCI at that time, for the non-intersection portions of the Runway, was 79, or satisfactory. It is anticipated that the pavement has continued to deteriorate since that time. This project would provide the design services for the rehabilitation of the non-intersection portions of Runway 11/29. The construction of this pavement is anticipated to occur with Project 23-01.

Project 22-03 Build One 10-Unit T-Hangar (#330)

Project Cost: $700,000

It is anticipated that another new 10-unit T-hangar will be required by the year 2022. This T-hangar would be located south of the existing T-hangars located in the south quadrant, adjacent to the one built as part of Project 20-03. It will also require that taxilanes be built for access on two of the four sides of the structure.

Project 23-01 Construct – Rehabilitation of Runway 11/29

Project Cost: $1,364,100

The pavement rehabilitation designed in Project 22-02 would be constructed in this project. It would rehabilitate all of Runway 11/29 except the intersection with Runway 5/23.

Project 23-02 PAPIs for Runway 11/29 – Including FAA Flight Check

Project Cost: $61,100

Runway 11 has a non-precision GPS approach. Typically, runways with these kinds of approaches would have Precision Approach Path Indicators (PAPI) associated with them. This project would place 4-light PAPIs at both the Runway 11 and Runway 29 ends.

Project 23-03 REILs for Runway 11/29

Project Cost: $125,000

Runway End Identifier Lights (REILs) allow pilots to more readily identify runway ends in dark and inclement weather. This project would place REILS at the Runway 11 and 29 ends.

Project 23-04 Design – Rehabilitation of Taxiway D

Project Cost: $16,500

The *Statewide Airfield Pavement Management Program*, developed by the FDOT in May of 2011, stated that Taxiway D had a PCI of 85, or satisfactory at that time as it had been constructed in 1998. It is anticipated that by the year 2023, the pavement will have continued to deteriorate until rehabilitation would be justified. It is anticipated that the construction of this rehabilitation would occur in Project 24-01.

Project 24-01 Construct – Rehabilitation of Taxiway D

Project Cost: $164,900

The construction of the rehabilitation of Taxiway D is anticipated to occur in 2024. The design for this rehabilitation is to have occurred with Project 23-04.

Project 24-02 Design and Construct Taxiway C/D Connector and Remove Existing Taxiway C3

Project Cost: $809,400

This project would design and construct the connection between Taxiways C and D and would rename the newly configured taxiway. It would also remove existing Taxiway C3 as it would then be redundant.

Project 24-03 Remove Taxiway A North of Taxiway D

Project Cost: $37,000

Taxiway A north of Taxiway D is redundant to Taxiway B. This project would remove the pavement of this portion of Taxiway A thereby providing developable land in the area east of the intersection of Taxiways B and E.

Project 24-04 Build One 10-Unit T-Hangar and Taxilanes (#340)

Project Cost: $902,900

It is anticipated that another new 10-unit T-hangar will be required by the year 2024. This T-hangar would be located south of and perpendicular to T-hangar #330 (built as Project 20-03) in

the south quadrant. It will also require that taxilanes be built for access on three of the four sides of the structure.

Table 8-2 presents the list of projects anticipated to occur in the mid-term as well as the proposed year. An order of magnitude cost estimate is also provided. Figure 8-2 shows the location and extent of each project.

Table 8-2
MID-TERM CAPITAL IMPROVEMENT PROGRAM PROJECTS

Year	Project Number	Project Description	Estimated Project Cost
2020	20-01	Construct - Rehabilitation of Runways 11 and 29 Turn-around	$ 114,200
2020	20-02	Design and Construct Obstruction Lighting for Runway 11 Departure Surface	$ 20,000
2020	20-03	Build One 10-Unit T-Hangar and Taxilanes (#320)	$ 902,900
2021	21-01	Master Plan Update	$ 275,000
2021	21-02	Design and Construct Obstruction Lighting for Runway 5 Departure Surface	$ 15,000
2021	21-03	Design - Rehabilitation of T-Hangars Taxilanes	$ 45,400
2022	22-01	Construct - Rehabilitation of T-Hangars Taxilanes	$ 504,200
2022	22-02	Design - Rehabilitation of Runway 11/29	$ 122,800
2022	22-03	Build One 10-Unit T-Hangar (#330)	$ 700,000
2023	23-01	Construct - Rehabilitation of Runway 11/29	$ 1,364,100
2023	23-02	PAPIs for Runway 11/29 - Including FAA Flight Check	$ 61,100
2023	23-03	REILS for Runway 11/29	$ 125,000
2023	23-04	Design - Rehabilitation of Taxiway D	$ 16,500
2024	24-01	Construct - Rehabilitation of Taxiway D	$ 164,900
2024	24-02	Design and Construct Taxiway C/D Connector and Remove Existing Taxiway C-3	$ 809,400
2024	24-03	Remove Taxiway A North of Taxiway D	$ 37,000
2024	24-04	Build One 10-Unit T-Hangar and Taxilanes (#340)	$ 902,900
		TOTAL	**$ 6,180,400**

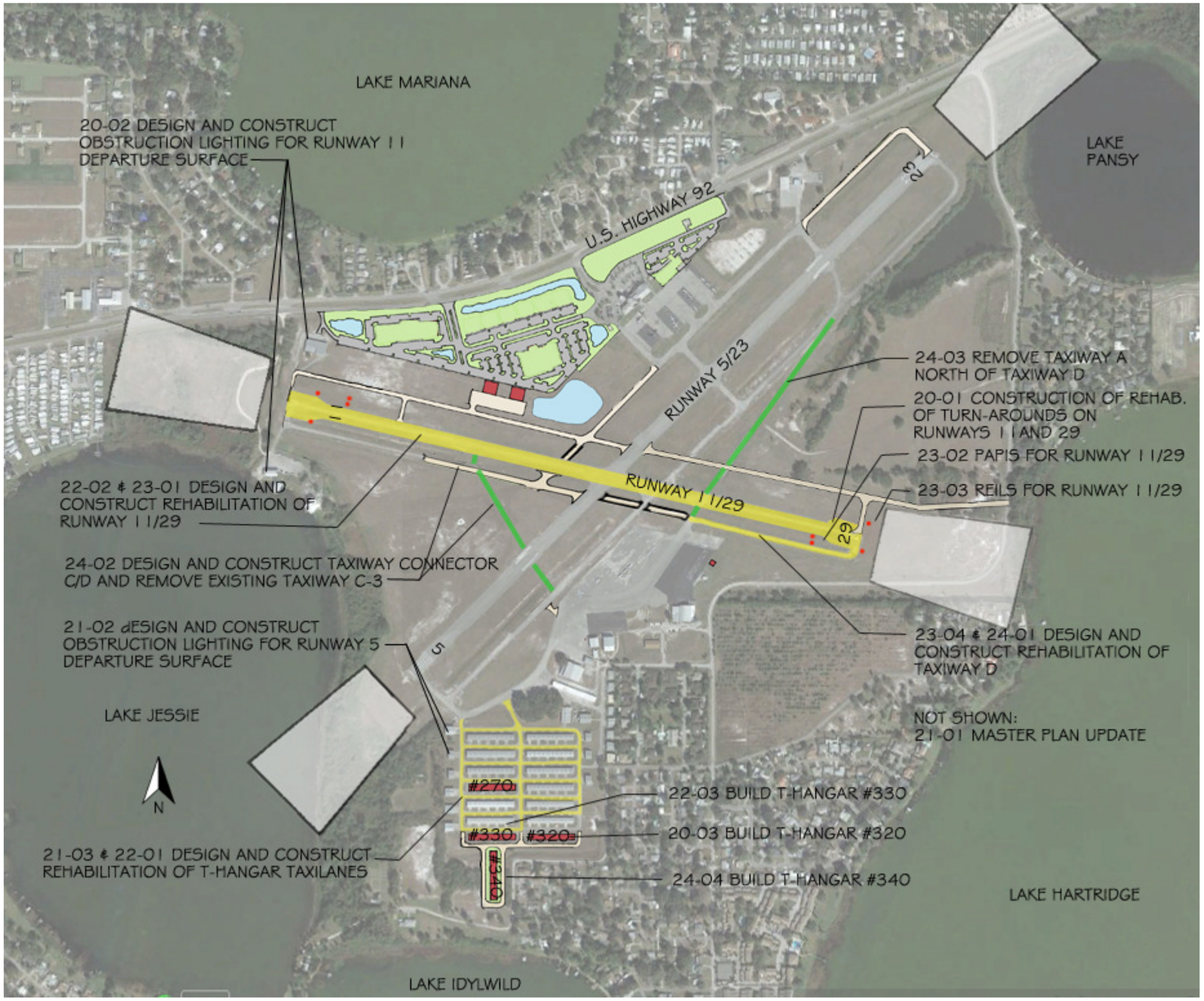

Figure 8-2
MID-TERM CIP PROJECTS

8.4 Long-term Projects (2025-2034)

Based upon the anticipated need and available funding, many projects associated with the preferred alternative of development will be developed over the ten-year, Long-term period. The projects have been scheduled for specific years but are loosely prioritized. The total project development costs and funding needs over the Long-term period is estimated in 2015 dollars at approximately $14.8 million. The projects included in the Long-term time-frame are:

Project 25-01 Design – Eastern Itinerant Aircraft Parking Apron

Project Cost: $63,100

It is anticipated that additional itinerant aircraft parking will be required in the area of the north apron associated with the terminal. This project would provide additional aircraft parking and taxilanes on the eastern edge of the existing terminal apron. It is anticipated that this project would be constructed in Project 26-01.

Project 26-01 Construct – Eastern Itinerant Aircraft Parking Apron

Project Cost: $700,900

The additional aircraft parking and associated taxilanes designed in Project 25-01 would be constructed in this project.

Project 27-01 Master Plan Update

Project Cost: $275,000

It is anticipated that the Master Plan Update begun in 2021 would be completed in 2022. The FAA recommends that a new Master Plan Update be developed every five to eight years. This project would begin the Master Plan Update process in 2027.

Project 27-02 Design – Rehabilitation of Runway 5/23 and North Taxiway B

Project Cost: $288,400

Runway 5/23 was originally constructed in 1942 and was last rehabilitated in 2010. It is anticipated that by the year 2027, the pavement will be nearing the end of its lifespan. The North Taxiway B was originally constructed in 1985 and 1991. It was last rehabilitated in 1993 and 2010. This project would rehabilitate the Runway and Taxiway including the intersection with Runway 11/29. The construction of this rehabilitation is anticipated to occur with Project 28-01.

Project 28-01 Construct – Rehabilitation of Runway 5/23 and North Taxiway B

Project Cost: $3,204,600

This project would construct the rehabilitation of the pavement of Runway 5/23 and the intersection of Runway 5/23 and Runway 11/29, as well as the north portions of Taxiway B as designed in Project 27-02.

Project 28-02 Build One 10-Unit T-Hangar and Taxilanes (#350)

Project Cost: $700,000

It is anticipated that another new 10-unit T-hangar will be required by the year 2028. This T-hangar would be located south of T-hangar #330 (built as Project 20-03) and west of T-hangar #340 (built as Project 24-04) in the south quadrant. It will also require that taxilanes be built for access on two of the four sides of the structure.

Project 29-01 Rehabilitation of the General Aviation Terminal

Project Cost: $3,050,000

The existing General Aviation terminal was completed in 2008. In 2029, this facility will have been in operation for over twenty years. This project would potentially include a new roof for the building, the upgrade of the mechanical, electrical, and plumbing systems, and potentially the interior finishes of the building.

Project 30-01 Design – Rehabilitation of Taxiway C

Project Cost: $19,000

Taxiway C was constructed in 1998. By the year 2030, it will be in need of rehabilitation and this project would provide the design for the Taxiway C rehabilitation. It is anticipated that the construction of the rehabilitation of Taxiway C will occur with Project 31-01.

Project 30-02 Build One 10-Unit T-Hangar and Taxilanes (#360)

Project Cost: $902,900

It is anticipated that another new 10-unit T-hangar will be required by the year 2030. This T-hangar would be located west of T-hangar #350 (built as Project 28-02) in the south quadrant. It will also require that taxilanes be built for access on three of the four sides of the structure.

Project 31-01 Construct – Rehabilitation of Taxiway C

Project Cost: $190,300

The pavement designed in Project 30-01 for Taxiway C rehabilitation would be constructed in this project.

Project 31-02 Design - Rehabilitation of North Terminal Apron

Project Cost: $61,500

The North Terminal Apron was constructed in 2011 in conjunction with the construction of the new terminal. It is anticipated that the project will require rehabilitation by the year 2032. This project would design the rehabilitation and it is anticipated that the construction would occur with Project 32-01.

Project 32-01 Construct - Rehabilitation of North Terminal Apron

Project Cost: $682,900

The construction of the pavement rehabilitation designed in Project 31-02 for the North Terminal Apron would occur in this project.

Project 32-02 Design – Rehabilitation of Northeast Taxiways F, F-1 and F-2

Project Cost: $27,400

The existing Taxiways F, F-1 and F-2 were constructed in 2011. By the year 2033, it is anticipated that these pavements will be in need of rehabilitation. This project would design the rehabilitation of the existing Taxiways F, F-1 and F-2. The construction associated with this project is anticipated to occur with Project 33-01.

Project 33-01 Construct – Rehabilitation of Northeast Taxiways F, F-1, and F-2

Project Cost: $273,800

The pavement rehabilitation designed in Project 32-02 for the northeast Taxiways F, F-1 and F-2 would be constructed in this project.

Project 33-02 Design One 3,600 SF Conventional Hangar with Apron and Parking

Project Cost: $125,200

It is anticipated that by the year 2033, an additional conventional hangar with associated apron and parking would be required. It is currently anticipated that it would be located in the eastern quadrant of the Airport. It is anticipated that the construction of this project would occur as project 34-02.

Project 33-03 Build One 10-Unit T-Hangar and Taxilanes (#370)

Project Cost: $902,900

It is anticipated that another new 10-unit T-hangar will be required by the year 2033. This T-hangar would be located west of T-hangar #360 (built as Project 30-02) in the south quadrant. It would also require that taxilanes be built for access on three of the four sides of the structure.

Project 33-04 Build One 10-Unit T-Hangar and Taxilanes (#380)

Project Cost: $902,900

It is anticipated that a second new 10-unit T-hangar will be required by the year 2033. This T-hangar would be located west of T-hangar #370 (built as Project 33-03) in the south quadrant. It will also require that taxilanes be built for access on three of the four sides of the structure.

Project 33-05 Design – Western Itinerant Aircraft Parking Apron

Project Cost: $108,100

It is anticipated that additional itinerant aircraft parking will be required in the area of the north apron associated with the terminal. This project would provide additional aircraft parking and

taxilanes on the western edge of the existing terminal apron. It is anticipated that this project would be constructed in Project 34-01.

Project 34-01 Construct – Western Itinerant Aircraft Parking Apron

Project Cost: $1,201,400

The western itinerant aircraft parking apron designed in Project 33-05 would be constructed in this project.

Project 34-02 Construct - One 3,600 SF Conventional Hangar with Apron and Parking

Project Cost: $1,252,200

The construction of the 3,600 square foot conventional hangar with associated apron and parking designed in Project 33-02 would be constructed in this project.

Table 8-3 presents the list of projects anticipated to occur in the Long-term period, as well as the proposed year. An order of magnitude cost estimate in 2015 dollars is also provided. Figure 8-3 shows the location and extent of each project.

Table 8-3
LONG-TERM CAPITAL IMPROVEMENT PROGRAM PROJECTS

Year	Project Number	Project Description	Estimated Project Cost
2025	25-01	Design - Eastern Itinerant Aircraft Parking Apron	$ 63,100
2026	26-01	Construct - Eastern Itinerant Aircraft Parking Apron	$ 700,900
2027	27-01	Master Plan Update	$ 275,000
2027	27-02	Design - Rehabilitation of Runway 5/23 and North Taxiway B	$ 288,400
2028	28-01	Construct - Rehabilitation of Runway 5/23 and North Taxiway B	$ 3,204,600
2028	28-02	Build One 10-Unit T-Hangar and Taxilanes (#350)	$ 700,000
2029	29-01	Rehabilitation of the GA Terminal	$ 3,050,000
2030	30-01	Design - Rehabilitation of Taxiway C	$ 19,000
2030	30-02	Build One 10-Unit T-Hangar and Taxilanes (#360)	$ 902,900
2031	31-01	Construct - Rehabilitation of Taxiway C	$ 190,300
2031	31-02	Design – Rehabilitation of North Terminal Apron	$ 61,500
2032	32-01	Construct – Rehabilitation of North Terminal Apron	$ 682,900
2032	32-02	Design - Rehabilitation of NE Taxiway F, F-1, and F-2	$ 27,400
2033	33-01	Construct - Rehabilitation of NE Taxiways F, F-1, and F-2	$ 273,800
2033	33-02	Design - One 3600 SF Conventional Hangar with Apron and Parking	$ 125,200
2033	33-03	Build One 10-Unit T-Hangar and Taxilanes (#370)	$ 902,900
2033	33-04	Build One 10-Unit T-Hangar and Taxilanes (#380)	$ 902,900
2033	33-05	Design - Western Itinerant Parking Apron	$ 108,100
2034	34-01	Construct - Western Itinerant Aircraft Parking Apron	$ 1,201,400
2034	34-02	Construct - One 3,600 SF Conventional Hangar with Apron and Parking	$ 1,252,200
		TOTAL	**$ 14,932,500**

Figure 8-3
LONG-TERM CIP PROJECTS

8.5 Potential Funding Sources

The Winter Haven Municipal Airport – Gilbert Field relies primarily on revenues from tenants and funding from governmental sources. Funding from the FAA and state agencies such as the Florida Department of Transportation (FDOT) are very important to airports such as the Winter Haven Municipal Airport – Gilbert Field. While the main revenue from tenant leases and fuel sales may cover operating costs and some existing debt service, there are limited residual funds to cover the costs of necessary Airport capital improvement projects.

Based upon the type of project, these capital improvement projects may be eligible for FAA or FDOT funding. However, the Airport is competing with every other airport in the State and in the United States for the same funding. Because a project is eligible for Federal or State funding, does not ensure that the funding will be received. The following sections describe several funding programs and general eligibility requirements associated with each.

8.5.1 Federal Funding

The Airport Improvement Program (AIP) developed by the FAA has been established to assist in the growth of public-use airports within the National Plan of Integrated Airport System (NPIAS). The AIP provides grants to public-use airports such as Winter Haven Municipal Airport – Gilbert Field for a wide variety of airport improvement projects. Projects funded by the AIP include runway and taxiway rehabilitation and construction, land acquisition, planning and environmental studies, navigational aid installation, and airfield marking and signage projects. For General Aviation (GA) airports, such as the Winter Haven Airport, the AIP will fund up to 90 percent of the eligible costs of the project. The remaining 10 percent is the responsibility of an airport's local governing body and potential matching monies from the State. Some of the projects over the 20-year planning period at the Airport that are eligible for AIP funding include the rehabilitation of existing airfield pavement, the construction of new airfield pavement, and navigational aids.

The AIP allows for the annual disbursement of $150,000 to applicable GA airports within the NPIAS. It is assumed that this program or one similar to it will continue throughout the planning period covered by this Master Plan Update. The annual $150,000 is referred to as Non-Primary Entitlement money. In order for an airport to receive this money, it must be applied for each year. Additionally, the money may only be used towards the development of projects that are approved for federal funding under the AIP.

When entitlement funds are not sufficient to cover the costs of AIP eligible projects, airports can also request from the FAA special funds called discretionary funds. In order to allocate those additional grants, the FAA has developed a priority ranking system, which accounts for the type of project and airport. Projects concerning runway safety are generally the first priority. From these rankings, the appropriate funds are distributed.

8.5.2 State Funding

Like the FAA, FDOT has established a program to support the funding of various airport improvement projects. The FDOT aviation grant program provides funding to four major types of

projects: airport planning, airport improvement, land acquisition, and airport economic development. Examples of projects funded under these different categories that may apply to the Winter Haven Airport – Gilbert Field include:

- **Airport Planning:** master plans, master drainage plans, and environmental assessments
- **Airport Improvements:** terminal building improvements and runway/taxiway construction
- **Land Acquisition:** acquisition of land, aviation easements, and mitigation land
- **Airport Economic Development:** hangar construction, commerce park infrastructure and building development, and the development of other facilities that will enhance economic impact.

FDOT provides five percent of project costs when Federal funding is available. When FAA funding is not available, FDOT usually funds 50 percent or 80 percent of the total cost. For some security projects, FDOT can fund up to 100 percent of a project. The remaining cost of a project is typically covered by local entities, in this case, the City of Winter Haven.

In addition to FDOT funding, the state of Florida has established numerous economic development programs to provide incentives for companies to locate to Florida. These programs are administered through Enterprise Florida, a public-private partnership responsible for leading Florida's statewide economic development efforts. Some of the programs administered by Enterprise Florida include:

- **Qualified Target Industry Tax Refund:** Available for companies that create high wage jobs in targeted, high-value-added industries
- **The High Impact Performance Incentive:** A negotiated grant used to attract and grow major, high-impact facilities in Florida
- **Qualified Defense Contractor Tax Refund:** Up to $5,000 is offered per job created or saved in Florida through the conversion of defense jobs to civilian production, the acquisition of a new defense contract, or the consolidation of a defense contract, which results in at least a 25 percent increase in Florida employment or a minimum of 80 jobs
- **Capital Investment Tax Credit:** is used to attract and grow capital-intensive industries in Florida
- **Enterprise Zone Incentives:** Assortment of tax incentives to businesses that choose to create employment within an enterprise zone, which is a specific geographic area targeted for economic revitalization.

While these programs are not meant to fund airport improvement projects, they may be utilized to fund commercial development areas, similar to those planned for the Airport. Further information regarding Enterprise Florida and their economic development programs can be found at www.eflorida.com

8.5.3 Local Funding

Depending on the type of project funding available, local funding sources may or may not account for a major part in the costs of an airport improvement project. Sources of local funding can vary over a diverse group from county and city governments to private investors. While it is usually necessary for an airport or its sponsor to cover some percentage of the costs associated with these projects, the local percentage is generally quite small compared to other entities.

The local share of airport improvement projects that receive FAA or FDOT funding are generally funded through the governing body of the airport. In this case, the City of Winter Haven would be responsible for funding the local share of the improvement projects. Other projects throughout the Airport that may receive additional funding from the City could include the development of infrastructure such as the commerce park and other development areas that would increase the number of revenue producing tenants on Airport property. How the City goes about funding their share of a project can vary.

Funding may be drawn from various sources or it may be drawn from programs such as issuing a development bond. Although issuing bonds is more common at larger commercial service airports, which produce large revenues as opposed to small GA airports, it remains a viable source of funding.

In the case of private development on an airport, local funding may account for a much higher amount if not all of the funding necessary for certain developments. Historically, private investors are generally not a major source of funding for airport improvement projects unless they have a very significant impact on a particular current or future tenant. However, a recent occurrence at more than one airport includes a private investor wishing to fully fund a development that is strictly an investment such as a T-hangar complex for subsequent lease, hangar, apron, or other facility.

8.6 Potential Allocation of Funding

Table 8-4 through Table 8-6 provide a companion oversight of grant funding scenarios for the short-, mid-, and long-term time periods based upon current programs and eligible funding sources. It should be noted that these current programs are subject to change and the CIP should be updated at least annually to adjust for changes in funding and priorities as necessary. In addition to the funding sources, the projected cost estimated for the various airport improvement projects are provided in 2015 dollars. These costs should also be updated to current dollars periodically.

At the Winter Haven Municipal Airport – Gilbert Field, the proper management of funds is important to achieve self-sufficiency and to safely develop the Airport to match the projected growth over the planning period. It is recommended that the Airport apply for all available grant money for which it is eligible. It is also imperative that the Airport management meet often with the local representatives of the FAA and FDOT to provide them with a clear, consistent vision of what the City desires to accomplish at the Airport.

By obtaining government assistance to fund Airport improvements throughout the planning period, the ability of the Airport to progress toward operational and capital self-sufficiency will be greatly enhanced in future years. Additionally, a sound Capital Improvement Program may actually reduce the reliance of Winter Haven Municipal Airport – Gilbert Field on governmental aid as the Airport continues to grow and mature as an economic engine.

Table 8-4
POTENTIAL ALLOCATION OF SHORT-TERM (2015-2019) CIP PROJECT FUNDING

Year	Project Number	Project	Entitlements	FAA %	Discretionary	FAA %	FDOT	FDOT %	Local	Local %	Total
2015											
	15-01	Design - Taxiway E on North Side of Runway 11	$ -	0.0%	$ 65,700	90.0%	$ 5,840	8.0%	$ 1,460	2.0%	$ 73,000
	15-02	Construct - New Terminal Access Road	$ -	0.0%	$ -	0.0%	$ 500,000	80.0%	$ 125,000	20.0%	$ 625,000
			$ -	0.0%	$ 65,700	9.4%	$ 505,840	72.5%	$ 126,460	18.1%	$ 698,000
2016											
	16-01	Construct - Taxiway F Extension	$ 482,807	13.9%	$ 2,651,093	76.1%	$ 278,640	8.0%	$ 69,660	2.0%	$ 3,482,200
	16-02	Construct - New Taxiway E on North Side of Runway 11	$ -	0.0%	$ 742,500	90.0%	$ 66,000	8.0%	$ 16,500	2.0%	$ 825,000
	16-03	Design - Gates, Access Control, and Fencing	$ -	0.0%	$ 75,000	50.0%	$ 67,500	45.0%	$ 7,500	5.0%	$ 150,000
	16-04	Design and Construct - Public Restrooms at Fuel Farm	$ -	0.0%	$ -	0.0%	$ 64,000	80.0%	$ 16,000	20.0%	$ 80,000
	16-05	Conceptual Study and Design - Airport Commerce Park	$ -	0.0%	$ -	0.0%	$ 360,000	80.0%	$ 90,000	20.0%	$ 450,000
	16-06	Construct - Culvert Box (Bridge) at Entrance to Seaplane Base	$ -	0.0%	$ -	0.0%	$ 96,663	50.0%	$ 96,663	50.0%	$ 193,326
			$ 482,807	9.3%	$ 3,468,593	67.0%	$ 932,803	18.0%	$ 296,323	5.7%	$ 5,180,526
2017											
	17-01	Design - Airfield Lighting and Signage Rehabilitation	$ 150,000	90.0%	$ -	0.0%	$ 13,333	8.0%	$ 3,334	2.0%	$ 166,667
	17-02	Construction - Gates, Access Control, and Fencing	$ -	0.0%	$ 550,000	50.0%	$ 495,000	45.0%	$ 55,000	5.0%	$ 1,100,000
	17-03	Wildlife Hazard Assessment	$ -	0.0%	$ 52,000	80.0%	$ 6,500	10.0%	$ 6,500	10.0%	$ 65,000
	17-04	Construct - Airport Commerce Park - Phase I	$ -	0.0%	$ -	0.0%	$ 1,200,000	80.0%	$ 300,000	20.0%	$ 1,500,000
	17-05	Construct - Jet Hangar #501	$ -	0.0%	$ -	0.0%	$ 800,000	80.0%	$ 200,000	20.0%	$ 1,000,000
	17-06	Land Acquisition - Phase II	$ -	0.0%	$ -	0.0%	$ 480,000	80.0%	$ 120,000	20.0%	$ 600,000
	17-07	Design and Construct - New T-Hangar Building #270	$ -	0.0%	$ -	0.0%	$ 440,000	80.0%	$ 110,000	20.0%	$ 550,000
			$ 150,000	3.0%	$ 602.000	12.1%	$ 3,434,883	68.9%	$ 794,834	16.0%	$ 4,981,661
2018											
	18-01	Construct - Airfield Lighting and Signage Rehabilitation	$ 150,000	30.0%	$ 300,000	60.0%	$ 40,000	8.0%	$ 10,000	2.0%	$ 500,000
	18-02	Design - Rehabilitation of Taxiway A, A-2, A-3, and South Apron	$ -	0.0%	$ -	0.0%	$ 188,240	80.0%	$ 47,060	20.0%	$ 235,300
	18-03	Design - Rehabilitation of South Taxiway B, B-2, and B-4	$ -	0.0%	$ -	0.0%	$ 44,000	80.0%	$ 11,000	20.0%	$ 55,000
	18-04	Design - Extension of Taxiway E to 21st Street NW	$ -	0.0%	$ -	0.0%	$ 127,440	80.0%	$ 31,860	20.0%	$ 159,300
	18-05	Design and Construct - Jet Hangar #502	$ -	0.0%	$ -	0.0%	$ 800,000	80.0%	$ 200,000	20.0%	$ 1,000,000
			$ 150,000	7.7%	$ 300,000	15.4%	$ 1,199,680	61.5%	$ 299,920	15.4%	$ 1,949,600
2019											
	19-01	Construct - Rehabilitate Taxiway A, A-2, A-3, and South Apron	$ 150,000	6.3%	$ 2,005,950	83.7%	$ 119,775	5.0%	$ 119,775	5.0%	$ 2,395,500
	19-02	Construct - Rehabilitation of South Taxiway B, B-2, and B-4	$ -	0.0%	$ -	0.0%	$ 439,920	80.0%	$ 109,980	20.0%	$ 549,900
	19-03	Construct - Extension of Taxiway E to 21st Street NW	$ -	0.0%	$ -	0.0%	$ 1,416,400	80.0%	$ 354,100	20.0%	$ 1,770,500
	19-04	Design - Rehabilitation of Turn-arounds on Runways 11 and 29	$ -	0.0%	$ -	0.0%	$ 9,120	80.0%	$ 2,280	20.0%	$ 11,400
	19-05	New Wind Sock and Segmented Circle	$ -	0.0%	$ -	0.0%	$ 28,000	80.0%	$ 7,000	20.0%	$ 35,000
			$ 150,000	3.2%	$ 1,960,950	41.6%	$ 2,010,715	42.7%	$ 590,635	12.5%	$ 4,712,300
		Total Short-term Projects	$ 932,807		$ 6,442,243		$ 8,086,371		$ 2,110,672		$ 17,572,093
		Total Percentage	5.3%		36.7%		46.0%		12.0%		100.0%
		Average Annual Cost	$ 186,561		$ 1,288,449		$ 1,617,274		$ 422,134		$ 3,514,419

Table 8-5
POTENTIAL ALLOCATION OF MID-TERM (2020-2024) CIP PROJECT FUNDING

Year	Project Number	Project	Entitlements	FAA %	Discretionary	FAA %	FDOT	FDOT %	Local	Local %	Total
2020											
	20-01	Construct - Rehabilitation of Turn-around on Runways 11 and 29	$ -	0.0%	$ -	0.0%	$ 91,360	80.0%	$ 22,840	20.0%	$ 114,200
	20-02	Design and Construct Obstruction Lighting for Runway 11 Departure Surface	$ -	0.0%	$ -	0.0%	$ 16,000	80.0%	$ 4,000	20.0%	$ 20,000
	20-03	Build One 10-Unit T-Hangar and Taxilanes (#320)	$ -	0.0%	$ -	0.0%	$ 722,320	80.0%	$ 180,580	20.0%	$ 902,900
			$ -	0.0%	$ -	0.0%	$ 829,680	80.0%	$ 207,420	20.0%	$ 1,037,100
2021											
	21-01	Master Plan Update	$ 150,000	54.5%	$ 97,500	35.5%	$ 13,750	5.0%	$ 13,750	5.0%	$ 275,000
	21-02	Design and Construct Obstruction Lighting for Runway 5 Departure Surface	$ -	0.0%	$ -	0.0%	$ 12,000	80.0%	$ 3,000	20.0%	$ 15,000
	21-03	Design - Rehabilitation of Apron T-Hangars Taxilanes	$ -	0.0%	$ -	0.0%	$ 36,320	80.0%	$ 9,080	20.0%	$ 45,400
			$ 150,000	44.7%	$ 97,500	29.1%	$ 62,070	18.5%	$ 25,830	7.7%	$ 335,400
2022											
	22-01	Construct - Rehabilitation of Apron T-Hangars Taxilanes	$ -	0.0%	$ -	0.0%	$ 403,360	80.0%	$ 100,840	20.0%	$ 504,200
	22-02	Design - Rehabilitation of Runway 11/29	$ -	0.0%	$ -	0.0%	$ 98,240	80.0%	$ 24,560	20.0%	$ 122,800
	22-03	Build One 10-Unit T-Hangar (#330)	$ -	0.0%	$ -	0.0%	$ 560,000	80.0%	$ 140,000	20.0%	$ 700,000
			$ -	0.0%	$ -	0.0%	$ 1,061,600	80.0%	$ 265,400	20.0%	$ 1,327,000
2023											
	23-01	Construct - Rehabilitation of Runway 11/29	$ 450,000	33.0%	$ 777,690	57.0%	$ 68,205	5%	$ 68,205	5.0%	$ 1,364,100
	23-02	PAPIs for Runway 11/29 - Including FAA Flight Check	$ -	0.0%	$ 54,990	90.0%	$ 3,055	5.0%	$ 3,055	5.0%	$ 61,100
	23-03	REILS for Runway 11/29	$ -	0.0%	$ 112,500	90.0%	$ 6,250	5.0%	$ 6,250	5.0%	$ 125,000
	23-04	Design - Rehabilitation of Taxiway D	$ -	0.0%	$ -	0.0%	$ 13,200	80.0%	$ 3,300	20.0%	$ 16,500
			$ 450,000	28.7%	$ 945,180	60.3%	$ 90,710	5.8%	$ 80,810	5.2%	$ 1,566,700
2024											
	24-01	Construct - Rehabilitation of Taxiway D	$ 148,410	90.0%	$ -	0.0%	$ 8,245	5.0%	$ 8,245	5.0%	$ 164,900
	24-02	Remove Existing Taxiway C-3 and Construct Taxiway C/D Connector	$ -	0.0%	$ 728,460	90.0%	$ 40,470	5.0%	$ 40,470	5.0%	$ 809,400
	24-03	Remove Taxiway A North of Taxiway D	$ -	0.0%	$ 33,300	90.0%	$ 1,850	5.0%	$ 1,850	5.0%	$ 37,000
	24-04	Build One 10-Unit T-Hangar and Taxilanes (#340)	$ -	0.0%	$ -	0.0%	$ 722,320	80.0%	$ 180,580	20.0%	$ 902,900
			$ 148,410	7.8%	$ 761,760	39.8%	$ 772,885	40.4%	$ 231,145	12.1%	$ 1,914,200
		Total Mid-term Projects	$ 748,410		$ 1,804,440		$ 2,816,945		$ 810,605		$ 6,180,400
		Total Percentage	12.1%		29.2%		45.6%		13.1%		100.0%
		Average Annual Cost	$ 49,682.00		$ 360,888.00		$563,389.00		$162,121.00		$1,236,080.00

Note: It is anticipated that $318 of Entitlement funds will be carried over from Year 2024 to Year 2026.

Table 8-6
POTENTIAL ALLOCATION OF LONG-TERM (2025-2034) CIP PROJECT FUNDING

Year	Project Number	Project	Entitlements	FAA %	Discretionary	FAA %	FDOT	FDOT %	Local	Local %	Total
2025											
	25-01	Design - Eastern Itinerant Aircraft Parking Apron	$ -	0.0%	$ -	0.0%	$ 50,480	80.0%	$ 12,620	20%	$ 63,100
2026											
	26-01	Construct - Eastern Itinerant Aircraft Parking Apron	$ 300,318	42.8%	$ 330,492	47.2%	$ 35,045	5.0%	$ 35,045	5%	$ 700,900
2027											
	27-01	Master Plan Update	$ 150,000	54.5%	$ 97,500	35.5%	$ 13,750	5.0%	$ 13,750	5.0%	$ 275,000
	27-02	Design - Rehabilitation of Runway 5/23 & North Taxiway B	$ -	0.0%	$ -	0.0%	$ 230,720	80.0%	$ 57,680	20%	$ 288,400
			$ 150,000	26.6%	$ 97,500	17.3%	$ 244,470	43.4%	$ 71,430	13%	$ 563,400
2028											
	28-01	Construct - Rehabilitation of Runway 5/23 and North Taxiway B	$ 150,000	4.7%	$ 2,734,140	85.3%	$ 160,230	5.0%	$ 160,230	5.0%	$ 3,204,600
	28-02	Build One 10-unit T-Hangar and Taxilanes (#350)	$ -	0.0%	$ -	0.0%	$ 560,000	80.0%	$ 140,000	20.0%	$ 700,000
			$ 150,000	3.8%	$ 2,734,140	70.0%	$ 720,230	18.4%	$ 300,230	7.7%	$ 3,904,600
2029											
	29-01	Rehabilitation of the GA Terminal	$ -	0.0%	$ -	0.0%	$ 1,525,000	50.0%	$ 1,525,000	50.0%	$ 3,050,000
			$ -	0.0%	$ -	0.0%	$ 1,525,000	50.0%	$ 1,525,000	50.0%	$ 3,050,000
2030											
	30-01	Design - Rehabilitation of Taxiway C	$ -	0.0%	$ -	0.0%	$ 15,200	80.0%	$ 3,800	20%	$ 19,000
	30-02	Build One 10-unit T-Hangar and Taxilanes (#360)	$ -	0.0%	$ -	0.0%	$ 722,320	80.0%	$ 180,580	20%	$ 902,900
			$ -	0.0%	$ -	0.0%	$ 737,520	80.0%	$ 184,380	20%	$ 921,900
2031											
	31-01	Construct - Rehabilitation of Taxiway C	$ 171,270	90.0%	$ -	0.0%	$ 9,515	5.0%	$ 9,515	5%	$ 190,300
	31-02	Design - Rehabilitation of North Terminal Apron	$ -	0.0%	$ -	0.0%	$ 49,200	80.0%	$ 12,300	20%	$ 61,500
			$ 171,270	68.0%	$ -	0.0%	$ 58,715	23.3%	$ 21,815	8.7%	$ 251,800
2032											
	32-01	Construct - Rehabilitation of North Terminal Apron	$ 428,730	62.8%	$ 185,880	27.2%	$ 34,145	5.0%	$ 34,145	5%	$ 682,900
	32-02	Design - Rehabilitation of NE Taxiway F, F1, and F2	$ -	0.0%	$ -	0.0%	$ 21,920	80.0%	$ 5,480	20%	$ 27,400
			$ 428,730	60.4%	$ 185,880	26.2%	$ 56,065	7.9%	$ 39,625	6%	$ 710,300
2033											
	33-01	Construct - Rehabilitation of NE Taxiway F, F1, and F2	$ 150,000	54.8%	$ 96,420	35.2%	$ 13,690	5.0%	$ 13,690	5%	$ 273,800
	33-02	Design - One 3600 SF Conventional Hangar with Apron and Parking	$ -	0.0%	$ -	0.0%	$ 100,160	80.0%	$ 25,040	20%	$ 125,200
	33-03	Build One 10-unit T-Hangar and Taxilanes (#370)	$ -	0.0%	$ -	0.0%	$ 722,320	80.0%	$ 180,580	20%	$ 902,900
	33-04	Build One 10-unit T-Hangar and Taxilanes (#380)	$ -	0.0%	$ -	0.0%	$ 722,320	80.0%	$ 180,580	20%	$ 902,900
	33-05	Design - Western Itinerant Parking Apron	$ -	0.0%	$ -	0.0%	$ 86,480	80.0%	$ 21,620	20%	$ 108,100
			$ 150,000	6.5%	$ 96,420	4.2%	$ 1,644,970	71.1%	$ 421,510	18%	$ 2,312,900
2034											
	34-01	Construct - Western Itinerant Aircraft Parking Apron	$ 150,000	12.5%	$ 931,260	77.5%	$ 60,070	5.0%	$ 60,070	5%	$ 1,201,400
	34-02	Construct - One 3600 SF Conventional Hangar with Apron and Parking	$ -	0.0%	$ -	0.0%	$ 1,001,760	80.0%	$ 250,440	20%	$ 1,252,200
			$ 150,000	6.1%	$ 931,260	38.0%	$ 1,061,830	43.3%	$ 310,510	13%	$ 2,453,600
		Total Long-term Projects	$ 1,500,318		$ 4,375,692		$ 6,134,325		$ 2,922,165		$ 14,932,500
		Total Percentage	10.0%		29.3%		41.1%		19.6%		100.0%
		Average Annual Cost	$ 150,032		$ 437,569		$ 613,432		$ 292,216		$ 1,493,250

Note: It is anticipated that $318 of Entitlement funds will be carried over from Year 2024 to Year 2026.

8.7 Summary

The total estimated cost of the Short-term CIP Projects is $17,572,093 over a five-year period beginning in 2015 and ending in 2019. Projects proposed for the Short-term period include:

- Construction of a New Terminal Access Road
- Construction of the Taxiway F Extension
- Design and Construction of Taxiway E on North Side of Runway 11
- Conceptual Study, Design, and Phase I Construction of the Airport Commerce Park
- Design and Construction of Taxiways A, A-2, A-3, and the South Apron
- Design and Construction of South Taxiway B, B-2, and B-4
- Design and Construction of Extension of Taxiway E to 21st Street NW
- Wildlife Hazard Assessment
- Design and Construction of Runway 11/29 Airfield Lighting and Signage Rehabilitation
- Design and Construction of Gates, Access Control, and Fencing

The potential funding of the proposed Short-term Projects is as follows:

• FAA Entitlement Funds	$ 932,807
• FAA Discretionary Funds	6,442,243
• FDOT	8,086,371
• City of Winter Haven	2,110,672
	$ 17,572,093

The total estimated cost of the Mid-term CIP Projects is $6,180,400 over a five-year period beginning in 2020 and ending in 2024. Projects proposed for the Mid-term period include:

- Construct Rehabilitation of the Turn-arounds on Runways 11 and 29
- Design and Construct Obstruction Lighting for Runway 5 and 11 Departure Surfaces
- Construction of Three 10-Unit T-Hangars
- Design and Construction of the T-Hangar Taxilanes
- Design and Construction of the Rehabilitation of Runway 11/29
- PAPIs and REILs for Runway 11/29
- Design and Rehabilitation of Taxiway D
- Design and Construct Taxiway C/D Connector and Remove Existing Taxiway C-3
- Master Plan Update

The potential funding of the proposed Mid-term Projects is as follows:

• FAA Entitlements	$ 748,410
• FAA Discretionary	1,804,440
• FDOT	2,816,945
• City of Winter Haven	810,605
	$ 6,180,400

The total estimated cost of the Long-term CIP Projects is $14,932,500 over a ten-year period beginning in 2025 and ending in 2034. Projects proposed for the Long-term period include:

- Design and Construct the Eastern Itinerant Aircraft Apron
- Design and Construct Rehabilitation of Runway 5/23 and North Taxiway B
- Build Four 10-Unit T-Hangars
- Design and Construct Rehabilitation of Taxiway C
- Master Plan Update
- Design and Construct Rehabilitation of Northeast Taxiways F, F-1, and F-2
- Design and Construct Rehabilitation of North Terminal Apron
- Design and Construct One 3,600 SF Conventional Hangar with Apron and Parking
- Design and Construct of Western Itinerant Aircraft Apron

The potential funding of the proposed Long-term Projects is as follows:

• FAA Entitlements	$ 1,500,318
• FAA Discretionary	4,375,692
• FDOT	6,134,325
• City of Winter Haven	2,922,165
	$ 14,932,500